

99 S. Almaden Road, Suite 600 San Jose, CA 95113

December 22, 2021

Subject: Bid Package #1

Borel Middle School HVAC Replcmt-DSA 01-119557 College Park Elementary School HVAC Replcmt-DSA 01 119530 Meadow Heights Elementary School HVAC Replcmt DSA 01-119554 North Shoreview Montessori School HVAC Replcmt DSA 01-119526 San Mateo - Foster City School District

ADDENDUM NO. 3

CHANGES AND/OR CLARIFICATIONS OF THE DRAWINGS AND SPECIFICATIONS ARE AS FOLLOWS FOR THE THREE DSA PROJECTS ASSOCIATED WITH BID PACKAGE NO.1. PLEASE NOTE THAT THIS ADDEDUM IS BEING ISSUED IN A COMBINED PACKAGE IN FIVE PARTS.

Part 1. Cover section addressing all four projects with overlapping information impacting each campus project.

Part 2. Addendum documentation exclusively for Borel Middle School Project.

Part 3. Addendum documentation exclusively for College Park Elementary School Project.

Part 4. Addendum documentation exclusively for Meadow Heights Elementary School Project.

Part 5. Addendum documentation exclusively for North Shoreview Montessori School Project.

Part 1. Cover section addressing all four projects with overlapping information impacting each campus project.

RFI QUESTION

ITEM NO 3.1	Question, "Can I get the sign in sheet(s) for these job walks?" <u>Response</u> , Yes, the pre-bid walk sign sheets from December 1, December 8 and December 15, 2021, have been posted to the District's web site and <i>are included within this</i> <i>addendum</i> .
ITEM NO 3.2	Question, "Do the qualified Mechanical Electrical and Plumbing sub-contractors need to adhere to the Quality Bidder authorized financial limits if bidding to a Pre-Approved General Contractor? Response, "As to the current financial limits placed upon the various MEP sub-contractors for SM-FCSD, if the MEP sub-contractor are bidding directly to a project General Contractor (also pre-qualified by Quality Bidders), then the MEP sub-contractor does not need to comply with the financial limits applied to them."

ITEM NO 3.3 **Question**, the notice inviting bids and as stated at the pre-bid walks, the District uses propriety products, please confirm?

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<u>Response</u>, "Yes, as stated within Document 00 11 16-NOTICE TO BIDDERS/INVITAION TO BID The District's Board has found and determined that the following item(s) shall be used on this Project based on the purpose(s) indicated. (Public Contract Code section 3400(c).) A particular material, product, thing, or service is designated by specific brand or trade name for the following purpose(s):

In order to match other products in use on a particular public improvement either completed or during completion.

- Door Hardware (Schlage)
- Energy Management System (Delta)
- Fire Alarm System (Notifier)"

SPECIFICATIONS

ITEM NO. 3.4: DOCUMENT 00 11 16 - NOTICE TO BIDDERS/INVITATION TO BID

<u>Add:</u> DOCUMENT 00 11 16 - NOTICE TO BIDDERS/INVIATION TO BID section number 3 has been modified to read as noted below. The Notice inviting Bidders has not been reissued. All prequalification questionnaires will be received until **4:00 P.M., December 30 28, 2021** through Quality Bidders using their web link at <u>www.qualitybidders.com</u>

ITEM NO. 3.5: DOCUMENT 00 41 13 BID FORM

<u>Revise item 3</u>: Unit Price(s) Unit Price #2- delete reference to SAMSUNG unit. Request is rewritten as follows.

Dollars \$_

Classroom Split System Heat Pump-SAMSUNG-Unit, with associated equipment as listed within section 01 23 00 Alternative and Unit Pricing. Additive price

ITEM NO. 3.6: DOCUMENT 00 45 10 AGREEMENT

<u>Revise item 6</u>, Liquidated Damages, section to rea d as follows:

"Liquidated Damages: Time is of the essence for all Work to be performed. It is hereby understood and agreed that it is and will be difficult and/or impossible to ascertain and determine the actual damage that District will sustain in the event of and by reason of Contractor's delay; therefore, pursuant to Government Code section 53069.85 and Public Contract Code section 7203, Contractor shall forfeit and pay to District the following sum(s) as liquidated damages ("Liquidated Damages"):

- Submittal of any item on approved Submittal Schedule: Five Hundred Dollars & No Cents (<u>\$500.00</u>) per day as Liquidated Damages for each and every day's delay beyond the time herein prescribed for each item on approved Submittal Schedule.
- Milestone No. 1: February 15,2022 Mechanical Unit Shop Drawings Due.

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- Milestone No. 2: All other product submittals and shop drawings are due within thirty-five days of Notice to Proceed except or pay Five Hundred Dollars & No Cents per outstanding submittal (\$500.00) per day as Liquidated Damages for each and every day's delay beyond the time herein prescribed in finishing the Work of Milestone No. 2.
- Milestone No. 3: August 5,2022 School Staff on Site Site must have power, Operational HVAC units and all areas cleaned per the District's cleaning specification. One Thousand Dollars & No Cents (\$1,000.00) per day as Liquidated Damages for each and every day's delay beyond the Contract Time to complete all the Work.
- Milestone No. 4: October 28, 2022, Project Completion. One Thousand Dollars & No Cents
 (\$1,000.00)
 per day as Liquidated Damages for each and every day's delay beyond the Contract Time to complete all the Work.

ITEM NO. 3.7: DOCUMENT 01 11 00 - SUMMARY OF WORK with ATTACHMENTS

<u>Add:</u> The specification section in its entirety has been replaced posti8ngf scope of work for all Bid Package #2 project campuses, Abbott MS, George Hall ES and Laurel ES with the additional of attached documents as indicated below.

Attachments included within the summary of work:

- 1. SMFCSD CONTRACTOR COVID 19 ADDENDUM (1 PAGE)
- 2. SMFCSD DEEP CLEANING AND MATERIAL STANDARDS (1 PAGE)
- 3. SMFCSD SUMMER SPECIFICATION FOR DEEP CLEANING (1 PAGE)
- 4. BOREL MIDDLE SCHOOL LOGISTICS PLAN (1 PAGE)
- 5. COLLEGE PARK ELEMENTARY SCHOOL LOGISTICS PLAN (1 PAGE)
- 6. MEADOW HEIGHTS ELEMENTARY SCHOOL LOGISTICS PLAN (1 PAGE)
- 7. NORTH SHOREVIEW MONTESORRI SCHOOL LOGISTICS PLAN (1 PAGE)
- 8. BOREL MIDDLE SCHOOL PHASING PLAN (1 PAGE)
- 9. COLLEGE PARK ELEMENTARY SCHOOL PHASING PLAN (1 PAGE)
- 10. MEADOW HEIGHTS ELEMENTARY SCHOOL PHASING PLAN (1 PAGE)
- 11. NORTH SHOREVIEW MONTESORRI SCHOOL PHASING PLAN (1 PAGE)

ITEM NO. 3.8: DOCUMENT 01 23 00 – ALTERNATES AND UNIT PRICING

Revise: Section 4, Execution, 4.2 Schedule of Unit Pricing, sub-section 4.2.2 Unit, to read as follows;

4.2.2 Unit Price Request #2-Classroom Split System Heat Pump unit. Split system shall be able to operate at 94% heating capacity down to 32 Degrees Fahrenheit outdoor ambient temperature. CFM based on 0.55 ESP. Provide with manufacturer min-A60un 24 VAC thermostat adapter and 24VAC transformer. Provide with DELTA Controls thermostat with CO2 sensor. Provide condensate pump. Provide with 4" MERV-13 Filter access panel. Fan coil shall be adjusted to operate at constant speed at indicated CFM. Indoor unit power by outdoor unit. Unit price is for all prime and associated equipment for this specified item to be delivered to the Owner as requested in writing in quantities as required. This request is for equipment purchase only.

Part 2. Addendum 3 Items for Borel Middle School

Review posted Addendum No. 3 documents as prepared by Aedis Architects, *attached*.



Part 3. Addendum 3 Items for College Park Elementary School

Review posted Addendum No. 3 documents as prepared by Aedis Architects, attached.

Part 4. Addendum 3 Items for Meadow Heights Elementary School

Review posted Addendum No. 3 documents as prepared by Aedis Architects, attached.

Part 5. Addendum 3 Items for North Shoreview Montessori School

Review posted Addendum No. 3 documents as prepared by Aedis Architects, attached.

END OF ADDEDUM #3

DOCUMENT 01 11 00

SUMMARY OF WORK

1. GENERAL

1.1. RELATED DOCUMENTS AND PROVISIONS

Contractor shall review all Contract Documents for applicable provisions related to the provisions in this document, including without limitation:

- 1.1.1. General Conditions;
- 1.1.2. Special Conditions (if any);
- 1.1.3. Supplemental Conditions (if any);
- 1.1.4. Submittals; and
- 1.1.5. Temporary Facilities and Controls.

1.2. SUMMARY OF WORK COVERED BY CONTRACT DOCUMENTS

The Work may consist of but not limited to the following:

1.2.1. Selective demolition and construction necessary for HVAC system replacement with selected primary and secondary electrical system upgrades for one middle school and three elementary schools as noted below. The proposed scope of work may include associated civil, architectural, structural, plumbing, irrigation, and electrical work as indicated in the Drawings and Specifications. Generally, these categories of work involve new finishes, adaptive re-use and modification of certain selected areas, handicap accessibility retrofits, and pertain to changing and expanding selected infrastructure utilities, and extensive modifications.

1.2.2. BID PACKAGE #1

- 1.2.2.1. **Borel Middle School**: Campus wide electrical service upgrade and replacement of HVAC equipment and enclosures.
- 1.2.2.2. **College Park Elementary School**: Campus wide electrical service upgrade and replacement of HVAC equipment and enclosures.
- 1.2.2.3. **Meadow Heights Elementary School**: Campus wide electrical service upgrade and replacement of HVAC equipment and enclosures.

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- 1.2.2.4. **North Shoreview Montessori School**: Campus wide electrical service upgrade and replacement of HVAC equipment and enclosures.
- 1.2.3. Protection of all District office, classroom, and school furniture from construction damage, dust, debris, spills, and stains is required. Reference Document 01 77 00 for Contract Closeout and Final Cleaning.
- 1.2.4. The work also includes working multiple shifts, overtime, and/or six (6) days per week as necessary to complete the work within the specified time frames and contract completion date.
- 1.2.5. One Superintendent or Lead Foreman must be present throughout each work shift and at each site during the course of construction.
- 1.2.6. Specific Electrical Main Switchboard Equipment are Owner Furnished Contractor Installed, (OFCI) items as noted on the plans. The current program calls for the following OFCI items per bid package.
 - 1.2.6.1. **Bid Package #1,** College Park Elementary School, Meadow Heights Elementary School and North Shoreview Elementary School.
 - 1.2.6.2. Reference is made to the "Main Switchboard" as shown in the single line diagram on sheets E4.2 and the "Main Switchboard" specification section 26 24 13 Switchboards, 600V and Below is the related spec section. All other electrical equipment is provided by the contractor.
 - 1.2.6.3. The Contractor will be responsible for coordinating delivery, logistics, inspection, unloading, handling, and storage as necessary. Reference Documents 01 66 10, Delivery, Storage, and Handling for further instructions. Contractor is also responsible for coordinating the work with District and PG&E to complete the electrical service upgrade scope of work on each campus.
- 1.2.7. Specific Carrier HVAC Equipment is Owner Furnished Contractor Installed, (OFCI) items as noted on the plans for Borel Middle School. The current program calls for the following OFCI items per bid package.
 - 1.2.7.1 Bid Package #1, Borel Middle School.
 - 1.2.7.2 Reference is made on sheet MPO.02 AD3. All other HVAC equipment is provided by the Contractor.
 - 1.2.7.3 The Contractor will be responsible for coordinating delivery, logistics, inspection, unloading, handling, and storage as necessary. Reference Documents 01 66 10, Delivery, Storage, and Handling for further instructions. Contractor is also responsible for coordinating the work

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with District and PG&E to complete the HVAC upgrade scope of work on each campus

BID PACKAGE 1: BOREL MIDDLE SCHOOL

1. Included: Scope of work for this site includes all work shown in the project plans and specifications but not limited to – electrical upgrades, supply and replacement of HVAC equipment, installation of OFCI HVAC equipment, construction of interior HVAC equipment closets / installation ductwork & relief vent. Construction of rooftop HVAC platforms and associated roof patching. Installation of underground utilities and associated patching.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 02 - EXISTING CONDITIONS

024119 SELECTIVE DEMOLITION 028000 HAZARDOUS MATERIALS ABATEMENT

DIVISION 03 - CONCRETE

031000 FORMWORK

032000 CONCRETE REINFORCEMENT

033000 CAST-IN-PLACE CONCRETE

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

061000 ROUGH CARPENTRY 061600 SHEATHING

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

072100	THERMAL INSULATION
072500	WEATHER BARRIERS
072600	UNDER SLAB VAPOR BARRIER
074113.1	STANDING-SEAM METAL ROOF PANELS
6	
075419	POLYVINYL-CHLORIDE (PVC) ROOFING
079200	JOINT SEALANTS

DIVISION 08 - OPENINGS

081113 HOLLOW METAL DOORS AND FRAMES081416 FLUSH WOOD DOORS087100 DOOR HARDWARE

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088000 GLAZING

089119 FIXED LOUVERS

DIVISION 09 - FINISHES

09056113 MOISTURE VAPOR EMISSION CONTROL

092400 CEMENT PLASTERING

092900 GYPSUM BOARD

095113 ACOUSTICAL PANEL CEILINGS

- 095123 ACOUSTICAL TILE CEILINGS
- 096513 RESILIENT BASE AND ACCESSORIES
- 097200 WALL COVERING
- 099114 EXTERIOR PAINTING
- 099124 INTERIOR PAINTING

DIVISION 10 - SPECIALTIES

102600 WALL AND DOOR PROTECTION

DIVISION 21 - FIRE SUPPRESSION

NOT APPLICABLE

DIVISION 22 - PLUMBING

220000 PLUMBING GENERAL REQUIREMENTS

220500 PLUMBING

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

- 230000 MECHANICAL GENERAL REQUIREMENTS
- 230130 CLEANING OF EXISTING HVAC AND AIR DISTRIBUTION
- 230500 HEATING, VENTILATING AND AIR CONDITIONING
- 230800 COMMISSIONING OF HVAC SYSTEM
- 230923 DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC

DIVISION 26 - ELECTRICAL

- 260510 GENERAL ELECTRICAL REQUIREMENTS
- 260511 ELECTRICAL DEMOLITION
- 260512 SHUTDOWNS, SWITCHING, PHASING & CUTOVERS
- 260519 LOW VOLTAGE WIRE AND CABLE
- 260526 GROUNDING
- 260533 CONDUITS, RACEWAYS AND FITTINGS
- 260534 JUNCTION AND PULL BOXES
- 260543 UNDERGROUND DUCTS
- 260544 IN GRADE PULL BOXES
- 260573 OVERCURRENT PROTECTIVE DEVICE COORDINATION
- 262416 PANELBOARDS AND DISTRIBUTION PANELS

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- 262726 DEVICES WIRING
- 262816 CIRCUITS BREAKERS

DIVISION 32 - EXTERIOR IMPROVEMENTS

321123	AGGREGATE BASE

321216 ASPHALT PAVING

Hazardous Material Abatement Specification

Also Included but not limited to:

Contractor and all the contractor's subcontractors, vendors and suppliers must comply with the District COVID 19 procedures and provide the District's COVID-19 Vaccination Certification. Please see the attached certification form included at the end of this section.

Important Dates –

January 11,2022 – Bid Package #1 – Bids Due January 25,2022 – Notice to Proceed Issued to Contractor February 15,2022 – Mechanical Unit Shop Drawings Due March 28,2022 – April 8,2022 – On-site Construction Work – No School April 11,2022 - June 15,2022 - On-site Construction Work - With Approval (see below) June 15, 2022 – Last Day of School June 16, 2022 – August 4, 2022 – District Summer Break – On-site **Construction Work** August 5,2022 – School Staff on Site – Site must have power, Operational HVAC units and all areas cleaned per the District's cleaning specification. August 8,2022 - October 27,2022 - On-site Construction Work During off-school hours - With written Owner Approval October 28,2022 - Project Complete On-site work during when school is in session - The District and Construction Manager must approve any on-site work. Some on-site work when school is in session will be permitted but the Contractor must submit their work plan with the areas of work, tasks to be performed and work hours for review/approval of the District &

Construction Manager prior to beginning any work. See section 1.5.1 and the site Phasing Plan included with this document for additional information.

Provide all labor and material for the lawful disposal of any excess soils / spoils from utility trenching. Any soils testing for disposal will be the

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responsibility of the contractor.

Provide all labor and material for the lawful removal and disposal of any hazardous materials removed during the performance of the work.

Contractor to provide all labor, material, and equipment to off-load the new OFCI Carrier HVAC units at the District's maintenance yard when delivered by the manufacturer. The Owner/ Construction Manager will provide the Contactor shipping and receiving information as issued by the manufacturer.

Contractor to provide all labor, material, and equipment to load the new OFCI Carrier HVAC units at the District's maintenance yard and deliver / unload the units at the site and install the new Carrier units.

Provide all labor and material for all Crane / hoisting operations during demolition and construction phase of the work. Including all crane, hoisting & rigging cost. The Contractor will be required to provide a crane lift plan prior to performing any crane or hoisting work on-site. If the crane / hoisting operations require the Contractor to stage equipment off-site the Contractor at their sole expense will be required to obtain an encroachment permit prior to performing any work.

Contractor is required to provide an underground utility survey performed by a licensed underground utility locator at the contractor's expense. The locator's report must be submitted to the Owner and Construction Manager for review prior to beginning any trenching or excavation operations

Contractor to perform leak testing with the Construction Manager, Architect, Inspector of Record & Owner present for all roof patching / cutting, roof penetrations, mechanical equipment curbs / flashing / louvers and glazing infill work.

Coordinate work with all other District personal, District contractors, vendors, or suppliers.

Provide and install all underground utilities, under-slab conduits, pipes, and concrete reinforcement in accordance with the project documents.

Provide labor and material for final terminations at electrical panels for all HVAC equipment.

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Included but not limited to provide and install all nailers, curbs, pipe hangers, pipe supports, equipment hangers, equipment support and miscellaneous blocking as required for all equipment. Provide and install all backing/blocking required for mechanical and electrical equipment, fixtures, duct hangers, piping/conduits.

Provide continuous clean up. Provide two laborers all day each Friday for a weekly jobsite clean-up (broom clean).

Provide weather protection and dewatering per contract documents during all phases of the work.

Provide and install roof jacks and vents for all new roof penetrations mechanical / electrical work.

Provide and install all access doors as required for access to mechanical/electrical systems.

Provide and install conduit, wire and line voltage for all low voltage HVAC equipment and mechanical controls.

Provide and install all sealants and fire stopping associated with this all work at fire barrier separations.

Provide all labor and material for all trenching, backfill, compaction and patching of surfaces impacted by this scope of work.

Provide all labor and material to repair, replace, or relocate any irrigation mainlines, lateral lines, valves or irrigation boxes impacted by trenching or excavation work.

Provide all labor and material to restore and/or replace any games lines, maps or designs damaged on playgrounds where trenching occurred.

Provide engineering of underground utilities associated with this scope of work.

Provide selective demolition and cutting of structural elements. This shall include saw cutting, demolition and/or coring of concrete walls, interior slabs.

Provide patching and restoration of existing finishes associated with all work.

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Provide Debris bins, waste disposal and sanitary facilities for use by Contractor and all subcontractors.

Provide and install approximately 1,100 LF of temporary fencing for work areas and Contractor laydown area (see attached logistic plan included with this document). All ongoing work, open excavations and/or trenches must be inaccessible to staff, students, parents and public by means of temporary fencing. Provide all labor and material to reconfigure fencing as directed by the Construction Manager or Owner.

Provide labor for the daily securing of the temporary construction fence.

Provide continual floor protection during construction including maintenance of the protection throughout the project for all work areas.

Provide weather protection during roofing operations as required.

Provide all labor and material to install all new roofing as shown on the contract drawings and specifications.

Provide cap flashing and sleeper blocks for all roof mounted piping and conduit.

Provide and install equipment flashing and sealing for all roof mounted equipment.

Provide all labor and material to paint the building interior / exterior surfaces impacted by the work shown on the contract drawings and specifications including but not limited to all surface preparation, caulking, priming, masking, etc.

Provide all labor and material for final cleaning of all interior and exterior areas of the school and the contractor laydown area. All cleaning work must comply with specification section 01 77 00 and the District's cleaning specification. The District's cleaning specification is included at the end of this section.

BID PACKAGE 1: COLLEGE PARK ELEMENTARY SCHOOL

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 Included: Scope of work for this site includes all work shown in the project plans and specifications but not limited to – electrical upgrades, off-site electrical work, installation of new OFCI electrical main switchboard and associated civil work, replacement of HVAC equipment, construction of interior HVAC equipment closets / installation ductwork & relief vent. Construction of rooftop HVAC platforms and associated roof patching. Installation of underground utilities and associated patching.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 02 - EXISTING CONDITIONS

024119 SELECTIVE DEMOLITION 028000 HAZARDOUS MATERIALS ABATEMENT

DIVISION 03 - CONCRETE

031000 FORMWORK032000 ONCRETE REINFORCEMENT033000 CAST-IN-PLACE CONCRETE

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

061000 ROUGH CARPENTRY 061600 SHEATHING

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

072100 THERMAL INSULATION 073113 ASPHALT SHINGLES 079200 JOINT SEALANTS

DIVISION 08 - OPENINGS

081113 HOLLOW METAL DOORS AND FRAMES081416 FLUSH WOOD DOORS087100 DOOR HARDWARE089119 FIXED LOUVER

DIVISION 09 – FINISHES

090561.13 MOISTURE VAPOR EMISSION CONTROL
092900 GYPSUM BOARD
095113 ACOUSTICAL PANEL CEILINGS
095113 RESILIENT BASE AND ACCESSORIES
097200 WALL COVERINGS

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099124 INTERIOR PAINTING

DIVISION 10 – SPECIALTIES

101423.16 SIGNAGE 102600 WALL AND DOOR PROTECTION

DIVISION 22 – PLUMBING

220000 PLUMBING GENERAL REQUIREMENTS 220500 PLUMBING

DIVISION 23 – HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

230000 MECHANICAL GENERAL REQUIREMENTS
230130 CLEANING OF EXISTING AIR CONDITIONING
230500 HEATING, VENTILATING AND AIR CONDITIONING
230593 TESTING, ADJUSTING, BALANCING
230800 COMMISSIONING OF HVAC SYSTEM
230923 DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC

DIVISION 26 - ELECTRICAL

260510 GENERAL ELECTRICAL REQUIREMENTS
260511 ELECTRICAL DEMOLITION
260512 SHUTDOWNS, SWITCHING, PHASING & CUTOVERS
260519 LOW VOLTAGE WIRE AND CABLE
260526 GROUNDING
260533 CONDUITS, RACEWAYS AND FITTINGS
260534 JUNCTION AND PULL BOXES
260543 UNDERGROUND DUCTS
260544 IN GRADE PULL BOXES
260573 OVERCURRENT PROTECTIVE DEVICE COORDINATION
262213 TRANSFORMERS
262416 PANELBOARDS AND DISTRIBUTION PANELS
262726 DEVICES WIRING

262816 CIRCUITS BREAKERS

DIVISION 32 - EXTERIOR IMPROVEMENTS

321123 AGGREGATE BASE

- 321216 ASPHALT PAVING
- 321723 PAVEMENT MARKINGS
- 323113 CHAIN LINK FENCES AND GATES

Hazardous Material Abatement Specification

Also Included but not limited to:

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Contractor and all the contractor's subcontractors, vendors and suppliers must comply with the District COVID 19 procedures and provide the District's COVID-19 Vaccination Certification. Please see the attached certification form included at the end of this section.

Important Dates –

January 11,2022 – Bid Package #1 – Bids Due January 25,2022 – Notice to Proceed Issued to Contractor February 15,2022 – Mechanical Unit Shop Drawings Due March 28,2022 – April 8,2022 – On-site Construction Work – No School April 11,2022 - June 15,2022 - On-site Construction Work - With Approval (see below) June 15, 2022 – Last Day of School June 16, 2022 – August 4, 2022 – District Summer Break – On-site Construction Work August 5,2022 – School Staff on Site – Site must have power, Operational HVAC units and all areas cleaned per the District's cleaning specification. August 8,2022 – October 27,2022 - On-site Construction Work During off school hours – With written Owner Approval October 28,2022 - Project Complete On-site work during when school is in session - The District and Construction Manager must approve any on-site work. Some on-site work when school is in session will be permitted but the Contractor must submit their work plan with the areas of work, tasks to be performed and work hours for review/approval of the District & Construction Manager prior to beginning any work. See section 1.5.1 and the site Phasing Plan included with this document for additional information.

Contractor to coordinate the installation of the new OFCI electrical main switchboard with the District and Pacific Gas & Electric.

Provide all labor and material for the installation of new site utilities both on-site and off-site to the point of connections as shown in the contract drawings. PG&E engineering fees will be paid by the District.

Provide all labor and materials for the installation of conduits including trenching, backfilling and AC & PCC pavement for the new electrical service. Drawings for submission to the City of San Mateo will be provided by the District. All permit procurement and fees and construction costs, traffic control is the responsibility of the Contractor.

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Contractor to provide all labor, material, and equipment to off-load the new OFCI Electrical Switchgear and Equipment at the District's maintenance yard when delivered by the manufacturer. The Owner/ Construction Manager will provide the Contactor shipping and receiving information as issued by the manufacturer.

Contractor to provide all labor, material, and equipment to load the new OFCI electrical main switchboard at the District's maintenance yard and deliver / unload and install the new main switchboard at the site.

Provide all labor and material for the lawful disposal of any excess soils / spoils from utility trenching. Any soils testing for disposal will be the responsibility of the contractor.

Provide all labor and material for the lawful removal and disposal of any hazardous materials removed during the performance of the work.

Contractor is required to provide an underground utility survey performed by a licensed underground utility locator at the contractor's expense. The locator's report must be submitted to the Owner and Construction Manager for review prior to beginning any trenching or excavation operations

Contractor to perform leak testing with the Construction Manager, Architect, Inspector of Record & Owner present for all roof patching / cutting, roof penetrations, mechanical equipment curbs / flashing / louvers and glazing infill work.

Coordinate work with all other District personal, District contractors, vendors, or suppliers.

Provide and install all underground utilities, under-slab conduits, pipes, and concrete reinforcement in accordance with the project documents.

Provide labor and material for final terminations at electrical panels for all HVAC equipment.

Included but not limited to provide and install all nailers, curbs, pipe hangers, pipe supports, equipment hangers, equipment support and miscellaneous blocking as required for all equipment. Provide and install all backing/blocking required for mechanical and electrical equipment, fixtures, duct hangers, piping/conduits.

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Provide continuous clean up. Provide two laborers all day each Friday for a weekly jobsite clean-up (broom clean).

Provide weather protection and dewatering per contract documents during all phases of the work.

Provide and install roof jacks and vents for all new roof penetrations mechanical / electrical work.

Provide and install all access doors as required for access to mechanical/electrical systems.

Provide and install conduit, wire and line voltage for all low voltage HVAC equipment and mechanical controls.

Provide and install all sealants and fire stopping associated with this all work at fire barrier separations.

Provide all labor and material for all trenching, backfill, compaction and patching of surfaces impacted by this scope of work.

Provide all labor and material to repair, replace, or relocate any irrigation mainlines, lateral lines, valves or irrigation boxes impacted by trenching or excavation work.

Provide all labor and material to restore and/or replace any games lines, maps or designs damaged on playgrounds where trenching occurred.

Provide engineering of underground utilities associated with this scope of work.

Provide all labor and material for the installation of new site utilities onsite to the point of connections as shown in the contract drawings. PG&E engineering fees will be paid by the Owner.

Provide selective demolition and cutting of structural elements. This shall include saw cutting, demolition and/or coring of concrete walls, interior slabs.

Provide patching and restoration of existing finishes associated with all work.

Provide Debris bins, waste disposal and sanitary facilities for use by

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Contractor and all subcontractors.

Provide and install approximately 1,900 LF of temporary fencing for work areas and Contractor laydown area (see attached logistic plan included with this document). All ongoing work, open excavations and/or trenches must be inaccessible to staff, students, parents and public by means of temporary fencing. Provide all labor and material to reconfigure fencing as directed by the Construction Manager or Owner.

Provide labor for the daily securing of the temporary construction fence.

Provide continual floor protection during construction including maintenance of the protection throughout the project for all work areas.

Provide weather protection during roofing operations as required.

Provide all labor and material to install all new roofing as shown on the contract drawings and specifications.

Provide cap flashing and sleeper blocks for all roof mounted piping and conduit.

Provide and install equipment flashing and sealing for all roof mounted equipment.

Provide all labor and material to paint the building interior / exterior surfaces impacted by the work shown on the contract drawings and specifications including but not limited to all surface preparation, caulking, priming, masking, etc.

Provide all labor and material for final cleaning of all interior and exterior areas of the school and the contractor laydown area. All cleaning work must comply with specification section 01 77 00 and the District's cleaning specification. The District's cleaning specification is included at the end of this section.

BID PACKAGE 1: MEADOW HEIGHTS ELEMENTARY SCHOOL

1. **Included:** Scope of work for this site includes all work shown in the project plans and specifications but not limited to – electrical upgrades,

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installation of new electrical switchgear and associated civil work, replacement of HVAC equipment, construction of interior HVAC equipment closets / installation ductwork & relief vent. Construction of rooftop HVAC platforms and associated roof patching. Installation of underground utilities and associated patching.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS

DIVISION 02 - EXISTING CONDITIONS

024119 SELECTIVE DEMOLITION 028000 HAZARDOUS MATERIALS ABATEMENT

DIVISION 03 - CONCRETE

- 031000 FORMWORK
- 032000 CONCRETE REINFORCEMENT
- 033000 CAST-IN-PLACE CONCRETE

DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

- 061000 ROUGH CARPENTRY
- 061600 SHEATHING
- 064116 PLASTIC-LAMINATE-CLAD ARCHITECTURAL CABINETS

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

- 072100 THERMAL INSULATION
- 072500 WEATHER BARRIERS
- 073113 ASPHALT SHINGLES
- 079200 JOINT SEALANTS

DIVISION 08 - OPENINGS

- 081113 HOLLOW METAL DOORS AND FRAMES
- 081416 FLUSH WOOD DOORS
- 087100 DOOR HARDWARE

DIVISION 09 - FINISHES

- 09056113 MOISTURE VAPOR EMISSION CONTROL
- 092400 CEMENT PLASTERING
- 092900 GYPSUM BOARD
- 095113 ACOUSTICAL PANEL CEILINGS
- 095123 ACOUSTICAL TILE CEILINGS
- 096513 RESILIENT BASE AND ACCESSORIES
- 097260 TACKABLE WALL COVERING

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099114 EXTERIOR PAINTING

099124 INTERIOR PAINTING

DIVISION 10 - SPECIALTIES

102600 WALL AND DOOR PROTECTION

DIVISION 22 - PLUMBING

220000 PLUMBING GENERAL REQUIREMENTS

220500 PLUMBING

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

- 230000 MECHANICAL GENERAL REQUIREMENTS
- 230500 HEATING, VENTILATING AND AIR CONDITIONING
- 230593 TESTING, ADJUSTING, BALANCING
- 230800 COMMISSIONING OF HVAC SYSTEM
- 230923 DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC

DIVISION 26 - ELECTRICAL

- 260510 GENERAL ELECTRICAL REQUIREMENTS
- 260511 ELECTRICAL DEMOLITION
- 260512 SHUTDOWNS, SWITCHING, PHASING & CUTOVERS
- 260519 LOW VOLTAGE WIRE AND CABLE
- 260526 GROUNDING
- 260533 CONDUITS, RACEWAYS AND FITTINGS
- 260534 JUNCTION AND PULL BOXES
- 260543 UNDERGROUND DUCTS
- 260544 IN GRADE PULL BOXES
- 260573 OVERCURRENT PROTECTIVE DEVICE COORDINATION
- 262213 TRANSFORMER
- 262413 SWITCHBOARD
- 262416 PANELBOARDS AND DISTRIBUTION PANELS
- 262726 DEVICES WIRING
- 262816 CIRCUITS BREAKERS

DIVISION 32 - EXTERIOR IMPROVEMENTS

- 321123 AGGREGATE BASE
- 321216 ASPHALT PAVING
- 321723 PAVEMENT MARKINGS
- 323113 CHAIN LINKE FENCES AND GATES

Hazardous Material Abatement Specification

Also Included but not limited to:

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Contractor and all the contractor's subcontractors, vendors and suppliers must comply with the District COVID 19 procedures and provide the District's COVID-19 Vaccination Certification. Please see the attached certification form included at the end of this section.

Important Dates –

January 11,2022 – Bid Package #1 – Bids Due January 25,2022 – Notice to Proceed Issued to Contractor February 15,2022 – Mechanical Unit Shop Drawings Due March 28,2022 – April 8,2022 – On-site Construction Work – No School April 11,2022 - June 15,2022 - On-site Construction Work - With Approval (see below) June 15, 2022 – Last Day of School June 16, 2022 – August 4, 2022 – District Summer Break – On-site Construction Work August 5,2022 – School Staff on Site – Site must have power, Operational HVAC units and all areas cleaned per the District's cleaning specification. August 8,2022 – October 27,2022 - On-site Construction Work During off school hours – With written Owner Approval October 28,2022 - Project Complete On-site work during when school is in session - The District and Construction Manager must approve any on-site work. Some on-site work when school is in session will be permitted but the Contractor must submit their work plan with the areas of work, tasks to be performed and work hours for review/approval of the District & Construction Manager prior to beginning any work. See section 1.5.1 and the site Phasing Plan included with this document for additional information.

Contractor to coordinate the installation of the new OFCI electrical main switchboard with the District and Pacific Gas & Electric.

Provide all labor and material for the installation of new site utilities both on-site to the point of connections as shown in the contract drawings. PG&E engineering fees will be paid by the District.

Contractor to provide all labor, material, and equipment to off-load the new OFCI Electrical Switchgear and Equipment at the District's maintenance yard when delivered by the manufacturer. The Owner/ Construction Manager will provide the Contactor shipping and receiving information as issued by the manufacturer.

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Provide all labor and material for the lawful disposal of any excess soils / spoils from utility trenching. Any soils testing for disposal will be the responsibility of the contractor.

Provide all labor and material for the lawful removal and disposal of any hazardous materials removed during the performance of the work.

Contractor is required to provide an underground utility survey performed by a licensed underground utility locator at the contractor's expense. The locator's report must be submitted to the Owner and Construction Manager for review prior to beginning any trenching or excavation operations

Contractor to perform leak testing with the Construction Manager, Architect, Inspector of Record & Owner present for all roof patching / cutting, roof penetrations, mechanical equipment curbs / flashing / louvers and glazing infill work.

Coordinate work with all other District personal, District contractors, vendors, or suppliers.

Provide and install all underground utilities, under-slab conduits, pipes, and concrete reinforcement in accordance with the project documents.

Provide labor and material for final terminations at electrical panels for all HVAC equipment.

Included but not limited to provide and install all nailers, curbs, pipe hangers, pipe supports, equipment hangers, equipment support and miscellaneous blocking as required for all equipment. Provide and install all backing/blocking required for mechanical and electrical equipment, fixtures, duct hangers, piping/conduits.

Provide continuous clean up. Provide two laborers all day each Friday for a weekly jobsite clean-up (broom clean).

Provide weather protection and dewatering per contract documents during all phases of the work.

Provide and install roof jacks and vents for all new roof penetrations mechanical / electrical work.

Provide and install all access doors as required for access to

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mechanical/electrical systems.

Provide and install conduit, wire and line voltage for all low voltage HVAC equipment and mechanical controls.

Provide and install all sealants and fire stopping associated with this all work at fire barrier separations.

Provide all labor and material for all trenching, backfill, compaction and patching of surfaces impacted by this scope of work.

Provide all labor and material to repair, replace, or relocate any irrigation mainlines, lateral lines, valves or irrigation boxes impacted by trenching or excavation work.

Provide all labor and material to restore and/or replace any games lines, maps or designs damaged on playgrounds where trenching occurred.

Provide engineering of underground utilities associated with this scope of work.

Provide all labor and material for the installation of new site utilities onsite to the point of connections as shown in the contract drawings. PG&E engineering fees will be paid by the Owner.

Provide selective demolition and cutting of structural elements. This shall include saw cutting, demolition and/or coring of concrete walls, interior slabs.

Provide patching and restoration of existing finishes associated with all work.

Provide Debris bins, waste disposal and sanitary facilities for use by Contractor and all subcontractors.

Provide labor for the daily securing of the temporary construction fence.

Provide continual floor protection during construction including maintenance of the protection throughout the project for all work areas.

Provide weather protection during roofing operations as required.

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Provide all labor and material to install all new roofing as shown on the contract drawings and specifications.

Provide cap flashing and sleeper blocks for all roof mounted piping and conduit.

Provide and install equipment flashing and sealing for all roof mounted equipment.

Provide all labor and material to paint the building interior / exterior surfaces impacted by the work shown on the contract drawings and specifications including but not limited to all surface preparation, caulking, priming, masking, etc.

Excluded:

All work in classroom 3.

BID PACKAGE 1: NORTH SHOREVIEW MONTESSORI SCHOOL

1. Included: Scope of work for this site includes all work shown in the project plans and specifications but not limited to – electrical upgrades, installation of new electrical switchgear and associated civil work, replacement of HVAC equipment, construction of interior HVAC equipment closets / installation ductwork & relief vent. Construction of rooftop HVAC platforms and associated roof patching. Installation of underground utilities and associated patching.

DIVISION 00 – PROCUREMENT AND CONTRACTING REQUIREMENTS

DIVISION 01 – GENERAL REQUIREMENTS

015639 TEMPORARY TREE AND PLANT PROTECTION

DIVISION 02 - EXISTING CONDITIONS

- 024119 SELECTIVE DEMOLITION
- 028000 HAZARDOUS MATERIALS ABATEMENT

DIVISION 03 - CONCRETE

- 031000 FORMWORK
- 032000 CONCRETE REINFORCEMENT
- 033000 CAST-IN-PLACE CONCRETE

DIVISION 04 - MASONRY

042000 CONCRETE MASONRY UNITS

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DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES

061000 ROUGH CARPENTRY 061600 SHEATHING

DIVISION 07 - THERMAL AND MOISTURE PROTECTION

- 072100 THERMAL INSULATION
- 072500 WEATHER BARRIERS
- 073113 ASPHALT SHINGLES
- 079200 JOINT SEALANTS

DIVISION 08 - OPENINGS

- 081113 HOLLOW METAL DOORS AND FRAMES
- 081416 FLUSH WOOD DOORS
- 087100 DOOR HARDWARE
- 089119 FIXED LOUVER

DIVISION 09 - FINISHES

- 090561.13 MOISTURE VAPOR EMISSION CONTROL
- 092400 CEMENT PLASTERING
- 092900 GYPSUM BOARD
- 095113 ACOUSTICAL PANEL CEILINGS
- 096513 RESILIENT BASE AND ACCESSORIES
- 097200 WALL COVERING
- 099114 EXTERIOR PAINTING
- 099124 INTERIOR PAINTING

DIVISION 10 - SPECIALTIES

102600 WALL AND DOOR PROTECTION

DIVISION 22 - PLUMBING

- 220000 PLUMBING GENERAL REQUIREMENTS
- 220500 PLUMBING

DIVISION 23 - HEATING, VENTILATING, AND AIR CONDITIONING (HVAC)

- 230000 MECHANICAL GENERAL REQUIREMENTS
- 230500 HEATING, VENTILATING AND AIR CONDITIONING
- 230593 TESTING, ADJUSTING, BALANCING
- 230800 COMMISSIONING OF HVAC SYSTEM
- 230923 DIRECT DIGITAL CONTROL SYSTEMS FOR HVAC

DIVISION 26 - ELECTRICAL

260511 ELECTRICAL DEMOLITION

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- 260512 SHUTDOWNS, SWITCHING, PHASING & CUTOVERS
- 260519 LOW VOLTAGE WIRE AND CABLE
- 260526 GROUNDING
- 260533 CONDUITS, RACEWAYS AND FITTINGS
- 260534 JUNCTION AND PULL BOXES
- 260543 UNDERGROUND DUCTS
- 260544 IN GRADE PULL BOXES
- 260573 OVERCURRENT PROTECTIVE DEVICE COORDINATION
- 262213 TRANSFORMER
- 262416 PANELBOARDS AND DISTRIBUTION PANELS
- 262726 DEVICES WIRING
- 262816 CIRCUITS BREAKERS

DIVISION 32 - EXTERIOR IMPROVEMENTS

- 321123 AGGREGATE BASE
- 321216 ASPHALT PAVING
- 321723 PAVEMENT MARKINGS
- 323113 CHAIN LINK FENCES AND GATES

Hazardous Material Abatement Specification

Also Included but not limited to:

Contractor and all the contractor's subcontractors, vendors and suppliers must comply with the District COVID 19 procedures and provide the District's COVID-19 Vaccination Certification. Please see the attached certification form included at the end of this section.

Important Dates -

January 11,2022 – Bid Package #1 – Bids Due January 25,2022 – Notice to Proceed Issued to Contractor February 15,2022 – Mechanical Unit Shop Drawings Due March 28,2022 – April 8,2022 – On-site Construction Work – No School April 11,2022 – June 15,2022 – On-site Construction Work – With Approval (see below) June 15, 2022 – Last Day of School June 16, 2022 – August 4, 2022 – District Summer Break – On-site Construction Work August 5,2022 – School Staff on Site – Site must have power, Operational HVAC units and all areas cleaned per the District's cleaning specification. August 8,2022 – October 27,2022 - On-site Construction Work During off school hours – With written Owner Approval

October 28,2022 – Project Complete

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On-site work during when school is in session - The District and Construction Manager must approve any on-site work. Some on-site work when school is in session will be permitted but the Contractor must submit their work plan with the areas of work, tasks to be performed and work hours for review/approval of the District & Construction Manager prior to beginning any work. See section 1.5.1 and the site Phasing Plan included with this document for additional information.

Contractor to coordinate the installation of the new OFCI electrical main switchboard with the District and Pacific Gas & Electric.

Provide all labor and material for the installation of new site utilities onsite to the point of connections as shown in the contract drawings. PG&E engineering fees will be paid by the District.

Contractor to provide all labor, material, and equipment to off-load the new OFCI Electrical Switchgear and Equipment at the District's maintenance yard when delivered by the manufacturer. The Owner/ Construction Manager will provide the Contactor shipping and receiving information as issued by the manufacturer.

Contractor to provide all labor, material, and equipment to load the new OFCI electrical main switchboard at the District's maintenance yard and deliver / unload and install the new main switchboard at the site.

Provide all labor and material for the lawful disposal of any excess soils / spoils from utility trenching. Any soils testing for disposal will be the responsibility of the contractor.

Provide all labor and material for the lawful removal and disposal of any hazardous materials removed during the performance of the work.

Contractor is required to provide an underground utility survey performed by a licensed underground utility locator at the contractor's expense. The locator's report must be submitted to the Owner and Construction Manager for review prior to beginning any trenching or excavation operations

Contractor to perform leak testing with the Construction Manager, Architect, Inspector of Record & Owner present for all roof patching / cutting, roof penetrations, mechanical equipment curbs / flashing / louvers and glazing infill work.

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Coordinate work with all other District personal, District contractors, vendors, or suppliers.

Provide and install all underground utilities, under-slab conduits, pipes, and concrete reinforcement in accordance with the project documents.

Provide labor and material for final terminations at electrical panels for all HVAC equipment.

Included but not limited to provide and install all nailers, curbs, pipe hangers, pipe supports, equipment hangers, equipment support and miscellaneous blocking as required for all equipment. Provide and install all backing/blocking required for mechanical and electrical equipment, fixtures, duct hangers, piping/conduits.

Provide continuous clean up. Provide two laborers all day each Friday for a weekly jobsite clean-up (broom clean).

Provide weather protection and dewatering per contract documents during all phases of the work.

Provide and install roof jacks and vents for all new roof penetrations mechanical / electrical work.

Provide and install all access doors as required for access to mechanical/electrical systems.

Provide and install conduit, wire and line voltage for all low voltage HVAC equipment and mechanical controls.

Provide and install all sealants and fire stopping associated with this all work at fire barrier separations.

Provide all labor and material for all trenching, backfill, compaction and patching of surfaces impacted by this scope of work.

Provide all labor and material to repair, replace, or relocate any irrigation mainlines, lateral lines, valves or irrigation boxes impacted by trenching or excavation work.

Provide all labor and material to restore and/or replace any games lines, maps or designs damaged on playgrounds where trenching occurred.

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Provide engineering of underground utilities associated with this scope of work.

Provide all labor and material for the installation of new site utilities onsite to the point of connections as shown in the contract drawings. PG&E engineering fees will be paid by the District.

Provide all labor and materials for the installation the new driveway, associated civil work and reduced pressure backflow preventer as noted on plan sheets AD1-C1.1, AD1-C2.1, AD1-C3.1, AD1-C4.1 & AD1-C4.2 including demolition, grading, drainage, excavation, trenching, backfilling and AC & PCC pavement for the new driveway and backflow. Drawings for submission to the City of San Mateo and/or Cal Water will be provided by the District. All permit(s) procurement and fees and construction costs, traffic control is the responsibility of the Contractor.

Provide selective demolition and cutting of structural elements. This shall include saw cutting, demolition and/or coring of concrete walls, interior slabs.

Provide patching and restoration of existing finishes associated with all work.

Provide Debris bins, waste disposal and sanitary facilities for use by Contractor and all subcontractors.

Provide and install approximately 1,300 LF of temporary fencing for work areas and Contractor laydown area (see attached logistic plan included with this document). All ongoing work, open excavations and/or trenches must be inaccessible to staff, students, parents and public by means of temporary fencing. Provide all labor and material to reconfigure fencing as directed by the Construction Manager or Owner.

Provide labor for the daily securing of the temporary construction fence.

Provide continual floor protection during construction including maintenance of the protection throughout the project for all work areas.

Provide weather protection during roofing operations as required.

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Provide all labor and material to install all new roofing as shown on the contract drawings and specifications.

Provide cap flashing and sleeper blocks for all roof mounted piping and conduit.

Provide and install equipment flashing and sealing for all roof mounted equipment.

Provide all labor and material to paint the building interior / exterior surfaces impacted by the work shown on the contract drawings and specifications including but not limited to all surface preparation, caulking, priming, masking, etc.

Provide all labor and material for final cleaning of all interior and exterior areas of the school and the contractor laydown area. All cleaning work must comply with specification section 01 77 00 and the District's cleaning specification. The District's cleaning specification is included at the end of this section.

1.3. CONTRACTS

Perform the Work under a single, fixed-price Contract.

1.4. DEFERRED APPROVAL ITEMS

- 1.4.1. All items that are subject to subsequent review and approval by the Division of the State Architect shall are as indicated below. No deferred approval items shall be installed until the Contractor has complied with all the processes in the Contract Documents, including Division 01 Document "Submittals."
- 1.4.2. Deferred approval items for this Project are the following: **NONE**

1.5. SPECIAL PROJECT REQUIREMENTS

1.5.1. Project Schedule: No later than August 4, 2022 each campus must have power, operational HVAC units and all buildings, exterior spaces and Contractor's laydown area must be clean and ready for staff, parents & students. If permanent power is not operational by August 4, 2022 the Contractor at their sole expense must provide temporary power for the campus.

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1.6. WORK BY OTHERS

- 1.6.1. Work to be performed and completed prior to the start of the Project: **Pacific Gas & Electric**
- 1.6.2. SMFCSD Team (Owner) will be responsible for tree trimming as requested for trees that may fall within zone of work associated for specific campus projects.
- 1.6.3. SMFCCSD Team (Owner) cleaning and maintenance of areas / building not included scope of work

1.7. CODES, REGULATIONS AND STANDARDS

- 1.7.1. The codes, regulations, and standards adopted by the State and federal agencies having jurisdiction shall govern minimum requirements for the Project. Where codes, regulations, and standards conflict with the Contract Documents, these conflicts shall be brought to the immediate attention of the District and the Architect.
- 1.7.2. Codes, regulations, and standards are as published effective as of date of bid opening, unless otherwise specified or indicated.

1.8. EXAMINATION OF EXISTING CONDITIONS

- 1.8.1. Contractor shall be held to have examined the Project Site and acquainted itself with the conditions of the Site and of the streets and roads approaching the Site.
- 1.8.2. Prior to commencement of Work, Contractor shall survey the Site and existing buildings and improvements to observe existing damage and defects such as cracks, sags, broken, missing or damaged glazing, other building elements and Site improvements, and other damage.
- 1.8.3. Should Contractor observe cracks, sags, and other damage to and defects of the Site and adjacent buildings, paving, and other items not indicated in the Contract Documents, Contractor shall immediately report same to the District and the Architect.

1.9. CONTRACTOR'S USE OF PREMISES

- 1.9.1. Contractor shall take all reasonable precautions for the safety of the students and the school employees throughout the duration of the Project.
- 1.9.2. If unoccupied and only with District's prior written approval, Contractor may use the building(s) at the Project Site without limitation for its operations, storage,

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and office facilities for the performance of the Work. If the District chooses to beneficially occupy any building(s), Contractor must obtain the District's written approval for Contractor's use of spaces and types of operations to be performed within the building(s) while so occupied. Contractor's access to the building(s) shall be limited to the areas indicated.

- 1.9.3. If the space at the Project Site is not sufficient for Contractor's operations, storage, office facilities and/or parking, Contractor shall arrange and pay for any additional facilities needed by Contractor, at no expense to District.
- 1.9.4. Contractor shall not interfere with others use of or access to occupied portions of the building(s) or adjacent property.
- 1.9.5. Contractor shall maintain corridors, stairs, halls, and other exit-ways of building clear and free of debris and obstructions at all times.
- 1.9.6. No one other than those directly involved in the demolition and construction or specifically designated by the District or the Architect shall be permitted in the areas of Work during demolition and construction activities.

1.10. PROTECTION OF EXISTING STRUCTURES AND UTILITIES

- 1.10.1. The Drawings show above-grade and below-grade structures, utility lines, and other installations that are known or believed to exist in the area of the Work. Contractor shall locate these existing installations before proceeding with excavation and other operations that could damage same; maintain them in service, where appropriate; and repair damage to them caused by the performance of the Work. Should damage occur to these existing installations, the costs of repair shall be at the Contractor's expense and made to the District's satisfaction.
- 1.10.2. Contractor shall be alert to the possibility of the existence of additional structures and utilities. If Contractor encounters additional structures and utilities, Contractor will immediately report to the District for disposition of same as indicated in the General Conditions.

1.11. UTILITY SHUTDOWNS AND INTERRUPTIONS

1.11.1. Contractor shall give the District a minimum of three (3) days written notice in advance of any need to shut off existing utility services or to effect equipment interruptions. District will set exact time and duration for shutdown and will assist Contractor with shutdown. Work required to re-establish utility services shall be performed by the Contractor.

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1.11.2. Contractor shall obtain District's written approval as indicated in the General Conditions in advance of deliveries of material or equipment or other activities that may conflict with District's use of the building(s) or adjacent facilities.

1.12. STRUCTURAL INTEGRITY

- 1.12.1. Contractor shall be responsible for and supervise each operation and work that could affect structural integrity of various building elements, both permanent and temporary.
- 1.12.2. Contractor shall include structural connections and fastenings as indicated or required for complete performance of the Work.

ATTACHMENTS INCLUDED IN THIS DOCUMENT:

- 1. SMFCSD CONTRACTOR COVID 19 ADDENDUM (1 PAGE)
- 2. SMFCSD DEEP CLEANING AND MATERIAL STANDARDS (1 PAGE)
- 3. SMFCSD SUMMER SPECIFICATION FOR DEEP CLEANING (1 PAGE)
- 4. BOREL MIDDLE SCHOOL LOGISTICS PLAN (1 PAGE)
- 5. COLLEGE PARK ELEMENTARY SCHOOL LOGISTICS PLAN (1 PAGE)
- 6. MEADOW HEIGHTS ELEMENTARY SCHOOL LOGISTICS PLAN (1 PAGE)
- 7. NORTH SHOREVIEW ELEMENTARY SCHOOL LOGISTICS PLAN (1 PAGE)
- 8. BOREL MIDDLE SCHOOL PHASING PLAN (1 PAGE)
- 9. COLLEGE PARK ELEMENTARY SCHOOL PHASING PLAN (1 PAGE)
- 10. MEADOW HEIGHTS ELEMENTARY SCHOOL PHASING PLAN (1 PAGE)
- 11. NORTH SHOREVIEW ELEMENTARY SCHOOL PHASING PLAN (1 PAGE)

END OF DOCUMENT

ADDENDUM COVID-19 VACCINATION CERTIFICATION

Consistent with California Department of Public Health (CDPH) guidance, the District currently requires that all permittees, contract workers, and other non-District employees who will be physically present on District premises pursuant to an agreement with the District certify have been fully vaccinated against COVID-19 or submit to regular COVID-19 testing. Contractor is responsible for maintaining a log of all of its employees performing work under the Agreement that indicates each employee's vaccination status ("Vaccination Log"), collecting proof of vaccination for all such employees, and ensuring that any unvaccinated employees submit to weekly COVID-19 testing. Any unvaccinated employees who receive a positive test result will not be permitted on any District site until they have fully quarantined in compliance with all CDC and CDPH guidance. The District retains the right, upon request, to receive a copy of the Vaccination Log, proof of vaccination for any employee(s), and/or records of testing for any unvaccinated employee(s).

Contractor is responsible for maintaining proof of vaccination in any of the following forms:

- COVID-19 Vaccination Record Card (issued by the Department of Health and Human Services Centers for Disease Control & Prevention or WHO Yellow Card) which includes name of person vaccinated, type of vaccine provided and date last dose administered;
- (2) a photo of a Vaccination Record Card as a separate document;
- (3) a photo of the Vaccination Record Card stored on a phone or electronic device;
- (4) documentation of COVID-19 vaccination from a health care provider; OR
- (5) documentation of vaccination from other contracted employers who follow these vaccination records guidelines and standards.

Please certify acknowledgment and compliance by checking the boxes below:

□Permittee/Contractor hereby certifies that it retains a complete Vaccination Log for all of its employees who may perform any work under this Agreement.

□Permittee/Contractor has collected proof of COVID-19 vaccination for all fully vaccinated employees and will provide such proof to the District upon request.

□Permittee/Contractor certifies that all unvaccinated employees who may perform work under this Agreement undergo weekly COVID-19 testing and certifies that it will notify the District if any such employee receives a positive test result.

The District reserves the right to terminate this Agreement immediately upon discovery that any of Permittee/Contractor's personnel who enter District property under the terms of this Agreement are not vaccinated.

Contractor signature:	Date:
	Dute.

San Mateo-Foster City School District HVAC Replacement Scope, Bid Package #1-Add #3 Borel MS DSA 01-119557 College Park ES DSA 01-119530 Meadow Heights DSA 01-119554 North Shoreview DSA 01-119526

San Mateo-Foster City School District HVAC Replacement Scope, Bid Package #1-Add #3 Borel MS DSA 01-119557 College Park ES DSA 01-119530 Meadow Heights DSA 01-119554 North Shoreview DSA 01-119526



Maintenance & Operations Department | 1410 South Amphlett Boulevard, San Mateo, California 94402 |

- 1. Dust and wipe all walls, air vents/registers, air ducts including corners with cobwebs
- 2. Dust, clean all window seals
- 3. Clean indoor windows and glass surfaces
- 4. Clean and dust all whiteboards
- 5. Remove all unbolted furniture from carpet and hard floor surfaces before cleaning the carpet and stripping hard floors
- 6. Clean and strip baseboards
- 7. Remove all gum and tape before completely stripping floor with RSG Demolition stripper
- 8. Apply four coats of Resource Solutions Group "Perfect 610" floor finish/wax
- 9. Remove all gum from carpet before you pre-spray carpet with carpet spotter
- 10. Extract carpet with truck mounted extractor, self- contained brush roller extractor or highpressure box and wand extractor only. No spin bonnet cleaning
- 11. Move all furniture back into classrooms, offices, etc.
- 12. Clean and disinfect all sinks, doors, thresholds, door handles, door kick plates and desks with RSG #49 disinfectant cleaner
SMFCSD SUMMER FACILITY DEEP CLEANING SPECS

- Kindergarten Classrooms (with bathroom and sinks)
 - Sweep, mop and scrub all hard surface floors.
 - Apply four coats of floor finish to all vinyl floors.
 - Vacuum carpet, edges and corners.
 - Extract all carpets (No Spin Bonnet Cleaning)
 - Spot Clean where necessary
 - Dust all ledges, edges, blinds, vents, door and window frames.
 - Vacuum and wipe all case work.
 - Clean and disinfect all desks, sinks and drinking fountains.
 - o Clean all sidelight glass and frames.
- Classrooms
 - Sweep, mop and scrub all hard surface floors.
 - Apply four coats of floor finish to all vinyl floors.
 - Vacuum carpet, edges and corners.
 - Extract all carpets (No Spin Bonnet Cleaning)
 - Spot Clean where necessary
 - Dust all ledges, edges, blinds, vents, door and window frames.
 - Vacuum and wipe all case work.
 - Clean and disinfect all desks, sinks and drinking fountains.
 - Clean all sidelight glass and frames.
- Restrooms
 - Clean and disinfect restroom floors, walls, partitions, fixtures, sinks, toilets, counters and mirrors.
 - Sweep, mop and scrub all hard surface floors.
 - Apply four coats of floor finish to all vinyl floors.
- Outdoor Lunch Court & Sidewalks
 - Pressure wash picnic tables and concrete surfaces.
 - Pressure wash identified sidewalks and areas identified.

Bid Package 1 – Addendum 3

San Mateo-Foster City School District HVAC Replacement Scope, Bid Package #1-Add #3 Borel MS DSA 01-119557 College Park ES DSA 01-119530 Meadow Heights DSA 01-119554 North Shoreview DSA 01-119526 SUMMARY OF WORK DOCUMENT 01 11 00-2



TEMPORARY FACILITIES AND JOBSITE TRAILERS:

Contractor is responsible for providing a site office trailer for IOR including utility connections for power and data. Contractor to provide sanitary temporary facilities and hand washing stations in no fewer numbers than required by law for use of all workers. Contractor is responsible for providing and maintaining electrical power to the extent power is not available in the building(s), on Site, or during temporary utility shutdowns. Refer to Contract Document 01 50 00, Temporary Facilities and Control for additional requirements.



Contractor is responsible for maintaining a clean work site and adequate protection of existing structures, paved walks, roads, trees, landscaping, and/or improvements in working areas. Any existing finishes damaged by construction activities including areas within temporary site access, laydown, staging yards, AC and concrete paving, play yard markings, painted surfaces, and adjacent offsite improvements shall be replaced by Contractor at its expense with same kind, quality, and size of work or item(s) damaged. Refer to Contract Document 00 70 00, General Conditions for additional requirements.

CONSTRUCTION WORK HOURS:

1) Construction activities are limited to between the hours of 7:00AM to 7:00PM Monday through Friday, between 10:00AM to 6:00PM on Saturday, and between 12:00PM to 4:00PM on Sunday.

2) Notice of proposed noisy operations outside of the allowable construction work hours, including without limitation, operation of pneumatic demolition tools, concrete saws, and other equipment, shall be submitted to District a minimum of forty-eight (48) hours in advance of their performance.

TEMPORARY UTILITY SHUTDOWNS:

Contractor shall give the District a minimum of three (3) days written notice in advance of any need to shut off existing utility services or to effect equipment interruptions. District will set exact time and duration for shutdown and will assist Contractor with shutdown. Work required to re-establish utility services shall be performed by the Contractor. Refer Contractor Document 00 71 00, Special Conditions, and Document 01 11 00, Summary of Work for additional requirements.

TEMPORARY ROAD / WALK CLOSURES / CITY PERMITS: Contractor is responsible to secure any encroachment permits with the City of San Mateo as required in the event that a road and/or sidewalk Right Of Way is to be temporarily blocked for construction activity. Contractor to provide any required temporary traffic control plans for City review and approval. Contractor will be responsible for implementing temporary traffic controls plans.

GRAPHIC KEY

EXISTING TOILET ROOMS

EXISTING CONSTRUCTION TO REMAIN

EXISTING COVERED STRUCTURE

(E) F.H.

EXISTING FIRE HYDRANT





GENERAL NOTES

- OTHERWISE NOTED.
- NORK HAVE BEEN APPROVED BY DSA.
- JSED FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AND COORDINATED WITH THE OWNER.
- PAVEMENTS, TREES AND SHRUBS FROM DAMAGE DURING
- ELECTRICAL AND MECHANICAL WORK.



BUILDINGS ARE UNSPRINKLERED, TYPE V-B CONSTRUCTION UNLESS

- NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION
- CONTRACTOR SHALL MAINTAIN FIRE LANE ACCESS THROUGHOUT
- DO NOT INTERRUPT EXISTING UTILITY SERVICES SERVING OCCUPIED OR
- PROTECT EXISTING & NEW STRUCTURES, UTILITIES, SIDEWALKS
- REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR EXTENT OF

SITE PLAN KEY NOTES

1 (E) GATE TO REMAIN. (E) SHED TO REMAIN.

(E) F.H.

- 3 (E) CMU TRASH ENCLOSURE TO REMAIN. (E) CHAINLINK FENCING TO REMAIN.
- 5 (E) PLANTINGTO REMAIN
- 6 (E) SIDEWALK TO REMAIN 7 REMOVE (E) CURB AND PREP FOR NEW WORK, S.E.D.
- 8 (E) ASPHALT TO REMAIN 9 REMOVE (E) PLANTER.
- 10 4'-0"W GATE. SEE DETAIL 2/A8.10 AND S.E.D.
- 11 ELECTRICAL EQUIPMENT, S.E.D. 12 CHAINLINK FENCE, SEE DETAIL 2/A8.10 AND S.E.D.
- 13 REMOVE (E) ELECTRICAL EQUIPMENT AND FOUNDATION COMPLETELY, S.E.D. (E) CHAINLINK FENCING TO REMAIN
- 14 (E) GAS METER TO REMAIN. 15 (E) GATE TO REMAIN
- 16 (E) SLIDING GATE TO REMAIN.
- 17 REMOVE (E) CHAINLINK FENCING, POLES, AND FOOTINGS. SEE NEW PLAN FOR ADDITIONAL INFORMATION. 18 REMOVE (E) PLANTING, CAP & REROUTE IRRIGATION AND PREP FOR NEW WORK, S.E.D.
- 19 10'-0"W DOUBLE GATE, SEE DETAIL 3/A8.10 AND S.E.D. 20 ASPHALT PAVING, SEE DETAIL 9/A8.01 SIM. CONFORM FLUSH TO ADJACENT
- SURFACE. 21 REMOVE (E) LIGHT POLE & FOOTING. PREP FOR NEW WORK, S.E.D.
- 22 (E) PLANTER TO REMAIN. 23 REMOVE (E) PAVING. SEE NEW PLAN FOR MORE INFORMATION.
- 24 (E) POLES TO REMAIN. REMOVE (E) CHAINLINK FENCING. SEE NEW PLAN FOR **ADDITIONAL INFORMATION.**
- 25 RESTRIPE AREAS ALTERED FOR CONSTRUCTION ACCESS. 26 CURB, SEE 13/A8.10. CONFORM FLUSH TO ADJACENT CURB TO REMAIN.
- 27 LIGHT POLE, S.E.D.

GRAPHIC KEY

	EXISTING TOILET F
	EXISTING CONSTR
	EXISTING COVERE
	TURNBULL LEARNI CENTER PRESCHO
	ASSUMED PROPER
(E) F.H.	EXISTING FIRE HYD
- x x -	EXISTING CHAINLIN
	EXISTING TUBE ST
-000-	(N) CHAINLINK FEN

[¢]⊙^s (E) F.H.







//17/2021 12:44:45 PM 2:\Users\kbailey\Docume ersion)_kbaileyKKPJP.r

TEMPORARY FACILITIES AND CONTROL:

Contractor to provide sanitary temporary facilities and hand washing stations in no fewer numbers than required by law for use of all workers. Contractor is responsible for providing and maintaining electrical power to the extent power is not available in the building(s), on Site, or during temporary utility shutdowns. Refer to Contract Document 01 50 00, Temporary Facilities and Control for additional requirements.

SITE PROTECTION AND RESTORATION:

Contractor is responsible for maintaining a clean work site and adequate protection of existing structures, paved walks, roads, trees, landscaping, and/or improvements in working areas. Any existing finishes damaged by construction activities including areas within the temporary site access, laydown, staging yards and adjacent offsite improvements shall be replaced at by Contractor at its expense with same kind, quality, and size of work or item(s) damaged. Refer to Contract Document 00 70 00, General Conditions for additional requirements.

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GRAPHIC KEY

	•••••	
- <u>O</u> -	O	
	(E) F.H.	

EXISTING TOILET ROOMS

EXISTING CONSTRUCTION TO REMAIN

EXISTING COVERED STRUCTURE

PROPERTY LINE

— (E) CHAINLINK FENCE

(N) CHAINLINK FENCE

EXISTING FIRE HYDRANT



North Shore view Montessori Campus Logistic Plan **Bid Package 1-Addendum 3**









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2

GRAPHIC KEY

EXISTING TOILET ROOMS. $-\bigcirc - - \bigcirc - - \bigcirc -$ (E) CHAINLINK FENCE -O- - -O- (N) CHAINLINK FENCE

(E) F.H.

EXISTING CONSTRUCTION TO REMAIN

EXISTING COVERED STRUCTURE

EXISTING FIRE HYDRANT





GENERAL NOTES:

- CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAW CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT
- SURFACES TO MATCH ADJACENT. 3. CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND LOCATIONS OF EXISTING UNDERGROUND SYSTEMS, WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.
- 4. ALL ON SITE TRENCH SHALL BE INSTALLED PER 3/ E5.2.
- 5. SEE DEMO SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
- 6. SEE NEW SINGLE LINE DIAGRAM FOR FEEDER CABLE AND CONDUIT REQUIREMENTS.

SHEET NOTES:

- $\overrightarrow{|}$ Existing PG&E transformer to remain.
- 2 EXISTING MAIN SWITCHBOARD. STUB NEW CONDUIT INTO EXISTING SWITCHBOARD AS REQUIRED.
- (3) EXISTING RETAINING WALL AT THIS LOCATION. ROUTE NEW CONDUIT AS REQUIRED.
- $\langle 4 \rangle$ Existing stairs at this location. Route New conduit as required
- $\left< 5 \right>$ EXISTING RAMP AT THIS LOCATION. ROUTE NEW CONDULT AS REQUIRED.

CONDUIT SCHEDULE:

(N) (2) 2"C - PNL 'CM' (N) (2) 4"C - FUTURE BLDG 'F' 2 (N) (2) 2"C - PNL 'CM' (N) (2) 3"C - PNL 'AM' (N) (2) 3"C - PNL 'DM' (N) (2) 3"C - PNL 'DM'

PULLBOX SCHEDULE

- NEW B3048 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- E2 NEW B2436 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.

K Brown-KCEM 11.22.2021 K Brown-KCEM 12.10.2021

Campus Site Plan identifying areas of allowable work during current school year and non school year times frames. Drawing prepared for Bid Package #1 Addendum 3 12.20.2021





- SYSTEM. COORDINATE WITH PG&E FOR ADDITIONAL REQUIREMENTS AND PROCEDURES.

- CIRCUITRY IS TO BE REUSED. CONTRACTOR IS RESPONSIBLE TO LOCATE AND PREPARE THE EXISTING UNDERGROUND CIRCUITRY TO BE INTERCEPTED. REMOVE THE EXISTING LIGHTING CIRCUITRY FROM THE AREA OF NEW WORK.

	/Vbbi
I) (N) (I) 4"C - PG&E PRIMARY	IB NOT USED
2 (N) (7) 5"C - PG&E SECONDARY	VIA NOT USED
3 (E) (I) 4"C - PG&E PRIMARY	\sim
4 (E) (5) 5"C - PG&E SECONDARY	(15) NOT USED
	6 (N) (2) 2 ¹ / ₂ "c - >
6 (N) (2) 2 ¹ / ₂ "C - XFMR 'TI' (N) (I) 2"C - FUTURE PV	 (N) (I) 2½°C - X (N) (I) 4°C - XF (N) (I) 2°C - XF
(N) (1) $2\frac{1}{2}$ "C - XFMR 'T2' (N) (1) 2"C - FUTURE PV	(N) (I) 2½"C - X (N) (5) 2"C - FL

- - (N) (I) $2\frac{1}{2}$ "C XFMR 'T7' (FUTURE) (N) (7) 2"C - FUTURE PV

EЗ LID. LABEL LID 'POWER'. - NEW B3048 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'.





Meadow Heights ES Campus Phasing Plan **Bid Package 1-Addendum 3**

GENERAL NOTES:

- I. CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAW CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT SURFACES TO MATCH ADJACENT.
- 3. CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND LOCATIONS OF EXISTING UNDERGROUND SYSTEMS, WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.
- 4. INSTALL PG&E PRIMARY TRENCH PER I/ E5.1
- 5. INSTALL PG&E SECONDARY TRENCH PER 3/ E5.1.
- 6. PG&E TRANSFORMER PAD SHALL BE PER 2/ E5.1.
- 7. ALL ON SITE TRENCH SHALL BE INSTALLED PER 3/ E5.4.
- 8. SEE THE DEMO SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS. 9. SEE NEW SINGLE LINE DIAGRAM FOR FEEDER CABLE AND CONDUIT REQUIREMENTS.
- IO. THE CONTRACTOR SHALL MANDREL THROUGH THE ENTIRE PG&E CONDUIT SYSTEM. COORDINATE WITH PG&E FOR ADDITIONAL REQUIREMENTS AND PROCEDURES.

SHEET NOTES:

- > EXISTING PG&E POLE WITH NEW PG&E PRIMARY RISER.
- EXISTING 1600A MAIN SWITCHBOARD, CONCRETE PAD AND ALL ASSOCIATED EQUIPMENT TO BE DEMOLISHED. EXISTING FEEDER TO BUILDING LGI TO REMAIN. PROVIDE B3048 PULL BOX AS REQUIRED TO INTERCEPT THE LGI FEEDER.
- (3) EXISTING PG&E TRANSFORMER TO BE REMOVED BY PG&E. DEMOLISH EXISTING TRANSFORMER PAD AND PATCH SURFACE TO MATCH EXISTING.
- 4 NEW PG&E TRANSFORMER PAD. REFER TO DETAIL 2/E5.1 FOR ADDITIONAL REQUIREMENTS.
- 5 FUTURE PV DISCONNECT SWITCH
- \rangle FUTURE PV DISTRIBUTION PANEL
- > NEW 2000A MAIN SWITCHBOARD. REFER TO DETAIL I/E5.I FOR
- ADDITIONAL REQUIREMENTS. $\left< \mathfrak{S} \right>$ NEW TRANSFORMER 'TP' AND PAD. REFER TO DETAIL 6/E5.4 FOR ADDITIONAL REQUIREMENTS.
- P NEW DISTRIBUTION PANEL 'DPP'. REFER TO DETAIL 8/E5.1 FOR ADDITIONAL REQUIREMENTS.
- $\langle 10 \rangle$ NEW 400A-3P, WALL MOUNT DISCONNECT SWITCH. REFER TO DETAIL 8/E5.1 FOR ADDITIONAL REQUIREMENTS.

PULLBOX SCHEDULE:

- NEW 4'-6"x8'-6" ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- NEW B2436 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED F2
- LID. LABEL LID 'POWER'. NEW 3'X5' ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED
- LID. LABEL LID 'POWER'.
- NEW B3048 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- NEW B2436 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'.
- NEW B3048 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'. C2

K Brown-KCEM 11.22.2021 K Brown-KCEM 12.14.2021

Campus Site Plan identifying areas of allowable work during current school year and non school year times frames. Drawing prepared for Bid Package #2 Addendum 3 12.20.2021



ELECTRICAL SWITCHGEAR



(3) (N) (I) I"C - PG#E COMMUNICATIONS (4) (N) (2) 3"C - FUTURE PV DISTRIBUTION PANEL.

(5) (N) (I) 2"C - FUTURE PV COMMUNICATIONS (6) (N) (I) I"C - PG&E COMMUNICATIONS

CONDUIT SCHEDULE:

(|) (N) (I) 4"C - PG&E PRIMARY

2) (N) (7) 5"C - PG&E SECONDARY

- (N) (I) 2"C FUTURE PV COMMUNICATIONS (7) (N) (I) 4"C - PNL 'GI'
- $\langle 8 \rangle$ (N) (4) 4"C FUTURE POWER (MU) (N) (2) $2\frac{1}{2}$ "C - FUTURE PV (MU)
- (N) (I) 4"C XFMR 'TA' (N) (I) $2\frac{1}{2}$ "C - FUTURE PV
- $(N) (I) 2^{I}_{2}C XFMR 'TB' (N) (I) 2^{I}_{2}C FUTURE PV$ (N) (I) 4"C - XFMR 'TA' (N) (I) 2¹₂"C - XFMR 'TB' (N) (2) 2^{\perp}_2 "C - FUTURE PV
- $\langle 12 \rangle$ (N) (I) 2¹/₂"C XFMR 'TC' (N) (I) $2\frac{1}{2}$ "C - FUTURE PV (13) (N) (I) 4"C - XFMR 'TA' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TB' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TC' (N) (3) 2^{\downarrow}_2 "C - FUTURE PV
- $\langle 14 \rangle$ (N) (1) 2¹/₂"C XFMR 'TD' (N) (I) 2^{1}_{2} "C - FUTURE PV (15) (N) (I) 4"C - XFMR 'TA' (N) (I) 2¹₂"C - XFMR 'TB' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TC' (N) (I) 2¹/₂"C - XFMR 'TD'
- (N) (4) $2\frac{1}{2}$ "C FUTURE PV \wedge $\langle 16 \rangle$ (N) (I) $|_{2}^{1}$ "C - XFMR 'TP' (I) (N) (I) 4"C - XFMR 'TA' (N) (I) 2¹₂"C - XFMR 'TB' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TC'
- (N) (I) $2\frac{1}{2}$ C XFMR 'TD' (N) (I) I_2^{\perp} - XFMR 'TP' (N) (4) 22"C - FUTURE PV (N) (I) 12"C - PANEL 'P6' $\langle 19 \rangle$ (N) (I) $1\frac{1}{2}$ "C - PANEL 'P7'
- $\langle 20 \rangle$ (N) (I) $2\frac{1}{2}$ "C PANEL 'DPP' (2I) (N) (7) 2^{\downarrow}_2 "C - FUTURE PV (N) (I) 2¹/₂"C - XFMR 'TB' (N) (I) 2¹/₂"C - XFMR 'TD'
- (N) (I) 1/2"C XFMR 'TP' (N) (4) 4"C FUTURE MULTI-USE 23 (N) (I) 4"C - XFMR 'TA' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TC' (N) (4) 4"C - SPARE
- $\langle 24 \rangle$ (N) (4) 4"C FUTURE COMMUNICATION



DIMENSIONS





E1.1 SCALE: |" = 20'-0"

GENERAL NOTES

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- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAW CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT SURFACES TO MATCH ADJACENT.
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- 4. INSTALL PG&E PRIMARY TRENCH PER I/ E5.1.
- 5. INSTALL PG&E SECONDARY TRENCH PER 3/ E5.1.
- 6. PG&E TRANSFORMER PAD SHALL BE PER 2/ E5.1.
- 7. ALL ON SITE TRENCH SHALL BE INSTALLED PER 3/ E5.4.
- 8. SEE THE DEMO SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS
- 9. SEE NEW SINGLE LINE DIAGRAM FOR FEEDER CABLE AND CONDUIT REQUIREMENTS.
- IO. THE CONTRACTOR SHALL MANDREL THROUGH THE ENTIRE PG&E CONDUIT SYSTEM. COORDINATE WITH PG&E FOR ADDITIONAL REQUIREMENTS AND PROCEDURES.

SHEET NOTES:

- $\langle | \rangle$ EXISTING PG&E TRANSFORMER TO BE REMOVED.
- 2 EXISTING MAIN SWITCHBOARD TO BE CONVERTED TO DISTRIBUTION PANEL 'DPI'.
- 3 INTERCEPT EXISTING PG&E PRIMARY CONDUIT.
- $\langle 4 \rangle$ EXISTING PG#E UTILITY POLE WITH RISER.
- 5 EXISTING PG&E PRIMARY STREET CROSSING TO REMAIN. INTERCEPT THE PRIMARY CONDUIT ON THE SCHOOL SIDE OF THE STREET AND EXTEND AS SHOWN.
- $\langle 6 \rangle$ EXISTING PG&E GAS METER LOCATION.
- $\langle 7 \rangle$ NEW 3'X5' PG&E PULLBOX.
- $\langle s \rangle$ stub PV conduit in this location. Conduit to be
- STUBBED TO JUST OUTSIDE CONCRETE SIDEWALK. STUB UP AT +18" A.F.F AND CAP.

CONDUIT SCHEDULE

	(N) (I) 4"C - PG&E PRIMARY
2	(N) (7) 5"C - PG&E SECONDARY
3	(E) (I) 4"C - PG&E PRIMARY
4	(N) (2) 4"C - PANEL 'DPI' (N) (1) $2\frac{1}{2}$ "C - PANEL 'BM' (N) (1) $2\frac{1}{2}$ "C - PANEL 'CM' (N) (2) $2\frac{1}{2}$ "C - FUTURE PV (N) (2) $2\frac{1}{2}$ "C - FUTURE EV
5	$\begin{array}{llllllllllllllllllllllllllllllllllll$
6	(N) (2) 4"C - PANEL 'DPI'
	(N) (I) 2_2^{I} "C - PANEL 'BM' (N) (I) 2_2^{I} "C - PANEL 'CM'

8 (N) (I) 2¹/₂"C - PANEL 'CM'

(N) (I) $2\frac{1}{2}$ "C - PANEL 'BM'
10 (N) (I) $2\frac{1}{2}$ "C - FUTURE PV
$\begin{array}{c c} (N) & (2) & 4"C & - PANEL 'DPI' \\ (N) & (1) & 2\frac{1}{2}"C & - PANEL 'BM' \\ (N) & (1) & 2\frac{1}{2}"C & - PANEL 'CM' \\ (N) & (1) & 2\frac{1}{2}"C & - PANEL 'CM' \\ (N) & (2) & 4"C & - FUTURE POWER \end{array}$
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$
13 (N) (2) 3"C - FUTURE PV
$(N) (5) 2^{1}_{2}C - FUTURE PV (N) (2) 4"C - FUTURE PV (N) $
15 (N) (I) 4"C - XFMR 'DPI'

- $\langle 16 \rangle$ (N) (2) 4"C PANEL 'DPI'
- (N) (I) 4"C PANEL EM' (FUTURE)

- $\langle 18 \rangle$ (N) (1) 2¹/₂"C PANEL 'DM' $\langle | q \rangle$ (N) (I) 4"C - PANEL 'AM' $\langle 20 \rangle$ (N) (I) I"C - PG&E COMMUNICATIONS \langle 21angle (N) (1) 2"C - FUTURE PV COMMUNICATIONS (N) (2) 2^{1}_{2} C - FUTURE EV

 $\langle q \rangle$ FUTURE PV DISCONNECT SWITCH.

(10) FUTURE PV DISTRIBUTION PANEL

CONDITION AND LAYOUT.

AND CAP.

> NEW 225KVA TRANSFORMER "TOPI".

 \langle 13 \rangle STUB PV CONDUIT IN THIS LOCATION. CONDUIT TO BE



 $\left(2 \right)$

J.







KITCHELL

Attendance Sign-in Sheet

99 S. Almaden Rd., Suite 600, San Jose CA 95113

(408) 483-4267

- DATE: Wednesday, December 1 at 10:00am
- PROJECT: San Mateo-Foster City School District Multi-Site HVAC Replacements – Phase 1 for Seven Campuses Bid Number #21-190 and 21-189

MEETING: PRE-BID CONFERENCE

	Pre-Bid Conference Sign-In Sheet							
	Name	Company Name	Telephone					
1	Justin Libay	Marina Mechanical	(510) 715-1326					
	Email: jlibay@marinam.com							
2	Don Teixeira	Strawn Construction	(650) 888-9599					
	Email: don@scmdinc.com							
3	Tyler Valencia	GLS Electric	(209) 914-4094					
	Email: tvalencia@gls-inc.net							
4	Phil Enfantini	ESI Mechanical	(409) 980-1711					
	Email: penfantini@esite.net							
5	(Bobo Construction)	Bobo Construction	(916) 383-7777					
	Email: bestimating@boboconstructioninc.com							
6	(EF Brett)	EF Brett	(415) 524-8351					
	Email: estimator@efbrett.com							
7	(Rodan Builders)	Rodan Builders	(650) 508-1700					
	Email: bids@rodanbuilders.com							
8	TJ Kay	ESI Controls	(408) 980-1711					
	Email: tjkay@esite.net							
9	Jake Barker	Air Treatment	(402) 643-0661					
	Email: jbarker@airtreatment.com							

Page 1 of 2

	Pre-Bid Conference Sign-In Sheet								
	Name	Company Name	Telephone						
10	Steve Davies	Foothill Air Conditioning	(408) 395-2500						
	Email: steve@foothillac.com								
11									
	Email:								
12									
	Email:								
13									
	Email:								
14									
	Email:								
15									
	Email:								
16									
	Email:								
17									
	Email:								
18									
	Email:								
19									
	Email:								
20									
	Email:								
21									
	Email:								

Attendance Sign-in Sheet

99 S. Almaden Rd., Suite 600, San Jose CA 95113

(408) 483-4267

DATE: Wednesday, December 8 at 10:00am

PROJECT: San Mateo-Foster City School District Multi-Site HVAC Replacements – Phase 1 for Seven Campuses Bid Number #21-190 and 21-189

MEETING: PRE-BID CONFERENCE

	Pre-Bid Conference Sign-In Sheet				Site Loo	ation V	isited			
	Name	Company Name	Telephone	BMS	MHES	ABS	LES	GHES	NSMS	CPES
1	Tyler Armstrong	Quality Air Services	510.728.7700	YES	NO	NO	NO	NO	NO	NO
	Email: chasecontracting@yahoo.com									
2	Jared Perry	Calstate Construction, Inc	510.657.1800	YES	YES	YES	YES	YES	YES	YES
	Email: calstatebid@gmail.com									
3	Willie Cestarrallo	CWS Construction Group, Inc	515.599.6545	YES	YES	YES	YES	YES	YES	YES
	Email: charliejr.cws@gmail.com									
4	Huan Truong	DL Falk Construction	510.857.6500	YES	NO	NO	NO	NO	NO	NO
	Email: htruong@dlfalk.com									
5	Jordan Bramleff	Aire Sheet Metal	510.246.6745	YES	YES	NO	NO	NO	NO	NO
	Email: joprdan@airsm.com									
6	Ryan Alipate	Aire Sheet Metal	510.246.6745	YES	YES	NO	NO	NO	NO	NO
	Email: ryana@airsm.com									

Page 1 of 2

	Pre-Bid Conf	erence Sign-In Sheet			Site Loo	cation V	isited			
	Name	Company Name	Telephone	BMS	MHES	ABS	LES	GHES	NSMS	CPES
7	Bryan Martin	OC McDonald	408.569.8267	YES	YES	YES	YES	YES	YES	YES
	Email: bmartin@ocmcdonald.com	hduur@ocmcdonald.com								
8	Steve Perry	F & H Construction	209.931.3738	YES	YES	YES	YES	YES	YES	YES
	Email: estimating@f-hconst.com									
9	April Karsemeyer	BHM Construction	707.643.454580	YES	NO	NO	NO	NO	NO	NO
	Email: bids@bhmconstruction.com									
10	Alyssa Countryman	BRCO Construction	916.253.9373	YES	YES	YES	YES	YES	YES	YES
	Email: acountryman@gobrco.com									
11	Chahan Shah	Cypress Engineering	831.664.8779	YES	YES	NO	NO	NO	NO	NO
	Email: chahan@cyresseng.com									
12	Eric Tsai	Aedis	408.300.5160	YES	YES	YES	YES	YES	YES	YES
	Email:									
13	Kaitlin Bailey	Aedis	408.300.5160	YES	YES	YES	YES	YES	YES	YES
	Email:									
14	John Cacka	American Consulting Engineers	408.236,2312	YES	YES	NO	NO	NO	NO	NO
	Email:									
15										
	Email:									

Attendance Sign-in Sheet

99 S. Almaden Rd., Suite 600, San Jose CA 95113

(408) 483-4267

DATE: Wednesday, December 15, 2021 at 10:00am

PROJECT: San Mateo-Foster City School District Multi-Site HVAC Replacements – Phase 1 for Seven Campuses Bid Number #21-190 and 21-189

MEETING: PRE-BID CONFERENCE

	Pre-Bid Conference Sign-In Sheet				Site Loo	cation V	isited			
	Name	Company Name	Telephone	BMS	MHES	ABS	LES	GHES	NSMS	CPES
1	Thomas Francis	Dowdle & Sons Mechanical	707-224-6968	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Email: tomf@dowdleandsonsmech.com									
2	Chip Brennand	Rodan Builders	650-508-1700	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Email: bids@rodanbuilders.com									
3										
	Email:									
4										
	Email:									
5										
	Email:									
6										
	Email:									

	Pre-Bid Conference Sign-In Sheet			Site Location Visited						
	Name	Company Name	Telephone	BMS	MHES	ABS	LES	GHES	NSMS	CPES
7										
	Email:									
8										
	Email:									
9										
	Email:									
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	Email:									
12										
	Email:									
13										
	Email:									
14										
	Email:									
15										
	Email:									



December 22, 2021

Aedis Architects 387 S. First St., Suite 300 San Jose, CA 95113

Subject: Borel Middle School HVAC Replacement San Mateo - Foster City School District Aedis Project No. 2021005 DSA Application #01-119557

ADDENDUM NO. 3

CHANGES AND/OR CLARIFICATIONS OF THE DRAWINGS AND SPECIFICATIONS ARE AS FOLLOWS:

GENERAL

	HVAC AND POWER UPGRADE PROJECT HAZARDOUS MATERIALS SURVEY REPORT			
<u> A</u>	<u>Add:</u>	The report in its entirety per HVAC And Power Upgrade Project Hazardous Materials Survey Report Borel Middle School		
ITEM NO. 3.2:	DSA FORM 103-19 LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS			
<u> A</u>	<u>Add:</u>	The DSA form in its entirety per DSA Form 103-19 Listing Of Structural Tests & Special Inspections, 2019 CBC		
ITEM NO. 3.3:	ADDENDUM 1 LIST OF ATTACHMENTS			
<u> A</u>	<u>Add:</u>	On page 6 of addendum 1, add to list of attachments Sheet AD1-E4.3		
SPECIFICATIONS				
ITEM NO. 3.4:	TABLE OF C	ONTENTS		
<u> </u>	<u>Add:</u> Add:	02 80 00 HAZARDOUS MATERIALS ABATEMENT 07 62 00 SHEET METAL FLASHING & TRIM		
<u>ITEM NO. 3.5:</u>	SECTION 0	2 80 00 HAZARDOUS MATERIALS ABATEMENT		
Ă	Add:_	The specification in its entirety per 02 80 00 Hazardous Materials Abatement		
<u>ITEM NO. 3.6:</u>	SECTION 07 41 13.16 STANDING SEAM METAL ROOF PANELS			
Ĕ	<u>Add:</u>	Paragraph 3.6E to read as: "Provide water leak test at roof areas where cutting and patching occurs, including flashings, with hose spray test in front of District		

personnel. Spray flashing in both directions for no less than five (5) minutes and confirm there is no leaking."

ITEM NO. 3.7: SECTION 07 54 19 POLY VINYL-CHLORIDE (PVC) ROOFING

<u>Add:</u> Paragraph 3.8D to read as: "Provide water leak test at roof areas where cutting and patching occurs, including flashings, with hose spray test in front of District personnel. Spray flashing in both directions for no less than five (5) minutes and confirm there is no leaking."

ITEM NO. 3.8: SECTION 07 62 00 SHEET METAL FLASHING & TRIM

<u>Add:</u> The specification in its entirety per attached 07 62 00 - Sheet Metal Flashing and Trim.

ITEM NO. 3.9: SECTION 09 65 13 RESILIENT BASE AND ACCESSORIES:

<u>*Revise:*</u> Paragraph 2.1H to read: "Colors: Selected from manufacturer's full range to match existing."

DRAWINGS

ARCHITECTURAL

ITEM NO. 3.10:	DRAWING SHEET A1.02 – SITE PLAN
----------------	---------------------------------

	<u>Add:</u> <u>Revise:</u> <u>Add:</u> <u>Revise:</u> <u>Remove:</u>	Fire department access route in plan per attached AD3-A1.02.Electrical Trench routing in plan per attached AD3-A1.02.(E) Fire department access graphics to Graphic Key per attached AD3-A1.02.Graphics of existing ramp per attached AD3-A1.02.Reference to four existing shade structures per attached AD3-A1.02.		
ITEM NO. 3.11:	DRAWING SHEET A2.01 – DEMOLITION FLOOR PLANS – BLDGS A, B, C, & D			
	<u>Revise:</u> <u>Remove:</u> <u>Add:</u> <u>Revise:</u>	Demolition Floor Plan Keynote #1 per attached AD3-A2.01. Demo and prep for drywell at locations indicated per attached AD3-A2.01. Demolition Floor Plan Keynote #8 in plan per attached AD1-A2.01. Reference to see room for similar scope in plan per attached AD1-A2.01.		
ITEM NO. 3.12:	DRAWING SHEET A3.01 – NEW FLOOR PLANS – BLDGS A, B, C, & D			
	<u>Add:</u> <u>Add:</u> <u>Remove:</u> <u>Remove:</u>	General Sheet Note #I per attached AD3-A3.01. New Floor Plan Keynotes #8 & #9 and associated tags on new floor plans per attached AD3-A3.01. New Floor Plan Keynote #2 per attached AD3-A3.01. Drywell locations as indicated per attached AD3-A3.01.		

- <u>Revise:</u>Keynotes for Classroom 27 and 32 per attached AD3-A3.01.<u>Revise:</u>Framing dimensions per attached AD3-A3.01.
- ITEM NO. 3.13:
 DRAWING SHEET A3.02 NEW FLOOR PLAN SCIENCE BLDG. & TYP. NEW REFLECTED

 CEILING PLANS
 - Add:General Sheet Note #I to read "AT INTERIOR AND EXTERIOR PAINT ALL NEW
EXPOSED CONDUITS, PIPES, HANGERS AND ATTACHMENTS, AND DUCTWORK"Revise:New Floor Plan Keynotes #2 to read "AT REGISTER OR LOUVER, PATCH WALL TO
MATCH ADJACENT. CONT. CAULKING AT INTERIOR AND EXTERIOR LOUVER."
- ITEM NO. 3.14: DRAWING SHEET A8.10 EXTERIOR DETAILS

<u>Revise:</u> Detail 6/A8.10 Concrete Patch per attached AD3-A8.10.

ITEM NO. 3.15: DRAWING SHEET A9.10 – INTERIOR DETAILS, WALL TYPES, AND INTERIOR ELEVATIONS

<u>Revise:</u>In typical elevations 9/A9.10 and 10/A9.10 revise finish tag VWC-1 to GB-1<u>Revise:</u>Detail 14/A9.10 Gas shut off signage per attached AD3-A9.10.<u>Revise:</u>Detail 16/A9.10 Mech Enclosure Clearances, Typ. per attached AD3-A9.10.

ITEM NO. 3.16: DRAWING SHEET A11.01 – FINISH SCHEDULE, OPENING SCHEDULE, LEGENDS, & DETAILS

<u>Remove:</u>In Finish Schedule, remove VWC-1 from Wall Finish at all rooms<u>Revise:</u>In Finish Legend, revise GB-1 from "GYPSUM BOARD" to "GYPSUM BOARD,
PAINTED"

STRUCTURAL

- ITEM NO. 3.17: DRAWING SHEET \$8.01 FRAMING DETAILS AND NAILING SCHEDULE
 - <u>*Remove:*</u> Vertical nailing requirement in detail 7 per attached sheet AD3-S8.01

MECHANICAL

- ITEM NO. 3.18: DRAWING SHEET MP0.02 SCHEDULES MECHANICAL
 - <u>*Revise:*</u> Classroom split system heat pump schedule notes referenced, and revise note #5 per attached AD3-MP0.02
 - <u>Add:</u> Packaged rooftop Air Conditioning Units Schedule notes #10 per attached AD3-MP0.02
- ITEM NO. 3.19: DRAWING SHEET MP2.05 FLOOR PLAN NEW BLDGS A & D MECHANICAL & PLUMBING

<u>Clarification</u>: Condensate pipe revisions and associated notes moved to new sheet AD3-P2.05

San Mateo – Foster City School District Aedis Project No. 2021005.07

Remove:Keynotes #5, #11, #12, #13, #24 & #25 per attached Sheet AD3-MP2.05Revise:Keynote #26 per attached Sheet AD3-MP2.05

<u>Revise:</u> Drywell locations per attached Sheet AD3-MP2.05

<u>Revise:</u> Keynote #15 per attached Sheet AD3-MP2.05. Intent is damper and actuator are concealed inside the opening and covered with grilles similar to picture below.



<u>Add:</u> Keynote #33 and associated tag in plan per attached Sheet AD3-MP2.05. Intent is to provide a duct collar at enclosure penetration similar to the picture below.



ITEM NO. 3.20: DRAWING SHEET MP2.06 – FLOOR PLAN – NEW – BLDG B, BLDG C & SCIENCE BLDG - MECHANICAL & PLUMBING

Clarification: Condensate pipe revisions and associated notes moved to new sheet AD3-P2.06

Remove: Keynote #3 per attached Sheet AD3-MP2.06 ITEM NO. 3.21: DRAWING SHEET P2.05 – FLOOR PLAN – NEW – BLDGS A & D – CONDENSATE DRAINS – PLUMBING Add: New sheet in its entirety per attached Sheet AD3-P2.05 DRAWING SHEET P2.06 – FLOOR PLAN – NEW – BLDG B, BLDG C & SCIENCE BLDG ITEM NO. 3.22: **CONDENSATE DRAINS – PLUMBING** Add: New sheet in its entirety per attached Sheet AD3-P2.06 DRAWING SHEET MP6.01 - DETAILS - MECHANICAL - PLUMBING ITEM NO. 3.23: Revise: Detail 15/MP6.01 per attached AD3-MP6.01a. Revise: Detail 18/MP6.01 per attached AD3-MP6.01a. Detail 5/MP6.01 per attached AD3-MP6.01b. Revise: ELECTRICAL DRAWING SHEET E0.1 – Electrical Cover Sheet ITEM NO. 3.24: Wiring & Conduit Run Symbols per attached Sheet AD3-E0.1 Revise: ITEM NO. 3.25: DRAWING SHEET E1.1 Electrical Site Plan General Note #2 per attached Sheet AD3-E1.1. Revise: Add: Sheet Note #6 per attached Sheet AD3-E1.1. Add: Sheet Note #6 tag on site plan per attached Sheet AD3-E1.1. ITEM NO. 3.26: DRAWING SHEET E3.1 New Floor Plan Bldgs A, B, C, D Sheet Note #10 per attached Sheet AD3-E1.1. Revise: Add: Sheet Note #11 per attached Sheet AD3-E1.1. Add: Sheet Note #11 tag on the plan per attached Sheet AD3-E1.1. ITEM NO. 3.27: DRAWING SHEET E5.2 – Electrical Details Revise: Detail 3/E5.2 Note #1 per attached Sheet AD3-E5.2. Add: Detail 3/E5.2 Note #5 per attached Sheet AD3-E5.2.

ADDENDUM NO. 3 Borel Middle School HVAC Replacement

San Mateo – Foster City School District Aedis Project No. 2021005.07



Aedis Architects Thang Do, Principal



Structural, BASE Design Gokhan Akalan



Electrical, American Consulting Engineers Electrical Sammy Fernandez



Mechanical, Cypress Engineering Group Metin Serttunc

ADDENDUM NO. 3

Borel Middle School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.07

Attachments:

General:

HVAC And Power Upgrade Project Hazardous Materials Survey Report Borel Middle School (38 pages) DSA Form 103-19 Listing Of Structural Tests & Special Inspections, 2019 CBC (13 pages)

Specifications: 02 80 00 Hazardous Materials Abatement (43 Pages) 07 62 00 Sheet Metal Flashing and Trim (11 pages)

Drawings: ARCHITECTURAL SHEET AD3-A1.02 SHEET AD3-A2.01 SHEET AD3-A3.01 SHEET AD3-A8.10 SHEET AD3-A9.10 STRUCTURAL: SHEET AD3-S8.01 MECHANICAL SHEET AD3-MP0.02 SHEET AD3-MP2.05 SHEET AD3-MP2.06 SHEET AD3-P2.05 SHEET AD3-P2.06 SHEET AD3-MP6.01a SHEET AD3-MP6.01b ELECTRICAL SHEET AD3-E0.1 SHEET AD3-E1.1 SHEET AD3-E3.1 SHEET AD3-E5.2





HVAC and Power Upgrade Project HAZARDOUS MATERIALS SURVEY REPORT Borel Middle School

For



419 Mason Street Suite 109 | Vacaville CA 95688 | 707.999.5234

Email: erica@znapfly.com

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Cover Letter

Friday, September 3, 2021

Kevin Sanders San Mateo Foster City School District 1170 Chess Drive Foster City, California 94404

SUBJECT: HVAC and Power Upgrades Project - Hazardous Materials Survey Report

Dear Mr. Sanders,

At the request of the San Mateo Foster City School District, Znap Fly provided an asbestos and lead survey of suspect building construction materials at Borel Middle School located at 425 Barneson Avenue in San Mateo, California as part of the San Mateo Foster City School District (SMFCSD).

Onsite testing was performed on June 30 and July 14, 2021, by Ms. Erica Sattar.

This report is intended as an informational resource for the San Mateo Foster City School District and includes sample/test results, conclusions and recommendations regarding hazardous materials based upon information obtained from samples and tests collected at specific locations, review of information/drawings provided to us, and professional judgment.

Shall you have any questions or concerns regarding this document, following review, please contact us at 707-999-5234.

With Gratitude,

Erica Sattar, CAC, CDPH Principal Consultant / Director of Environmental Znap Fly

Description of Buildings Surveyed

The buildings surveyed at Borel Middle School are stucco exterior with metal framed windows with a corrugated roof. Interior finishes anticipated to be impacted by project work include acoustic ceiling panels, plaster wall, sheetrock on walls, acoustic wall tiles may not be impacted however are near the HVAC unit, carpet, cove base and sealants at conduit and HVAC case. Floor tile was also sampled in areas outside the scope of work at the request of SMFCSD.

Survey Methodology: Sampling & Analytical

All onsite testing was performed at 7-sites throughout the San Mateo Foster City School District (SMFCSD), with XRF lead testing completed on June 30, 2021 and bulk samples from Borel Middle School collected on July 14, 2021, by Ms. Erica Sattar. The project was planned and overseen by Ms. Sattar and Mr. Christopher Smith. Both, Ms. Sattar and Mr. Smith, are Cal/OSHA Certified Asbestos Consultants (CACs) and CDPH Lead Consultants, with mold investigation and remediation training. The report was prepared by Ms. Sattar and reviewed by Mr. Smith.

<u>Asbestos</u>

All bulk samples were collected using sampling guidelines established by the Environmental Protection Agency (EPA) and by generally following the methods described in Appendix K of title 8, CCR, Section 1529 of the California Code of Regulations for sample collection. Znap Fly was not prevented and/or instructed by the owner/operator of SMFCSD as to what materials were to be sampled. The following summarizes the sampling procedures utilized.

- Visually identified suspect ACMs were categorized into homogeneous material areas. A homogeneous material
 is defined as being a surfacing material, thermal system insulation, or miscellaneous material which is uniform
 in color and texture.
- A sampling scheme was developed based upon the location and quantity of the various homogeneous materials.
- Trained and certified personnel using appropriate sampling tools and leak-tight containers collected bulk samples.
- Bulk sample collection tools were decontaminated after the collection of each bulk sample to prevent the spread of secondary contamination to subsequent bulk samples.
- Each bulk sample was labeled with a unique sample identification number and recorded on a bulk sample log.
- Bulk samples collected were submitted to a laboratory with a chain of custody record.

All material quantities reported herein are rough order of magnitude estimates and should not be used for bidding purposes without review of available record drawings and on-site field verification by the bidder. The information provided in this report should be used in conjunction with construction documents and the contractor's own field verification of the abatement scope of work including location and extent of removal required for the demolition project being undertaken at each site. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Bulk samples of suspect materials were delivered to EMSL Analytical, Inc. (EMSL) in San Leandro, California, and forwarded to LA Testing in Pasadena, California, a sister lab of EMSL. EMSL/LA Testing is a laboratory accredited under the National Institute of Standards and Technology (NIST)/National Voluntary Laboratory Accreditation Program (NVLAP) and the California Environmental Laboratory Accreditation Program (Cal-ELAP) for bulk asbestos sample analysis. The samples were submitted for analysis by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance with the

EPA's "Method for the Determination of Asbestos in Bulk Building Materials" US EPA/600/R-93/116, dated July 1993 and adopted by the NVLAP as Test Method Code 18/A01.

Standard PLM analytical method has a limit of quantification of 1% asbestos. For materials with asbestos detected at trace levels or below 1% by standard PLM, the material must be considered to be above 1% (ACM) unless re-analyzed and found to be less than 1% by the PLM point count method (400 points minimum). Each sample of a homogeneous area material with trace result(s) must be re-analyzed by point count and found to be less than 1% in order to avoid assuming the material to be ACM according to EPA regulation. For this project, no materials were analyzed by point count methods.

Lead

Lead-based paint (LBP) is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%), as set forth in the Department of Housing and Urban Development (HUD) guidelines and California Department of Public Health (CDPH) regulations. Lead-Containing Paints (LCPs) are paints and coatings that contain detectable lead as defined by Cal/OSHA. Most paint and coatings on pre-1978 buildings contain some detectable lead subject to Cal/OSHA regulation. Therefore the exhaustive testing required to prove painted coatings do not contain lead is not practical or cost effective. Consequently, all paints and architectural coatings must be considered to contain some detectable levels of lead unless proven otherwise by laboratory analysis.

This survey included screening level LBP testing for the purpose of characterizing the general presence of lead in existing paints and coatings. As such, this survey included paint testing using a C series Vanta XRF direct read lead testing instrument. The results presented herein are representative of typical conditions but are not inclusive of all painted/ coated surfaces present at the site. The results of this survey should assist with compliance to the California Occupational Safety and Health Administration (Cal/OSHA) lead construction standard and preliminary evaluation of potential construction waste streams. All painted/coated surfaces including untested surfaces, must be assumed to contain some detectable level of lead in the absence of representative paint chip analytical results demonstrating that lead levels are below analytical detection limits. This is because the XRF instrument, while providing a cost effective, non-destructive test method, the instrument is calibrated to detect LBP and cannot detect lead at the lowest levels regulated Cal/OSHA and Cal/ EPA. Any detectable level of lead is subject to Cal/OSHA regulation.

Universal Wastes & Other Suspected Hazardous Materials

The building areas were visually surveyed for universal wastes and other hazardous materials. These universal wastes include fluorescent lighting fixtures manufactured prior to 1979 that have the potential to contain Polychlorinated Biphenyl (PCB) ballasts, mercury containing lighting tubes, and other components considered to be "universal wastes" upon disposal. "Universal wastes" include mercury-containing non-incandescent lamps, batteries, mercury thermostat switches and other hazardous wastes commonly found in building components and equipment. Other suspect hazardous materials include refrigerants, paints, and solvents.

Asbestos Containing Materials

Znap Fly collected a total of 95 bulk samples with 144 sample layers of suspect ACM analyzed by PLM analysis. One sample reported asbestos, window putty from Room 34, while all other samples collected reported "none detected" by laboratory analysis. The analytical laboratory results for sampled suspect ACMs are listed below and in the attached Analytical Laboratory Reports.

Assumed Asbestos-Containing Material

The following list of materials are assumed to contain asbestos, pending testing prior to construction to confirm asbestos content or prove no asbestos is present by laboratory analysis.

- Window putty at window HVAC unit, 2% asbestos, Category II ACM, approximately 2 square feet limited to Room 34
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Roof mastic , assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work location

Suspect Asbestos-Containing Materials Sampled with No Asbestos Reported

Materials listed below were sampled and analyzed by an accredited laboratory by PLM analysis reported "none detected" for asbestos. The following list are all materials sampled.

- Sheetrock with joint compound
- Skim coat/coating material on wood wall
- Plaster, smooth wall
- Temp wallboard
- Floor tile, 12" x 12" blue and white pattern with associated yellow mastics
- Gray faux wood vinyl flooring with mastics
- Cove base, 4" gray and black in color with associated white mastics
- Acoustic ceiling panel, 2' x 4' white with random pinhole pattern
- Acoustic ceiling tile, 12" x 12" fibrous material (mastic associated is assumed ACM)
- Sealant at HVAC unit and conduit box at interior classroom areas
- Carpet mastic
- Stucco

Refer to Attachment for a complete set of the laboratory results and sample locations.

Lead Containing Paints, Coatings and Materials

Znap Fly performed a total of 54 XRF lead tests from the interior and exterior building surfaces. The results of the XRF LBP screening survey are provided in the table shown below. A total of two XRF tests contained lead at LBP levels above the threshold 1.0 mg/cm² of the 54 total tests of painted surfaces tested.

The following is a brief summary of types of building components that tested above 1.0 mg/cm² and should be considered lead based paint (LBP) as determined by XRF. Samples submitted to the laboratory for analysis reported detectable lead, however reported laboratory levels are below lead based paint criteria. Refer to laboratory data attached for lead analysis results.

	Component	Substrate	Condition	Result
Exterior	Window frame	Wood	Intact/good	3.97 - 5.12 (mg/cm2)

The tabulated data is not intended to be all inclusive and must be extrapolated to similar surfaces that were not tested. Lead content will vary according to painting histories involved. Generally on a building by building basis, component type and substrate are more reliable indicators.

General Interpretation of Lead-Containing Paint Findings Reported:

All painted components must be presumed to contain some detectable levels of lead regardless of non – detection by the XRF method unless exhaustively tested by paint chip analysis. Untested painted/coated components must be presumed to contain some lead at detectable levels. About 3% of the painted/glazed surfaces tested contained high levels of lead considered to be LBP and most of the remaining surfaces contained some detectable lead. In general, LBP was detected on exterior window frames. The frequency of occurrence was typically low. The tested surfaces that reported low levels of detected lead must be considered lead-containing paints (LCP) and coatings in the absence of exhaustive testing by wet chemistry methods.

Paint Condition Findings:

The condition of paint at this site is generally in good/intact condition. Since even low levels of paint (e.g., just over 50 ppm) may exhibit hazardous waste characteristics, care must be taken to eliminate loose and peeling paint prior to general building demolition. Any loose, peeling or flaking paint should be removed and disposed of as lead hazardous waste.

Universal Wastes & Other Potential Hazardous Materials

Znap Fly visually inspected readily accessible areas of the building for other hazardous materials PCB lighting ballasts, Universal Wastes (such as mercury containing lighting tubes, thermostats, and batteries), and other suspect hazardous waste and contamination. No attempt to disassemble equipment or sample any additionally discovered suspect materials was included. Any suspect hazardous material must be presumed hazardous pending complete identification. For example, fluorescent lighting fixtures must be presumed to contain PCB ballasts pending removal and disassembly of each unit to determine ballast type and/or labeling in the absence of other explicit product specific information to the contrary.

Asbestos Containing Construction Materials

Prior to renovation/demolition construction activities, known or assumed ACMs that are likely to be disturbed by those activities must be removed and disposed of in accordance with all applicable regulations including federal National Emissions Standard for Hazardous Air Pollutants (NESHAPS) and Cal/OSHA regulations. A Cal-OSHA registered and State licensed, registered asbestos contractor (abatement/demolition/roofing) is required for removal of ACM prior to general demolition and renovation. For this project, mastic associated with tack board/white board/chalk board and acoustic wall tiles are assumed to contain asbestos and the mastic associated with roof field shingles contain asbestos. These materials are considered Category I non-friable asbestos contractor shall notify the project manager, contracting officer, or inspector immediately. Assumed materials can be sampled on a rush turnaround time to prove a material does not contain asbestos. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Other Considerations and Rules

Where removal is unavoidable, the contractor's abatement sub-contractor should remove all friable RACM under class I removal requirements and dispose of waste as hazardous asbestos waste at a landfill permitted for asbestos hazardous waste disposal, this work is anticipated for this project at select locations; refer to project documents on-site. The contractor's abatement sub-contractor should also remove all category I & II non-friable ACM in a manner that does not produce friable ACM under Cal/OSHA Class I removal requirements and dispose of removed materials as non-hazardous asbestos waste at a landfill permitted for asbestos waste disposal.

The following additional requirements should be adhered to for any maintenance, renovation, or demolition projects requiring asbestos disturbance and/or removal:

•All asbestos-containing wastes shall be manifested as either hazardous or non-hazardous based on asbestos content, friability, and actual waste stream classification.

•All asbestos removal should be overseen by a qualified independent third party, retained by the building owner or manager of the building to ensure proper removal, clean up, work area clearance, and review waste shipping and disposal documentation.

Contractor should perform all work in compliance with contract documents and the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of asbestos.

Lead Containing Paints and Coatings

The painted components tested at the subject buildings typically had detectable levels of lead and should be considered LCP coated. LBP was detected on about 3% of the surfaces or components tested and consisted of exterior window frames. All paints and coatings should be considered LCP or coatings in the absence of exhaustive sampling and laboratory analysis. The disturbance of these components during demolition and renovation activities will require use of personnel trained in lead hazards for construction and will require compliance with applicable Cal/OSHA and Cal/EPA regulation. Any detectable level of lead is subject to Cal/OSHA regulation.

At present there is no state or federal regulation requiring mandatory lead removal or abatement prior to disturbance, demolition or renovation of structures with identified lead materials. However, prior to hot work on painted metal, the paint either needs to be removed or supplied air respirators worn during welding or cutting operation. In addition, there

are applicable lead specific Cal/OSHA worker protection requirements and Cal/EPA waste disposal requirements that do apply to lead-related construction activities and associated wastes:

- Cal/OSHA: The Cal/OSHA regulation, Title 8, CCR, Section 1532.1 Lead governs occupation exposure to lead. This regulation requires that any task that may potentially expose workers to any concentration of lead, be monitored to determine workers eight-hour time weighted average (TWA) exposure to lead. Prior to initiation of certain activities, referred to as "trigger tasks," that are believed to have the capability of creating an excessive lead exposure, such workers must be properly fitted with respiratory protection and protective clothing until personal eight-hour TWA results reveal exposures within acceptable levels. Pertinent examples of trigger tasks are manual demolition, manual paint scraping and power tool removal, and hot work involving lead-containing coatings or materials. Cal/OSHA also has agency pre-start notification requirements and worker training and certification depending on exposure levels. Clearly these requirements will apply to demolition, patch and repair, paint removal, and surface preparation work at this site.
- Cal/EPA: Cal/EPA regulates disposal of lead hazardous waste (22 CCR Division 4.5, Environmental Health Standards for the Management of Hazardous Waste). The Cal/EPA Department of Toxic Substance Control (DTSC) has issued guidance indicating that architectural debris with intact lead paint is normally anticipated to be handled as general construction waste. Since detected LCP was generally in intact/good condition and 97% of paint coatings tested had low to moderate lead content, it is unlikely that most of the demolition debris will be hazardous as a composite sample. However, all lead containing waste streams should be considered potentially lead hazardous pending waste testing. Further, all surface preparation and paint removal wastes must be considered hazardous wastes due to the likelihood of paint chip lead levels exceeding 1,000 total lead or 5 ppm soluble lead.

All construction activities impacting lead must be performed in compliance with the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of lead containing/contaminated materials. Selective and general demolition activities will involve disturbing lead and possibly creating lead hazardous wastes. These construction activities must be controlled to prevent uncontrolled release of lead contamination and for environmental protection.

The Contractor conducting building demolition and any selective demolition controls the means and methods used and therefore should be required by the contract document to ensure that the demolition processes are conducted in a manner that creates the minimum amount of hazardous waste and leaves the site free of lead contamination exceeding regulatory levels.

Universal Wastes and Other Known or Presumed Hazardous Materials

PCB Lighting Ballasts: Znap Fly's visual inspection indicated that fluorescent light fixtures may contain PCB ballasts are present in the building. However, as it is not practically feasible to check each ballast for labeling prior to renovation, Znap Fly recommends that all light fixtures be visually inspected by the Contractor upon removal to determine if they contain PCB's. Electronic ballasts and ballasts marked "No PCB's" or "PCB Free" should be considered non-hazardous and recycled or disposed of accordingly. However, ballasts that are unmarked must be considered PCB-containing and properly handled, collected, stored, transported and recycled or disposed of by an approved recycling or disposal facility in accordance with the requirements of 22 CCR, Section 67426.1 and the contract.

Universal Wastes: All potential and identified mercury-containing light tubes, high intensity lamps, and other universal wastes such as batteries should be removed and recycled or disposed of in accordance with the guidelines established by the California Department of Toxic Substance Control Universal Waste Rule, as stated in 22 CCR Sections 66261.9 and 66273.1 thru 66273.90.

Other Suspect Hazardous Materials: Coolant gasses in air conditioning units must be properly extracted and recycled prior to unit removal and disposal by a qualified hazardous materials disposal contractor using EPA certified Refrigerant Reclaimer for the removal and recycling of the gases.

Limitations

Znap Fly conducted this survey in support of the HVAC Power Upgrade Project for San Mateo Foster City School District. Rooms and areas surveyed were based on access to unoccupied classrooms within the work scope defined in SD 90% CD drawings provided by the District dated 6/4/2021. No excavation or subsurface investigation was conducted to discover buried insulated piping and/or asbestos cement pipes concealed below the surface or interstitial wall spaces. Cement pipe and insulated pipe is assumed below the surface and/or in interstitial wall spaces. No samples were collected in rooms not anticipated to be impacted by this project. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Closing

Znap Fly performed the assessment in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

Conclusions and recommendations made regarding hazardous materials were based upon information obtained from samples and tests collected at specific locations, review of information provided to us, and professional judgment. Recommendations in this report were made based on conditions that Znap Fly reasonably infer to exist between sampling points.

This report is intended as an informational resource for the San Mateo Foster City School District. Any contractor using this document assumes all responsibility for reviewing all available information and for verifying existing site conditions including location and extent of hazardous materials present at specific areas.

Should any significant discrepancy between this report and existing conditions be discovered, the contractor shall notify the project manager, contracting officer, or inspector immediately.

If you have any questions or concerns regarding this document, please contact us at 707-999-5234.

With Gratitude, Znap Fly

Report prepared for the San Mateo Foster City School District by:

nich 1

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Report reviewed for the San Mateo Foster City School District by:

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Attachments

Laboratory Reports with Chain of Custody Record Asbestos Sampling Plan Suspect Asbestos Containing Materials Sample Table Lead Sampling Plan Lead Paint Testing and Sampling Table Znap Fly Personnel Certifications CDPH Lead Hazard Evaluation Report



520 Mission Street South Pasadena, CA 91030 Tel/Fax: (323) 254-9960 / (323) 254-9982 http://www.LATesting.com / pasadenalab@latesting.com

Attention:	Frica Sattar	Phono:	(707) 999-5234
Allention.		Flione.	(101) 333-3234
	Znap Fly	Fax:	
	419 Mason Street	Received Date:	07/21/2021 9:50 AM
	Suite 109	Analysis Date:	07/22/2021
	Vacaville, CA 95688	Collected Date:	07/13/2021
Proiect:	EN210601 / 7 School HVAC Project. Borel Middle School / San Mate	eo Foster Citv School DIs	trict

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

	Non-Asbestos			Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type
A1-20-Sheetrock	Room 20 - White with tan paper, sheetrock	Brown/White Fibrous	10% Cellulose	90% Non-fibrous (Other)	None Detected
322113140-0001	with joint compound	Heterogeneous			
A1-20-Joint Compound	Room 20 - White with tan paper, sheetrock	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0001A	with joint compound	Homogeneous			
A1-15A-Sheetrock 322113140-0002	Room 15A - White with tan paper, sheetrock with joint compound	Brown/White Fibrous Heterogeneous	10% Cellulose	90% Non-fibrous (Other)	None Detected
A1-15A-Caulk	Room 15A - White	White		100% Non-fibrous (Other)	None Detected
322113140-0002A	with tan paper, sheetrock with joint compound	Non-Fibrous Homogeneous		,	
No JC present for analysis.	•				
A1-24-Sheetrock	Room 24 - White with tan paper, sheetrock	Brown/White Fibrous	20% Cellulose	80% Non-fibrous (Other)	None Detected
322113140-0003	with joint compound	Heterogeneous			
A1-24-Joint Compound	Room 24 - White with tan paper, sheetrock	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0003A	with joint compound	Homogeneous			
A2-28-Skim Coat	Room 28 - White, skim	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0004	wood wall	Homogeneous			
A2-28-Caulk	Room 28 - White, skim	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0004A	coat/coating/paint on wood wall	Homogeneous			
No coating present for analysi	S.				
A2-28-Paint	Room 28 - White, skim coat/coating/paint on	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
	wood wall	5			
A2-24-Skim Coat	Room 24 - White, skim	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0005	coat/coating/paint on wood wall	Homogeneous			
A2-24-Paint	Room 24 - White, skim	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0005A	coat/coating/paint on wood wall	Homogeneous			
No coating present for analysi	s.				
A2-33-Skimcoat	Room 33 - White, skim	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0006	coat/coating/paint on wood wall	Homogeneous			
No coating/paint present for a	nalysis				


		Non-Asbestos			Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре	
A2-26-Caulk	Room 26 - White, skim coat/coating/paint on	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
No skim cost proport for apply	wood wall	Homogonoodo				
	5/5.					
A2-26-Paint 322113140-0007A	Room 26 - White, skim coat/coating/paint on wood wall	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
A2-26-Wood	Room 26 - White,	Tan	95% Cellulose	5% Non-fibrous (Other)	None Detected	
322113140-0007B	skim coat/coating/paint on wood wall	Horous Homogeneous				
A2-15A-Skim Coat	Room 15A - White,	Beige		100% Non-fibrous (Other)	None Detected	
322113140-0008	skim coat/coating/paint on wood wall	Non-Fibrous Homogeneous				
No coating present for analysis	S.					
A2-15A-Paint	Room 15A - White, skim	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0008A	coat/coating/paint on wood wall	Homogeneous				
A2-18	Room 18 - White, skim	White Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0009	coat/coating/paint on wood wall	Homogeneous				
A2-31-Skim Coat	Room 31 - White, skim	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0010	coat/coating/paint on wood wall	Homogeneous				
No coating present for analysis	S.					
A2-31-Paint	Room 31 - White, skim	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0010A	coat/coating/paint on wood wall	Homogeneous				
A3-36-Adhesive-Top	Room 36 - White with brown board, temp wallboard	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
A3-36-Temp Wallboard	Room 36 - White with	Brown/White	80% Cellulose	20% Non-fibrous (Other)	None Detected	
322113140-0011A	brown board, temp wallboard	Fibrous Heterogeneous				
A3-38-Adhesive Top	Room 38 - White with brown board, temp	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0012	wallboard	Homogeneous				
A3-38-Temp Wallboard	Room 38 - White with brown board, temp	Brown/White Fibrous	90% Cellulose	10% Non-fibrous (Other)	None Detected	
322113140-0012A	wallboard	Heterogeneous				
B1-28	Wall - Smooth, plaster	White/Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
522113140-0013	Wall Create alester	Helerogeneous		400% Non Ebrown (Other)	Nama Datastad	
322113140-0014	waii - Smooth, plaster	Non-Fibrous Heterogeneous		100% NOTHIDROUS (Other)	NOTIE DELECTED	
B1-20	Wall - Smooth, plaster	White		100% Non-fibrous (Other)	None Detected	
322113140-0015		Homogeneous				



		Non-Asbestos			Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре	
E1-26-Floor Tile 1 322113140-0016	Entry room 26 - Yellow mastics, floor tile 12"x12" blue/white pattern	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-26-Mastic 1	Entry room 26 -	Yellow		100% Non-fibrous (Other)	None Detected	
322113140-0016A	Yellow mastics, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous				
E1-26-Floor Tile 2	Entry room 26 -	White		100% Non-fibrous (Other)	None Detected	
322113140-0016B	Yellow mastics, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous				
E1-26-Mastic 2	Entry room 26 -	Yellow		100% Non-fibrous (Other)	None Detected	
322113140-0016C	tile 12"x12" blue/white pattern	Homogeneous				
E1-29-Floor Tile 1	Entry room 29 -	Blue		100% Non-fibrous (Other)	None Detected	
322113140-0017	Yellow mastics, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous				
E1-29-Mastic 1	Entry room 29 -	Yellow		100% Non-fibrous (Other)	None Detected	
322113140-0017A	tile 12"x12" blue/white pattern	Homogeneous				
E1-29-Floor Tile 2	Entry room 29 -	White		100% Non-fibrous (Other)	None Detected	
322113140-0017B	tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous				
E1-29-Mastic 2	Entry room 29 -	Yellow		100% Non-fibrous (Other)	None Detected	
322113140-0017C	tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous				
E1-24-Floor Tile 1	Entry room 24 -	Blue		100% Non-fibrous (Other)	None Detected	
322113140-0018	tile 12"x12" blue/white pattern	Homogeneous				
E1-24-Mastic 1/Leveling Compound	Entry room 24 - Yellow mastics, floor tile 12"x12" blue/white	Gray/Yellow Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected	
322113140-0018A Unable to separate	pattern					
E1-24-Floor Tile 2	Entry room 24 -	White Non Eibrous		100% Non-fibrous (Other)	None Detected	
322113140-0018B	tile 12"x12" blue/white pattern	Homogeneous				
E1-24-Mastic 2	Entry room 24 - Vellow mastics, floor	Yellow Non Eibrous		100% Non-fibrous (Other)	None Detected	
322113140-0018C	tile 12"x12" blue/white pattern	Homogeneous				
E1-38-Floor Tile	Entry room 38 -	White		100% Non-fibrous (Other)	None Detected	
322113140-0019	tile 12"x12" blue/white pattern	Homogeneous				
No blue floor tile present for an	nalysis.					
E1-38-Mastic	Entry room 38 - Yellow mastics, floor	Yellow Non-Eibrous		100% Non-fibrous (Other)	None Detected	
322113140-0019A	tile 12"x12" blue/white pattern	Homogeneous				



		Non-Asbestos			Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре	
E1-36-Floor Tile	Entry room 36 - Yellow mastics, floor tile 12"x12" blue/white pattern	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
No white floor tile present fo	or analysis.					
E1-36-Mastic 322113140-0020A	Entry room 36 - Yellow mastics, floor tile 12"x12" blue/white pattern	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-34-Floor Tile 1	Entry room 34 - Yellow mastics, floor tile 12"x12" blue/white	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
	pattern	Vellew		100% Non fibrous (Other)	Nana Datastad	
322113140-0021A	Yellow mastics, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			None Delected	
E1-34-Floor Tile 2 322113140-0021B	Entry room 34 - Yellow mastics, floor tile 12"x12" blue/white pattern	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-34-Mastic 2 322113140-0021C	Entry room 34 - Yellow mastics, floor tile 12"x12" blue/white pattern	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-15A-Floor Tile 1 322113140-0022	Entry room 15A - Yellow mastics, floor tile 12"x12" blue/white pattern	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-15A-Mastic 1 322113140-0022A	Entry room 15A - Yellow mastics, floor tile 12"x12" blue/white pattern	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-15A-Floor Tile 2 322113140-0022B	Entry room 15A - Yellow mastics, floor tile 12"x12" blue/white pattern	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-15A-Mastic 2 322113140-0022C	Entry room 15A - Yellow mastics, floor tile 12"x12" blue/white pattern	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-18-Floor Tile 1 322113140-0023	Entry room 18 - Yellow mastics, floor tile 12"x12" blue/white pattern	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-18-Mastic 1 322113140-0023A	Entry room 18 - Yellow mastics, floor tile 12"x12" blue/white pattern	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-18-Floor Tile 2 322113140-0023B	Entry room 18 - Yellow mastics, floor tile 12"x12" blue/white pattern	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1-18-Mastic 2 322113140-0023C	Entry room 18 - Yellow mastics, floor tile 12"x12" blue/white pattern	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	



			Asbestos		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
E1-20-Floor Tile 1	Entry room 20 - Yellow mastics, floor tile 12"x12" blue/white	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
	pattern				
E1-20-Mastic 1	Entry room 20 - Yellow mastics, floor	Yellow Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0024A	tile 12"x12" blue/white pattern	Homogeneous			
E1-20-Floor Tile 2	Entry room 20 - Vellow mastics_floor	Blue Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0024B	tile 12"x12" blue/white pattern	Homogeneous			
E1-20-Mastic 2	Entry room 20 -	Yellow Non-Eibrous		100% Non-fibrous (Other)	None Detected
322113140-0024C	tile 12"x12" blue/white pattern	Homogeneous			
E2-33-Vinyl Flooring	Near HVAC unit room 33 - Yellow mastics,	Gray Fibrous	10% Synthetic	90% Non-fibrous (Other)	None Detected
322113140-0025	gray faux ood	Heterogeneous			
E2-33-Mastic	Near HVAC unit room 33 - Yellow mastics,	Yellow Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0025A	gray faux ood	Homogeneous			
E2-33-Cementitious	Near HVAC unit room	Gray		100% Non-fibrous (Other)	None Detected
Material	33 - Yellow mastics, gray faux ood	Non-Fibrous Homogeneous			
322113140-0025B					
E2-28-Vinyl Flooring	Near HVAC unit room 28 - Yellow mastics,	Gray Non-Fibrous	8% Glass	92% Non-fibrous (Other)	None Detected
322113140-0026	gray faux ood	Homogeneous			
E2-28-Mastic/Leveling Compound	Near HVAC unit room 28 - Yellow mastics, grav faux ood	Gray/Yellow Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
322113140-0026A Unable to separate	g,				
F2-24-Cove Base	Room 24 - White mastic, covebase 4"	Gray Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0027	gray	Homogeneous			
F2-24-Mastic/Paint	Room 24 - White mastic, covebase 4"	Blue/Green/Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0027A Unable to separate	gray	Heterogeneous			
F2-18-Cove Base	Room 18 - White mastic, covebase 4"	Blue Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0028	gray	Homogeneous			
F2-18-Mastic/Paint	Room 18 - White mastic, covebase 4"	White/Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0028A	gray	Heterogeneous			
Unable to separate					
F2-20-Cove Base	Room 20 - White mastic, covebase 4"	Gray Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0029	gray	Homogeneous			
F2-20-Mastic	Room 20 - White mastic, covebase 4"	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0029A	gray	Homogeneous			
F2-15A-Cove Base	Room 15A - White mastic, covebase 4"	Blue Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113140-0030	gray	Homogeneous			
No mastic present for analysis.					

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		Non-Asbestos			Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Type	
F2-15A-Joint Compound	Room 15A - White mastic, covebase 4"	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0030A	gray	Homogeneous				
F2-31-Cove Base	Room 31 - White mastic, covebase 4"	Gray Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0031	gray	Homogeneous				
F2-31-Mastic/Paint	Room 31 - White mastic, covebase 4"	Yellow/Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0031A Unable to separate	gray	Heterogeneous				
F2-26-Cove Base	Room 26 - White mastic, covebase 4"	Gray Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0032	gray	Homogeneous				
F2-26-Mastic	Room 26 - White mastic, covebase 4"	White Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0032A		Homogeneous				
F2-34-Cove Base	Room 34 - White mastic, covebase 4" grav	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E2.34 Mastic	Boom 31 - White	Vellow		100% Non-fibrous (Other)	None Detected	
322113140-0033A	mastic, covebase 4" gray	Non-Fibrous Homogeneous			None Delected	
F2-28-Mastic	Room 28 - White mastic, covebase 4"	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0034 No cove base present for analy	black vsis.	Homogeneous				
F2-28-Caulk Like	Room 28 - White	Clear		100% Non-fibrous (Other)	None Detected	
322113140-0034A	mastic, covebase 4" black	Non-Fibrous Homogeneous		· · · · ·		
F2-38-Cove Base	Room 38 - White mastic, covebase 4"	Black Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0035	black	Homogeneous				
F2-38-Mastic	Room 38 - White mastic, covebase 4"	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0035A	DIACK	Homogeneous				
F2-36-Cove Base	Room 36 - White mastic, covebase 4" black	Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E2 26 Mastia	Boom 36 - White	Beige		100% Non-fibrous (Other)	None Detected	
322113140-0036A	mastic, covebase 4" black	Non-Fibrous Homogeneous			None Deletted	
F2-33-Cove Base	Room 33 - White mastic, covebase 4"	Black Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0037	black	Homogeneous				
F2-33-Mastic	Room 33 - White mastic, covebase 4"	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113140-0037A	black	Homogeneous				
11-38	Room 38 - 2'x4' whtie pinhole pattern,	White/Beige Fibrous	40% Cellulose 20% Min. Wool	20% Perlite 20% Non-fibrous (Other)	None Detected	
322113140-0038	acoustical ceiling panel	Heterogeneous				
11-28	Room 28 - 2'x4' whtie pinhole pattern,	Beige Fibrous	40% Cellulose 20% Min. Wool	30% Perlite 10% Non-fibrous (Other)	None Detected	
322113140-0039	acoustical ceiling panel	Homogeneous				



		Non-Asbestos			Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре	
I1-15A	Room 15A - 2'x4'	Brown/White	40% Cellulose	20% Perlite	None Detected	
	whtie pinhole pattern,	Fibrous	20% Min. Wool	20% Non-fibrous (Other)		
322113140-0040	acoustical ceiling panel	Heterogeneous				
l1-18	Room 18	White/Beige	50% Cellulose	40% Perlite	None Detected	
322113140-0041		Fibrous		10% Non-fibrous (Other)		
11 21	Room 31	White/Beige		30% Perlite	None Detected	
11-51	1001131	Fibrous	10% Min. Wool	20% Non-fibrous (Other)	None Detected	
322113140-0042		Heterogeneous		, , , , , , , , , , , , , , , , , , ,		
11-26	Room 26	Brown/White	95% Cellulose	5% Non-fibrous (Other)	None Detected	
322113140-0043		Heterogeneous				
11-24	Room 24	White/Beige	50% Cellulose	40% Perlite	None Detected	
		Fibrous		10% Non-fibrous (Other)		
322113140-0044		Heterogeneous				
11-35	Room 36	White/Beige	40% Cellulose	20% Perlite 20% Non fibrous (Other)	None Detected	
322113140-0045		Heterogeneous	2070 101111. 00001			
11-34	Room 34	Brown/White	40% Cellulose	20% Perlite	None Detected	
		Fibrous	20% Min. Wool	20% Non-fibrous (Other)		
322113140-0046		Heterogeneous				
J1-15A	Room 15A	Brown/Beige	80% Cellulose	20% Non-fibrous (Other)	None Detected	
322113140-0047		Heterogeneous				
.11-18	Room 8	Brown/Beige	80% Cellulose	20% Non-fibrous (Other)	None Detected	
		Fibrous		()		
322113140-0048		Heterogeneous				
J1-26	Room 26	Brown/White	95% Cellulose	5% Non-fibrous (Other)	None Detected	
322113140-0049		Fibrous Heterogeneous				
11-28	Room 28	Brown/Beige	80% Cellulose	20% Non-fibrous (Other)	None Detected	
01-20	1001120	Fibrous			None Deteoled	
322113140-0050		Heterogeneous				
J1-34	Room 4	Brown/Beige	80% Cellulose	20% Non-fibrous (Other)	None Detected	
322113140-0051		Fibrous Heterogeneous				
11_33	Room 33	Brown/White	95% Cellulose	5% Non-fibrous (Other)	None Detected	
01-00	Koom oo	Fibrous			None Deteoled	
322113140-0052		Heterogeneous				
N1-24	At conduit box, room	White		100% Non-fibrous (Other)	None Detected	
322113140-0053	24	Non-Fibrous				
NI 150	At conduit box, room	White		100% Non fibrous (Other)	None Detected	
NI-13A	15A	Non-Fibrous			None Delected	
322113140-0054		Homogeneous				
N1-18	At conduit box, room	White		100% Non-fibrous (Other)	None Detected	
222112140 0055	18	Non-Fibrous				
NI1 06	At conduit box, room	White		100% Non fibrous (Othor)	None Detected	
N1-20	6	Non-Fibrous		100% Non-librous (Other)	None Delected	
322113140-0056	-	Homogeneous				
N1-28	At conduit box, room	White		100% Non-fibrous (Other)	None Detected	
222112110 0057	28	Non-Fibrous				
522TT3T40-0057	At conduit have no see	nomogeneous		100% Non Staring (Other)	Nana Data ata d	
IN 1-33	AL CONDULT DOX, FOOM	Deige Non-Fibrous		100% NOT-TIDFOUS (Other)	None Delected	
322113140-0058		Homogeneous				

Initial report from: 07/22/2021 14:30:11



			Non-Asbe	Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
N1-31		White		100% Non-fibrous (Other)	None Detected
		Non-Fibrous			
322113140-0059		Homogeneous			
N1-36		White		100% Non-fibrous (Other)	None Detected
322113140-0060		Non-Fibrous Homogeneous			
N2 20		Poigo		100% Non fibrous (Other)	None Detected
INZ-20		Non-Fibrous		100% Non-horous (Other)	None Delected
322113140-0061		Homogeneous			
N2-18		White/Beige		100% Non-fibrous (Other)	None Detected
		Non-Fibrous			
322113140-0062		Homogeneous			
N2-28		White/Beige		100% Non-fibrous (Other)	None Detected
322113140-0063		Homogeneous			
N2-34		Beige		100% Non-fibrous (Other)	None Detected
		Non-Fibrous			
322113140-0064		Homogeneous			
N2-31		Beige		100% Non-fibrous (Other)	None Detected
322113140-0065		Non-Fibrous			
NO 00		Mbite		100% Non fibrous (Other)	Nana Datastad
NZ-30		Non-Fibrous		100% Non-librous (Other)	None Detected
322113140-0066		Homogeneous			
N2-15A		Beige		100% Non-fibrous (Other)	None Detected
		Non-Fibrous			
322113140-0067		Homogeneous			
O1-31-Sealant		White		100% Non-fibrous (Other)	None Detected
322113140-0068		Non-Fibrous Homogeneous			
No window putty present	t for analysis.	hemegeneede			
01-34		Grav/White		98% Non-fibrous (Other)	2% Chrvsotile
		Non-Fibrous			
322113140-0069		Homogeneous			
O2-33		Clear		100% Non-fibrous (Other)	None Detected
322113140-0070		Non-Fibrous			
01.26 Correct		Various	00% Synthetic	10% Non fibrous (Other)	None Detected
Q1-26-Carpet		Fibrous	90% Synthetic	10% Non-fibrous (Other)	None Delected
322113140-0071		Homogeneous			
Q1-26-Mastic/Glue		White/Yellow		100% Non-fibrous (Other)	None Detected
		Non-Fibrous			
322113140-0071A		Homogeneous			
Q1-31-Mastic		Yellow	2% Cellulose	96% Non-fibrous (Other)	None Detected
322113140-0072		Homogeneous	2% Synthetic		
No glue present for analy	ysis.	······g-····			
Q1-18-Carpet		Various	95% Synthetic	5% Non-fibrous (Other)	None Detected
		Fibrous	,		
322113140-0073		Homogeneous			
Q1-18-Mastic/Glue		White/Yellow		100% Non-fibrous (Other)	None Detected
322113140-00734		Non-Fibrous			
01 154 Corpot		Blue	00% Synthatia	10% Non fibrous (Other)	None Detected
ar-ion-carper		Fibrous			
322113140-0074		Homogeneous			



			Non-Asbe	stos	Asbestos		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре		
Q1-15A-Mastic/Glue		White/Yellow		100% Non-fibrous (Other)	None Detected		
		Non-Fibrous					
322113140-0074A		Homogeneous					
Q1-20-Carpet		Blue Fibrous	90% Synthetic	10% Non-fibrous (Other)	None Detected		
322113140-0075		Heterogeneous					
01-20-Mastic/Glue		Yellow/Beige		100% Non-fibrous (Other)	None Detected		
		Non-Fibrous					
322113140-0075A		Homogeneous					
Q1-24-Carpet		Various	95% Synthetic	5% Non-fibrous (Other)	None Detected		
·		Fibrous					
322113140-0076		Homogeneous					
Q1-24-Mastic/Glue		White/Yellow		100% Non-fibrous (Other)	None Detected		
		Non-Fibrous					
322113140-0076A		Homogeneous					
Q1-29-Carpet		Blue	90% Synthetic	10% Non-fibrous (Other)	None Detected		
322113140-0077		Homogeneous					
		W/hite/Yellow		100% Non fibrous (Other)	None Detected		
Q1-29-Mastic/Glue		Non-Fibrous			None Delected		
322113140-0077A		Homogeneous					
Q1-36-Mastic		Yellow		100% Non-fibrous (Other)	None Detected		
		Non-Fibrous					
322113140-0078		Homogeneous					
No glue present for analysis.							
Q1-34-Carpet		Various	95% Synthetic	5% Non-fibrous (Other)	None Detected		
		Fibrous					
322113140-0079		Homogeneous					
Q1-34-Mastic/Glue		White/Yellow		100% Non-fibrous (Other)	None Detected		
322113110-00704		Non-Fibrous					
N/4 07		Craw/Tan/Daina		1000/ Nam Shrawa (Otham)	Nama Data ata d		
VV1-37		Non-Fibrous		100% Non-librous (Other)	None Detected		
322113140-0080		Homogeneous					
		Tan		100% Non-fibrous (Other)	None Detected		
WT 00		Non-Fibrous					
322113140-0081		Homogeneous					
W2-ext1		Gray/Beige		100% Non-fibrous (Other)	None Detected		
		Non-Fibrous					
322113140-0082		Homogeneous					
W2-ext2		White/Beige		100% Non-fibrous (Other)	None Detected		
202112110 0082		Non-Fibrous					
322113140-0083		Homogeneous					
W2-ext3		White/Beige		100% Non-fibrous (Other)	None Detected		
322113140-0084		Homogeneous					
W/2-ext/		Grav/Beige		100% Non-fibrous (Other)	None Detected		
WZ-6X14		Non-Fibrous			None Delected		
322113140-0085		Homogeneous					
W2-ext5		White/Beige		100% Non-fibrous (Other)	None Detected		
		Non-Fibrous		· · ·			
322113140-0086		Homogeneous					
W2-ext6		White/Beige		100% Non-fibrous (Other)	None Detected		
		Non-Fibrous					
322113140-0087		Homogeneous					



		Non-A		Asbestos	Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
W2-ext7		Gray		100% Non-fibrous (Other)	None Detected
		Non-Fibrous			
322113140-0088		Homogeneous			

Analyst(s)

Kieu-anh Pham Duong (97) Rosa Mendoza (47)

Jerry Drapala Ph.D, Laboratory Manager or Other Approved Signatory

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Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 07/22/2021 14:30:11

ZNAP 🖧 FLY

#322113140

Asbestos Bulk Sample Log

Client: San Mateo Foster City School District

Project: 7 School HVAC project, Borel Middle School

Sample Date: 7/13/21 Project #: EN210601

Collected By: Erica Sattar

HOMO SAMPLE NO.		LE NO.	MATERIAL	DESCRIPTION	LOCATION
ID	ID NO.				
А	A1	20	Sheetrock with joint compound	White with tan paper	Room 20
A	A1	15A	Sheetrock with joint compound	White with tan paper	Room 15A
A	A1	24	Sheetrock with joint compound	White with tan paper	Room 24
А	A2	28	Skim coat/coating/paint on wood wall	White	Room 28
A	A2	24	Skim coat/coating/paint on wood wall	White	Room 24
A	A2	33	Skim coat/coating/paint on wood wall	White	Room 33
A	A2	26	Skim coat/coating/paint on wood wall	White	Room 26
A	A2	15A	Skim coat/coating/paint on wood wall	White	Room 15A
А	A2	18	Skim coat/coating/paint on wood wall	White	Room 18
A	A2	31	Skim coat/coating/paint on wood wall	White	Room 31
А	A3	36	Temp wallboard	White with brown board	Room 36
А	A3	38	Temp wallboard	White with brown board	Room 38
В	B1	28	Plaster	Smooth	Wall
В	B1	29	Plaster	Smooth	Wall
В	B1	20	Plaster	Smooth	Wall
E	E1	26	Floor tile 12″ x 12″ Blue/white pattern	Yellow mastics	Entry room 26
E	E1	29	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry room 29
E	E1	24	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry room 24
E	E1	38	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry room 38
E	E1	36	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry room 36
Analyti	cal Me	thod: Pl	LM	PLEASE SEND BY EMAIL:	erica@znapfly.com

72 hour TAT

CHAIN OF CUSTODY:

DATE&TIME

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DATE&TIME

Signatures

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ZNAP 🖧 FLY

Client: San Mateo Foster City School District	Sample Date 7/13/21	
Project: 7 School HVAC project, Borel Middle School	Project #: EN210601	
	Collected By: Erica Sattar	

SAMPLE NO.		MATERIAL	DESCRIPTION	LOCATION
ID	NO.			
E1	34	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry room 34
E1	15A	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry room 15A
E1	18	Floor tile 12″ x 12″ Blue/white pattern	Yellow mastics	Entry room 18
E1	20	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry room 20
E2	33	Gray faux wood vinyl flooring	Yellow mastics	Near HVAC unit room 33
E2	28	Gray faux wood vinyl flooring	Yellow mastics	Near HVAC unit room 28
F2	24	Covebase 4″ gray	White mastic	Room 24
F2	18	Covebase 4″ gray	White mastic	Room 18
F2	20	Covebase 4″ gray	White mastic	Room 20
F2	15A	Covebase 4" gray	White mastic	Room 15A
F2	31	Covebase 4" gray	White mastic	Room 31
F2	26	Covebase 4″ gray	White mastic	Room 26
F2	34	Covebase 4″ gray	White mastic	Room 34
F3	28	Covebase 4" black	White mastic	Room 28
F3	38	Covebase 4" black	White mastic	Room 38
F3	36	Covebase 4" black	White mastic	Room 36
F3	33	Covebase 4" black	White mastic	Room 33
11	38	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 38
11	28	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 28
11	15A	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 15A
cal Me	thod: Pl	M	PLEASE SEND BY EMAI	L: erica@znapfly.com
	SAMP ID E1 E2 F2 F2 F2 F2 F3 F3 I1 I1 I1	SAMPLE NO. ID NO. E1 34 E1 15A E1 15A E1 20 E1 20 E2 33 E2 28 F2 24 F2 20 F2 31 F2 31 F2 34 F2 34 F2 31 F2 34 F2 34 F3 38 F3 36 F3 33 I1 38 I1 28 I1 53	SAMPLE NO.MATERIALIDNO.E134Floor tile 12" x 12" Blue/white patternE115AFloor tile 12" x 12" Blue/white patternE118Floor tile 12" x 12" Blue/white patternE120Floor tile 12" x 12" Blue/white patternE233Gray faux wood vinyl flooringE228Gray faux wood vinyl flooringF224Covebase 4" grayF218Covebase 4" grayF215ACovebase 4" grayF231Covebase 4" grayF234Covebase 4" grayF338Covebase 4" blackF336Covebase 4" blackF333Covebase 4" blackF334Acoustical ceiling panel1115AAcoustical ceiling panel1115AAcoustical ceiling panel	SAMPLE NO. MATERIAL DESCRIPTION ID NO. Floor tile 12" x 12" Blue/white pattern Yellow mastics E1 15A Floor tile 12" x 12" Blue/white pattern Yellow mastics E1 15A Floor tile 12" x 12" Blue/white pattern Yellow mastics E1 18 Floor tile 12" x 12" Blue/white pattern Yellow mastics E1 20 Floor tile 12" x 12" Blue/white pattern Yellow mastics E2 33 Gray faux wood vinyl flooring Yellow mastics E2 28 Gray faux wood vinyl flooring Yellow mastics F2 24 Covebase 4" gray White mastic F2 18 Covebase 4" gray White mastic F2 15A Covebase 4" gray White mastic F2 15A Covebase 4" gray White mastic F2 31 Covebase 4" gray White mastic F2 26 Covebase 4" gray White mastic F2 34 Covebase 4" gray White mastic F3 28 Covebase 4" black White mastic F3 33

72 hour TAT

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CHAIN OF CUSTODY: Signatures

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#322113140

ZNAP 💐 FLY

Client: San Mateo Foster City School District Project: 7 School HVAC project, Borel Middle School Sample Date: 7/13/21 Project #: EN210601

Collected By: Erica Sattar

номо	SAMP	LE NO.	MATERIAL DESCRIPTION		LOCATION
ID	ID	NO.			
ł	11	18	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 18
ì	11	31	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 31
1	11	26	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 26
ľ	11	24	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 24
1	11	36	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 36
1	11	34	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 34
J	J1	15A	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 15A
J	J1	18	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 18
J	J1	26	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 26
J	J1	28	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 28
J	J1	34	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 34
J	J1	33	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 33
N	N1	24	Sealant	White/gray	at conduit box, Room 24
N	N1	15A	Sealant	White/gray	at conduit box, Room 15A
N	N1	18	Sealant	White/gray	at conduit box, Room 18
N	N1	26	Sealant	White/gray	at conduit box, Room 26
N	N1	28	Sealant	White/gray	at conduit box, Room 28
N	N1	33	Sealant	White/gray	at conduit box, Room 33
N	N1	31	Sealant	White/gray	at conduit box, Room 31
N	N1	36	Sealant	White/gray	at conduit box, Room 36

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OrderID: 322113140

#322113140

Asbestos Bulk Sample Log

ZNAP 🖧 FLY

Client: San Mateo Foster City School District

Project: 7 School HVAC project, Borel Middle School

Sample Date: 7/13/21 Project #: EN210601

Collected By: Erica Sattar

HOMO SAMPLE NO		MATERIAL	DESCRIPTION	LOCATION	
ID	NO.				
N2	20	Sealant	White with tan paint	At HVAC unit, Room 20	
N2	18	Sealant	White with tan paint	At HVAC unit, Room 18	
N2	28	Sealant	White with tan paint	At HVAC unit, Room 28	
N2	34	Sealant	White with tan paint	At HVAC unit, Room 34	
N2	31	Sealant	White with tan paint	At HVAC unit, Room 31	
N2	36	Sealant	White with tan paint	At HVAC unit, Room 36	
N2	15A	Sealant	White with tan paint	At HVAC unit, Room 15A	
01	31	Window putty/sealant	White	At window HVAC, Room 31	
01	34	Window putty	whtie	At window HVAC, Room 34	
02	33	Window sealant	Clear	At window HVAC, Room 33	
Q1	26	Carpet mastic/glue	Yellow associated with blue carpet	Room 26	
Q1	31	Carpet mastic/glue	Yellow associated with blue carpet	Room 31	
Q1	18	Carpet mastic/glue	Yellow associated with blue carpet	Room 18	
Q1	15A	Carpet mastic/glue	Yellow associated with blue carpet	Room 15A	
Q1	20	Carpet mastic/glue	Yellow associated with blue carpet	Room 20	
Q1	24	Carpet mastic/glue	Yellow associated with blue carpet	Room 24	
Q1	29	Carpet mastic/glue	Yellow associated with blue carpet	Room 29	
Q1	36	Carpet mastic/glue	Yellow associated with blue carpet	Room 36	
Q1	34	Carpet mastic/glue	Yellow associated with blue carpet	Room 34	
W1	37	Stucco	Exterior building wall	Room 37	
cal Met	hod: PLM		PLEASE SEND BY EMAIL: 6	erica@znapfly.com	
	SAMPI ID N2 Q1 Q1	SAMPLE NO. ID NO. N2 20 N2 18 N2 28 N2 34 N2 36 N2 15A O1 31 O1 34 O2 33 Q1 26 Q1 31 Q1 15A Q1 15A Q1 26 Q1 31 Q1 26 Q1 15A Q1 20 Q1 20 Q1 24 Q1 29 Q1 36 Q1 34 W1 37	SAMPLE NO.MATERIALIDNO.N220SealantN218SealantN218SealantN228SealantN234SealantN231SealantN236SealantN236SealantN215ASealantO131Window putty/sealantO134Window puttyO233Window sealantQ126Carpet mastic/glueQ118Carpet mastic/glueQ115ACarpet mastic/glueQ120Carpet mastic/glueQ124Carpet mastic/glueQ136Carpet mastic/glueQ134Carpet	SAMPLE NO.MATERIALDESCRIPTIONIDNO.N220SealantWhite with tan paintN218SealantWhite with tan paintN218SealantWhite with tan paintN228SealantWhite with tan paintN234SealantWhite with tan paintN234SealantWhite with tan paintN231SealantWhite with tan paintN236SealantWhite with tan paintN215ASealantWhite with tan paintO131Window putty/sealantWhiteO134Window puttywhiteO233Window sealantClearQ126Carpet mastic/glueYellow associated with blue carpetQ118Carpet mastic/glueYellow associated with blue carpetQ113Carpet mastic/glueYellow associated with blue carpetQ120Carpet mastic/glueYellow associated with blue carpetQ124Carpet mastic/glueYellow associated with blue carpetQ134Carpet mastic/glueYellow associated with blue carpetQ131Carpet mastic/glueYellow associated with blue carpetQ134Carpet mastic/glueYellow associated with blue carpetQ134Carpet mastic/glueYellow associated with blue carpetQ134Carpet mastic/glueYellow associated with blue carpetQ136Carpet m	

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Signatures

DATE&TIME

CHAIN OF CUSTODY: Signatures

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OrderID: 322113140

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#322113140

Asbestos Bulk Sample Log

Client:	San Mateo Foster City School District	Sample Date:	7/13/21	
Project:	7 School HVAC project, Borel Middle School	Project #:	EN210601	
The second		Collected By:	Erica Sattar	

номо	SAMP	LE NO.	MATERIAL	DESCRIPTION	LOCATION
ID	ID	NO.			
W	W1	39	Stucco	Exterior building wall	Exterior at Room 39
W	W2	ext1	Stucco	Exterior building wall	Exterior building wall
W	W2	ext2	Stucco	Exterior building wall	Exterior building wall
W	W2	ext3	Stucco	Exterior building wall	Exterior building wall
W	W2	ext4	Stucco	Exterior building wall	Exterior building wall
W	W2	ext5	Stucco	Exterior building wall	Exterior building wall
W	W2	ext6	Stucco	Exterior building wall	Exterior building wall
W	W2	ext7	Stucco	Exterior building wall	Exterior building wall
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Analyt	ical Me	thod: PLM		PLEASE SEND BY EMA	IL: erica@znapfly.com
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DATE&TIME

CHAIN OF CUSTODY: Signatures

DATE&TIME

4 7/19/21

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2 15 FX 7/19/21

Asbestos Sampling Plan

W2-ext5 W0MENS MECH SUPPLY CLASSSROOM SEE ROOM 195 FOR SCOPE, SM. BOY'S GIRLIS BOY'S GIRLIS CLASSSROOM SEE ROOM 195 FOR SCOPE, SM. F2-15a CLASSSROOM F2-15a CLASSSROOM CLASSSR	SUPPLY IGA SUPPLY ITA	W2-ext7 A2-128 11-18 J1-18 U1-18 U1-18 CLASSSROOM 17 17 17 17 17 18 19 SEE ROOM 27 FOR SCOPE, SM. E1-18/F2-18 E1-18/F2-18
1 DEMOLITION FLOOR PLAN - BLDG D		
UDF F2-20 N1-20 F2-20 B1-20 Q1-20 A1-20 N2-20 CLASSROOM Z1 SEE ROOM IS FOR SCOPE, SM. SEE ROOM IS FOR SCOPE, SM. SEE ROOM IS FOR SCOPE, SM. E1-20 E1-20 E1-20 E1-20 E1-20 E1-20	CLASSROOM 22 2001 39 FOR SCOPE, INL. BEE	W2-ext6 N1-24 F2-24 Q1-24 Q1-24 A2-24 CLASSROOM Z2 Z4 SERVING SERVING SERVING SERVING NTOR BCORE SM. E1-24 W2-ext2
2) DEMOLITION FLOOR PLAN - BLDG A		N
UP A2-26/N1-26 I1-26 J1-26 J1-26 CLASSROOM 25 SEE ROOM 31 FOR SCOPE, SM. B8 E1-26	CLASSROOM 27 DOM 28 FGR BCOPE, SM.	W2-ext2 B1-28 11-28 J-28 CLASSROOM 20 20
3) DEMOLITION FLOOR PLAN - BLDG B SCALE: 18"+ 1"-9"		
CLASSROOM CLASSROOM	сыляяроом аз А2-33 все поов ни гов соогь эр, 11-33 N1-33 О2-33 Е2-33 Г2-33	W2-ext1 E1-34 J1-34 I1-34 CLASSROOM S CLASSROOM CLASSROOM S CLASSROOM CLASSROOM CLASSROOM S CLASSROOM CLASSC
(4) DEMOLITION FLOOR PLAN - BLDG C		N
Legend		
 Sample IDs were created using the homogenous material letter/number pattern with the room number. For ease on this 	Project	HVAC and Power Upgrade Project Borel Middle School
map, the room numbers were not added above. Example: A2-101 on lab data/coc is shown on map as A2 with a	ZF Project #	EN210601
 Ine to room 101. Green highlight indicates asbestos detected or >1% asbestos detected or assumed present. 		



Suspect Asbestos Containing Materials Sample Table

Sam	ple ID	Material Description		Sample Location	Results (% asbestos detected)
A1	20	Sheetrock with joint compound	White with tan paper	Room 20	ND
A1	15A	Sheetrock with joint compound	White with tan paper	Room 15A	ND
A1	24	Sheetrock with joint compound	White with tan paper	Room 24	ND
A2	28	Skim coat/coating/paint on wood wall	White	Room 28	ND
A2	24	Skim coat/coating/paint on wood wall	White	Room 24	ND
A2	33	Skim coat/coating/paint on wood wall	White	Room 33	ND
A2	26	Skim coat/coating/paint on wood wall	White	Room 26	ND
A2	15A	Skim coat/coating/paint on wood wall	White	Room 15A	ND
A2	18	Skim coat/coating/paint on wood wall	White	Room 18	ND
A2	31	Skim coat/coating/paint on wood wall	White	Room 31	ND
A3	36	Temp wallboard	White with brown board	Room 36	ND
A3	38	Temp wallboard	White with brown board	Room 38	ND
B1	28	Plaster	Smooth	Wall, Rm 28	ND
B1	29	Plaster	Smooth	Wall, Rm 29	ND
B1	20	Plaster	Smooth	Wall, Rm 20	ND
E1	26	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry, Rm 26	ND
E1	29	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry, Rm 29	ND
E1	24	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry, Rm 24	ND
E1	38	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry, Rm 38	ND
E1	36	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry, Rm 36	ND
E1	34	Floor tile 12″ x 12″ Blue/white pattern	Yellow mastics	Entry, Rm 34	ND
E1	15A	Floor tile 12″ x 12″ Blue/white pattern	Yellow mastics	Entry, Rm 15A	ND
E1	18	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry, Rm 18	ND
E1	20	Floor tile 12" x 12" Blue/white pattern	Yellow mastics	Entry, Rm 20	ND
E2	33	Gray faux wood vinyl flooring	Yellow mastics	Near HVAC unit Rm 33	ND
E1	28	Gray faux wood vinyl flooring	Yellow mastics	Near HVAC unit Rm 28	ND
F2	24	Covebase 4″ gray	White mastic	Room 24	ND
F2	18	Covebase 4″ gray	White mastic	Room 18	ND
F2	20	Covebase 4″ gray	White mastic	Room 20	ND
F2	15A	Covebase 4" gray	White mastic	Room 15A	ND
F2	31	Covebase 4″ gray	White mastic	Room 31	ND
F2	26	Covebase 4" gray	White mastic	Room 26	ND
F2	34	Covebase 4" gray	White mastic	Room 34	ND
F3	28	Covebase 4" black	White mastic	Room 28	ND
F3	38	Covebase 4" black	White mastic	Room 38	ND
F3	36	Covebase 4" black	White mastic	Room 36	ND
F3	33	Covebase 4" black	White mastic	Room 33	ND
1	38	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 38	ND
1	28	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 28	ND
11	15A	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 15A	ND
11	18	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 18	ND
11	31	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 31	ND
11	26	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 26	ND

Sam	ple ID	Material	Description	Sample Location	Results (% asbestos detected)
11	24	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 24	ND
11	36	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 36	ND
11	34	Acoustical ceiling panel	2'x4' white pinhole pattern	Room 34	ND
J1	15A	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 15A	ND
J1	18	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 18	ND
J1	26	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 26	ND
J1	28	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 28	ND
J1	34	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 34	ND
J1	33	Acoustical ceiling tile	12" x 12" white pinhole pattern	Room 33	ND
N1	24	Sealant	White/gray	At conduit box, Rm 24	ND
N1	15A	Sealant	White/gray	At conduit box, Rm 15A	ND
N1	18	Sealant	White/gray	At conduit box, Rm 18	ND
N1	26	Sealant	White/gray	At conduit box, Rm 26	ND
N1	28	Sealant	White/gray	At conduit box, Rm 28	ND
N1	33	Sealant	White/gray	At conduit box, Rm 33	ND
N1	31	Sealant	White/gray	At conduit box, Rm 31	ND
N1	36	Sealant	White/gray	At conduit box, Rm 36	ND
N2	20	Sealant	White with tan paint	At HVAC unit, Rm 20	ND
N2	18	Sealant	White with tan paint	At HVAC unit, Rm 18	ND
N2	28	Sealant	White with tan paint	At HVAC unit, Rm 28	ND
N2	34	Sealant	White with tan paint	At HVAC unit, Rm 34	ND
N2	31	Sealant	White with tan paint	At HVAC unit, Rm 31	ND
N2	36	Sealant	White with tan paint	At HVAC unit, Rm 36	ND
N2	15A	Sealant	White with tan paint	At HVAC unit, Rm 15A	ND
01	31	Window putty/sealant	White	At window HVAC, Rm 31	ND
<mark>01</mark>	<mark>34</mark>	Window putty/sealant	White	At window HVAC, Rm 34	<mark>2%</mark>
O2	33	Window putty/sealant	Clear	At window HVAC, Rm 34	ND
Q1	26	Carpet mastic/glue	Yellow associated with blue carpet	Room 26	ND
Q1	31	Carpet mastic/glue	Yellow associated with blue carpet	Room 31	ND
Q1	18	Carpet mastic/glue	Yellow associated with blue carpet	Room 18	ND
Q1	15A	Carpet mastic/glue	Yellow associated with blue carpet	Room 15A	ND
Q1	20	Carpet mastic/glue	Yellow associated with blue carpet	Room 20	ND
Q1	24	Carpet mastic/glue	Yellow associated with blue carpet	Room 24	ND
Q1	29	Carpet mastic/glue	Yellow associated with blue carpet	Room 29	ND
Q1	36	Carpet mastic/glue	Yellow associated with blue carpet	Room 36	ND
Q1	34	Carpet mastic/glue	Yellow associated with blue carpet	Room 34	ND

Sam	ple ID	Material	Description	Sample Location	Results (% asbestos detected)	
W1	37	Stucco	Exterior building wall near HVAC	Exterior wall at Rm 37	ND	
W1	39	Stucco	Exterior building wall near HVAC	Exterior wall at Rm 39	ND	
W2	Ext1	Stucco	Exterior building wall	Exterior building wall	ND	
W2	ext2	Stucco	Exterior building wall	Exterior building wall	ND	
W2	ext3	Stucco	Exterior building wall	Exterior building wall	ND	
W2	ext4	Stucco	Exterior building wall	Exterior building wall	ND	
W2	ext5	Stucco	Exterior building wall	Exterior building wall	ND	
W2	ext6	Stucco	Exterior building wall	Exterior building wall	ND	
W2	ext7	Stucco	Exterior building wall	Exterior building wall	ND	
1. NE 2. All 3. *N	 ND = No asbestos detected by laboratory analysis. "None Detected". All reported asbestos is chrysotile unless noted otherwise. *Material sampled in previous survey. Report and data is attached in this report. 					

3. *Material sampled in previous survey. Report and data is attached in this report.

Lead Sampling Plan





Test #	Room	Component	Substrate	Color	Condition	Lead Result (mg/cm2)
7	20. I. I.	Wall	Stucco	Tan	Intact/good	0
8	39, exterior	Wall	Stucco	Tan	Intact/good	0
9	36	Counter	Formica	Black	Intact/good	0
10		Counter	Formica	Black	Intact/good	0
11		Counter	Formica	Black	Intact/good	0
12		Cabinet	Wood	Beige	Intact/good	0
13		Cabinet	Wood	Beige	Intact/good	0
14		Counter	Formica	Black	Intact/good	0
15		Cabinet	Wood	Beige	Intact/good	0
16	57	Counter	Formica	Black	Intact/good	0
17		Counter	Formica	Black	Intact/good	0
18		HVAC case	Metal	Beige	Intact/good	0
19	14	Wall	Sheetrock	White	Intact/good	0
20		Wall	ACT	White	Intact/good	0
21		Wall	Sheetrock	White	Intact/good	0
22	17	Wall	ACT	White	Intact/good	0
23		Wall trim	Wood	White	Intact/good	0
24		Wall trim	Wood	White	Intact/good	0
25	23	Wall	Sheetrock	White	Intact/good	0.223
26		HVAC case	Metal	Beige	Intact/good	0
27	21	Window frame	Metal	Beige	Intact/good	<mark>3.97</mark>
28		Window frame	Metal	Beige	Intact/good	<mark>5.1</mark> 2
29	22. exterior	Louver	Metal	Beige	Intact/good	0
30		Pipe	Metal	Beige	Intact/good	0
31		Window	Plexiglas	Beige	Intact/good	0
32		Window trim	Wood	White	Intact/good	0
33		Wall	Wood	White	Intact/good	0.293
34	20	Window trim	Wood	White	Intact/good	0
35		Wall	Wood	White	Intact/good	0.288
36		HVAC case	Metal	White	Intact/good	0
37		Wall	ACT	White	Intact/good	0
38		Wall	ACT	White	Intact/good	0
39		HVAC case	Metal	White	Intact/good	0
40	26	Window trim	Wood	White	Intact/good	0
41		Wall	Wood	White	Intact/good	0.179
42		Window trim	Wood	White	Intact/good	0.201
43		Wall	Wood	White	Intact/good	0

Lead Paint Testing and Sampling Table

Test #	Room	Component	Substrate	Color	Condition	Lead Result (mg/cm2)	
44		Wall	Wood	White	Intact/good	0	
45	29	Window trim	Wood	White	Intact/good	0	
46		Wall	Wood	White	Intact/good	0	
47		HVAC case	Metal	White	Intact/good	0	
48		Wall	ACT	White	Intact/good	0	
49		Wall trim	Wood	White	Intact/good	0	
50	20	HVAC case	Metal	Beige	Intact/good	0	
51	32	Wall	ACT	White	Intact/good	0	
52		Wall	Wood	White	Intact/good	0	
53	34	Window frame	Wood	White	Intact/good	0.244	
54		Window trim	Wood	White	Intact/good	0	
55		Window sill	Wood	White	Intact/good	0.624	
56		Wall	ACT	White	Intact/good	0	
57		Wall	Wood	White	Intact/good	0	
58		Wall	Stucco	Beige	Intact/good	0	
59	Serving Kitchen, exterior	Wall	Stucco	Beige	Intact/good	0	
60		Wall	Stucco	Beige	Intact/good	0	
NOTES	 Bold represents component is considered lead based paint. Lead-based paint (LBP) is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%). 						



LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation			
Section 2 — Type of Lead Hazard Evaluation (Che	ck one box only)		
Lead Inspection Risk assessment	Clearance Inspection	Other (specify)	
Section 3 — Structure Where Lead Hazard Evaluat	ion Was Conducted		
Address [number, street, apartment (if applicable)]	City	County	Zip Code
Construction date (year) of structure Multi-unit building Single family dwellin	School or daycare	Children living in structure?	
Section 4 — Owner of Structure (if business/agene	cy, list contact person)		
Name		Telephone number	
Address [number, street, apartment (if applicable)]	City	State	Zip Code
Section 5 — Results of Lead Hazard Evaluation (cl	heck all that apply)		•
No lead-based paint detected Intact lea	ad-based paint detected dust found Lead-contar	Deteriorated lead-base	ed paint detected
Section 6 — Individual Conducting Lead Hazard E	valuation		
Name		Telephone number	
Address [number, street, apartment (if applicable)]	City	State	Zip Code
CDPH certification number	Signature	2	Date
Name and CDPH certification number of any other individual	s 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

Application Number:
01-119557
DSA File Number:
41-26

KEV TO COLLIMNIS

School Name: Borel Middle School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-05 09:27:27

2019 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2019 CBC).

****NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

1. TYPE	2. PERFORMED BY
Continuous – Indicates that a continuous special inspection is required	GE – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.
Periodic – Indicates that a periodic special inspection is required	LOR – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.
	PI – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.
Test – Indicates that a test is required	SI – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.

Application Number: 01-119557 DSA File Number: 41-26 School Name: Borel Middle School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-05 09:27:27

Geotechnical Reports: Project does NOT have and does NOT require a geotechnical report

1. GENERAL:	Table 1705A.	Table 1705A.6			
Test or Special Inspection	Туре	Performed By	Code References and Notes		
 a. Verify that: Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations. Foundation excavations are extended to proper depth and have reached proper material. Materials below footings are adequate to achieve the design bearing capacity. 	See Notes	PI	Refer to specific items identified in the Appendix listing exemptions for limitations. Placement of controlled fill exceeding 12" depth under foundations is not permitted without a geotechnical report.		

2. SOIL COMPACTION AND FILL:	Table 1705A.6	Table 1705A.6		
Test or Special Inspection	Туре	Performed By	Code References and Notes	
a. Verify use of proper materials, densities and inspect lift thicknesses, placement and compaction during placement of fill.	Continuous	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	
b. Compaction testing.	Test	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	

3. DRIVEN DEEP FOUNDATIONS (PILES):

Table 1705A.7

DGS DSA 103-19 (Revised 07/16/2020)

Application Number: 01-119557 DSA File Number: 41-26 School Name: Borel Middle School Increment Number:

Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Verify pile materials, sizes and lengths comply with the requirements.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
b. Determine capacities of test piles and conduct additional load tests as required.	Test	LOR*	* Under the supervision of the geotechnical engineer.
c. Inspect driving operations and maintain complete and accurate records for each pile.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
d. Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
e. Steel piles.	Provide tests and inspections per STEEL section below.		
f. Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.		
g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.

	4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):	Table 1705A.8	3	
1	Test or Special Inspection	Туре	Performed By	Code References and Notes

Application Number:
01-119557
DSA File Number:
41-26

School Name: Borel Middle School Increment Number:

a. Inspect drilling operations and maintain complete and accurate records for each pier.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
b. Verify pier locations, diameters, plumbness and lengths.Record concrete or grout volumes.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
c. Concrete piers.	Provide tests and inspections per CONCRETE section below.		

5. RETAINING WALLS:						
Test or Special Inspection	Туре	Performed By	Code References and Notes			
a. Placement, compaction and inspection of backfill.	Continuous	GE*	1705A.6.1. * By geotechnical engineer or his or her qualified representative. (See Section 2 above).			
b. Placement of soil reinforcement and/or drainage devices.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.			
c. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	Continuous GE* * By geotechnical engineer or his or her qualified representative. See DSA IR 16-3.					
d. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.					
e. Masonry retaining walls.	Provide tests a	Provide tests and inspections per MASONRY section below.				

6. OTHER SOILS:			
Test or Special Inspection	Туре	Performed By	Code References and Notes

Application Number: 01-119557 DSA File Number: 41-26 School Name: Borel Middle School Increment Number:

a. Soil Improvements	Test	GE*	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS for final acceptance. * By geotechnical engineer or his or her qualified representative.
b. Inspection of Soil Improvements	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
C.			

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119557	Borel Middle School	San Mateo-Foster City School District
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	7. CAST-IN-PLACE CONCRETE			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
Mate	rial Verification and Testing:			
	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1.
	b. Identifiy, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-14 Section 26.6.1.2; DSA IR 17-10. (See Appendix for exemptions.)
	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-14 Sections 26.5 & 26.12.
7	d. Test concrete (f'c).	Test	LOR	1905A.1.15 ; ACI 318-14 Section 26.12.
Inspe	ction:			
	e. Batch plant inspection: Eliminated	See Notes	SI	Default of 'Continuous' per 1705A.3.3 . If approved by DSA, batch plant inspection may be reduced to ' Periodic' subject to requirements in Section 1705A.3.3.1 , or eliminated per 1705A.3.3.2 . (See Appendix for exemptions.)
	f. Welding of reinforcing steel.	Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below.		

8. PRESTRESSED / POST-TENSIONED CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
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Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.
c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	Periodic	SI	Table 1705A.3 Item 11. Special inspector to verify specified concretestrength test prior to stressing.
d. Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	1705A.3.4, Table 1705A.3 Item 9; ACI 318-14 Section 26.13

9. PRECAST CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):			
Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Inspect fabrication of precast concrete members.	Continuous	SI	ACI 318-14 Section 26.13.
b. Inspect erection of precast concrete members.	Periodic	SI*	Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA.

10. SHOTCRETE (in addition to Cast-in-Place Concrete te	sts and inspect	tions):	
Test or Special Inspection	Туре	Performed By	Code References and Notes

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
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a. Inspect shotcrete placement for proper application techniques.	Continuous	SI	1705A.19, Table 1705A.3 Item 7, 1908A.6, 1908A.7, 1908A.8, 1908A.9, 1908A.11, 1908A.12. See ACI 506.2-13 Section 3.4, ACI 506R-16.
b. Sample and test shotcrete (f'c).	Test	LOR	1908A.5, 1908A.10.

	11. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
	a. Inspect installation of post-installed anchors	See Notes	SI*	1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
V	b. Test post-installed anchors.	Test	LOR	1910A.5. (See Appendix for exemptions.)

12. OTHER CONCRETE:			
Test or Special Inspection	Туре	Performed By	Code References and Notes
a.			

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:
01-119557
DSA File Number:
41-26

School Name: Borel Middle School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-05 09:27:27

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. Items marked as exempt shall be identified on the approved construction documents. The project inspector shall verify all construction complies with the approved construction documents.

SOILS:
1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.

	CONCRETE/MASONRY:
	1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."
\checkmark	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:
01-119557
DSA File Number:
41-26

School Name: Borel Middle School Increment Number:

	3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
\checkmark	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.
V	5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

	Welding:
	1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
	2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.
	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
V	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).
	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:	School Name:	School District:
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	6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category).
7	7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) \leq 4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.
DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2019 CBC

Application Number:		
01-119557		
DSA File Number:		
41-26		

School Name: Borel Middle School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-05 09:27:27

Name of Architect or Engineer in general responsible charge:			
Name of Structural Engineer (When structural design has been delegated):			
Gokhan Akalan			
Signature of Architect or Structural Engineer:	Date:		
Rabhurt	10/05/2021		

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

DSA STAMP
IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT
APP: 01-119557 INC: REVIEWED FOR
SS 🗹 FLS 🗹 ACS 🗹
DATE: <u>10/21/2021</u>

DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

Application Number: 01-119557 DSA File Number: 41-26 School Name: Borel Middle School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-05 09:27:27

1. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291

2. Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

This Hazardous Material Abatement & Related Construction Specification 02 80 00 was prepared for San Mateo Foster City School District in support of the HVAC and Power Upgrade Project for the following schools:

School Name	Address
Abbott Middle School	600 36th Avenue, San Mateo, CA 94403
Borel Middle School	425 Barenson Avenue, San Mateo, CA 94403
College Park	715 Indian Avenue, San Mateo, CA 94402
Laurel Elementary	316 36th Avenue, San Mateo, CA 94403
Meadow Heights	2619 Dolores Street, San Mateo, CA 94403
North Shoreview	1301 Cypress Avenue, San Mateo, CA 94401
George Hall	130 San Miguel Way, San Mateo, CA 94403

Prepared for:

San Mateo Foster City School District 1170 Chess Drive Foster City, CA 94404

Prepared by:



419 Mason Street Vacaville, CA 95688

SECTION 02 80 00

HAZARDOUS MATERIAL ABATEMENT & RELATED CONSTRUCTION

PART 1. GENERAL

1.1 <u>SCOPE</u>

A. The work of this section includes removal, clean up and disposal of the below listed hazardous materials prior to the general building and structure renovation and/or demolition work of the project. These work scope items are generally described as follows for the buildings and structures indicated. Contractor is to review all demolition/construction project plans and field verify location and extent of hazardous materials-related work.

1. Asbestos-Containing Materials – Remove all:

a. Abbott Middle School

- Plaster, < 1% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Category II ACM, approximately 5 square feet may be impacted at each work location
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location

b. Borel Middle School

- Window putty at window HVAC unit, 2% asbestos, Category II ACM, approximately 2 square feet limited to Room 34
- Mastic Associate with tack board/white board/chalkboard, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Roof mastic, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work location

c. College Park Elementary School

- Texture coat associated with sheetrock above acoustical ceiling panel, < 1 - 2% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Regulated Asbestos Containing Material (RACM), approximately 5 square feet may be impacted at each work location, however may not be impacted with the given scope of work
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Roof shingle & roof mastics, assumed asbestos, located throughout the roof system, non-friable Category I ACM, approximately 5 square feet may be impacted at each work location

d. George Hall Elementary School

- Stucco, < 1% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Category II ACM, approximately 2 square feet may be impacted at each work location, however this material may not be impacted by scheduled work
- Floor tile beneath existing tile and/or carpet, 2% asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 4. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, however this material may not be impacted by scheduled work

e. Laurel Elementary School

- 1. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- 3. Roof field shingle mastic (below the top layer), 6% asbestos, located throughout the roof system, non-friable Category I ACM, found at one sample location and assumed throughout homogenous roofing system of Buildings A, B, C, D, approximately 41,150 square feet

f. Meadow Heights Elementary School

- Floor tile, tan tile beneath existing flooring, 5% asbestos, with residual mastic (insufficient material to analyze) Category I non-friable ACM, approximately 5 square feet to be impacted at each work area location
- 2. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work area location
- 3. Roof shingles, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location
- Roof mastics, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location

g. North Shoreview Montessori School

- Joint compound associated with sheetrock wall system, joint compound = 2% asbestos, sheetrock = no asbestos detected, Regulated Asbestos Containing Material (RACM) - friable asbestos containing material, approximately 15 square feet may be impacted at each work location, refer to project drawings
- 2. Residual floor tile mastic, found in one of seven samples collected at Room 18, 3% asbestos approximately 8 square feet at each work location may be impacted, refer to project drawings
- 3. Stucco, <1% asbestos assumed >1% asbestos without point count analysis, Category II non-friable asbestos containing material, quantity impacted is dependent on the scope of work, refer to project drawings
- 4. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location, may not be impacted.
- 5. Mastic associated with acoustic ceiling tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, although material may not be impacted by scope of work
- 6. Roof field, shingle with associated mastic (assumed asbestos, this material may be sampled during construction if impacted to prove no asbestos by laboratory analysis, non-friable Category I ACM, quantity impacted is dependent on the scope of work, refer to project drawings

2. Lead-Based Paint (LBP). Remove loose and peeling LBP where occurs on lead-based components including:

a. Abbott Middle School

- 1. Exterior plexiglas windows/window covers (wall panels)
- 2. Exterior metal window frames
- 3. Exterior wood window trims
- 4. Window panels (windows/window covers)

b. Borel Middle School

1. Exterior wood window frames

c. George Hall Elementary School

- 1. Interior wood window sills
- 2. Interior wood wall trim
- 3. Exterior metal collars
- 4. Exterior metal equipment

d. Laurel Elementary School

- 1. Exterior wood window sills
- 2. Exterior wood window casings
- 3. Exterior metal roof collars
- 4. Exterior metal roof HVAC/mechanical equipment

e. Meadow Heights Elementary School

- 1. Interior wood window sills
- 2. Exterior wood wall trim

f. North Shoreview Montessori School

- 1. Interior wood lower walls
- 2. Exterior metal window trims
- 3. Exterior metal wall trims
- 3. Presumed Polychlorinated Biphenyl (PCB) lighting ballasts. Remove presumed PCB items, verify PCB content by labeling or manufacturing information and dispose of as PCB items unless proven non-PCB and/or labeled 'PCB FREE'. Recycle non-PCB components to extent possible.
- 4. Universal Waste including lighting tubes and exterior non-incandescent lighting. Remove and properly recycle.
- 5. Chlorofluorocarbons (CFCs) coolant gases in air conditioning units must be properly extracted and recycled prior to unit removal and disposal by a qualified hazardous materials disposal contractor using EPA certified Refrigerant Re-claimer for the removal and recycling of the CFC gases.
- B. The Contractor's work scope includes all removal, waste testing, and disposal or recycling costs associated with removed materials and removal operations for this project.

- C. Subsurface concrete piping shall be presumed to be asbestos cement (Transite®).
- D. The Contractor shall make any necessary arrangements for temporary water and power necessary to conduct the work of this project. Power and water are available on site but will require Contractor to make any necessary temporary connections. Coordinate schedule and phasing with architectural.
- E. Contractor shall review the demolition/construction project plans, reports, related documents identified herein, and shall visit the site during the scheduled bid walk and field verify the location and extent of hazardous materials removal work prior to submitting bid.
- F. The Contractor's work scope includes all removal, waste testing, and disposal and/or recycling of removed and demolished materials. The Contractor is responsible for all costs associated with removed hazardous materials and removal/demolition operations during abatement, disposal, and testing for waste stream during renovation and demolition work.
 - 1. Removed friable asbestos, including but not limited to texture coat and doing compound associated with sheetrock/wallboard and mechanically removed floor tile and flooring mastic, is to be disposed of as hazardous asbestos waste. Non-friable asbestos materials removed in a non-friable state shall be disposed of as a non-hazardous asbestos waste at an asbestos permitted landfill.
 - 2. Lead debris resulting from removal of loose LBP prior to demolition shall be disposed of as lead hazardous waste.
 - 3. PCB ballasts are to be disposed of as hazardous PCB wastes at a Class I landfill or permitted PCB incineration facility.
 - 4. All remaining hazardous materials wastes, including lighting tubes & lamps, batteries, refrigerants/coolants, and other universal wastes are to be recycled by a permitted facility or disposed of as hazardous wastes as it pertains to this project.
- G. The Contractor's work scope also includes removal of loose LBP and all required lead-related protective measures for Cal/OSHA, CDPH, and Cal/EPA compliance associated with renovation/demolition of the buildings and associated structures or other components on this site.
- H. The Contractors shall be responsible for all agency permits, notices, and fees required to conduct the abatement and demolition and shall be responsible for all costs of removal, demolition, waste characterization and profiling, and disposal associated with abatement and demolition.

1.2. <u>RELATED DOCUMENTS / WORK IN OTHER SECTIONS</u>

- A. HVAC and Power Upgrade Project, Hazardous Materials Survey Reports, prepared for each school by Znap Fly.
- B. Project Drawings.
- C. All other sections of the specifications.

1.3. <u>REFERENCES</u>

- A. General: Codes, regulations, and references to hazardous materials abatement work include, but are not limited to the most current versions of the following:
 - 1. California Code of Regulations (CCR):
 - a. Title 8, Article 2.5 Registration Asbestos-Related Work
 - b. Title 8, Section 1529 Construction Safety Orders, Asbestos Regulations
 - c. Title 8, Section 1531 Construction Safety Orders, Respiratory Protection
 - d. Title 8, Section 1532.1 Construction Safety Orders, Lead in Construction
 - e. Title 17, Div. 1, Ch. 8 Accreditation, Certification and Work Practices for Lead-Based Paint and Lead Hazards
 - f. Title 22, Div. 4.5 Environmental Health Standards for Management of Hazardous Waste
 - g. Title 22, Div. 4.5, Ch 23 Universal Waste Rule
 - 2. Bay Area Air Quality Management District (BAAQMD):
 - a. Regulation 11 Hazardous pollutants Rule 2 Asbestos Demolition, Renovation and Manufacturing
 - 3. Other Local Regulations
 - a. California Health and Safety Code 25249-25249.13
 - b. California Health and Safety Code 25915-25919.7

1.4. <u>DEFINITIONS</u>

- A. Definitions specific to Work of this Section.
 - 1. Abatement Procedures to control airborne contaminate and other releases from hazardous material-containing building materials. Includes removal, repair, encapsulation, and enclosure.
 - 2. Airlock A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area.

- 3. Air Monitoring The processing of measuring the air contaminants such as asbestos or lead for measured volume of air collected over the specific period of time being monitored.
- 4. Air Sampling Professional The professional contracted or employed to supervise air monitoring and analysis schemes. This individual is also responsible for recognition of technical deficiencies in Worker protection equipment and procedures during both planning and on-site phases of an abatement project.
- 5. Amended Water A water to which a surfactant has been added.
- 6. Asbestos The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.
- 7. Asbestos Containing Construction Material (ACCM) Any construction material with asbestos content of 0.1 percent or greater by weight.
- 8. Asbestos Containing Material (ACM) Any material which contains over one percent asbestos as determined by current EPA bulk sample analysis method.
- 9. Asbestos Fibers This expression refers to asbestos fibers longer than five micrometers with an aspect ratio of 3:1 or larger under phase contrast microscopy (PCM) analytical procedures.
- 10. Authorized Visitor Any Owner Representative, Consultant or Agent and any representative of a regulatory of other agency having jurisdiction over the project.
- 11. Certified Supervisor An individual who is capable of identifying asbestos or lead hazards in the workplace and who has sufficient experience and authority to take prompt corrective measures to eliminate them. In addition, the Certified Supervisor is responsible for conducting and approving all required inspections as specified. Also known as the "Competent Person."
- 12. Class I Asbestos Removal Class I Asbestos work means activities involving the removal of thermal system insulation (TSI) and surfacing ACM.
- 13. Class II Asbestos Work Class II Asbestos Work means activities associated with removal of any asbestos containing material that is not a Class I surfacing material or thermal system insulation.
- 14. Clean Room An uncontaminated area or room that is a part of the Worker decontamination enclosure with provisions for storage of Workers' street clothes and protective equipment.
- 15. Critical Barrier A unit of temporary construction of air-tight and impermeable barrier which provides the only separation between a contained asbestos Work Area and an adjacent, potentially occupied area.
- 16. Decontamination Enclosure System A series of connected rooms, with air-tight doorways between any two adjacent rooms, for the

decontamination of Workers and of materials and equipment. A decontamination enclosure system always contains at least one airlock.

- 17. Differential Pressure Equipment A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contaminated area from adjacent uncontaminated areas. Also referred to as HEPA Exhaust Units or Negative Pressure Units (NPUs).
- 18. Encapsulant (sealant) A liquid material which can be applied to asbestos-containing material or surface and which controls the possible release of asbestos fiber from the material or surface by creating a membrane over the surface (bridging encapsulant), or by penetrating into the material and binding its components together (penetrating encapsulant), or by locking down invisible fibers (lockdown encapsulant).
- 19. Fluorescent Light Ballast (FLB) A device that electrically controls fluorescent light fixtures. Most existing FLBs include a capacitor containing 0.1 kilograms or less of dielectric fluid that may contain PCBs. Ballasts manufactured prior to 1979 may contain PCB capacitors. More recently, electronic ballasts have come into use that do not have dielectric fluids or PCBs. Ballasts with PCB capacitors also contain asphalt potting compounds which are likely to contain PCBs.
- 20. Hazardous Materials Hazardous materials include, but are not limited to: asbestos containing materials, lead and lead-based paint, mercury, PCB, coolant gases, universal wastes, solvents, fuels and other chemical products or wastes.
- 21. HEPA Filter A high-efficiency particulate absolute (HEPA) filter capable of trapping and retaining 99.97 percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- 22. HEPA Vacuum Equipment Vacuuming equipment with a HEPA (UL 586 labeled) filter system.
- 23. Lead-Based Paint (LBP) Lead-Containing Paint (LCP) that is at least 5,000 ppm, 0.5% lead by weight, or 1.0 milligrams of lead per square centimeter of surface area (as measured by XRF lead analyzer). Note: any untested paints or coatings must be presumed to be LBP.
- 24. Lead Hazardous Waste Lead-based paint waste or other debris that has been classified as hazardous due to the characteristic of toxicity, as determined by testing in accordance with the California Code of Regulations, Title 22, Division 4, Chapter 30, Article 11. A hazardous waste is any substance(s) listed in Article 11 Section 66699 at concentrations greater than its listed Soluble Threshold Limit Concentration (STLC) or Total Threshold Limit Concentration (TTLC). The STLC for lead is 5.0 parts per million (ppm) and the TTLC for lead is 1,000 ppm lead. If either of these values are exceeded, the lead related waste will need to be further characterized by the Toxicity Characteristic

Leaching Procedure (TCLP) in accordance with 40 CFR 261 and possibly other tests prior to disposal as a hazardous waste. Waste testing for proper disposal is the responsibility of the Contractor.

- 25. Negative Pressure Enclosure (NPE) An enclosed or contained area of any configuration constructed of polyethylene sheeting with a minimum of four (4) air changes per hour and a negative pressure of -0.022 inches of water as compared to surrounding areas outside the enclosure. NPE must be maintained until post abatement sampling.
- 26. Non-Friable Asbestos Material Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating binder, or other material so that the asbestos is well bound and will not release fibers in excess of the asbestos control limit during any appropriate use, handling, demolition, storage, transportation, processing, or disposal.
- 27. Non-hazardous Asbestos Waste Wastes which are non-friable and/or are below one percent asbestos by weight as determined by objective testing. These wastes require OSHA Asbestos Hazard warning labels and disposal at landfills that accept such asbestos wastes.
- 28. Observation Service Environmental Consultant hired to conduct compliance observation and air monitoring services on behalf of the Owner. Sometimes referred to as the Owner's Observation Service.
- 29. Owner The San Mateo Foster City School District and any of its designated representatives for this project.
- **30**. Owner's Representative Representative(s) the District (Owner) has assigned to manage, oversee, and inspect this project. This may include an architectural and/or construction management consultant hired by the Owner to oversee the project.
- 31. Polychlorinated Biphenyl (PCB) PCB's are any chemical substances consisting of the biphenyl molecule chlorinated to varying degrees or any combination of such molecules. PCBs have had a wide variety of uses in the past including dielectric fluids in capacitors. PCBs are clear to yellow oily substances which are toxic to the liver and reproductive system. PCBs are also suspect human carcinogens.
- **32**. PCB Ballast An FLB that is known or suspected to contain PCBs. All FLBs must be considered PCB ballasts unless they are:
 - a. Labeled or marked "No PCB" by the manufacturer.
 - b. Manufactured in 1979 or later as indicated and verified on a date stamp or code, located on the ballast.
 - c. Labeled as "Electronic Ballasts" by the manufacturer.
 - d. General Electric HDF Ballasts manufactured from 1977 to 1978 and which have a "W" added to their catalogue number on the label of the ballast.
- 33. Removal Procedures necessary to remove hazardous materials such as, but not limited to, asbestos or lead from designated areas and to

dispose of these materials at an acceptable properly permitted waste disposal site.

- **34**. Surfactant A chemical wetting agent added to water to improve penetration.
- 35. Universal Waste Certain common designated hazardous wastes that are required to be handled and disposed of or recycled in accordance with special rules. Includes fluorescent light tubes, HID lamps, sodium vapor lamps, mercury switches, mercury thermostats, NiCad, Silver, & Mercury & other batteries (often used in building alarms and emergency systems), and other items.
- 36. Visually Clean Free of visible dust, paint chips, dirt, debris, or films removable by vacuuming or wet cleaning methods specified. For outside soil or ground cover areas, visually clean shall mean free of construction or paint debris, chips or dust distinguishable from the initial soil or ground conditions.
- **37**. Waste Generator Label Waste Generator label shall include the Generator's Name, ID Number, Address, and Waste Manifest Number.
- 38. Wet Cleaning The process of eliminating asbestos or lead contamination from building surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with water or water/ detergent solution, and by afterwards disposing of these cleaning tools and materials as contaminated waste.
- 39. Work Area Designated rooms, spaces, or areas of the project in which hazardous material removal actions are to be undertaken or which may become contaminated as a result of such removal actions during the process and prior to final clean-up and decontamination. A contained Work Area is a Work Area that has been sealed and equipped with a Decontamination Enclosure System. Also referred to as a "Regulated Area."
- 40. Worker Decontamination Enclosure System (Worker Decon) That portion of a Decontamination Enclosure System designed for controlled passage of workers, and other personnel and authorized visitors, typically consisting of a clean room, a shower room, and an equipment room.

1.5. <u>SUBMITTALS</u>

- A. General:
 - 1. Requirements are as set forth in the General Conditions documents (001 000 to 019 9999) that are prepared by aedis architects for items required to be submitted under this section.
 - 2. Submittals that are incomplete, disorganized, unreadable, or not project specific will be rejected.

- B. Pre-Start Submittal-Part A; Submit and obtain approval prior to starting on-site set-up for asbestos removal work. Submit the following:
 - 1. Licensing and Registration for Contractor or Subcontractor responsible for removal of hazardous materials. Submit copies of current and valid:
 - a. The Contractor's license and Contractor's asbestos certificate issued by the California State Contractor's Licensing Board (CSLB);
 - Registration for Asbestos-Related Work from the Division of Occupational Safety and Health in accordance with CCR, Title 8, Article 2.5 of the California Administrative Code and C-22 Asbestos Abatement Contractor in accordance with CCR, Title 16, Div 8, Article 3.
 - 2. Notifications, Communications, and Postings.
 - a. Submit copies of notifications to appropriate government agencies where required, including the following:

Division of Occupational Safety and Health 1065 East Hillsdale Blvd., Suite 110 Foster City, California 94404 (650) 573– 3812 Email: DOSHFC@dir.ca.gov Notifications shall be in accordance with the Title 8 CCR Section 341.9 for asbestos and Section 1532.1 for lead.

Bay Area Air Quality Management District (BAAQMD) Attn: Asbestos Section 375 Beale Street, Suite 600 San Francisco, California 94105 (415) 749-4900 Notifications shall be in accordance with the Regulation 11 Rule 2 for Asbestos.

- b. Copies of Government agency correspondence shall be included in the submittals.
- 3. Respiratory Protection Plan: Submit a written standard operating procedure governing selection, fit-testing, and use of respirators for asbestos and lead removal.
- 4. Detailed Work Plan: Submit a detailed work plan proposed for use in complying with the requirements of these specifications. The detailed work plan shall include, at a minimum, the following information:
 - a. Procedures: Job-specific procedures proposed for completing the scope of work outlined herein including: means of Work Area containment including barriers and other protective measures for

removal at each location; means for provision of decontamination units; removal methods to be employed;

- b. Detailed schedule with calendar dates showing all phases of work. Where scheduled start dates have not been confirmed, provide the number of consecutive work days to complete each phase of work.
- 5. Plan for personnel air monitoring required by law by the Contractor for Worker protection. The Plan shall include, but not be limited to the following:
 - Personnel Air Monitoring conducted in strict accordance with 8 CCR 1529. Include calibration data for the secondary standard to be used for air sampling pump calibration on-site. This data must be within six (6) months of the projected completion of this project.
 - b. Name, address and accreditation and/or certification of laboratory selected by the contractor to analyze personal air samples for workers.
- 6. Hazardous Waste Transporter. Submit name, address and EPA# for each transporter to be used.
- 7. Waste Disposal Sites: Submit name location, class, and EPA# for each waste disposal site to be used for asbestos, lead, PCB, and other hazardous wastes for this project.
- 8. Method of disposal (i.e., landfill or incineration) for PCB ballasts and PCB contaminated materials shall be indicated. List transporter and disposal site(s) and their respective EPA ID number(s).
- 9. Method of on-site storage and shipping for packaging to keep lighting tubes and lamps intact from removal until their delivery to a recycling facility.
- 10. Product Data: Manufacturers product data for all items required for complete and proper execution of the work, this includes product data for all items listed under Part 2 Products. Product data shall include manufacturing product data, specifications, samples and application instructions, material safety data sheet (MSDS), and other pertinent information as necessary.
- C. Pre-Start Submittal-Part B; Submit and obtain approval prior to any asbestos and/or lead removal work. Submit the following:
 - 1. Personnel Qualifications: Personnel documents required per this section shall be organized by individual employee and include the following information:
 - a. Personnel Training (asbestos)
 - 1. Competent Person/Supervisor: Submit a copy of current AHERA asbestos training certificates for the Contractor's

Competent Person and Quality Control Person documenting successful completion of a training course in asbestos abatement project supervision offered by a Cal/ OSHA accredited educational institution. Designate by name, the person who will act as the Certified Supervisor/ Competent Person and Qualified Person for the project.

- 2. Workers: Submit a copy of the current asbestos training certificates for the Contractor's asbestos abatement workers documenting successful completion of a training course in asbestos abatement for workers offered by an EPA accredited education institution.
- 3. For lead abatement or removal work, supervisors and workers shall have appropriate training and CDPH certification documentation. For lead related demolition work, comply with CAL/OSHA training and certification requirements as applicable and submit documentation.
- b. Medical Examination: Submit proof that personnel who will be performing asbestos-related work, lead related work, or otherwise wearing respirators shall have had medical examinations within the last 12 months in conformance with Title 8 CCR; Section 1529 asbestos, and furnish the results of each exam in the form of the physician's written opinion or approval with regard to worker fitness to wear a respirator and perform asbestos and lead work as applicable.
- c. Respirator fit tests: Submit proof that personnel who will be entering asbestos Work Areas have had a qualitative respiratory fit test performed within 12 months from the scheduled completion date of the project.
- 2. HEPA Filtration Certifications:
 - a. Provide third party test certificates for al Differential Pressure Equipment and HEPA Vacuums to be used on this project. Such certificates shall document that each item of equipment has been tested on-site prior to start-up and that the results have demonstrated that each HEPA equipment assembly meets the efficiency requirement for HEPA filtration as an installed system or unit of equipment.
 - b. All HEPA filtration testing must be conducted by challenging the installed filter system with 0.3 micrometer diameter particles using a dioctyl-phthalate (DOP) particle generator and appropriate aerosol measurement test equipment designed for this purpose. Alternate test methods may be accepted if certified to be equivalent. Test certificate stickers shall be placed on each machine tested and a copy of the testing certification shall be

submitted. The test result, date and time of testing, testing firm, and signature of qualified test technician shall be included on each certification along with equipment identification information.

- D. Daily & Other Progress Submittals: Submit the following within 24 hours following the completion of each Work Shift. The Contractor shall submit the following information to the Observation Service.
 - 1. A complete asbestos worker/employee roster for each work shift prior to the commencement of each shift.
 - 2. Work Area entry/exit logs completed for each Work Area and each Work Shift.
 - 3. Worker exposure ("OSHA") sample results for asbestos including eight (8) hour Time Weighted Average (TWA) sampling and 30-minute excursion limit sampling. Sample results must indicate the person sampled, description of work activity, start and stop times, liters per minute, total volume and laboratory result expressed as an eight-hour TWA or excursion limit sample.
 - 4. Waste Manifests:
 - a. Each time hazardous waste (asbestos, lead, PCB, etc) is picked up from the site the Contractor is responsible for preparing an accurate hazardous waste manifest, presenting the manifest to the Owner's Representative for review and signature, and submitting the generator and DTSC copies to the Owner's Representative.
 - b. Each time a non-hazardous asbestos waste is shipped, the Contractor shall submit the non-hazardous shipping manifests to the Owner's Representative for review and signature and provide the Owner's Representative a signed copy.
 - c. All asbestos and other hazardous material waste manifests are to be reviewed and signed by an Owner Representative.
 - d. All materials shipped for recycling (lighting tubes, mercury, etc.) shall be accompanied by a manifest prepared by the Contractor, review and signed by the Owner's Representative. A copy of the signed manifest shall be provided to the Owner Representative.
 - e. Land Disposal Restrictions: Submit a copy of the completed Notice and Certification with each Hazardous Waste Manifest for wastes intended for land disposal pursuant to Section 67740 of 22 CCR) signed by the co-generator to the Owner's Representative.
 - 5. Land Disposal Restrictions: Submit a copy of the completed Notice and Certification with each Hazardous Waste Manifest for wastes intended for land disposal pursuant to Section 67740 of 22 CCR) signed by the co-

generator to the San Mateo Foster City School District's Construction Supervisor.

- 6. Special Reports: (Submit to the Owner's Observation Service within 24 hours of occurrence.)
 - a. The Contractor shall complete a report of unusual events when an event of unusual significance occurs at the site including loss of negative pressure, power failures, breeches in containment, etc. This report shall include the date and time of the event, activities leading up to the event, a detailed account of the event, persons involved, corrective action taken, and action taken to prevent a reoccurrence.
 - b. The Contractor shall submit a detailed accident report in the event of an accident or injury at the site. This report shall include the date and time of the injured, persons involved, cause of injury, detailed description of loss or injury, response actions taken and action taken to prevent a reoccurrence.
- E. Close-Out Submittals:
 - 1. Within 10 days of completion of all hazardous material removal work, submit to the Owner's Observation Service:
 - a. One copy of all outstanding daily submittals;
 - b. One copy of each hazardous waste manifest and one copy of each non-hazardous asbestos waste manifest;
 - c. One copy of Work Area entry/exit logs completed for each Work Area and each Work Shift.

1.6. <u>CERTIFICATIONS</u>

- A. Inspection Certifications (Asbestos)
 - 1. Pre-Abatement Visual Inspection Forms and Final Visual Inspection and Post Abatement Certification Forms will be provided at the preconstruction start up meeting by the Observation Service.
 - 2. Pre-Abatement Visual Inspection: Upon inspection and approval of each Work Area by the Contractor's Certified Supervisor, a Pre-Visual Inspection Form shall be signed and submitted to the Observation Service for review and approval. The approved inspection form shall be considered notice to proceed with abatement operations within the Work Area.
 - 3. Final Visual Inspection and Post Abatement Certification: Upon completion of asbestos abatement and before encapsulation in each Work Area, the Contractor's Certified Supervisor shall thoroughly inspect the Work Area for completeness of work. The Contractor's Competent Person shall sign and submit a completed Final Visual Inspection and

Post Abatement Certification Form for review and approval by the Observation Service. The approved inspection form shall be considered notice to proceed with encapsulation.

1.7. <u>POSTINGS</u>

- A. Before the commencement of any asbestos related work at the site, Cal/OSHA warning signs in and around the Work Area to comply with Cal/OSHA regulations.
- B. Copies of the Contractor's SCLB license, Cal/OSHA registration certificate, temporary job-site notifications, pre-start LBP notifications to Cal/OSHA, local agency notifications, emergency exit diagram, emergency phone numbers, Cal/ OSHA poster on worker's rights, and worker's compensation poster shall be posted proximate to the entrance to each Work Area.
- C. The Contractor shall have at least one copy of the Contract Documents including project plans and specifications, and a current copy of 8 CCR 1529 & 1532.1.

PART 2. PRODUCTS

2.1. <u>GENERAL</u>

- A. Submit manufacturer's product data for all items to be used including the items listed below.
- B. All materials to be used on the project shall be new in original packages, containers, or bundles bearing the name of the manufacturer and the brand name. Used materials will not be permitted.

2.2. PROTECTIVE COVERING (PLASTIC SHEETING)

A. For standard containment and critical barrier usage: Fire Retardant Polyethylene sheets six (6) mil and four (4) mil in sizes to minimize frequency of joints, approved and listed by the State Fire Marshall per Section 13121 and/or 13144.1 of the California Health and Safety Code.

2.3. <u>TAPE, ADHESIVE, SEALANTS</u>

A. Duct tape two inches or wider, or equivalent, capable of sealing joints of adjacent sheets of plastic sheets and for attachment of plastic sheets to finished

or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions.

B. Spray adhesives for sealing polyethylene to polyethylene shall contain no methylene chloride compounds.

2.4. <u>PROTECTIVE PACKAGING</u>

- A. Appropriately labeled six (6) mil sealable polyethylene bags as a minimum.
- B. Appropriately labeled, impermeable drum containers with sealable lids.
- C. Bilingual labels (English and Spanish) on waste packages, contaminated material packages and other containers shall be in accordance with applicable Cal/EPA and Cal/OSHA standards.

2.5 WARNING LABELS AND SIGNS

- A. All warning signs and labels must meet all applicable regulatory requirements for wording, size of lettering, and use of language, pictographs, and graphics to effectively convey the warning. Additional requirements apply for hazardous waste containers and shipments for transportation to disposal sites.
- B. Lead Caution Signs must include phrase "WARNING, LEAD WORK AREA, POISON, NO SMOKING OR EATING" in minimum two-inch high letters. These shall be posted at each approach to each lead paint stabilization/surface preparation and manual demolition Work Area.
- C. Cal/OSHA Lead Warning Posters: "DANGER, LEAD WORK AREA, MAY DAMAGE FERTILITY OR THE UNBORN CHILD, CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM, DO NOT EAT, DRINK OR SMOKE IN THIS AREA" shall be posted at the entrance to each LBP stabilization/surface preparation and manual demolition Work Area.
- D. Asbestos Warning signs for Regulated Areas must contain the following wording:

DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA AUTHORIZED PERSONNEL ONLY

E. Labels for packaging and containers containing ACM waste must contain the following wording:

DANGER CONTAINS ASBESTOS FIBERS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS DO NOT BREATHE DUST AVOID CREATING DUST

2.6. <u>SURFACTANT</u>

A. Surfactant, or wetting agent, for amending water will be 50 percent polyethylene ether and 50 percent polyethylene ester, or equivalent, at a concentration of one ounce per five gallons of water.

2.7. <u>VENTILATION EQUIPMENT</u>

- A. Provide differential pressure equipment in areas as shown on Contractor's work plans. High-efficiency particulate absolute (HEPA) filtration systems shall be equipped with filtration equipment in compliance with ANSI Z9.2, local exhaust ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the work area. Differential pressure within the work area shall be maintained at negative 0.022 inches of water during abatement.
- B. Provide air filtration equipment with HEPA filtration system to cleanse air of particulate matter during abatement. Replace HEPA filters when filters become clogged with particulate matter. Provide enough air filtration devices within the work area to maintain fiber levels within the protection factors of workers' respirators.

2.8. <u>PERSONAL PROTECTIVE EQUIPMENT</u>

- A. Personal Protective Equipment shall comply with the requirements of 29 CFR 1910, Subpart 1 and 8CCR 1514, 1515, 1516, and 1517.
- B. Work clothes shall consist of impervious disposable, full-body coveralls, head covers, boots, rubber gloves, and work boots (or sneakers). Sleeves at wrists and cuffs at ankles shall be secure.
- C. Eye protection and hard hats shall be available and worn when required by applicable safety regulations and shall conform to ANSI 87.1 and 89.1.

D. Provide Authorized Visitors with suitable protection clothing, headgear, eye protection, and footwear whenever they enter the Work Area.

2.9. <u>RESPIRATORS</u>

- A. Provide all workers, foremen, superintendents, authorized visitors, and inspectors' personally-issued and marked, clean and sanitized respiratory equipment approved by NIOSH. When respirators with disposable filters are employed, provide sufficient filters for replacement as recommended by manufacturers or this specification. Selection of respirators shall be made according to the guidance of 8 CCR 1529 and 1532.1.
- B. The minimum respiratory protection required for this project is a half mask respirator as long as the airborne levels do not exceed one tenth of the applicable PEL established by regulation.

PART 3. EXECUTION

3.1. <u>PROJECT PROCEDURES</u>

- A. Prior to the start of on-site work, the Contractor shall hold an on-site start-up safety meeting for all of contractor and facility employees that addresses at least the following issues specific for the project.
 - 1. Safety and health hazards;
 - 2. Procedures and work practices;
 - 3. Respiratory protection and instruction; and
 - 4. Special conditions and/or work requirements.
- B. Worker Protection Procedures
 - 1. Provide Authorized Visitors with suitable protective clothing, respirators, headgear, eye protection, and footwear whenever they are required to enter the Work Area. All provided equipment shall be new or in good working condition and clean, sanitized, and inspected by a competent person since last use.
 - 2. Each Worker and Authorized Visitor shall, upon entering the job site: remove street clothes in the clean-change rooms and put on a respirator and clean protective clothing before entering the Work Area.
 - 3. Workers shall, each time they leave the Work Area, remove gross contamination from protective clothing before leaving the Work Area, proceed to the Equipment Room or decontamination area and remove protective clothing except respirators; still wearing the respirator, proceed to the showers or wash area, clean the outside of the respirator

with soap and water while showering; remove the respirator, and thoroughly shampoo and wash themselves.

- 4. Following washing and/or showering and drying off, each Worker shall proceed directly to the clean change room/area and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before re-entering the Work Area from the clean change room, each Worker and Authorized Visitor shall put on a clean respirator and shall dress in clean protective clothing.
- 5. Contaminated work footwear shall be stored in the Decontamination Area when not in use in the Work Area. Upon completion of abatement, dispose of footwear as contaminated waste.
- 6. Workers removing waste containers from the Equipment Decontamination Enclosure shall enter the Holding Area from outside wearing a respirator and dressed in clean disposable coveralls. No Worker shall use this system as a means to leave or enter the Wash Room or the Work Area.
- 7. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work Area.
- 8. Workers and Authorized Visitors with beards shall not enter the Work Area unless equipped with respirators approved for use with beards.

3.2. <u>COORDINATION REQUIREMENTS</u>

- A. Coordinate with the Observation Service and Owner's Representative the locations of the Worker Decontamination Unit, waste load out, staging areas, and emergency egress exits.
- B. Coordinate timing of waste bag-out and waste shipping activities with the Owner's Representative and Observation Service. All asbestos and hazardous waste manifests shall be signed by the owner or designated owners's representative. The Contractor shall be aware that these activities may need to take place during times when it is most convenient to the facility.
- C. Coordinate and provide to the Observation Service the required number of GFCI protected energized 110 Volt AC power outlets needed inside and outside each Work Area. These outlets shall be solely dedicated for the use of the Owner's Observation Service.

3.3. <u>PREPARATION</u>

- A. General Preparation Requirements for All Interior Work Areas. Not each area will require abatement of all materials. Each school differs. Refer to project plans/ drawings.
 - 1. Prior to Work Area set up and preparation, remove all movable objects that will not disturb existing ACM or asbestos contaminated materials in the process.
 - 2. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements and provide ground-fault interrupter circuits as power source for electrical equipment.
 - 3. Clean and decontaminate all accessible areas above ceiling prior to hazardous material remediation, demolition, and other construction activities.
 - 4. Install a Decontamination Enclosure System or equivalent prefabricated portable decontamination unit(s) as approved. This system will be the primary entrance and exit to the Work Area.
 - 5. Seal off all other accesses to the Work Area with hard barriers and polyethylene sheeting sealed with tape.
 - 6. Install Differential Pressure Equipment for all Class I and Class II Asbestos Removal Operations in accordance with the requirements herein. Establish a negative pressure of -0.022 inches water or greater inside the Work Area containment with respect to the outside and non-involved building areas.
 - 7. Install an adequate number of HEPA Units to obtain the required negative pressure continuously and achieve at least four (4) complete air changes per hour inside the containment.
 - 8. Conduct any required non-ACM selective demolition including demolition to reveal concealed ACM prior to starting ACM removal work to ensure such areas are prepared with additional critical barriers to ensure negative pressure can be maintained at a negative (-) 0.022 inches or better during asbestos removal.
 - 9. Pre-clean fixed objects and surfaces within the proposed Work Areas, using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclose with protective barriers. Protective barriers will consist of plastic sheeting and plywood as appropriate.
 - 10. Seal all remaining openings, including but limited to ducts, grills, diffusers, and any other penetrations of the Work Areas, with two (2) layers of six (6) mil polyethylene sheeting sealed with tape.
 - 11. Seal all joints of conduit, junction boxes, and ductwork with duct tape and plastic sheeting. Cover and protect during abatement.

- 12. Install Viewing Ports of size, quantity, and location to meet local AQMD/ APCD requirements. Where no requirements are specified, install an adequate number of windows to view the entire removal Work Areas as feasible.
- 13. Establish and maintain emergency and fire exits from each Work Area.
- B. Decontamination Enclosure System (General)
 - 1. Construct or establish Decontamination Enclosure System or area contiguous to the work area for proper decontamination of worker as they exit a Regulated Area or containment system.
 - 2. Provide separate designated areas or chambers for: removal of contaminated clothing prior to exiting the contaminated area; for washing or showering (as appropriate); and for donning clean protective clothing and equipment prior to re-entry. The decontamination system shall comply with applicable regulation taking into account the Cal/ OSHA asbestos removal work class as well as site conditions.
 - 3. In the event that the Decontamination Enclosure System is not contiguous with the Work Area, there must be at least an established area for removing and properly disposing of contaminated clothing and equipment, minimum amenities for washing hands, respirator and face, to allow exiting the work areas prior to going to a remote decontamination enclosure on site. Under these conditions, double suit procedures are required.
- C. Mini Containments
 - 1. The use of mini-containments shall be permitted only if entire removal can be completely contained by the enclosure or as needed to isolate the HVAC, Plumbing, Electrical or other system as part of localized preparatory activities.
 - 2. Mini-containments shall shall be constructed with rigid framing and shall have a minimum of one layer of 6 mil polyethylene sheeting sealed with tape.
 - 3. The mini-containment enclosure shall have a decontamination enclosure system in accordance with the requirements herein or as approved by the Observation Service.
 - 4. The The mini-containment enclosure shall be placed under negative pressure for the duration of work in the containment until final air clearance is obtained.
- D. Maintenance of Enclosure Systems
 - 1. Ensure that all barriers intact and are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

- 2. Visually inspect enclosures at the beginning of each work period and periodically throughout each shift. Inspection shall include, but not be limited to, the protective critical barriers and the worker Decon unit barriers, warning signage, and Work Area barriers or barricades.
- 3. Use smoke test methods to evaluate effectiveness of barriers prior to implementing asbestos removal and when directed by the Observation Service.
- 4. Ensure all negative pressure containment enclosures for regulated asbestos-containing material removal meet all BAAQMD requirements at all times from start up through completion and post abatement sampling.
- E. Asbestos, lead, and hazardous material removal work shall not commence until:
 - 1. Submittals as required herein have been reviewed and approved in writing by the Observation Service;
 - 2. Arrangements have been made for secure temporary storage of asbestos wastes and other hazardous wastes on-site and for disposal of such wastes at an acceptable permitted disposal sites;
 - 3. Work Areas and Decontamination Enclosure Systems (or equivalent) have been installed and approved and all parts of the building or facility required to remain in use are effectively segregated and isolated;
 - 4. Tools, equipment, and secure material waste receptors are on hand;
 - 5. Arrangements have been made for buildings' and Work Area security during removal operations including periods when no work is in progress such as off hours, weekends, and holidays; and
 - 6. Differential pressure systems, as required for interior asbestos removal, are installed, operating, and recording properly.

3.4. CLASS I & II ASBESTOS REMOVAL OPERATIONS

- A. General Requirements. Not each area will require abatement of all materials. Each school differs. Refer to project plans/drawings.
 - 1. Class I Asbestos Work is defined as removal of ACM that is a surfacing material or thermal system insulation. Class II Asbestos Work is defined as the removal of ACM that is not a surfacing material or thermal system insulation.
 - 2. The Class I Asbestos Work of this project includes but is not limited to removal of: non-friable ACM and PACM if made friable by removal process.
 - 3. The Class II Asbestos Work means activities involving removal of ACM which is not thermal system insulation or surfacing materials. For this project materials include, but is not limited to removal of the following

materials: wallboard, floor tile, roofing and siding shingles, and construction mastics.

- B. Class I & II Asbestos Work Preparation Requirements
 - 1. All interior work shall be conducted within negative pressure containments with contiguous decontamination units for worker enter & exit.
 - 2. Negative pressure shall be maintained at -0.025 inches of differential pressure (water column) or higher compared to the exterior pressure.
 - 3. All negative pressure exhaust units shall be HEPA filtered and exhausted to the building exterior. All HEPA exhaust units shall be DOP (or equivalent) tested on-site and certified to meet HEPA efficiency standards.
 - 4. Interior walls and other non-movable objects shall be covered with at least one layer of four (4) mil plastic sheeting. Wall covering may be reduced to 4' splash guards in Work Areas where glove bags or "cut, wrap, and remove" methods are the sole method used for pipe and fitting insulation removal.
 - 5. Floor areas shall be covered with two (2) layers of six (6) mil plastic sheeting unless glove bags and/or cut, wrap and remove methods for pipe insulation are used. Where glove bags and cut & wrap methods are used, six (6) mil plastic drop sheets extending at least 5 feet on each side of pipe at minimum are required.
- C. General Removal Procedures
 - 1. Spray asbestos materials with amended water, using only spray equipment capable of dispensing a fine mist application. Apply amended water sufficiently to wet material surfaces without causing excess dripping or pooling. Spray materials and Work Area repeatedly during work process to control airborne fiber levels.
 - 2. Place asbestos waste in clear asbestos-labeled plastic bags or lined drums. Plastic bags must be sealed using the "goose neck" technique by twisting the neck of the bag, bending it over and taping it with multiple wraps of tape. Clean external surfaces of containers thoroughly prior to setting down on a clean plastic drop cloth.
 - 3. Move waste containers to washroom or wash area, wet clean each container thoroughly, and move to holding area pending removal to uncontaminated areas.
 - 4. After completion of removal work, equipment surfaces from which asbestos has been removed shall be wet cleaned and/or wet sponged by an equivalent method to remove all visible material and residue. During this work, the surfaces being cleaned shall be kept damp. Do not allow water to pond at any time.

- 5. Clean all surfaces of the Work Area including remaining sheeting by use of damp cleaning and/or HEPA filtered vacuum.
- 6. Proceed with final decontamination of the Work Area.
- D. Glove bag Technique
 - 1. Removal of Class I and II asbestos-containing materials from piping may be accomplished using approved glove bag techniques in specified areas. In all cases, removal shall be conducted in secondary negative pressure containment or mini-containment.
 - 2. After installation of glove bag, smoke test the glove bag to verify that it is air tight.
 - 3. Thoroughly wet material to be removed with amended water before and during the removal process.
 - 4. Thoroughly wash the inside of the bag, the piping surfaces and the tools upon completion.
 - 5. Encapsulate all surfaces inside the glove bag including the piping and ends of exposed coating material.
 - 6. Evacuate bag with an approved HEPA vacuum; tie off waste area; remove tools from bag; remove bag from pipe, folding inward the sides of the bag; then twist and tape the open end, the wand opening, and the vacuum opening.
 - 7. Place glove bag directly into another six (6) mil sealable labeled plastic waste bag or other appropriate waste container. Seal the outer bag using the "goose neck" technique by twisting the neck of the bag, bending it over and taping it with multiple wraps of tape. Seal container with duct tape.
- E. Modified Cut, Wrap, and Remove Technique
 - 1. Removal of pipe insulation may be accomplished using approved Modified Cut, Wrap, and Removal Techniques where piping is to be demolished or abandoned in place unless otherwise noted.
 - 2. Verify the piping being removed scheduled for removal or abandonment in place prior to proceeding.
 - 3. Verify pipe lines have be isolated and drained prior to cutting pipe(s).
 - 4. Use glove bag technique to remove insulation at location of pipe to be cut. Wrap pipe including all insulation being removed with two layers of six (6) mil polyethylene sheeting secured with duct tape.
 - 5. Cut the pipe and remove wrapped pipe with ACM insulation for disposal.
- F. Floor Tile Removal
 - 1. Remove wall base, cabinets, and any other components and materials as necessary to expose and access all resilient floor tiles for removal.

- 2. Thoroughly wet floor tiles with amended water but do not let water pool or pond.
- 3. Remove tile by prying with scrapers or spud bars taking care to minimize breakage.
- 4. Place removed tiles in appropriately labeled impervious bags or containers and seal.
- 5. Do not subject floor tiles to any sanding, grinding, cutting, abrading activities likely to create friable ACM.
- G. Flooring Mastics Removal
 - 1. Remove all overlaying non-asbestos carpet and other materials concealing the flooring mastics.
 - 2. Remove all asbestos and/or asbestos mastic contaminated floor tiles prior to initiating mastic removal in the Work Area.
 - 3. Remove all flooring mastics using a suitable mastic solvent along with manual scraping and/or mechanical removal methods as necessary for complete removal.
 - 4. Where removal solvents are used, clean up slurry as the mastic is removed and place in properly labeled containers for disposal as a hazardous waste.
 - 5. As an alternative to solvent removal, use bead blast systems for removal is acceptable if permitted by the AQMD and any required variance or waiver is obtained in advance by the Contractor. Likewise, removal by high pressure water systems is allowable if water is fully contained and removal is complete. All floor mastic removal operations must be conducted as a Class I removal operations unless removal is limited to manual scraping methods.
 - 6. Regardless of removal method used, all three dimensional mastic residues must be removed and extent of removal must sufficient to allow for recycling of concrete foundations and decks.
- H. Mastic behind chalkboard/ACT
 - 1. Removal of non-friable shall be conducted using wet methods using hand

scrapers and cutting tools to remove the ACM mastic from the non-ACM substrate materials.

- 2. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
- 3. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- I. Texture coat, wallboard (sheetrock) and joint tape compound

1. Mist the gypsum board/joint tape compound/texture continuously with amended.

water during removal.

- 2. Remove gypsum board in larger sections or pieces where possible. Use pry bars, utility knives, claw hammers and other appropriate tools to loosen and remove wallboard from framing. Remove all wallboard fasteners.
- 3. Place removed gypsum board/joint tape compound/texture in impervious containers with asbestos warning labels as it is removed. Wall insulation shall be placed in same bags as asbestos contaminated.
- 4. Complete Work Area clean-up including: all remaining nails; framing; electrical junction boxes, outlets, wiring, and conduit; plumbing fixtures, piping, and hanger, and all other surfaces in the work area.
- J. Window Glazing/putty
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable sealants and caulking to be removed.
 - 2. Removal of non-friable shall be conducted using wet methods using hand scrapers and cutting tools to remove the ACM mastic/sealant from the non-ACM substrate materials.
 - **3**. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
 - 4. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- K. Exterior Stucco wall
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable stucco to be removed.
 - 2. Removal of non-friable shall be conducted using wet methods using manual demolition.
 - **3**. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
 - 4. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- L. Roofing Materials (shingles and mastic)
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable roofing mastic or penetration mastic to be removed.

- 2. Removal of non-friable roofing shall be conducted using wet methods and appropriate cutting tools. Remove roofing in small sections and place in waste bags or containers.
- 3. If a chute is used to remove ACM roofing waste from the roof, it must be totally enclosed and air tight to and including the bin it is connected to.
- 4. Removal of roofing flashing and sealants shall be conducted using hand scrapers and cutting tools to remove the ACM mastic/sealant from the non-ACM substrate materials.
- 5. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
- 6. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the State or State's representative.
- M. Cutting, Tapping, Demolition of Asbestos Cement (AC) Piping
 - 1. Carefully machine excavate to exposed AC pipe as necessary. Once exposed, hand excavate areas where cuts, breaks or taps are to be made to prevent pipe breakage.
 - 2. Establish a regulated Work Area surrounding the location of pipe cutting and/or modification. At minimum, use barrier tape and signage.
 - 3. Place plastic sheeting under the area to be cut or altered to catch any resulting chips or dust debris.
 - 4. The methods and procedures used to cut or modify pipe shall not cause the pipe to shatter, crumble, be pulverized or release airborne asbestos dust.
 - 5. Keep the AC pipe wet at all times during cutting or tapping work.
 - 6. Use only industry recommended practices for cutting, splicing and tapping AC pipe. At minimum:
 - a. Cutting is to be by special carbide tipped blade cutters that are frame adjustable to the circumference of the pipe and that have self -tracking rollers or "snap cutters" that operate with cutting wheels on a chain wrapper around the pipe barrel.
 - b. Machining, if necessary, shall be conducted wet using manual field lathe or manual rasp.
 - c. Tapping, whether under pressure or on non-pressured lines, shall be conducted wet and include provisions for internal pipe cleaning by flushing, purging or other means to prevent asbestos dust and chips from entering the drinking water system.
 - d. Do not blow out with compressed air or dry sweep. Do not vacuum dust and debris without a HEPA filtered vacuum.
 - e. All cutting, machining, tapping procedures must be conducted wet and all resulting AC pipe dust and debris must be cleaned up and disposed of as asbestos contaminated waste.

- f. Piping sections to be demolished shall be carefully cut into manageable sections, wrapped and sealed and plastic sheeting, and carefully placed in a lined asbestos waste disposal bin.
- g. All intact AC pipe waste and debris shall be disposed of as nonhazardous asbestos waste under a non-hazardous asbestos manifest at a permitted asbestos landfill.

3.5. FINAL ASBESTOS DECONTAMINATION AND TESTING

- A. Previous Work: During completion of the interior asbestos removal and visible debris clean up work specified, the first cleaning of all exposed equipment and building surfaces should be completed. Likewise for exterior Work Areas, all visible debris and removed materials must be bagged up for disposal.
- B. Clean all surfaces within the Work Area by wet wiping and HEPA vacuuming.
- C. Clean any remaining materials and debris exposed by the plastic barrier removal. Final independent layer of polyethylene sheeting and all isolation barriers, vents, grilles, diffusers, etc., shall remain in place.
- D. At the completion of this cleaning phase, the Work Area shall be free of all unnecessary equipment/materials and waste containers.
- E. The Contractor's Competent Person/Supervisor shall perform a complete visual inspection of the Work Area under adequate lighting to ensure that the Work Area is free of visible asbestos material, debris, and dust.
- F. The Contractor's Competent Person/Supervisor shall ensure that additional cleaning is completed if the area is not acceptably clean. The Contractor shall submit a completed and signed Final Visual Certification Form along with a request for a final visual inspection by the Observation Service once the Competent Person/Supervisor concludes that the area is acceptable for final visual inspection.
- G. After final visual inspection of the Work Area shall be conducted by the Observation Service. The standard for visual acceptance shall be no visible dust, debris or three dimensional suspect ACM residues within the Work Area. After written notification to proceed from the Observation Service, encapsulate all surfaces within the Work Area.
- H. For interior work areas, the Observation Service will conduct post abatement air testing to evaluate the final acceptability of the Work Area for release to unprotected personnel and the environment. Each interior containment will be evaluated by collection and analysis of a minimum of three and up to five (5)

phase contract microscopy (PCM) air samples collected by the Observation Services and analyzed in accordance with NIOSH Method 7400 or equivalent. The standard for acceptance shall be that each sample result for the containment shall be less than 0.010 fibers per cubic centimeter of air (f/cc). The Contractor shall allow for up to 24 hours for collection of post abatement air samples to allow Work Area and encapsulants drying and up to another 24 hours for air test results.

- I. The Contractor shall re-clean and re-encapsulate all surfaces within any Work Area Containment that fails post abatement air testing at no additional cost to the Owner. Likewise, the Contractor is responsible for all costs associated with failed visual inspections including additional cleaning and inspection. All costs associated with failed inspections shall be borne by the Contractor.
- J. After written notification from the Observation Service in the form of a fully completed Final Visual Inspection/Post Abatement Certification Form accepting decontamination of the Work Area as acceptable, proceed with removal of critical barriers.
- K. For exterior non-friable ACM removals such as sealants, mastics, Transite® pipe and/or similar materials, following abatement inspection will consist of a visual inspection by the Observation Service. If all ACM materials have been removed and the Work Area is free of visible ACM material, dust and debris, the removal will be considered complete.

3.6. LOOSE LEAD-BASED PAINT SURFACE PREPARATION

- A. Prepare the exterior Work Area with plastic flooring and another plastic drop sheet, place lead caution tape demarkation around removal area.
- B. Wet the surfaces with loose LBP by misting lightly with water.
- C. Wet scrape loose LBP until remaining paint is intact.
- D. Clean up removed LBP chips, debris and dust using HEPA vacuuming and wet wiping. Containerize all lead waste including vacuum bags for disposal as hazardous lead waste. Label and place container into secure storage pending waste characterization testing and disposal.
- E. Clean up plastic sheeting and place in separate lead related waste bags or drums along with protective clothing and related potentially contaminated materials.

F. Conduct final clean up and all necessary waste profiling, evaluation, and testing of lead-related waste as specified herein.

3.7. LEAD WASTE CLEAN UP AND WASTE EVALUATION

- A. Clean up paint chips and debris using wet cleaning methods and HEPA vacuuming. All surfaces shall be free of all visible paint chips, dust and debris. Place all paint chips in a labeled waste bag or container.
- B. Place all contaminated cleaning materials, disposal personal protective equipment (PPE) and contaminated plastic in separate waste bags. The Contractor shall assume all lead-related waste is RCRA hazardous waste and shall conduct required waste testing as necessary for disposal at a permitted waste disposal site.
- C. All waste streams and waste categories listed below shall be considered lead hazardous waste until proven otherwise through testing. All testing of demolition waste wastes is the responsibility of the Contractor. The Contractor shall be responsible for segregating suspect lead hazardous waste based on potential for exhibiting hazardous waste characteristics. Lead-related wastes are to be segregated into the below listed categories at a minimum.
 - 1. Category I: LBP paint chips, vacuum bags, used cleaning materials. These materials are typically hazardous wastes.
 - 2. Category II: Plastic sheeting and tape, disposable clothing, and equipment. These materials should be non-hazardous if properly cleaned and decontaminated. However, these items are to be considered hazardous subject to testing.
- D. Based on the testing protocols, any waste greater than or equal to five (5) ppm lead using STLC or TCLP tests or any waste greater than or equal to 1,000 ppm lead using the TTLC test shall be considered a California hazardous waste.
- E. When the TTLC test result is less than 50 ppm lead, no further testing is required for that waste category sampled unless the waste stream or waste generating process changes.

3.8. <u>LEAD- RELATED DEMOLITION</u>

A. General: All painted or coated surfaces are known or presumed to contain lead subject to worker protection and environmental regulations. Refer to related documents identified herein for additional information including components with LBP requiring agency notification.

- B. Conduct selective as well as general building and structural demolition in a manner that does not result in site contamination above background levels.
 - 1. Remove any loose, peeling, or flaking paint before demolition in accordance with this section.
 - 2. Clean up any demolition-related lead wastes including any resulting paint chips and debris.
 - 3. Do not let any wetting agents or water enter soil or storm drain.
- C. The Contractor shall evaluate each demolition debris waste stream and ensure proper disposal of all generated wastes. All waste profiling and testing required by the disposal site is the responsibility of the Contractor.

3.9. FLUORESCENT LIGHTING & BALLASTS

- A. Remove fluorescent lighting tubes from fixtures in and on buildings to be renovation/demolished, in accordance with project documents.
 - 1. Carefully place all tubes in storage or shipping containers so the risk of breakage is minimized.
 - 2. Place containerized light tubes in a safe and secure storage area pending shipping to the recycler or reuse.
- B. Remove presumed PCB ballasts from all fluorescent lighting fixtures presumed PCB transformers in buildings to be renovation/demolished.
 - 1. Any ballast not marked "PCB Free" or "No PCB" shall be lab packed with adsorbent in a waste drum for disposal as hazardous PCB ballast waste.
 - 2. Ballasts that are clearly marked "PCB Free" shall be set aside for verification inspection by the Observation Service. All ballasts verified to be PCB free may be disposed of as ordinary construction waste or recycled.
 - 3. Ensure PCB ballast drum is properly labeled for PCB wastes and shipping.
 - 4. Any electrical transformer that cannot be determined to be PCB free by labeling, date of manufacture, or manufacturer's information shall be disposed of as a PCB item.

3.10. UNIVERSAL WASTES AND OTHER HAZARDOUS WASTES

A. Refrigerators, air conditioners, and other equipment with refrigerant or coolant gases shall be assumed to contain chlorofluorocarbon (CFC) gases and shall have those gases removed by appropriately certified mechanics or technicians and recycled according to state and federal regulation.

- B. Carefully segregate waste by type and lab pack for disposal in impervious labeled waste containers.
- C. Dispose of or recycle each type of waste in accordance with applicable regulation at permitted facilities. Maintain all shipping and disposal record and provide copies to Owner's Representative and the Observation Service.

3.11. PACKAGING & LABELING

- A. All asbestos wastes shall be adequately wetted prior to packaging.
- B. Place asbestos waste in six (6) mil labeled asbestos waste bags or approved equivalent containers.
- C. Goose neck and seal each bag and place in a second clean-labeled bag, drum or impervious container.
- D. Decontaminate waste bags and containers prior to removing from regulated or contained area.
- E. Label all asbestos waste bags or containers with OSHA warning label: "DANGER CONTAINS ASBESTOS FIBERS MAY CAUSE CANCER. CAUSES DAMAGE TO LUNGS. DO NOT BREATHE DUST. AVOID CREATING DUST" and other information as required by regulation.
- F. All other hazardous lead, PCB, and universal wastes shall be properly labeled and containerized in leak tight containers.

3.12. WASTE DISPOSAL

- A. Waste Transportation: Submit the method of transport of hazardous asbestos wastes including name, address, EPA ID number, and telephone number of transporter.
- B. Waste Disposal Site(s): Submit for approval the name, class, address, EPA ID number, and telephone number of waste disposal site(s) to be utilized for:
 - 1. Disposal of non-hazardous non-friable asbestos wastes;
 - 2. Disposal of hazardous lead, PCB, and Mercury wastes; and
 - 3. Disposal of any other universal wastes.
- C. Waste Manifest: Submit for approval at the Pre-construction meeting a filled out Waste Manifest form. For Waste Manifest purposes, the Generator is the facility of the subject work.
- 1. Obtain necessary information including generator EPA number for this purpose from the Owner or Owner's Representative prior to start up of any abatement or demolition.
- 2. After removal and packaging waste for shipment, provide a copy of the Waste Manifest to the Observation Service for each required shipment.
- 3. Use the uniform hazardous waste manifest for hazardous wastes including lead, PCBs, universal wastes and other hazardous wastes. Include a properly completed Land Disposal Restriction Notice and Certification form with each manifest submitted for signature by the generator (Owner).
- 4. Use a non-hazardous wastes manifest for disposal of non-friable asbestos wastes.
- D. Each hazardous waste manifest and each non-hazardous asbestos waste manifest shall be prepared for the Owner or Owner's Representative's review and approval prior to shipment.
- E. The sealed hazardous waste containers shall be delivered to the Contractor's pre-designated, approved hazardous waste treatment and waste disposal site for burial in accordance with applicable state and federal regulations. Likewise, non-hazardous asbestos waste shall be delivered under manifest to a permitted asbestos waste disposal site.
- F. Notify the Owner's facility representative 48 hours in advance of the time when hazardous waste materials of all types and non-hazardous asbestos wastes are to be removed and transported from the site to allow for manifest review and approval.
- G. The Contractor shall be responsible for safe handling and transportation of all hazardous waste generated by this Contract to the designated Hazardous Waste Site and shall hold the Owner and the Owner's agents and consultants harmless for claims, damages, losses, and expenses against the Owner, including attorney's fees arising out of our resulting from asbestos and hazardous materials spills on the site or en route to the disposal site.

3.13. <u>AIR MONITORING</u>

- A. Area Air Monitoring
 - 1. Throughout the asbestos removal process, area air monitoring may be conducted by the Observation Service to ensure work is done in conformance with the fiber concentration limits of these specifications. Likewise, lead removal work areas may be visually inspected and/or monitored during removal.

- 2. If results of area air monitoring outside the Work Area are in excess of 0.010 f/cc for asbestos or 50 micrograms per cubic meter of airborne lead per cubic meter of air for lead, the Contractor shall make changes in work procedures to assure compliance with minimum standards. At a minimum, the Contractor shall stop all work and implement additional remedial controls and conduct decontamination as necessary in response to exceeding these limits.
- 3. Unsatisfactory asbestos results are fiber counts in excess of 0.010 fibers/ cc by PCM Method NIOSH 7400 determined as a TWA outside the Work Area by general air monitoring. All results greater than 0.010 fibers/cc shall be subject to further laboratory analysis by the TEM method at the Contractor's sole expense.
- B. The Contractor shall submit a written report to the Owner's Observation Service of the Contractor's personnel exposure monitoring within 48 hours of sample collection. The Contractor shall take all necessary control and protective measures to ensure airborne contaminate levels based on personnel air monitoring results do not exceed the levels recommended for the type of respiratory gear in use.
- C. Interior Asbestos Post Abatement Air Sampling. The Owner's Observation Service, upon receipt of the post abatement certification from the Contractor, will take a minimum of one (1,200-2,800) liter air sample(s) "post abatement tests" upon completion of each Work Area. For the purpose of this work, adequate decontamination shall be defined as an air sample showing less than 70 structures/cc by TEM AHERA.
- D. Lead Post Abatement Inspections. All LBP Work Areas will be cleared by visual inspection by the San Mateo Foster City School District Observation Service.

3.14. <u>CLOSE-OUT</u>

A. All submittal and punch list items must be complete and provided to the Observation Service. These include daily work-force rosters, work area sign-in/ out sheets, and waste test data and waste manifests.

END OF SECTION

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME: _	
PROJECT ADDRES	S:
CONTRACTOR'S N	IAME:

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PERSON.

Your employer's contract with the Owner for the above project requires that: You will be supplied with the proper respirator and be trained in its use. You will be trained in safe work practices and in the use of the equipment found on the job. You will receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have completed an asbestos-training course of not less than 3 days. I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

1) Physical characteristics of asbestos; 2) Health hazards associated with asbestos; 3:) Respiratory protection; 4) Use of personal protective equipment; 5) Pressure Differential Systems; 6) Work practices including handson or on-the-job training; 7) Personal decontamination procedures; and 8) Air monitoring, personal, and area.

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Printed Name:	
Signature:	_ Date:
Social Security No.:	
Witness:	

FMPI	OYFF	DAILY	ROSTER
			NOSIEN

DATE: ______PROJECT NO. _____

PROJECT TITLE: _____

CONTRACTOR: _____

COMPETENT PERSON: _____

IMPORTANT NOTE: ALL PERSONS ENTERING AND EXITING THE WORK AREA MUST SIGN IN AND OUT EVERY TIME.

PERSON'S NAME (PRINT)	SOCIAL SECURITY #	START TIME	STOP TIME

WORK AREA ENTRY / EXIT LOG

DATE:	PROJECT NO	
PROJECT TITLE:		_
BUILDING NAME:		
LOCATION OF WOR	?K AREA:	
DESCRIPTION OF W	'ORK:	

IMPORTANT NOTE: ALL PERSONS ENTERING AND EXITING THE WORK AREA MUST SIGN IN AND OUT EVERY TIME.

PERSON'S NAMI (PRINT)	E SIGNATURE	SECURITY #	SOCIA	l In/out	TIME IN/OUT	TIME

DAILY MANOMETER REPORT

PROJECT TITLE:				
CONTRACTOR:				
COMPETENT PE	RSON:			
LOCATION OF V	VORK AREA:			-
START TIME:	START DATE:	STOP TIME:	STOP DATE:	

(CONTRACTOR TO ATTACH A COPY OF THE NEGATIVE PRESSURE RECORDING HERETO AND COMPLETE THIS FORM FOR EACH WORK AREA ON A DAILY BASIS).

I hereby declare the above data is true and correct.

COMPETENT PERSON'S SIGNATURE: _____ DATE: _____

PRE-ABATEMENT VISUAL INSPECTION FORM

CLIENT NAME:	
PROJECT NAME:	
BUILDING NAME	
LOCATION OF WORK AREA:	
OWNER REF. NUMBER:	PROJECT NO:

VISUAL INSPECTION

CONTRACTOR hereby certifies that he has visually inspected the Work Area and has found it to be prepared in accordance with the project specifications. This inspection included the verification that Primary Barriers have been installed and are sealed, specified number of layers of polyethylene sheeting has been installed properly, Decontamination Enclosure System(s) is fully functional, HEPA units are operational, negative air pressure is >0.02 inches of water, manometer unit recording properly, HVAC and electrical systems have been locked and tagged out, there is adequate power and lighting, and all electric sources are supplied from GFIs outside the Work Area.

Name:	Inspection Date:
Signature:	Certification No

OWNER'S CONSULTANT hereby certifies that he has conducted a pre-abatement visual inspection of the referenced Work Area and verifies that the Contractor has prepared the Work Area in accordance with the Specifications and is ready to start abatement operations.

Name:_____ Inspection Date: _____

Signature:_____ Certification No. _____

FINAL VISUAL INSPECTION/CLEARANCE CERTIFICATION FORM

CLIENT NAME:	
PROJECT NAME:	
BUILDING NAME:	
LOCATION OF WORK AREA:	
OWNER REF. NUMBER:	_ PROJECT NO:

VISUAL INSPECTION

CONTRACTOR hereby certifies that he has visually inspected the Work Area and has found no dust, debris or residue. This inspection included all surfaces including pipes, beams, ledges, walls, ceiling, floor, Decontamination Unit, sheet plastic, etc.

OWNER'S CONSULTANT hereby certifies that he has performed the final visual inspection of the referenced Work Area and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's Certification above is a true and honest one.

 Name:_____
 Inspection Date: _____

 Signature:_____
 Certification No._____

CLEARANCE AIR SAMPLING

Pre-Abatement/Background fiber levels: ______

OWNER'S CONSULTANT hereby certifies that the results of air samples collected and analyzed in this work area meet the clearance criteria indicated below:

PCM samples at or below ______ fibers/cc. TEM samples at or below ______ structures/mm².

Circle One: Aggressive Non-Aggressive

Other criteria:

Name:	Inspection Date:
Signature:	Certification No.:
Reviewer:	CAC Cert. No.:

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Formed roof-drainage sheet metal fabrications.
 - 2. Formed low-slope roof sheet metal fabrications.
 - 3. Formed steep-slope roof sheet metal fabrications.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETING

- A. Preinstallation Conference: Conduct a conference at Project Site.
 - 1. Review construction schedule. Verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect sheet metal flashing and trim.
 - 3. Review requirements for insurance and certificates if applicable.
 - 4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each of the following, including manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
 - 1. Underlayment materials.
 - 2. Elastomeric sealant.
 - 3. Butyl sealant.
- B. Shop Drawings: For sheet metal flashing and trim.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
 - 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
 - 4. Include details for forming, including profiles, shapes, seams, and dimensions.
 - 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 - 6. Include details of termination points and assemblies.
 - 7. Include details of roof-penetration flashing.
 - 8. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
 - 9. Include details of special conditions.
 - 10. Include details of connections to adjoining work.
 - 11. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches (1:10).
- C. Samples: For each exposed product and for each color and texture specified, 12 inches (300 mm) long by actual width.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.
- B. Special warranty.

1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA "Architectural Sheet Metal Manual" and NRCA "Roofing and Waterproofing Manual" unless more stringent requirements are indicated or specified.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
 - 1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
 - 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing, trim materials, and fabrications during transportation and handling.
- C. Unload, store and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight. Coordinate with work of other Sections for watertight installation at interface with other materials and systems.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and

Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- D. Water Infiltration: Provide sheet metal flashing and trim that to not allow water infiltration to building interior.
- E. Provide materials that are compatible with one another under conditions or service and application required, as demonstrated by testing and field experience.

2.2 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet in accordance with ASTM A653/A653M, G90 (Z275) coating designation; prepainted by coil-coating process to comply with ASTM A755/A755M.
 - 1. Surface: Smooth, flat and mill phosphatized for field painting or with manufacturer's standard clear acrylic coating on both sides.
- C. Lead Sheet: ASTM B749 lead sheet.

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. (0.16 kg/sq. m) minimum.

2.4 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

- 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
- 2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hotdip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329.
- C. Solder:
 - 1. For Zinc-Coated (Galvanized) Steel: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
- H. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated and with interlocking counterflashing on exterior face, of same metal as reglet.
 - 1. Source Limitations: Obtain reglets from single source from single manufacturer.
 - 2. Material: Galvanized steel, 0.022 inch (0.56 mm) thick.
 - 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 4. Accessories:
 - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
 - 5. Finish: With manufacturer's standard color coating.

I. Metal Accessories: Provide sheet metal clips, cleats, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gauge required for performance.

2.5 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
 - 1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 - 3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
 - 4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 - 5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
 - 1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
 - 2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams:
 - 1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Do not use graphite pencils to mark metal surfaces.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof and Roof-to-Wall Transition Expansion-Joint Cover: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.034 inch (0.86 mm) thick.
- B. Base Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- C. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- D. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- E. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.

2.7 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- B. Valley Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- C. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- D. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- E. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:

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- 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- 2. Lead: 4 lb (1.8 kg).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lap joints not less than 2 inches (50 mm).
- B. Install slip sheet, wrinkle free, directly on substrate before installing sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lapp joints not less than 4 inches (100 mm).

3.3 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
 - 1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds or sealant.
 - 3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.

- 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
- 5. Install continuous cleats with fasteners spaced not more than 12 inches (300 mm) o.c.
- 6. Space individual cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
- 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
- 8. Do not field cut sheet metal flashing and trim by torch.
- 9. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
 - 1. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
 - 1. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
 - 2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
 - 3. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated.
 - a. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant.
 - b. Form joints to completely conceal sealant.
 - c. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
 - d. Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
 - 1. Pretin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pretinning where pretinned surface would show in completed Work.
 - 2. Do not use torches for soldering.
 - 3. Heat surfaces to receive solder, and flow solder into joint.
 - a. Fill joint completely.
 - b. Completely remove flux and spatter from exposed surfaces.

3.4 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard.
 - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless steel draw band and tighten.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
 - 1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
 - 2. Extend counterflashing 4 inches (100 mm) over base flashing.
 - 3. Lap counterflashing joints minimum of 4 inches (100 mm).
 - 4. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated.
- D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.5 INSTALLATION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

3.7 **PROTECTION**

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200





- A BUILDINGS ARE UNSPRINKLERED, TYPE V-B CONSTRUCTION UNLESS OTHERIWSE NOTED.
- NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN APPROVED BY DSA.
- CONTRACTOR SHALL MAINTAIN FIRE LANE ACCESS THROUGHOUT PROJECT. С
- DO NOT INTERRUPT EXISTING UTILITY SERVICES SERVING OCCUPIED OR USED FACILI EXCEPT WHEN AUTHORIZED IN WRITING BY AND COORDINATED WITH THE OWNER.
- PROTECT EXISTING & NEW STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, TREES AND SHRUBS FROM DAMAGE DURING CONSTRUCTION.
- REFER TO STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXTENT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL WORK.



- 1 (E) ELECTRICAL EQUIPMENT TO REMAIN, S.E.D. (E) PLANTING TO REMAIN.
- (E) CONC. STAIR TO REMAIN. 3
- 4 (E) CONC. RAMP TO REMAIN. (E) CONC. PAVING TO REMAIN.
- 6 (E) ASPHALT PAVING TO REMAIN. GAS SHUT OFF SIGN, SEE DETAIL 14/A9.10. LOCATE BETWEEN DOOR SWINGS, SUCH THAT SIGNAGE REMAINS VISIBLE WHEN DOORS ARE IN OPEN POSITION.

GRAPHIC KEY

- **KXXXX**

~~(É) F.̀Ң.~√

(E) FIRE DEPARTMENT ACCESS

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EXISTING TOILET ROOMS.

EXISTING CONSTRUCTION TO REMAIN

TRENCH FOR ELECTRICAL WORK, S.E.D. , 8/S5.01 &

EXISTING COVERED STRUCTURE

DETAILS ON SHEET A8.10

EXISTING FIRE HYDRANT

ILITIES,	











2 DEMOLITION FLOOR PLAN - BLDG A SCALE: 1/8" = 1'-0"



3 DEMOLITION FLOOR PLAN - BLDG B SCALE: 1/8" = 1'-0"





GENERAL SHEET NOTES

- ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW FLOOR Α PLANS.
- REFER TO STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXTENT OF STRUCTURAL, MECHANICAL AND ELECTRICAL DEMOLITION WORK.
- VERIFY LIMITS OF DEMOLITION WITH SCOPE OF NEW WORK PRIOR TO COMMENCING WORK.
- ALL ITEMS SHOWN DASHED ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED ON PLANS.
- REMOVE ALL MISCELLANEOUS TRIM, CASEWORK, EQUIPMENT, CONDUIT, BASES, AND OTHER SURFACE MOUNTED ITEMS WHETHER SHOWN OR NOT, AS REQUIRED TO FACILITATE SCOPE OF WORK. REMOVE AND CAP ALL OUTLETS, SWITCHES, WIRES, THERMOSTATS, ETC. TO THEIR SOURCE AS REQUIRED. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION AND SCOPE OF WORK.
- REMOVE ADJACENT FINISHES AS REQUIRED TO FACILITATE SCOPE OF WORK. PATCH BACK IN KIND.
- EXISTING EQUIPMENT INDICATED TO BE RELOCATED PER NEW PLAN IS TO BE STORED AND G PROTECTED DURING CONSTRUCTION.
- NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN н APPROVED BY DSA
- DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO START OF CONSTRUCTION.
- REFER TO "HVAC AND POWER UPGRADE PROJECT HAZARDOUS MATERIALS SURVEY REPORT." CONTRACTOR TO ABATE AREAS AFFECTED BY SCOPE OF WORK. REMOVE AND DISPOSE OF MATERIALS PER REPORT RECOMMENDATIONS.

DEMOLITION FLOOR PLAN KEYNOTES

- 1 REMOVE (E) MECHANICAL UNIT AND METAL ENCLOSURE, S.M.D. REMOVE A.C.T., A.C.T. GRID, AND SOFFIT AS REQUIRED FOR CONSTRUCTION ACCESS. 2 RECONFIGURE (E) WIREMOLD. SHORTEN CONFIGURATION TIGHT TO NEW ENCLOSURE AND
- PROVIDE END CAP. 3 REMOVE (E) 12' BASE CASEWORK.
- 4 REMOVE (E) A/C UNIT AND SURROUNDING (E) GLAZING. PREP FOR NEW WORK. 5 SALVAGE (E) 4' X 4' TACK PANEL AND TURN OVER TO DISTRICT.
- REMOVE (E) MECHANICAL UNIT, S.M.D. 7 (E) CHAINLINK FENCE AND GATE TO BE REMOVED. GRIND DOWN POLE AND INFILL W/ CONCRETE, FLUSH TO ADJACENT.
- 8 REMOVE PAVING AND PREP FOR NEW WORK, S.M.D.
- 9 REMOVE (E) WINDOW GLAZING ABOVE AND PREP FOR NEW WORK, S.M.D 10 REMOVE (E) TACK PANEL AND TURN OVER TO DISTRICT
- 11 CUT AND PREP OPENING FOR NEW WORK, S.M.D. DO NOT OVERCUT. 12 PREP FOR NEW WORK, S.M.D.

GRAPHIC KEY

EXISTING WALL TO REMAIN

EXISTING STOREFRONT OR WINDOW TO REMAIN

BUILDING KEY











1 NEW FLOOR PLAN - BLDG D SCALE: 1/8" = 1'-0"



2 NEW FLOOR PLAN - BLDG A SCALE: 1/8" = 1'-0" (B3) A3.02 (B2) (B1) _____ _____ IDF CLASSROOM **4**] 25 CUSTODIAN SEE ROOM 28 FOR SCOPE, SIM. **└**....







GENERAL SHEET NOTES

DUCTWORK.

- REFER TO STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXTENT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL WORK.
- DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO
- START OF CONSTRUCTION. PATCH AND PAINT WALL AT REMOVED CASEWORK, REMOVED WALL MOUNTED BOARDS, OR
- RECONFIGURED RACEWAY. SCRIBE FINISHES TIGHT TO ADJACENT CONDITIONS INCLUDING WALL FINISHES, WINDOWS, AND D
- PROVIDE NEW WALL BASE AT ALL REMOVED CASEWORK, NEW PARTITION WALLS, OR PATCHED
- FLOORING.
- REFER TO FINISH SCHEDULE ON SHEET A11.01 FOR CEILING FINISHES NOT SHOWN. RECONFIGURE A.C.T. GRID TIGHT TO NEW MECHANICAL ENCLOSURE WALL FINISH. PROVIDE NEW LAY IN CEILING TILES AT RECONFIGURED AREA. AREA CUT OR ALTERED IN EACH ROOM
- SHALL NOT EXCEED 10 PERCENT OF THE ENTIRE CEILING AREA.

PROVIDE NEW CEILING TILE MATCHING ADJACENT TILES WHERE EXISTING LIGHTS, SPEAKERS OR OTHER EQUIPMENT WERE REMOVED. AT INTERIOR AND EXTERIOR PAINT ALL NEW EXPOSED CONDUITS, PIPES, HANGERS AND $^{
m (}$ ATTACHMENTS, AND DUCTWORK.

NEW FLOOR PLAN KEYNOTES

- 1 FULL HEIGHT FRAMED MECHANICAL ENCLOSURE. MAINTAIN MIN. INTERIOR CLR. PER DETAIL 16/A9.10. PATCH ADJACENT FINISHES INCLUDING BUT NOT LIMITED TO WALLS AND CEILINGS. RECONFIGURE A.C.T. GRID AND REPLACE ACOUSTICAL TILES. V.I.F. FREE AND FIXED END OF GRID AND REPLACE IN KIND, SEE DETAILS 8/A9.10, 11/A9.10, & 12/A9.10 2 (NOT IN USE.) C
- 3 MECHANICAL EQUIPMENT, SEE DETAIL 20/A8.10, S.M.D. REMOVE (E) ROOFING TO SUBSTRATE AND PREP OPENING FOR NEW WORK.
- 4 ELECTRICAL PANEL, S.E.D.
- 5 PATCH PAVING AT DRY WELL. SEE A1.02, 2/A8.10, 9/A8.10, AND S.M.D. 6 REFER TO 2/A3.02 FOR TYPICAL CLASSROOM NEW REFLECTED CEILING PLAN. REMOVE AND REINSTALL (E) ACOUSTICAL CEILING TILES ABOVE AS REQUIRED FOR CONSTRUCTION ACCESS INCLUDING BUT NOT LIMITED TO ELECTRICAL ROUTING, MECHANICAL DUCTWORK ANCHORAGE, BLOCKING FOR ROOFTOP PLATFORMS. DO NOT ALTER SUSPENDED A.C.T. GRID.
- 7 MECHANICAL EQUIPMENT, S.M.D. PATCH AND PAINT WALL TO MATCH ADJACENT. 8 DAMPER @ (E) WINDOW FRAME, S.M.D. CONT. CAULKING AT INTERIOR AND EXTERIOR OF MOTORIZED RELIEF DAMPÉR. 9 CONT. CAULKING AT INTERIOR AND EXTERIOR OF LOUVER.

- **GRAPHIC KEY**
- EXISTING NONRATED WALL TO REMAIN.

EXISTING STOREFRONT OR WINDOW TO REMAIN

- WALL TYPE. REFER TO SHEET A9.10 FOR WALL TYPE DESCRIPTION, TYP.

STUD WALL

BUILDING KEY









NOTES:

1. PROVIDE EXPANSION JOINT @ 24'-0" O.C. MAX.

SCALE: 1 1/2" = 1'-0"





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387 S. 1st Street, Suite 300 San Jose, CA., 95113

aedi	Sarchitects	E SA FILE NO.: APPL NO.	BOREL MIDDLI REPLA N MATEO-FOSTER 41-26	E SCHOOL - HVAC ACEMENT CITY SCHOOL DISTRICT SHEET
et, Suite 300	tel: (408) 300 - 5160	JOB NO.	2021005.07	AD3-A9.10
95113	fax: (408) 300 - 5121	DATE	12/22/2021	

FASTENING	SCHEDULE	
DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ROOF	SPACING AND LOCATION
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each end, toenail
Blocking between rafters or truss not at the wall top plate, to rafter or truss	2-8d common (2 1/2" × 0.131") 2-3" × 0.131" nails 2-3" 14 gage staples	Each end, toenail
	2-16 d common (3 1/2" × 0.162") 3-3" × 0.131" nails 3-3" 14 gage staples	End nail
Flat blocking to truss and web filler	16d common (3 1/2" × 0.162") @ 6" o.c. 3" × 0.131" nails @ 6" o.c. 3" × 14 gage staples @ 6" o.c	Face nail
2. Ceiling joists to top plate	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each joist, toenail
3. Ceiling joist not attached to parallel rafter, laps over partitions (no thrust)	3-16d common (3 1/2" x 0.163") 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
4. Ceiling joist attached to parallel rafter (heel joint)	Per Table 2308.7.3.1, CBC 2019	Face nail
5. Collar tie to rafter	3-10d common (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
6. Rafter or roof truss to top plate	3-10 common (3" × 0.148"); or 3-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail ^c
7. Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3"14 gage staples, 7/16" crown; or	End nail
	3-10d common (3 1/2" × 0.148"); or 4-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail
9 Stud to stud (not at braced well penale)	WALL	24" o o foco noil
	10d box (3" × 0.128"); or	16" o.c. face nail
	3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	
 Stud to stud and abutting studs at intersecting wall corners (at braced wall panels) 	16d common (3 1/2" × 0.162"); or	16" o.c. face nail
	3" × 0.131" nails; or	12" o.c. face nail
10. Built-up header (2" to 2" header)	3-3" 14 gage staples, 7/16" crown 16d common (3 1/2" × 0.162"); or	16" o.c. each edge, face nail
11. Continuous header to stud	4-8d common (2 1/2" × 0.131"); or	Toenail
12. Top plate to top plate	4-10d box (3" × 0.128") 16d common (3 1/2" × 0.162"); or	16" o.c. face nail
	10d box (3" × 0.128"); or 3" × 0.131" nails; or	12'' o.c. face nail
13. Top plate to top plate, at end joints	8-16d common (3 1/2" × 0.162"); or 12-10d box (3" × 0.128"); or 12-3" × 0.131" nails; or 12-3" 14 gage staples, 7/16" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14. Bottom plate to joist, rim joist, band joist or blocking (not at braced wall panels)	16d common (3 1/2"x0.163"); or 16d box (3 1/2" × 0 135"); or	16" o.c. face nail
3(1)	3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3 1/2 " × 0.162"); or 3-16d box (3 1/2" × 0.135"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail
16. Stud to top or bottom plate	4-8d common (2 1/2" × 0.131"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples. 7/16" crown; or	Toenail
	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
17. Top plates, laps at corners and intersections	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail
18. 1" brace to each stud and plate	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128"); or 2-3" × 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail
19. 1" × 6" sheathing to each bearing	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128")	Face nail
20. 1" × 8" and wider sheathing to each bearing	3-8d common (2 1/2" × 0.131"); or	Face nail
	J-100 DUX (J × 0.120)	

For SI: 1 inch = 25.4 mm.

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. Nails for wall sheathing are permitted to be

common, box or casing. b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.

Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.

d. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.

(E) PLY

(E) JOIST — BELOW, TYP

6x BLKG







	1		IBUTION SCHE	DULE	I	
TAG	MANUFACTURER	MODEL NO.	DESCRIPTION	BORDER TYPE	MOUNTING DETAIL	NOTES
HSS-1	TITUS	S300FL	HIGH SIDEWALL SUPPLY	TYPE 1	17/MP6.01	1, 2, 4
HSS-2	TITUS	272FS	HIGH SIDEWALL SUPPLY	TYPE 1	13/MP6.01	1,2
HSR-1	TITUS	350RL	HIGH SIDEWALL RETURN	TYPE 1	13/MP6.01	2, 3
LSR-1	TITUS	350RL	LOW SIDEWALL RETURN	TYPE 1	13/MP6.01	2, 3
RG-1	TITUS	30R	RELIEF GRILLE	SURFACE MOUNT	2/M6.02	2, 5
EG-1	TITUS	30R	EXHAUST/ INTAKE GRILLE	SURFACE MOUNT	3/M6.02	2

																						<i></i>			–									
		1		C	CLASSROOM	M SPLIT SY	STEM HE	AT PUMPS S	CHEDUIد	E - CONT	INUED						ļ,		1	1	1	CLASS	KOOM SPL		M HEAT P	UMPS SC	HEDULE				,			
TAG	MANUFACTURER	MODEL	BUILDING	LOCATION		HEATING	AIRFLOW		(EFRIGERA)		SEER HSPF			L W	/EIGHT	MOUNTING NOTES	TAG	MANUFACTURER	MODEL	BUILDING	LOCATION		HEATING	AIRFLOW		REFRIGERA		SEER H'			CAL	WEIGHT	MOUNTING DETAIL	N
					TOTAL MBH	TOTAL MBH				GAS		V / PH	MCA	MOCP								TOTAL MBH	TOTAL MBH			LIQUID	GAS		V/I	PH MCA	MOCP			
FC-36	SAMSUNG	AC054KNZDCH/AA	-	36	- 54	60	1200	450	3/8"	3/4"			NOTE 8		164	12/MP6.01 2, 3, 4, 6, 7, 8	• FC-14	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 14	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01 (2, 3, 4,
HP-36	SAMSUNG	AC054KXADCH/AA	-				-	-	3/8"	3/4"	17.1 9.0	208 / 1	42	70	212	16/MP6.01 1	HP-14	SAMSUNG	AM053TXMDCH/AA					-	-	3/8"	3/4"	17.5 1	10 208	3/1 34	50	212	3/MP6.01	
FC-37	SAMSUNG	AC054KNZDCH/AA	-	37	- 54	60	1600	450	3/8"	3/4"			NOTE 8		164	12/MP6.01 2, 3, 4, 6, 7, 8	→ FC-15A	SAMSUNG	AC030JXADCH/AA	-	15A	33	36	650	200	3/8"	3/4"	-	-	NOTE 8	3	125	1/MP6.01 (2, 3, 4,
HP-37	SAMSUNG	AC054KXADCH/AA	SCIENCE BLDG	SLAB			-	-	3/8"	3/4"	17.1 9.0	208 / 1	42	70	212	16/MP6.01 1	HP-15A	SAMSUNG	AC030KNZDCH/AA	-	ROOF			-	-	3/8"	3/4"	19.6 3	0.33 208	3/1 34	50	155	3/MP6.01	
FC-38	SAMSUNG	AC054KNZDCH/AA	-	CLASSROOM 38	- 54	60	1600	450	3/8"	3/4"			NOTE 8		164	12/MP6.01 2, 3, 4, 6, 7, 8	△ FC-15B	SAMSUNG	AC030JXADCH/AA	-	CLASSROOM 15B	33	36	650	200	3/8"	5/8"	-	-	NOTE 8	8	125	1/MP6.01	2, 3, 4,
HP-38	SAMSUNG	AC054KXADCH/AA	-	SLAB			-	-	3/8"	3/4"	17.1 9.0	208 / 1	42	70	212	16/MP6.01 1	HP-15B	SAMSUNG	AC030KNZDCH/AA	-	ROOF			-	-	3/8"	5/8"	19.6 3).33 208	3/1 21.7	35	155	3/MP6.01	1
FC-39	SAMSUNG	AC054KNZDCH/AA	-	CLASSROOM 39	- 54	60	1600	450	3/8"	3/4"			NOTE 8		164	12/MP6.01 2, 3, 4, 6, 7, 8	FC-16	SAMSUNG	AM054TNZDCH/AA	BLDG D	CLASSROOM 16	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
HP-39	SAMSUNG	AC054KXADCH/AA		SLAB			-	-	3/8"	3/4"	17.1 9.0	208 / 1	42	70	212	16/MP6.01 1	HP-16	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5 ⁻	10 208	3/1 34	50	212	3/MP6.01	1
1. SPL AME 2 CEM	IT SYSTEM SHALL I BIENT TEMPERATUI 1 BASED ON 0.55 ES	BE ABLE TO OPERATE / RE. SP	AT 94% HEATIN	IG CAPACITY D	OWN TO 32°F C	OUTDOOR		5. P		NDÉNSATE P EQUAL.	'UMP, LITTLE GI		-20ULS 230		RFLOW PR	RÓTECTIÓN, ÓR	FC-17	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 17	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
3. PRC 4. PRC	OVIDE WITH SAMSU OVIDE WITH DELTA	NG MIM-A60UN 24VAC CONTROLS THERMOST	THERMOSTAT / FAT WITH CO2 \$	ADAPTER AND SENSOR. SEE N	24VAC TRANSF MP5.01 FOR CO	ORMER. NTROLS.		7. F 8. II	AN COIL SH NDOOR UNI	ALL BE ADJU T POWERED I	STED TO OPER BY OUTDOOR U	ATE AT CO INIT.	NSTANT SP	PEED AT INDIC	CATED CF	FM.	HP-17	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5 ´	10 208	3/1 34	50	212	3/MP6.01	1
					PACKAG												FC-18	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 18	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
TAG	MANUFACTURE	R MODEL NO.	COOLING	S MBH	GAS HEATING I					MOTOR	SEER AFUE	<u> </u>	ELECTRICAI	L W	/EIGHT	MOUNTING NOTES	HP-18	SAMSUNG	AM053TXMDCH/AA	-	ROOF			-	-	3/8"	3/4"	17.5 [/]	10 208	3 / 1 34	50	212	3/MP6.01	1
AC-1	CARRIER	48JCDV05	49.3	45.7	1NPUT OU 50	40 16	00 1.	.0 450	2883	1.46	20 81	208/3	MCA 25	MOCP 30	695	2/MP6.01 (1, 2, 3, 4, 9, 10	FC-19	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 19	53	61	1150	450	3/8"	3/4"	-	- 20{	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
AC-2	CARRIER	48JCDV05	49.3	45.7	50	40 16	00 1.	.0 450	2883	1.46	20 81	208/3	25	30	695	2/MP6.01 1, 2, 3, 4, 9, 10	HP-19	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5 [,]	10 208	3/1 34	50	212	3/MP6.01	1
AC-3	CARRIER	48VGNE24	23.0	21.9	40	33 85	i0 0.	.8 350	1050	0.36	15 81	208 / 1	19.4	30	350	14/MP6.01 \$ 1, 2, 3, 7, 8, 9, 10	FC-20	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 20	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
AC-4	CARRIER	48JCDV05	49.3	45.7	50	40 16	00 1.	0 450	2883	1.46	20 81	208/3	25	30	695	2/MP6.01 1. 2. 3. 4. 9. 10	HP-20	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5 [/]	10 208	3/1 34	50	212	3/MP6.01	1
AC-5	CARRIER	48JCDV05	49.3	45.7	67 50	40 16		0 450	2883	1 46	20 81	208/3	25	30	695	2/MP6 01 (1, 2, 3, 4, 9, 10	FC-21	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 21	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
AC-6	CARRIER	48.ICDV04	36.3	32.8	67 50	40 12		0 450	2059	0.64	20 81	208/3	22	30	670	2/MP6 01 (1.2.3.4.9.10	HP-21	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10 208	3/1 34	50	212	3/MP6.01	1
AC-8	CARRIER	48VGNA30	29.1	27.3	67 40	32 85	i0 0.	8 350	1050	0.36	15 78	208/3	16.2	20	355	14/MP6.01 (1. 2. 3. 7. 8. 9. 10	FC-22	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 22	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
AC-9	CARRIER	48JCDV04	36.3	32.8	50	40 12		0 450	2059	0.64	20 81	208/3	22	30	670	2/MP6.01 1. 2. 3. 4. 9. 10	HP-22	SAMSUNG	AM053TXMDCH/AA	BIDGA	ROOF			-	-	3/8"	3/4"	17.5 [/]	10 208	3/1 34	50	212	3/MP6.01	1
AC-10	CARRIER	48HCDD08	93.3	85.2	90	73 30	00 1.	2 450	939	1.79	13.8 82	208/3	41	50	1100	2/MP6.01 (1.2, 3, 6, 9, 10	FC-23	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 23	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
AC-11	CARRIER	48HCDD08	93.3	85.2	90	73 30	00 1.	2 450	939	1.79	13.8 82	208/3	41	50	1100	2/MP6.01 (1. 2. 3. 6. 9. 10	HP-23	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5 [/]	10 208	3/1 34	50	212	3/MP6.01	1
AC-12	CARRIER	48VGNA30	29.1	27.3	40	32 85	i0 0.	.8 350	1050	0.36	15 78	208/3	16.2	20	355	14/MP6.01 (1, 2, 3, 7, 8, 9, 10)	FC-24	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 24	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
AC-13	CARRIER	48JCDV05	49.3	45.7	50	40 16	00 1.	.0 450	2883	1.46	20 81	208/3	25	30	695	2/MP6.01 2 1, 2, 3, 7, 8, 9, 10	HP-24	SAMSUNG	AM053TXMDCH/AA	-	ROOF			-	-	3/8"	3/4"	17.5 [/]	10 208	3/1 34	50	212	3/MP6.01	1
AC-14	CARRIER	48VGNA30	29.1	27.3	40	32 85	i0 0.	.8 350	1050	0.36	15 78	208/3	16.2	20	355	14/MP6.01 2 1, 2, 3, 7, 8, 9, 10	FC-24A	SAMSUNG	AC024KNZDCH/AA		KITCHEN	24	27	760	150	1/4"	5/8"	-	-	NOTE {	8	100	1/MP6.01	2, 3, 4,
AC-15	CARRIER	48JCDV04	36.3	32.8	50	40 12	00 1.	.0 450	2059	0.64	20 81	208/3	22	30	670	2/MP6.01 (1, 2, 3, 4, 9, 10)	HP-24A	SAMSUNG	AC024JXADCH/AA		ROOF			-	-	1/4"	5/8"	19.5 1	1.5 208	3 / 1 13.58	20	145	3/MP6.01	1
AC-16	CARRIER	48JCDV05	49.3	45.7	50	40 16	00 1.	.0 450	2883	1.46	20 81	208/3	25	30	695	2/MP6.01 (1, 2, 3, 4, 9, 10	FC-25	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 25	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
AC-17	CARRIER	48JCDV04	36.3	32.8	50	40 12	00 1.	.0 450	2059	0.64	20 81	208/3	22	30	670	2/MP6.01 (1, 2, 3, 4, 9, 10	HP-25	SAMSUNG	AM053TXMDCH/AA	-	ROOF			-	-	3/8"	3/4"	17.5 [/]	10 208	3/1 34	50	212	3/MP6.01	1
AC-18	CARRIER	48VGNA30	29.1	27.3	40	32 85	i0 0.	.8 350	1050	0.36	15 78	208/3	16.2	20	355	14/MP6.01 (1, 2, 3, 7, 8, 9, 10)	FC-26	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 26	53	61	1150	450	3/8"	3/4"	-	- 20{	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
AC-19	CARRIER	48FCDM07	72.4	67.3	67	54 24	00 1.	.0 450	2589	1.86	15 81	208/3	30	45	710	2/MP6.01 (1, 2, 3, 5, 9, 10	HP-26	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5 [/]	10 208	3/1 34	50	212	3/MP6.01	1
AC-20	CARRIER	48JCDV04	36.3	32.8	50	40 12	00 1.	.0 450	2059	0.64	20 81	208/3	22	30	670	2/MP6.01 1, 2, 3, 4, 9, 10	FC-27	SAMSUNG	AM054TNZDCH/AA	BLDG B	CLASSROOM 27	53	61	1150	450	3/8"	3/4"	-	- 20{	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
1. WEIG	HT INCLUDES ALL (OPTIONS AND ACCESS	ORIES.		67	54		6. PROVIDE			 MIZER WITH BA		RELIEF, TW	VO STAGE CO	OOLING, N		HP-27	SAMSUNG	AM053TXMDCH/AA	-	ROOF			-	-	3/8"	3/4"	17.5 [,]	10 208	3/1 34	50	212	3/MP6.01	1
 PROV PROV PROV PROV 	IDE WITH DELTA CO IDE WITH MERV 13 IDE WITH LOW LEA	ONTROLS THERMOSTA FILTERS. K ECONOMIZER WITH E	T WITH CO2 SE	ENSOR. SEE MP RELIEF, VARIAB	P5.01 FOR CON	TROLS. DLING CAPACI ⁻	⁻Y, HIGH	BELT DRIV PHASE M 7. PROVIDE	/E FAN, LOU ONITOR, TW WITH LOW	JVERED HAIL /O-SPEED INC NOX, TIN-PLA	GUARDS, HING DOOR FAN MOT ATED INDOOR C	ed acces or vfd co oil hairpin	S PANELS, U NTROLLER, NS, CRANKO	UNPOWERED , AND E-COA ⁻ CASE HEATEF	D CONVEN T COILS. R, AND TII	NIENCE OUTLET, ME GUARD II.	FC-28	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 28	53	61	650	200	3/8"	5/8"	-	- 20{	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
STATI OUTLI 5. PROV	C DIRECT DRIVE FA ET, PHASE MONITC IDE WITH LOW LEA	AN, LOUVERED HAIL GU DR, AND E-COAT COILS. IK ECONOMIZER WITH E	JARDS, HINGEE	D ACCESS PANI RELIEF, TWO ST	ELS, UNPOWER	RED CONVENII		8. PROVIDE 9. PROVIDE 10. OWNER F	WITH MICROMET	DMETL CURB L ROOF CURE CONTRACTO	ADAPTOR. CON 3 TO MATCH EX R INSTALLED.		TO FIELD V	/ERIFY ALL E	XISTING (CURB DIMENSIONS.	HP-28	SAMSUNG	AM053TXMDCH/AA	-	ROOF			-	-	3/8"	5/8"	17.5 [,]	10 208	3/1 34	50	212	3/MP6.01	1
DIREC	E MONITOR, AND E	VERED HAIL GUARDS, I -COAT COILS.	HINGED ACCES	SS PANELS, UN	POWERED CON	IVENIENCE OU	JILEI,					7					FC-29	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 29	53	61	1150	450	3/8"	3/4"	-	- 20{	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
						SPL	IT SYSTE	.M AIR CONI	DITIONEF	KS SCHED	ULE						HP-29	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10 208	3/1 34	50	212	3/MP6.01	1
	TAG	MANUFACTURER	MODEL	- WI BUII	ING / LC		COOLING TOTAL MBH	HEATING TOTAL MBH	AIRFLOW CFM	REFRIGER/	ANT PIPING GAS	SEER V	ELECTF	RICAL	WEIGH LBS	T MOUNTING NOTES	FC-30	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 30	53	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
	SSO-A-1	SAMSUNG	AR24TSFYBV	VKXCV		ROOF				1/4"	5/8"	18 20	08 / 1 20) 30	125	3/MP6.01	HP-30	SAMSUNG	AM053TXMDCH/AA		ROOF	-		-	-	3/8"	3/4"	17.5	10 208	3 / 1 34	50	212	3/MP6.01	1
	SSI-A-1	SAMSUNG	AR24TSFYBV		DING A	/ING ROOM	22	24 -	657	1/4"	5/8"	_	NOT	Ē 1	30	6/MP6.01 2, 3, 4, 5	FC-31	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 31	53	61	1150	450	3/8"	3/4"	-	- 20{	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
	1. IN 2 P			DOOR UNIT.				4. PROVIDE '	WITH BACN		E CARD. SEE M	IP5.01 FOR	CONTROLS.				HP-31	SAMSUNG	AM053TXMDCH/AA	-	ROOF			-	-	3/8"	3/4"	17.5 [/]	10 208	3/1 34	50	212	3/MP6.01	1
	2. P 3. P	ROVIDE WITH SAMSUN	IG WALL MOUN	TED THERMOS	STAT.						···						FC-32	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 32	53	61	1150	450	3/8"	3/4"	-	- 201	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
							LIT SYST						FIFCTP	CAI			HP-32	SAMSUNG	AM053TXMDCH/AA	BIDGO	ROOF		VI	-	-	3/8"	3/4"	17.5	10 208	3/1 34	50	212	3/MP6.01	1
	TAG MA	NUFACTURER	MODEL	WING / BUILDING	LOCATION	TOTAL MB	TOTAL MI	AIRFLOW 3H CFM		GAS	SEER HSP	PF V/PI		MOCP	LBS	DETAIL NOTES	FC-33	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 33	52	61	1150	450	3/8"	3/4"	-	- 208	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
	SSO-G-1	SAMSUNG AC0	18JXADCH/AA	BUILDING G	ROOF	18	20		1/4"	1/2"	20.1 10	208 /	1 8.1	15	100	3/MP6.01	HP-33	SAMSUNG	AM053TXMDCH/AA		ROOF	JJ	UI	-	-	3/8"	3/4"	17.5	10 208	3/1 34	50	212	3/MP6.01	1
	SSI-G-1	SAMSUNG ACO	18NN4DCH/AA		CLASSROOM 40			580	1/4"	1/2"			NOTE	1	35	10/MP6.01 2, 3, 4, 5	FC-34	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 34	53	61	1150	450	3/8"	3/4"	-	- 201	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
	1. INDOOF 2. VERIFY INSTAL	R UNITS ARE POWEREE ' REFRIGERANT PIPE S LATION.) by outdoor Izes and rou	R UNIT. TING LIMITATIO	ONS WITH MANU	JFACTURER P	RIOR TO	3. 4. 5.	Provide Provide With Bl	WITH SAMSU WITH BACNI JILT-IN CONDI	JNG WALL MOU ET INTERFACE / ENSATE PUMP.	JNTED THE CARD. SEE	RMOSTAT. MP5.01 FOF	R CONTROLS	S.		HP-34	SAMSUNG	AM053TXMDCH/AA		ROOF	00	UI	-	-	3/8"	3/4"	17.5	10 208	3/1 34	50	212	3/MP6.01	1
																	FC-35	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 35	53	61	1150	450	3/8"	3/4"	-	- 20/	8/1 2.6	15	164	1/MP6.01	2, 3, 4,
								1	EXHAU!	ST FANS S			M	OTOR	141-1		HP-35	SAMSUNG	AM053TXMDCH/AA		ROOF		UI	-	-	3/8"	3/4"	17.5	10 208	3/1 34	50	212	3/MP6.01	1

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TAG	MANUFACTURE	R MODEL	BUILDING	LOCATION	TOTAL MBH	TOTAL MBH	AIRFLOW CFM	OUTSIDE		SEER	HSPF	V/PH		WEIGHT	MOUNTING DETAIL	NOTES		TAG	MANUFACTURER	MODEL	BUILDING	LOCATION			Flow out Fm air			- SEER	HSPF			CP UEIGH	T MOUNTI DETAI	
FC-36	SAMSUNG			CLASSROOM			1200	450	3/8" 3/			N		164	12/MP6.01	234678		FC-14	SAMSUNG			CLASSROOM 14		1	150 4	50 3/8"	3/4"	 		208/1	26 1	5 164	1/MP6 (
				36	- 54	60																	53	61						200/1				
HP-36	SAMSUNG	AC054KXADCH/AA		SLAB			-	-	3/8" 3/4	." 17.1	9.0	208 / 1	42 70	212	16/MP6.01			HP-14	SAMSUNG	AM053TXMDCH/AA	-	ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50) 212	3/MP6.0	J1 1
FC-37	SAMSUNG	AC054KNZDCH/AA		CLASSROOM 37	54	60	1600	450	3/8" 3/4	-	-	N	OTE 8	164	12/MP6.01	2, 3, 4, 6, 7, 8		FC-15A	SAMSUNG	AC030JXADCH/AA		CLASSROOM 15A	33	36	50 2	00 3/8"	3/4"	_	-	٢	NOTE 8	125	1/MP6.0	01 2, 3, 4,
HP-37	SAMSUNG	AC054KXADCH/AA		SLAB	54	00	-	-	3/8" 3/4	." 17.1	9.0	208 / 1	42 70	212	16/MP6.01	1		HP-15A	SAMSUNG	AC030KNZDCH/AA		ROOF		30	-	- 3/8"	3/4"	19.6	3.33	208 / 1	34 50	ე 155	3/MP6.0	01 1
FC-38	SAMSUNG	AC054KNZDCH/AA	BLDG	CLASSROOM			1600	450	3/8" 3/4	." _		I	I	164	12/MP6.01	2, 3, 4, 6, 7, 8		FC-15B	SAMSUNG	AC030JXADCH/AA		CLASSROOM			50 2	00 3/8"	5/8"	-	-	<u> </u>	I	125	1/MP6.0	.01 2, 3, 4,
			_	38	- 54	60										$\left(\begin{array}{c} \end{array} \right)$	4				-	15B	33	36					+					
HP-38	SAMSUNG	AC054KXADCH/AA		SLAB			-	-	3/8" 3/4	." 17.1	9.0	208 / 1	42 70	212	16/MP6.01			HP-15B	SAMSUNG	AC030KNZDCH/AA	-	ROOF			-	- 3/8"	5/8"	19.6	3.33	208 / 1	21.7 35) 155 	3/MP6.()1 1
FC-39	SAMSUNG	AC054KNZDCH/AA		CLASSROOM 39	54	60	1600	450	3/8" 3/4	-	-	N	OTE 8	164	12/MP6.01	2, 3, 4, 6, 7, 8	j c	FC-16	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 16	52	1	150 4	50 3/8"	3/4"	_	-	208/1	2.6 15	5 164	1/MP6.0	01 2, 3, 4,
HP-39	SAMSUNG	AC054KXADCH/AA		SLAB	- 54	00	-	-	3/8" 3/4	." 17.1	9.0	208 / 1	42 70	212	16/MP6.01	1		HP-16	SAMSUNG	AM053TXMDCH/AA		ROOF		01	-	- 3/8"	3/4"	17.5	10	208 / 1	34 50	ງ 212	3/MP6.0	.01 1
1. SI	L	L BE ABLE TO OPERATI	E AT 94% HEAT	 TING CAPACITY D	OWN TO 32°F (DUTDOOR		5. F	PROVIDE CONDEN	SATE PUMP, I	LITTLE GIA	ANT VCMX-20L	ILS 230V WITH	OVERFLOW	PROTECTION,			FC-17	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 17		1	150 4	50 3/8"	3/4"	-		208/1	2.6 1!	5 164	1/MP6.0	.01 2, 3, 4,
A 2. C 3 PI	MBIENT TEMPERAT FM BASED ON 0.55 ROVIDE WITH SAM	FURE. ESP. SUNG MIM-AGOUN 24VA						6. F	PPROVED EQUAL PROVIDE WITH 4" /	MERV- 13 FILT	ERS WITH		ESS PANEL.			\sim					-		53	61		0.01	0/45						0/1/20	
4. PI	ROVIDE WITH DELT	TA CONTROLS THERMO	STAT WITH CC	2 SENSOR. SEE	MP5.01 FOR CC	INTROLS.		8. II	NDOOR UNIT POW	ERED BY OUT	TDOOR UN	NIT.		INDICATED				HP-17	SAMSUNG	AM053TXMDCH/AA	-	RUUF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50	212	3/MP6.0	J1 1
																	7	FC-18	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 18	53	61	150 4	50 3/8"	3/4"		-	208/1	2.6 15	i 164	1/MP6.(J1 2, 3, 4,
			COOLI	NG MBH	GAS HEATING							ELE	CTRICAL	WEIGHT			-	HP-18	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50	ງ 212	3/MP6.0	01 1
TAG	MANUFACTU	RER MODEL NO.	TOTAL	SENSIBLE	INPUT OL	JTPUT CF	M IN. W	/.G. AIR CFM	I RPM BF	IP SEER	%	V / PH	MCA MOCF	b LBS	DETAIL	NOTES	-	FC-19	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 19		1	150 4	50 3/8"	3/4"	-		208/1	2.6 15	5 164	1/MP6.0	.01 2, 3, 4,
AC-1	CARRIER	48JCDV05	49.3	45.7	50 67	40 54 160	00 1.0	0 450	2883 1.4	46 20	81	208 / 3	25 30	695	2/MP6.01	1, 2, 3, 4, 9, 10	B		CAMPLING		-	POOF	53	61		2/0"	2/4"	17.5		208 / 1	24 54		2/MDC/	01 1
AC-2	CARRIER	48JCDV05	49.3	45.7	50 67	40 54 160	00 1.0	0 450	2883 1.	46 20	81	208 / 3	25 30	695	2/MP6.01	1, 2, 3, 4, 9, 10	\mathbb{R}	пр-19	SAMSUNG	AIVIUDD I XIVIDCH/AA		RUUF			-	- 3/0	5/4	17.5		20071			3/101P0.0	
AC-3	CARRIER	48VGNE24	23.0	21.9	40	33 85	50 0.8	8 350	1050 0.	36 15	81	208 / 1	19.4 30	350	14/MP6.01	1, 2, 3, 7, 8, 9, 10	$\overline{\mathbf{x}}$	FC-20	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 20	53	61	150 4	50 3/8"	3/4"		-	208/1	2.6 15	j 164	1/MP6.0	J1 2, 3, 4,
					50	40											-	HP-20	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50	J 212	3/MP6.0	01 1
AC-4	CARRIER	48JCDV05	49.3	45.7	67	54 160	00 1.0	0 450	2883 1.4	46 20	81	208 / 3	25 30	695	2/MP6.01	1, 2, 3, 4, 9, 10		FC-21	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 21		1	150 4	50 3/8"	3/4"	-		208/1	2.6 15	5 164	1/MP6.0	.01 2, 3, 4,
AC-5	CARRIER	48JCDV05	49.3	45.7	50 67	40 54 160	00 1.0	0 450	2883 1.4	46 20	81	208 / 3	25 30	695	2/MP6.01	1, 2, 3, 4, 9, 10	K		CAMPLINC		-	POOF	53	61		2/0"	2///"	17.5		208 / 1	24 54		2/MD6 /	01 1
AC-6	CARRIER	48JCDV04	36.3	32.8	50 67	40 54 120	00 1.0	0 450	2059 0.4	64 20	81	208 / 3	22 30	670	2/MP6.01	1, 2, 3, 4, 9, 10		HP-21	SAMSUNG	AIVIUDD I XIVIDCH/AA	-	KUUF			-	- 3/0	5/4	17.5		20071			3/101P0.0	
AC-8	CARRIER	48VGNA30	29.1	27.3	40	32 85	50 0.8	8 350	1050 0.	36 15	78	208 / 3	16.2 20	355	14/MP6.01	(1, 2, 3, 7, 8, 9, 10	$\overline{\mathbf{k}}$	FC-22	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 22	53	61	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	164 ز	1/MP6.0)1 2, 3, 4,
					50	40											-	HP-22	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50	J 212	3/MP6.0	01 1
AC-9	CARRIER	48JCDV04	36.3	32.8	67	54 120	00 1.0	0 450	2059 0.6	54 20	81	208/3	22 30	670	2/MP6.01	1, 2, 3, 4, 9, 10		FC-23	SAMSUNG	AM054TNZDCH/AA	BLDG A	CLASSROOM 23		1	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	5 164	1/MP6.0	.01 2, 3, 4,
AC-10	CARRIER	48HCDD08	93.3	85.2	90 125	73 103 300	00 1.2	2 450	939 1.7	79 13.8	82	208 / 3	41 50	1100	2/MP6.01	1, 2, 3, 6, 9, 10	K	HP-23	SAMSLING			ROOF	53	61		3/8"	3///"	17.5		208 / 1	34 51	0 212	3/MP6 (01 1
AC-11	CARRIER	48HCDD08	93.3	85.2	90 125	73 103 300	00 1.2	2 450	939 1. ⁻	79 13.8	82	208 / 3	41 50	1100	2/MP6.01	1, 2, 3, 6, 9, 10	Ŕ	111-23	SAMOUNO		-				-	- 3/0							5/WI 0.	
AC-12	CARRIER	48VGNA30	29.1	27.3	40	32 85	50 0.8	8 350	1050 0.	36 15	78	208 / 3	16.2 20	355	14/MP6.01	1, 2, 3, 7, 8, 9, 10	Ř	FC-24	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 24	53	61	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	<u>ن</u> 164	1/MP6.0)1 2, 3, 4,
					50	40											-	HP-24	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50	J 212	3/MP6.0	01 1
AC-13	CARRIER	48JCDV05	49.3	45.7	67	54 160	00 1.0	0 450	2883 1.4	46 20	81	208/3	25 30	695	2/MP6.01	1, 2, 3, 7, 8, 9, 10	\downarrow	FC-24A	SAMSUNG	AC024KNZDCH/AA	-	KITCHEN		;	60 1	50 1/4"	5/8"	-	-	1	NOTE 8	100	1/MP6.0	.01 2, 3, 4,
AC-14	CARRIER	48VGNA30	29.1	27.3	40	32 85	50 0.8	8 350	1050 0.5	36 15	78	208 / 3	16.2 20	355	14/MP6.01	1, 2, 3, 7, 8, 9, 10	<u> </u>	HP-24A	SAMSLING			ROOF	24	27		- 1/4"	5/8"	19.5	11.5	208 / 1	13.58 21	0 145	3/MP6 (01 1
AC-15	CARRIER	48JCDV04	36.3	32.8	50 67	40 54 120	00 1.0	0 450	2059 0.1	64 20	81	208 / 3	22 30	670	2/MP6.01	1, 2, 3, 4, 9, 10	K		GANOUNG							- 1/4								
AC-16	CARRIER	48JCDV05	49.3	45.7	50	40 160	00 1.0	0 450	2883 1.	46 20	81	208/3	25 30	695	2/MP6.01	1, 2, 3, 4, 9, 10	$\overline{\mathbf{x}}$	FC-25	SAMSUNG	AM054TNZDCH/AA	-	CLASSROOM 25	53	61	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	<u>ن</u> 164	1/MP6.()1 2, 3, 4,
AC 17		49.1001/04	26.2	20.0	50	40 40		0 450	2050 0	24 20	01	200 / 2	22 20	670	2/MDC 01		Ŕ	HP-25	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50) 212	3/MP6.0	01 1
AG-17		48JCDV04	30.3	32.8	67	54	00 1.0	J 450		20	81	20873	22 30	670	2/MP6.01	1, 2, 3, 4, 9, 10	-{	FC-26	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 26		1	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	5 164	1/MP6.0	01 2, 3, 4,
AC-18	CARRIER	48VGNA30	29.1	27.3	40	32 85	50 0.8	8 350	1050 0.3	36 15	78	208 / 3	16.2 20	355	14/MP6.01	1, 2, 3, 7, 8, 9, 10		HP-26	SAMSUNG	AM053TXMDCH/AA	-	ROOF	53	61		- 3/8"	3/4"	17.5	10	208 / 1	34 5(0 212	3/MP6.0	.01 1
AC-19	CARRIER	48FCDM07	72.4	67.3	67	54 240	00 1.0	0 450	2589 1.8	36 15	81	208 / 3	30 45	710	2/MP6.01	1, 2, 3, 5, 9, 10	R				-							!	+					
AC-20	CARRIER	48JCDV04	36.3	32.8	50 67	40 54 120	00 1.0	0 450	2059 0.	64 20	81	208 / 3	22 30	670	2/MP6.01	1, 2, 3, 4, 9, 10		FC-27	SAMSUNG	AM054TNZDCH/AA	BLDG B		53	61	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	, 164	1/MP6.0	J1 Z, 3, 4,
1. WE	IGHT INCLUDES AL	L OPTIONS AND ACCES	SORIES.					6. PROVIDE			WITH BAF		LIEF. TWO STA		MEDIUM STA			HP-27	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50) 212	3/MP6.0	J1 1
2. PR(3. PR(OVIDE WITH DELTA	CONTROLS THERMOS	TAT WITH CO2	SENSOR. SEE MF	P5.01 FOR CON	TROLS.		BELT DRI	VE FAN, LOUVERE ONITOR, TWO-SP	D HAIL GUAR	DS, HINGE Fan Moto	ED ACCESS PA	ANELS, UNPOV ROLLER, AND E	VERED CONV	ENIENCE OUT	LET,		FC-28	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 28		(50 2	00 3/8"	5/8"	-	-	208/1	2.6 15	5 164	1/MP6.0	01 2, 3, 4,
4. PRO STA OUT	ATIC DIRECT DRIVE TLET, PHASE MONI	EAK ECONOMIZER WITH EFAN, LOUVERED HAIL (TOR, AND E-COAT COIL	HBAROMETRIC GUARDS, HING S.	C RELIEF, VARIAB SED ACCESS PAN	ELS, UNPOWE	RED CONVENIE	ence	 PROVIDE PROVIDE PROVIDE 	WITH LOW NOX, I WITH MICROMET	IN-PLATED IN L CURB ADAP F C <u>U</u> RB TO M	IDOOR CO TOR. CON ATCH EXI	DIL HAIRPINS, TRACTOR TO STING.	FIELD VERIFY	ALL EXISTIN	G CURB DIMEN	II. ISIONS.		HP-28	SAMSUNG	AM053TXMDCH/AA	-	ROOF	53	61	-	- 3/8"	5/8"	17.5	10	208 / 1	34 5(0 212	3/MP6.0	.01 1
5. PRO DIR	OVIDE WITH LOW L ECT DRIVE FAN, LO	EAK ECONOMIZER WITH DUVERED HAIL GUARDS	H BAROMETRIC 5, HINGED ACC	C RELIEF, TWO ST ESS PANELS, UN	TAGE COOLING	, HIGH STATIC NVENIENCE OL	(JTLET,	10. OWNER F	URNISHED CONTI	RÁCTOR INST	ALLED.	$\mathbf{\mathcal{T}}$						FC 20	CAMPLINC						150 4	E0 2/9"	2/4"		+	20.9/1	2.6 1		1/MD6 (01 234
PD/	ASE MONITOR, AND	DE-COAT COILS.									<u></u>							FC-29	SAMSUNG	AMU54TNZDCH/AA	-	CLASSROOM 29	53	61	150 4	50 5/6	5/4	-		200/1	2.0 10		1/101P0.0	, , , 4, 5
						SPL	IT SYSTE	M AIR CONE		HEDULE							7	HP-29	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50) 212	3/MP6.0	J1 1
	TAG	MANUFACTURER	MOE	DEL W			COOLING	HEATING	AIRFLOW REF	RIGERANT PI	PING	EER	ELECTRICAL	WEI	GHT MOUN	TING NOTES		FC-30	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 30		1	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	5 164	1/MP6.0	01 2, 3, 4,
				BUI			TOTAL MBH	TOTAL MBH		UID GA	AS						-	HP-30	SAMSUNG	AM053TXMDCH/AA		ROOF	53	61	-	- 3/8"	3/4"	17.5	10	208 / 1	34 5(0 212	3/MP6.0	.01 1
	SSO-A	-1 SAMSUNG	AR241SFY	BWKXCV	DING A	ROOF	22	24	_ 1/	/4" 5/	8"	18 2087	1 20	30 12	25 3/MP	5.01	-	EC 21	SAMSLING					1	150 4	50 2/8"	2///"		+	208/1	2.6 1		1/MD6 (01 234
	SSI-A-	1 SAMSUNG	AR24TSFY	BWKNCV	SER'	VING ROOM			657 1 <i>i</i>	/4" 5/	8"	-	NOTE 1	3	0 6/MP	6.01 2, 3, 4, 5		FC-31	SAMSUNG	AMU54TNZDCH/AA	-		53	61	150 4	50 3/8	3/4	-		208/1	2.0 15	104	I/MP6.0	JI 2, 3, 4, 8
	1. 2	INDOOR UNITS ARE PO		UTDOOR UNIT.				4. PROVIDE	WITH BACNET INT		D. SEE MP	5.01 FOR CON	ITROLS.					HP-31	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50) 212	3/MP6.0	J1 1
	3.	PROVIDE WITH SAMSU	JNG WALL MOU	UNTED THERMOS	STAT.			3. TROVIDE	MITTCONDENSA									FC-32	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 32		1	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	5 164	1/MP6.0	01 2, 3, 4,
						SP	LIT SYSTE	EM HEAT PL	JMPS SCHED ¹	JLE								HP-32	SAMSUNG	AM053TXMDCH/AA		ROOF	53	61	-	- 3/8"	3/4"	17.5	10	208 / 1	34 5(0 212	3/MP6.0	.01 1
	TAG	MANUFACTURER	MODEL	WING / BUILDING	LOCATION	COOLING		AIRFLOW			R HSPF			WEI		TING NOTES		EC 22	CAMOUNO		BLDG C				150 4	50 2/0"	2/4"	+	+	200/4	26	5 404	1/1/100	01 2 2 4
	SSO_C-1	SAMSUNG		A	ROOF				נוטאים G 1/4" .	/2" 20 1	10	208 / 1	8 1	15 1)0 3/MD	6.01	-	1-0-33	SAIVISUING		-	ULAOOKUUM 33	53	61	- JU 4	J/8"	3/4"	-	-	200/ I	∠.∪ 15		ілмРб.(, z, 3, 4, 5
				BUILDING G		18	20			20.1		20071	0.1				-	HP-33	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50) 212	3/MP6.0	J1 1
	SSI-G-1	SAMSUNG AC	018NN4DCH/A	A	40	'		580	1/4" 1	/2" —	-		NOTE 1	3	5 10/MP	6.01 2, 3, 4, 5		FC-34	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 34		1	150 4	50 3/8"	3/4"	-	-	208/1	2.6 15	5 164	1/MP6.0	01 2, 3, 4,
	1. INDO 2. VERI	OR UNITS ARE POWER	ED BY OUTDO SIZES AND RC	OR UNIT. DUTING LIMITATIC	ONS WITH MAN	UFACTURER PI	RIOR TO	3. 4.	PROVIDE WITH PROVIDE WITH	I SAMSUNG W I BACNET INTI	ALL MOUI	NTED THERMO ARD. SEE MP	DSTAT. 5.01 FOR CONT	TROLS.				HP-34	SAMSUNG	AM053TXMDCH/AA	1	ROOF	53	61	-	- 3/8"	3/4"	17.5	10	208 / 1	34 5(0 212	3/MP6.0	.01 1
	INST	ALLATION.						5.	WITH BUILT-IN	CONDENSAT	E PUMP.							FC-35	SAMSUNG						150	50 2/0"	3///"		-	20.8/1	26 4	5 164	1/MD6 /	01 234
			[7			/ WIUG+ HVZDUN/AA			53	61	4	JU J/0	0/4						i/ivir'0.(
													MOTOR			TINC	-	HP-35	SAMSUNG	AM053TXMDCH/AA		ROOF			-	- 3/8"	3/4"	17.5	10	208 / 1	34 50) 212	3/MP6.0	J1 1

	TA	٩G	MANU
	SSC)-A-1	SA
	SSI	-A-1	SA
	1. 2. 3.	ini Pr Pr	DOOR U OVIDE \ OVIDE \
ΤÆ	٩G	MAN	UFACT

TAG	MANUFACT
SSO-G-1	SAMSU
SSI-G-1	SAMSU
1. INI 2. VE INS	DOOR UNITS RIFY REFRIG STALLATION.

1. SET BLADES AT 22.5° DEFLECTION. PRIME AND PAINT PER ARCHITECT'S INSTRUCTIONS. REGISTER COLOR SELECTED BY ARCHITECT.

PROVIDE WITH AIRSAN COMPACT DUCT SILENCER. 4. PROVIDE WITH ASD AIR SCOOP DEVICE.

5. CONTRACTOR TO FIELD VERIFY (E) DIMENSIONS PRIOR TO ORDERING.

3. PROVIDE WITH GREENHECK ROOF CURB.

				EXHAU	ST FANS	SCHED	ULE					
TAG	MANUFACTURER	MODEL NO.	AREA SERVED	AIRFLOW	ESP	FAN	SOUND POWER	МОТО	R	WEIGHT	MOUNTING	NOTES
				CFM	IN. W.G.	RPM	SONES	HP / WATTS	V / PH	LBS	DETAIL	
EF-G-1	GREENHECK	G-140-VG	BLDG G ART 13	1000	0.25	742	5.6	1/4	115 / 1	75	1/MP6.02	1, 2, 3, 4, 5

1. WEIGHT INCLUDES ACCESSORIES.

 PROVIDE WITH UL LISTING, FAN MOUNTED SPEED CONTROL, GRAVITY OPERATED
 BACKDRAFT DAMPER, AND BIRDSCREEN.
 WITH 16"Ø DUCT TO 24x24 EG-1 GRILLE, SEE AIR DISTRIBUTION SCHEDULE.
 EXHAUST FAN SHALL BE CONTROLLED BY LINE VOLTAGE HUMIDISTAT RH 5. EXHAUST FAN SHALL BE CONTROLLED BY LINE VOLTAGE HUMIDISTAT RH SETPOINT. EXHAUST FAN SHALL ALSO BE ALLOWED TO MANUALLY OPERATED VIA TIMER SWITCH IN PARALLEL WITH HUMIDISTAT.

	ROOF HOODS SCHEDULE										
TAG	MANUFACTURER	MODEL NO.	AREA SERVED	TYPE	THROAT SIZE	HOOD SIZE	CURB CAP SIZE	WEIGHT LBS	MOUNTING DETAIL	NOTES	
Al-G-1	GREENHECK	GRSI-20	BLDG G ART 13	INTAKE	20"Ø	35.5"Ø	30" x 30"	55	1/MP6.02	1, 2, 3, 4	

1. WEIGHT INCLUDES ACCESSORIES. 2. PROVIDE WITH BACKDRAFT DAMPER, AND INSECT SCREEN.

3. PROVIDE WITH GREENHECK ROOF CURB. 4. WITH 16"Ø DUCT TO 24x24 EG-1, SEE AIR DISTRIBUTION SCHEDULE. 1. SPLIT SYSTEM SHALL BE ABLE TO OPERATE AT 94% HEATING CAPACITY DOWN TO 32°F OUTDOOR AMBIENT TEMPERATURE. 2. CFM BASED ON 0.55 ESP.

5. PROVIDE CONDENSATE PUMP, LITTLE GIANT VCMX-20ULS WITH OVERFLOW PROTECTION, OR 6. PROVIDE WITH 4" MERV- 13 FILTERS WITH FILTER ACCESS PANEL.

3. PROVIDE WITH SAMSUNG MIM-A60UN 24VAC THERMOSTAT ADAPTER AND 24VAC TRANSFORMER. 4. PROVIDE WITH DELTA CONTROLS THERMOSTAT WITH CO2 SENSOR. SEE MP5.01 FOR CONTROLS. 7. FAN COIL SHALL BE ADJUSTED TO OPERATE AT CONSTANT SPEED AT INDICATED CFM. 8. INDOOR UNIT POWERED BY OUTDOOR UNIT.









2 FLOOR PLAN - BLDG D - NEW - MECHANICAL & PLUMBING MP2.05 SCALE: 1/8" = 1'-0"



3 FLOOR PLAN - BLDG A - NEW - MECHANICAL & PLUMBING MP2.05 SCALE: 1/8" = 1'-0"







MP2.05 SCALE: NONE

NORTH

	GENERAL NOTES
1.	CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING AND NEW BUILDING STRUSERVICES AND OWNER'S PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION.
2.	COORDINATE THE LOCATIONS OF ROOF/ WALL OPENINGS, PENETRATIONS, DUCTWORK AND ALL EQUIPMENT WITH RESPECT TO BUILDING STRUCTURE AND OTHER BUILDING SERVICES TO AVOID
3.	EQUIPMENT MOUNTING DETAIL REFERENCES SHOWN ON SCHEDULES ON SHEET MP0.02.
4.	FOR CLARITY, ABANDONED CD PIPING AND (E) GAS MAINS ARE NOT SHOWN ON THIS PLAN. SEE N
5.	PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT.
6.	SEE DETAIL 7/MP6.01 FOR PIPE SUPPORT ON ROOF.
7.	CONTRACTOR TO PROVIDE AND INSTALL THERMOSTAT WIRING AND ASSOCIATED CONDUITS FOR EQUIPMENT AND CONNECTIONS.
8.	CLEAN ALL (E) DUCTWORK AND REGISTERS PER SPECIFICATION 23 01 30.
9.	PAINT HEAT PUMPS ON ROOF TO MATCH (E) ROOF COLOR.
10.	PAINT EXPOSED CONDENSATE PIPING AT EXTERIOR TO MATCH ADJACENT.
	(#) NEW SHEET NOTES
1.	INSTALL FAN COIL, TYP. SEE 4/MP2.05 AND 5/MP2.05 FOR TYPICAL FAN COIL INSTALLATION. SEE 1/ TYPICAL FAN COIL MOUNTING.
2.	INSTALL HEAT PUMP ON ROOF, MIN 10 FT AWAY FROM EDGE OF ROOF, TYP. SEE FLOOR PLANS FOL LOCATION OF EACH UNIT.
3.	INSTALL REFRIGERANT PIPING FROM HEAT PUMP TO FAN COIL, TYP. MINIMIZE EXPOSED PIPING O PENETRATE ROOF WITHIN 36" OF HEAT PUMP. RUN PIPE CONCEALED ABOVE T-BAR CEILING TO F. ENCLOSURE. PENETRATE FAN COIL ENCLOSURE WALL ABOVE CEILING. DROP DOWN TO FAN COIL UNIT. ENSURE REFRIGERANT PIPING DOES NOT BLOCK FILTER ACCESS.
4.	INSTALL THERMOSTAT ON WALL, 48" MAX AFF, AND WIRE TO NEW FAN COIL, TYP.
5.	NOT USED.
6.	INSTALL EXPOSED SUPPLY DUCT. PAINT ALL EXPOSED DUCTWORK AND REGISTERS.
7.	(E) OUTSIDE AIR LOUVER, TYP.
8.	INSTALL DUCT SUPPORTS, TYP. SEE DETAIL 5/MP6.01.
9.	INSTALL FACE OPERABLE KEY EXTRACTOR, TYP. FOR ALL SUPPLY REGISTERS.
10.	INSTALL FAN COIL. CONNECT TO (E) SUPPLY DUCT ABOVE UNIT.
· 11.	NOT USED.

12. NOT USEI

(13. NOT USED. \cdots

14. RETURN REGISTER WITH GRILLE SILENCER.

- 5. MOTORIZED RELIEF DAMPER AND RETURN GRILLE (RG-1) MOUNTED TO BOTH SIDES OF RELIEF OPENING. DAMPER ackslashWITH ACTUATOR TO MATCH (E) FRAME APPROXIMATELY 46"x26". ENSURE DAMPER AND ACTUATOR FIT WITHIN RELIEF OPENING. RETURN GRILLE TO FILL ENTIRE (E) WINDOW PANEL. VERIFY EXACT DIMENSIONS IN FIELD. RUN LOW VOLTAGE PLENUM RATED CABLE ABOVE CEILING, MINIMIZE EXPOSED CABLE, PAINT EXPOSED CABLE TO MATCH ADJACENT FINISHES. _____ 16. (E) OUTSIDE AIR LOUVER.
- 17. INSTALL OUTSIDE AIR LOUVER. SIZE TO MATCH FULL WIDTH AND HEIGHT OF (E) WINDOW PANEL (46" x 26" NOMINAL). FIELD VERIFY EXACT FRAME SIZE BEFORE ORDERING LOUVER.
- 18. 6"x32" OUTSIDE AIR DUCT DOWN TO MIXING PLENUM.
- 19. FAN COIL. SEE PLANS FOR LOCATION.
- 20. 24"x24" RETURN REGISTER HSR-1 WITH GRILLE SILENCER.
- 21. CLEARANCE REQUIRED FOR FILTER REPLACEMENT
- 22. 30" FULL HEIGHT DOOR. SEE ARCHITECTS DRAWINGS
- 23. 20"X16" MOTORIZED DAMPER (LOW VOLTAGE).
- \sim
- 24. NOT USED.
- 25. NOT USED. \sim
- 26. REFRIGERANT PIPING FROM HEAT PUMP TO FAN COIL. SEE 11/MP6.01 FOR PIPE SUPPORT.
- 27. DUCT TRANSITION TO ALLOW DAMPER CONNECTION.
- 28. FILTER BOX THAT CAN FIT 4" OR 2" FILTER.
- 29. FLEX DUCT AT CONNECTION TO UNIT.
- 30. MIXING PLENUM BELOW FAN COIL.
- 31. INSTALL HEAT PUMP ON ROOF. INSTALL REFRIGERANT PIPING FROM HEAT PUMP TO FAN COIL.
- 32. INSTALL FAN COIL ON WALL. COORDINATE EXACT HEIGHT WITH DISTRICT
- 33. PROVIDE DUCT COLLAR TO CONCEAL DUCT OPENING AT ENCLOSURE.











FLOOR PLAN - BLDG B - NEW - MECHANICAL & PLUMBING



3 FLOOR PLAN - SCIENCE BLDG - NEW - MECHANICAL & PLUMBING MP2.06 SCALE: 1/8" = 1'-0"





ROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL

SEE DETAILS 9/MP6.01 FOR CD CONNECTION TO EQUIPMENT.

CHANGE IN DIRECTION EXCEEDING 135°.

30x16 HSR-1 ABOVE DOOR.

POC TO EXISTING SUPPLY

DUCTWORK. ALL DUCTWORK INSIDE ENCLOSURE IS NEW.

BUILDING KEY

14"Ø

PARTIAL FLOOR PLAN - SCIENCE CLASSROOM

4 **PARTIAL** MP2.06 SCALE: 1/2" = 1'-0"



ŚCIENCĘ

INSTALL THERMOSTAT ON — SIDE OF ENCLOSURE AND

WIRE TO FAN COIL.

INSTALL 1/2" MESH SCREEN AT POC TO EXISTING 14" ROUND RETURN DUCTWORK.

ADJUST TOTAL RETURN TO 1350 CFM. TYPICAL.







2 FLOOR PLAN - BLDG D - NEW - PLUMBING P2.05 SCALE: 1/8" = 1'-0"









	ADDENDUM 3 NOTES
1.	THIS SHEET COVERS CONDENSATE DRAINS FOR BUILDINGS A AND D AND SUPERCEDES CONDENSATE DRAINS SHOWN FOR BUILDINGS A AND D IN BID DOCUMENTS AND ADDENDUMS 1 AND 2.
	(#) NEW SHEET NOTES
1.	CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. DROP PIPE AT LEFT SIDE OF UNIT. ENSURE PIPE DOES NOT BLOCK FILTER ACCESS.
2.	DROP CD TIGHT TO EXTERIOR WALL TO BELOW GRADE, AND ROUTE TO CD DRYWELL. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. SEE DETAIL 15/MP6.01 FOR CD DRYWELL.
3.	DRYWELL AT LANDSCAPE AREA.
4.	SAWCUT, REPAIR, AND PATCH TO MATCH EXISTING. SEE SHEET A8.10 ON ARCHITECT'S DRAWINGS FOR PATCHING AT GRADE.
5.	CONDENSATE DRAIN PIPE ABOVE ACT. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°.
6.	CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. INSTALL CONDENSATE PUMP AT LEFT SIDE OF UNIT. ENSURE PUMP AND PIPE DO NOT BLOCK FILTER ACCESS. PUMP CD UP TO ENCLOSURE CEILING AND CONNECT TO CD HEADER ABOVE ACT.
7.	CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. DROP PIPE AT LEFT SIDE OF UNIT. ENSURE PIPE DOES NOT BLOCK FILTER ACCESS. CONNECT TO CD HEADERS DROPPING AT WALL.
8.	DROP CD HEADERS AT WALL AND COMBINE INTO SINGLE PIPE.
9.	DROP CD TIGHT TO EXTERIOR WALL TO ABOVE CONCRETE FOOTING. THEN DROP TIGHT TO EXTERIOR CONCRETE FOOTING TO BELOW GRADE, AND ROUTE TO CD DRYWELL. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. SEE DETAIL 18/MP6.01 FOR CD DRYWELL.
10.	CD FROM FAN COIL. DROP CD TIGHT TO EXTERIOR WALL TO BELOW GRADE, AND ROUTE TO CD DRYWELL. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. SEE DETAILS 9/MP6.01 FOR CD CONNECTION TO EQUIPMENT AND 15/MP6.01 FOR CD DRYWELL.
11.	ROUTE CD PIPE ALONG WALL TO FAN COIL ENCLOSURE. DROP DOWN LEFT SIDE OF ENCLOSURE AND COMBINE WITH CD FROM FAN COIL. ROUTE TO CD DRYWELL.























CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. INSTALL CONDENSATE PUMP AT LEFT SIDE OF UNIT. ENSURE PUMP AND PIPE DO NOT BLOCK FILTER ACCESS. PUMP CD UP TO ENCLOSURE CEILING AND CONNECT TO CD HEADER.

- FOOTING TO BELOW GRADE, AND ROUTE TO CD DRYWELL. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. SEE DETAIL 18/MP6.01 FOR CD DRYWELL.
- . DROP CD TIGHT TO EXTERIOR WALL TO ABOVE CONCRETE FOOTING. DROP CD TIGHT TO EXTERIOR CONCRETE
- 5. DROP CD HEADERS AT WALL AND COMBINE INTO SINGLE PIPE.
- 4. CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. DROP PIPE AT LEFT SIDE OF UNIT. ENSURE PIPE DOES NOT BLOCK FILTER ACCESS. CONNECT TO CD HEADERS DROPPING AT WALL.
- AT GRADE.
- 3. SAWCUT, REPAIR, AND PATCH TO MATCH EXISTING. SEE SHEET A8.10 ON ARCHITECT'S DRAWINGS FOR PATCHING
- CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. INSTALL CONDENSATE PUMP AT LEFT SIDE OF UNIT. ENSURE PUMP AND PIPE DO NOT BLOCK FILTER ACCESS. PUMP CD UP TO ENCLOSURE CEILING AND CONNECT TO CD HEADER ABOVE ACT.
- DIRECTION EXCEEDING 135°.
- (#) NEW SHEET NOTES CONDENSATE DRAIN PIPE ABOVE ACT. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN

ADDENDUM 3 NOTES

SHOWN FOR BUILDINGS B AND C IN BID DOCUMENTS AND ADDENDUMS 1 AND 2.



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8. DROP CD TIGHT TO EXTERIOR WALL TO BELOW GRADE, AND ROUTE TO CD DRYWELL. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. SEE DETAIL 15/MP6.01 FOR CD DRYWELL.







HVAC, Plumbing, Fire Protection Building Commissioning Industrial Refrigeration

Environmental Compliance

Training & Technical Support

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387 S. 1st Street, Suite 300 San Jose, CA., 95113



	BOREL MI HVAC R	DDLE SCHOOL - EPLACEMENT
IS	SAN MATEO-FOSTER	R CITY SCHOOL DISTRICT
architects	FILE NO.: 41-26	SHEET
arcritecto	APPL NO.: 01-119557	REF. SHEET MP6.01
tel: (408) 300 - 5160	^{JOB NO.} 2021005.07	AD3-MP6.01a
fax: (408) 300 - 5121	DATE 12/22/2021	







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:S:
UBLE NUT AT FITTINGS,
026 W/ 3/8" THRU BOLT,
V/ (3) TIGHT TURNS ′P. 4 WAYS.
R ROD.
925.
ILING.
ORGED STEEL CLEVIS
OLT W/ LOCKWASHER
VEIGHT OF DUCT = 10 LANS FOR SIZES AND
E CONTINUOUS COLLAR T AROUND DUCT.
D NUT.
OF T-BAR CEILING TILE. O NOT OVERCUT. REPLACED WITHOUT
ASSEMBLY SPACING
N.T.S.

SYMBOL LIST:

LI.J	PLAN, DETAIL OR SECTION DESIGNATION.
201	ROOM NUMBER.
$\langle \rangle$	SHEET REFERENCE SYMBOL - SEE ASSOCIATED NOTE ON SAME SHEET.
3	FEEDER SCHEDULE SYMBOL.
CH I	MECHANICAL EQUIPMENT TAG.
A	INDICATES FIXTURE TYPE
LUMINAIRE	SYMBOLS
	LUMINAIRE - SEE SCHEDULE.
— -0	POLE MOUNTED LUMINAIRE - SEE SCHEDULE.
o	POLE MOUNTED LUMINAIRE - SEE SCHEDULE.
$\langle O$	LUMINAIRE - SEE SCHEDULE.
0	LUMINAIRE - SEE SCHEDULE.
Ю	LUMINAIRE WALL MOUNTED-SEE SCHEDULE.
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST
EM	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST
	EMERGENCY LUMINAIRE WALL MOUNTED- PROVIDE EM. BATTERY BALLAST
۲	EXIT LIGHT SINGLE FACE - SEE SCHEDULE.
$\overline{\otimes}$	EXIT LIGHT SINGLE FACE (WITH ARROW)- SEE SCHEDULE.
Θ	EXIT LIGHT (DOUBLE FACED WITH ARROW)- SEE SCHEDULE.
	EMERGENCY BATTERY PACK EXIT LIGHT INSTALL AS DIRECTED.

<u>TYPICAL LUMINAIRE NOMENCLATURE</u>

	INDICATES SWITCHING DESIGNATION
SWITCH SYN	<u>1BOLS</u>
\$	SINGLE POLE SWITCH, + 48" AFF TO THE TOP OF THE OUTLET BOX UON.
\$a	SINGLE POLE SWITCH, + 48" AFF TO THE TOP OF THE OUTLET BOX, a = CIRCUIT CONTROLLED.
\$ 3	THREE WAY SWITCH + 48" AFF TO THE TOP OF THE OUTLET BOX VON.
\$4	FOUR WAY SWITCH + 48" AFF TO THE TOP OF THE OUTLET BOX VON.
	MOTOR RATED SWITCH
a Vs	WALL MOUNTED LOW VOLTAGE "DATALINE SWITCH =48" FROM TOP OF BOX, VON,

a = CIRCUIT CONTROLLED LIGHTING OCCUPANCY SENSOR MOTION DETECTOR POWER PACK ONE CIRCUIT WALL SWITCH WITH BUILT IN OCCUPANCY SENSOR. CONNECT SWITCHING TO LIGHTING FIXTURES AS REQUIRED. MOUNT AT +48"AFF TO THE TOP

RECEPTACLE SYMBOLS

OF THE SWITCH BOX, UON.

1.1	
Φ	CONVENIENCE RECEPTACLE - DUPLEX AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
$\mathbf{\Phi}$	GFCI CONVENIENCE RECEPTACLE - DUPLEX AT +18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
\bigoplus	RECEPTACLE - DOUBLE DUPLEX AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
Φ	SINGLE RECEPTACLE - NEMA 5-20R UON, AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
Φ	SINGLE RECEPTACLE - NEMA L21 - 208 VOLT, THREE PHASE, 5 WIRE, AT + 18" AFF VON AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
↓ ^c	DOUBLE DUPLEX RECEPTACLE WITH (1) CONTROLLED DUPLEX AND (1) UNCONTROLLED DUPLEX, AT +18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
	3-CHANNEL SURFACE RACEWAY, INSTALL AT +36" AFF VON. RACE SHALL BE WIREMOLD #5500.
\bigtriangledown	FLOOR BOX WITH (2) DUPLEX RECEPTACLES AND DATA OUTLETS. QUANTITY OF DATA OUTLETS AS INDICATED ON THE FLOOR PLANS.





LCP	
LMRC 101	
LMRC 211	
LMRC 212	
LMRC 213	
P	
Φıoı	

Sioi \$102

POWER DISTRIBUTION SYMBOLS

LCP

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PANELBOARD - SURFACE OR FLUSH MOUNTED.		19" FLOOR MOUNTED DATA RACK.	
LIGHTING CONTROL CABINET.			
EMERGENCY POWER INVERTER.	∇	DATA/TEL STATION AT +18" AFF UON WITH (1) DATA OUTLET. CONNECT DATA/TEL OUTLETS OUTLETS PER THE DATA/TEL RISER DIAGRAM. STUB CONDUIT INTO AVAILABLE CEILING SPACE.	
JUNCTION BOX - CEILING OR WALL MOUNTED, SIZE PER CEC, TAPE AND TAG WIRES.			
MAIN SWITCHBOARD OR DISTRIBUTION PANEL.	$\nabla^{(2)}$	DATA/TEL STATION AT +18" AFF VON WITH (2) DATA OUTLETS. CONNECT DATA/TEL OUTLETS OUTLETS PER THE DATA/TEL RISER DIAGRAM. STUB CONDUIT INTO AVAILABLE CEILING SPACE.	
MOTOR			
	\frown		
RATING AS INDICATED.	(MAP)	(2) DATA OUTLETS FOR WIRELESS ACCESS POINT EQUIPMENT TO BE MOUNTED IN CEILING CHASE.	
UNFUSED DISCONNECT SWITCH - RATING AS INDICATED.			
FUSED DISCONNECT SWITCH - SIZE FUSES PER MOTOR MANUFACTURER'S RECOMMENDATIONS. RATING AS INDICATED.		INTERIOR SPEAKER WALL MOUNTED AT + 8'-0" AFF VON. CONNECT SPEAKER	
MAGNETIC STARTER - NEMA SIZE INDICATED.	(SH		
TRANSFORMER - SEE SINGLE LINE FOR REQUIREMENTS.	9	CEILING MOUNTED SPEAKER. CONNECT SPEAKER PER THE PA/CLOCK RISER DIAGRAM	
GROUND ROD.			
IN-GRADE ELECTRICAL PULL BOX WITH TRAFFIC RATED LID.	<u>ទ</u>	FLUSH MOUNTED EXTERIOR SPEAKER AT +8'-0" AFF UON. CONNECT EXTERIOR SPEAKER PER THE PA(CLOCK RISER DIAGRAM	
IN-GRADE LIGHTING PULL BOX WITH TRAFFIC RATED LID.		EXTERIOR OF EARLY ER THE PAROLOOK RIDER DIADRAH.	
IN-GRADE COMMUNICATION PULL BOX WITH TRAFFIC RATED LID.		COMBINATION FLUSH MOUNTED CLOCK/SPEAKER DEVICE AT +8'-0" AFF	
SINGLE EV CHARGER FOR BUS		UON. CONNECT CLOCK/SPEAKER PER THE PA/CLOCK RISER DIAGRAM. PROVIDE $\frac{3}{4}$ "C TO ACCESSIBLE CEILING.	
DOUBLE EV CHARGER FOR CAR		HDMI DEVICE. CONNECT PER A $4\frac{1}{4}$ " EXTRA DEEP BOX WITH A 2 GANG RING	

COMMUNICATIONS SYMBOLS

POWER DISTRIBUTION SINGLE LINE SYMBOLS

NORMALLY OPENED, AUXILIARY CONTACT.

NORMALLY CLOSED, AUXILIARY CONTACT.

EXISTING CONDUIT, CABLES OR DEVICE

FLEX CONDUIT WITH CONNECTION.

CONDUIT EMERGENCY SYSTEM.

CONDUIT - STUB UP.

CAPPED CONDUIT.

CONDUIT - STUB DOWN.

CONDUIT CONTINUATION.

AUTOMATIC TRANSFER SWITCH.

EMERGENCY GENERATOR.

	FIRE ALARM SYMBOLS		
DRAW-OUT CIRCUIT BREAKER.	FACP	FIRE ALARM CONTROL PANEL.	
	RPS	REMOTE POWER SUPPLY.	
	AMP	EVAC SPEAKER AMPLIFIER.	
	FATC	FIRE ALARM TERMINAL CABINET.	
	ANN	REMOTE FIRE ALARM ANNUNCIATOR.	
FUSED SWITCH.	3	SMOKE DETECTOR	
	F	PULL STATION	
"PG&E" METER W/ CURRENT TRANSFORMER.	Not	HORN STROBE	
TRANSFORMER.			

MEP 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 BEANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC, SECTIONS 1617A.I.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTER 13, 26 AND 30.

THROUGH I_4^{\perp} 'C TO CEILING.

- I. ALL PERMANENT EQUIPMENT AND COMPONENTS. 2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.q., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLE HAVING A FLEIXBLE CABLE.
- 3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 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 LINGITUDINAL DIRECTIONS:

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OF 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 THE 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., SMACNA OR 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 SYSTEM. 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 |: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

 $\mathsf{MP} \square \mathsf{MD} \square \mathsf{PP} \square \mathsf{E} \square - \mathsf{OPTION} 2: \mathsf{SHALL} \mathsf{COMPLY} \mathsf{WITH} \mathsf{THE} \mathsf{APPLICABLE} \mathsf{OSHPD}$ PRE-APPROVED (OPM #) #

WATTSTOPPER DIGITAL LIGHTING MANAGEMENT CONTROLS

CONDUIT - HOME RUN TO PANEL, TERMINAL CABINET, ETC. RUNS MARKED

WITH SUBSCRIPT "G" INDICATES GREEN GROUND WIRE. SIZE CONDUIT

CROSSHATCHES WITH "#10" INDICATES WIRE SIZE OTHER THAN #12'S.

ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.

WITH CROSSHATCHES INDICATE NUMBER OF #12 AWG WIRES. CROSSHATCH

WATTSTOPPER LMCP24

WATTSTOPPER LMRC-101

WATTSTOPPER LMRC-211

WATTSTOPPER LMRC-212

WATTSTOPPER LMRC-213

WATTSTOPPER LMDC-100, CEILING MOUNT

WATTSTOPPER LMDW-IOI, + 48" AFF TO TOP OF THE BOX, UON.

WATTSTOPPER LMLS-500, CEILING/WALL MOUNT

WATTSTOPPER LMSW-101, + 48" AFF TO TOP OF THE BOX, UON. WATTSTOPPER LMSW-102, + 48" AFF TO TOP OF THE BOX, UON.

GENERAL NOTES:

- THE CONTRACTOR SHALL BE LICENSED BY THE STATE OF CALIFORNIA C-10 AND SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT SHALL BE U.L. LISTED AND LABELED FOR THE APPLICATION.
- THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY THIS CONTRACT WORK.
- 3. PRIOR TO SUBMITTING A BID THE CONTRACTOR SHALL VISIT THE SITE, REVIEW THE EXISTING CONDITIONS AND ALLOW FOR LABOR, MATERIAL AND COORDINATION THAT IS NECESSARY TO PROVIDE A COMPLETE INSTALLATION OF EACH SYSTEM. THE CONTRACTOR SHALL OBTAIN AND BE FAMILIAR WITH ALL OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES ON PROJECT.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
- 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 ACCURATE "AS-BUILT" DRAWINGS. "AS-BUILT" DRAWINGS SHALL SHOW ACTUAL CHANGES TO ORIGINAL ELECTRICAL DRAWING, SHOW LOCATIONS OF PULL BOXES, CONDUIT RUNS AND WIRING CHANGES. THE CONTRACTOR SHALL PROVIDE ONE (1) HARDCOPY SET OF DOCUMENT DRAWINGS AND ONE (1) SET OF DOCUMENT DRAWINGS IN ELECTRONIC CAD FILE THAT REPRESENTS THE ACTUAL "AS-BUILTS". CAD FILES SHALL BE AUTOCAD 2010 FORMAT.
- 6. ALL MATERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
- 7. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
- 8. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT START OF WORK. THE CONTRACTOR SHALL CONTACT "UNDERGROUND SERVICES ALERT" FOR LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF UNDERGROUND WORK.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.
- IO. ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN INTO BUILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ELECTRICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS. ALL EXTERIOR CONDUITS SHALL BE "RSG" UNLESS OTHERWISE NOTED ON DRAWINGS.
- II. ALL CONDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM: TWO (2) #12'S WITH ONE (1) #12 GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR "ROUGH" ESTIMATING ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE.
- 12. COORDINATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID CONFLICTS.
- 13. SEE ARCHITECTURAL DOCUMENTS FOR EXACT PLACEMENT OF LIGHTING FIXTURES AND DEVICES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CEILING TYPES FROM ARCHITECTURAL DOCUMENTS AND PROVIDE AND INSTALL ALL REQUIRED FIXTURE MOUNTING HARDWARE. PROVIDE AND INSTALL U.L. LISTED FIRE STOP ENCLOSURES FOR ALL RECESSED FIXTURES IN FIRE RATED CEILINGS.
- 14. THE CONTRACTOR SHALL PROVIDE IN EVERY CONDUIT A DRAW STRING FOR USE IN FUTURE CONSTRUCTION.
- 15. POWER FEEDERS MAY NOT BE SHOWN ON THE DRAWINGS, REFER TO THE SINGLE LINE DIAGRAM FOR CONDUIT AND FEEDER INFORMATION. ALL DRAWINGS ARE DIAGRAMMATIC INDICATING LOCATION OR POSITION OF EQUIPMENT. FIELD VERIFY CONDITIONS PRIOR TO INSTALLATION OF ANY WORK.
- 16. MANUFACTURER'S RECOMMENDATIONS FOR CONDUCTOR SIZING, CIRCUIT BREAKER OR FUSE PROTECTION OF ELECTRICALLY OPERATED EQUIPMENT MAY DIFFER FROM THOSE INDICATED ON DRAWINGS. CONTRACTOR SHALL CONFIRM RATINGS PRIOR TO ORDERING EQUIPMENT. PROVIDE ELECTRICAL PROTECTION TO EQUIPMENT IN ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS AND PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
- 17. CONTRACTOR SHALL REVIEW EQUIPMENT REQUIREMENTS OF OTHER TRADES AND PROVIDE POWER CIRCUITS AND CONNECTIONS TO ELECTRICALLY OPERATED EQUIPMENT.
- 18. EFFECTIVELY BOND ELECTRICAL CABINETS, ENCLOSURES AND CONDUIT RACEWAYS TO CODE APPROVED GROUND AS PART OF THE CONTINUOUS GROUNDING SYSTEM.
- 19. MEASEURE THE 3-PHASE AND PHASE TO NEUTRAL SERVICE VOLTAGE FOR 208/120V PANELS PRIOR TO ENERGIZING ANY PANELS OR EQUIPMENT. AVOID ENERGIZING 208/120V PANELS PHASE TO NEUTRAL VOLTAGE ABOVE 130 VOLTS. TRANSFORMER TAP SETTING MAY REQUIRE CHANGING.
- 20. MEASURE THE I-PHASE AND PHASE TO NEUTRAL SERVICE VOLTAGE FOR 240/120V PANELS PRIOR TO ENERGIZING ANY PANELS OR EQUIPMENT. AVOID ENERGIZING 240/120V PANELS PHASE TO NEUTRAL VOLTAGE ABOVE 130 VOLTS.
- 21. DO NOT SUBSTITUTE SPECIFIED MATERIAL OR EQUIPMENT WITHOUT FIRST OBTAINING APPROVAL FROM THE OWNER OR HIS REPRESENTATIVE.
- 22. IDENTIFY ALL ABOVE CEILING JUNCTION BOXES COVERS WITH PANEL AND CIRCUITS IN LEGIBLE PRINT USING BLACK INDELIBLE INK. ABOVE CEILING JUNCTION BOXES SHALL ALSO BE LABELED AT THE REAR INTERIOR BOX WITH AN INDELIBLE BLACK MARKER. 23. LABEL ALL WALL AND/OR WIREMOLD MOUNTED OUTLET DEVICES WITH PANEL CIRCUIT IDENTIFICATION WITH BOLD TYPE-PRINTED LABELING. BLACK LETTERING ON WHITE BACKGROUND PREFERRED.
- 24. DERATE CONDUCTORS IN RACEWAYS IN ACCORDANCE WITH NEC CODE REQUIREMENTS. PANEL FEEDERS TO WIREMOLDS CAN ENTER AT VARIOUS LOCATIONS TO LIMIT CONDUCTOR CIRCUITS PER WIREMOLD CAPACITIES.

	DRAWING INDEX
ET NO.	SHEET TITLE
2 .1	ELECTRICAL COVER SHEET
1.1	ELECTRICAL SITE PLAN
2.1	ELECTRICAL DEMO FLOOR PLANS - BUILDINGS A, B, C & D
2.2	ELECTRICAL DEMO FLOOR PLANS - SCIENCE BUILDING
2.3	ELECTRICAL DEMO PARTIAL FLOOR PLAN - BUILDING G
2.4	ELECTRICAL DEMO PARTIAL FLOOR PLAN - BUILDING G
3.1	ELECTRICAL NEW FLOOR PLANS - BUILDINGS A, B, C \ddagger D
3.2	ELECTRICAL NEW FLOOR PLANS - SCIENCE BUILDING
3.3	ELECTRICAL NEW PARTIAL FLOOR PLAN - BUILDING G
3.4	ELECTRICAL NEW PARTIAL FLOOR PLAN - BUILDING G
4.1	DEMO SINGLE LINE DIAGRAM
4.2	NEW SINGLE LINE DIAGRAM
4.3	PANEL SCHEDULES
4.4	PANEL SCHEDULES
5.1	ELECTRICAL DETAILS
5.2	ELECTRICAL DETAILS







GENERAL NOTES:

 CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
 ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE UNDERGROUND CONDUITS AND CABLING.

- 3. CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND LOCATIONS OF EXISTING UNDERGROUND SYSTEMS, WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.
- 4. ALL ON SITE TRENCH SHALL BE INSTALLED PER 3/ E5.2.
- SEE DEMO SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
 SEE NEW SINGLE LINE DIAGRAM FOR FEEDER CABLE AND CONDUIT REQUIREMENTS.

SHEET NOTES:

- $\langle | \rangle$ EXISTING PG&E TRANSFORMER TO REMAIN.
- $\left< \frac{1}{2} \right>$ Existing main switchboard. Stub New conduit into existing switchboard as required.
- 3 EXISTING RETAINING WALL AT THIS LOCATION. ROUTE NEW CONDUIT AS REQUIRED.
- REQUIRED. $\overline{4}$ EXISTING STAIRS AT THIS LOCATION. ROUTE NEW CONDUIT AS REQUIRED.
- 5 EXISTING RAMP AT THIS LOCATION. ROUTE-NEW CONDUIT AS REQUIRED
- 6 DIRECTIONAL BORE CONDUIT UNDER THE SURROUNDING AREAS OF THE STAIRS AND RAMP.

CONDUIT SCHEDULE:

- (N) (2) 2"C PNL 'CM' (N) (2) 4"C - FUTURE BLDG 'F' (N) (2) 2"C - PNL 'CM' (N) (2) 3"C - PNL 'AM' (N) (2) 3"C - PNL 'AM'
- (N) (2) 3"C PNL 'DM'

PULLBOX SCHEDULE:

- E1 NEW B3048 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- E2 NEW B2436 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.













E3.1 SCALE: 1/8" = 1'-0"







GENERAL NOTES:

- I. ALL CONDUITS SHALL BE ROUTED CONCEALED IN CEILING BELOW WHERE POSSIBLE. ALL EXPOSED CONDUITS SHALL BE PAINTED.
- 2. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND POINTS OF CONNECTION FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR. ADJUST LOCATION AND CONNECTION POINTS AS NEEDED.
- 3. SEE PANEL SCHEDULES AND SINGLE LINE DIAGRAM FOR POWER CONNECTION REQUIREMENTS.
- 4. COORDINATE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL REQUREMENTS.
- 5. FUSED AND UNFUSED DISCONNECT SWITCHES SHALL BE $600\vee$ RATED, HEAVY DUTY CYCLE. FUSES FOR MECHANICAL UNITS SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATION.
- PROVIDE CONDUIT ROOF PENETRATIONS REQUIRED. COORDINATE ROOF PENETRATION LOCATIONS WITH MECHANICAL'S PIPING ROOF PENETRATIONS. ROOF PENETRATION SHALL BE PER DETAIL 4/MP6.01.

SHEET NOTES:

- I > NEW 60A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- $\langle 2 \rangle$ NEW 30A-2P, NEMA-I, MOTOR-RATED DISCONNECT SWITCH FOR MECHANICAL
- \langle 3 \rangle NEW 30A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- 4 INDOOR UNIT IS POWER BY THE OUTDOOR UNIT. ROUTE HOMERUN CIRCUIT TO ASSOCIATED OUTDOOR UNIT. REFER TO MECHANICAL SCHEDULE MP0.02 FOR ADDITIONAL REQUIREMENTS.
- 5 PROVIDE NEW WEATHERPROOF GFCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC WPIOIMXD "BOSS".
- 6 PROVIDE MOTOR RATED SWITCH AND 120V POWER FOR CONDENSATION PUMP.
- \langle 7 \rangle mount conduit adjacent to chase and route across the Hallway.
- \langle 8 \rangle NEW 60A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- (9) ROUTE CONDUIT BELOW CANOPY.
- $\overline{}$
- (10) ROUTE CONDUIT AT EXTERIOR BUILDING BELOW EAVE. PROVIDE PULL CANS AS REQUIRED TO ROUTE. II > PROVIDE LB CONDUIT FOR TRANSITIONS AT CORNER.

CONDUIT SCHEDULE:

- <1>(N) (2) 2"C PNL 'CM'
- (N) (2) 3"C PNL 'AM' (N) (2) 3"C PNL 'DM'
- (N) (2) 3"C PNL 'AM'
- (N) (2) 3"C PNL 'DM'

BUILDING KEY









NOTES:

- HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM
- OF THE PULL BOX. 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS.
- 4. PROVIDE BELL ENDS ON ALL CONDUIT.
- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.

B2436 ELECTRICAL VAULT ´4 `

NOT TO SCALE





- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE
- PULL BOX. 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS.
- 4. PROVIDE BELL ENDS ON ALL CONDUIT.

NOT TO SCALE

- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.

B1017 ELECTRICAL VAULT 5 E5.2







∖E5.2 / NOT TO SCALE




Aedis Architects 387 S. First St., Suite 300 San Jose, CA 95113

Subject: College Park Elementary School HVAC Replacement San Mateo - Foster City School District Aedis Project No. 2021005.01 DSA Application #01-119530

ADDENDUM NO. 3

CHANGES AND/OR CLARIFICATIONS OF THE DRAWINGS AND SPECIFICATIONS ARE AS FOLLOWS:

GENERAL

<u>Add:</u> The report in its entirety per HVAC And Power Upgrade Project Hazardous Materials Survey Report College Park Elementary School

ITEM NO. 3.2: DSA FORM 103-19 LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS

<u>Add:</u> The DSA form in its entirety per DSA Form 103-19 Listing Of Structural Tests & Special Inspections, 2019 CBC

ITEM NO. 3.3: REFERENCE PLANS

Add:Utility survey for reference only, per attached College Park Campus Utility SurveyAdd:Topographic survey reference only, per attached Topographic Survey of 715Indian Avenue

SPECIFICATIONS

- ITEM NO. 3.4: TABLE OF CONTENTS:
 - Add: 02 80 00 HAZARDOUS MATERIALS ABATEMENT
 - Add: 07 62 00 SHEET METAL FLASHING & TRIM
 - Add: 32 17 23 PAVEMENT MARKINGS
- ITEM NO. 3.5: SECTION 02 80 00 HAZARDOUS MATERIALS ABATEMENT
 - <u>Add:</u> The specification in its entirety per attached 02 80 00 Hazardous Materials Abatement.

College Park Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.01

ITEM NO. 3.6: SECTION 07 31 13 ASPHALT SHINGLES

- <u>Revise:</u> Paragraph 2.1 to read: "Acceptable Manufacturer: GAF Corporation; Timberline Ultra. Select color to match existing roof."
- <u>Revise:</u> Paragraph 2.3A to read: "Underlayment: GAF Corporation; Shingle Mate Underlayment."
- <u>Add:</u> Paragraph 3.10 to read: "Provide water leak test at roof areas where cutting and patching occurs, including flashings, with hose spray test in front of District personnel. Spray flashing in both directions for no less than five (5) minutes and confirm there is no leaking."

ITEM NO. 3.7: SECTION 07 62 00 SHEET METAL FLASHING & TRIM

<u>Add:</u> The specification in its entirety per attached 07 62 00 Sheet Metal Flashing and Trim.

ITEM NO. 3.8: SECTION 09 51 13 ACOUSTICAL PANEL CEILINGS

- <u>*Revise:*</u> Paragraph 2.3C to read: Acoustical Panels Type: Painted Miner Fiber
 - 1. Basis of Design Product: USG Radar Acoustical Panels
 - 2. Thickness: ¾ inches
 - 3. Sizes: 24"x48"
 - 4. Composition: Miner Fiber
 - 5. Edge: Square
 - 6. Surface Color: White
 - 7. Suspended Systems: Standard

ITEM NO. 3.9: SECTION 09 65 13 RESILIENT BASE AND ACCESSORIES

- <u>*Revise:*</u> Paragraph 2.1H to read: "Colors: Selected from manufacturer's full range to match existing."
- ITEM NO. 3.10: SECTION 32 17 23 PAVEMENT MARKINGS
 - <u>Add:</u> The specification in its entirety per attached 32 17 23 Pavement Markings.

DRAWINGS

ARCHITECTURAL

ITEM NO. 3.11: DRAWING SHEET A1.02 – SITE PLAN

<u>Add:</u> Site Plan Keynote #29 & associated tags in plan for gas shut off sign per attached AD3-A2.01.

College Park Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.01

- Add: Fire department access route in plan per attached AD3-A2.01.
- <u>*Revise:*</u> Fire hydrant label from new to existing per attached AD3-A2.01.
- <u>Add:</u> (E) Fire department access route graphics to Graphic Key per attached AD3-A2.01.
- ITEM NO. 3.12: DRAWING SHEET A3.01 NEW FLOOR PLANS WINGS 2, 3, & 4
 - <u>Add:</u> General sheet note #G to read "AT INTERIOR AND EXTERIOR PAINT ALL NEW EXPOSED CONDUITS, PIPES, HANGERS AND ATTACHMENTS, AND DUCTWORK"
- ITEM NO. 3.13: DRAWING SHEET A4.01 TYPICAL NEW REFLECTED CEILING PLAN
 - <u>Revise:</u> Graphic Key label for gypsum board to cement plaster per attached AD3-A4.01 <u>Revise:</u> New Reflected Ceiling Plan Keynote #7 per AD3-A4.01.
- ITEM NO. 3.14: DRAWING SHEET A8.10 EXTERIOR DETAILS

Revise:	Detail 6/A8.10 Concrete Patch per attached AD3-A8.10A.
<u>Revise:</u>	Detail 2/A8.10 Typical Chain link Gate (Single) per attached AD3-A8.10B.
<u>Revise:</u>	Detail 10/A8.10 Shingle Side Flashing per attached AD3-A8.10B.
Revise:	Detail 11/A8.10 Shingle Lower Flashing per attached AD3-A8.10B.

ITEM NO. 3.15: DRAWING SHEET A9.10 – INTERIOR ELEVATIONS & DETAILS

<u>Revise:</u>	Detail 13/A9.10 Gas Shut Off Signage per attached AD3-A9.10.
<u>Revise:</u>	Detail 16/A9.10 Mech Enclosure Clearances, Typ. per attached AD3-A9.10.
<u>Revise:</u>	In typical elevations 9/A9.10 and 10/A9.10 revise finish tag VWC-1 to GB-1

ITEM NO. 3.16: DRAWING SHEET A11.01 – FINISH SCHEDULE, OPENING SCHEDULE, LEGENDS, & DETAILS

<u>Remove:</u>In Finish Schedule, remove VWC-1 from Wall Finish at all rooms<u>Revise:</u>In Finish Legend, revise GB-1 from "GYPSUM BOARD" to "GYPSUM BOARD,
PAINTED"

STRUCTURAL

- ITEM NO. 3.17: DRAWING SHEET S8.01 FRAMING DETAILS AND NAILING SCHEDULE
 - <u>*Remove:*</u> Vertical nailing requirement in detail 7 per attached AD3-S8.01

ELECTRICAL

- ITEM NO. 3.18: DRAWING SHEET E0.1 Electrical Cover Sheet
 - <u>Revise:</u> Wiring & Conduit Run Symbols per attached AD3-E0.1

ADDENDUM NO. 3

College Park Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.01

ITEM NO. 3.19: DRAWING SHEET E1.1 Electrical Site Plan

Revise:General Note #2 per attached AD3-E1.1.Revise:Underground conduit linetype per attached AD3-E1.1.

ITEM NO. 3.20: DRAWING SHEET E5.4 – Electrical Details

Revise: Detail 3/E5.4 Note #1 per attached AD3-E5.4.

Add: Detail 3/E5.4 Note #5 per attached AD3-E5.4.

ADDENDUM NO. 3

College Park Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.01



Aedis Architects Thang Do, Principal



Structural, BASE Design Gokhan Akalan



Electrical, American Consulting Engineers Electrical Sammy Fernandez

ADDENDUM NO. 3

College Park Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.01

Attachments:

General:

HVAC And Power Upgrade Project Hazardous Materials Survey Report College Park Elementary School (30 pages) DSA Form 103-19 Listing Of Structural Tests & Special Inspections, 2019 CBC (13 pages) College Park Campus Utility Survey (1 page) Topographic Survey of 715 Indian Avenue (2 pages)

Specifications: 02 80 00 Hazardous Material Abatement (42 Pages) 07 62 00 Sheet Metal Flashing and Trim (11 pages) 32 17 23 Pavement Markings (2 Pages)

Drawings: ARCHITECTURAL: SHEET AD3-A1.02 SHEET AD3-A4.01 SHEET AD3-A8.10A SHEET AD3-A8.10B SHEET AD3-A9.10 STRUCTURAL: SHEET AD3-S8.01 ELECTRICAL: SHEET AD3-E0.1 SHEET AD3-E0.1 SHEET AD3-E1.1 SHEET AD3-E5.4





HVAC and Power Upgrade Project

HAZARDOUS MATERIALS SURVEY REPORT

College Park Elementary School

For



419 Mason Street Suite 109 | Vacaville CA 95688 | 707.999.5234

Email: erica@znapfly.com

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Cover Letter

Thursday, September 9, 2021

Mark Sanders San Mateo Foster City School District 1170 Chess Drive Foster City, California 94404

SUBJECT: HVAC and Power Upgrades Project - Hazardous Materials Survey Report

Dear Mr. Sanders,

At the request of the San Mateo Foster City School District, Znap Fly provided an asbestos and lead survey of suspect building construction materials at College Park Elementary School located at 715 Indian Avenue in San Mateo, California as part of the San Mateo Foster City School District (SMFCSD).

Onsite testing was performed on July 1, and August 1, 2021, by Ms. Erica Sattar.

This report is intended as an informational resource for the San Mateo Foster City School District and includes sample/test results, conclusions and recommendations regarding hazardous materials based upon information obtained from samples and tests collected at specific locations, review of information/drawings provided to us, and professional judgment.

Shall you have any questions or concerns regarding this document, following review, please contact us at 707-999-5234.

With Gratitude,

Erica Sattar, CAC, CDPH Principal Consultant / Director of Environmental Znap Fly

Description of Buildings Surveyed

The buildings surveyed at College Park Elementary School are concrete/stucco exterior with metal framed windows with shingle roofing system. Interior finishes anticipated to be impacted by project work include acoustic ceiling panels, plaster soffit, sheetrock on walls, acoustic wall tiles, carpet mastic, cove base, and sealants. Floor tile was also sampled in areas outside the scope of work at the request of SMFCSD.

Survey Methodology: Sampling & Analytical

All onsite testing was performed at 7-sites throughout the San Mateo Foster City School District (SMFCSD), with XRF lead testing completed on July 1, 2021 and bulk samples from College Park Elementary School collected on August 1, 2021, by Ms. Erica Sattar. The project was planned and overseen by Ms. Sattar and Mr. Christopher Smith. Both, Ms. Sattar and Mr. Smith, are Cal/OSHA Certified Asbestos Consultants (CACs) and CDPH Lead Consultants, with mold investigation and remediation training. The report was prepared by Ms. Sattar and reviewed by Mr. Smith.

<u>Asbestos</u>

All bulk samples were collected using sampling guidelines established by the Environmental Protection Agency (EPA) and by generally following the methods described in Appendix K of title 8, CCR, Section 1529 of the California Code of Regulations for sample collection. Znap Fly was not prevented and/or instructed by the owner/operator of SMFCSD as to what materials were to be sampled. The following summarizes the sampling procedures utilized.

- Visually identified suspect ACMs were categorized into homogeneous material areas. A homogeneous material
 is defined as being a surfacing material, thermal system insulation, or miscellaneous material which is uniform
 in color and texture.
- A sampling scheme was developed based upon the location and quantity of the various homogeneous materials.
- Trained and certified personnel using appropriate sampling tools and leak-tight containers collected bulk samples.
- Bulk sample collection tools were decontaminated after the collection of each bulk sample to prevent the spread of secondary contamination to subsequent bulk samples.
- Each bulk sample was labeled with a unique sample identification number and recorded on a bulk sample log.
- Bulk samples collected were submitted to a laboratory with a chain of custody record.

All material quantities reported herein are rough order of magnitude estimates and should not be used for bidding purposes without review of available record drawings and on-site field verification by the bidder. The information provided in this report should be used in conjunction with construction documents and the contractor's own field verification of the abatement scope of work including location and extent of removal required for the demolition project being undertaken at each site. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Bulk samples of suspect materials were delivered to EMSL Analytical, Inc. (EMSL) in San Leandro, California. EMSL is a laboratory accredited under the National Institute of Standards and Technology (NIST)/National Voluntary Laboratory Accreditation Program (NVLAP) and the California Environmental Laboratory Accreditation Program (Cal-ELAP) for bulk asbestos sample analysis. The samples were submitted for analysis by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance with the EPA's "Method for the Determination of Asbestos in Bulk Building Materials" US EPA/600/R-93/116, dated July 1993 and adopted by the NVLAP as Test Method Code 18/A01.

Standard PLM analytical method has a limit of quantification of 1% asbestos. For materials with asbestos detected at trace levels or below 1% by standard PLM, the material must be considered to be above 1% (ACM) unless re-analyzed and found to be less than 1% by the PLM point count method (400 points minimum). Each sample of a homogeneous area material with trace result(s) must be re-analyzed by point count and found to be less than 1% in order to avoid assuming the material to be ACM according to EPA regulation. For this project, no materials were analyzed by point count methods.

Lead

Lead-based paint (LBP) is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%), as set forth in the Department of Housing and Urban Development (HUD) guidelines and California Department of Public Health (CDPH) regulations. Lead-Containing Paints (LCPs) are paints and coatings that contain detectable lead as defined by Cal/OSHA. Most paint and coatings on pre-1978 buildings contain some detectable lead subject to Cal/OSHA regulation. Therefore the exhaustive testing required to prove painted coatings do not contain lead is not practical or cost effective. Consequently, all paints and architectural coatings must be considered to contain some detectable levels of lead unless proven otherwise by laboratory analysis.

This survey included screening level LBP testing for the purpose of characterizing the general presence of lead in existing paints and coatings. As such, this survey included paint testing using a C series Vanta XRF direct read lead testing instrument. The results presented herein are representative of typical conditions but are not inclusive of all painted/coated surfaces present at the site. The results of this survey should assist with compliance to the California Occupational Safety and Health Administration (Cal/OSHA) lead construction standard and preliminary evaluation of potential construction waste streams. All painted/coated surfaces including untested surfaces, must be assumed to contain some detectable level of lead in the absence of representative paint chip analytical results demonstrating that lead levels are below analytical detection limits. This is because the XRF instrument, while providing a cost effective, non-destructive test method, the instrument is calibrated to detect LBP and cannot detect lead at the lowest levels regulated Cal/OSHA and Cal/EPA. Any detectable level of lead is subject to Cal/OSHA regulation.

Universal Wastes & Other Suspected Hazardous Materials

The building areas were visually surveyed for universal wastes and other hazardous materials. These universal wastes include fluorescent lighting fixtures manufactured prior to 1979 that have the potential to contain Polychlorinated Biphenyl (PCB) ballasts, mercury containing lighting tubes, and other components considered to be "universal wastes" upon disposal. "Universal wastes" include mercury-containing non-incandescent lamps, batteries, mercury thermostat switches and other hazardous wastes commonly found in building components and equipment. Other suspect hazardous materials include refrigerants, paints, and solvents.

Asbestos Containing Materials

Znap Fly collected a total of 51 bulk samples with 92 sample layers of suspect ACM analyzed by PLM analysis. Two plaster samples collected from the rough plaster soffit reported asbestos, while all other samples collected reported "none detected" by laboratory analysis. The analytical laboratory results for sampled suspect ACMs are listed below and in the attached Analytical Laboratory Reports.

Assumed Asbestos-Containing Material

The following list of materials are assumed to contain asbestos, pending testing prior to construction to confirm asbestos content or prove no asbestos is present by laboratory analysis.

- Texture coat associated with sheetrock above acoustical ceiling panel, < 1 2% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Regulated Asbestos Containing Material (RACM), approximately 5 square feet may be impacted at each work location, however may not be impacted with the given scope of work
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- Roof shingle & roof mastics, assumed asbestos, located throughout the roof system, non-friable Category I ACM, approximately 5 square feet may be impacted at each work location.

Suspect Asbestos-Containing Materials Sampled with No Asbestos Reported

Materials listed below were sampled and analyzed by an accredited laboratory by PLM analysis reported "none detected" for asbestos. The following list are all materials sampled.

- Temp wall material
- Sheet flooring material with associated mastics/adhesives
- Cove base, 4" tan cove base with associated white mastics
- Acoustic ceiling panel, 2' x 4' white with random pinhole pattern
- Sealant at exterior louver
- Carpet mastic

Refer to Attachment for a complete set of the laboratory results and sample locations.

Lead Containing Paints, Coatings and Materials

Znap Fly performed a total of 39 XRF lead tests from the interior and exterior building surfaces. The results of the XRF LBP screening survey are provided in the table attached. None of the painted surfaces tested by XRF detected lead at LBP levels above the threshold 1.0 mg/cm².

The tabulated data is not intended to be all inclusive and must be extrapolated to similar surfaces that were not tested. Lead content will vary according to painting histories involved. Generally on a building by building basis, component type and substrate are more reliable indicators.

General Interpretation of Lead-Containing Paint Findings Reported:

All painted components must be presumed to contain some detectable levels of lead regardless of non – detection by the XRF method unless exhaustively tested by paint chip analysis. Untested painted/coated components must be presumed to contain some lead at detectable levels. No surfaces tested contained high levels of lead considered to be LBP. The frequency of occurrence was typically low. The tested surfaces that reported low levels of detected lead must be considered lead-containing paints (LCP) and coatings in the absence of exhaustive testing by wet chemistry methods.

Paint Condition Findings:

The condition of paint at this site is generally in good/intact condition. Since even low levels of paint (e.g., just over 50 ppm) may exhibit hazardous waste characteristics, care must be taken to eliminate loose and peeling paint prior to general building demolition. Any loose, peeling or flaking paint should be removed and disposed of as lead hazardous waste.

Universal Wastes & Other Potential Hazardous Materials

Znap Fly visually inspected readily accessible areas of the building for other hazardous materials PCB lighting ballasts, Universal Wastes (such as mercury containing lighting tubes, thermostats, and batteries), and other suspect hazardous waste and contamination. No attempt to disassemble equipment or sample any additionally discovered suspect materials was included. Any suspect hazardous material must be presumed hazardous pending complete identification. For example, fluorescent lighting fixtures must be presumed to contain PCB ballasts pending removal and disassembly of each unit to determine ballast type and/or labeling in the absence of other explicit product specific information to the contrary.

Asbestos Containing Construction Materials

Prior to renovation/demolition construction activities, known or assumed ACMs that are likely to be disturbed by those activities must be removed and disposed of in accordance with all applicable regulations including federal National Emissions Standard for Hazardous Air Pollutants (NESHAPS) and Cal/OSHA regulations. A Cal-OSHA registered and State licensed, registered asbestos contractor (abatement/demolition/roofing) is required for removal of ACM prior to general demolition and renovation. For this project, mastic associated with tack board/white board/chalk board, roof materials, and texture coat associated with sheetrock above ceiling acoustic panels are considered asbestos containing materials unless proven otherwise by laboratory data. The mastics are considered Category I non-friable asbestos containing materials, while the plaster is considered a Category II ACM. Should any significant discrepancy between this report and existing conditions be discovered, the contractor shall notify the project manager, contracting officer, or inspector immediately. Assumed materials can be sampled on a rush turnaround time to prove a material does not contain asbestos. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Other Considerations and Rules

Where removal is unavoidable, the contractor's abatement sub-contractor should remove all friable RACM under class I removal requirements and dispose of waste as hazardous asbestos waste at a landfill permitted for asbestos hazardous waste disposal, this work is anticipated for this project at select locations; refer to project documents on-site. The contractor's abatement sub-contractor should also remove all category I & II non-friable ACM in a manner that does not produce friable ACM under Cal/OSHA Class I removal requirements and dispose of removed materials as non-hazardous asbestos waste at a landfill permitted for asbestos waste disposal.

The following additional requirements should be adhered to for any maintenance, renovation, or demolition projects requiring asbestos disturbance and/or removal:

•All asbestos-containing wastes shall be manifested as either hazardous or non-hazardous based on asbestos content, friability, and actual waste stream classification.

•All asbestos removal should be overseen by a qualified independent third party, retained by the building owner or manager of the building to ensure proper removal, clean up, work area clearance, and review waste shipping and disposal documentation.

Contractor should perform all work in compliance with contract documents and the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of asbestos.

Lead Containing Paints and Coatings

The painted components tested at the subject buildings typically had some detectable levels of lead and should be considered LCP coated. LBP was not detected on the surfaces or components tested. All paints and coatings should be considered LCP or coatings in the absence of exhaustive sampling and laboratory analysis. The Contractor conducting building demolition and any selective demolition controls the means and methods used and therefore should be required by the contract document to ensure that the demolition processes are conducted in a manner that creates the minimum amount of hazardous waste and leaves the site free of lead contamination exceeding regulatory levels.

Universal Wastes and Other Known or Presumed Hazardous Materials

PCB Lighting Ballasts: Znap Fly's visual inspection indicated that fluorescent light fixtures may contain PCB ballasts are present in the building. However, as it is not practically feasible to check each ballast for labeling prior to renovation, Znap Fly recommends that all light fixtures be visually inspected by the Contractor upon removal to determine if they contain PCB's. Electronic ballasts and ballasts marked "No PCB's" or "PCB Free" should be considered non-hazardous and recycled or disposed of accordingly. However, ballasts that are unmarked must be considered PCB-containing and properly handled, collected, stored, transported and recycled or disposed of by an approved recycling or disposal facility in accordance with the requirements of 22 CCR, Section 67426.1 and the contract.

Universal Wastes: All potential and identified mercury-containing light tubes, high intensity lamps, and other universal wastes such as batteries should be removed and recycled or disposed of in accordance with the guidelines established by the California Department of Toxic Substance Control Universal Waste Rule, as stated in 22 CCR Sections 66261.9 and 66273.1 thru 66273.90.

Other Suspect Hazardous Materials: Coolant gasses in air conditioning units must be properly extracted and recycled prior to unit removal and disposal by a qualified hazardous materials disposal contractor using EPA certified Refrigerant Reclaimer for the removal and recycling of the gases.

Limitations

Znap Fly conducted this survey in support of the HVAC Power Upgrade Project for San Mateo Foster City School District. Rooms and areas surveyed were based on access to unoccupied classrooms within the work scope defined in SD 90% CD drawings provided by the District dated 05/26/2021. No excavation or subsurface investigation was conducted to discover buried insulated piping and/or asbestos cement pipes concealed below the surface or interstitial wall spaces. Cement pipe and insulated pipe is assumed below the surface and/or in interstitial wall spaces. No samples were collected in rooms not anticipated to be impacted by this project and outside the scope of work anticipated. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Closing

Znap Fly performed the assessment in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

Conclusions and recommendations made regarding hazardous materials were based upon information obtained from samples and tests collected at specific locations, review of information provided to us, and professional judgment. Recommendations in this report were made based on conditions that Znap Fly reasonably infer to exist between sampling points.

This report is intended as an informational resource for the San Mateo Foster City School District. Any contractor using this document assumes all responsibility for reviewing all available information and for verifying existing site conditions including location and extent of hazardous materials present at specific areas.

Should any significant discrepancy between this report and existing conditions be discovered, the contractor shall notify the project manager, contracting officer, or inspector immediately.

If you have any questions or concerns regarding this document, please contact us at 707-999-5234.

With Gratitude, Znap Fly

Report prepared for the San Mateo Foster City School District by:

nich 1

Erica Sattar, CAC, CDPH Certified Asbestos Consultant #14-5250 CDPH Lead Sampling Technician #20425

Report reviewed for the San Mateo Foster City School District by:

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Attachments

Laboratory Reports with Chain of Custody Record Asbestos Sampling Plan Suspect Asbestos Containing Materials Sample Table Lead Sampling Plan Lead Paint Testing and Sampling Table Znap Fly Personnel Certifications CDPH Lead Hazard Evaluation Report

EMSL	EMSL Analytical, Inc. 464 McCormick Street San Leandro, CA 94577 Tel/Fax: (510) 895-3675 / (510) 895-3680 http://www.EMSL.com / sanleandrolab@emsl.com	EMSL Order: Customer ID: Customer PO: Project ID:	092112082 ZNAP75 EN210601
Attention:	Erica Sattar	Phone:	(707) 999-5234
	2nap Fly 419 Mason Street	Fax: Received Date:	08/05/2021 1:45 PM
	Suite 109	Analysis Date:	08/09/2021
	Vacaville, CA 95688	Collected Date:	07/22/2021
Project:	EN210601 - SAN MATEO FOSTER CITY SCHOOL DISTRICT - 7 PARK	SCHOOL HVAC PROJEC	T, COLLEGE

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

Sample		Asbestos			
	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
CP-A1-11-Sheetrock	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 11	White Non-Fibrous Homogeneous	4% Cellulose	80% Gypsum 16% Non-fibrous (Other)	None Detected
CP-A1-11-Skim Coat	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 11	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
CP-A1-13-Sheetrock	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 13	White Non-Fibrous Homogeneous	2% Cellulose	80% Gypsum 18% Non-fibrous (Other)	None Detected
CP-A1-13-Joint Compound 092112082-00024	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 13	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
CP-A1-13-Skim Coat	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 13	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
CP-A1-24-Sheetrock	SHEETROCK WALL - ABOVE 11, NOT ANTICIPATED TO BE TOUCHED - ROOM 24	Tan Non-Fibrous Homogeneous	2% Glass	80% Gypsum 18% Non-fibrous (Other)	None Detected
CP-A1-24-Joint Compound 092112082-0003A	SHEETROCK WALL - ABOVE 11, NOT ANTICIPATED TO BE TOUCHED - ROOM 24	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
CP-A1-17-Sheetrock	SHEETROCK WALL - ABOVE 11, NOT ANTICIPATED TO BE TOUCHED - ROOM 17	White Non-Fibrous Homogeneous		80% Gypsum 20% Non-fibrous (Other)	None Detected
CP-A1-17-Joint Compound 092112082-0004A	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 17	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
CP-A1-19-Sheetrock	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 19				Layer Not Present

Initial report from: 08/09/2021 13:53:37



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Project ID:

			Asbestos		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
CP-A1-19-Joint Compound 092112082-0005A	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED -	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
	ROOM 19				
CP-A1-19-Ceiling Tile	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 19	Gray/White Fibrous Homogeneous	60% Cellulose 15% Min. Wool	10% Perlite 15% Non-fibrous (Other)	None Detected
CP-A1-07	SHEETROCK WALL -	Tan	3% Cellulose	80% Gypsum	None Detected
092112082-0006	ABOVE 11, NOT ANTICIPATED TO BE TOUCHED - ROOM 7	Non-Fibrous Homogeneous		17% Non-fibrous (Other)	
CP-A1-08-Sheetrock	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 8	White Non-Fibrous Homogeneous		80% Gypsum 20% Non-fibrous (Other)	None Detected
CP-A1-08-Joint Compound	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
092112082-0007A	BE TOUCHED - ROOM 8				
CP-A1-08-Skim Coat	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 8	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
CP-A1-10-Sheetrock	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 10	White Non-Fibrous Homogeneous		80% Gypsum 20% Non-fibrous (Other)	None Detected
CP-A1-10-Skim Coat	SHEETROCK WALL - ABOVE I1, NOT ANTICIPATED TO BE TOUCHED - ROOM 10	White Non-Fibrous Homogeneous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
CP-A2-17	TEMP WALL - BROWN - ROOM 17	Gray Fibrous	100% Cellulose		None Detected
092112082-0009		Homogeneous	500% 0, 11, 1		N. 5. ()
CP-A2-24	TEMP WALL - BROWN - ROOM 24	White Fibrous Homogeneous	50% Cellulose 15% Min. Wool	20% Perlite 15% Non-fibrous (Other)	None Detected
CP-A3-13-Sheetrock	SHEETROCK ABOVE CEILING WITH TEXTURE - WHITE, ABOVE ACP - ROOM 13	White Non-Fibrous Homogeneous	3% Cellulose	80% Gypsum 17% Non-fibrous (Other)	None Detected
CP-A3-13-Texture	SHEETROCK ABOVE CEILING WITH TEXTURE - WHITE, ABOVE ACP - ROOM 13	White Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	<1% Chrysotile



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		Non-Asbestos			Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
CP-A3-08-Sheetrock 092112082-0012	SHEETROCK ABOVE CEILING WITH TEXTURE - WHITE, ABOVE ACP - ROOM 8	White Non-Fibrous Homogeneous	4% Cellulose	80% Gypsum 16% Non-fibrous (Other)	None Detected
CP-A3-08-Texture	SHEETROCK				Layer Not Present
092112082-0012A	ABOVE CEILING WITH TEXTURE - WHITE, ABOVE ACP - ROOM 8				
CP-A3-24-Sheetrock	SHEETROCK	White	3% Cellulose	80% Gypsum	None Detected
092112082-0013	ABOVE CEILING WITH TEXTURE - WHITE, ABOVE ACP - ROOM 24	Non-Fibrous Homogeneous		17% Non-fibrous (Other)	
CP-A3-24-Texture	SHEETROCK				Layer Not Present
092112082-0013A	ABOVE CEILING WITH TEXTURE - WHITE, ABOVE ACP - ROOM 24				
CP-C1-13	TEXTURE COAT	White		70% Ca Carbonate	<1% Chrysotile
092112082-0014	ASSOCIATED WITH A3 - WHITE, ABOVE ACP - ROOM 13	Non-Fibrous Homogeneous		30% Non-fibrous (Other)	
CP-C1-24	TEXTURE COAT	White		3% Quartz	2% Chrysotile
092112082-0015	ASSOCIATED WITH A3 - WHITE, ABOVE ACP - ROOM 24	Non-Fibrous Homogeneous		80% Ca Carbonate 15% Non-fibrous (Other)	
CP-C1-08	TEXTURE COAT	White		70% Ca Carbonate	<1% Chrysotile
092112082-0016	ASSOCIATED WITH A3 - WHITE, ABOVE ACP - ROOM 8	Non-Fibrous Homogeneous		30% Non-fibrous (Other)	
CP-F1-11-Cove Base	4" COVE BASE - TAN WITH MASTIC -	Brown Non-Fibrous		70% Matrix 30% Non-fibrous (Other)	None Detected
092112082-0017	ROOM 11	Homogeneous			
CP-F1-11-Mastic	4" COVE BASE - TAN WITH MASTIC - ROOM 11	White Non-Fibrous Homogeneous		10% Ca Carbonate 80% Matrix 10% Non-fibrous (Other)	None Detected
CP-F1-13-Cove Base	4" COVE BASE -	Brown		70% Matrix	None Detected
092112082-0018	TAN WITH MASTIC - ROOM 13	Non-Fibrous Homogeneous		30% Non-fibrous (Other)	
CP-F1-13-Mastic	4" COVE BASE -	White		10% Ca Carbonate	None Detected
000110080 00184	TAN WITH MASTIC -	Non-Fibrous		80% Matrix	
CP-E1-24-Cove Base	4" COVE BASE -	Brown		70% Matrix	None Detected
01 -1 1-24-00VC Dasc	TAN WITH MASTIC -	Non-Fibrous		30% Non-fibrous (Other)	
092112082-0019	ROOM 24	Homogeneous			
CP-F1-24-Mastic	4" COVE BASE - TAN WITH MASTIC -	White Non-Fibrous		5% Ca Carbonate 80% Matrix	None Detected
092112082-0019A	ROOM 24	Homogeneous		15% Non-fibrous (Other)	
CP-F1-17-Cove Base	4" COVE BASE - TAN WITH MASTIC - BOOM 17	Brown Non-Fibrous Homogeneous		70% Matrix 30% Non-fibrous (Other)	None Detected
CP-F1-17-Mastic	4" COVE BASE -	White		5% Ca Carbonate	None Detected
	TAN WITH MASTIC -	Non-Fibrous		80% Matrix	
092112082-0020A	ROOM 17	Homogeneous		15% Non-fibrous (Other)	



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		Non-Asbestos			Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
CP-F1-19-Cove Base	4" COVE BASE - TAN WITH MASTIC, OFF-WHITE - ROOM 19	Brown Non-Fibrous Homogeneous		70% Matrix 30% Non-fibrous (Other)	None Detected
CP-F1-19-Mastic	4" COVE BASE - TAN WITH MASTIC,	White Non-Fibrous		10% Ca Carbonate 80% Matrix	None Detected
092112082-0021A	OFF-WHITE - ROOM 19	Homogeneous		10% Non-fibrous (Other)	
CP-F1-07-Cove Base	4" COVE BASE - TAN WITH MASTIC,	Brown Non-Fibrous		70% Matrix 30% Non-fibrous (Other)	None Detected
092112082-0022	OFF-WHITE - ROOM 7	Homogeneous		· · ·	
CP-F1-07-Mastic	4" COVE BASE - TAN WITH MASTIC,	White Non-Fibrous		10% Ca Carbonate 80% Matrix	None Detected
092112082-0022A	OFF-WHITE - ROOM 7	Homogeneous		10% Non-fibrous (Other)	
CP-F1-08-Cove Base	4" COVE BASE - TAN WITH MASTIC,	Brown Non-Fibrous		70% Matrix 30% Non-fibrous (Other)	None Detected
092112082-0023	OFF-WHITE - ROOM 8	Homogeneous			
CP-F1-08-Mastic	4" COVE BASE - TAN WITH MASTIC.	White Non-Fibrous		10% Ca Carbonate 80% Matrix	None Detected
092112082-0023A	OFF-WHITE - ROOM 8	Homogeneous		10% Non-fibrous (Other)	
CP-F1-10-Cove Base	4" COVE BASE - TAN WITH MASTIC.	Brown Non-Fibrous		70% Matrix 30% Non-fibrous (Other)	None Detected
092112082-0024	OFF-WHITE - ROOM 10	Homogeneous			
CP-F1-10-Mastic	4" COVE BASE - TAN WITH MASTIC	White Non-Fibrous		10% Ca Carbonate 80% Matrix	None Detected
092112082-0024A	OFF-WHITE - ROOM 10	Homogeneous		10% Non-fibrous (Other)	
CP-H1-11-Sheet Flooring	SHEET FLOORING WITH MASTIC - TAN,	Tan Non-Fibrous		80% Matrix 20% Non-fibrous (Other)	None Detected
092112082-0025	CLEAR MASTIC - ROOM 11	Homogeneous			
CP-H1-11-Mastic	SHEET FLOORING	White Non-Fibrous		80% Matrix 20% Non-fibrous (Other)	None Detected
092112082-0025A	CLEAR MASTIC - ROOM 11	Homogeneous			
CP-H1-13-Sheet Flooring	SHEET FLOORING WITH MASTIC - TAN,	Tan Non-Fibrous		80% Matrix 20% Non-fibrous (Other)	None Detected
092112082-0026	CLEAR MASTIC - ROOM 13	Homogeneous			
CP-H1-13-Mastic	SHEET FLOORING	Tan Non-Fibrous		80% Matrix 20% Non-fibrous (Other)	None Detected
092112082-0026A	CLEAR MASTIC - ROOM 13	Homogeneous			
CP-H1-24-Sheet	SHEET FLOORING	White Non-Fibrous		80% Matrix 20% Non-fibrous (Other)	None Detected
092112082-0027	CLEAR MASTIC - ROOM 24	Homogeneous			
CP-H1-24-Mastic 1	SHEET FLOORING	Yellow		5% Ca Carbonate	None Detected
092112082-0027A	WITH MASTIC - TAN, CLEAR MASTIC - ROOM 24	Non-Fibrous Homogeneous		80% Matrix 15% Non-fibrous (Other)	



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Sample			Non-Asbe	Asbestos	
	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
CP-H1-24-Mastic 2 092112082-0027B	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 24	Beige Non-Fibrous Homogeneous		90% Matrix 10% Non-fibrous (Other)	None Detected
CP-H1-17-Sheet Flooring 092112082-0028	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 17	White Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-H1-17-Mastic	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 17	White Non-Fibrous Homogeneous		5% Ca Carbonate 80% Matrix 15% Non-fibrous (Other)	None Detected
CP-H1-19-Sheet Flooring 092112082-0029	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 19	White Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-H1-19-Mastic	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 19	Yellow Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-H1-07-Sheet Flooring	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC -	Tan Non-Fibrous Homogeneous		90% Matrix 10% Non-fibrous (Other)	None Detected
CP-H1-07-Mastic 1	SHEET FLOORING	Tan		90% Matrix	None Detected
092112082-0030A	WITH MASTIC - TAN, CLEAR MASTIC - ROOM 7	Non-Fibrous Homogeneous		10% Non-fibrous (Other)	
CP-H1-07-Mastic 2	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 7	Black Non-Fibrous Homogeneous	2% Cellulose	80% Matrix 18% Non-fibrous (Other)	None Detected
CP-H1-08-Sheet Flooring 092112082-0031	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 8	Tan Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-H1-08-Mastic	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 8	Tan Non-Fibrous Homogeneous		90% Matrix 10% Non-fibrous (Other)	None Detected
CP-H1-10-Sheet Flooring 092112082-0032	SHEET FLOORING WITH MASTIC - TAN, CLEAR MASTIC - ROOM 10	Tan Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-H1-10-Mastic	SHEET FLOORING	Tan		80% Matrix	None Detected
092112082-0032A	WITH MASTIC - TAN, CLEAR MASTIC - ROOM 10	Non-Fibrous Homogeneous		20% Non-fibrous (Other)	
CP-I1-24 092112082-0033	ACOUSTIC CEILING PANEL - 2" X 4" WHITE, WITH PINHOLE PATTERN - ROOM 24	Tan Fibrous Homogeneous	70% Cellulose	15% Perlite 15% Non-fibrous (Other)	None Detected
CP-I1-17 092112082-0034	ACOUSTIC CEILING PANEL - 2" X 4" WHITE, WITH PINHOLE PATTERN - ROOM 17	Tan Fibrous Homogeneous	70% Cellulose	15% Perlite 15% Non-fibrous (Other)	None Detected



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 EMSL Order:
 092112082

 Customer ID:
 ZNAP75

 Customer PO:
 EN210601

Project ID:

Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 Method using Polarized Light Microscopy

			Asbestos		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
CP-I1-07 092112082-0035	ACOUSTIC CEILING PANEL - 2" X 4" WHITE, WITH PINHOLE PATTERN - ROOM 7	Tan Fibrous Homogeneous	70% Cellulose	15% Perlite 15% Non-fibrous (Other)	None Detected
CP-I1-08	ACOUSTIC CEILING	Tan Fibrous	70% Cellulose	15% Perlite 15% Non-fibrous (Other)	None Detected
092112082-0036	WHITE, WITH PINHOLE PATTERN - ROOM 8	Homogeneous			
CP-I1-10	ACOUSTIC CEILING PANEL - 2" X 4"	Tan Fibrous	70% Cellulose	15% Perlite 15% Non-fibrous (Other)	None Detected
092112082-0037	WHITE, WITH PINHOLE PATTERN - ROOM 10	Homogeneous			
CP-I1-11	ACOUSTIC CEILING PANEL - 2" X 4"	Tan Fibrous	60% Cellulose 10% Min, Wool	20% Perlite 10% Non-fibrous (Other)	None Detected
092112082-0038	WHITE, WITH PINHOLE PATTERN - ROOM 11	Homogeneous			
CP-I1-13	ACOUSTIC CEILING	Tan Fibrous	60% Cellulose 10% Min, Wool	20% Perlite 10% Non-fibrous (Other)	None Detected
092112082-0039	WHITE, WITH PINHOLE PATTERN - ROOM 13	Homogeneous			
CP-N1-11	SEALANT - WHITE - AT HVAC UNIT, RM	White Non-Fibrous		80% Ca Carbonate 20% Non-fibrous (Other)	None Detected
092112082-0040	11	Homogeneous			
CP-N2-13 092112082-0041	SEALANT - GRAY - EXTERIOR AT LOUVER, RM 13	Gray Non-Fibrous Homogeneous		60% Ca Carbonate 30% Matrix 10% Non-fibrous (Other)	None Detected
CP-N2-22	SEALANT - GRAY - EXTERIOR AT	Gray Non-Fibrous		60% Ca Carbonate 30% Matrix 10% Nac fibraus (Other)	None Detected
092112082-0042	LOUVER, RM 22	Homogeneous			None Detected
092112082-0043	EXTERIOR AT	Non-Fibrous Homogeneous		30% Matrix 10% Non-fibrous (Other)	None Detected
CP-N2-10	SEALANT - GRAY -	Gray		60% Ca Carbonate	None Detected
092112082-0044	EXTERIOR AT LOUVER, RM 10	Non-Fibrous Homogeneous		30% Matrix 10% Non-fibrous (Other)	
CP-N2-09	SEALANT - GRAY -	Gray		60% Ca Carbonate	None Detected
092112082-0045	EXTERIOR AT LOUVER, RM 9	Non-Fibrous Homogeneous		30% Matrix 10% Non-fibrous (Other)	
CP-Q1-13-Carpet	CARPET MASTIC -	Gray	90% Synthetic	10% Non-fibrous (Other)	None Detected
092112082-0046	AND BLACK - NEAR HVAC UNIT, RM 13	Homogeneous			
CP-Q1-13-Mastic	CARPET MASTIC -	Beige Non-Fibrous		80% Matrix 20% Non-fibrous (Other)	None Detected
092112082-0046A	AND BLACK - NEAR HVAC UNIT, RM 13	Homogeneous			
CP-Q1-13-Leveling	CARPET MASTIC -	Gray	4% Cellulose	80% Matrix	None Detected
Compound	MASTIC, YELLOW AND BLACK - NEAR	Non-⊢ibrous Homogeneous		16% Non-tibrous (Other)	
CP-01-17 Mactic 1		Black	5% Callulosa	80% Matrix	None Detected
092112082-0047	MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 17	Non-Fibrous Homogeneous	5 70 Cellulose	15% Non-fibrous (Other)	NONE DELECIEU

Initial report from: 08/09/2021 13:53:37



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 Customer PO:
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Project ID:

		Asbestos			
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
CP-Q1-17-Mastic 2 092112082-0047A	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 17	Tan/Yellow Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-Q1-17-Carpet	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 17	Gray Fibrous Homogeneous	70% Synthetic 10% Glass	15% Matrix 5% Non-fibrous (Other)	None Detected
CP-Q1-19-Mastic	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 19	Tan Non-Fibrous Homogeneous		5% Ca Carbonate 80% Matrix 15% Non-fibrous (Other)	None Detected
CP-Q1-19-Carpet	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 19	Brown/Gray Fibrous Homogeneous	70% Synthetic 5% Glass	15% Matrix 10% Non-fibrous (Other)	None Detected
CP-Q1-07-Mastic	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 7	Tan Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-Q1-07-Carpet	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 7	Gray Fibrous Homogeneous	70% Synthetic	20% Matrix 10% Non-fibrous (Other)	None Detected
CP-Q1-08-Mastic	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 8	Tan Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-Q1-08-Leveler	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 8	Gray Non-Fibrous Homogeneous		70% Ca Carbonate 30% Non-fibrous (Other)	None Detected
CP-Q1-08-Carpet	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 8	Gray Fibrous Homogeneous	70% Synthetic	10% Matrix 20% Non-fibrous (Other)	None Detected
CP-Q1-10-Mastic 1	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 10	Black Non-Fibrous Homogeneous		80% Matrix 20% Non-fibrous (Other)	None Detected
CP-Q1-10-Mastic 2	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 10	Yellow Non-Fibrous Homogeneous		5% Ca Carbonate 80% Matrix 15% Non-fibrous (Other)	None Detected
CP-Q1-10-Carpet	CARPET MASTIC - MASTIC, YELLOW AND BLACK - NEAR HVAC UNIT, RM 10	Gray Fibrous Homogeneous	70% Synthetic	10% Matrix 20% Non-fibrous (Other)	None Detected



464 McCormick Street San Leandro, CA 94577 Tel/Fax: (510) 895-3675 / (510) 895-3680 http://www.EMSL.com / sanleandrolab@emsl.com EMSL Order: 092112082 Customer ID: ZNAP75 Customer PO: EN210601 Project ID:

Analyst(s)

David Nguyen (39) Kevin Lares (50)

Cecilia Yu, Laboratory Manager or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA NVLAP Lab Code 101048-3, WA C884

Initial report from: 08/09/2021 13:53:37

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#092112082

Asbestos Bulk Sample Log

Client: San Mateo Foster City School District Project: 7 School HVAC project, College Park Sample Date: 7/22/21 Project #: EN210601 Collected By: Erica Sattar

BLDG	SAMPLE NO.		MATERIAL DESCRIPTION		LOCATION	
	ID	NO.				
СР	A1	11	Sheetrock wall	Above I1, not anticipated to be touched	Room 11	
CP	A1	13	Sheetrock wall	Above I1, not anticipated to be touched	Room 13	
СР	A1	24	Sheetrock wall	Above I1, not anticipated to be touched	Room 24	
СР	A1	17	Sheetrock wall	Above I1, not anticipated to be touched	Room 17	
СР	A1	19	Sheetrock wall	Above I1, not anticipated to be touched	Room 19	
СР	A1	07	Sheetrock wall	Above I1, not anticipated to be touched	Room 7	
СР	A1	08	Sheetrock wall	Above I1, not anticipated to be touched	Room 8	
СР	A1	10	Sheetrock wall	Above I1, not anticipated to be touched	Room 10	
СР	A2	17	Temp wall	Brown	Room 17	
СР	A2	24	Temp wall	Brown	Room 24	
СР	A3	13	Sheetrock above ceiling with texture	White, above ACP	Room 13	
СР	A3	08	Sheetrock above ceiling with texture	White, above ACP	Room 8	
СР	A3	24	Sheetrock above ceiling with texture	White, above ACP	Room 24	
СР	C1	13	Texture coat associated with A3.	White, above ACP	Room 13	
СР	C1	24	Texture coat associated with A3	White, above ACP	Room 24	
CP	C1	08	Texture coat associated with A3 '	White, above ACP	Room 8	
CP	F1	11	4" cove base	Tan with mastic	Room 11	
СР	F1	13	4" cove base	Tan with mastic	Room 13	
CP	F1	24	4" cove base	Tan with mastic	Room 24	
СР	P F1 17 4" cove base		4" cove base	Tan with mastic	Room 17	
Analyti	cal Met	hod: Pl	LM	PLEASE SEND BY EMAIL: erica@zna	pfly.com	

72 hour TAT

CHAIN OF CUSTODY:

Signatures

DATE&TIME

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CHAIN OF CUSTODY: Signatures

DATE&TIME

16 W/Z

:45 8-5

#092112082

Asbestos Bulk Sample Log

ZNAP 🖧 FLY

Client: San Mateo Foster City School District Project: 7 School HVAC project, College Park

Sample Date 7/22/21 Project #: EN210601

Collected By: Erica Sattar

BIDG	SAMPLE NO.		MATERIAL	IATERIAL DESCRIPTION	
DEDG	ID	NO.			
СР	F1	19	4" cove base	Tan with mastic, off-white	Room 19
СР	F1	07	4" cove base	Tan with mastic, off-white	Room 7
СР	F1	08	4" cove base	Tan with mastic, off-white	Room 8
СР	F1	10	4" cove base	Tan with mastic, off-white	Room 10
СР	H1	11	Sheet flooring with mastic	Tan, clear mastic	Room 11
СР	H1	13	Sheet flooring with mastic	Tan, clear mastic	Room 13
СР	H1	24	Sheet flooring with mastic	Tan, clear mastic	Room 24
CP	H1	17	Sheet flooring with mastic '	Tan, clear mastic	Room 17
СР	H1	19	Sheet flooring with mastic -	Tan, clear mastic	Room 19
СР	H1	07	Sheet flooring with mastic	Tan, clear mastic	Room 7
СР	H1	08	Sheet flooring with mastic '	Tan, clear mastic	Room 8
СР	H1	10	Sheet flooring with mastic	Tan, clear mastic	Room 10
СР	11	24	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 24
СР	11	17	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 17
CP	11	07	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 7
CP	11	08	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 8
CP	11	10	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 10
СР	11	11	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 11
CP	11	13	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 13
СР	N1	11	Sealant	White	At HVAC unit, rm 11

Analytical Method: PLM 72 hour TAT

PLEASE SEND BY EMAIL: erica@znapfly.com

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DATE&TIME

1/2 W/I 8-5-21 1:45PM

Page 2 Of 3

ZNAP & FLY #092112082

Asbestos Bulk Sample Log

Client: San Mateo Foster City School District Project: 7 School HVAC project, College Park Sample Date: 7/22/21 Project #: EN210601

Collected By: Erica Sattar

BLDG	SAMPLE NO.		MATERIAL	DESCRIPTION	LOCATION	
DEDG	ID	NO.				
CP	N2	13	Sealant -	Gray	Exterior at louver, rm 13	
СР	N2	22	Sealant	Gray	Exterior at louver, rm 22	
СР	N2	17	Sealant	Gray	Exterior at louver, rm 17	
СР	N2	10	Sealant	Gray	Exterior at louver, rm 10	
СР	N2	09	Sealant	Gray	Exterior at louver, rm 9	
СР	Q1	13	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 13	
CP	Q1	17	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 17	
СР	Q1	19	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 19	
CP	Q1	07	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 7	
СР	Q1	08	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 8	
СР	Q1	10	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 10	
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Second						
Analyti	ical Met	hod: PLM		PLEASE SEND BY EM	AIL: erica@znapfly.com	

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CHAIN OF CUSTODY: Signatures

DATE&TIME

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:45PA 8-5-2

Page 3 Of 3

Asbestos Sampling Plan



Samp	ole ID	Material	Description	Sample Location	Results (% asbestos detected)	
A1	11	Sheetrock wall	Above I1, not anticipated to be impacted	Room 11	ND	
A1	13	Sheetrock wall	Above I1, not anticipated to be impacted	Room 13	ND	
A1	24	Sheetrock wall	Above I1, not anticipated to be impacted	Room 24	ND	
A1	17	Sheetrock wall	Above I1, not anticipated to be impacted	Room 17	ND	
A1	19	Sheetrock wall	Above I1, not anticipated to be impacted	Room 19	ND	
A1	07	Sheetrock wall	Above I1, not anticipated to be impacted	Room 7	ND	
A1	08	Sheetrock wall	Above I1, not anticipated to be impacted	Room 8	ND	
A1	10	Sheetrock wall	Above I1, not anticipated to be impacted	Room 10	ND	
A2	17	Temp wall	Brown	Room 17	ND	
A2	24	Temp wall	Brown	Room 24	ND	
*A3	13	Sheetrock above ceiling with texture	White, above ACP	Room 13	< 1%	
A3	08	Sheetrock above ceiling with texture	White, above ACP	Room 8	ND	
A3	24	Sheetrock above ceiling with texture	White, above ACP	Room 24	ND	
*C1	13	Texture coat associated with A3	White, above ACP	Room 13	< 1%	
C1	24	Texture coat associated with A3	White, above ACP	Room 24	2%	
*C1	08	Texture coat associated with A3	White, above ACP	Room 8	< 1%	
F1	11	4" cove base	Tan with mastic	Room 11	ND	
F1	13	4" cove base	Tan with mastic	Room 13	ND	
F1	24	4" cove base	Tan with mastic	Room 24	ND	
F1	17	4″ cove base	Tan with mastic	Room 17	ND	
F1	19	4″ cove base	Tan with mastic, off-white	Room 19	ND	
F1	07	4″ cove base	Tan with mastic, off-white	Room 7	ND	
F1	08	4" cove base	Tan with mastic, off-white	Room 8	ND	
F1	10	4″ cove base	Tan with mastic, off-white	Room 10	ND	
H1	11	Sheet flooring with mastic	Tan, clear mastic	Room 11	ND	
H1	13	Sheet flooring with mastic	Tan, clear mastic	Room 13	ND	
H1	24	Sheet flooring with mastic	Tan, clear mastic	Room 24	ND	
H1	17	Sheet flooring with mastic	Tan, clear mastic	Room 17	ND	
H1	19	Sheet flooring with mastic	Tan, clear mastic	Room 19	ND	
H1	07	Sheet flooring with mastic	Tan, clear mastic	Room 7	ND	

Suspect Asbestos Containing Materials Sample Table

Samp	ole ID	Material	Description	Sample Location	Results (% asbestos detected)
H1	08	Sheet flooring with mastic	Tan, clear mastic	Room 8	ND
H1	10	Sheet flooring with mastic	Tan, clear mastic	Room 10	ND
11	24	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 24	ND
11	17	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 17	ND
11	07	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 7	ND
11	08	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 8	ND
11	10	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 10	ND
11	11	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 11	ND
11	13	Acoustic ceiling panel	2" x 4" white, with pinhole pattern	Room 13	ND
N1	11	Sealant	White	At HVAC unit, rm 11	ND
N2	13	Sealant	Gray	Exterior at louver, rm 13	ND
N2	22	Sealant	Gray	Exterior at louver, rm 22	ND
N2	17	Sealant	Gray	Exterior at louver, rm 17	ND
N2	10	Sealant	Gray	Exterior at louver, rm 10	ND
N2	09	Sealant	Gray	Exterior at louver, rm 9	ND
Q1	13	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 13	ND
Q1	17	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 17	ND
Q1	19	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 19	ND
Q1	07	Carpet mastic	nastic Mastic, Yellow and black		ND
Q1	08	Carpet mastic Mastic, Yellow and black		Near HVAC unit, rm 8	ND
Q1	10	Carpet mastic	Mastic, Yellow and black	Near HVAC unit, rm 10	ND
1. NE	D = No	asbestos detected by laboratory analysis. '	"None Detected".		

*Materials with <1% asbestos reported are assumed >1% unless proven otherwise by point count analysis.
 All reported asbestos is chrysotile unless noted otherwise.

Lead Sampling Plan



Lead Paint Testing and Sampling Table

Test #	Room	Component	Substrate	Color	Condition	Lead Result (mg/cm2)
217	Deve tellet evterior	Wall	Stucco	Tan	Intact/good	0.0003
218	Boys tollet, exterior	Wall	Stucco	Tan	Intact/good	0.0007
219	Girls toilet, exterior	Wall	Stucco	Tan	Intact/good	0.004
220		Wall	Stucco	Tan	Intact/good	0.0009
221		Duct	Metal	Beige	Intact/good	0.002
222	10	Duct bracket	Metal	Beige	Intact/good	0
223	81	Wall	Sheetrock	Beige	Intact/good	0
224		HVAC case	Metal	Beige	Intact/good	0
225		Wall	Sheetrock	Beige	Intact/good	0
226		HVAC case	Metal	Beige	Intact/good	0
227	22	Duct	Metal	Beige	Intact/good	0.003
228		Duct bracket	Metal	Beige	Intact/good	0
229		Wall	Sheetrock	Beige	Intact/good	0
230		Downspout	Metal	Brown	Intact/good	0.102
231	16, exterior	Window casing	Wood	Brown	Intact/good	0
232		Wall	Stucco	Tan	Intact/good	0
233		Duct bracket	Metal	Beige	Intact/good	0.359
234	16	Wall	Sheetrock	Beige	Intact/good	0
235		Duct	Metal	Beige	Intact/good	0
236		Duct bracket	Metal	Beige	Intact/good	0.361
237		Wall	Sheetrock	Beige	Intact/good	0
238	11	Wall	Sheetrock	Beige	Intact/good	0
239		Duct	Metal	Beige	Intact/good	0
240		Window casing	Wood	Brown	Intact/good	0
241	14 outorior	Column	Metal	Brown	Intact/good	0
242	14, exterior	Window casing	Wood	Brown	Intact/good	0
243		Duct	Metal	Beige	Intact/good	0
244	14	Duct bracket	Metal	Beige	Intact/good	0.004
245		Wall	Sheetrock	Beige	Intact/good	0
246		Wall	Sheetrock	Beige	Intact/good	0
247	7	Duct	Metal	Beige	Intact/good	0
248		Duct bracket	Metal	Beige	Intact/good	0.003
249		HVAC case	Metal	Beige	Intact/good	0
250	7, exterior	Window casing	Wood	Brown	Intact/good	0

Test #	Room	Component	Substrate	Color	Condition	Lead Result (mg/cm2)	
251	9	Wall	Sheetrock	Beige	Intact/good	0	
252		Wall	Sheetrock	Beige	Intact/good	0	
253		Duct	Metal	Beige	Intact/good	0	
254		Duct bracket	Metal	Beige	Intact/good	0.002	
255		HVAC case	Metal	Beige	Intact/good	0	
NOTE:	1. Bold represents component is considered lead based paint.						

Lead-based paint (LBP) is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%)

3. * Materials were sampled in a previous survey. Report and results are attached.



LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead H	lazard Evaluation 7/1/20	21						
Section 2 — Type of Lead Hazard Evaluation (Check one box only)								
X Lead Inspection Risk assessment Clearance Inspection Other (specify)								
Section 3 — Structure Where Lead Hazard Evaluation Was Conducted								
Address [number, street, apartmo	ent (if applicable)]	City	County	Zip Code				
715 Inidan Avenue		San Mateo	San Mateo	94401				
Construction date (year) of structure	Type of structure	X School or daycare	Children living in structure?					
unknown	Single family dwelling	Other	Don't Know	NO				
Section 4 — Owner of Strue	cture (if business/agency, li	st contact person)						
Name		-	Telephone number					
San Mateo Foster City S	School District, Kevin Sa	nders	650-655-3331					
Address [number, street, apartmo	ent (if applicable)]	City	State	Zip Code				
1170 Chess Drive		Foster City	CA	94404				
Section 5 — Results of Lea	d Hazard Evaluation (check	all that apply)						
X No lead-based paint detect	ted Intact lead-ba	sed paint detected	Deteriorated lead-base	ed paint detected				
No lead hazards detected	Lead-contaminated dust	found Lead-contam	inated soil found 📃 Othe	r				
Section 6 — Individual Con	ducting Lead Hazard Evalu	ation						
Name			Telephone number					
Chris Smith			707-999-5234					
Address [number, street, apartme	ent (if applicable)]	City	State	Zip Code				
419 Mason Street		Vacaville	CA	95688				
CDPH certification number	Sign	ature 0 0		Date				
00006885/0006884		Church	2	8/5/2021				
Name and CDPH certification nu	mber of any other individuals cor	ducting sampling or testing (if applicable)					
Erica Sattar, 00003791								
Section 7 – Attachments								
 A. A foundation diagram or sk lead-based paint; B. Each testing method, device 	ketch of the structure indicatir	g the specifc locations of ised;	each lead hazard or presen	ice of				

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
Application Number: 01-119530 DSA File Number: 41-26

KEV TO COLLIMNIS

School Name: College Park Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-09-17 12:50:10

2019 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2019 CBC).

****NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

1. TYPE	2. PERFORMED BY
Continuous – Indicates that a continuous special inspection is required	GE – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.
Periodic – Indicates that a periodic special inspection is required	LOR – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.
	PI – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.
Test – Indicates that a test is required	SI – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.

Application Number: 01-119530 DSA File Number: 41-26 School Name: College Park Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-09-17 12:50:10

Geotechnical Reports: Project does NOT have and does NOT require a geotechnical report

1. GENERAL:	Table 1705A.6		
Test or Special Inspection	Туре	Performed By	Code References and Notes
 a. Verify that: Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations. Foundation excavations are extended to proper depth and have reached proper material. Materials below footings are adequate to achieve the design bearing capacity. 	See Notes	PI	Refer to specific items identified in the Appendix listing exemptions for limitations. Placement of controlled fill exceeding 12" depth under foundations is not permitted without a geotechnical report.

2. SOIL COMPACTION AND FILL:	Table 1705A.6	Table 1705A.6		
Test or Special Inspection	Туре	Performed By	Code References and Notes	
a. Verify use of proper materials, densities and inspect lift thicknesses, placement and compaction during placement of fill.	Continuous	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	
b. Compaction testing.	Test	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	

3. DRIVEN DEEP FOUNDATIONS (PILES):

Table 1705A.7

DGS DSA 103-19 (Revised 07/16/2020)

Application Number: 01-119530 DSA File Number: 41-26 School Name: College Park Elementary School Increment Number:

Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Verify pile materials, sizes and lengths comply with the requirements.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
b. Determine capacities of test piles and conduct additional load tests as required.	Test	LOR*	* Under the supervision of the geotechnical engineer.
c. Inspect driving operations and maintain complete and accurate records for each pile.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
d. Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
e. Steel piles.	Provide tests and inspections per STEEL section below.		
f. Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.		
g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.

4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):	Table 1705A.8		
 Test or Special Inspection	Туре	Performed By	Code References and Notes

Application Number: 01-119530 DSA File Number: 41-26 School Name: College Park Elementary School Increment Number:

a. Inspect drilling operations and maintain complete and accurate records for each pier.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
b. Verify pier locations, diameters, plumbness and lengths.Record concrete or grout volumes.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
c. Concrete piers.	Provide tests and inspections per CONCRETE section below.		

5. RETAINING WALLS:				
Test or Special Inspection	Туре	Performed By	Code References and Notes	
a. Placement, compaction and inspection of backfill.	Continuous	GE*	1705A.6.1. * By geotechnical engineer or his or her qualified representative. (See Section 2 above).	
b. Placement of soil reinforcement and/or drainage devices.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.	
c. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	ContinuousGE** By geotechnical engineer or his or her qualified representative. See DSA IR 16-3.		* By geotechnical engineer or his or her qualified representative. See DSA IR 16-3.	
d. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.			
e. Masonry retaining walls.	Provide tests a	nd inspection	s per MASONRY section below.	

6. OTHER SOILS:			
Test or Special Inspection	Туре	Performed By	Code References and Notes

Application Number: 01-119530 DSA File Number: 41-26 School Name: College Park Elementary School Increment Number:

a. Soil Improvements	Test	GE*	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS for final acceptance. * By geotechnical engineer or his or her qualified representative.
b. Inspection of Soil Improvements	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
C.			

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:School Name:01-119530College Park Elementary SchoolDSA File Number:Increment Number:41-2641-26

School District: San Mateo-Foster City School District Date Created: 2021-09-17 12:50:10

	Test or Special Inspection	Туре	Performed By	Code References and Notes
Mate	rial Verification and Testing:			
	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1.
V	b. Identifiy, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-14 Section 26.6.1.2; DSA IR 17-10. (See Appendix for exemptions.)
	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-14 Sections 26.5 & 26.12.
V	d. Test concrete (f'c).	Test	LOR	1905A.1.15 ; ACI 318-14 Section 26.12.
Inspe	ction:			
	e. Batch plant inspection: Eliminated	See Notes	SI	Default of 'Continuous' per 1705A.3.3 . If approved by DSA, batch plant inspection may be reduced to ' Periodic' subject to requirements in Section 1705A.3.3.1 , or eliminated per 1705A.3.3.2 . (See Appendix for exemptions.)
	f. Welding of reinforcing steel.	Provide spec	Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below.	

8. PRESTRESSED / POST-TENSIONED CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119530	College Park Elementary School	San Mateo-Foster City School District
DSA File Number:	Increment Number:	Date Created:
41-26		2021-09-17 12:50:10

Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.
c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	Periodic	SI	Table 1705A.3 Item 11. Special inspector to verify specified concretestrength test prior to stressing.
d. Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	1705A.3.4, Table 1705A.3 Item 9; ACI 318-14 Section 26.13

9. PRECAST CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):			
Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Inspect fabrication of precast concrete members.	Continuous	SI	ACI 318-14 Section 26.13.
b. Inspect erection of precast concrete members.	Periodic	SI*	Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA.

10. SHOTCRETE (in addition to Cast-in-Place Concrete te	sts and inspec	tions):	
Test or Special Inspection	Туре	Performed By	Code References and Notes

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119530	College Park Elementary School	San Mateo-Foster City School District
DSA File Number:	Increment Number:	Date Created:
41-26		2021-09-17 12:50:10

a. Inspect shotcrete placement for proper application techniques.	Continuous	SI	1705A.19, Table 1705A.3 Item 7, 1908A.6, 1908A.7, 1908A.8, 1908A.9, 1908A.11, 1908A.12. See ACI 506.2-13 Section 3.4, ACI 506R-16.
b. Sample and test shotcrete (f'c).	Test	LOR	1908A.5, 1908A.10.

	11. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
	a . Inspect installation of post-installed anchors	See Notes	SI*	1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
V	b. Test post-installed anchors.	Test	LOR	1910A.5. (See Appendix for exemptions.)

12. OTHER CONCRETE:			
Test or Special Inspection	Туре	Performed By	Code References and Notes
a.			

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:
01-119530
DSA File Number:
41-26

School Name: College Park Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-09-17 12:50:10

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. Items marked as exempt shall be identified on the approved construction documents. The project inspector shall verify all construction complies with the approved construction documents.

SOILS:
1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.

	CONCRETE/MASONRY:
	1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."
\checkmark	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 01-119530 DSA File Number: 41-26 School Name: College Park Elementary School Increment Number:

3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.
5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

	Welding:
	1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
	2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.
	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
V	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).
V	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 01-119530 DSA File Number: 41-26 School Name: College Park Elementary School Increment Number:

6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category).
7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) \leq 4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.

Application Number: 01-119530 DSA File Number: 41-26 School Name: College Park Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-09-17 12:50:10

Name of Architect or Engineer in general responsible charge:		
Name of Structural Engineer (When structural design has been delegated):		
Gokhan Akalan		
Signature of Architect or Structural Engineer:	Date:	
Salthurk	10/08/2021	

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

DSA STAMP		
IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT		
APP: 07 F SS 🗹	1-119530 INC: REVIEWED FOR FLS ACS	
DATE: _	10/26/2021	

DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

Application Number: 01-119530 DSA File Number: 41-26 School Name: College Park Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-09-17 12:50:10

1. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291

2. Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292



- NOTES
- THIS IS NOT A BOUNDARY SURVEY. NO LIABILITY IS ASSUMED, BY KIER & WRIGHT, FOR THE EXISTENCE OF ANY EASEMENTS, ENCUMBRANCES, DISCREPANCIES IN BOUNDARY, OR TITLE DEFECTS NOT MENTIONED IN SAID DOCUMENTS AND THEREFORE NOT SHOWN ON THIS DRAWING. PROPERTY LINE PLOT ONLY (NO EASEMENTS SHOWN)
- 2. ALL DISTANCES AND ELEVATIONS SHOWN HEREON ARE IN FEET AND DECIMALS THEREOF.
- 3. THIS IS NOT A UTILITY SURVEY. PHYSICAL ITEMS SHOWN ON THIS SURVEY ARE LIMITED TO THOSE ITEMS VISIBLE AS OF THE DATE OF THIS SURVEY. SUBSURFACE STRUCTURES, IF ANY, ARE NOT SHOWN. SAID SUBSURFACE OBJECTS MAY INCLUDE, BUT ARE NOT LIMITED TO, CONCRETE FOOTINGS, SLABS, SHORING, STRUCTURAL PILES, UTILITY VAULTS, PIPING, UNDERGROUND TANKS, AND ANY OTHER SUBSURFACE STRUCTURES NOT REVEALED BY A SURFACE INSPECTION.
- 4. THE SUBJECT PROPERTY IS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR SAN MATEO COUNTY, CALIFORNIA, MAP NUMBER 06081C0154G FOR COMMUNITY NUMBER 060328 (CITY OF SAN MATEO), WITH AN EFFECTIVE DATE OF APRIL 5, 2019, AS BEING LOCATED IN FLOOD ZONE "X-SHADED" AND ZONE "AE". ACCORDING TO FEMA THE DEFINITION OF ZONE "X-SHADED" IS: AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND ZONE "AE" IS: WITH BASE FLOOD ELEVATION OR DEPTH OF 10. INFORMATION WAS OBTAINED FROM THE FEMA WEBSITE (WWW.FEMA.GOV) ON JULY 20, 2021.



ABBREVIATIONS

AREA DRAIN AD BOLLARD BACK OF WALK BLRD BW CATCH BASIN CB CENTERLINE DOOR ELECTRIC BOX EDGE OF PAVEMENT EDGE OF WALK FACE OF CURB FINISH FLOOR FLOW LINE GAS VALVE LIP OF GUTTER I IP POWER POLE **RIM ELEVATION** RET RETAINING STORM DRAIN CLEAN OUT SDCO STREET LIGHT BOX SLB SSC0 SANITARY SEWER CLEAN OUT TOP OF CURB UTILITY BOX UR VALLEY GUTTER WATER BOX WB WATER VALVE WV



LEGEND

BUILDING LINE CENTERLINE CONCRETE/BLOCK WALL CONCRETE CURB CONCRETE CURB & GUTTER MAJOR CONTOUR LINE OBSCURED MAJOR CONTOUR LINE MINOR CONTOUR LINE OBSCURED MINOR CONTOUR LINE DRIVEWAY EDGE OF PAVEMENT FENCE LINE LOT LINE OVERHEAD POWER LINE PROPERTY LINE SANITARY SEWER LINE-MANHOLE & CLEANOUT SIDEWALK SPOT ELEVATION STORM DRAIN LINE-MANHOLE & CATCH BASIN STORM DRAIN LINE-MANHOLE & CATCH BASIN ACCESSIBLE PARKING SYMBOL AREA DRAIN BACKFLOW PREVENTION DEVICE ELECTROLIER FIRE HYDRANT GUY ANCHOR

POWER POLE/JOINT POLE

TRAFFIC SIGN

UTILITY BOX

WATER VALVE

TREE



PREPARED BY R UNDER THE SUPERVISION OF DATE RODNEY A. STEWART II P.L.S. 9225 RSTEWART©KIERWRIGHT.COM



Conc. Valley Gutte -106.38 Post Chain Link Fe EXISTING BUILDING ONE STORY BUILDING FF=108.50 EXISTING BUILDING ONE STORY BUILDING FF=108.47 JO





ABBREVIATIONS







LEGEND

	BUILDING LINE
	CENTERLINE
	CONCRETE/BLOC
	CONCRETE CURB
	CONCRETE CURB
	MAJOR CONTOUR
	OBSCURED MAJO
	MINOR CONTOUR
	OBSCURED MINO
	DRIVEWAY
<u> </u>	EDGE OF PAVEM
X —	FENCE LINE
	LOT LINE
	OVERHEAD POWE
	PROPERTY LINE
)—~	SANITARY SEWER
	SIDEWALK
	SPOT ELEVATION
)— — []	STORM DRAIN LI
$-\bar{\mathbb{O}}$	STORM DRAIN LI
	ACCESSIBLE PAR
	AREA DRAIN
	BACKFLOW PREV
¥.	ELECTROLIER
	FIRE HYDRANT
	PUWER PULE/JU
	TRAFFIC SIGN
	IREE
	UTILITY BOX
	WATER VALVE

LINE -/BLOCK WALL E CURB & GUTTER ONTOUR LINE D MAJOR CONTOUR LINE DNTOUR LINE D MINOR CONTOUR LINE PAVEMENT POWER LINE LINE SEWER LINE-MANHOLE & CLEANOUT ATION RAIN LINE-MANHOLE & CATCH BASIN RAIN LINE-MANHOLE & CATCH BASIN E PARKING SYMBOL PREVENTION DEVICE NT E/JOINT POLE SIGN









This Hazardous Material Abatement & Related Construction Specification 02 80 00 was prepared for San Mateo Foster City School District in support of the HVAC and Power Upgrade Project for the following schools:

School Name	Address
Abbott Middle School	600 36th Avenue, San Mateo, CA 94403
Borel Middle School	425 Barenson Avenue, San Mateo, CA 94403
College Park	715 Indian Avenue, San Mateo, CA 94402
Laurel Elementary	316 36th Avenue, San Mateo, CA 94403
Meadow Heights	2619 Dolores Street, San Mateo, CA 94403
North Shoreview	1301 Cypress Avenue, San Mateo, CA 94401
George Hall	130 San Miguel Way, San Mateo, CA 94403

Prepared for:

San Mateo Foster City School District 1170 Chess Drive Foster City, CA 94404

Prepared by:



419 Mason Street Vacaville, CA 95688

SECTION 02 80 00

HAZARDOUS MATERIAL ABATEMENT & RELATED CONSTRUCTION

PART 1. GENERAL

1.1 <u>SCOPE</u>

A. The work of this section includes removal, clean up and disposal of the below listed hazardous materials prior to the general building and structure renovation and/or demolition work of the project. These work scope items are generally described as follows for the buildings and structures indicated. Contractor is to review all demolition/construction project plans and field verify location and extent of hazardous materials-related work.

1. Asbestos-Containing Materials – Remove all:

a. Abbott Middle School

- Plaster, < 1% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Category II ACM, approximately 5 square feet may be impacted at each work location
- 2. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location

b. Borel Middle School

- Window putty at window HVAC unit, 2% asbestos, Category II ACM, approximately 2 square feet limited to Room 34
- Mastic Associate with tack board/white board/chalkboard, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Roof mastic, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work location

c. College Park Elementary School

- Texture coat associated with sheetrock above acoustical ceiling panel, < 1 - 2% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Regulated Asbestos Containing Material (RACM), approximately 5 square feet may be impacted at each work location, however may not be impacted with the given scope of work
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Roof shingle & roof mastics, assumed asbestos, located throughout the roof system, non-friable Category I ACM, approximately 5 square feet may be impacted at each work location

d. George Hall Elementary School

- Stucco, < 1% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Category II ACM, approximately 2 square feet may be impacted at each work location, however this material may not be impacted by scheduled work
- Floor tile beneath existing tile and/or carpet, 2% asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 4. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, however this material may not be impacted by scheduled work

e. Laurel Elementary School

- 1. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 2. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- 3. Roof field shingle mastic (below the top layer), 6% asbestos, located throughout the roof system, non-friable Category I ACM, found at one sample location and assumed throughout homogenous roofing system of Buildings A, B, C, D, approximately 41,150 square feet

f. Meadow Heights Elementary School

- Floor tile, tan tile beneath existing flooring, 5% asbestos, with residual mastic (insufficient material to analyze) Category I non-friable ACM, approximately 5 square feet to be impacted at each work area location
- 2. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work area location
- 3. Roof shingles, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location
- Roof mastics, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location

g. North Shoreview Montessori School

- Joint compound associated with sheetrock wall system, joint compound = 2% asbestos, sheetrock = no asbestos detected, Regulated Asbestos Containing Material (RACM) - friable asbestos containing material, approximately 15 square feet may be impacted at each work location, refer to project drawings
- 2. Residual floor tile mastic, found in one of seven samples collected at Room 18, 3% asbestos approximately 8 square feet at each work location may be impacted, refer to project drawings
- 3. Stucco, <1% asbestos assumed >1% asbestos without point count analysis, Category II non-friable asbestos containing material, quantity impacted is dependent on the scope of work, refer to project drawings
- 4. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location, may not be impacted.
- 5. Mastic associated with acoustic ceiling tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, although material may not be impacted by scope of work
- 6. Roof field, shingle with associated mastic (assumed asbestos, this material may be sampled during construction if impacted to prove no asbestos by laboratory analysis, non-friable Category I ACM, quantity impacted is dependent on the scope of work, refer to project drawings

2. Lead-Based Paint (LBP). Remove loose and peeling LBP where occurs on lead-based components including:

a. Abbott Middle School

- 1. Exterior plexiglas windows/window covers (wall panels)
- 2. Exterior metal window frames
- 3. Exterior wood window trims
- 4. Window panels (windows/window covers)

b. Borel Middle School

1. Exterior wood window frames

c. George Hall Elementary School

- 1. Interior wood window sills
- 2. Interior wood wall trim
- 3. Exterior metal collars
- 4. Exterior metal equipment

d. Laurel Elementary School

- 1. Exterior wood window sills
- 2. Exterior wood window casings
- 3. Exterior metal roof collars
- 4. Exterior metal roof HVAC/mechanical equipment

e. Meadow Heights Elementary School

- 1. Interior wood window sills
- 2. Exterior wood wall trim

f. North Shoreview Montessori School

- 1. Interior wood lower walls
- 2. Exterior metal window trims
- 3. Exterior metal wall trims
- 3. Presumed Polychlorinated Biphenyl (PCB) lighting ballasts. Remove presumed PCB items, verify PCB content by labeling or manufacturing information and dispose of as PCB items unless proven non-PCB and/or labeled 'PCB FREE'. Recycle non-PCB components to extent possible.
- 4. Universal Waste including lighting tubes and exterior non-incandescent lighting. Remove and properly recycle.
- 5. Chlorofluorocarbons (CFCs) coolant gases in air conditioning units must be properly extracted and recycled prior to unit removal and disposal by a qualified hazardous materials disposal contractor using EPA certified Refrigerant Re-claimer for the removal and recycling of the CFC gases.
- B. The Contractor's work scope includes all removal, waste testing, and disposal or recycling costs associated with removed materials and removal operations for this project.

- C. Subsurface concrete piping shall be presumed to be asbestos cement (Transite®).
- D. The Contractor shall make any necessary arrangements for temporary water and power necessary to conduct the work of this project. Power and water are available on site but will require Contractor to make any necessary temporary connections. Coordinate schedule and phasing with architectural.
- E. Contractor shall review the demolition/construction project plans, reports, related documents identified herein, and shall visit the site during the scheduled bid walk and field verify the location and extent of hazardous materials removal work prior to submitting bid.
- F. The Contractor's work scope includes all removal, waste testing, and disposal and/or recycling of removed and demolished materials. The Contractor is responsible for all costs associated with removed hazardous materials and removal/demolition operations during abatement, disposal, and testing for waste stream during renovation and demolition work.
 - 1. Removed friable asbestos, including but not limited to texture coat and doing compound associated with sheetrock/wallboard and mechanically removed floor tile and flooring mastic, is to be disposed of as hazardous asbestos waste. Non-friable asbestos materials removed in a non-friable state shall be disposed of as a non-hazardous asbestos waste at an asbestos permitted landfill.
 - 2. Lead debris resulting from removal of loose LBP prior to demolition shall be disposed of as lead hazardous waste.
 - 3. PCB ballasts are to be disposed of as hazardous PCB wastes at a Class I landfill or permitted PCB incineration facility.
 - 4. All remaining hazardous materials wastes, including lighting tubes & lamps, batteries, refrigerants/coolants, and other universal wastes are to be recycled by a permitted facility or disposed of as hazardous wastes as it pertains to this project.
- G. The Contractor's work scope also includes removal of loose LBP and all required lead-related protective measures for Cal/OSHA, CDPH, and Cal/EPA compliance associated with renovation/demolition of the buildings and associated structures or other components on this site.
- H. The Contractors shall be responsible for all agency permits, notices, and fees required to conduct the abatement and demolition and shall be responsible for all costs of removal, demolition, waste characterization and profiling, and disposal associated with abatement and demolition.

1.2. <u>RELATED DOCUMENTS / WORK IN OTHER SECTIONS</u>

- A. HVAC and Power Upgrade Project, Hazardous Materials Survey Reports, prepared for each school by Znap Fly.
- B. Project Drawings.
- C. All other sections of the specifications.

1.3. <u>REFERENCES</u>

- A. General: Codes, regulations, and references to hazardous materials abatement work include, but are not limited to the most current versions of the following:
 - 1. California Code of Regulations (CCR):
 - a. Title 8, Article 2.5 Registration Asbestos-Related Work
 - b. Title 8, Section 1529 Construction Safety Orders, Asbestos Regulations
 - c. Title 8, Section 1531 Construction Safety Orders, Respiratory Protection
 - d. Title 8, Section 1532.1 Construction Safety Orders, Lead in Construction
 - e. Title 17, Div. 1, Ch. 8 Accreditation, Certification and Work Practices for Lead-Based Paint and Lead Hazards
 - f. Title 22, Div. 4.5 Environmental Health Standards for Management of Hazardous Waste
 - g. Title 22, Div. 4.5, Ch 23 Universal Waste Rule
 - 2. Bay Area Air Quality Management District (BAAQMD):
 - a. Regulation 11 Hazardous pollutants Rule 2 Asbestos Demolition, Renovation and Manufacturing
 - 3. Other Local Regulations
 - a. California Health and Safety Code 25249-25249.13
 - b. California Health and Safety Code 25915-25919.7

1.4. <u>DEFINITIONS</u>

- A. Definitions specific to Work of this Section.
 - 1. Abatement Procedures to control airborne contaminate and other releases from hazardous material-containing building materials. Includes removal, repair, encapsulation, and enclosure.
 - 2. Airlock A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area.

- 3. Air Monitoring The processing of measuring the air contaminants such as asbestos or lead for measured volume of air collected over the specific period of time being monitored.
- 4. Air Sampling Professional The professional contracted or employed to supervise air monitoring and analysis schemes. This individual is also responsible for recognition of technical deficiencies in Worker protection equipment and procedures during both planning and on-site phases of an abatement project.
- 5. Amended Water A water to which a surfactant has been added.
- 6. Asbestos The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.
- 7. Asbestos Containing Construction Material (ACCM) Any construction material with asbestos content of 0.1 percent or greater by weight.
- 8. Asbestos Containing Material (ACM) Any material which contains over one percent asbestos as determined by current EPA bulk sample analysis method.
- 9. Asbestos Fibers This expression refers to asbestos fibers longer than five micrometers with an aspect ratio of 3:1 or larger under phase contrast microscopy (PCM) analytical procedures.
- 10. Authorized Visitor Any Owner Representative, Consultant or Agent and any representative of a regulatory of other agency having jurisdiction over the project.
- 11. Certified Supervisor An individual who is capable of identifying asbestos or lead hazards in the workplace and who has sufficient experience and authority to take prompt corrective measures to eliminate them. In addition, the Certified Supervisor is responsible for conducting and approving all required inspections as specified. Also known as the "Competent Person."
- 12. Class I Asbestos Removal Class I Asbestos work means activities involving the removal of thermal system insulation (TSI) and surfacing ACM.
- 13. Class II Asbestos Work Class II Asbestos Work means activities associated with removal of any asbestos containing material that is not a Class I surfacing material or thermal system insulation.
- 14. Clean Room An uncontaminated area or room that is a part of the Worker decontamination enclosure with provisions for storage of Workers' street clothes and protective equipment.
- 15. Critical Barrier A unit of temporary construction of air-tight and impermeable barrier which provides the only separation between a contained asbestos Work Area and an adjacent, potentially occupied area.
- 16. Decontamination Enclosure System A series of connected rooms, with air-tight doorways between any two adjacent rooms, for the

decontamination of Workers and of materials and equipment. A decontamination enclosure system always contains at least one airlock.

- 17. Differential Pressure Equipment A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contaminated area from adjacent uncontaminated areas. Also referred to as HEPA Exhaust Units or Negative Pressure Units (NPUs).
- 18. Encapsulant (sealant) A liquid material which can be applied to asbestos-containing material or surface and which controls the possible release of asbestos fiber from the material or surface by creating a membrane over the surface (bridging encapsulant), or by penetrating into the material and binding its components together (penetrating encapsulant), or by locking down invisible fibers (lockdown encapsulant).
- 19. Fluorescent Light Ballast (FLB) A device that electrically controls fluorescent light fixtures. Most existing FLBs include a capacitor containing 0.1 kilograms or less of dielectric fluid that may contain PCBs. Ballasts manufactured prior to 1979 may contain PCB capacitors. More recently, electronic ballasts have come into use that do not have dielectric fluids or PCBs. Ballasts with PCB capacitors also contain asphalt potting compounds which are likely to contain PCBs.
- 20. Hazardous Materials Hazardous materials include, but are not limited to: asbestos containing materials, lead and lead-based paint, mercury, PCB, coolant gases, universal wastes, solvents, fuels and other chemical products or wastes.
- 21. HEPA Filter A high-efficiency particulate absolute (HEPA) filter capable of trapping and retaining 99.97 percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- 22. HEPA Vacuum Equipment Vacuuming equipment with a HEPA (UL 586 labeled) filter system.
- 23. Lead-Based Paint (LBP) Lead-Containing Paint (LCP) that is at least 5,000 ppm, 0.5% lead by weight, or 1.0 milligrams of lead per square centimeter of surface area (as measured by XRF lead analyzer). Note: any untested paints or coatings must be presumed to be LBP.
- 24. Lead Hazardous Waste Lead-based paint waste or other debris that has been classified as hazardous due to the characteristic of toxicity, as determined by testing in accordance with the California Code of Regulations, Title 22, Division 4, Chapter 30, Article 11. A hazardous waste is any substance(s) listed in Article 11 Section 66699 at concentrations greater than its listed Soluble Threshold Limit Concentration (STLC) or Total Threshold Limit Concentration (TTLC). The STLC for lead is 5.0 parts per million (ppm) and the TTLC for lead is 1,000 ppm lead. If either of these values are exceeded, the lead related waste will need to be further characterized by the Toxicity Characteristic

Leaching Procedure (TCLP) in accordance with 40 CFR 261 and possibly other tests prior to disposal as a hazardous waste. Waste testing for proper disposal is the responsibility of the Contractor.

- 25. Negative Pressure Enclosure (NPE) An enclosed or contained area of any configuration constructed of polyethylene sheeting with a minimum of four (4) air changes per hour and a negative pressure of -0.022 inches of water as compared to surrounding areas outside the enclosure. NPE must be maintained until post abatement sampling.
- 26. Non-Friable Asbestos Material Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating binder, or other material so that the asbestos is well bound and will not release fibers in excess of the asbestos control limit during any appropriate use, handling, demolition, storage, transportation, processing, or disposal.
- 27. Non-hazardous Asbestos Waste Wastes which are non-friable and/or are below one percent asbestos by weight as determined by objective testing. These wastes require OSHA Asbestos Hazard warning labels and disposal at landfills that accept such asbestos wastes.
- 28. Observation Service Environmental Consultant hired to conduct compliance observation and air monitoring services on behalf of the Owner. Sometimes referred to as the Owner's Observation Service.
- 29. Owner The San Mateo Foster City School District and any of its designated representatives for this project.
- **30**. Owner's Representative Representative(s) the District (Owner) has assigned to manage, oversee, and inspect this project. This may include an architectural and/or construction management consultant hired by the Owner to oversee the project.
- 31. Polychlorinated Biphenyl (PCB) PCB's are any chemical substances consisting of the biphenyl molecule chlorinated to varying degrees or any combination of such molecules. PCBs have had a wide variety of uses in the past including dielectric fluids in capacitors. PCBs are clear to yellow oily substances which are toxic to the liver and reproductive system. PCBs are also suspect human carcinogens.
- **32**. PCB Ballast An FLB that is known or suspected to contain PCBs. All FLBs must be considered PCB ballasts unless they are:
 - a. Labeled or marked "No PCB" by the manufacturer.
 - b. Manufactured in 1979 or later as indicated and verified on a date stamp or code, located on the ballast.
 - c. Labeled as "Electronic Ballasts" by the manufacturer.
 - d. General Electric HDF Ballasts manufactured from 1977 to 1978 and which have a "W" added to their catalogue number on the label of the ballast.
- 33. Removal Procedures necessary to remove hazardous materials such as, but not limited to, asbestos or lead from designated areas and to

dispose of these materials at an acceptable properly permitted waste disposal site.

- **34**. Surfactant A chemical wetting agent added to water to improve penetration.
- 35. Universal Waste Certain common designated hazardous wastes that are required to be handled and disposed of or recycled in accordance with special rules. Includes fluorescent light tubes, HID lamps, sodium vapor lamps, mercury switches, mercury thermostats, NiCad, Silver, & Mercury & other batteries (often used in building alarms and emergency systems), and other items.
- 36. Visually Clean Free of visible dust, paint chips, dirt, debris, or films removable by vacuuming or wet cleaning methods specified. For outside soil or ground cover areas, visually clean shall mean free of construction or paint debris, chips or dust distinguishable from the initial soil or ground conditions.
- **37**. Waste Generator Label Waste Generator label shall include the Generator's Name, ID Number, Address, and Waste Manifest Number.
- 38. Wet Cleaning The process of eliminating asbestos or lead contamination from building surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with water or water/ detergent solution, and by afterwards disposing of these cleaning tools and materials as contaminated waste.
- 39. Work Area Designated rooms, spaces, or areas of the project in which hazardous material removal actions are to be undertaken or which may become contaminated as a result of such removal actions during the process and prior to final clean-up and decontamination. A contained Work Area is a Work Area that has been sealed and equipped with a Decontamination Enclosure System. Also referred to as a "Regulated Area."
- 40. Worker Decontamination Enclosure System (Worker Decon) That portion of a Decontamination Enclosure System designed for controlled passage of workers, and other personnel and authorized visitors, typically consisting of a clean room, a shower room, and an equipment room.

1.5. <u>SUBMITTALS</u>

- A. General:
 - 1. Requirements are as set forth in the General Conditions documents (001 000 to 019 9999) that are prepared by aedis architects for items required to be submitted under this section.
 - 2. Submittals that are incomplete, disorganized, unreadable, or not project specific will be rejected.

- B. Pre-Start Submittal-Part A; Submit and obtain approval prior to starting on-site set-up for asbestos removal work. Submit the following:
 - 1. Licensing and Registration for Contractor or Subcontractor responsible for removal of hazardous materials. Submit copies of current and valid:
 - a. The Contractor's license and Contractor's asbestos certificate issued by the California State Contractor's Licensing Board (CSLB);
 - Registration for Asbestos-Related Work from the Division of Occupational Safety and Health in accordance with CCR, Title 8, Article 2.5 of the California Administrative Code and C-22 Asbestos Abatement Contractor in accordance with CCR, Title 16, Div 8, Article 3.
 - 2. Notifications, Communications, and Postings.
 - a. Submit copies of notifications to appropriate government agencies where required, including the following:

Division of Occupational Safety and Health 1065 East Hillsdale Blvd., Suite 110 Foster City, California 94404 (650) 573– 3812 Email: DOSHFC@dir.ca.gov Notifications shall be in accordance with the Title 8 CCR Section 341.9 for asbestos and Section 1532.1 for lead.

Bay Area Air Quality Management District (BAAQMD) Attn: Asbestos Section 375 Beale Street, Suite 600 San Francisco, California 94105 (415) 749-4900 Notifications shall be in accordance with the Regulation 11 Rule 2 for Asbestos.

- b. Copies of Government agency correspondence shall be included in the submittals.
- 3. Respiratory Protection Plan: Submit a written standard operating procedure governing selection, fit-testing, and use of respirators for asbestos and lead removal.
- 4. Detailed Work Plan: Submit a detailed work plan proposed for use in complying with the requirements of these specifications. The detailed work plan shall include, at a minimum, the following information:
 - a. Procedures: Job-specific procedures proposed for completing the scope of work outlined herein including: means of Work Area containment including barriers and other protective measures for

removal at each location; means for provision of decontamination units; removal methods to be employed;

- b. Detailed schedule with calendar dates showing all phases of work. Where scheduled start dates have not been confirmed, provide the number of consecutive work days to complete each phase of work.
- 5. Plan for personnel air monitoring required by law by the Contractor for Worker protection. The Plan shall include, but not be limited to the following:
 - Personnel Air Monitoring conducted in strict accordance with 8 CCR 1529. Include calibration data for the secondary standard to be used for air sampling pump calibration on-site. This data must be within six (6) months of the projected completion of this project.
 - b. Name, address and accreditation and/or certification of laboratory selected by the contractor to analyze personal air samples for workers.
- 6. Hazardous Waste Transporter. Submit name, address and EPA# for each transporter to be used.
- 7. Waste Disposal Sites: Submit name location, class, and EPA# for each waste disposal site to be used for asbestos, lead, PCB, and other hazardous wastes for this project.
- 8. Method of disposal (i.e., landfill or incineration) for PCB ballasts and PCB contaminated materials shall be indicated. List transporter and disposal site(s) and their respective EPA ID number(s).
- 9. Method of on-site storage and shipping for packaging to keep lighting tubes and lamps intact from removal until their delivery to a recycling facility.
- 10. Product Data: Manufacturers product data for all items required for complete and proper execution of the work, this includes product data for all items listed under Part 2 Products. Product data shall include manufacturing product data, specifications, samples and application instructions, material safety data sheet (MSDS), and other pertinent information as necessary.
- C. Pre-Start Submittal-Part B; Submit and obtain approval prior to any asbestos and/or lead removal work. Submit the following:
 - 1. Personnel Qualifications: Personnel documents required per this section shall be organized by individual employee and include the following information:
 - a. Personnel Training (asbestos)
 - 1. Competent Person/Supervisor: Submit a copy of current AHERA asbestos training certificates for the Contractor's

Competent Person and Quality Control Person documenting successful completion of a training course in asbestos abatement project supervision offered by a Cal/ OSHA accredited educational institution. Designate by name, the person who will act as the Certified Supervisor/ Competent Person and Qualified Person for the project.

- 2. Workers: Submit a copy of the current asbestos training certificates for the Contractor's asbestos abatement workers documenting successful completion of a training course in asbestos abatement for workers offered by an EPA accredited education institution.
- 3. For lead abatement or removal work, supervisors and workers shall have appropriate training and CDPH certification documentation. For lead related demolition work, comply with CAL/OSHA training and certification requirements as applicable and submit documentation.
- b. Medical Examination: Submit proof that personnel who will be performing asbestos-related work, lead related work, or otherwise wearing respirators shall have had medical examinations within the last 12 months in conformance with Title 8 CCR; Section 1529 asbestos, and furnish the results of each exam in the form of the physician's written opinion or approval with regard to worker fitness to wear a respirator and perform asbestos and lead work as applicable.
- c. Respirator fit tests: Submit proof that personnel who will be entering asbestos Work Areas have had a qualitative respiratory fit test performed within 12 months from the scheduled completion date of the project.
- 2. HEPA Filtration Certifications:
 - a. Provide third party test certificates for al Differential Pressure Equipment and HEPA Vacuums to be used on this project. Such certificates shall document that each item of equipment has been tested on-site prior to start-up and that the results have demonstrated that each HEPA equipment assembly meets the efficiency requirement for HEPA filtration as an installed system or unit of equipment.
 - b. All HEPA filtration testing must be conducted by challenging the installed filter system with 0.3 micrometer diameter particles using a dioctyl-phthalate (DOP) particle generator and appropriate aerosol measurement test equipment designed for this purpose. Alternate test methods may be accepted if certified to be equivalent. Test certificate stickers shall be placed on each machine tested and a copy of the testing certification shall be

submitted. The test result, date and time of testing, testing firm, and signature of qualified test technician shall be included on each certification along with equipment identification information.

- D. Daily & Other Progress Submittals: Submit the following within 24 hours following the completion of each Work Shift. The Contractor shall submit the following information to the Observation Service.
 - 1. A complete asbestos worker/employee roster for each work shift prior to the commencement of each shift.
 - 2. Work Area entry/exit logs completed for each Work Area and each Work Shift.
 - 3. Worker exposure ("OSHA") sample results for asbestos including eight (8) hour Time Weighted Average (TWA) sampling and 30-minute excursion limit sampling. Sample results must indicate the person sampled, description of work activity, start and stop times, liters per minute, total volume and laboratory result expressed as an eight-hour TWA or excursion limit sample.
 - 4. Waste Manifests:
 - a. Each time hazardous waste (asbestos, lead, PCB, etc) is picked up from the site the Contractor is responsible for preparing an accurate hazardous waste manifest, presenting the manifest to the Owner's Representative for review and signature, and submitting the generator and DTSC copies to the Owner's Representative.
 - b. Each time a non-hazardous asbestos waste is shipped, the Contractor shall submit the non-hazardous shipping manifests to the Owner's Representative for review and signature and provide the Owner's Representative a signed copy.
 - c. All asbestos and other hazardous material waste manifests are to be reviewed and signed by an Owner Representative.
 - d. All materials shipped for recycling (lighting tubes, mercury, etc.) shall be accompanied by a manifest prepared by the Contractor, review and signed by the Owner's Representative. A copy of the signed manifest shall be provided to the Owner Representative.
 - e. Land Disposal Restrictions: Submit a copy of the completed Notice and Certification with each Hazardous Waste Manifest for wastes intended for land disposal pursuant to Section 67740 of 22 CCR) signed by the co-generator to the Owner's Representative.
 - 5. Land Disposal Restrictions: Submit a copy of the completed Notice and Certification with each Hazardous Waste Manifest for wastes intended for land disposal pursuant to Section 67740 of 22 CCR) signed by the co-

generator to the San Mateo Foster City School District's Construction Supervisor.

- 6. Special Reports: (Submit to the Owner's Observation Service within 24 hours of occurrence.)
 - a. The Contractor shall complete a report of unusual events when an event of unusual significance occurs at the site including loss of negative pressure, power failures, breeches in containment, etc. This report shall include the date and time of the event, activities leading up to the event, a detailed account of the event, persons involved, corrective action taken, and action taken to prevent a reoccurrence.
 - b. The Contractor shall submit a detailed accident report in the event of an accident or injury at the site. This report shall include the date and time of the injured, persons involved, cause of injury, detailed description of loss or injury, response actions taken and action taken to prevent a reoccurrence.
- E. Close-Out Submittals:
 - 1. Within 10 days of completion of all hazardous material removal work, submit to the Owner's Observation Service:
 - a. One copy of all outstanding daily submittals;
 - b. One copy of each hazardous waste manifest and one copy of each non-hazardous asbestos waste manifest;
 - c. One copy of Work Area entry/exit logs completed for each Work Area and each Work Shift.

1.6. <u>CERTIFICATIONS</u>

- A. Inspection Certifications (Asbestos)
 - 1. Pre-Abatement Visual Inspection Forms and Final Visual Inspection and Post Abatement Certification Forms will be provided at the preconstruction start up meeting by the Observation Service.
 - 2. Pre-Abatement Visual Inspection: Upon inspection and approval of each Work Area by the Contractor's Certified Supervisor, a Pre-Visual Inspection Form shall be signed and submitted to the Observation Service for review and approval. The approved inspection form shall be considered notice to proceed with abatement operations within the Work Area.
 - 3. Final Visual Inspection and Post Abatement Certification: Upon completion of asbestos abatement and before encapsulation in each Work Area, the Contractor's Certified Supervisor shall thoroughly inspect the Work Area for completeness of work. The Contractor's Competent Person shall sign and submit a completed Final Visual Inspection and

Post Abatement Certification Form for review and approval by the Observation Service. The approved inspection form shall be considered notice to proceed with encapsulation.

1.7. <u>POSTINGS</u>

- A. Before the commencement of any asbestos related work at the site, Cal/OSHA warning signs in and around the Work Area to comply with Cal/OSHA regulations.
- B. Copies of the Contractor's SCLB license, Cal/OSHA registration certificate, temporary job-site notifications, pre-start LBP notifications to Cal/OSHA, local agency notifications, emergency exit diagram, emergency phone numbers, Cal/ OSHA poster on worker's rights, and worker's compensation poster shall be posted proximate to the entrance to each Work Area.
- C. The Contractor shall have at least one copy of the Contract Documents including project plans and specifications, and a current copy of 8 CCR 1529 & 1532.1.

PART 2. PRODUCTS

2.1. <u>GENERAL</u>

- A. Submit manufacturer's product data for all items to be used including the items listed below.
- B. All materials to be used on the project shall be new in original packages, containers, or bundles bearing the name of the manufacturer and the brand name. Used materials will not be permitted.

2.2. PROTECTIVE COVERING (PLASTIC SHEETING)

A. For standard containment and critical barrier usage: Fire Retardant Polyethylene sheets six (6) mil and four (4) mil in sizes to minimize frequency of joints, approved and listed by the State Fire Marshall per Section 13121 and/or 13144.1 of the California Health and Safety Code.

2.3. <u>TAPE, ADHESIVE, SEALANTS</u>

A. Duct tape two inches or wider, or equivalent, capable of sealing joints of adjacent sheets of plastic sheets and for attachment of plastic sheets to finished

or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions.

B. Spray adhesives for sealing polyethylene to polyethylene shall contain no methylene chloride compounds.

2.4. <u>PROTECTIVE PACKAGING</u>

- A. Appropriately labeled six (6) mil sealable polyethylene bags as a minimum.
- B. Appropriately labeled, impermeable drum containers with sealable lids.
- C. Bilingual labels (English and Spanish) on waste packages, contaminated material packages and other containers shall be in accordance with applicable Cal/EPA and Cal/OSHA standards.

2.5 WARNING LABELS AND SIGNS

- A. All warning signs and labels must meet all applicable regulatory requirements for wording, size of lettering, and use of language, pictographs, and graphics to effectively convey the warning. Additional requirements apply for hazardous waste containers and shipments for transportation to disposal sites.
- B. Lead Caution Signs must include phrase "WARNING, LEAD WORK AREA, POISON, NO SMOKING OR EATING" in minimum two-inch high letters. These shall be posted at each approach to each lead paint stabilization/surface preparation and manual demolition Work Area.
- C. Cal/OSHA Lead Warning Posters: "DANGER, LEAD WORK AREA, MAY DAMAGE FERTILITY OR THE UNBORN CHILD, CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM, DO NOT EAT, DRINK OR SMOKE IN THIS AREA" shall be posted at the entrance to each LBP stabilization/surface preparation and manual demolition Work Area.
- D. Asbestos Warning signs for Regulated Areas must contain the following wording:

DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA AUTHORIZED PERSONNEL ONLY

E. Labels for packaging and containers containing ACM waste must contain the following wording:

DANGER CONTAINS ASBESTOS FIBERS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS DO NOT BREATHE DUST AVOID CREATING DUST

2.6. <u>SURFACTANT</u>

A. Surfactant, or wetting agent, for amending water will be 50 percent polyethylene ether and 50 percent polyethylene ester, or equivalent, at a concentration of one ounce per five gallons of water.

2.7. <u>VENTILATION EQUIPMENT</u>

- A. Provide differential pressure equipment in areas as shown on Contractor's work plans. High-efficiency particulate absolute (HEPA) filtration systems shall be equipped with filtration equipment in compliance with ANSI Z9.2, local exhaust ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the work area. Differential pressure within the work area shall be maintained at negative 0.022 inches of water during abatement.
- B. Provide air filtration equipment with HEPA filtration system to cleanse air of particulate matter during abatement. Replace HEPA filters when filters become clogged with particulate matter. Provide enough air filtration devices within the work area to maintain fiber levels within the protection factors of workers' respirators.

2.8. <u>PERSONAL PROTECTIVE EQUIPMENT</u>

- A. Personal Protective Equipment shall comply with the requirements of 29 CFR 1910, Subpart 1 and 8CCR 1514, 1515, 1516, and 1517.
- B. Work clothes shall consist of impervious disposable, full-body coveralls, head covers, boots, rubber gloves, and work boots (or sneakers). Sleeves at wrists and cuffs at ankles shall be secure.
- C. Eye protection and hard hats shall be available and worn when required by applicable safety regulations and shall conform to ANSI 87.1 and 89.1.

D. Provide Authorized Visitors with suitable protection clothing, headgear, eye protection, and footwear whenever they enter the Work Area.

2.9. <u>RESPIRATORS</u>

- A. Provide all workers, foremen, superintendents, authorized visitors, and inspectors' personally-issued and marked, clean and sanitized respiratory equipment approved by NIOSH. When respirators with disposable filters are employed, provide sufficient filters for replacement as recommended by manufacturers or this specification. Selection of respirators shall be made according to the guidance of 8 CCR 1529 and 1532.1.
- B. The minimum respiratory protection required for this project is a half mask respirator as long as the airborne levels do not exceed one tenth of the applicable PEL established by regulation.

PART 3. EXECUTION

3.1. <u>PROJECT PROCEDURES</u>

- A. Prior to the start of on-site work, the Contractor shall hold an on-site start-up safety meeting for all of contractor and facility employees that addresses at least the following issues specific for the project.
 - 1. Safety and health hazards;
 - 2. Procedures and work practices;
 - 3. Respiratory protection and instruction; and
 - 4. Special conditions and/or work requirements.
- B. Worker Protection Procedures
 - 1. Provide Authorized Visitors with suitable protective clothing, respirators, headgear, eye protection, and footwear whenever they are required to enter the Work Area. All provided equipment shall be new or in good working condition and clean, sanitized, and inspected by a competent person since last use.
 - 2. Each Worker and Authorized Visitor shall, upon entering the job site: remove street clothes in the clean-change rooms and put on a respirator and clean protective clothing before entering the Work Area.
 - 3. Workers shall, each time they leave the Work Area, remove gross contamination from protective clothing before leaving the Work Area, proceed to the Equipment Room or decontamination area and remove protective clothing except respirators; still wearing the respirator, proceed to the showers or wash area, clean the outside of the respirator
with soap and water while showering; remove the respirator, and thoroughly shampoo and wash themselves.

- 4. Following washing and/or showering and drying off, each Worker shall proceed directly to the clean change room/area and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before re-entering the Work Area from the clean change room, each Worker and Authorized Visitor shall put on a clean respirator and shall dress in clean protective clothing.
- 5. Contaminated work footwear shall be stored in the Decontamination Area when not in use in the Work Area. Upon completion of abatement, dispose of footwear as contaminated waste.
- 6. Workers removing waste containers from the Equipment Decontamination Enclosure shall enter the Holding Area from outside wearing a respirator and dressed in clean disposable coveralls. No Worker shall use this system as a means to leave or enter the Wash Room or the Work Area.
- 7. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work Area.
- 8. Workers and Authorized Visitors with beards shall not enter the Work Area unless equipped with respirators approved for use with beards.

3.2. <u>COORDINATION REQUIREMENTS</u>

- A. Coordinate with the Observation Service and Owner's Representative the locations of the Worker Decontamination Unit, waste load out, staging areas, and emergency egress exits.
- B. Coordinate timing of waste bag-out and waste shipping activities with the Owner's Representative and Observation Service. All asbestos and hazardous waste manifests shall be signed by the owner or designated owners's representative. The Contractor shall be aware that these activities may need to take place during times when it is most convenient to the facility.
- C. Coordinate and provide to the Observation Service the required number of GFCI protected energized 110 Volt AC power outlets needed inside and outside each Work Area. These outlets shall be solely dedicated for the use of the Owner's Observation Service.

3.3. <u>PREPARATION</u>

- A. General Preparation Requirements for All Interior Work Areas. Not each area will require abatement of all materials. Each school differs. Refer to project plans/ drawings.
 - 1. Prior to Work Area set up and preparation, remove all movable objects that will not disturb existing ACM or asbestos contaminated materials in the process.
 - 2. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements and provide ground-fault interrupter circuits as power source for electrical equipment.
 - 3. Clean and decontaminate all accessible areas above ceiling prior to hazardous material remediation, demolition, and other construction activities.
 - 4. Install a Decontamination Enclosure System or equivalent prefabricated portable decontamination unit(s) as approved. This system will be the primary entrance and exit to the Work Area.
 - 5. Seal off all other accesses to the Work Area with hard barriers and polyethylene sheeting sealed with tape.
 - 6. Install Differential Pressure Equipment for all Class I and Class II Asbestos Removal Operations in accordance with the requirements herein. Establish a negative pressure of -0.022 inches water or greater inside the Work Area containment with respect to the outside and non-involved building areas.
 - 7. Install an adequate number of HEPA Units to obtain the required negative pressure continuously and achieve at least four (4) complete air changes per hour inside the containment.
 - 8. Conduct any required non-ACM selective demolition including demolition to reveal concealed ACM prior to starting ACM removal work to ensure such areas are prepared with additional critical barriers to ensure negative pressure can be maintained at a negative (-) 0.022 inches or better during asbestos removal.
 - 9. Pre-clean fixed objects and surfaces within the proposed Work Areas, using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclose with protective barriers. Protective barriers will consist of plastic sheeting and plywood as appropriate.
 - 10. Seal all remaining openings, including but limited to ducts, grills, diffusers, and any other penetrations of the Work Areas, with two (2) layers of six (6) mil polyethylene sheeting sealed with tape.
 - 11. Seal all joints of conduit, junction boxes, and ductwork with duct tape and plastic sheeting. Cover and protect during abatement.

- 12. Install Viewing Ports of size, quantity, and location to meet local AQMD/ APCD requirements. Where no requirements are specified, install an adequate number of windows to view the entire removal Work Areas as feasible.
- 13. Establish and maintain emergency and fire exits from each Work Area.
- B. Decontamination Enclosure System (General)
 - 1. Construct or establish Decontamination Enclosure System or area contiguous to the work area for proper decontamination of worker as they exit a Regulated Area or containment system.
 - 2. Provide separate designated areas or chambers for: removal of contaminated clothing prior to exiting the contaminated area; for washing or showering (as appropriate); and for donning clean protective clothing and equipment prior to re-entry. The decontamination system shall comply with applicable regulation taking into account the Cal/ OSHA asbestos removal work class as well as site conditions.
 - 3. In the event that the Decontamination Enclosure System is not contiguous with the Work Area, there must be at least an established area for removing and properly disposing of contaminated clothing and equipment, minimum amenities for washing hands, respirator and face, to allow exiting the work areas prior to going to a remote decontamination enclosure on site. Under these conditions, double suit procedures are required.
- C. Mini Containments
 - 1. The use of mini-containments shall be permitted only if entire removal can be completely contained by the enclosure or as needed to isolate the HVAC, Plumbing, Electrical or other system as part of localized preparatory activities.
 - 2. Mini-containments shall shall be constructed with rigid framing and shall have a minimum of one layer of 6 mil polyethylene sheeting sealed with tape.
 - 3. The mini-containment enclosure shall have a decontamination enclosure system in accordance with the requirements herein or as approved by the Observation Service.
 - 4. The The mini-containment enclosure shall be placed under negative pressure for the duration of work in the containment until final air clearance is obtained.
- D. Maintenance of Enclosure Systems
 - 1. Ensure that all barriers intact and are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

- 2. Visually inspect enclosures at the beginning of each work period and periodically throughout each shift. Inspection shall include, but not be limited to, the protective critical barriers and the worker Decon unit barriers, warning signage, and Work Area barriers or barricades.
- 3. Use smoke test methods to evaluate effectiveness of barriers prior to implementing asbestos removal and when directed by the Observation Service.
- 4. Ensure all negative pressure containment enclosures for regulated asbestos-containing material removal meet all BAAQMD requirements at all times from start up through completion and post abatement sampling.
- E. Asbestos, lead, and hazardous material removal work shall not commence until:
 - 1. Submittals as required herein have been reviewed and approved in writing by the Observation Service;
 - 2. Arrangements have been made for secure temporary storage of asbestos wastes and other hazardous wastes on-site and for disposal of such wastes at an acceptable permitted disposal sites;
 - 3. Work Areas and Decontamination Enclosure Systems (or equivalent) have been installed and approved and all parts of the building or facility required to remain in use are effectively segregated and isolated;
 - 4. Tools, equipment, and secure material waste receptors are on hand;
 - 5. Arrangements have been made for buildings' and Work Area security during removal operations including periods when no work is in progress such as off hours, weekends, and holidays; and
 - 6. Differential pressure systems, as required for interior asbestos removal, are installed, operating, and recording properly.

3.4. CLASS I & II ASBESTOS REMOVAL OPERATIONS

- A. General Requirements. Not each area will require abatement of all materials. Each school differs. Refer to project plans/drawings.
 - 1. Class I Asbestos Work is defined as removal of ACM that is a surfacing material or thermal system insulation. Class II Asbestos Work is defined as the removal of ACM that is not a surfacing material or thermal system insulation.
 - 2. The Class I Asbestos Work of this project includes but is not limited to removal of: non-friable ACM and PACM if made friable by removal process.
 - 3. The Class II Asbestos Work means activities involving removal of ACM which is not thermal system insulation or surfacing materials. For this project materials include, but is not limited to removal of the following

materials: wallboard, floor tile, roofing and siding shingles, and construction mastics.

- B. Class I & II Asbestos Work Preparation Requirements
 - 1. All interior work shall be conducted within negative pressure containments with contiguous decontamination units for worker enter & exit.
 - 2. Negative pressure shall be maintained at -0.025 inches of differential pressure (water column) or higher compared to the exterior pressure.
 - 3. All negative pressure exhaust units shall be HEPA filtered and exhausted to the building exterior. All HEPA exhaust units shall be DOP (or equivalent) tested on-site and certified to meet HEPA efficiency standards.
 - 4. Interior walls and other non-movable objects shall be covered with at least one layer of four (4) mil plastic sheeting. Wall covering may be reduced to 4' splash guards in Work Areas where glove bags or "cut, wrap, and remove" methods are the sole method used for pipe and fitting insulation removal.
 - 5. Floor areas shall be covered with two (2) layers of six (6) mil plastic sheeting unless glove bags and/or cut, wrap and remove methods for pipe insulation are used. Where glove bags and cut & wrap methods are used, six (6) mil plastic drop sheets extending at least 5 feet on each side of pipe at minimum are required.
- C. General Removal Procedures
 - 1. Spray asbestos materials with amended water, using only spray equipment capable of dispensing a fine mist application. Apply amended water sufficiently to wet material surfaces without causing excess dripping or pooling. Spray materials and Work Area repeatedly during work process to control airborne fiber levels.
 - 2. Place asbestos waste in clear asbestos-labeled plastic bags or lined drums. Plastic bags must be sealed using the "goose neck" technique by twisting the neck of the bag, bending it over and taping it with multiple wraps of tape. Clean external surfaces of containers thoroughly prior to setting down on a clean plastic drop cloth.
 - 3. Move waste containers to washroom or wash area, wet clean each container thoroughly, and move to holding area pending removal to uncontaminated areas.
 - 4. After completion of removal work, equipment surfaces from which asbestos has been removed shall be wet cleaned and/or wet sponged by an equivalent method to remove all visible material and residue. During this work, the surfaces being cleaned shall be kept damp. Do not allow water to pond at any time.

- 5. Clean all surfaces of the Work Area including remaining sheeting by use of damp cleaning and/or HEPA filtered vacuum.
- 6. Proceed with final decontamination of the Work Area.
- D. Glove bag Technique
 - 1. Removal of Class I and II asbestos-containing materials from piping may be accomplished using approved glove bag techniques in specified areas. In all cases, removal shall be conducted in secondary negative pressure containment or mini-containment.
 - 2. After installation of glove bag, smoke test the glove bag to verify that it is air tight.
 - 3. Thoroughly wet material to be removed with amended water before and during the removal process.
 - 4. Thoroughly wash the inside of the bag, the piping surfaces and the tools upon completion.
 - 5. Encapsulate all surfaces inside the glove bag including the piping and ends of exposed coating material.
 - 6. Evacuate bag with an approved HEPA vacuum; tie off waste area; remove tools from bag; remove bag from pipe, folding inward the sides of the bag; then twist and tape the open end, the wand opening, and the vacuum opening.
 - 7. Place glove bag directly into another six (6) mil sealable labeled plastic waste bag or other appropriate waste container. Seal the outer bag using the "goose neck" technique by twisting the neck of the bag, bending it over and taping it with multiple wraps of tape. Seal container with duct tape.
- E. Modified Cut, Wrap, and Remove Technique
 - 1. Removal of pipe insulation may be accomplished using approved Modified Cut, Wrap, and Removal Techniques where piping is to be demolished or abandoned in place unless otherwise noted.
 - 2. Verify the piping being removed scheduled for removal or abandonment in place prior to proceeding.
 - 3. Verify pipe lines have be isolated and drained prior to cutting pipe(s).
 - 4. Use glove bag technique to remove insulation at location of pipe to be cut. Wrap pipe including all insulation being removed with two layers of six (6) mil polyethylene sheeting secured with duct tape.
 - 5. Cut the pipe and remove wrapped pipe with ACM insulation for disposal.
- F. Floor Tile Removal
 - 1. Remove wall base, cabinets, and any other components and materials as necessary to expose and access all resilient floor tiles for removal.

- 2. Thoroughly wet floor tiles with amended water but do not let water pool or pond.
- 3. Remove tile by prying with scrapers or spud bars taking care to minimize breakage.
- 4. Place removed tiles in appropriately labeled impervious bags or containers and seal.
- 5. Do not subject floor tiles to any sanding, grinding, cutting, abrading activities likely to create friable ACM.
- G. Flooring Mastics Removal
 - 1. Remove all overlaying non-asbestos carpet and other materials concealing the flooring mastics.
 - 2. Remove all asbestos and/or asbestos mastic contaminated floor tiles prior to initiating mastic removal in the Work Area.
 - 3. Remove all flooring mastics using a suitable mastic solvent along with manual scraping and/or mechanical removal methods as necessary for complete removal.
 - 4. Where removal solvents are used, clean up slurry as the mastic is removed and place in properly labeled containers for disposal as a hazardous waste.
 - 5. As an alternative to solvent removal, use bead blast systems for removal is acceptable if permitted by the AQMD and any required variance or waiver is obtained in advance by the Contractor. Likewise, removal by high pressure water systems is allowable if water is fully contained and removal is complete. All floor mastic removal operations must be conducted as a Class I removal operations unless removal is limited to manual scraping methods.
 - 6. Regardless of removal method used, all three dimensional mastic residues must be removed and extent of removal must sufficient to allow for recycling of concrete foundations and decks.
- H. Mastic behind chalkboard/ACT
 - 1. Removal of non-friable shall be conducted using wet methods using hand

scrapers and cutting tools to remove the ACM mastic from the non-ACM substrate materials.

- 2. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
- 3. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- I. Texture coat, wallboard (sheetrock) and joint tape compound

1. Mist the gypsum board/joint tape compound/texture continuously with amended.

water during removal.

- 2. Remove gypsum board in larger sections or pieces where possible. Use pry bars, utility knives, claw hammers and other appropriate tools to loosen and remove wallboard from framing. Remove all wallboard fasteners.
- 3. Place removed gypsum board/joint tape compound/texture in impervious containers with asbestos warning labels as it is removed. Wall insulation shall be placed in same bags as asbestos contaminated.
- 4. Complete Work Area clean-up including: all remaining nails; framing; electrical junction boxes, outlets, wiring, and conduit; plumbing fixtures, piping, and hanger, and all other surfaces in the work area.
- J. Window Glazing/putty
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable sealants and caulking to be removed.
 - 2. Removal of non-friable shall be conducted using wet methods using hand scrapers and cutting tools to remove the ACM mastic/sealant from the non-ACM substrate materials.
 - 3. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
 - 4. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- K. Exterior Stucco wall
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable stucco to be removed.
 - 2. Removal of non-friable shall be conducted using wet methods using manual demolition.
 - **3**. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
 - 4. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- L. Roofing Materials (shingles and mastic)
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable roofing mastic or penetration mastic to be removed.

- 2. Removal of non-friable roofing shall be conducted using wet methods and appropriate cutting tools. Remove roofing in small sections and place in waste bags or containers.
- 3. If a chute is used to remove ACM roofing waste from the roof, it must be totally enclosed and air tight to and including the bin it is connected to.
- 4. Removal of roofing flashing and sealants shall be conducted using hand scrapers and cutting tools to remove the ACM mastic/sealant from the non-ACM substrate materials.
- 5. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
- 6. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the State or State's representative.
- M. Cutting, Tapping, Demolition of Asbestos Cement (AC) Piping
 - 1. Carefully machine excavate to exposed AC pipe as necessary. Once exposed, hand excavate areas where cuts, breaks or taps are to be made to prevent pipe breakage.
 - 2. Establish a regulated Work Area surrounding the location of pipe cutting and/or modification. At minimum, use barrier tape and signage.
 - 3. Place plastic sheeting under the area to be cut or altered to catch any resulting chips or dust debris.
 - 4. The methods and procedures used to cut or modify pipe shall not cause the pipe to shatter, crumble, be pulverized or release airborne asbestos dust.
 - 5. Keep the AC pipe wet at all times during cutting or tapping work.
 - 6. Use only industry recommended practices for cutting, splicing and tapping AC pipe. At minimum:
 - a. Cutting is to be by special carbide tipped blade cutters that are frame adjustable to the circumference of the pipe and that have self -tracking rollers or "snap cutters" that operate with cutting wheels on a chain wrapper around the pipe barrel.
 - b. Machining, if necessary, shall be conducted wet using manual field lathe or manual rasp.
 - c. Tapping, whether under pressure or on non-pressured lines, shall be conducted wet and include provisions for internal pipe cleaning by flushing, purging or other means to prevent asbestos dust and chips from entering the drinking water system.
 - d. Do not blow out with compressed air or dry sweep. Do not vacuum dust and debris without a HEPA filtered vacuum.
 - e. All cutting, machining, tapping procedures must be conducted wet and all resulting AC pipe dust and debris must be cleaned up and disposed of as asbestos contaminated waste.

- f. Piping sections to be demolished shall be carefully cut into manageable sections, wrapped and sealed and plastic sheeting, and carefully placed in a lined asbestos waste disposal bin.
- g. All intact AC pipe waste and debris shall be disposed of as nonhazardous asbestos waste under a non-hazardous asbestos manifest at a permitted asbestos landfill.

3.5. FINAL ASBESTOS DECONTAMINATION AND TESTING

- A. Previous Work: During completion of the interior asbestos removal and visible debris clean up work specified, the first cleaning of all exposed equipment and building surfaces should be completed. Likewise for exterior Work Areas, all visible debris and removed materials must be bagged up for disposal.
- B. Clean all surfaces within the Work Area by wet wiping and HEPA vacuuming.
- C. Clean any remaining materials and debris exposed by the plastic barrier removal. Final independent layer of polyethylene sheeting and all isolation barriers, vents, grilles, diffusers, etc., shall remain in place.
- D. At the completion of this cleaning phase, the Work Area shall be free of all unnecessary equipment/materials and waste containers.
- E. The Contractor's Competent Person/Supervisor shall perform a complete visual inspection of the Work Area under adequate lighting to ensure that the Work Area is free of visible asbestos material, debris, and dust.
- F. The Contractor's Competent Person/Supervisor shall ensure that additional cleaning is completed if the area is not acceptably clean. The Contractor shall submit a completed and signed Final Visual Certification Form along with a request for a final visual inspection by the Observation Service once the Competent Person/Supervisor concludes that the area is acceptable for final visual inspection.
- G. After final visual inspection of the Work Area shall be conducted by the Observation Service. The standard for visual acceptance shall be no visible dust, debris or three dimensional suspect ACM residues within the Work Area. After written notification to proceed from the Observation Service, encapsulate all surfaces within the Work Area.
- H. For interior work areas, the Observation Service will conduct post abatement air testing to evaluate the final acceptability of the Work Area for release to unprotected personnel and the environment. Each interior containment will be evaluated by collection and analysis of a minimum of three and up to five (5)

phase contract microscopy (PCM) air samples collected by the Observation Services and analyzed in accordance with NIOSH Method 7400 or equivalent. The standard for acceptance shall be that each sample result for the containment shall be less than 0.010 fibers per cubic centimeter of air (f/cc). The Contractor shall allow for up to 24 hours for collection of post abatement air samples to allow Work Area and encapsulants drying and up to another 24 hours for air test results.

- I. The Contractor shall re-clean and re-encapsulate all surfaces within any Work Area Containment that fails post abatement air testing at no additional cost to the Owner. Likewise, the Contractor is responsible for all costs associated with failed visual inspections including additional cleaning and inspection. All costs associated with failed inspections shall be borne by the Contractor.
- J. After written notification from the Observation Service in the form of a fully completed Final Visual Inspection/Post Abatement Certification Form accepting decontamination of the Work Area as acceptable, proceed with removal of critical barriers.
- K. For exterior non-friable ACM removals such as sealants, mastics, Transite® pipe and/or similar materials, following abatement inspection will consist of a visual inspection by the Observation Service. If all ACM materials have been removed and the Work Area is free of visible ACM material, dust and debris, the removal will be considered complete.

3.6. LOOSE LEAD-BASED PAINT SURFACE PREPARATION

- A. Prepare the exterior Work Area with plastic flooring and another plastic drop sheet, place lead caution tape demarkation around removal area.
- B. Wet the surfaces with loose LBP by misting lightly with water.
- C. Wet scrape loose LBP until remaining paint is intact.
- D. Clean up removed LBP chips, debris and dust using HEPA vacuuming and wet wiping. Containerize all lead waste including vacuum bags for disposal as hazardous lead waste. Label and place container into secure storage pending waste characterization testing and disposal.
- E. Clean up plastic sheeting and place in separate lead related waste bags or drums along with protective clothing and related potentially contaminated materials.

F. Conduct final clean up and all necessary waste profiling, evaluation, and testing of lead-related waste as specified herein.

3.7. LEAD WASTE CLEAN UP AND WASTE EVALUATION

- A. Clean up paint chips and debris using wet cleaning methods and HEPA vacuuming. All surfaces shall be free of all visible paint chips, dust and debris. Place all paint chips in a labeled waste bag or container.
- B. Place all contaminated cleaning materials, disposal personal protective equipment (PPE) and contaminated plastic in separate waste bags. The Contractor shall assume all lead-related waste is RCRA hazardous waste and shall conduct required waste testing as necessary for disposal at a permitted waste disposal site.
- C. All waste streams and waste categories listed below shall be considered lead hazardous waste until proven otherwise through testing. All testing of demolition waste wastes is the responsibility of the Contractor. The Contractor shall be responsible for segregating suspect lead hazardous waste based on potential for exhibiting hazardous waste characteristics. Lead-related wastes are to be segregated into the below listed categories at a minimum.
 - 1. Category I: LBP paint chips, vacuum bags, used cleaning materials. These materials are typically hazardous wastes.
 - 2. Category II: Plastic sheeting and tape, disposable clothing, and equipment. These materials should be non-hazardous if properly cleaned and decontaminated. However, these items are to be considered hazardous subject to testing.
- D. Based on the testing protocols, any waste greater than or equal to five (5) ppm lead using STLC or TCLP tests or any waste greater than or equal to 1,000 ppm lead using the TTLC test shall be considered a California hazardous waste.
- E. When the TTLC test result is less than 50 ppm lead, no further testing is required for that waste category sampled unless the waste stream or waste generating process changes.

3.8. <u>LEAD- RELATED DEMOLITION</u>

A. General: All painted or coated surfaces are known or presumed to contain lead subject to worker protection and environmental regulations. Refer to related documents identified herein for additional information including components with LBP requiring agency notification.

- B. Conduct selective as well as general building and structural demolition in a manner that does not result in site contamination above background levels.
 - 1. Remove any loose, peeling, or flaking paint before demolition in accordance with this section.
 - 2. Clean up any demolition-related lead wastes including any resulting paint chips and debris.
 - 3. Do not let any wetting agents or water enter soil or storm drain.
- C. The Contractor shall evaluate each demolition debris waste stream and ensure proper disposal of all generated wastes. All waste profiling and testing required by the disposal site is the responsibility of the Contractor.

3.9. FLUORESCENT LIGHTING & BALLASTS

- A. Remove fluorescent lighting tubes from fixtures in and on buildings to be renovation/demolished, in accordance with project documents.
 - 1. Carefully place all tubes in storage or shipping containers so the risk of breakage is minimized.
 - 2. Place containerized light tubes in a safe and secure storage area pending shipping to the recycler or reuse.
- B. Remove presumed PCB ballasts from all fluorescent lighting fixtures presumed PCB transformers in buildings to be renovation/demolished.
 - 1. Any ballast not marked "PCB Free" or "No PCB" shall be lab packed with adsorbent in a waste drum for disposal as hazardous PCB ballast waste.
 - 2. Ballasts that are clearly marked "PCB Free" shall be set aside for verification inspection by the Observation Service. All ballasts verified to be PCB free may be disposed of as ordinary construction waste or recycled.
 - 3. Ensure PCB ballast drum is properly labeled for PCB wastes and shipping.
 - 4. Any electrical transformer that cannot be determined to be PCB free by labeling, date of manufacture, or manufacturer's information shall be disposed of as a PCB item.

3.10. UNIVERSAL WASTES AND OTHER HAZARDOUS WASTES

A. Refrigerators, air conditioners, and other equipment with refrigerant or coolant gases shall be assumed to contain chlorofluorocarbon (CFC) gases and shall have those gases removed by appropriately certified mechanics or technicians and recycled according to state and federal regulation.

- B. Carefully segregate waste by type and lab pack for disposal in impervious labeled waste containers.
- C. Dispose of or recycle each type of waste in accordance with applicable regulation at permitted facilities. Maintain all shipping and disposal record and provide copies to Owner's Representative and the Observation Service.

3.11. PACKAGING & LABELING

- A. All asbestos wastes shall be adequately wetted prior to packaging.
- B. Place asbestos waste in six (6) mil labeled asbestos waste bags or approved equivalent containers.
- C. Goose neck and seal each bag and place in a second clean-labeled bag, drum or impervious container.
- D. Decontaminate waste bags and containers prior to removing from regulated or contained area.
- E. Label all asbestos waste bags or containers with OSHA warning label: "DANGER CONTAINS ASBESTOS FIBERS MAY CAUSE CANCER. CAUSES DAMAGE TO LUNGS. DO NOT BREATHE DUST. AVOID CREATING DUST" and other information as required by regulation.
- F. All other hazardous lead, PCB, and universal wastes shall be properly labeled and containerized in leak tight containers.

3.12. WASTE DISPOSAL

- A. Waste Transportation: Submit the method of transport of hazardous asbestos wastes including name, address, EPA ID number, and telephone number of transporter.
- B. Waste Disposal Site(s): Submit for approval the name, class, address, EPA ID number, and telephone number of waste disposal site(s) to be utilized for:
 - 1. Disposal of non-hazardous non-friable asbestos wastes;
 - 2. Disposal of hazardous lead, PCB, and Mercury wastes; and
 - 3. Disposal of any other universal wastes.
- C. Waste Manifest: Submit for approval at the Pre-construction meeting a filled out Waste Manifest form. For Waste Manifest purposes, the Generator is the facility of the subject work.

- 1. Obtain necessary information including generator EPA number for this purpose from the Owner or Owner's Representative prior to start up of any abatement or demolition.
- 2. After removal and packaging waste for shipment, provide a copy of the Waste Manifest to the Observation Service for each required shipment.
- 3. Use the uniform hazardous waste manifest for hazardous wastes including lead, PCBs, universal wastes and other hazardous wastes. Include a properly completed Land Disposal Restriction Notice and Certification form with each manifest submitted for signature by the generator (Owner).
- 4. Use a non-hazardous wastes manifest for disposal of non-friable asbestos wastes.
- D. Each hazardous waste manifest and each non-hazardous asbestos waste manifest shall be prepared for the Owner or Owner's Representative's review and approval prior to shipment.
- E. The sealed hazardous waste containers shall be delivered to the Contractor's pre-designated, approved hazardous waste treatment and waste disposal site for burial in accordance with applicable state and federal regulations. Likewise, non-hazardous asbestos waste shall be delivered under manifest to a permitted asbestos waste disposal site.
- F. Notify the Owner's facility representative 48 hours in advance of the time when hazardous waste materials of all types and non-hazardous asbestos wastes are to be removed and transported from the site to allow for manifest review and approval.
- G. The Contractor shall be responsible for safe handling and transportation of all hazardous waste generated by this Contract to the designated Hazardous Waste Site and shall hold the Owner and the Owner's agents and consultants harmless for claims, damages, losses, and expenses against the Owner, including attorney's fees arising out of our resulting from asbestos and hazardous materials spills on the site or en route to the disposal site.

3.13. <u>AIR MONITORING</u>

- A. Area Air Monitoring
 - 1. Throughout the asbestos removal process, area air monitoring may be conducted by the Observation Service to ensure work is done in conformance with the fiber concentration limits of these specifications. Likewise, lead removal work areas may be visually inspected and/or monitored during removal.

- 2. If results of area air monitoring outside the Work Area are in excess of 0.010 f/cc for asbestos or 50 micrograms per cubic meter of airborne lead per cubic meter of air for lead, the Contractor shall make changes in work procedures to assure compliance with minimum standards. At a minimum, the Contractor shall stop all work and implement additional remedial controls and conduct decontamination as necessary in response to exceeding these limits.
- 3. Unsatisfactory asbestos results are fiber counts in excess of 0.010 fibers/ cc by PCM Method NIOSH 7400 determined as a TWA outside the Work Area by general air monitoring. All results greater than 0.010 fibers/cc shall be subject to further laboratory analysis by the TEM method at the Contractor's sole expense.
- B. The Contractor shall submit a written report to the Owner's Observation Service of the Contractor's personnel exposure monitoring within 48 hours of sample collection. The Contractor shall take all necessary control and protective measures to ensure airborne contaminate levels based on personnel air monitoring results do not exceed the levels recommended for the type of respiratory gear in use.
- C. Interior Asbestos Post Abatement Air Sampling. The Owner's Observation Service, upon receipt of the post abatement certification from the Contractor, will take a minimum of one (1,200-2,800) liter air sample(s) "post abatement tests" upon completion of each Work Area. For the purpose of this work, adequate decontamination shall be defined as an air sample showing less than 70 structures/cc by TEM AHERA.
- D. Lead Post Abatement Inspections. All LBP Work Areas will be cleared by visual inspection by the San Mateo Foster City School District Observation Service.

3.14. <u>CLOSE-OUT</u>

A. All submittal and punch list items must be complete and provided to the Observation Service. These include daily work-force rosters, work area sign-in/ out sheets, and waste test data and waste manifests.

END OF SECTION

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME: _	
PROJECT ADDRES	S:
CONTRACTOR'S N	IAME:

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PERSON.

Your employer's contract with the Owner for the above project requires that: You will be supplied with the proper respirator and be trained in its use. You will be trained in safe work practices and in the use of the equipment found on the job. You will receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have completed an asbestos-training course of not less than 3 days. I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

1) Physical characteristics of asbestos; 2) Health hazards associated with asbestos; 3:) Respiratory protection; 4) Use of personal protective equipment; 5) Pressure Differential Systems; 6) Work practices including handson or on-the-job training; 7) Personal decontamination procedures; and 8) Air monitoring, personal, and area.

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Printed Name:	
Signature:	_ Date:
Social Security No.:	
Witness:	

FMPI	OYFF	DAILY	ROSTER
			NOSIEN

DATE: ______PROJECT NO. _____

PROJECT TITLE: _____

CONTRACTOR: _____

COMPETENT PERSON: _____

IMPORTANT NOTE: ALL PERSONS ENTERING AND EXITING THE WORK AREA MUST SIGN IN AND OUT EVERY TIME.

PERSON'S NAME (PRINT)	SOCIAL SECURITY #	START TIME	STOP TIME

WORK AREA ENTRY / EXIT LOG

DATE:	PROJECT NO	
PROJECT TITLE:		_
BUILDING NAME:		
LOCATION OF WOR	?K AREA:	
DESCRIPTION OF W	'ORK:	

IMPORTANT NOTE: ALL PERSONS ENTERING AND EXITING THE WORK AREA MUST SIGN IN AND OUT EVERY TIME.

PERSON'S NAMI (PRINT)	E SIGNATURE	SECURITY #	SOCIA	l IN/OUT	TIME IN/OUT	TIME

DAILY MANOMETER REPORT

PROJECT TITLE:				
CONTRACTOR:				
COMPETENT PE	RSON:			
LOCATION OF V	VORK AREA:			-
START TIME:	START DATE:	STOP TIME:	STOP DATE:	

(CONTRACTOR TO ATTACH A COPY OF THE NEGATIVE PRESSURE RECORDING HERETO AND COMPLETE THIS FORM FOR EACH WORK AREA ON A DAILY BASIS).

I hereby declare the above data is true and correct.

COMPETENT PERSON'S SIGNATURE: _____ DATE: _____

PRE-ABATEMENT VISUAL INSPECTION FORM

CLIENT NAME:	
PROJECT NAME:	
BUILDING NAME	
LOCATION OF WORK AREA:	
OWNER REF. NUMBER:	PROJECT NO:

VISUAL INSPECTION

CONTRACTOR hereby certifies that he has visually inspected the Work Area and has found it to be prepared in accordance with the project specifications. This inspection included the verification that Primary Barriers have been installed and are sealed, specified number of layers of polyethylene sheeting has been installed properly, Decontamination Enclosure System(s) is fully functional, HEPA units are operational, negative air pressure is >0.02 inches of water, manometer unit recording properly, HVAC and electrical systems have been locked and tagged out, there is adequate power and lighting, and all electric sources are supplied from GFIs outside the Work Area.

Name:	Inspection Date:
Signature:	Certification No

OWNER'S CONSULTANT hereby certifies that he has conducted a pre-abatement visual inspection of the referenced Work Area and verifies that the Contractor has prepared the Work Area in accordance with the Specifications and is ready to start abatement operations.

Name:_____ Inspection Date: _____

Signature:_____ Certification No. _____

FINAL VISUAL INSPECTION/CLEARANCE CERTIFICATION FORM

CLIENT NAME:	
PROJECT NAME:	
BUILDING NAME:	
LOCATION OF WORK AREA:	
OWNER REF. NUMBER:	_ PROJECT NO:

VISUAL INSPECTION

CONTRACTOR hereby certifies that he has visually inspected the Work Area and has found no dust, debris or residue. This inspection included all surfaces including pipes, beams, ledges, walls, ceiling, floor, Decontamination Unit, sheet plastic, etc.

OWNER'S CONSULTANT hereby certifies that he has performed the final visual inspection of the referenced Work Area and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's Certification above is a true and honest one.

 Name:_____
 Inspection Date: _____

 Signature:_____
 Certification No._____

CLEARANCE AIR SAMPLING

Pre-Abatement/Background fiber levels: ______

OWNER'S CONSULTANT hereby certifies that the results of air samples collected and analyzed in this work area meet the clearance criteria indicated below:

PCM samples at or below ______ fibers/cc. TEM samples at or below ______ structures/mm².

Circle One: Aggressive Non-Aggressive

Other criteria:

Name:	Inspection Date:
Signature:	Certification No.:
Reviewer:	CAC Cert. No.:

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Formed roof-drainage sheet metal fabrications.
 - 2. Formed low-slope roof sheet metal fabrications.
 - 3. Formed steep-slope roof sheet metal fabrications.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETING

- A. Preinstallation Conference: Conduct a conference at Project Site.
 - 1. Review construction schedule. Verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect sheet metal flashing and trim.
 - 3. Review requirements for insurance and certificates if applicable.
 - 4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each of the following, including manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
 - 1. Underlayment materials.
 - 2. Elastomeric sealant.
 - 3. Butyl sealant.
- B. Shop Drawings: For sheet metal flashing and trim.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
 - 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
 - 4. Include details for forming, including profiles, shapes, seams, and dimensions.
 - 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 - 6. Include details of termination points and assemblies.
 - 7. Include details of roof-penetration flashing.
 - 8. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
 - 9. Include details of special conditions.
 - 10. Include details of connections to adjoining work.
 - 11. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches (1:10).
- C. Samples: For each exposed product and for each color and texture specified, 12 inches (300 mm) long by actual width.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.
- B. Special warranty.

1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA "Architectural Sheet Metal Manual" and NRCA "Roofing and Waterproofing Manual" unless more stringent requirements are indicated or specified.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
 - 1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
 - 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing, trim materials, and fabrications during transportation and handling.
- C. Unload, store and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight. Coordinate with work of other Sections for watertight installation at interface with other materials and systems.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and

Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- D. Water Infiltration: Provide sheet metal flashing and trim that to not allow water infiltration to building interior.
- E. Provide materials that are compatible with one another under conditions or service and application required, as demonstrated by testing and field experience.

2.2 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet in accordance with ASTM A653/A653M, G90 (Z275) coating designation; prepainted by coil-coating process to comply with ASTM A755/A755M.
 - 1. Surface: Smooth, flat and mill phosphatized for field painting or with manufacturer's standard clear acrylic coating on both sides.
- C. Lead Sheet: ASTM B749 lead sheet.

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. (0.16 kg/sq. m) minimum.

2.4 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

- 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
- 2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hotdip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329.
- C. Solder:
 - 1. For Zinc-Coated (Galvanized) Steel: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
- H. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated and with interlocking counterflashing on exterior face, of same metal as reglet.
 - 1. Source Limitations: Obtain reglets from single source from single manufacturer.
 - 2. Material: Galvanized steel, 0.022 inch (0.56 mm) thick.
 - 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 4. Accessories:
 - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
 - 5. Finish: With manufacturer's standard color coating.

I. Metal Accessories: Provide sheet metal clips, cleats, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gauge required for performance.

2.5 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
 - 1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 - 3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
 - 4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 - 5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
 - 1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
 - 2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams:
 - 1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Do not use graphite pencils to mark metal surfaces.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof and Roof-to-Wall Transition Expansion-Joint Cover: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.034 inch (0.86 mm) thick.
- B. Base Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- C. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- D. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- E. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.

2.7 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- B. Valley Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- C. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- D. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- E. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:

COLLEGE PARK ELEMENTARY SCHOOL HVAC REPLACEMENT San Mateo-Foster City School District Project No. 2021005.01

- 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- 2. Lead: 4 lb (1.8 kg).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lap joints not less than 2 inches (50 mm).
- B. Install slip sheet, wrinkle free, directly on substrate before installing sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lapp joints not less than 4 inches (100 mm).

3.3 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
 - 1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds or sealant.
 - 3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.

- 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
- 5. Install continuous cleats with fasteners spaced not more than 12 inches (300 mm) o.c.
- 6. Space individual cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
- 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
- 8. Do not field cut sheet metal flashing and trim by torch.
- 9. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
 - 1. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
 - 1. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
 - 2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
 - 3. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated.
 - a. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant.
 - b. Form joints to completely conceal sealant.
 - c. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
 - d. Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
 - 1. Pretin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pretinning where pretinned surface would show in completed Work.
 - 2. Do not use torches for soldering.
 - 3. Heat surfaces to receive solder, and flow solder into joint.
 - a. Fill joint completely.
 - b. Completely remove flux and spatter from exposed surfaces.

3.4 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard.
 - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless steel draw band and tighten.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
 - 1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
 - 2. Extend counterflashing 4 inches (100 mm) over base flashing.
 - 3. Lap counterflashing joints minimum of 4 inches (100 mm).
 - 4. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated.
- D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.5 INSTALLATION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

3.7 **PROTECTION**

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

SECTION 321723 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Painted markings applied to asphalt paving.
 - 2. Painted markings applied to concrete surfaces.

1.3 ACTION SUBMITTALS

- A. Product Data: Include technical data and tested physical and performance properties.
 - 1. Pavement-marking paint, acrylic.
- B. Shop Drawings:
 - 1. Indicate areas to be re-striped.
- C. Samples: For each exposed product and for each color and texture specified; on rigid backing, 8 inches (200 mm) square.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F (12.8 deg C) for water-based materials, and not exceeding 95 deg F (35 deg C).

PART 2 - PRODUCTS

2.1 PAVEMENT-MARKING PAINT

- A. Pavement-Marking Paint, Acrylic: Acrylic, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952F, Type II, with drying time of less than three minutes.
 - 1. Color: White.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that pavement-marking substrate is dry and in suitable condition to begin pavement marking in accordance with manufacturer's written instructions.
- B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Sweep and clean surface to eliminate loose material and dust.
- C. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).
 - 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to asphalt paving or concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.

3.3 PROTECTING AND CLEANING

- A. Protect pavement markings from damage and wear during remainder of construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 321723



	EXISTING TOILET F
	EXISTING CONSTR
	EXISTING COVERE
	TRENCH FOR ELEC S.E.D. , 8/S5.01 & D A8.10
	TURNBULL LEARNI CENTER PRESCHC
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NEW REFLECTED CEILING PLAN KEYNOTES

- 1 DUCTWORK OBSCURED FOR CLARITY, S.M.D.
- 2 REPLACE PERIMETER TRIM AND PROVIDE NEW CEILING TILE ADJACENT. REPLACE FREE AND FIXED ENDS IN KIND, SEE DETAILS 8/A9.10, 11/A9.10, & 12/A9.10.
- 3 (E) RIDGE
- 4 (E) PAINTED SHEET METAL CONDUIT ENCLOSURE TO REMAIN.
- 5 18 GA SHEET METAL CONDUIT ENCLOSURE PAINTED, SEE DETAIL 20/A8.10 AND S.E.D.
- 6 S.E.D. FOR CONDULT PENETRATION DETAIL.
- (E) CEMENT PLASTER FINISH.







NOTES:

1. PROVIDE EXPANSION JOINT @ 24'-0" O.C. MAX.

6) CONCRETE PATCH SCALE: 1 1/2" = 1'-0"

CENSED ARC COLLEGE PARK ELEMENTARY SCHOOL -HVAC REPLACEMENT aedis ۶Ċ. SAN MATEO-FOSTER CITY SCHOOL DISTRICT FILE NO .: SHEET 41-26 architects APPL NO.:01-119530 AD3-A8.10A JOB NO. 2021005.01 387 S. 1st Street, Suite 300 tel: (408) 300 - 5160 San Jose, CA., 95113 fax: (408) 300 - 5121 DATE 12/22/2021



lis	COLLEGE PARK ELEMENTARY SCHOOL - HVAC REPLACEMENT SAN MATEO-FOSTER CITY SCHOOL DISTRICT		
architects	FILE NO.: 41-26 APPL NO.: 01-119530	SHEET	
tel: (408) 300 - 5160	JOB NO. 2021005.01	AD3-A8.10B	
fax: (408) 300 - 5121	DATE 12/22/2021		



/C`

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387 S. 1st Street, Suite 300 San Jose, CA., 95113

FASTENING	S SCHEDULE		
DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION	_
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	ROOF 3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples 7/16" crown	Each end, toenail	
Blocking between rafters or truss not at the wall top plate, to rafter or truss	2-8d common (2 1/2" × 0.131") 2-3" × 0.131" nails 2-3" 14 gage staples	Each end, toenail	
	2-16 d common (3 1/2" × 0.162") 3-3" × 0.131" nails 3-3" 14 gage staples	End nail	
Flat blocking to truss and web filler	16d common (3 1/2" × 0.162") @ 6" o.c. 3" × 0.131" nails @ 6" o.c. 3" × 14 gage staples @ 6" o.c	Face nail	
2. Ceiling joists to top plate	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each joist, toenail	
3. Ceiling joist not attached to parallel rafter, laps over partitions (no thrust)	3-16d common (3 1/2" x 0.163") 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail	
4. Ceiling joist attached to parallel rafter (heel joint)	Per Table 2308.7.3.1, CBC 2019	Face nail	9
5. Collar tie to rafter	3-10d common (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail	
6. Rafter or roof truss to top plate	3-10 common (3" × 0.148"); or 3-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail ^c	3x6 P
7. Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3"14 gage staples, 7/16" crown; or	End nail	2-SDWS2210 SCREW @ 2
	3-10d common (3 1/2" × 0.148"); or 4-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail	6x8 P
	WALL	1	SHAPED 6x F
8. Stud to stud (not at braced wall panels)	16d common (3 1/2" × 0.162");	24" o.c. face nail	(E) PLY
	$3'' \times 0.131''$ nails; or 3-3'' 14 gage staples. 7/16'' crown		
9. Stud to stud and abutting studs at intersecting wall	16d common (3 1/2" × 0.162"); or	16" o.c. face nail	``````````````````````````````````````
	16d box (3 1/2" × 0.135"); or 3" × 0 131" nails: or	12" o.c. face nail 12" o.c. face nail	_
10. Built-up header (2" to 2" header)	3-3" 14 gage staples, 7/16" crown 16d common (3 1/2" × 0.162"); or 16d box (3 1/2" × 0.135")	16" o.c. each edge, face nail	_
11. Continuous header to stud	4-8d common (2 1/2" × 0.131"); or	Toenail	_
12. Top plate to top plate	16d common (3 1/2" × 0.162"); or	16" o.c. face nail	
	10d box (3" × 0.128"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail	
13. Top plate to top plate, at end joints	8-16d common (3 1/2" × 0.162"); or 12-10d box (3" × 0.128"); or 12-3" × 0.131" nails; or 12-3" 14 gage staples, 7/16" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)	
14. Bottom plate to joist, rim joist, band joist	16d common (3 1/2"x0.163"); or	16" o.c. face nail	_
	16d box (3 1/2" × 0.135"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail	_
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3 1/2 " × 0.162"); or 3-16d box (3 1/2" × 0.135"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail	
16. Stud to top or bottom plate	4-8d common (2 1/2" × 0.131"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown; or	Toenail	
	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail	
17. Top plates, laps at corners and intersections	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail	
18. 1" brace to each stud and plate	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128"); or 2-3" × 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail	L90 EA CC
19. 1" × 6" sheathing to each bearing	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128")	Face nail	
20. 1" × 8" and wider sheathing to each bearing	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128")	Face nail	

For SI: 1 inch = 25.4 mm.

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. Nails for wall sheathing are permitted to be common, box or casing.

b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.

Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail. d. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.



6x BLKG



SYMBOL LIST:

	PLAN, DETAIL OR SECTION DESIGNATION.
201	ROOM NUMBER.
	SHEET REFERENCE SYMBOL - SEE ASSOCIATED NOTE ON SAME SHEET.
3	FEEDER SCHEDULE SYMBOL.
CH I	MECHANICAL EQUIPMENT TAG.
A	INDICATES FIXTURE TYPE
LUMINAIRE	<u>SYMBOLS</u>
	LUMINAIRE - SEE SCHEDULE.
	LUMINAIRE - SEE SCHEDULE.
	LUMINAIRE - SEE SCHEDULE.
\Box	LUMINAIRE - SEE SCHEDULE.
	POLE MOUNTED LUMINAIRE - SEE SCHEDULE.
	POLE MOUNTED LUMINAIRE - SEE SCHEDULE.
$\langle\!\!\!O$	LUMINAIRE - SEE SCHEDULE.
0	LUMINAIRE - SEE SCHEDULE.
Ю	LUMINAIRE WALL MOUNTED-SEE SCHEDULE.
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST
EM	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST
$\bullet H$	EMERGENCY LUMINAIRE WALL MOUNTED- PROVIDE EM. BATTERY BALLAST
⊗	EXIT LIGHT SINGLE FACE - SEE SCHEDULE.
$\overline{\otimes}$	EXIT LIGHT SINGLE FACE (WITH ARROW)- SEE SCHEDULE.
Θ	EXIT LIGHT (DOUBLE FACED WITH ARROW)- SEE SCHEDULE.
٥٥	EMERGENCY BATTERY PACK EXIT LIGHT INSTALL AS DIRECTED.

TYPICAL LUMINAIRE NOMENCLATURE

3a I INDICA	INDICATES SWITCHING DESIGNATION
<u>SWITCH SYN</u>	MBOLS
\$	SINGLE POLE SWITCH, + 48" AFF TO THE TOP OF THE OUTLET BOX VON.
\$a	SINGLE POLE SWITCH, + 48" AFF TO THE TOP OF THE OUTLET BOX, a = CIRCUIT CONTROLLED.
\$ 3	THREE WAY SWITCH + 48" AFF TO THE TOP OF THE OUTLET BOX UON.
\$ 4	FOUR WAY SWITCH + 48" AFF TO THE TOP OF THE OUTLET BOX UON.
\$	MOTOR RATED SWITCH
⊈ [°]	WALL MOUNTED LOW VOLTAGE "DATALINE SWITCH =48" FROM TOP OF BOX, UOI a = CIRCUIT CONTROLLED
09	LIGHTING OCCUPANCY SENSOR
P	MOTION DETECTOR POWER PACK
	ONE CIRCUIT WALL SWITCH WITH BUILT IN OCCUPANCY SENSOR. CONNECT

SWITCHING TO LIGHTING FIXTURES AS REQUIRED. MOUNT AT +48"AFF TO THE TOP

RECEPTACLE SYMBOLS

OF THE SWITCH BOX, UON.

Φ	CONVENIENCE RECEPTACLE - DUPLEX AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
•	GFCI CONVENIENCE RECEPTACLE - DUPLEX AT +18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
\	RECEPTACLE - DOUBLE DUPLEX AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
Φ	SINGLE RECEPTACLE - NEMA 5-20R VON, AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
Φ	SINGLE RECEPTACLE - NEMA L2I - 208 VOLT, THREE PHASE, 5 WIRE, AT + 18" AFF UON AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
ŧ	DOUBLE DUPLEX RECEPTACLE WITH (1) CONTROLLED DUPLEX AND (1) UNCONTROLLED DUPLEX, AT +18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
	3-CHANNEL SURFACE RACEWAY, INSTALL AT +36" AFF UON. RACE SHALL BE WIREMOLD #5500.
$\mathbf{\Phi}$	FLOOR BOX WITH (2) DUPLEX RECEPTACLES AND DATA OUTLETS. QUANTITY OF DATA OUTLETS AS INDICATED ON THE FLOOR PLANS.



ΕVI

EV2





LCP
LMRC 101
LMRC 211
LMRC 212
LMRC 213
6
Фю
P
\$ 101

\$102

POWER DISTRIBUTION SYMBOLS

STRIBUTION SYMBOLS	<u>COMMUNI</u>	CATIONS SYMBOLS
PANELBOARD - SURFACE OR FLUSH MOUNTED.	H	19" FLOOR MOUNTED DATA RACK.
LIGHTING CONTROL CABINET.	∇	
EMERGENCY POWER INVERTER.	×	DATA/TEL STATION AT TID ATT OON ATT (I) DATA COTLET. CONNECT DATA/TEL OUTLETS OUTLETS PER THE DATA/TEL RISER DIAGRAM. STUB CONDUIT INTO AVAILABLE CEILING SPACE.
JUNCTION BOX - CEILING OR WALL MOUNTED, SIZE PER CEC, TAPE AND TAG WIRES.	(2)	
MAIN SWITCHBOARD OR DISTRIBUTION PANEL.	$\nabla^{(2)}$	DATA/TEL STATION AT +18" AFF VON WITH (2) DATA OUTLETS. CONNECT DATA/TEL OUTLETS OUTLETS PER THE DATA/TEL RISER DIAGRAM. STUB CONDUIT INTO AVAILABLE CEILING SPACE.
MOTOR		
RATING AS INDICATED.	WAP	(2) DATA OUTLETS FOR WIRELESS ACCESS POINT EQUIPMENT TO BE
UNFUSED DISCONNECT SWITCH - RATING AS INDICATED.		MOUNTED IN GEILING ONAGE.
FUSED DISCONNECT SWITCH - SIZE FUSES PER MOTOR MANUFACTURER'S RECOMMENDATIONS. RATING AS INDICATED.	-	INTERIOR SPEAKER WALL MOUNTED AT $+ \delta'-O''$ AFF UON. CONNECT SPEAKER
MAGNETIC STARTER - NEMA SIZE INDICATED.	(GH	PER THE PAVOLOOR RIBER DIAGRAM
TRANSFORMER - SEE SINGLE LINE FOR REQUIREMENTS.	9	CEILING MOUNTED SPEAKER. CONNECT SPEAKER PER THE PA/CLOCK RISER DIAGRAM
GROUND ROD.		
IN-GRADE ELECTRICAL PULL BOX WITH TRAFFIC RATED LID.	ତ୍ର	FLUSH MOUNTED EXTERIOR SPEAKER AT +8'-0" AFF VON. CONNECT
IN-GRADE LIGHTING PULL BOX WITH TRAFFIC RATED LID.		exterior spearer per the prodock riser diroram.
IN-GRADE COMMUNICATION PULL BOX WITH TRAFFIC RATED LID.		COMBINATION FLUSH MOUNTED CLOCK/SPEAKER DEVICE AT +8'-0" AFF
SINGLE EV CHARGER FOR BUS		UON. CONNECT CLOCK/SPEAKER PER THE PA/CLOCK RISER DIAGRAM. PROVIDE $\frac{3}{4}$ "C TO ACCESSIBLE CEILING.
DOUBLE EV CHARGER FOR CAR	8	HOMI DEVICE CONNECT PER A 4^{\parallel} " EXTRA DEEP BOX WITH A 2 GANG RING

POWER DISTRIBUTION SINGLE LINE SYMBOLS

	<u>FIRE ALAR</u>	<u>RM SYMBOLS</u>
DRAW-OUT CIRCUIT BREAKER.	FACP	FIRE ALARM CONTROL PANEL.
	RPS	REMOTE POWER SUPPLY.
	AMP	EVAC SPEAKER AMPLIFIER.
	FATC	FIRE ALARM TERMINAL CABINET.
	ANN	REMOTE FIRE ALARM ANNUNCIATOR.
FUSED SWITCH.	0	SMOKE DETECTOR
	Ē	PULL STATION
"PG&E" METER W/ CURRENT TRANSFORMER.	N N N	HORN STROBE
TRANSFORMER.		

NORMALLY OPENED, AUXILIARY CONTACT.

NORMALLY CLOSED, AUXILIARY CONTACT.

AUTOMATIC TRANSFER SWITCH.

EMERGENCY GENERATOR.

WIRING & CONDUIT RUN SYMBOLS

	<u>/2/</u>
CONDUIT - CONCEALED IN WALLS OR CEILING.)
CONDUIT - EXPOSED.	}
CONDUIT - UNDERGROUND OR BELOW FLOOR	\$
EXISTING CONDUIT, CABLES OR DEVICE	{
CONDUIT - HOME RUN TO PANEL, TERMINAL CABIN WITH CROSSHATCHES INDICATE NUMBER OF #12 A WITH SUBSCRIPT "G" INDICATES GREEN GROUND M ACCORDING TO SPECIFICATIONS AND APPLICABL CROSSHATCHES WITH "#10" INDICATES WIRE SIZE	IET, ETC. RUNS MARKED MG WIRES. CROSSHATCH NIRE. SIZE CONDUIT LE CODE. OTHER THAN #12'S.
FLEX CONDUIT WITH CONNECTION.	
CONDUIT - STUB UP.	
CONDUIT - STUB DOWN.	
CONDUIT ENERGENCY CYCTEM	

Δ

CONDUIT EMERGENCY SYSTEM.

CAPPED CONDUIT.

CONDUIT CONTINUATION.

WATTSTOPPER DIGITAL LIGHTING MANAGEMENT CONTROLS

WATTSTOPPER LMCP24

WATTSTOPPER LMRC-101

WATTSTOPPER LMRC-211

WATTSTOPPER LMRC-212

WATTSTOPPER LMRC-213

WATTSTOPPER LMDC-100, CEILING MOUNT

WATTSTOPPER LMDW-IOI, + 48" AFF TO TOP OF THE BOX, UON.

WATTSTOPPER LMLS-500, CEILING/WALL MOUNT

WATTSTOPPER LMSW-101, + 48" AFF TO TOP OF THE BOX, UON.

WATTSTOPPER LMSW-102, + 48" AFF TO TOP OF THE BOX, UON.

MEP 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 BEANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTER 13, 26 AND 30.

HDMI DEVICE. CONNECT PER A 4^{\parallel}_{E} EXTRA DEEP BOX WITH A 2 GANG RING

THROUGH I_4^+ C TO CEILING.

- I. ALL PERMANENT EQUIPMENT AND COMPONENTS 2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED
- (e.q., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLE HAVING A FLEIXBLE CABLE
- 3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 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 LINGITUDINAL DIRECTIONS:

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OF 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 THE 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., SMACNA OR 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 SYSTEM. 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□ EX - OPTION I: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS.

MP | MD | PP | E - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM #) #

GENERAL NOTES:

- THE CONTRACTOR SHALL BE LICENSED BY THE STATE OF CALIFORNIA C-10 AND SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT SHALL BE U.L. LISTED AND LABELED FOR THE APPLICATION.
- 2. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY THIS CONTRACT WORK. PRIOR TO SUBMITTING A BID THE CONTRACTOR SHALL VISIT THE SITE, REVIEW THE
- EXISTING CONDITIONS AND ALLOW FOR LABOR, MATERIAL AND COORDINATION THAT IS NECESSARY TO PROVIDE A COMPLETE INSTALLATION OF EACH SYSTEM. THE CONTRACTOR SHALL OBTAIN AND BE FAMILIAR WITH ALL OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES ON PROJECT.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
- 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 ACCURATE "AS-BUILT" DRAWINGS. "AS-BUILT" DRAWINGS SHALL SHOW ACTUAL CHANGES TO ORIGINAL ELECTRICAL DRAWING, SHOW LOCATIONS OF PULL BOXES, CONDUIT RUNS AND WIRING CHANGES. THE CONTRACTOR SHALL PROVIDE ONE (I) HARDCOPY SET OF DOCUMENT DRAWINGS AND ONE (I) SET OF DOCUMENT DRAWINGS IN ELECTRONIC CAD FILE THAT REPRESENTS THE ACTUAL "AS-BUILTS". CAD FILES SHALL BE AUTOCAD 2010 FORMAT.
- 6. ALL MATERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
- 7. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES. 8. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION,
- BACKFILL AND REPAIRS" NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT START OF WORK. THE CONTRACTOR SHALL CONTACT "UNDERGROUND SERVICES ALERT" FOR LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF UNDERGROUND WORK.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.
- IO. ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN INTO BUILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ELECTRICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS. ALL EXTERIOR CONDUITS SHALL BE "RSG" UNLESS OTHERWISE NOTED ON DRAWINGS.
- II. ALL CONDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM: TWO (2) #12'S WITH ONE (1) #12 GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR "ROUGH" ESTIMATING ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE.
- 12. COORDINATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID CONFLICTS. 13. SEE ARCHITECTURAL DOCUMENTS FOR EXACT PLACEMENT OF LIGHTING FIXTURES AND
- DEVICES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CEILING TYPES FROM ARCHITECTURAL DOCUMENTS AND PROVIDE AND INSTALL ALL REQUIRED FIXTURE MOUNTING HARDWARE. PROVIDE AND INSTALL U.L. LISTED FIRE STOP ENCLOSURES FOR ALL RECESSED FIXTURES IN FIRE RATED CEILINGS.
- 14. THE CONTRACTOR SHALL PROVIDE IN EVERY CONDUIT A DRAW STRING FOR USE IN FUTURE CONSTRUCTION.
- 15. POWER FEEDERS MAY NOT BE SHOWN ON THE DRAWINGS, REFER TO THE SINGLE LINE DIAGRAM FOR CONDUIT AND FEEDER INFORMATION. ALL DRAWINGS ARE DIAGRAMMATIC INDICATING LOCATION OR POSITION OF EQUIPMENT. FIELD VERIFY CONDITIONS PRIOR TO INSTALLATION OF ANY WORK.
- 16. MANUFACTURER'S RECOMMENDATIONS FOR CONDUCTOR SIZING, CIRCUIT BREAKER OR FUSE PROTECTION OF ELECTRICALLY OPERATED EQUIPMENT MAY DIFFER FROM THOSE INDICATED ON DRAWINGS. CONTRACTOR SHALL CONFIRM RATINGS PRIOR TO ORDERING EQUIPMENT. PROVIDE ELECTRICAL PROTECTION TO EQUIPMENT IN ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS AND PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
- 17. CONTRACTOR SHALL REVIEW EQUIPMENT REQUIREMENTS OF OTHER TRADES AND PROVIDE POWER CIRCUITS AND CONNECTIONS TO ELECTRICALLY OPERATED EQUIPMENT.
- 18. EFFECTIVELY BOND ELECTRICAL CABINETS, ENCLOSURES AND CONDUIT RACEWAYS TO CODE APPROVED GROUND AS PART OF THE CONTINUOUS GROUNDING SYSTEM. 19. MEASEURE THE 3-PHASE AND PHASE TO NEUTRAL SERVICE VOLTAGE FOR 208/120V PANELS PRIOR TO ENERGIZING ANY PANELS OR EQUIPMENT. AVOID ENERGIZING 208/120V PANELS PHASE TO NEUTRAL VOLTAGE ABOVE 130 VOLTS. TRANSFORMER TAP SETTING
- MAY REQUIRE CHANGING. 20. MEASURE THE I-PHASE AND PHASE TO NEUTRAL SERVICE VOLTAGE FOR 240/120V PANELS PRIOR TO ENERGIZING ANY PANELS OR EQUIPMENT. AVOID ENERGIZING 240/120V PANELS PHASE TO NEUTRAL VOLTAGE ABOVE 130 VOLTS.
- 21. DO NOT SUBSTITUTE SPECIFIED MATERIAL OR EQUIPMENT WITHOUT FIRST OBTAINING APPROVAL FROM THE OWNER OR HIS REPRESENTATIVE.
- 22. IDENTIFY ALL ABOVE CEILING JUNCTION BOXES COVERS WITH PANEL AND CIRCUITS IN LEGIBLE PRINT USING BLACK INDELIBLE INK. ABOVE CEILING JUNCTION BOXES SHALL ALSO BE LABELED AT THE REAR INTERIOR BOX WITH AN INDELIBLE BLACK MARKER. 23. LABEL ALL WALL AND/OR WIREMOLD MOUNTED OUTLET DEVICES WITH PANEL CIRCUIT IDENTIFICATION WITH BOLD TYPE-PRINTED LABELING. BLACK LETTERING ON WHITE BACKGROUND PREFERRED.
- 24. DERATE CONDUCTORS IN RACEWAYS IN ACCORDANCE WITH NEC CODE REQUIREMENTS. PANEL FEEDERS TO WIREMOLDS CAN ENTER AT VARIOUS LOCATIONS TO LIMIT CONDUCTOR CIRCUITS PER WIREMOLD CAPACITIES.

DRAWING INDEX			
SHEET NO.	SHEET TITLE		
EO.1	ELECTRICAL COVER SHEET		
E1.1	ELECTRICAL SITE PLAN		
E2.1	ELECTRICAL DEMO FLOOR PLANS - WINGS #1, #2, #3 & #4		
E3.1	ELECTRICAL NEW FLOOR PLANS - WINGS #1, #2, #3 & #4		
E4.1	DEMO SINGLE LINE DIAGRAM		
E4.2	NEW SINGLE LINE DIAGRAM		
E4.3	PANEL SCHEDULES		
E5.1	ELECTRICAL DETAILS		
E5.2	ELECTRICAL DETAILS		
E5.3	ELECTRICAL DETAILS		
E5.4	ELECTRICAL DETAILS		







SYSTEM. COORDINATE WITH PG&E FOR ADDITIONAL REQUIREMENTS AND PROCEDURES.

CIRCUITRY IS TO BE REUSED. CONTRACTOR IS RESPONSIBLE TO LOCATE AND PREPARE THE EXISTING UNDERGROUND CIRCUITRY TO BE INTERCEPTED. REMOVE THE EXISTING LIGHTING CIRCUITRY FROM THE AREA OF NEW WORK.

	(N) (I) 4"C - PG&E PRIMARY		NOT USED
	(N) (7) 5"C - PG&E SECONDARY	$\langle 14 \rangle$	NOT USED
3	(E) (I) 4"C - PG&E PRIMARY	\sim	
4	(E) (5) 5"C - PG&E SECONDARY		NOT USED
5	(N) (I) I"C - PG&E COMMUNICATIONS	(16)	(N) (2) 2 ¹ / ₂ "C - >
6 ^	(N) (2) 22"C - XFMR 'TI' (N) (I) 2"C - FUTURE PV	~	(N) (I) 2½"C - X (N) (I) 4"C - XF (N) (I) 2"C - XF
$\langle \gamma \rangle$	(N) (I) 2 ¹ ₂ "C - XFMR 'T2' (N) (I) 2"C - FUTURE PV	\land	(N) (I) 2½"C - X (N) (5) 2"C - FL
8	(N) (2) $2\frac{1}{2}$ "C - XFMR 'TI' (N) (1) $2\frac{1}{2}$ "C - XFMR 'T2' (N) (2) 2"C - FUTURE PV		(N) (2) $2\frac{1}{2}$ "C - > (N) (1) $2\frac{1}{2}$ "C - × (N) (1) 3"C - ×F (N) (1) 4"C - ×F
q	(N) (I) 3"C - XFMR 'T3' (N) (I) 2"C - FUTURE PV		(N) (I) 2"C - XF (N) (I) 2½"C - X (N) (6) 2"C - FL
$\langle 0 \rangle$	(N) (I) 3"C - XFMR 'T4' (N) (I) 2"C - FUTURE PV	18	(N) (2) 2½"C - > (N) (I) 2½"C - ×
	NOT USED		(N) (I) 3 C - XF (N) (I) 3 C - XF (N) (I) 4 C - XF
\wedge			(N) (I) 2"C - XF

(N) (I) $2\frac{1}{2}$ "C - XFMR 'T7' (FUTURE)

(N) (7) 2[™]C - FUTURE PV

- EЗ NEW 3'x5' ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.

C2 - NEW B3048 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'.







NOTES:

- HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE PULL BOX.
- 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS.
- 4. PROVIDE BELL ENDS ON ALL CONDUIT.
- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.





NOTES:

E5.4

- HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM
- 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS.
- 4. PROVIDE BELL ENDS ON ALL CONDUIT.

NOT TO SCALE

OF THE PULL BOX.

- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.

B2436 ELECTRICAL VAULT 4





TORSION SPRING ASSISTED ACCESS COVER INCIDENTAL H-20TRAFFIC OR PEDESTRIAN LOADING. GALVANIZED STEEL

JENSEN PRECAST 4686-U OR EQUAL

NOTES:

- HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE PULL BOX.
- 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE
- REQUIREMENTS.
- 4. PROVIDE BELL ENDS ON ALL CONDUIT. 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.





NOTES:

PULL BOX.

5

E5.4

HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN. 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE

3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS. 4. PROVIDE BELL ENDS ON ALL CONDUIT.

5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT. 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.

B1017 ELECTRICAL VAULT

NOT TO SCALE

(FULL TRAFFIC COVER)









NOT TO SCALE (NOT PART OF DSA STRUCTURAL REVIEW PER IR A-22)

PG&E 3' X 5' ELECTRICAL VAULT 7 E5.4 NOT TO SCALE

dedis architects www.aedisarchitects.com 387 S. 1st Street, Suite 300 San Jose, CA 95113 tel: (408)-300-5160 fax: (408)-300-5121 PROJECT COLLEGE PARK ELEMENTARY SCHOOL - HVAC REPLACEMENT SAN MATEO-FOSTER CITY SCHOOL DISTRICT CONSULTANT American Consulting Engineers Electrical, Inc. 1590 The Alameda, Suite 200 San Jose, CA 95126 JOB # EK21030.00
408/236-2312 Fax: 408/236-2316 STAMP STATE DSA FILE NUMBER 41-26 01-119530 APPL # REVISIONS No. Description Date A ADDENDUM 1 11/24/2021 **ADDENDUM 3** 12/22/2021 MILESTONES DD 90% CD DSA SUB 05/26/2021 10/07/2021 BACKCHECK 11/15/2021 ADDENDUM 1 SHEET ELECTRICAL DETAILS DATE 12/22/2021 ^{JOB #} 2021005.01 AD3-SHEET # E5.4



December 22, 2021

Aedis Architects 387 S. First St., Suite 300 San Jose, CA 95113

Subject: Meadow Heights Elementary School HVAC Replacement San Mateo - Foster City School District Aedis Project No. 2021005.04 DSA Application #01-119554

ADDENDUM NO. 3

CHANGES AND/OR CLARIFICATIONS OF THE DRAWINGS AND SPECIFICATIONS ARE AS FOLLOWS:

GENERAL

<u>Add:</u> The report in its entirety per attached HVAC And Power Upgrade Project Hazardous Materials Survey Report Meadow Heights Elementary School

ITEM NO. 3.2: DSA FORM 103-19 LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS

<u>Add:</u> The DSA form in its entirety per attached DSA Form 103-19 Listing Of Structural Tests & Special Inspections, 2019 CBC

ITEM NO. 3.3: REFERENCE PLANS

Add:Utility survey for reference only, per attached Meadow Heights Campus Utility
SurveyAdd:Topographic survey for reference only, per attached 2619 Dolores Street
Topographic Map

SPECIFICATIONS

- ITEM NO. 3.4: TABLE OF CONTENTS
 - Add: 02 80 00 HAZARDOUS MATERIALS ABATEMENT
 - Add: 07 62 00 SHEET METAL FLASHING AND TRIM
 - Add: 32 17 23 PAVEMENT MARKINGS

Meadow Heights Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.04

ITEM NO. 3.5: SECTION 02 80 00 HAZARDOUS MATERIALS ABATEMENT

- <u>Add:</u> The specification in its entirety per attached 02 80 00 Hazardous Materials Abatement
- ITEM NO. 3.6: SECTION 07 31 13 ASPHALT SHINGLES
 - <u>Add:</u> Paragraph 3.10 to read: "Provide water leak test at roof areas where cutting and patching occurs, including flashings, with hose spray test in front of District personnel. Spray flashing in both directions for no less than five (5) minutes and confirm there is no leaking."

ITEM NO. 3.7: SECTION SHEET METAL FLASHING AND TRIM

<u>Add:</u> The specification in its entirety per attached 07 62 00 Sheet Metal Flashing and Trim

ITEM NO. 3.8: SECTION 09 65 13 RESILIENT BASE AND ACCESSORIES

<u>*Revise:*</u> Paragraph 2.1H to read: "Colors: Selected from manufacturer's full range to match existing."

ITEM NO. 3.9: SECTION 32 17 23 PAVEMENT MARKINGS

Add: The specification in its entirety per attached 32 17 23 Pavement Markings

DRAWINGS

ARCHITECTURAL

- ITEM NO. 3.10: DRAWING SHEET A1.02 SITE PLAN
 - <u>Add:</u> Fire department access route in plan per attached AD3-1.02
 - <u>Add:</u> (E) Fire department access route graphics to Graphic Key per attached AD3-1.02
 - <u>Add:</u> Site Plan Keynotes #22 & #23 and associated tags in plan per attached AD3-1.02
 - Add: Playground striping graphics per attached AD3-1.02

ITEM NO. 3.11: DRAWING SHEET A2.01 – DEMOLITION FLOOR PLAN BLDGS. 1, 2, 3 & 4

- <u>*Revise:*</u> Demolition Floor Plan Keynote #1 per attached AD3-A2.01
- *<u>Revise:</u>* Demo and prep for drywell at locations indicated on attached AD3-A2.01

<u>Clarification</u>: Existing VCT-1 flooring to remain at new partition wall framing at rooms 3, 4, 5,

8, and 15.

Meadow Heights Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.04

ITEM NO. 3.12: DRAWING SHEET A3.01 – NEW FLOOR PLAN BLDGS. 1, 2, 3 & 4

- Add: General Sheet Note #H per attached AD3-A3.01 Add: New Floor Plan Keynote #12 and associated tags in plan per attached AD3-A3.01 Revise: Drywell at locations indicated on attached AD3-A3.01 Revise: Framing dimensions per attached AD3-A3.01 DRAWING SHEET A4.01– DEMOLITION & NEW REFLECTED CEILING PLANS ITEM NO. 3.13: Finish tags in views 1/A4.01, 2/A4.02, 11/A4.01 & 12/A4.10 per attached AD3-Revise: A4.01 DRAWING SHEET A8.10 - EXTERIOR DETAILS ITEM NO. 3.14: Detail 6/A8.10 Concrete Patch per attached AD3-A8.10A. Revise: Detail 9/A8.10 Asphalt/Concrete Joint per attached AD3-A8.10A. Revise: Revise: Detail 2/A8.10 Typical Chain link Gate (Single) per attached AD3-A8.10B. Detail 10/A8.10 Shingle Side Flashing per attached AD3-A8.10B. Revise: Revise: Detail 11/A8.10 Shingle Lower Flashing per attached AD3-A8.10B. ITEM NO. 3.15: DRAWING SHEET A9.10 – INTERIOR DETAILS, WALL TYPES, AND INTERIOR ELEVATIONS In typical elevations 9/A9.10 and 10/A9.10 revise finish tag VWC-1 to GB-1 Revise: Revise: Detail 16/A9.10 Mech Enclosure Clearances, Typ. per attached AD3-A9.10. ITEM NO. 3.16: DRAWING SHEET A11.01 – FINISH SCHEDULE, OPENING SCHEDULE, LEGENDS, & DETAILS Remove: In Finish Schedule, remove VWC-1 from Wall Finish at all rooms In Finish Legend, revise GB-1 from "GYPSUM BOARD" to "GYPSUM BOARD, Revise: PAINTED" STRUCTURAL ITEM NO. 3.17: DRAWING SHEET \$8.01 - FRAMING DETAILS AND NAILING SCHEDULE
 - *<u>Remove:</u>* Vertical nailing requirement in detail 7 per attached AD3-S8.01

MECHANICAL

- ITEM NO. 3.18: DRAWING SHEET MP0.02 SCHEDULES MECHANICAL & PLUMBING
 - <u>Revise:</u> Classroom split system heat pump schedule note 5 per attached AD3-MP0.02

ITEM NO. 3.19: DRAWING MP2.03 – FLOOR PLAN – NEW – BLDGS 1, 2, 3, & 4 – MECHANICAL & PLUMBING

<u>Clarification</u>: Condensate pipe revisions and associated notes moved to AD3-P2.03 <u>Remove</u>: Keynote #12, #13, #18 & #19 per attached AD3-MP2.03

- <u>*Revise:*</u> Drywell locations per attached AD3-MP2.03
- <u>*Revise:*</u> Keynote #20 per attached AD3-MP2.03. Intent is damper and actuator are concealed inside the opening and covered with grilles similar to picture below.







ADDENDUM NO. 3

Meadow Heights Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.04

<u>ITEM NO. 3.20:</u>	<u>DRAWING P2.03 – FLOOR PLAN – NEW – BLDGS 1, 2, 3, & 4 – CONDENSATE DRAINS</u> <u>PLUMBING</u>				
	<u>Add:</u>	New sheet in its entirety per attached AD3-P2.03			
ITEM NO. 3.21:	DRAWING	SHEET MP6.01 – DETAILS – MECHANICAL & PLUMBING			
	<u>Revise:</u>	Details 5/MP6.01 & 14/MP6.01 per attached AD3-MP6.01.			
ELECTRICAL					
ITEM NO. 3.22:	DRAWING	<u>SHEET E0.1 – Electrical Cover Sheet</u>			
	<u>Revise:</u>	Wiring & Conduit Run Symbols per attached AD3-E0.1.			
ITEM NO. 3.23:	DRAWING	SHEET E1.1 Electrical Site Plan			
	<u>Revise:</u> Delete:	General note #2 per attached AD3-E1.1. Sheet note #10 from pull box per attached AD3-E1.1.			
ITEM NO. 3.24:	DRAWING	SHEET E5.4 Electrical Details			
	<u>Revise:</u>	Detail 3/E5.4 Note #1 per attached AD3-E5.4.			

Add: Detail 3/E5.4 Note #5 per attached AD3-E5.4.

ADDENDUM NO. 3 Meadow Heights Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.04



Aedis Architects Thang Do, Principal



Electrical, American Consulting Engineers Electrical Sammy Fernandez



Structural, BASE Design Gokhan Akalan



Mechanical, Cypress Engineering Group Metin Serttunç

ADDENDUM NO. 3

Meadow Heights Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.04

Attachments:

General:

HVAC And Power Upgrade Project Hazardous Materials Survey Report Meadow Heights Elementary School (29 pages) DSA Form 103-19 Listing Of Structural Tests & Special Inspections, 2019 CBC (13 pages) Meadow Heights Campus Utility Survey (1 page) 2619 Dolores Street Topographic Map (2 pages)

Specifications: 02 80 00 Hazardous Materials Abatement (42 Pages) 07 62 00 Sheet Metal Flashing and Trim (11 Pages) 32 17 23 Pavement Markings (2 Pages)

Drawings:

ARCHITECTURAL: SHEET AD3-A1.02 SHEET AD3-A2.01 SHEET AD3-A3.01 SHEET AD3-A4.01 SHEET AD3-A8.10A SHEET AD3-A8.10B SHEET AD3-A9.10 **STRUCTURAL:** SHEET AD3-S8.01 **MECHANICAL:** SHEET AD3-MP0.02 SHEET AD3-MP2.03 SHEET AD3-P2.03 SHEET AD3-MP6.01 **ELECTRICAL:** SHEET AD3-E0.1 SHEET AD3-E1.1 SHEET AD3-E5.4





HVAC and Power Upgrade Project

HAZARDOUS MATERIALS SURVEY REPORT

Meadow Heights Elementary School

For



419 Mason Street Suite 109 | Vacaville CA 95688 | 707.999.5234

Email: erica@znapfly.com

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Cover Letter

Friday, September 10, 2021

Kevin Sanders San Mateo Foster City School District 1170 Chess Drive Foster City, California 94404

SUBJECT: HVAC and Power Upgrades Project - Hazardous Materials Survey Report

Dear Mr. Sanders,

At the request of the San Mateo Foster City School District, Znap Fly provided an asbestos and lead survey of suspect building construction materials at Meadow Heights Elementary School located at 2619 Dolores Street in San Mateo, California as part of the San Mateo Foster City School District (SMFCSD).

Onsite testing was performed on July 1 and July 20, 2021, by Ms. Erica Sattar.

This report is intended as an informational resource for the San Mateo Foster City School District and includes sample/test results, conclusions and recommendations regarding hazardous materials based upon information obtained from samples and tests collected at specific locations, review of information/drawings provided to us, and professional judgment.

Shall you have any questions or concerns regarding this document, following review, please contact us at 707-999-5234.

With Gratitude,

Erica Sattar, CAC, CDPH Principal Consultant / Director of Environmental Znap Fly

Description of Buildings Surveyed

The buildings surveyed at Meadow Heights Elementary School are stucco concrete exterior with wood trimmed windows frames, metal louver frame and with a shingle roof system. Interior finishes anticipated to be impacted by project work include acoustic ceiling panels, plaster walls, sheetrock walls, carpet, cove base and sealants at HVAC case. Floor tile was also sampled in areas outside the scope of work at the request of SMFCSD.

Survey Methodology: Sampling & Analytical

All onsite testing was performed at 7-sites throughout the San Mateo Foster City School District (SMFCSD), with XRF lead testing completed on July 1, 2021 and bulk samples from Meadow Heights Elementary School collected on July 20, 2021, by Ms. Erica Sattar. The project was planned and overseen by Ms. Sattar and Mr. Christopher Smith. Both, Ms. Sattar and Mr. Smith, are Cal/OSHA Certified Asbestos Consultants (CACs) and CDPH Lead Consultants, with mold investigation and remediation training. The report was prepared by Ms. Sattar and reviewed by Mr. Smith.

Asbestos

All bulk samples were collected using sampling guidelines established by the Environmental Protection Agency (EPA) and by generally following the methods described in Appendix K of title 8, CCR, Section 1529 of the California Code of Regulations for sample collection. Znap Fly was not prevented and/or instructed by the owner/operator of SMFCSD as to what materials were to be sampled. The following summarizes the sampling procedures utilized.

- Visually identified suspect ACMs were categorized into homogeneous material areas. A homogeneous material is defined as being a surfacing material, thermal system insulation, or miscellaneous material which is uniform in color and texture.
- A sampling scheme was developed based upon the location and quantity of the various homogeneous materials.
- Trained and certified personnel using appropriate sampling tools and leak-tight containers collected bulk samples.
- Bulk sample collection tools were decontaminated after the collection of each bulk sample to prevent the spread of secondary contamination to subsequent bulk samples.
- Each bulk sample was labeled with a unique sample identification number and recorded on a bulk sample log.
- Bulk samples collected were submitted to a laboratory with a chain of custody record.

All material quantities reported herein are rough order of magnitude estimates and should not be used for bidding purposes without review of available record drawings and on-site field verification by the bidder. The information provided in this report should be used in conjunction with construction documents and the contractor's own field verification of the abatement scope of work including location and extent of removal required for the demolition project being undertaken at each site. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Bulk samples of suspect materials were delivered to EMSL Analytical, Inc. (EMSL) in San Leandro, California. EMSL is a laboratory accredited under the National Institute of Standards and Technology (NIST)/National Voluntary Laboratory Accreditation Program (NVLAP) and the California Environmental Laboratory Accreditation Program (Cal-ELAP) for bulk asbestos sample analysis. The samples were submitted for analysis by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance with the EPA's "Method for the Determination of Asbestos in Bulk Building Materials" US EPA/600/R-93/116, dated July 1993 and adopted by the NVLAP as Test Method Code 18/A01.

Standard PLM analytical method has a limit of quantification of 1% asbestos. For materials with asbestos detected at trace levels or below 1% by standard PLM, the material must be considered to be above 1% (ACM) unless re-analyzed and found to be less than 1% by the PLM point count method (400 points minimum). Each sample of a homogeneous area material with trace result(s) must be re-analyzed by point count and found to be less than 1% in order to avoid assuming the material to be ACM according to EPA regulation. For this project, no materials were analyzed by point count methods.

Lead

Lead-based paint (LBP) is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%), as set forth in the Department of Housing and Urban Development (HUD) guidelines and California Department of Public Health (CDPH) regulations. Lead-Containing Paints (LCPs) are paints and coatings that contain detectable lead as defined by Cal/OSHA. Most paint and coatings on pre-1978 buildings contain some detectable lead subject to Cal/OSHA regulation. Therefore the exhaustive testing required to prove painted coatings do not contain lead is not practical or cost effective. Consequently, all paints and architectural coatings must be considered to contain some detectable levels of lead unless proven otherwise by laboratory analysis.

This survey included screening level LBP testing for the purpose of characterizing the general presence of lead in existing paints and coatings. As such, this survey included paint testing using a C series Vanta XRF direct read lead testing instrument. The results presented herein are representative of typical conditions but are not inclusive of all painted/ coated surfaces present at the site. The results of this survey should assist with compliance to the California Occupational Safety and Health Administration (Cal/OSHA) lead construction standard and preliminary evaluation of potential construction waste streams. All painted/coated surfaces including untested surfaces, must be assumed to contain some detectable level of lead in the absence of representative paint chip analytical results demonstrating that lead levels are below analytical detection limits. This is because the XRF instrument, while providing a cost effective, non-destructive test method, the instrument is calibrated to detect LBP and cannot detect lead at the lowest levels regulated Cal/OSHA and Cal/ EPA. Any detectable level of lead is subject to Cal/OSHA regulation.

Universal Wastes & Other Suspected Hazardous Materials

The building areas were visually surveyed for universal wastes and other hazardous materials. These universal wastes include fluorescent lighting fixtures manufactured prior to 1979 that have the potential to contain Polychlorinated Biphenyl (PCB) ballasts, mercury containing lighting tubes, and other components considered to be "universal wastes" upon disposal. "Universal wastes" include mercury-containing non-incandescent lamps, batteries, mercury thermostat switches and other hazardous wastes commonly found in building components and equipment. Other suspect hazardous materials include refrigerants, paints, and solvents.

Asbestos Containing Materials

Znap Fly collected a total of 48 bulk samples with 80 sample layers of suspect ACM analyzed by PLM analysis. Most flooring had two layers of tile or tile beneath the carpet that reported asbestos by laboratory analysis. The analytical laboratory results for sampled suspect ACMs are listed below and in the attached Analytical Laboratory Reports.

Assumed Asbestos-Containing Material

The following list of materials are assumed to contain asbestos, pending testing prior to construction to confirm asbestos content or prove no asbestos is present by laboratory analysis.

- Floor tile, tan tile beneath existing flooring, 5% asbestos, with residual mastic (insufficient material to analyze) Category I non-friable ACM, approximately 5 square feet to be impacted at each work area location
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work area location
- Roof shingles , assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location
- Roof mastics, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location

Suspect Asbestos-Containing Materials Sampled with No Asbestos Reported

Materials listed below were sampled and analyzed by an accredited laboratory by PLM analysis reported "none detected" for asbestos. The following list are all materials sampled.

- Sheetrock with joint compound
- Plaster, smooth wall
- Gray faux wood vinyl flooring with mastics
- Cove base, 4" black in color with associated beige/off-white mastics
- Acoustic ceiling panel, 2' x 4' white with random pinhole pattern
- Residual brown mastic associated with removed tile behind wood wall (not anticipated to be impacted by work scope)
- Sealant at HVAC unit at interior
- Carpet mastic, however tile beneath carpet contains asbestos

Refer to Attachment for a complete set of the laboratory results and sample locations.

Lead Containing Paints, Coatings and Materials

Znap Fly performed a total of 40 XRF lead tests from the interior and exterior building surfaces. The results of the XRF LBP screening survey are provided in the table attached with LBP shown below. A total of five XRF tests contained lead at LBP levels above the threshold 1.0 mg/cm² of the 40 total tests of painted surfaces tested.

The following is a brief summary of types of building components that tested above 1.0 mg/cm² and should be considered lead based paint (LBP) as determined by XRF.

	Component	Substrate	Condition	Result
Interior	Window sills	Wood	Intact/good	2.36 - 3.71 mg/cm2
Exterior	Wall trim	Wood	Intact/good	3.80 mg/cm2

The tabulated data is not intended to be all inclusive and must be extrapolated to similar surfaces that were not tested. Lead content will vary according to painting histories involved. Generally on a building by building basis, component type and substrate are more reliable indicators.

General Interpretation of Lead-Containing Paint Findings Reported:

All painted components must be presumed to contain some detectable levels of lead regardless of non – detection by the XRF method unless exhaustively tested by paint chip analysis. Untested painted/coated components must be presumed to contain some lead at detectable levels. About 10% of the painted/glazed surfaces tested contained high levels of lead considered to be LBP and most of the remaining surfaces contained some detectable lead. In general, LBP was detected on interior window sills and exterior wall trim. The frequency of occurrence was typically low. The tested surfaces that reported low levels of detected lead must be considered lead-containing paints (LCP) and coatings in the absence of exhaustive testing by wet chemistry methods.

Paint Condition Findings:

The condition of paint at this site is generally in good/intact condition. Since even low levels of paint (e.g., just over 50 ppm) may exhibit hazardous waste characteristics, care must be taken to eliminate loose and peeling paint prior to general building demolition. Any loose, peeling or flaking paint should be removed and disposed of as lead hazardous waste.

Universal Wastes & Other Potential Hazardous Materials

Znap Fly visually inspected readily accessible areas of the building for other hazardous materials PCB lighting ballasts, Universal Wastes (such as mercury containing lighting tubes, thermostats, and batteries), and other suspect hazardous waste and contamination. No attempt to disassemble equipment or sample any additionally discovered suspect materials was included. Any suspect hazardous material must be presumed hazardous pending complete identification. For example, fluorescent lighting fixtures must be presumed to contain PCB ballasts pending removal and disassembly of each unit to determine ballast type and/or labeling in the absence of other explicit product specific information to the contrary.

Asbestos Containing Construction Materials

Prior to renovation/demolition construction activities, known or assumed ACMs that are likely to be disturbed by those activities must be removed and disposed of in accordance with all applicable regulations including federal National Emissions Standard for Hazardous Air Pollutants (NESHAPS) and Cal/OSHA regulations. A Cal-OSHA registered and State licensed, registered asbestos contractor (abatement/demolition/roofing) is required for removal of ACM prior to general demolition and renovation. For this project, mastic associated with tack board/white board/chalk board , tan floor tile beneath existing flooring (tile and carpet) contain asbestos while roof field shingles and associated roof mastics are assumed to contain asbestos. These materials are considered Category I non-friable asbestos contractor shall notify the project manager, contracting officer, or inspector immediately. Assumed materials can be sampled on a rush turnaround time to prove a material does not contain asbestos. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Other Considerations and Rules

Where removal is unavoidable, the contractor's abatement sub-contractor should remove all friable RACM under class I removal requirements and dispose of waste as hazardous asbestos waste at a landfill permitted for asbestos hazardous waste disposal, this work is anticipated for this project at select locations; refer to project documents on-site. The contractor's abatement sub-contractor should also remove all category I & II non-friable ACM in a manner that does not produce friable ACM under Cal/OSHA Class I removal requirements and dispose of removed materials as non-hazardous asbestos waste at a landfill permitted for asbestos waste disposal.

The following additional requirements should be adhered to for any maintenance, renovation, or demolition projects requiring asbestos disturbance and/or removal:

•All asbestos-containing wastes shall be manifested as either hazardous or non-hazardous based on asbestos content, friability, and actual waste stream classification.

•All asbestos removal should be overseen by a qualified independent third party, retained by the building owner or manager of the building to ensure proper removal, clean up, work area clearance, and review waste shipping and disposal documentation.

Contractor should perform all work in compliance with contract documents and the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of asbestos.

Lead Containing Paints and Coatings

The painted components tested at the subject buildings typically had detectable levels of lead and should be considered LCP coated. LBP was detected on about 10% of the surfaces or components tested and consist of exterior window sill and wall trim. All paints and coatings should be considered LCP or coatings in the absence of exhaustive sampling and laboratory analysis. The disturbance of these components during demolition and renovation activities will require use of personnel trained in lead hazards for construction and will require compliance with applicable Cal/OSHA and Cal/EPA regulation. Any detectable level of lead is subject to Cal/OSHA regulation.

At present there is no state or federal regulation requiring mandatory lead removal or abatement prior to disturbance, demolition or renovation of structures with identified lead materials. However, prior to hot work on painted metal, the

paint either needs to be removed or supplied air respirators worn during welding or cutting operation. In addition, there are applicable lead specific Cal/OSHA worker protection requirements and Cal/EPA waste disposal requirements that do apply to lead-related construction activities and associated wastes:

- Cal/OSHA: The Cal/OSHA regulation, Title 8, CCR, Section 1532.1 Lead governs occupation exposure to lead. This regulation requires that any task that may potentially expose workers to any concentration of lead, be monitored to determine workers eight-hour time weighted average (TWA) exposure to lead. Prior to initiation of certain activities, referred to as "trigger tasks," that are believed to have the capability of creating an excessive lead exposure, such workers must be properly fitted with respiratory protection and protective clothing until personal eight-hour TWA results reveal exposures within acceptable levels. Pertinent examples of trigger tasks are manual demolition, manual paint scraping and power tool removal, and hot work involving lead-containing coatings or materials. Cal/OSHA also has agency pre-start notification requirements and worker training and certification depending on exposure levels. These requirements will apply to demolition, patch and repair, paint removal, and surface preparation work at this site.
- Cal/EPA: Cal/EPA regulates disposal of lead hazardous waste (22 CCR Division 4.5, Environmental Health Standards for the Management of Hazardous Waste). The Cal/EPA Department of Toxic Substance Control (DTSC) has issued guidance indicating that architectural debris with intact lead paint is normally anticipated to be handled as general construction waste. Since detected LCP was generally in intact/good condition and 90% of paint coatings tested had low to moderate lead content, it is unlikely that most of the demolition debris will be hazardous as a composite sample. However, all lead containing waste streams should be considered potentially lead hazardous pending waste testing. Further, all surface preparation and paint removal wastes must be considered hazardous wastes due to the likelihood of paint chip lead levels exceeding 1,000 total lead or 5 ppm soluble lead.

All construction activities impacting lead must be performed in compliance with the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of lead containing/contaminated materials. Selective and general demolition activities will involve disturbing lead and possibly creating lead hazardous wastes. These construction activities must be controlled to prevent uncontrolled release of lead contamination and for environmental protection.

The Contractor conducting building demolition and any selective demolition controls the means and methods used and therefore should be required by the contract document to ensure that the demolition processes are conducted in a manner that creates the minimum amount of hazardous waste and leaves the site free of lead contamination exceeding regulatory levels.

Universal Wastes and Other Known or Presumed Hazardous Materials

PCB Lighting Ballasts: Znap Fly's visual inspection indicated that fluorescent light fixtures may contain PCB ballasts are present in the building. However, as it is not practically feasible to check each ballast for labeling prior to renovation, Znap Fly recommends that all light fixtures be visually inspected by the Contractor upon removal to determine if they contain PCB's. Electronic ballasts and ballasts marked "No PCB's" or "PCB Free" should be considered non-hazardous and recycled or disposed of accordingly. However, ballasts that are unmarked must be considered PCB-containing and properly handled, collected, stored, transported and recycled or disposed of by an approved recycling or disposal facility in accordance with the requirements of 22 CCR, Section 67426.1 and the contract.

Universal Wastes: All potential and identified mercury-containing light tubes, high intensity lamps, and other universal wastes such as batteries should be removed and recycled or disposed of in accordance with the guidelines established by the California Department of Toxic Substance Control Universal Waste Rule, as stated in 22 CCR Sections 66261.9 and 66273.1 thru 66273.90.

Other Suspect Hazardous Materials: Coolant gasses in air conditioning units must be properly extracted and recycled prior to unit removal and disposal by a qualified hazardous materials disposal contractor using EPA certified Refrigerant Reclaimer for the removal and recycling of the gases.

Limitations

Znap Fly conducted this survey in support of the HVAC Power Upgrade Project for San Mateo Foster City School District. Rooms and areas surveyed were based on access to unoccupied classrooms within the work scope defined in SD 90% CD drawings provided by the District dated 6/2/2021. No excavation or subsurface investigation was conducted to discover buried insulated piping and/or asbestos cement pipes concealed below the surface or interstitial wall spaces. Cement pipe and insulated pipe is assumed below the surface and/or in interstitial wall spaces. No samples were collected in rooms not anticipated to be impacted by this project. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Closing

Znap Fly performed the assessment in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

Conclusions and recommendations made regarding hazardous materials were based upon information obtained from samples and tests collected at specific locations, review of information provided to us, and professional judgment. Recommendations in this report were made based on conditions that Znap Fly reasonably infer to exist between sampling points.

This report is intended as an informational resource for the San Mateo Foster City School District. Any contractor using this document assumes all responsibility for reviewing all available information and for verifying existing site conditions including location and extent of hazardous materials present at specific areas.

Should any significant discrepancy between this report and existing conditions be discovered, the contractor shall notify the project manager, contracting officer, or inspector immediately.

If you have any questions or concerns regarding this document, please contact us at 707-999-5234.

With Gratitude, Znap Fly

Report prepared for the San Mateo Foster City School District by:

nich 1

Erica Sattar, CAC, CDPH Certified Asbestos Consultant #14-5250 CDPH Lead Sampling Technician #20425

Report reviewed for the San Mateo Foster City School District by:

Chris Smith, CAC, CDPH Certified Asbestos Consultant #05-3823 CDPH Lead Inspector Assessor/Project Designer #12430

Attachments

Laboratory Reports with Chain of Custody Record Asbestos Sampling Plan Suspect Asbestos Containing Materials Sample Table Lead Sampling Plan Lead Paint Testing and Sampling Table Znap Fly Personnel Certifications CDPH Lead Hazard Evaluation Report



			Asbestos		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
A1-02	Room 2 - Sheetrock with Joint Compound	Gray Fibrous	5% Cellulose 2% Glass	93% Non-fibrous (Other)	None Detected
B1-04	Room 4 - Plaster - White	Gray/White Non-Fibrous		65% Quartz 35% Non-fibrous (Other)	None Detected
062116349-0002		Homogeneous			
B1-07	Room 7 - Plaster - White	Gray/White Non-Fibrous		65% Quartz 35% Non-fibrous (Other)	None Detected
062116349-0003		Homogeneous			
B1-12	Room 12 - Plaster - White	Gray/White Non-Fibrous		65% Quartz 35% Non-fibrous (Other)	None Detected
P1 14	Room 1/ - Plaster -	Grav/White		65% Quartz	None Detected
062116349-0005	White	Non-Fibrous Homogeneous		35% Non-fibrous (Other)	None Delected
B1-02	Room 2 - Plaster - White	Gray/White Fibrous		65% Quartz 35% Non-fibrous (Other)	None Detected
062116349-0006		Homogeneous		· · ·	
B1-18	Room 18 - Plaster - White	Gray Non-Fibrous		65% Quartz 35% Non-fibrous (Other)	None Detected
062116349-0007		Homogeneous			
B1-15	Room 15 - Plaster - White	Gray Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
B1- 101	lanitor Closet -	Grav		50% Quartz	None Detected
062116349-0009	Plaster - White	Non-Fibrous Homogeneous		50% Non-fibrous (Other)	
B1-J02	Janitor Closet - Plaster - White	Gray/White Non-Fibrous		50% Quartz 50% Non-fibrous (Other)	None Detected
062116349-0010		Homogeneous		, , , , , , , , , , , , , , , , , , ,	
B1-01	Room 1 - Plaster - White	Gray/White Non-Fibrous		40% Quartz 60% Non-fibrous (Other)	None Detected
062116349-0011		Homogeneous			
E1-04-Blue FT	Room 4 - Floor Tile - 12"x12" Blue & White	Blue Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0012	Pattern - Yellow Mastic	Homogeneous			
E1-04-White FT	Room 4 - Floor Tile - 12"x12" Blue & White	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0012A	Pattern - Yellow Mastic	Homogeneous			
E1-04-Tan FT and	Room 4 - Floor Tile -	Tan		95% Non-fibrous (Other)	5% Chrysotile
Mastic	12"x12" Blue & White Pattern - Yellow Mastic	Non-Fibrous Homogeneous			
Crushed tile could not be se	eparated from mastics; analyzed	as composite.			



			Non-A	sbestos	Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре	
E2-15-Blue FT 062116349-0013	Room 15 - Floor Tile - 12"x12" Blue Tile - Yellow Mastic with Tan Tile beneath &	Blue Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
	Black Mastic	Mallana			New Detected	
E2-15-Yellow Mastic	Room 15 - Floor Tile - 12"x12" Blue Tile - Yellow Mastic with Tan Tile beneath & Black Mastic	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E2-15-Black Mastic	Room 15 - Floor Tile -				Insufficient Material	
062116349-0013B	12"x12" Blue Tile - Yellow Mastic with Tan Tile beneath & Black Mastic					
E2-15-Leveler	Room 15 - Floor Tile -	Gray		100% Non-fibrous (Other)	None Detected	
062116349-0013C	12"x12" Blue Tile - Yellow Mastic with Tan Tile beneath & Black Mastic	Non-Fibrous Homogeneous				
E2-18-Blue FT	Room 18 - Floor Tile -	Blue		100% Non-fibrous (Other)	None Detected	
062116349-0014	12"x12" Blue Tile - Yellow Mastic with Tan Tile beneath & Black Mastic	Non-Fibrous Homogeneous				
E2-18-Tan FT and	Room 18 - Floor Tile -	Tan		95% Non-fibrous (Other)	5% Chrysotile	
Mastic 062116349-0014A	12"x12" Blue Tile - Yellow Mastic with Tan Tile beneath &	Non-Fibrous Homogeneous				
	Black Mastic					
Crushed tile could not be se	parated from mastics; analyzed	as composite.				
E2-14-Blue FT	Room 14 - Floor Tile - 12"x12" Blue Tile -	Blue Non-Fibrous		100% Non-fibrous (Other)	None Detected	
062116349-0015	Yellow Mastic with Tan Tile beneath & Black Mastic	Homogeneous				
E2-14-Tan FT and	Room 14 - Floor Tile -	Tan		95% Non-fibrous (Other)	5% Chrysotile	
Mastic	12"x12" Blue Tile -	Non-Fibrous				
062116349-0015A	Tan Tile beneath & Black Mastic	Tomogeneous				
Crushed tile could not be se	parated from mastics; analyzed	as composite.				
E2-12-Blue FT	Room 12 - Floor Tile - 12"x12" Blue Tile -	Blue Non-Fibrous		100% Non-fibrous (Other)	None Detected	
062116349-0016	Yellow Mastic with Tan Tile beneath & Black Mastic	Homogeneous				
E2-12-Tan Mastic	Room 12 - Floor Tile -				Insufficient Material	
062116240 00164	12"x12" Blue Tile -					
	Tan Tile beneath & Black Mastic					
E2-12-Black Mastic	Room 12 - Floor Tile -				Insufficient Material	
062116349-0016B	Yellow Mastic with					
	Tan Tile beneath & Black Mastic					



		Non-Asbestos			Asbestos		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре		
E2-12-Gray Quartz Layer	Room 12 - Floor Tile - 12"x12" Blue Tile - Yellow Mastic with	Gray Non-Fibrous Homogeneous		75% Quartz 25% Non-fibrous (Other)	None Detected		
062116349-0016C	Black Mastic						
E2-07-Blue FT	Room 7 - Floor Tile - 12"x12" Blue Tile -	Blue Non-Fibrous		100% Non-fibrous (Other)	None Detected		
062116349-0017	Yellow Mastic with Tan Tile beneath & Black Mastic	Homogeneous					
E2-07-Yellow Mastic	Room 7 - Floor Tile - 12"x12" Blue Tile -				Insufficient Material		
062116349-0017A	Yellow Mastic with Tan Tile beneath & Black Mastic						
E2-07-Leveler	Room 7 - Floor Tile - 12"x12" Blue Tile -	Gray Non-Fibrous		25% Quartz 75% Non-fibrous (Other)	None Detected		
062116349-0017B	Yellow Mastic with Tan Tile beneath & Black Mastic	Homogeneous					
E3-02-White FT	Room 2 - Vinyl Flooring - Gray with Black Rubber Back	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected		
E2.02 Rubbar	Boom 2 Vinvl	Plack		100% Non fibrous (Other)	None Detected		
Membrane	Flooring - Grav with	Non-Fibrous		100% Non-horous (Other)	None Detected		
Monibiano	Black Rubber Back	Homogeneous					
062116349-0018A							
E3-01-White FT	Room 1 - Vinyl Flooring - Gray with	White Non-Fibrous		100% Non-fibrous (Other)	None Detected		
062116349-0019	Black Rubber Back	Homogeneous					
E3-01-Rubber	Room 1 - Vinyl	Black		100% Non-fibrous (Other)	None Detected		
Membrane	Black Rubber Back	Non-Fibrous Homogeneous					
062116349-0019A	Deem 2 Couchase	Diaste		400% Nore Streets (Other)	Nana Data ata d		
F3-02-Cove Base	4" Black - With Beige	Non-Fibrous		100% Non-librous (Other)	None Detected		
50,00 Martin	Reserve Courses	Tomogeneous		400% Non Sharaya (Othan)	Nana Data ata d		
F3-02-Mastic	4" Black - With Beige	Non-Fibrous		100% Non-librous (Other)	None Detected		
50, 11, 0	Reserved A Courses	Diale		400% Nore Streets (Other)	Nana Data ata d		
62116349-0021	- 4" Black - With	Non-Fibrous		100% Non-librous (Other)	None Detected		
52.11 Maatia	Beem 11 Covebaaa	Ton		100% Non fibrous (Other)	Nana Datastad		
F3-11-Masuc	- 4" Black - With	Non-Fibrous		100% Non-horous (Other)	None Detected		
062116349-0021A	Beige Mastic	Homogeneous					
F3-15-Cove Base	Room 15 - Covebase - 4" Black - With	Black Non-Fibrous		100% Non-fibrous (Other)	None Detected		
062116349-0022	Beige Mastic	Homogeneous					
F3-15-Mastic	Room 15 - Covebase - 4" Black - With	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected		
062116349-0022A	Beige Mastic	Homogeneous					
F3-18-Cove Base	Room 18 - Covebase - 4" Black - With	Black Non-Fibrous		100% Non-fibrous (Other)	None Detected		
062116349-0023	Beige Mastic	Homogeneous					
F3-18-Mastic	Room 18 - Covebase - 4" Black - With	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected		
062116349-0023A	Beige Mastic	Homogeneous					

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			Asbestos		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
I1-04 062116349-0024	Room 4 - Acoustic Ceiling Panel - 2'x4' - Random Pinhole Pattern - White w./ Brown Fiber	Gray Fibrous Homogeneous	75% Cellulose	25% Non-fibrous (Other)	None Detected
11-07	Room 7 - Acoustic Ceiling Panel - 2'x4' - Pandom Pinbole	Gray Fibrous	75% Cellulose	25% Non-fibrous (Other)	None Detected
062116349-0025	Pattern - White w./ Brown Fiber	Homogeneous			
I1-12 062116349-0026	Room 12 - Acoustic Ceiling Panel - 2'x4' - Random Pinhole	Gray Fibrous Homogeneous	75% Cellulose	25% Non-fibrous (Other)	None Detected
	Pattern - White w./ Brown Fiber	Tiomogeneoue			
11-14 062116349-0027	Room 14 - Acoustic Ceiling Panel - 2'x4' - Random Pinhole	Gray Fibrous Homogeneous	75% Cellulose	25% Non-fibrous (Other)	None Detected
	Pattern - White w./ Brown Fiber				
I1-18	Room 18 - Acoustic Ceiling Panel - 2'x4' - Random Pinhole	Gray Fibrous Homogeneous		75% Ca Carbonate 25% Non-fibrous (Other)	None Detected
	Pattern - White w./ Brown Fiber	Homogeneous			
11-15	Room 15 - Acoustic Ceiling Panel - 2'x4' -	Gray Non-Fibrous	75% Cellulose	25% Non-fibrous (Other)	None Detected
062116349-0029	Random Pinhole Pattern - White w./ Brown Fiber	Homogeneous			
11-01	Room 1 - Acoustic Ceiling Panel - 2'x4' -	Gray Fibrous	60% Cellulose	40% Non-fibrous (Other)	None Detected
062116349-0030	Random Pinhole Pattern - White w./ Brown Fiber	Homogeneous			
11-02	Room 2 - Acoustic Ceiling Panel - 2'x4' -	Brown Non-Fibrous	50% Cellulose	50% Non-fibrous (Other)	None Detected
062116349-0031	Random Pinhole Pattern - White w./ Brown Fiber	Homogeneous			
J1-15	Behind Wood Wall, not to be impacted -	Brown Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0032	Residual Brown Mastic - Brown Mastic	Homogeneous			
J1-18	Behind Wood Wall, not to be impacted -	Brown Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0033	Residual Brown Mastic - Brown Mastic	Homogeneous			
N1-02	At HVAC, Rm. 2 - Sealant - Beige	Gray Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0034		Homogeneous			N
N1-07	At HVAC, Rm. 1 - Sealant- Beige	Tan Non-Fibrous Homogeneous		100% Non-tibrous (Other)	None Detected
N1-12	At HVAC, Rm. 12 - Sealant - Beige	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0036		Homogeneous			



			Non-A	sbestos	Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
N1-14	At HVAC, Rm. 14 - Sealant - Beige	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0037	5	Homogeneous			
N1-18	At HVAC, Rm. 18 - Sealant - Beige	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0038	5	Homogeneous			
N1-15	At HVAC, Rm. 15 - Sealant - Beige	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0039	J	Homogeneous			
N1-01	At HVAC, Rm. 1 - Sealant - Beige	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0040		Homogeneous			
N1-02	At HVAC, Rm. 2 - Sealant - Beige	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0041		Homogeneous			
Q1-04-Carpet Mastic	Room 4 - Carpet Mastic - With Tan Tile and Black Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
	Room 4 - Carpet	Grav		100% Non-fibrous (Other)	None Detected
062116349-00424	Mastic - With Tan Tile	Non-Fibrous			None Delected
Sample is grey leveler, not ta	an Floor Tile	Homogeneous			
Q1-04-Black Mastic	Room 4 - Carpet Mastic - With Tan Tile				Insufficient Material
062116349-0042B	and Black Mastic				
Q1-07-Carpet Mastic	Room 7 - Carpet Mastic - With Tan Tile	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0043	and Black Mastic	Homogeneous			
Q1-07-Floor Tile	Room 7 - Carp <mark>et</mark> Mastic - With Tan Tile	Tan Non-Fibrous		95% Non-fibrous (Other)	5% Chrysotile
062116349-0043A	and Black Mastic	Homogeneous			
Q1-07-Mastic	Room 7 - Carpet Mastic - With Tan Tile				Insufficient Material
002110349-0043B		T 1.1			New Detected
Q1-12-Carpet Mastic	Room 12 - Carpet Mastic - With Tan Tile and Black Mastic	Tan Non-Fibrous Homogeneous		100% Non-librous (Other)	None Detected
	Room 12 - Carpet	Tan		95% Non-fibrous (Other)	5% Chrysotile
062116349-0044A	Mastic - With Tan Tile and Black Mastic	Non-Fibrous Homogeneous			
01-12-Mastic	Room 12 - Carpet	g			Insufficient Material
062116349-0044B	Mastic - With Tan Tile and Black Mastic				
01-14- Carpet Mastic	Room 14 - Carpet	Tan		100% Non-fibrous (Other)	None Detected
062116349-0045	Mastic - With Tan Tile and Black Mastic	Non-Fibrous Homogeneous			
Q1-14-Floor Tile	Room 14 - Carpet	Tan Non Eibroun		95% Non-fibrous (Other)	5% Chrysotile
062116349-0045A	and Black Mastic	Homogeneous			
Q1-14-Mastic	Room 14 - Carpet Mastic - With Tan Tile				Insufficient Material
062116349-0045B	and Black Mastic				
Q1-18-Carpet Mastic	Room 18 - Carpet Mastic - With Tan Tile	Tan Non-Fibrous		100% Non-fibrous (Other)	None Detected
062116349-0046	and Black Mastic	Homogeneous			



			Non-A	sbestos	Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
Q1-18-Floor Tile	Room 18 - Carpet Mastic - With Tan Tile	Tan Non-Fibrous		95% Non-fibrous (Other)	5% Chrysotile
	and Diack Mastic	Homogeneous			
Q1-18-Mastic 062116349-0046B	Room 18 - Carpet Mastic - With Tan Tile and Black Mastic				Insufficient Material
Q1-15-Carpet Mastic	Room 15 - Carpet Mastic - With Tan Tile and Black Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
Q1-15-Floor Tile	Room 15 - Carpet Mastic - With Tan Tile and Black Mastic	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
Q1-15-Mastic	Room 15 - Carpet Mastic - With Tan Tile and Black Mastic				Insufficient Material
Q1-01-Carpet Mastic	Room 1 - Carpet Mastic - With Tan Tile and Black Mastic	Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
Q1-01-Floor Tile	Room 1 - Carpet Mastic - With Tan Tile and Black Mastic	Tan Non-Fibrous Homogeneous		95% Non-fibrous (Other)	5% Chrysotile
Q1-01-Mastic	Room 1 - Carpet Mastic - With Tan Tile and Black Mastic				Insufficient Material

Analyst(s)

Daniel Clarke (69)

Ch

Daniel Clarke, Asbestos Laboratory Manager or Other Approved Signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore EMSL recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by EMSL Analytical, Inc. Carle Place, NY NVLAP Lab Code 101048-10, CA ELAP 2339

Initial report from: 08/17/2021 11:21:53

OrderID: 062116349

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062116349

Asbestos Bulk Sample Log

		• •	-		
Client:	San Mateo Foster City School District		Sample Date:	7/20/21	
Project:	7 School HVAC project, Meadow Heights		Project #:	EN210601	-
·			Collected By:	Erica Sattar	

PLDG	SAMPLE NO.		MATERIAL	DESCRIPTION	LOCATION			
BLUG	ID	NO.			-			
MH	A1	02	Sheetrock with joint compound	White	Room 2			
MH	B1	04	Plaster	White	Room 4			
MH	B1	07	Plaster	White	Room 7			
MH	B1	12	Plaster	White	Room 12			
МН	B1	14	Plaster	White	Room 14			
MH	B1	02	Plaster	White	Room 2			
MH	B1	18	Plaster	White	Room 18			
MH	B1	15	Plaster	White	Room 15			
ΜΗ	B1	J01	Plaster	White	Janitor closet			
MH	B1	J02	Plaster	White	Janitors closet			
MH	B1	01	Plaster	White	Room 1			
MH	E1	04	Floor tile 12" x 12" blue & white pattern	Yellow mastic	Room 4			
MH	E2	⁻ 15	Floor tile 12" x 12" blue tile	Yellow mastic with tan tile beneath & black mastic	Room 15			
ΜН	E2	18	Floor tile 12" x 12" blue tile	Yellow mastic with tan tile beneath & black mastic	Room 18			
МН	E2	14	Floor tile 12" x 12" blue tile	Yellow mastic with tan tile beneath & black mastic	Room 14			
мн	E2	12	Floor tile 12" x 12" blue tile	Yellow mastic with tan tile beneath & black mastic	Room 12			
МН	E2	07	Floor tile 12" x 12" blue tile	Yellow mastic with tan tile beneath & black mastic	Room 7			
мн	E3	02	Vinyl flooring	Gray with black rubber back	Room 2			
MH	E3	01	Vinyl flooring	Gray with black rubber back	room 1			
мн	F3	02	Covebase, 4" black	With beige mastic 😂				
Analytical Method: PLM (C) 72 hour-TAT								
HAIN OF	IAIN OF CUSTODY: CHAIN OF CUSTODY: D							
tria	En a XIAM 1/23/21-1600 "?							

8/11/21

OrderID: 062116349

ZNAP 🖧 FLY

OG2/1 6349 Asbestos Bulk Sample Log

Client: San Mateo Foster City School District Project: 7 School HVAC project, Meadow Heights Sample Date 7/20/21 Project #: EN210601

Collected By: Erica Sattar

RIDG	SAMPLE NO.		MATERIAL	DESCRIPTION	LOCATION		
ID NO.		NO.					
МН	F3	11	Covebase, 4" black	With beige mastic	Room 11		
MH	F3	15	Covebase, 4" black	With beige mastic	Room 15		
MH	F3	18	Covebase, 4" black	With beige mastic	Room 18		
MH	11	04	Acoustic celling panel, 2' x 4'	Random pinhole pattern, white w/ brownfiber	Room 4		
MH	1	07	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brownfiber	Room 7		
MH	11	12	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brownfiber	Room 12		
MH	11	14	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brownfiber	Room 14		
MH	1	18	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brownfiber	Room 18		
мн	1	15	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brownfiber	Room 15		
MH	11	01	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brownfiber	Room 1		
MH	11	02	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brownfiber	Room 2		
ΜΗ	J1	15	Residual brown mastic	Brown mastic	Behind wood well not to		
MH	J1	18	Residual brown mastic	Brown mastic	be impacted		
MH	N1	02	Sealant	Beige	At HVAC, Rm 2		
мн	N1	07	Sealant	Beige	At HVAC, Rm 1		
мн	N1	12	Sealant	Beige	At HVAC, Rm 12		
МН	N1	14	Sealant	Beige	At HVAC, Rm 14		
MH_	N1	18	Sealant	Beige	At HVAC, Rm 18		
MH_	N1	15	Sealant	Beige	At HVAC, Rm 15		
MH_	N1	01	Sealant	Beige			
Analyti	ical Met	thod: P		PLEASE SEND BY EMAIL:	erica@znapfly.co的m		
IAIN OF CUSTODY: Inatures DATE&TIME DATE							
1/2 2000 1/23/21-1600 CC-C 8/13/21/0260-							
R/16/21							

OrderID: 062116349

ZNAP 🖧 FLY

O62/6349 Asbestos Bulk Sample Log

Client: San Mateo Foster City School District Project: 7 School HVAC project, Meadow Heights

Sample Date: 7/20/21 Project #: EN210601

Collected By: Erica Sattar

BIDG	SAMPLE NO.		MATERIAL	DESCRIPTION	LOCATION
	ID	NO.			
MH_	N1	02	Sealant	Beige	At HVAC, Rm 2
MH	Q1	04	Carpet mastic	With tan tile and black mastic	Room 4
MH	Q1	07	Carpet mastic	With tan tile and black mastic	Room 7
MH	Q1	12	Carpet mastic	With tan tile and black mastic	Room 12
MH	Q1	14	Carpet mastic	With tan tile and black mastic	Room 14
MH	Q1	18	Carpet mastic	With tan tile and black mastic	Room 18
MH	Q1	15	Carpet mastic	With tan tile and black mastic	Room 15
MH	Q1	01	Carpet mastic	With tan tile and black mastic	Room 1
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Analytical Method: PLM			LM (g)	PLEASE SEND BY EMAIL: erica@znapfly.com	
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Asbestos Sampling Plan



Suspect Asbestos Containing Materials Sample Table

Sample ID		D Material Description		Sample Location	Results (% asbestos detected)
A1	02	Sheetrock with joint compound	White	Room 2	ND
B1	04	Plaster	White	Room 4	ND
B1	07	Plaster	White	Room 7	ND
B1	12	Plaster	White	Room 12	ND
B1	14	Plaster	White	Room 14	ND
B1	02	Plaster	White	Room 2	ND
B1	18	Plaster	White	Room 18	ND
B1	15	Plaster	White	Room 15	ND
B1	J01	Plaster	White	Janitor closet	ND
B1	J02	Plaster	White	Janitors closet	ND
B1	01	Plaster	White	Room 1	ND
E1	04	Floor tile 12" x 12" blue & white tile pattern	Yellow mastic with tan tile beneath & black mastic	Room 4	Blue tile = ND White tile = ND Tan tile and residual mastic = 5%
E2	15	Floor tile 12″ x 12″ blue tile	Yellow mastic with tan tile beneath & black mastic	Room 15	ND
E2	18	Floor tile 12" x 12" blue tile	Yellow mastic with tan tile beneath & black mastic	Room 18	Blue tile & mastic = ND Tan tile & mastic = 5%
E2	14	Floor tile 12" x 12" blue tile	Yellow mastic with tan tile beneath & black mastic	Room 14	Blue tile & mastic = ND Tan tile & mastic = 5%
E2	12	Floor tile 12" x 12" blue tile	Yellow mastic with tan tile beneath & black mastic	Room 12	ND
E2	07	Floor tile 12″ x 12″ blue tile	Yellow mastic with tan tile beneath & black mastic	Room 7	ND
E3	02	Vinyl flooring	Gray with black rubber back	Room 2	ND
E3	01	Vinyl flooring	Gray with black rubber back	room 1	ND
F3	02	Cove base, 4″ black	Beige mastic	Room 2	ND
F3	11	Cove base, 4" black	Beige mastic	Room 11	ND
F3	15	Cove base, 4" black	Beige mastic	Room 15	ND
F3	18	Cove base, 4" black	Beige mastic	Room 18	ND
11	04	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brown fiber	Room 4	ND
11	07	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brown fiber	Room 7	ND
11	12	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brown fiber	Room 12	ND
11	14	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brown fiber	Room 14	ND
11	18	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brown fiber	Room 18	ND
11	15	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brown fiber	Room 15	ND
11	01	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brown fiber	Room 1	ND

Sample ID		Material	Description	Sample Location	Results (% asbestos detected)
11	02	Acoustic ceiling panel, 2' x 4'	Random pinhole pattern, white w/ brown fiber	Room 2	ND
J1	15	Residual brown mastic	Brown mastic	Behind wood wall, not to be impacted	ND
J1	18	Residual brown mastic	Brown mastic	Behind wood wall, not to be impacted	ND
N1	02	Sealant	Beige	At HVAC, Rm 2	ND
N1	07	Sealant	Beige	At HVAC, Rm 1	ND
N1	12	Sealant	Beige	At HVAC, Rm 12	ND
N1	14	Sealant	Beige	At HVAC, Rm 14	ND
N1	18	Sealant	Beige	At HVAC, Rm 18	ND
N1	15	Sealant	Beige	At HVAC, Rm 15	ND
N1	01	Sealant	Beige	At HVAC, Rm 1	ND
N1	02	Sealant	Beige	At HVAC, Rm 2	ND
Q1	04	Carpet mastic	Yellow mastic	Room 4	ND
Q1	07	Carpet mastic	Yellow mastic with tan tile and black mastic beneath carpet	Room 7	Carpet and mastic = ND Tan tile and residual mastic = 5%
Q1	12	Carpet mastic	Yellow mastic with tan tile and black mastic beneath carpet	Room 12	Carpet and mastic = ND Tan tile and residual mastic = 5%
Q1	14	Carpet mastic	Yellow mastic with tan tile and black mastic beneath carpet	Room 14	Carpet and mastic = ND Tan tile and residual mastic = 5%
Q1	18	Carpet mastic	Yellow mastic with tan tile and black mastic beneath carpet	Room 18	Carpet and mastic = ND Tan tile and residual mastic = 5%
Q1	15	Carpet mastic	Yellow mastic with tan tile and black mastic beneath carpet	Room 15	Carpet and mastic = ND Tan tile and residual mastic = 5%
Q1	01	Carpet mastic	Yellow mastic with tan tile and black mastic beneath carpet	Room 1	Carpet and mastic = ND Tan tile and residual mastic = 5%
NC	DTE:	 ND = No asbestos detected by All reported asbestos is chrysoti 	laboratory analysis; "None Detectec le unless noted otherwise.]"	

Lead Sampling Plan



Lead Paint Testing and Sampling Table

Test #	Room	Component	Substrate	Color	Condition	Lead Result (mg/cm2)
173		Door casing	Wood	White	Intact/good	0
174	. 2	Wall	Sheetrock	White	Intact/good	0
175		HVAC case	Metal	Beige	Intact/good	0
176		Wall trim	Wood	White	Intact/good	0.247
177	2, exterior	Wall	Stucco	Tan	Intact/good	0.044
178		Wall	Stucco	Tan	Intact/good	0.035
179		Wall casing	Wood	White	Intact/good	0
180	3	Wall trim	Wood	White	Intact/good	0
181		Wall	Sheetrock	Beige	Intact/good	0.171
182		Book case/shelf	Wood	Beige	Intact/good	0.374
183	5	Wall	Sheetrock	Beige	Intact/good	0.101
184	5	HVAC case	Metal	Beige	Intact/good	0
185		Wall trim	Wood	White	Intact/good	0
186		Wall	Wood	White	Intact/good	0
187	4, exterior	Wall trim	Metal	White	Intact/good	0.973
188		Wall trim	Wood	White	Intact/good	0.877
189	6	Wall	Sheetrock	Gray	Intact/good	0
190	6A	Wall	Sheetrock	White	Intact/good	0
191	11	Wall trim	Wood	White	Intact/good	0
192		HVAC case	Metal	Beige	Intact/good	0
193		Wall	Sheetrock	Beige	Intact/good	0.122
194		HVAC case	Metal	Beige	Intact/good	0
195		Wall	Sheetrock	Beige	Intact/good	0.105
196	12	Wall trim	Wood	Beige	Intact/good	0
197		HVAC case	Metal	Beige	Intact/good	0
198	-	Wall	Sheetrock	Beige	Intact/good	0.110
199	14	HVAC case	Metal	Beige	Intact/good	0
200		Wall trim	Wood	Beige	Intact/good	0
201	-	Wall	Wood	Beige	Intact/good	0
202	20	HVAC case	Metal	Beige	Intact/good	0
203		Window sill	Wood	Beige	Intact/good	<mark>3.0</mark> 8
204		Wall	Wood	White	Intact/good	0
205	19	HVAC case	Metal	Beige	Intact/good	0
206		Wall trim	Wood	Beige	Intact/good	0.113
207	_	Window sill	Wood	Beige	Intact/good	<mark>2.3</mark> 6
208	1 <mark>8</mark>	Window sill	Wood	Beige	Intact/good	<mark>3.1</mark> 7
209	18, exterior	Wall	Stucco	Tan	Intact/good	0

Test #	Room	Component	Substrate	Color	Condition	Lead Result (mg/cm2)
210	17 ovtorior	Wall	Wood	White	Intact/good	0
211		Wall trim	Wood	White	Intact/good	<mark>3.8</mark> 0
212	<mark>17</mark>	Window sill	Wood	White	Intact/good	<mark>3.71</mark>
NOTE:	 Bold represents component is considered lead based paint. Lead-based paint (LBP) is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%). 					



LEAD HAZARD EVALUATION REPORT

Section 1 — Date of Lead Hazard Evaluation 7/1/2021								
Section 2 — Type of Lead Hazard Evaluation (Check one box only)								
X Lead Inspection Risk assessment Clearance Inspection Other (specify)								
Section 3 – Structure Whe	re Lead Hazard Evaluation	Was Conducted						
Address [number, street, apartme	ent (if applicable)]	City	County	Zip Code				
2619 Dolores Street		San Mateo	San Mateo	94403				
Construction date (year) of structure	Type of structure	X School or daycare	Children living in structure?					
unknown	Single family dwelling	Other	Don't Know					
Section 4 – Owner of Strue	cture (if business/agency, li	st contact person)						
Name		Те	elephone number					
San Mateo Foster City S	School District, Kevin Sar	nders	650-655-3331					
Address [number, street, apartme	ent (if applicable)]	City	State	Zip Code				
1170 Chess Drive		Foster City	CA	94404				
Section 5 — Results of Lea	d Hazard Evaluation (check	all that apply)						
No lead-based paint detec	ted X Intact lead-ba	used paint detected	Deteriorated lead-base	ed paint detected				
No lead hazards detected	Lead-contaminated dust	found 📃 Lead-contamir	nated soil found 📃 Othe	r				
Section 6 — Individual Con	ducting Lead Hazard Evalu	ation						
Name		Т	elephone number					
Chris Smith			707-999-5234					
Address [number, street, apartme	ent (if applicable)]	City	State	Zip Code				
419 Mason Street		Vacaville	CA	95688				
CDPH certification number	Sign	ature		Date				
00006885/0006884 8/5/2021								
Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)								
Erica Sattar, 00003791								
Section 7 – Attachments								
 A. A foundation diagram or sl lead-based paint; B. Each testing method, devi 	ketch of the structure indicatin ce, and sampling procedure ι	g the specifc locations of e ised;	ach lead hazard or presen	ice of				

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

Application Number: 01-119554 DSA File Number: 41-26

KEV TO COLLIMNIS

School Name: Meadow Heights Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-05-29 15:55:06

2019 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2019 CBC).

****NOTE:** Undefined section and table references found in this document are from the CBC, or California Building Code.

1. TYPE	2. PERFORMED BY			
Continuous – Indicates that a continuous special inspection is required	GE – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.			
Periodic – Indicates that a periodic special inspection is required	LOR – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.			
	PI – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.			
Test – Indicates that a test is required	SI – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.			

Application Number: 01-119554 DSA File Number: 41-26 School Name: Meadow Heights Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-05-29 15:55:06

Geotechnical Reports: Project does NOT have and does NOT require a geotechnical report

1. GENERAL:	Table 1705A.6			
Test or Special Inspection	Туре	Performed By	Code References and Notes	
 a. Verify that: Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations. Foundation excavations are extended to proper depth and have reached proper material. Materials below footings are adequate to achieve the design bearing capacity. 	See Notes	PI	Refer to specific items identified in the Appendix listing exemptions for limitations. Placement of controlled fill exceeding 12" depth under foundations is not permitted without a geotechnical report.	

2. SOIL COMPACTION AND FILL:	Table 1705A.6	Table 1705A.6		
Test or Special Inspection	Туре	Performed By	Code References and Notes	
a. Verify use of proper materials, densities and inspect lift thicknesses, placement and compaction during placement of fill.	Continuous	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	
b. Compaction testing.	Test	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	

3. DRIVEN DEEP FOUNDATIONS (PILES):

Table 1705A.7

DGS DSA 103-19 (Revised 07/16/2020)

Application Number: 01-119554 DSA File Number: 41-26 School Name: Meadow Heights Elementary School Increment Number:

Test or Special Inspection	Туре	Performed By	Code References and Notes	
a. Verify pile materials, sizes and lengths comply with the requirements.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.	
b. Determine capacities of test piles and conduct additional load tests as required.	Test	LOR*	* Under the supervision of the geotechnical engineer.	
c. Inspect driving operations and maintain complete and accurate records for each pile.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.	
d. Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.	
e. Steel piles.	Provide tests and inspections per STEEL section below.			
f. Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.			
g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.	

4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):	Table 1705A.8		
 Test or Special Inspection	Туре	Performed By	Code References and Notes

Application Number: 01-119554 DSA File Number: 41-26 School Name: Meadow Heights Elementary School Increment Number:

a. Inspect drilling operations and maintain complete and accurate records for each pier.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
b. Verify pier locations, diameters, plumbness and lengths.Record concrete or grout volumes.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
c. Concrete piers.	Provide tests and inspections per CONCRETE section below.		

5. RETAINING WALLS:					
Test or Special Inspection	Туре	Performed By	Code References and Notes		
a. Placement, compaction and inspection of backfill.	Continuous	GE*	1705A.6.1. * By geotechnical engineer or his or her qualified representative. (See Section 2 above).		
b. Placement of soil reinforcement and/or drainage devices.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.		
c. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. See DSA IR 16-3.		
d. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.				
e. Masonry retaining walls.	Provide tests a	Provide tests and inspections per MASONRY section below.			

6. OTHER SOILS:			
Test or Special Inspection	Туре	Performed By	Code References and Notes

Application Number: 01-119554 DSA File Number: 41-26 School Name: Meadow Heights Elementary School Increment Number:

a. Soil Improvements	Test	GE*	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS for final acceptance. * By geotechnical engineer or his or her qualified representative.
b. Inspection of Soil Improvements	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
C.			

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119554	Meadow Heights Elementary School	San Mateo-Foster City School District
DSA File Number:	Increment Number:	Date Created:
41-26		2021-05-29 15:55:06

	7. CAST-IN-PLACE CONCRETE			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
Mate	rial Verification and Testing:			
	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1.
V	b. Identifiy, sample, and test reinforcing steel.	Test	LOR	1910A.2 ; ACI 318-14 Section 26.6.1.2; DSA IR 17-10. (See Appendix for exemptions.)
	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-14 Sections 26.5 & 26.12.
V	d. Test concrete (f'c).	Test	LOR	1905A.1.15 ; ACI 318-14 Section 26.12.
Inspe	ction:			
	e. Batch plant inspection: Eliminated	See Notes	SI	Default of 'Continuous' per 1705A.3.3 . If approved by DSA, batch plant inspection may be reduced to ' Periodic' subject to requirements in Section 1705A.3.3.1 , or eliminated per 1705A.3.3.2 . (See Appendix for exemptions.)
	f. Welding of reinforcing steel.	Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below.		

8. PRESTRESSED / POST-TENSIONED CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119554	Meadow Heights Elementary School	San Mateo-Foster City School District
DSA File Number:	Increment Number:	Date Created:
41-26		2021-05-29 15:55:06

Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.
c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	Periodic	SI	Table 1705A.3 Item 11. Special inspector to verify specified concretestrength test prior to stressing.
d . Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	1705A.3.4, Table 1705A.3 Item 9; ACI 318-14 Section 26.13

9. PRECAST CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):					
Test or Special Inspection	Туре	Performed By	Code References and Notes		
a. Inspect fabrication of precast concrete members.	Continuous	SI	ACI 318-14 Section 26.13.		
b. Inspect erection of precast concrete members.	Periodic	SI*	Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA.		

10. SHOTCRETE (in addition to Cast-in-Place Concrete tests and inspections):				
Test or Special Inspection	Туре	Performed By	Code References and Notes	

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119554	Meadow Heights Elementary School	San Mateo-Foster City School District
DSA File Number:	Increment Number:	Date Created:
41-26		2021-05-29 15:55:06

a. Inspect shotcrete placement for proper application techniques.	Continuous	SI	1705A.19, Table 1705A.3 Item 7, 1908A.6, 1908A.7, 1908A.8, 1908A.9, 1908A.11, 1908A.12. See ACI 506.2-13 Section 3.4, ACI 506R-16.
b. Sample and test shotcrete (f [*] c).	Test	LOR	1908A.5, 1908A.10.

	11. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
	a . Inspect installation of post-installed anchors	See Notes	SI*	1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
V	b. Test post-installed anchors.	Test	LOR	1910A.5. (See Appendix for exemptions.)

12. OTHER CONCRETE:			
Test or Special Inspection	Туре	Performed By	Code References and Notes
а.			

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:S01-119554MDSA File Number:I41-26I

School Name: Meadow Heights Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-05-29 15:55:06

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. Items marked as exempt shall be identified on the approved construction documents. The project inspector shall verify all construction complies with the approved construction documents.

	SOILS:
	1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
V	2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.

	CONCRETE/MASONRY:
V	 Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."
\checkmark	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:School Name:01-119554Meadow Heights Elementary SchoolDSA File Number:Increment Number:41-2641-26

\checkmark	3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
\checkmark	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.
V	5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

	Welding:
	1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
	2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.
	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
M	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).
V	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:School N01-119554MeadowDSA File Number:Increment41-2641-26

School Name: Meadow Heights Elementary School Increment Number:

	6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category).
\checkmark	7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) \leq 4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.

Application Number: 01-119554 DSA File Number: 41-26 School Name: Meadow Heights Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-05-29 15:55:06

Name of Architect or Engineer in general responsible charge:				
Name of Structural Engineer (When structural design has be	een delegated):			
Gokhan Akalan				
Signature of Architect or Structural Engineer:	Date:			
Salthurk	05/29/21			

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

DSA STAMP						
IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT						
APP: 01-119554 INC: REVIEWED FOR SS FLS ACS DATE: 09/21/2021						

DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

Application Number: 01-119554 DSA File Number: 41-26 School Name: Meadow Heights Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-05-29 15:55:06

1. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291

2. Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292





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	CSW/Stuber-Stroch Engineering Grou Civil & Structural Engineers Surveying & Mapping Environmen Land Planning Construction Management	I P, INC. Ital Planning	County	San Mateo	TOPO
	45 Leveroni Courttel:415Novato, CA 94949fax:415http://www.cswst2.comfax:415	5.883.9850 5.883.9835 © 2014	State	California	SAN MATEO ELEMENTAR



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ABBREVIATIONS

IC	ASPHALTIC CONCRETE	HV	HIGH VOLTAGE
BFP	BACK FLOW PREVENTER	HYD	HYDRANT
CL	CENTER LINE	IRR	IRRIGATION
CONC	CONCRETE	L	LIGHTING CONDUIT
DEP	DEPRESSED	LP	LOW POINT
-	ELECTRIC	RR	RAILROAD
OC	EDGE OF CONCRETE	SD	STORM DRAIN
ΓP	EDGE OF PAVEMENT	SL	STREET LIGHT
LEC	ELECTRICAL	SS	SANITARY SEWER
DC	FIRE DEPARTMENT CONNECTION	TC	TOP OF CURB
Н	FIRE HYDRANT	TELE	TELEPHONE
L	FLOW LINE	TYP	TYPICAL
;	GAS	TW	TOP OF WALL
SV .	GAS VALVE	W	WATER
IP	HIGH POINT	WV	WATER VALVE

NOTES

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- 1. DISTANCES SHOWN ARE IN FEET AND DECIMALS THEREOF.
- 2. HORIZONTAL DATUM IS CALIFORNIA REAL TIME NETWORK (CRTN), EPOCH 2017.5, P178 SAN MATEO CCCN200.
- 3. VERTICAL DATUM IS NORTH AMERICAN VERTICAL DATUM OF 1899 (NAVD88).
- 4. SUPPLEMENTAL TOPOGRAPHY SHOWN WAS PERFORMED BY FIELD SURVEY ON SEPTEMBER 7, 2021.
- 5. BOUNDARY SHOWN PER RETRACEMENT OF MEADOW HEIGHTS SUBDIVISION NO 1 & 4. MONUMENTS NOT RECOVERED, BUT LOCATING CURB ALIGNMENTS FIT RECORD DISTANCES OF LOTS SHOWN HEREON.
- UNDERGROUND UTILITY INFORMATION SHOWN HEREON IS APPROXIMATE. ACTUAL LOCATIONS, 6. ROUTE, TYPE, ETC. OF UNDERGROUND UTILITIES MAY VARY SIGNIFICANTLY FROM WHAT IS SHOWN HEREON. CONTRACTOR SHOULD VERIFY UTILITY LOCATIONS IN THE FIELD BY POT HOLING PRIOR TO CONSTRUCTION.

LEGEND

			BUILDING
	100		CONTOUR MAJOR (5' INTERVAL
	99		CONTOUR MINOR (1' INTERVAL
×××××	××××	XX	FENCE
			GRADE BREAK LINE
			TOE OF BANK
			TOP OF BANK
			RETAINING WALL
IRR	IRR	IRR	IRRIGATION LINE
	W	— W —	WATER LINE
SD	SD		STORM DRAIN
			BOUNDARY
			BOUNDARY RIGHT OF WAY

DOLORES STREET

POGRAPHIC MAP

RY SCHOOL DISTRICT (APN:039-125-150)



Sheet	2/	2
Scale:	1" = 1	0'
Date:	09/21/	21
Project Nu	umber:	2130037

Plan File:

This Hazardous Material Abatement & Related Construction Specification 02 80 00 was prepared for San Mateo Foster City School District in support of the HVAC and Power Upgrade Project for the following schools:

School Name	Address
Abbott Middle School	600 36th Avenue, San Mateo, CA 94403
Borel Middle School	425 Barenson Avenue, San Mateo, CA 94403
College Park	715 Indian Avenue, San Mateo, CA 94402
Laurel Elementary	316 36th Avenue, San Mateo, CA 94403
Meadow Heights	2619 Dolores Street, San Mateo, CA 94403
North Shoreview	1301 Cypress Avenue, San Mateo, CA 94401
George Hall	130 San Miguel Way, San Mateo, CA 94403

Prepared for:

San Mateo Foster City School District 1170 Chess Drive Foster City, CA 94404

Prepared by:



419 Mason Street Vacaville, CA 95688

SECTION 02 80 00

HAZARDOUS MATERIAL ABATEMENT & RELATED CONSTRUCTION

PART 1. GENERAL

1.1 <u>SCOPE</u>

A. The work of this section includes removal, clean up and disposal of the below listed hazardous materials prior to the general building and structure renovation and/or demolition work of the project. These work scope items are generally described as follows for the buildings and structures indicated. Contractor is to review all demolition/construction project plans and field verify location and extent of hazardous materials-related work.

1. Asbestos-Containing Materials – Remove all:

a. Abbott Middle School

- Plaster, < 1% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Category II ACM, approximately 5 square feet may be impacted at each work location
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location

b. Borel Middle School

- Window putty at window HVAC unit, 2% asbestos, Category II ACM, approximately 2 square feet limited to Room 34
- Mastic Associate with tack board/white board/chalkboard, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Roof mastic, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work location

c. College Park Elementary School

- Texture coat associated with sheetrock above acoustical ceiling panel, < 1 - 2% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Regulated Asbestos Containing Material (RACM), approximately 5 square feet may be impacted at each work location, however may not be impacted with the given scope of work
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Roof shingle & roof mastics, assumed asbestos, located throughout the roof system, non-friable Category I ACM, approximately 5 square feet may be impacted at each work location

d. George Hall Elementary School

- Stucco, < 1% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Category II ACM, approximately 2 square feet may be impacted at each work location, however this material may not be impacted by scheduled work
- Floor tile beneath existing tile and/or carpet, 2% asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 4. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, however this material may not be impacted by scheduled work

e. Laurel Elementary School

- 1. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- 3. Roof field shingle mastic (below the top layer), 6% asbestos, located throughout the roof system, non-friable Category I ACM, found at one sample location and assumed throughout homogenous roofing system of Buildings A, B, C, D, approximately 41,150 square feet

f. Meadow Heights Elementary School

- Floor tile, tan tile beneath existing flooring, 5% asbestos, with residual mastic (insufficient material to analyze) Category I non-friable ACM, approximately 5 square feet to be impacted at each work area location
- 2. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work area location
- 3. Roof shingles, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location
- Roof mastics, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location

g. North Shoreview Montessori School

- Joint compound associated with sheetrock wall system, joint compound = 2% asbestos, sheetrock = no asbestos detected, Regulated Asbestos Containing Material (RACM) - friable asbestos containing material, approximately 15 square feet may be impacted at each work location, refer to project drawings
- 2. Residual floor tile mastic, found in one of seven samples collected at Room 18, 3% asbestos approximately 8 square feet at each work location may be impacted, refer to project drawings
- 3. Stucco, <1% asbestos assumed >1% asbestos without point count analysis, Category II non-friable asbestos containing material, quantity impacted is dependent on the scope of work, refer to project drawings
- 4. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location, may not be impacted.
- 5. Mastic associated with acoustic ceiling tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, although material may not be impacted by scope of work
- 6. Roof field, shingle with associated mastic (assumed asbestos, this material may be sampled during construction if impacted to prove no asbestos by laboratory analysis, non-friable Category I ACM, quantity impacted is dependent on the scope of work, refer to project drawings

2. Lead-Based Paint (LBP). Remove loose and peeling LBP where occurs on lead-based components including:

a. Abbott Middle School

- 1. Exterior plexiglas windows/window covers (wall panels)
- 2. Exterior metal window frames
- 3. Exterior wood window trims
- 4. Window panels (windows/window covers)

b. Borel Middle School

1. Exterior wood window frames

c. George Hall Elementary School

- 1. Interior wood window sills
- 2. Interior wood wall trim
- 3. Exterior metal collars
- 4. Exterior metal equipment

d. Laurel Elementary School

- 1. Exterior wood window sills
- 2. Exterior wood window casings
- 3. Exterior metal roof collars
- 4. Exterior metal roof HVAC/mechanical equipment

e. Meadow Heights Elementary School

- 1. Interior wood window sills
- 2. Exterior wood wall trim

f. North Shoreview Montessori School

- 1. Interior wood lower walls
- 2. Exterior metal window trims
- 3. Exterior metal wall trims
- 3. Presumed Polychlorinated Biphenyl (PCB) lighting ballasts. Remove presumed PCB items, verify PCB content by labeling or manufacturing information and dispose of as PCB items unless proven non-PCB and/or labeled 'PCB FREE'. Recycle non-PCB components to extent possible.
- 4. Universal Waste including lighting tubes and exterior non-incandescent lighting. Remove and properly recycle.
- 5. Chlorofluorocarbons (CFCs) coolant gases in air conditioning units must be properly extracted and recycled prior to unit removal and disposal by a qualified hazardous materials disposal contractor using EPA certified Refrigerant Re-claimer for the removal and recycling of the CFC gases.
- B. The Contractor's work scope includes all removal, waste testing, and disposal or recycling costs associated with removed materials and removal operations for this project.

- C. Subsurface concrete piping shall be presumed to be asbestos cement (Transite®).
- D. The Contractor shall make any necessary arrangements for temporary water and power necessary to conduct the work of this project. Power and water are available on site but will require Contractor to make any necessary temporary connections. Coordinate schedule and phasing with architectural.
- E. Contractor shall review the demolition/construction project plans, reports, related documents identified herein, and shall visit the site during the scheduled bid walk and field verify the location and extent of hazardous materials removal work prior to submitting bid.
- F. The Contractor's work scope includes all removal, waste testing, and disposal and/or recycling of removed and demolished materials. The Contractor is responsible for all costs associated with removed hazardous materials and removal/demolition operations during abatement, disposal, and testing for waste stream during renovation and demolition work.
 - 1. Removed friable asbestos, including but not limited to texture coat and doing compound associated with sheetrock/wallboard and mechanically removed floor tile and flooring mastic, is to be disposed of as hazardous asbestos waste. Non-friable asbestos materials removed in a non-friable state shall be disposed of as a non-hazardous asbestos waste at an asbestos permitted landfill.
 - 2. Lead debris resulting from removal of loose LBP prior to demolition shall be disposed of as lead hazardous waste.
 - 3. PCB ballasts are to be disposed of as hazardous PCB wastes at a Class I landfill or permitted PCB incineration facility.
 - 4. All remaining hazardous materials wastes, including lighting tubes & lamps, batteries, refrigerants/coolants, and other universal wastes are to be recycled by a permitted facility or disposed of as hazardous wastes as it pertains to this project.
- G. The Contractor's work scope also includes removal of loose LBP and all required lead-related protective measures for Cal/OSHA, CDPH, and Cal/EPA compliance associated with renovation/demolition of the buildings and associated structures or other components on this site.
- H. The Contractors shall be responsible for all agency permits, notices, and fees required to conduct the abatement and demolition and shall be responsible for all costs of removal, demolition, waste characterization and profiling, and disposal associated with abatement and demolition.

1.2. <u>RELATED DOCUMENTS / WORK IN OTHER SECTIONS</u>

- A. HVAC and Power Upgrade Project, Hazardous Materials Survey Reports, prepared for each school by Znap Fly.
- B. Project Drawings.
- C. All other sections of the specifications.

1.3. <u>REFERENCES</u>

- A. General: Codes, regulations, and references to hazardous materials abatement work include, but are not limited to the most current versions of the following:
 - 1. California Code of Regulations (CCR):
 - a. Title 8, Article 2.5 Registration Asbestos-Related Work
 - b. Title 8, Section 1529 Construction Safety Orders, Asbestos Regulations
 - c. Title 8, Section 1531 Construction Safety Orders, Respiratory Protection
 - d. Title 8, Section 1532.1 Construction Safety Orders, Lead in Construction
 - e. Title 17, Div. 1, Ch. 8 Accreditation, Certification and Work Practices for Lead-Based Paint and Lead Hazards
 - f. Title 22, Div. 4.5 Environmental Health Standards for Management of Hazardous Waste
 - g. Title 22, Div. 4.5, Ch 23 Universal Waste Rule
 - 2. Bay Area Air Quality Management District (BAAQMD):
 - a. Regulation 11 Hazardous pollutants Rule 2 Asbestos Demolition, Renovation and Manufacturing
 - 3. Other Local Regulations
 - a. California Health and Safety Code 25249-25249.13
 - b. California Health and Safety Code 25915-25919.7

1.4. <u>DEFINITIONS</u>

- A. Definitions specific to Work of this Section.
 - 1. Abatement Procedures to control airborne contaminate and other releases from hazardous material-containing building materials. Includes removal, repair, encapsulation, and enclosure.
 - 2. Airlock A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area.

- 3. Air Monitoring The processing of measuring the air contaminants such as asbestos or lead for measured volume of air collected over the specific period of time being monitored.
- 4. Air Sampling Professional The professional contracted or employed to supervise air monitoring and analysis schemes. This individual is also responsible for recognition of technical deficiencies in Worker protection equipment and procedures during both planning and on-site phases of an abatement project.
- 5. Amended Water A water to which a surfactant has been added.
- 6. Asbestos The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.
- 7. Asbestos Containing Construction Material (ACCM) Any construction material with asbestos content of 0.1 percent or greater by weight.
- 8. Asbestos Containing Material (ACM) Any material which contains over one percent asbestos as determined by current EPA bulk sample analysis method.
- 9. Asbestos Fibers This expression refers to asbestos fibers longer than five micrometers with an aspect ratio of 3:1 or larger under phase contrast microscopy (PCM) analytical procedures.
- 10. Authorized Visitor Any Owner Representative, Consultant or Agent and any representative of a regulatory of other agency having jurisdiction over the project.
- 11. Certified Supervisor An individual who is capable of identifying asbestos or lead hazards in the workplace and who has sufficient experience and authority to take prompt corrective measures to eliminate them. In addition, the Certified Supervisor is responsible for conducting and approving all required inspections as specified. Also known as the "Competent Person."
- 12. Class I Asbestos Removal Class I Asbestos work means activities involving the removal of thermal system insulation (TSI) and surfacing ACM.
- 13. Class II Asbestos Work Class II Asbestos Work means activities associated with removal of any asbestos containing material that is not a Class I surfacing material or thermal system insulation.
- 14. Clean Room An uncontaminated area or room that is a part of the Worker decontamination enclosure with provisions for storage of Workers' street clothes and protective equipment.
- 15. Critical Barrier A unit of temporary construction of air-tight and impermeable barrier which provides the only separation between a contained asbestos Work Area and an adjacent, potentially occupied area.
- 16. Decontamination Enclosure System A series of connected rooms, with air-tight doorways between any two adjacent rooms, for the

decontamination of Workers and of materials and equipment. A decontamination enclosure system always contains at least one airlock.

- 17. Differential Pressure Equipment A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contaminated area from adjacent uncontaminated areas. Also referred to as HEPA Exhaust Units or Negative Pressure Units (NPUs).
- 18. Encapsulant (sealant) A liquid material which can be applied to asbestos-containing material or surface and which controls the possible release of asbestos fiber from the material or surface by creating a membrane over the surface (bridging encapsulant), or by penetrating into the material and binding its components together (penetrating encapsulant), or by locking down invisible fibers (lockdown encapsulant).
- 19. Fluorescent Light Ballast (FLB) A device that electrically controls fluorescent light fixtures. Most existing FLBs include a capacitor containing 0.1 kilograms or less of dielectric fluid that may contain PCBs. Ballasts manufactured prior to 1979 may contain PCB capacitors. More recently, electronic ballasts have come into use that do not have dielectric fluids or PCBs. Ballasts with PCB capacitors also contain asphalt potting compounds which are likely to contain PCBs.
- 20. Hazardous Materials Hazardous materials include, but are not limited to: asbestos containing materials, lead and lead-based paint, mercury, PCB, coolant gases, universal wastes, solvents, fuels and other chemical products or wastes.
- 21. HEPA Filter A high-efficiency particulate absolute (HEPA) filter capable of trapping and retaining 99.97 percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- 22. HEPA Vacuum Equipment Vacuuming equipment with a HEPA (UL 586 labeled) filter system.
- 23. Lead-Based Paint (LBP) Lead-Containing Paint (LCP) that is at least 5,000 ppm, 0.5% lead by weight, or 1.0 milligrams of lead per square centimeter of surface area (as measured by XRF lead analyzer). Note: any untested paints or coatings must be presumed to be LBP.
- 24. Lead Hazardous Waste Lead-based paint waste or other debris that has been classified as hazardous due to the characteristic of toxicity, as determined by testing in accordance with the California Code of Regulations, Title 22, Division 4, Chapter 30, Article 11. A hazardous waste is any substance(s) listed in Article 11 Section 66699 at concentrations greater than its listed Soluble Threshold Limit Concentration (STLC) or Total Threshold Limit Concentration (TTLC). The STLC for lead is 5.0 parts per million (ppm) and the TTLC for lead is 1,000 ppm lead. If either of these values are exceeded, the lead related waste will need to be further characterized by the Toxicity Characteristic

Leaching Procedure (TCLP) in accordance with 40 CFR 261 and possibly other tests prior to disposal as a hazardous waste. Waste testing for proper disposal is the responsibility of the Contractor.

- 25. Negative Pressure Enclosure (NPE) An enclosed or contained area of any configuration constructed of polyethylene sheeting with a minimum of four (4) air changes per hour and a negative pressure of -0.022 inches of water as compared to surrounding areas outside the enclosure. NPE must be maintained until post abatement sampling.
- 26. Non-Friable Asbestos Material Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating binder, or other material so that the asbestos is well bound and will not release fibers in excess of the asbestos control limit during any appropriate use, handling, demolition, storage, transportation, processing, or disposal.
- 27. Non-hazardous Asbestos Waste Wastes which are non-friable and/or are below one percent asbestos by weight as determined by objective testing. These wastes require OSHA Asbestos Hazard warning labels and disposal at landfills that accept such asbestos wastes.
- 28. Observation Service Environmental Consultant hired to conduct compliance observation and air monitoring services on behalf of the Owner. Sometimes referred to as the Owner's Observation Service.
- 29. Owner The San Mateo Foster City School District and any of its designated representatives for this project.
- **30**. Owner's Representative Representative(s) the District (Owner) has assigned to manage, oversee, and inspect this project. This may include an architectural and/or construction management consultant hired by the Owner to oversee the project.
- 31. Polychlorinated Biphenyl (PCB) PCB's are any chemical substances consisting of the biphenyl molecule chlorinated to varying degrees or any combination of such molecules. PCBs have had a wide variety of uses in the past including dielectric fluids in capacitors. PCBs are clear to yellow oily substances which are toxic to the liver and reproductive system. PCBs are also suspect human carcinogens.
- **32**. PCB Ballast An FLB that is known or suspected to contain PCBs. All FLBs must be considered PCB ballasts unless they are:
 - a. Labeled or marked "No PCB" by the manufacturer.
 - b. Manufactured in 1979 or later as indicated and verified on a date stamp or code, located on the ballast.
 - c. Labeled as "Electronic Ballasts" by the manufacturer.
 - d. General Electric HDF Ballasts manufactured from 1977 to 1978 and which have a "W" added to their catalogue number on the label of the ballast.
- 33. Removal Procedures necessary to remove hazardous materials such as, but not limited to, asbestos or lead from designated areas and to

dispose of these materials at an acceptable properly permitted waste disposal site.

- **34**. Surfactant A chemical wetting agent added to water to improve penetration.
- 35. Universal Waste Certain common designated hazardous wastes that are required to be handled and disposed of or recycled in accordance with special rules. Includes fluorescent light tubes, HID lamps, sodium vapor lamps, mercury switches, mercury thermostats, NiCad, Silver, & Mercury & other batteries (often used in building alarms and emergency systems), and other items.
- 36. Visually Clean Free of visible dust, paint chips, dirt, debris, or films removable by vacuuming or wet cleaning methods specified. For outside soil or ground cover areas, visually clean shall mean free of construction or paint debris, chips or dust distinguishable from the initial soil or ground conditions.
- **37**. Waste Generator Label Waste Generator label shall include the Generator's Name, ID Number, Address, and Waste Manifest Number.
- 38. Wet Cleaning The process of eliminating asbestos or lead contamination from building surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with water or water/ detergent solution, and by afterwards disposing of these cleaning tools and materials as contaminated waste.
- 39. Work Area Designated rooms, spaces, or areas of the project in which hazardous material removal actions are to be undertaken or which may become contaminated as a result of such removal actions during the process and prior to final clean-up and decontamination. A contained Work Area is a Work Area that has been sealed and equipped with a Decontamination Enclosure System. Also referred to as a "Regulated Area."
- 40. Worker Decontamination Enclosure System (Worker Decon) That portion of a Decontamination Enclosure System designed for controlled passage of workers, and other personnel and authorized visitors, typically consisting of a clean room, a shower room, and an equipment room.

1.5. <u>SUBMITTALS</u>

- A. General:
 - 1. Requirements are as set forth in the General Conditions documents (001 000 to 019 9999) that are prepared by aedis architects for items required to be submitted under this section.
 - 2. Submittals that are incomplete, disorganized, unreadable, or not project specific will be rejected.

- B. Pre-Start Submittal-Part A; Submit and obtain approval prior to starting on-site set-up for asbestos removal work. Submit the following:
 - 1. Licensing and Registration for Contractor or Subcontractor responsible for removal of hazardous materials. Submit copies of current and valid:
 - a. The Contractor's license and Contractor's asbestos certificate issued by the California State Contractor's Licensing Board (CSLB);
 - Registration for Asbestos-Related Work from the Division of Occupational Safety and Health in accordance with CCR, Title 8, Article 2.5 of the California Administrative Code and C-22 Asbestos Abatement Contractor in accordance with CCR, Title 16, Div 8, Article 3.
 - 2. Notifications, Communications, and Postings.
 - a. Submit copies of notifications to appropriate government agencies where required, including the following:

Division of Occupational Safety and Health 1065 East Hillsdale Blvd., Suite 110 Foster City, California 94404 (650) 573– 3812 Email: DOSHFC@dir.ca.gov Notifications shall be in accordance with the Title 8 CCR Section 341.9 for asbestos and Section 1532.1 for lead.

Bay Area Air Quality Management District (BAAQMD) Attn: Asbestos Section 375 Beale Street, Suite 600 San Francisco, California 94105 (415) 749-4900 Notifications shall be in accordance with the Regulation 11 Rule 2 for Asbestos.

- b. Copies of Government agency correspondence shall be included in the submittals.
- 3. Respiratory Protection Plan: Submit a written standard operating procedure governing selection, fit-testing, and use of respirators for asbestos and lead removal.
- 4. Detailed Work Plan: Submit a detailed work plan proposed for use in complying with the requirements of these specifications. The detailed work plan shall include, at a minimum, the following information:
 - a. Procedures: Job-specific procedures proposed for completing the scope of work outlined herein including: means of Work Area containment including barriers and other protective measures for
removal at each location; means for provision of decontamination units; removal methods to be employed;

- b. Detailed schedule with calendar dates showing all phases of work. Where scheduled start dates have not been confirmed, provide the number of consecutive work days to complete each phase of work.
- 5. Plan for personnel air monitoring required by law by the Contractor for Worker protection. The Plan shall include, but not be limited to the following:
 - Personnel Air Monitoring conducted in strict accordance with 8 CCR 1529. Include calibration data for the secondary standard to be used for air sampling pump calibration on-site. This data must be within six (6) months of the projected completion of this project.
 - b. Name, address and accreditation and/or certification of laboratory selected by the contractor to analyze personal air samples for workers.
- 6. Hazardous Waste Transporter. Submit name, address and EPA# for each transporter to be used.
- 7. Waste Disposal Sites: Submit name location, class, and EPA# for each waste disposal site to be used for asbestos, lead, PCB, and other hazardous wastes for this project.
- 8. Method of disposal (i.e., landfill or incineration) for PCB ballasts and PCB contaminated materials shall be indicated. List transporter and disposal site(s) and their respective EPA ID number(s).
- 9. Method of on-site storage and shipping for packaging to keep lighting tubes and lamps intact from removal until their delivery to a recycling facility.
- 10. Product Data: Manufacturers product data for all items required for complete and proper execution of the work, this includes product data for all items listed under Part 2 Products. Product data shall include manufacturing product data, specifications, samples and application instructions, material safety data sheet (MSDS), and other pertinent information as necessary.
- C. Pre-Start Submittal-Part B; Submit and obtain approval prior to any asbestos and/or lead removal work. Submit the following:
 - 1. Personnel Qualifications: Personnel documents required per this section shall be organized by individual employee and include the following information:
 - a. Personnel Training (asbestos)
 - 1. Competent Person/Supervisor: Submit a copy of current AHERA asbestos training certificates for the Contractor's

Competent Person and Quality Control Person documenting successful completion of a training course in asbestos abatement project supervision offered by a Cal/ OSHA accredited educational institution. Designate by name, the person who will act as the Certified Supervisor/ Competent Person and Qualified Person for the project.

- 2. Workers: Submit a copy of the current asbestos training certificates for the Contractor's asbestos abatement workers documenting successful completion of a training course in asbestos abatement for workers offered by an EPA accredited education institution.
- 3. For lead abatement or removal work, supervisors and workers shall have appropriate training and CDPH certification documentation. For lead related demolition work, comply with CAL/OSHA training and certification requirements as applicable and submit documentation.
- b. Medical Examination: Submit proof that personnel who will be performing asbestos-related work, lead related work, or otherwise wearing respirators shall have had medical examinations within the last 12 months in conformance with Title 8 CCR; Section 1529 asbestos, and furnish the results of each exam in the form of the physician's written opinion or approval with regard to worker fitness to wear a respirator and perform asbestos and lead work as applicable.
- c. Respirator fit tests: Submit proof that personnel who will be entering asbestos Work Areas have had a qualitative respiratory fit test performed within 12 months from the scheduled completion date of the project.
- 2. HEPA Filtration Certifications:
 - a. Provide third party test certificates for al Differential Pressure Equipment and HEPA Vacuums to be used on this project. Such certificates shall document that each item of equipment has been tested on-site prior to start-up and that the results have demonstrated that each HEPA equipment assembly meets the efficiency requirement for HEPA filtration as an installed system or unit of equipment.
 - b. All HEPA filtration testing must be conducted by challenging the installed filter system with 0.3 micrometer diameter particles using a dioctyl-phthalate (DOP) particle generator and appropriate aerosol measurement test equipment designed for this purpose. Alternate test methods may be accepted if certified to be equivalent. Test certificate stickers shall be placed on each machine tested and a copy of the testing certification shall be

submitted. The test result, date and time of testing, testing firm, and signature of qualified test technician shall be included on each certification along with equipment identification information.

- D. Daily & Other Progress Submittals: Submit the following within 24 hours following the completion of each Work Shift. The Contractor shall submit the following information to the Observation Service.
 - 1. A complete asbestos worker/employee roster for each work shift prior to the commencement of each shift.
 - 2. Work Area entry/exit logs completed for each Work Area and each Work Shift.
 - 3. Worker exposure ("OSHA") sample results for asbestos including eight (8) hour Time Weighted Average (TWA) sampling and 30-minute excursion limit sampling. Sample results must indicate the person sampled, description of work activity, start and stop times, liters per minute, total volume and laboratory result expressed as an eight-hour TWA or excursion limit sample.
 - 4. Waste Manifests:
 - a. Each time hazardous waste (asbestos, lead, PCB, etc) is picked up from the site the Contractor is responsible for preparing an accurate hazardous waste manifest, presenting the manifest to the Owner's Representative for review and signature, and submitting the generator and DTSC copies to the Owner's Representative.
 - b. Each time a non-hazardous asbestos waste is shipped, the Contractor shall submit the non-hazardous shipping manifests to the Owner's Representative for review and signature and provide the Owner's Representative a signed copy.
 - c. All asbestos and other hazardous material waste manifests are to be reviewed and signed by an Owner Representative.
 - d. All materials shipped for recycling (lighting tubes, mercury, etc.) shall be accompanied by a manifest prepared by the Contractor, review and signed by the Owner's Representative. A copy of the signed manifest shall be provided to the Owner Representative.
 - e. Land Disposal Restrictions: Submit a copy of the completed Notice and Certification with each Hazardous Waste Manifest for wastes intended for land disposal pursuant to Section 67740 of 22 CCR) signed by the co-generator to the Owner's Representative.
 - 5. Land Disposal Restrictions: Submit a copy of the completed Notice and Certification with each Hazardous Waste Manifest for wastes intended for land disposal pursuant to Section 67740 of 22 CCR) signed by the co-

generator to the San Mateo Foster City School District's Construction Supervisor.

- 6. Special Reports: (Submit to the Owner's Observation Service within 24 hours of occurrence.)
 - a. The Contractor shall complete a report of unusual events when an event of unusual significance occurs at the site including loss of negative pressure, power failures, breeches in containment, etc. This report shall include the date and time of the event, activities leading up to the event, a detailed account of the event, persons involved, corrective action taken, and action taken to prevent a reoccurrence.
 - b. The Contractor shall submit a detailed accident report in the event of an accident or injury at the site. This report shall include the date and time of the injured, persons involved, cause of injury, detailed description of loss or injury, response actions taken and action taken to prevent a reoccurrence.
- E. Close-Out Submittals:
 - 1. Within 10 days of completion of all hazardous material removal work, submit to the Owner's Observation Service:
 - a. One copy of all outstanding daily submittals;
 - b. One copy of each hazardous waste manifest and one copy of each non-hazardous asbestos waste manifest;
 - c. One copy of Work Area entry/exit logs completed for each Work Area and each Work Shift.

1.6. <u>CERTIFICATIONS</u>

- A. Inspection Certifications (Asbestos)
 - 1. Pre-Abatement Visual Inspection Forms and Final Visual Inspection and Post Abatement Certification Forms will be provided at the preconstruction start up meeting by the Observation Service.
 - 2. Pre-Abatement Visual Inspection: Upon inspection and approval of each Work Area by the Contractor's Certified Supervisor, a Pre-Visual Inspection Form shall be signed and submitted to the Observation Service for review and approval. The approved inspection form shall be considered notice to proceed with abatement operations within the Work Area.
 - 3. Final Visual Inspection and Post Abatement Certification: Upon completion of asbestos abatement and before encapsulation in each Work Area, the Contractor's Certified Supervisor shall thoroughly inspect the Work Area for completeness of work. The Contractor's Competent Person shall sign and submit a completed Final Visual Inspection and

Post Abatement Certification Form for review and approval by the Observation Service. The approved inspection form shall be considered notice to proceed with encapsulation.

1.7. <u>POSTINGS</u>

- A. Before the commencement of any asbestos related work at the site, Cal/OSHA warning signs in and around the Work Area to comply with Cal/OSHA regulations.
- B. Copies of the Contractor's SCLB license, Cal/OSHA registration certificate, temporary job-site notifications, pre-start LBP notifications to Cal/OSHA, local agency notifications, emergency exit diagram, emergency phone numbers, Cal/ OSHA poster on worker's rights, and worker's compensation poster shall be posted proximate to the entrance to each Work Area.
- C. The Contractor shall have at least one copy of the Contract Documents including project plans and specifications, and a current copy of 8 CCR 1529 & 1532.1.

PART 2. PRODUCTS

2.1. <u>GENERAL</u>

- A. Submit manufacturer's product data for all items to be used including the items listed below.
- B. All materials to be used on the project shall be new in original packages, containers, or bundles bearing the name of the manufacturer and the brand name. Used materials will not be permitted.

2.2. PROTECTIVE COVERING (PLASTIC SHEETING)

A. For standard containment and critical barrier usage: Fire Retardant Polyethylene sheets six (6) mil and four (4) mil in sizes to minimize frequency of joints, approved and listed by the State Fire Marshall per Section 13121 and/or 13144.1 of the California Health and Safety Code.

2.3. <u>TAPE, ADHESIVE, SEALANTS</u>

A. Duct tape two inches or wider, or equivalent, capable of sealing joints of adjacent sheets of plastic sheets and for attachment of plastic sheets to finished

or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions.

B. Spray adhesives for sealing polyethylene to polyethylene shall contain no methylene chloride compounds.

2.4. <u>PROTECTIVE PACKAGING</u>

- A. Appropriately labeled six (6) mil sealable polyethylene bags as a minimum.
- B. Appropriately labeled, impermeable drum containers with sealable lids.
- C. Bilingual labels (English and Spanish) on waste packages, contaminated material packages and other containers shall be in accordance with applicable Cal/EPA and Cal/OSHA standards.

2.5 WARNING LABELS AND SIGNS

- A. All warning signs and labels must meet all applicable regulatory requirements for wording, size of lettering, and use of language, pictographs, and graphics to effectively convey the warning. Additional requirements apply for hazardous waste containers and shipments for transportation to disposal sites.
- B. Lead Caution Signs must include phrase "WARNING, LEAD WORK AREA, POISON, NO SMOKING OR EATING" in minimum two-inch high letters. These shall be posted at each approach to each lead paint stabilization/surface preparation and manual demolition Work Area.
- C. Cal/OSHA Lead Warning Posters: "DANGER, LEAD WORK AREA, MAY DAMAGE FERTILITY OR THE UNBORN CHILD, CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM, DO NOT EAT, DRINK OR SMOKE IN THIS AREA" shall be posted at the entrance to each LBP stabilization/surface preparation and manual demolition Work Area.
- D. Asbestos Warning signs for Regulated Areas must contain the following wording:

DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA AUTHORIZED PERSONNEL ONLY

E. Labels for packaging and containers containing ACM waste must contain the following wording:

DANGER CONTAINS ASBESTOS FIBERS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS DO NOT BREATHE DUST AVOID CREATING DUST

2.6. <u>SURFACTANT</u>

A. Surfactant, or wetting agent, for amending water will be 50 percent polyethylene ether and 50 percent polyethylene ester, or equivalent, at a concentration of one ounce per five gallons of water.

2.7. <u>VENTILATION EQUIPMENT</u>

- A. Provide differential pressure equipment in areas as shown on Contractor's work plans. High-efficiency particulate absolute (HEPA) filtration systems shall be equipped with filtration equipment in compliance with ANSI Z9.2, local exhaust ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the work area. Differential pressure within the work area shall be maintained at negative 0.022 inches of water during abatement.
- B. Provide air filtration equipment with HEPA filtration system to cleanse air of particulate matter during abatement. Replace HEPA filters when filters become clogged with particulate matter. Provide enough air filtration devices within the work area to maintain fiber levels within the protection factors of workers' respirators.

2.8. <u>PERSONAL PROTECTIVE EQUIPMENT</u>

- A. Personal Protective Equipment shall comply with the requirements of 29 CFR 1910, Subpart 1 and 8CCR 1514, 1515, 1516, and 1517.
- B. Work clothes shall consist of impervious disposable, full-body coveralls, head covers, boots, rubber gloves, and work boots (or sneakers). Sleeves at wrists and cuffs at ankles shall be secure.
- C. Eye protection and hard hats shall be available and worn when required by applicable safety regulations and shall conform to ANSI 87.1 and 89.1.

D. Provide Authorized Visitors with suitable protection clothing, headgear, eye protection, and footwear whenever they enter the Work Area.

2.9. <u>RESPIRATORS</u>

- A. Provide all workers, foremen, superintendents, authorized visitors, and inspectors' personally-issued and marked, clean and sanitized respiratory equipment approved by NIOSH. When respirators with disposable filters are employed, provide sufficient filters for replacement as recommended by manufacturers or this specification. Selection of respirators shall be made according to the guidance of 8 CCR 1529 and 1532.1.
- B. The minimum respiratory protection required for this project is a half mask respirator as long as the airborne levels do not exceed one tenth of the applicable PEL established by regulation.

PART 3. EXECUTION

3.1. <u>PROJECT PROCEDURES</u>

- A. Prior to the start of on-site work, the Contractor shall hold an on-site start-up safety meeting for all of contractor and facility employees that addresses at least the following issues specific for the project.
 - 1. Safety and health hazards;
 - 2. Procedures and work practices;
 - 3. Respiratory protection and instruction; and
 - 4. Special conditions and/or work requirements.
- B. Worker Protection Procedures
 - 1. Provide Authorized Visitors with suitable protective clothing, respirators, headgear, eye protection, and footwear whenever they are required to enter the Work Area. All provided equipment shall be new or in good working condition and clean, sanitized, and inspected by a competent person since last use.
 - 2. Each Worker and Authorized Visitor shall, upon entering the job site: remove street clothes in the clean-change rooms and put on a respirator and clean protective clothing before entering the Work Area.
 - 3. Workers shall, each time they leave the Work Area, remove gross contamination from protective clothing before leaving the Work Area, proceed to the Equipment Room or decontamination area and remove protective clothing except respirators; still wearing the respirator, proceed to the showers or wash area, clean the outside of the respirator

with soap and water while showering; remove the respirator, and thoroughly shampoo and wash themselves.

- 4. Following washing and/or showering and drying off, each Worker shall proceed directly to the clean change room/area and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before re-entering the Work Area from the clean change room, each Worker and Authorized Visitor shall put on a clean respirator and shall dress in clean protective clothing.
- 5. Contaminated work footwear shall be stored in the Decontamination Area when not in use in the Work Area. Upon completion of abatement, dispose of footwear as contaminated waste.
- 6. Workers removing waste containers from the Equipment Decontamination Enclosure shall enter the Holding Area from outside wearing a respirator and dressed in clean disposable coveralls. No Worker shall use this system as a means to leave or enter the Wash Room or the Work Area.
- 7. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work Area.
- 8. Workers and Authorized Visitors with beards shall not enter the Work Area unless equipped with respirators approved for use with beards.

3.2. <u>COORDINATION REQUIREMENTS</u>

- A. Coordinate with the Observation Service and Owner's Representative the locations of the Worker Decontamination Unit, waste load out, staging areas, and emergency egress exits.
- B. Coordinate timing of waste bag-out and waste shipping activities with the Owner's Representative and Observation Service. All asbestos and hazardous waste manifests shall be signed by the owner or designated owners's representative. The Contractor shall be aware that these activities may need to take place during times when it is most convenient to the facility.
- C. Coordinate and provide to the Observation Service the required number of GFCI protected energized 110 Volt AC power outlets needed inside and outside each Work Area. These outlets shall be solely dedicated for the use of the Owner's Observation Service.

3.3. <u>PREPARATION</u>

- A. General Preparation Requirements for All Interior Work Areas. Not each area will require abatement of all materials. Each school differs. Refer to project plans/ drawings.
 - 1. Prior to Work Area set up and preparation, remove all movable objects that will not disturb existing ACM or asbestos contaminated materials in the process.
 - 2. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements and provide ground-fault interrupter circuits as power source for electrical equipment.
 - 3. Clean and decontaminate all accessible areas above ceiling prior to hazardous material remediation, demolition, and other construction activities.
 - 4. Install a Decontamination Enclosure System or equivalent prefabricated portable decontamination unit(s) as approved. This system will be the primary entrance and exit to the Work Area.
 - 5. Seal off all other accesses to the Work Area with hard barriers and polyethylene sheeting sealed with tape.
 - 6. Install Differential Pressure Equipment for all Class I and Class II Asbestos Removal Operations in accordance with the requirements herein. Establish a negative pressure of -0.022 inches water or greater inside the Work Area containment with respect to the outside and non-involved building areas.
 - 7. Install an adequate number of HEPA Units to obtain the required negative pressure continuously and achieve at least four (4) complete air changes per hour inside the containment.
 - 8. Conduct any required non-ACM selective demolition including demolition to reveal concealed ACM prior to starting ACM removal work to ensure such areas are prepared with additional critical barriers to ensure negative pressure can be maintained at a negative (-) 0.022 inches or better during asbestos removal.
 - 9. Pre-clean fixed objects and surfaces within the proposed Work Areas, using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclose with protective barriers. Protective barriers will consist of plastic sheeting and plywood as appropriate.
 - 10. Seal all remaining openings, including but limited to ducts, grills, diffusers, and any other penetrations of the Work Areas, with two (2) layers of six (6) mil polyethylene sheeting sealed with tape.
 - 11. Seal all joints of conduit, junction boxes, and ductwork with duct tape and plastic sheeting. Cover and protect during abatement.

- 12. Install Viewing Ports of size, quantity, and location to meet local AQMD/ APCD requirements. Where no requirements are specified, install an adequate number of windows to view the entire removal Work Areas as feasible.
- 13. Establish and maintain emergency and fire exits from each Work Area.
- B. Decontamination Enclosure System (General)
 - 1. Construct or establish Decontamination Enclosure System or area contiguous to the work area for proper decontamination of worker as they exit a Regulated Area or containment system.
 - 2. Provide separate designated areas or chambers for: removal of contaminated clothing prior to exiting the contaminated area; for washing or showering (as appropriate); and for donning clean protective clothing and equipment prior to re-entry. The decontamination system shall comply with applicable regulation taking into account the Cal/ OSHA asbestos removal work class as well as site conditions.
 - 3. In the event that the Decontamination Enclosure System is not contiguous with the Work Area, there must be at least an established area for removing and properly disposing of contaminated clothing and equipment, minimum amenities for washing hands, respirator and face, to allow exiting the work areas prior to going to a remote decontamination enclosure on site. Under these conditions, double suit procedures are required.
- C. Mini Containments
 - 1. The use of mini-containments shall be permitted only if entire removal can be completely contained by the enclosure or as needed to isolate the HVAC, Plumbing, Electrical or other system as part of localized preparatory activities.
 - 2. Mini-containments shall shall be constructed with rigid framing and shall have a minimum of one layer of 6 mil polyethylene sheeting sealed with tape.
 - 3. The mini-containment enclosure shall have a decontamination enclosure system in accordance with the requirements herein or as approved by the Observation Service.
 - 4. The The mini-containment enclosure shall be placed under negative pressure for the duration of work in the containment until final air clearance is obtained.
- D. Maintenance of Enclosure Systems
 - 1. Ensure that all barriers intact and are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

- 2. Visually inspect enclosures at the beginning of each work period and periodically throughout each shift. Inspection shall include, but not be limited to, the protective critical barriers and the worker Decon unit barriers, warning signage, and Work Area barriers or barricades.
- 3. Use smoke test methods to evaluate effectiveness of barriers prior to implementing asbestos removal and when directed by the Observation Service.
- 4. Ensure all negative pressure containment enclosures for regulated asbestos-containing material removal meet all BAAQMD requirements at all times from start up through completion and post abatement sampling.
- E. Asbestos, lead, and hazardous material removal work shall not commence until:
 - 1. Submittals as required herein have been reviewed and approved in writing by the Observation Service;
 - 2. Arrangements have been made for secure temporary storage of asbestos wastes and other hazardous wastes on-site and for disposal of such wastes at an acceptable permitted disposal sites;
 - 3. Work Areas and Decontamination Enclosure Systems (or equivalent) have been installed and approved and all parts of the building or facility required to remain in use are effectively segregated and isolated;
 - 4. Tools, equipment, and secure material waste receptors are on hand;
 - 5. Arrangements have been made for buildings' and Work Area security during removal operations including periods when no work is in progress such as off hours, weekends, and holidays; and
 - 6. Differential pressure systems, as required for interior asbestos removal, are installed, operating, and recording properly.

3.4. CLASS I & II ASBESTOS REMOVAL OPERATIONS

- A. General Requirements. Not each area will require abatement of all materials. Each school differs. Refer to project plans/drawings.
 - 1. Class I Asbestos Work is defined as removal of ACM that is a surfacing material or thermal system insulation. Class II Asbestos Work is defined as the removal of ACM that is not a surfacing material or thermal system insulation.
 - 2. The Class I Asbestos Work of this project includes but is not limited to removal of: non-friable ACM and PACM if made friable by removal process.
 - 3. The Class II Asbestos Work means activities involving removal of ACM which is not thermal system insulation or surfacing materials. For this project materials include, but is not limited to removal of the following

materials: wallboard, floor tile, roofing and siding shingles, and construction mastics.

- B. Class I & II Asbestos Work Preparation Requirements
 - 1. All interior work shall be conducted within negative pressure containments with contiguous decontamination units for worker enter & exit.
 - 2. Negative pressure shall be maintained at -0.025 inches of differential pressure (water column) or higher compared to the exterior pressure.
 - 3. All negative pressure exhaust units shall be HEPA filtered and exhausted to the building exterior. All HEPA exhaust units shall be DOP (or equivalent) tested on-site and certified to meet HEPA efficiency standards.
 - 4. Interior walls and other non-movable objects shall be covered with at least one layer of four (4) mil plastic sheeting. Wall covering may be reduced to 4' splash guards in Work Areas where glove bags or "cut, wrap, and remove" methods are the sole method used for pipe and fitting insulation removal.
 - 5. Floor areas shall be covered with two (2) layers of six (6) mil plastic sheeting unless glove bags and/or cut, wrap and remove methods for pipe insulation are used. Where glove bags and cut & wrap methods are used, six (6) mil plastic drop sheets extending at least 5 feet on each side of pipe at minimum are required.
- C. General Removal Procedures
 - 1. Spray asbestos materials with amended water, using only spray equipment capable of dispensing a fine mist application. Apply amended water sufficiently to wet material surfaces without causing excess dripping or pooling. Spray materials and Work Area repeatedly during work process to control airborne fiber levels.
 - 2. Place asbestos waste in clear asbestos-labeled plastic bags or lined drums. Plastic bags must be sealed using the "goose neck" technique by twisting the neck of the bag, bending it over and taping it with multiple wraps of tape. Clean external surfaces of containers thoroughly prior to setting down on a clean plastic drop cloth.
 - 3. Move waste containers to washroom or wash area, wet clean each container thoroughly, and move to holding area pending removal to uncontaminated areas.
 - 4. After completion of removal work, equipment surfaces from which asbestos has been removed shall be wet cleaned and/or wet sponged by an equivalent method to remove all visible material and residue. During this work, the surfaces being cleaned shall be kept damp. Do not allow water to pond at any time.

- 5. Clean all surfaces of the Work Area including remaining sheeting by use of damp cleaning and/or HEPA filtered vacuum.
- 6. Proceed with final decontamination of the Work Area.
- D. Glove bag Technique
 - 1. Removal of Class I and II asbestos-containing materials from piping may be accomplished using approved glove bag techniques in specified areas. In all cases, removal shall be conducted in secondary negative pressure containment or mini-containment.
 - 2. After installation of glove bag, smoke test the glove bag to verify that it is air tight.
 - 3. Thoroughly wet material to be removed with amended water before and during the removal process.
 - 4. Thoroughly wash the inside of the bag, the piping surfaces and the tools upon completion.
 - 5. Encapsulate all surfaces inside the glove bag including the piping and ends of exposed coating material.
 - 6. Evacuate bag with an approved HEPA vacuum; tie off waste area; remove tools from bag; remove bag from pipe, folding inward the sides of the bag; then twist and tape the open end, the wand opening, and the vacuum opening.
 - 7. Place glove bag directly into another six (6) mil sealable labeled plastic waste bag or other appropriate waste container. Seal the outer bag using the "goose neck" technique by twisting the neck of the bag, bending it over and taping it with multiple wraps of tape. Seal container with duct tape.
- E. Modified Cut, Wrap, and Remove Technique
 - 1. Removal of pipe insulation may be accomplished using approved Modified Cut, Wrap, and Removal Techniques where piping is to be demolished or abandoned in place unless otherwise noted.
 - 2. Verify the piping being removed scheduled for removal or abandonment in place prior to proceeding.
 - 3. Verify pipe lines have be isolated and drained prior to cutting pipe(s).
 - 4. Use glove bag technique to remove insulation at location of pipe to be cut. Wrap pipe including all insulation being removed with two layers of six (6) mil polyethylene sheeting secured with duct tape.
 - 5. Cut the pipe and remove wrapped pipe with ACM insulation for disposal.
- F. Floor Tile Removal
 - 1. Remove wall base, cabinets, and any other components and materials as necessary to expose and access all resilient floor tiles for removal.

- 2. Thoroughly wet floor tiles with amended water but do not let water pool or pond.
- 3. Remove tile by prying with scrapers or spud bars taking care to minimize breakage.
- 4. Place removed tiles in appropriately labeled impervious bags or containers and seal.
- 5. Do not subject floor tiles to any sanding, grinding, cutting, abrading activities likely to create friable ACM.
- G. Flooring Mastics Removal
 - 1. Remove all overlaying non-asbestos carpet and other materials concealing the flooring mastics.
 - 2. Remove all asbestos and/or asbestos mastic contaminated floor tiles prior to initiating mastic removal in the Work Area.
 - 3. Remove all flooring mastics using a suitable mastic solvent along with manual scraping and/or mechanical removal methods as necessary for complete removal.
 - 4. Where removal solvents are used, clean up slurry as the mastic is removed and place in properly labeled containers for disposal as a hazardous waste.
 - 5. As an alternative to solvent removal, use bead blast systems for removal is acceptable if permitted by the AQMD and any required variance or waiver is obtained in advance by the Contractor. Likewise, removal by high pressure water systems is allowable if water is fully contained and removal is complete. All floor mastic removal operations must be conducted as a Class I removal operations unless removal is limited to manual scraping methods.
 - 6. Regardless of removal method used, all three dimensional mastic residues must be removed and extent of removal must sufficient to allow for recycling of concrete foundations and decks.
- H. Mastic behind chalkboard/ACT
 - 1. Removal of non-friable shall be conducted using wet methods using hand

scrapers and cutting tools to remove the ACM mastic from the non-ACM substrate materials.

- 2. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
- 3. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- I. Texture coat, wallboard (sheetrock) and joint tape compound

1. Mist the gypsum board/joint tape compound/texture continuously with amended.

water during removal.

- 2. Remove gypsum board in larger sections or pieces where possible. Use pry bars, utility knives, claw hammers and other appropriate tools to loosen and remove wallboard from framing. Remove all wallboard fasteners.
- 3. Place removed gypsum board/joint tape compound/texture in impervious containers with asbestos warning labels as it is removed. Wall insulation shall be placed in same bags as asbestos contaminated.
- 4. Complete Work Area clean-up including: all remaining nails; framing; electrical junction boxes, outlets, wiring, and conduit; plumbing fixtures, piping, and hanger, and all other surfaces in the work area.
- J. Window Glazing/putty
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable sealants and caulking to be removed.
 - 2. Removal of non-friable shall be conducted using wet methods using hand scrapers and cutting tools to remove the ACM mastic/sealant from the non-ACM substrate materials.
 - **3**. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
 - 4. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- K. Exterior Stucco wall
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable stucco to be removed.
 - 2. Removal of non-friable shall be conducted using wet methods using manual demolition.
 - **3**. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
 - 4. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- L. Roofing Materials (shingles and mastic)
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable roofing mastic or penetration mastic to be removed.

- 2. Removal of non-friable roofing shall be conducted using wet methods and appropriate cutting tools. Remove roofing in small sections and place in waste bags or containers.
- 3. If a chute is used to remove ACM roofing waste from the roof, it must be totally enclosed and air tight to and including the bin it is connected to.
- 4. Removal of roofing flashing and sealants shall be conducted using hand scrapers and cutting tools to remove the ACM mastic/sealant from the non-ACM substrate materials.
- 5. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
- 6. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the State or State's representative.
- M. Cutting, Tapping, Demolition of Asbestos Cement (AC) Piping
 - 1. Carefully machine excavate to exposed AC pipe as necessary. Once exposed, hand excavate areas where cuts, breaks or taps are to be made to prevent pipe breakage.
 - 2. Establish a regulated Work Area surrounding the location of pipe cutting and/or modification. At minimum, use barrier tape and signage.
 - 3. Place plastic sheeting under the area to be cut or altered to catch any resulting chips or dust debris.
 - 4. The methods and procedures used to cut or modify pipe shall not cause the pipe to shatter, crumble, be pulverized or release airborne asbestos dust.
 - 5. Keep the AC pipe wet at all times during cutting or tapping work.
 - 6. Use only industry recommended practices for cutting, splicing and tapping AC pipe. At minimum:
 - a. Cutting is to be by special carbide tipped blade cutters that are frame adjustable to the circumference of the pipe and that have self -tracking rollers or "snap cutters" that operate with cutting wheels on a chain wrapper around the pipe barrel.
 - b. Machining, if necessary, shall be conducted wet using manual field lathe or manual rasp.
 - c. Tapping, whether under pressure or on non-pressured lines, shall be conducted wet and include provisions for internal pipe cleaning by flushing, purging or other means to prevent asbestos dust and chips from entering the drinking water system.
 - d. Do not blow out with compressed air or dry sweep. Do not vacuum dust and debris without a HEPA filtered vacuum.
 - e. All cutting, machining, tapping procedures must be conducted wet and all resulting AC pipe dust and debris must be cleaned up and disposed of as asbestos contaminated waste.

- f. Piping sections to be demolished shall be carefully cut into manageable sections, wrapped and sealed and plastic sheeting, and carefully placed in a lined asbestos waste disposal bin.
- g. All intact AC pipe waste and debris shall be disposed of as nonhazardous asbestos waste under a non-hazardous asbestos manifest at a permitted asbestos landfill.

3.5. FINAL ASBESTOS DECONTAMINATION AND TESTING

- A. Previous Work: During completion of the interior asbestos removal and visible debris clean up work specified, the first cleaning of all exposed equipment and building surfaces should be completed. Likewise for exterior Work Areas, all visible debris and removed materials must be bagged up for disposal.
- B. Clean all surfaces within the Work Area by wet wiping and HEPA vacuuming.
- C. Clean any remaining materials and debris exposed by the plastic barrier removal. Final independent layer of polyethylene sheeting and all isolation barriers, vents, grilles, diffusers, etc., shall remain in place.
- D. At the completion of this cleaning phase, the Work Area shall be free of all unnecessary equipment/materials and waste containers.
- E. The Contractor's Competent Person/Supervisor shall perform a complete visual inspection of the Work Area under adequate lighting to ensure that the Work Area is free of visible asbestos material, debris, and dust.
- F. The Contractor's Competent Person/Supervisor shall ensure that additional cleaning is completed if the area is not acceptably clean. The Contractor shall submit a completed and signed Final Visual Certification Form along with a request for a final visual inspection by the Observation Service once the Competent Person/Supervisor concludes that the area is acceptable for final visual inspection.
- G. After final visual inspection of the Work Area shall be conducted by the Observation Service. The standard for visual acceptance shall be no visible dust, debris or three dimensional suspect ACM residues within the Work Area. After written notification to proceed from the Observation Service, encapsulate all surfaces within the Work Area.
- H. For interior work areas, the Observation Service will conduct post abatement air testing to evaluate the final acceptability of the Work Area for release to unprotected personnel and the environment. Each interior containment will be evaluated by collection and analysis of a minimum of three and up to five (5)

phase contract microscopy (PCM) air samples collected by the Observation Services and analyzed in accordance with NIOSH Method 7400 or equivalent. The standard for acceptance shall be that each sample result for the containment shall be less than 0.010 fibers per cubic centimeter of air (f/cc). The Contractor shall allow for up to 24 hours for collection of post abatement air samples to allow Work Area and encapsulants drying and up to another 24 hours for air test results.

- I. The Contractor shall re-clean and re-encapsulate all surfaces within any Work Area Containment that fails post abatement air testing at no additional cost to the Owner. Likewise, the Contractor is responsible for all costs associated with failed visual inspections including additional cleaning and inspection. All costs associated with failed inspections shall be borne by the Contractor.
- J. After written notification from the Observation Service in the form of a fully completed Final Visual Inspection/Post Abatement Certification Form accepting decontamination of the Work Area as acceptable, proceed with removal of critical barriers.
- K. For exterior non-friable ACM removals such as sealants, mastics, Transite® pipe and/or similar materials, following abatement inspection will consist of a visual inspection by the Observation Service. If all ACM materials have been removed and the Work Area is free of visible ACM material, dust and debris, the removal will be considered complete.

3.6. LOOSE LEAD-BASED PAINT SURFACE PREPARATION

- A. Prepare the exterior Work Area with plastic flooring and another plastic drop sheet, place lead caution tape demarkation around removal area.
- B. Wet the surfaces with loose LBP by misting lightly with water.
- C. Wet scrape loose LBP until remaining paint is intact.
- D. Clean up removed LBP chips, debris and dust using HEPA vacuuming and wet wiping. Containerize all lead waste including vacuum bags for disposal as hazardous lead waste. Label and place container into secure storage pending waste characterization testing and disposal.
- E. Clean up plastic sheeting and place in separate lead related waste bags or drums along with protective clothing and related potentially contaminated materials.

F. Conduct final clean up and all necessary waste profiling, evaluation, and testing of lead-related waste as specified herein.

3.7. LEAD WASTE CLEAN UP AND WASTE EVALUATION

- A. Clean up paint chips and debris using wet cleaning methods and HEPA vacuuming. All surfaces shall be free of all visible paint chips, dust and debris. Place all paint chips in a labeled waste bag or container.
- B. Place all contaminated cleaning materials, disposal personal protective equipment (PPE) and contaminated plastic in separate waste bags. The Contractor shall assume all lead-related waste is RCRA hazardous waste and shall conduct required waste testing as necessary for disposal at a permitted waste disposal site.
- C. All waste streams and waste categories listed below shall be considered lead hazardous waste until proven otherwise through testing. All testing of demolition waste wastes is the responsibility of the Contractor. The Contractor shall be responsible for segregating suspect lead hazardous waste based on potential for exhibiting hazardous waste characteristics. Lead-related wastes are to be segregated into the below listed categories at a minimum.
 - 1. Category I: LBP paint chips, vacuum bags, used cleaning materials. These materials are typically hazardous wastes.
 - 2. Category II: Plastic sheeting and tape, disposable clothing, and equipment. These materials should be non-hazardous if properly cleaned and decontaminated. However, these items are to be considered hazardous subject to testing.
- D. Based on the testing protocols, any waste greater than or equal to five (5) ppm lead using STLC or TCLP tests or any waste greater than or equal to 1,000 ppm lead using the TTLC test shall be considered a California hazardous waste.
- E. When the TTLC test result is less than 50 ppm lead, no further testing is required for that waste category sampled unless the waste stream or waste generating process changes.

3.8. <u>LEAD- RELATED DEMOLITION</u>

A. General: All painted or coated surfaces are known or presumed to contain lead subject to worker protection and environmental regulations. Refer to related documents identified herein for additional information including components with LBP requiring agency notification.

- B. Conduct selective as well as general building and structural demolition in a manner that does not result in site contamination above background levels.
 - 1. Remove any loose, peeling, or flaking paint before demolition in accordance with this section.
 - 2. Clean up any demolition-related lead wastes including any resulting paint chips and debris.
 - 3. Do not let any wetting agents or water enter soil or storm drain.
- C. The Contractor shall evaluate each demolition debris waste stream and ensure proper disposal of all generated wastes. All waste profiling and testing required by the disposal site is the responsibility of the Contractor.

3.9. FLUORESCENT LIGHTING & BALLASTS

- A. Remove fluorescent lighting tubes from fixtures in and on buildings to be renovation/demolished, in accordance with project documents.
 - 1. Carefully place all tubes in storage or shipping containers so the risk of breakage is minimized.
 - 2. Place containerized light tubes in a safe and secure storage area pending shipping to the recycler or reuse.
- B. Remove presumed PCB ballasts from all fluorescent lighting fixtures presumed PCB transformers in buildings to be renovation/demolished.
 - 1. Any ballast not marked "PCB Free" or "No PCB" shall be lab packed with adsorbent in a waste drum for disposal as hazardous PCB ballast waste.
 - 2. Ballasts that are clearly marked "PCB Free" shall be set aside for verification inspection by the Observation Service. All ballasts verified to be PCB free may be disposed of as ordinary construction waste or recycled.
 - 3. Ensure PCB ballast drum is properly labeled for PCB wastes and shipping.
 - 4. Any electrical transformer that cannot be determined to be PCB free by labeling, date of manufacture, or manufacturer's information shall be disposed of as a PCB item.

3.10. UNIVERSAL WASTES AND OTHER HAZARDOUS WASTES

A. Refrigerators, air conditioners, and other equipment with refrigerant or coolant gases shall be assumed to contain chlorofluorocarbon (CFC) gases and shall have those gases removed by appropriately certified mechanics or technicians and recycled according to state and federal regulation.

- B. Carefully segregate waste by type and lab pack for disposal in impervious labeled waste containers.
- C. Dispose of or recycle each type of waste in accordance with applicable regulation at permitted facilities. Maintain all shipping and disposal record and provide copies to Owner's Representative and the Observation Service.

3.11. PACKAGING & LABELING

- A. All asbestos wastes shall be adequately wetted prior to packaging.
- B. Place asbestos waste in six (6) mil labeled asbestos waste bags or approved equivalent containers.
- C. Goose neck and seal each bag and place in a second clean-labeled bag, drum or impervious container.
- D. Decontaminate waste bags and containers prior to removing from regulated or contained area.
- E. Label all asbestos waste bags or containers with OSHA warning label: "DANGER CONTAINS ASBESTOS FIBERS MAY CAUSE CANCER. CAUSES DAMAGE TO LUNGS. DO NOT BREATHE DUST. AVOID CREATING DUST" and other information as required by regulation.
- F. All other hazardous lead, PCB, and universal wastes shall be properly labeled and containerized in leak tight containers.

3.12. WASTE DISPOSAL

- A. Waste Transportation: Submit the method of transport of hazardous asbestos wastes including name, address, EPA ID number, and telephone number of transporter.
- B. Waste Disposal Site(s): Submit for approval the name, class, address, EPA ID number, and telephone number of waste disposal site(s) to be utilized for:
 - 1. Disposal of non-hazardous non-friable asbestos wastes;
 - 2. Disposal of hazardous lead, PCB, and Mercury wastes; and
 - 3. Disposal of any other universal wastes.
- C. Waste Manifest: Submit for approval at the Pre-construction meeting a filled out Waste Manifest form. For Waste Manifest purposes, the Generator is the facility of the subject work.

- 1. Obtain necessary information including generator EPA number for this purpose from the Owner or Owner's Representative prior to start up of any abatement or demolition.
- 2. After removal and packaging waste for shipment, provide a copy of the Waste Manifest to the Observation Service for each required shipment.
- 3. Use the uniform hazardous waste manifest for hazardous wastes including lead, PCBs, universal wastes and other hazardous wastes. Include a properly completed Land Disposal Restriction Notice and Certification form with each manifest submitted for signature by the generator (Owner).
- 4. Use a non-hazardous wastes manifest for disposal of non-friable asbestos wastes.
- D. Each hazardous waste manifest and each non-hazardous asbestos waste manifest shall be prepared for the Owner or Owner's Representative's review and approval prior to shipment.
- E. The sealed hazardous waste containers shall be delivered to the Contractor's pre-designated, approved hazardous waste treatment and waste disposal site for burial in accordance with applicable state and federal regulations. Likewise, non-hazardous asbestos waste shall be delivered under manifest to a permitted asbestos waste disposal site.
- F. Notify the Owner's facility representative 48 hours in advance of the time when hazardous waste materials of all types and non-hazardous asbestos wastes are to be removed and transported from the site to allow for manifest review and approval.
- G. The Contractor shall be responsible for safe handling and transportation of all hazardous waste generated by this Contract to the designated Hazardous Waste Site and shall hold the Owner and the Owner's agents and consultants harmless for claims, damages, losses, and expenses against the Owner, including attorney's fees arising out of our resulting from asbestos and hazardous materials spills on the site or en route to the disposal site.

3.13. <u>AIR MONITORING</u>

- A. Area Air Monitoring
 - 1. Throughout the asbestos removal process, area air monitoring may be conducted by the Observation Service to ensure work is done in conformance with the fiber concentration limits of these specifications. Likewise, lead removal work areas may be visually inspected and/or monitored during removal.

- 2. If results of area air monitoring outside the Work Area are in excess of 0.010 f/cc for asbestos or 50 micrograms per cubic meter of airborne lead per cubic meter of air for lead, the Contractor shall make changes in work procedures to assure compliance with minimum standards. At a minimum, the Contractor shall stop all work and implement additional remedial controls and conduct decontamination as necessary in response to exceeding these limits.
- 3. Unsatisfactory asbestos results are fiber counts in excess of 0.010 fibers/ cc by PCM Method NIOSH 7400 determined as a TWA outside the Work Area by general air monitoring. All results greater than 0.010 fibers/cc shall be subject to further laboratory analysis by the TEM method at the Contractor's sole expense.
- B. The Contractor shall submit a written report to the Owner's Observation Service of the Contractor's personnel exposure monitoring within 48 hours of sample collection. The Contractor shall take all necessary control and protective measures to ensure airborne contaminate levels based on personnel air monitoring results do not exceed the levels recommended for the type of respiratory gear in use.
- C. Interior Asbestos Post Abatement Air Sampling. The Owner's Observation Service, upon receipt of the post abatement certification from the Contractor, will take a minimum of one (1,200-2,800) liter air sample(s) "post abatement tests" upon completion of each Work Area. For the purpose of this work, adequate decontamination shall be defined as an air sample showing less than 70 structures/cc by TEM AHERA.
- D. Lead Post Abatement Inspections. All LBP Work Areas will be cleared by visual inspection by the San Mateo Foster City School District Observation Service.

3.14. <u>CLOSE-OUT</u>

A. All submittal and punch list items must be complete and provided to the Observation Service. These include daily work-force rosters, work area sign-in/ out sheets, and waste test data and waste manifests.

END OF SECTION

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME: _	
PROJECT ADDRES	S:
CONTRACTOR'S N	IAME:

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PERSON.

Your employer's contract with the Owner for the above project requires that: You will be supplied with the proper respirator and be trained in its use. You will be trained in safe work practices and in the use of the equipment found on the job. You will receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have completed an asbestos-training course of not less than 3 days. I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

1) Physical characteristics of asbestos; 2) Health hazards associated with asbestos; 3:) Respiratory protection; 4) Use of personal protective equipment; 5) Pressure Differential Systems; 6) Work practices including handson or on-the-job training; 7) Personal decontamination procedures; and 8) Air monitoring, personal, and area.

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Printed Name:	
Signature:	_ Date:
Social Security No.:	
Witness:	

FMPI	OYFF	DAILY	ROSTER
			NOSIEN

DATE: ______PROJECT NO. _____

PROJECT TITLE: _____

CONTRACTOR: _____

COMPETENT PERSON: _____

IMPORTANT NOTE: ALL PERSONS ENTERING AND EXITING THE WORK AREA MUST SIGN IN AND OUT EVERY TIME.

PERSON'S NAME (PRINT)	SOCIAL SECURITY #	START TIME	STOP TIME

WORK AREA ENTRY / EXIT LOG

DATE:	PROJECT NO	
PROJECT TITLE:		_
BUILDING NAME:		
LOCATION OF WOR	?K AREA:	
DESCRIPTION OF W	'ORK:	

IMPORTANT NOTE: ALL PERSONS ENTERING AND EXITING THE WORK AREA MUST SIGN IN AND OUT EVERY TIME.

PERSON'S NAMI (PRINT)	E SIGNATURE	SECURITY #	SOCIA	l In/out	TIME IN/OUT	TIME

DAILY MANOMETER REPORT

PROJECT TITLE:				
CONTRACTOR:				
COMPETENT PE	RSON:			
LOCATION OF V	VORK AREA:			-
START TIME:	START DATE:	STOP TIME:	STOP DATE:	

(CONTRACTOR TO ATTACH A COPY OF THE NEGATIVE PRESSURE RECORDING HERETO AND COMPLETE THIS FORM FOR EACH WORK AREA ON A DAILY BASIS).

I hereby declare the above data is true and correct.

COMPETENT PERSON'S SIGNATURE: _____ DATE: _____

PRE-ABATEMENT VISUAL INSPECTION FORM

CLIENT NAME:	
PROJECT NAME:	
BUILDING NAME	
LOCATION OF WORK AREA:	
OWNER REF. NUMBER:	PROJECT NO:

VISUAL INSPECTION

CONTRACTOR hereby certifies that he has visually inspected the Work Area and has found it to be prepared in accordance with the project specifications. This inspection included the verification that Primary Barriers have been installed and are sealed, specified number of layers of polyethylene sheeting has been installed properly, Decontamination Enclosure System(s) is fully functional, HEPA units are operational, negative air pressure is >0.02 inches of water, manometer unit recording properly, HVAC and electrical systems have been locked and tagged out, there is adequate power and lighting, and all electric sources are supplied from GFIs outside the Work Area.

Name:	Inspection Date:
Signature:	Certification No

OWNER'S CONSULTANT hereby certifies that he has conducted a pre-abatement visual inspection of the referenced Work Area and verifies that the Contractor has prepared the Work Area in accordance with the Specifications and is ready to start abatement operations.

Name:_____ Inspection Date: _____

Signature:_____ Certification No. _____

FINAL VISUAL INSPECTION/CLEARANCE CERTIFICATION FORM

CLIENT NAME:	
PROJECT NAME:	
BUILDING NAME:	
LOCATION OF WORK AREA:	
OWNER REF. NUMBER:	_ PROJECT NO:

VISUAL INSPECTION

CONTRACTOR hereby certifies that he has visually inspected the Work Area and has found no dust, debris or residue. This inspection included all surfaces including pipes, beams, ledges, walls, ceiling, floor, Decontamination Unit, sheet plastic, etc.

OWNER'S CONSULTANT hereby certifies that he has performed the final visual inspection of the referenced Work Area and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's Certification above is a true and honest one.

 Name:_____
 Inspection Date: _____

 Signature:_____
 Certification No._____

CLEARANCE AIR SAMPLING

Pre-Abatement/Background fiber levels: ______

OWNER'S CONSULTANT hereby certifies that the results of air samples collected and analyzed in this work area meet the clearance criteria indicated below:

PCM samples at or below ______ fibers/cc. TEM samples at or below ______ structures/mm².

Circle One: Aggressive Non-Aggressive

Other criteria:

Name:	Inspection Date:
Signature:	Certification No.:
Reviewer:	CAC Cert. No.:

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Formed roof-drainage sheet metal fabrications.
 - 2. Formed low-slope roof sheet metal fabrications.
 - 3. Formed steep-slope roof sheet metal fabrications.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETING

- A. Preinstallation Conference: Conduct a conference at Project Site.
 - 1. Review construction schedule. Verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect sheet metal flashing and trim.
 - 3. Review requirements for insurance and certificates if applicable.
 - 4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each of the following, including manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
 - 1. Underlayment materials.
 - 2. Elastomeric sealant.
 - 3. Butyl sealant.
- B. Shop Drawings: For sheet metal flashing and trim.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
 - 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
 - 4. Include details for forming, including profiles, shapes, seams, and dimensions.
 - 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 - 6. Include details of termination points and assemblies.
 - 7. Include details of roof-penetration flashing.
 - 8. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
 - 9. Include details of special conditions.
 - 10. Include details of connections to adjoining work.
 - 11. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches (1:10).
- C. Samples: For each exposed product and for each color and texture specified, 12 inches (300 mm) long by actual width.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.
- B. Special warranty.

1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA "Architectural Sheet Metal Manual" and NRCA "Roofing and Waterproofing Manual" unless more stringent requirements are indicated or specified.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
 - 1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
 - 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing, trim materials, and fabrications during transportation and handling.
- C. Unload, store and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight. Coordinate with work of other Sections for watertight installation at interface with other materials and systems.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and

Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- D. Water Infiltration: Provide sheet metal flashing and trim that to not allow water infiltration to building interior.
- E. Provide materials that are compatible with one another under conditions or service and application required, as demonstrated by testing and field experience.

2.2 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet in accordance with ASTM A653/A653M, G90 (Z275) coating designation; prepainted by coil-coating process to comply with ASTM A755/A755M.
 - 1. Surface: Smooth, flat and mill phosphatized for field painting or with manufacturer's standard clear acrylic coating on both sides.
- C. Lead Sheet: ASTM B749 lead sheet.

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. (0.16 kg/sq. m) minimum.

2.4 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

- 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
- 2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hotdip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329.
- C. Solder:
 - 1. For Zinc-Coated (Galvanized) Steel: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
- H. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated and with interlocking counterflashing on exterior face, of same metal as reglet.
 - 1. Source Limitations: Obtain reglets from single source from single manufacturer.
 - 2. Material: Galvanized steel, 0.022 inch (0.56 mm) thick.
 - 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 4. Accessories:
 - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
 - 5. Finish: With manufacturer's standard color coating.

I. Metal Accessories: Provide sheet metal clips, cleats, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gauge required for performance.

2.5 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
 - 1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 - 3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
 - 4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 - 5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
 - 1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
 - 2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams:
 - 1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.
G. Do not use graphite pencils to mark metal surfaces.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof and Roof-to-Wall Transition Expansion-Joint Cover: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.034 inch (0.86 mm) thick.
- B. Base Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- C. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- D. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- E. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.

2.7 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- B. Valley Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- C. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- D. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- E. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:

MEADOW HEIGHTS ELEMENTARY SCHOOL HVAC REPLACEMENT San Mateo-Foster City School District Project No 2021005.04

- 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- 2. Lead: 4 lb (1.8 kg).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lap joints not less than 2 inches (50 mm).
- B. Install slip sheet, wrinkle free, directly on substrate before installing sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lapp joints not less than 4 inches (100 mm).

3.3 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
 - 1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds or sealant.
 - 3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.

- 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
- 5. Install continuous cleats with fasteners spaced not more than 12 inches (300 mm) o.c.
- 6. Space individual cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
- 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
- 8. Do not field cut sheet metal flashing and trim by torch.
- 9. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
 - 1. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
 - 1. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
 - 2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
 - 3. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated.
 - a. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant.
 - b. Form joints to completely conceal sealant.
 - c. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
 - d. Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
 - 1. Pretin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pretinning where pretinned surface would show in completed Work.
 - 2. Do not use torches for soldering.
 - 3. Heat surfaces to receive solder, and flow solder into joint.
 - a. Fill joint completely.
 - b. Completely remove flux and spatter from exposed surfaces.

3.4 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard.
 - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless steel draw band and tighten.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
 - 1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
 - 2. Extend counterflashing 4 inches (100 mm) over base flashing.
 - 3. Lap counterflashing joints minimum of 4 inches (100 mm).
 - 4. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated.
- D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.5 INSTALLATION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

3.7 **PROTECTION**

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

SECTION 321723 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Painted markings applied to asphalt paving.
 - 2. Painted markings applied to concrete surfaces.

1.3 ACTION SUBMITTALS

- A. Product Data: Include technical data and tested physical and performance properties.
 - 1. Pavement-marking paint, acrylic.
- B. Shop Drawings:
 - 1. Indicate areas to be re-striped.
- C. Samples: For each exposed product and for each color and texture specified; on rigid backing, 8 inches (200 mm) square.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F (12.8 deg C) for water-based materials, and not exceeding 95 deg F (35 deg C).

PART 2 - PRODUCTS

2.1 PAVEMENT-MARKING PAINT

- A. Pavement-Marking Paint, Acrylic: Acrylic, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952F, Type II, with drying time of less than three minutes.
 - 1. Color: White.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that pavement-marking substrate is dry and in suitable condition to begin pavement marking in accordance with manufacturer's written instructions.
- B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Sweep and clean surface to eliminate loose material and dust.
- C. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).
 - 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to asphalt paving or concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.

3.3 PROTECTING AND CLEANING

- A. Protect pavement markings from damage and wear during remainder of construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 321723

• 6







GENERAL SHEET NOTES

- A BUILDINGS ARE UNSPRINKLERED, TYPE V-B CONSTRUCTION UNLESS OTHERWISE NOTED
- APPROVED BY DSA
- CONTRACTOR SHALL MAINTAIN FIRE LANE ACCESS THROUGHOUT PROJECT. DO NOT INTERRUPT EXISTING UTILITY SERVICES SERVING OCCUPIED OR USED FACILITIES,
- EXCEPT WHEN AUTHORIZED IN WRITING BY AND COORDINATED WITH THE OWNER.
- PROTECT EXISTING & NEW STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, TREES AND SHRUBS FROM DAMAGE DURING CONSTRUCTION.
- REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR EXTENT OF ELECTRICAL AND MECHANICAL WORK.
- G ALL EXISTING FINISHES OR MATERIALS DAMAGED OR DEMOLISHED DUE TO NEW CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL STATE, INCLUDING BUT NOT LIMITED TO REINSTALLING OR REPLACING EXISTING CHAINLINK FENCING AS REQUIRED AND RESTRIPING PAVING IN KIND. S.E.D. FOR TRENCH ROUTING. SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING

SITE PLAN KEYNOTES

- 1 (E) ASPHALT TO REMAIN.
- 2 (E) CHAINLINK GATE TO REMAIN. 3 (E) POLE AND FOOTING TO BE REMOVED.
- 4 (E) TURF TO BE REMOVED. RECONFIGURE (E) IRRIGATION. SEE NEW ENLARGED SITE PLAN FOR MORE INFORMATION. DO NOT OVERCUT.
- 5 ASPHALT, SEE DETAIL 9/A8.10 FOR ASSEMBLY
- 6 (E) CHAINLINK BATTING ENCLOSURE TO REMAIN. 7 10'W DOUBLE GATE, SEE DETAIL 3/A8.10.
- 8 4'W GATE, SEE DETAIL 2/A8.10.
- 9 CHAINLINK ENCLOSURE, SEE DETAIL 4/A8.10. 10 ELECTRICAL EQUIPMENT, S.E.D.
- 11 REMOVE (E) ELECTRICAL EQUIPMENT AND CONCRETE PAD COMPLETELY, S.E.D. PATCH ASPHALT FLUSH TO ADJACENT. SEE DETAIL 9/A8.10 SIM. 12 (E) FENCING, POLES, AND FOOTING TO BE REMOVED.
- 13 REMOVE (E) ASHPALT PAVING.
- 14 20'W DOUBLE GATE, SEE DETAIL 3/A8.10. 15 AT (E) 12'H CHAINLINK FENCING TO REMAIN ADJACENT REMOVED CHAINLINK, PREP (E) CHAINLINK FOR RECONNECTION. 16 CONFORM NEW AND EXISTING ASPHALT FLUSH.
- 17 12" STORM INLET S.C.D.
- 18 CONCRETE DRIVEWAY S.C.D. 19 REMOVE (E) WOOD PLANTER BOXES & HEADER BOARD
- 20 TRANSFORMER, S.E.D.
- 21 ELECTRICAL BOX, S.E.D. 22 (E) STRIPING TO REMAIN.) 23 (E) ARTWORK TO REMAIN. RESTRIPE IN KIND. DISTRICT TO PROVIDE ARTWORK.

GRAPHIC KEY

- EXISTING TOILET ROOMS EXISTING CONSTRUCTION TO REMAIN r---ı EXISTING COVERED STRUCTURE L _ _ _ J TRENCH FOR ELECTRICAL WORK, S.E.D. , 8/S5.01 & DETAILS ON SHEET A8.10 PROPERTY LINE ____ (E) CHAINLINK FENCE -O- - O- - O- (N) CHAINLINK FENCE \wedge EXISTING FIRE HYDRANT -----(E) FIRE DEPARTMENT ACCESS FIRE DEPARTMENT ACCESS IS 20'-0" WIDE AND RATED FOR 96,000 ---- LBS.

NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN











2 DEMOLITION FLOOR PLAN - BLDG 2 SCALE: 1/8" = 1'-0"



3 DEMOLITION FLOOR PLAN - BLDG 3 SCALE: 1/8" = 1'-0" (D4)(D1) (D2)**GIRL'S** (' ┌ - - - - - ♥ -TOILET)-_L _ _ _ _ _ -STOR. STOR. 15A







GENERAL SHEET NOTES

- ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW FLOOR А PLANS.
- REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR EXTENT OF MECHANICAL AND В ELECTRICAL DEMOLITION WORK.
- C VERIFY LIMITS OF DEMOLITION WITH SCOPE OF NEW WORK PRIOR TO COMMENCING WORK.
- ALL ITEMS SHOWN DASHED ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED ON PLANS. D
- REMOVE ALL MISCELLANEOUS TRIM, CASEWORK, EQUIPMENT, CONDUIT, BASES, AND OTHER SURFACE MOUNTED ITEMS WHETHER SHOWN OR NOT, AS REQUIRED TO FACILITATE SCOPE OF WORK. REMOVE AND CAP ALL OUTLETS, SWITCHES, WIRES, THERMOSTATS, ETC. TO THEIR SOURCE AS REQUIRED. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION AND SCOPE OF WORK.
- REMOVE ADJACENT FINISHES AS REQUIRED TO FACILITATE SCOPE OF WORK. PATCH BACK IN F KIND.
- EXISTING EQUIPMENT INDICATED TO BE RELOCATED PER NEW PLAN IS TO BE STORED AND G PROTECTED DURING CONSTRUCTION.
- NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN н
- APPROVED BY DSA DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY
- PRIOR TO START OF CONSTRUCTION.
- REFER TO "HVAC AND POWER UPGRADE PROJECT HAZARDOUS MATERIALS SURVEY REPORT." CONTRACTOR TO ABATE AREAS AFFECTED BY SCOPE OF WORK. REMOVE AND DISPOSE OF MATERIALS PER REPORT RECOMMENDATIONS.

DEMOLITION FLOOR PLAN KEYNOTES

- REMOVE (E) MECHANICAL UNIT AND METAL ENCLOSURE, S.M.D. RÉMOVE A.C.T., A.C.T. GRID, AND SOFFIT AS REQUIRED FOR CONSTRUCTION ACCESS.
- SALVAGE (E) CABINET AND TURN OVER TO DISTRICT
- SALVAGE (E) 4'x 8' TACK PANEL AND TURN OVER TO DISTRICT REMOVE (E) MECHANICAL EQUIPMENT, S.M.D.
- RECONFIGURE (E) WIREMOLD. SHORTEN CONFIGURATION TIGHT TO NEW ENCLOSURE AND PROVIDE END CAP. SEE NEW FLOOR PLAN FOR MORE INFORMATION.
- CUT AND PREP OPENING FOR MECHANICAL WORK, S.M.D. REMOVE (E) WINDOW GLAZING ABOVE AND PREP FOR NEW WORK. S.M.D.
- REMOVE PAVING AND PREP FOR NEW WORK, S.M.D. PREP FOR NEW WORK, S.M.D.
- REMOVE PARTIAL GYP. BD CEILING FOR FUTURE EXHAUST FAN, S.M.D. 10

GRAPHIC KEY

WALL TYPES:

- EXISTING WALL TO REMAIN
- EXISTING STOREFRONT OR WINDOW TO REMAIN

BUILDING KEY





















387 S. 1st Street, Suite 300 San Jose, CA., 95113

is		MEADOW HEIGHTS ELEMENTARY SCHOOL - HVAC REPLACEMENT SAN MATEO-FOSTER CITY SCHOOL DISTRICT				
		FILE NO.:	41-26	SHEET		
arcritic		APPL NO.	01-119554			
	tel: (408) 300 - 5160	JOB NO.	2021005.04	AD3-A4.01		
	fax: (408) 300 - 5121	DATE 1	2/22/2021			



9

6 CONCRETE PATCH

SCALE: 1 1/2" = 1'-0"



SCALE: 1 1/2" = 1'-0"



387 S. 1st Street, Suite 300 San Jose, CA., 95113

lis	MEADO SA	DW HEIGHTS I HVAC RE N MATEO-FOSTER	ELEMENTARY SCHOOL - PLACEMENT & CITY SCHOOL DISTRICT
architects	FILE NO.: APPL NO.:	41-26 01-119554	SHEET
tel: (408) 300 - 5160 fax: (408) 300 - 5121	JOB NO. DATE	2021005.04 12/22/2021	AD3-A8.10A

ASPHALT/CONCRETE JOINT



lic	MEADOW HEIGHTS ELEMENTARY SCHOOL - HVAC REPLACEMENT SAN MATEO-FOSTER CITY SCHOOL DISTRICT				
architects	FILE NO.: 41-26 APPL NO.: 01-119554	SHEET			
tel: (408) 300 - 5160 fax: (408) 300 - 512	JOB NO. 2021005.04 DATE 12/22/2021	AD3-A8.10B			



NOTE: NOT ALL MECHANICAL ELEMENTS SHOWN. S.M.D. FOR MORE INFORMATION.







NOTE: NOT ALL MECHANICAL ELEMENTS SHOWN. S.M.D. FOR MORE INFORMATION.





FASTENIN	G SCHEDULE		7
DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER ROOF	SPACING AND LOCATION	_
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each end, toenail	
Blocking between rafters or truss not at the wall top plate, to rafter or truss	2-8d common (2 1/2" × 0.131") 2-3" × 0.131" nails 2-3" 14 gage staples	Each end, toenail	
	2-16 d common (3 1/2" × 0.162") 3-3" × 0.131" nails 3-3" 14 gage staples	End nail	
Flat blocking to truss and web filler	16d common (3 1/2" × 0.162") @ 6" o.c. 3" × 0.131" nails @ 6" o.c. 3" × 14 gage staples @ 6" o.c	Face nail	
2. Ceiling joists to top plate	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each joist, toenail	
3. Ceiling joist not attached to parallel rafter, laps over partitions (no thrust)	3-16d common (3 1/2" x 0.163") 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail	9 FF
4. Ceiling joist attached to parallel rafter (heel joint)	Per Table 2308.7.3.1, CBC 2019	Face nail	_
5. Collar tie to rafter	3-10d common (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail	
6. Rafter or roof truss to top plate	3-10 common (3" × 0.148"); or 3-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail ^c	
7. Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3"14 gage staples, 7/16" crown; or	End nail	SCREW
	3-10d common (3 1/2" × 0.148"); or 4-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail	SHAPEI
0. Stud to stud (not at broad well pende)	WALL		(E) PLY
8. Stud to stud (not at braced wall panels)	10d box (3" x 0 128"); or	24 o.c. face nail	_
	$3'' \times 0.131''$ nails; or 2'' = 14 gags steples $7/16'''$ srown		
9. Stud to stud and abutting studs at intersecting wall	16d common (3 1/2" × 0.162"); or	16" o.c. face nail	_
corners (at braced wall panels)	16d box (3 1/2" × 0.135"); or	12" o.c. face nail	
	3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	12" o.c. face nail	
10. Built-up header (2" to 2" header)	16d common (3 1/2" × 0.162"); or	16" o.c. each edge, face nail	
11 Continuous header to stud	16d box (3 1/2" × 0.135")	12" o.c. each edge, face nail	_
TT. Continuous neader to stud	4-10d box (3" × 0.128")		_
12. Top plate to top plate	16d common (3 1/2" × 0.162"); or	16" o.c. face nail	_
	$3" \times 0.131"$ nails; or 3" 14 gage staples 7/16" crown		
13. Top plate to top plate, at end joints	8-16d common (3 1/2" × 0.162"); or 12-10d box (3" × 0.128"); or 12-3" × 0.131" nails; or 12-3" 14 gage staples 7/16" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)	
14. Bottom plate to joist, rim joist, band joist	16d common (3 1/2"x0.163"); or	16" o.c. face nail	_
or blocking (not at braced wall panels)	16d box (3 1/2" × 0.135"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail	
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3 1/2 " × 0.162"); or 3-16d box (3 1/2" × 0.135"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples. 7/16" crown	16" o.c. face nail	
16. Stud to top or bottom plate	4-8d common (2 1/2" × 0.131"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples 7/16" crown: or	Toenail	
	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail	
17. Top plates, laps at corners and intersections	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples. 7/16" crown	Face nail	
18. 1" brace to each stud and plate	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128"); or 2-3" × 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail	 L90 E
19. 1" × 6" sheathing to each bearing	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128")	Face nail	
20. 1" × 8" and wider sheathing to each bearing	3-8d common (2 1/2" × 0.131"); or	Face nail	-
	3-10d box (3" × 0.128")		(E) J(BELC

For SI: 1 inch = 25.4 mm.

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. Nails for wall sheathing are permitted to be

common, box or casing.

b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications. Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the

top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail.

d. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.



6x BLKG



8	8	1150	450	3/8"	3/4"	_	_	208/1	2.6	15	164	1/MP6.01	
	55	01	_	_	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01
9	53	61	1150	450	3/8"	3/4"	_	_	208/1	2.6	15	164	1/MP6.01
	55	01	_	_	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01
:0	53	61	1150	450	3/8"	3/4"	_	_	208/1	2.6	15	164	1/MP6.01
	55	01	_	_	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01

'N TO 32°F OUTDOOR AMBIENT

/AC TRANSFORMER.

)1 FOR CONTROLS.

PROVIDE CONDENSATE PUMP, LITTLE GIANT VCMX-20ULS WITH OVERFLOW PROTECTION, OR APPROVED \sqrt{C} 5. EQUAL.

6. PROVIDE WITH MERV-13 FILTERS WITH FILTER ACCESS PANEL.

FAN COIL SHALL BE ADJUSTED TO OPERATE AT CONSTANT SPEED AT INDICATED CFM. 7.

8. NOT USED





Training & Technical Support

831.218.1802 8 Harris Court, Suite A8 Monterey, CA 93940 cypresseg.com

aed

387 S. 1st Street, Suite 300 San Jose, CA., 95113



12	MEADOW HEIGHTS ELEMENTARY SCHOOL - HVAC REPLACEMENT				
IS	SAN MATEO-FOSTER CITY SCHOOL DISTRICT				
architocts	FILE NO.: 41-26	SHEET			
architects	APPL NO.:01_119554	REF. SHEET MP0.02			
	01-110004				
tel: (408) 300 - 5160	^{JOB NO.} 2021005.04	ADJ-IVIP 0.02			
fax: (408) 300 - 5121	DATE 12/22/2021				











2 P2.03 SCALE: 1/8" = 1'-0"







NORTH

NORTH

 \bigcirc NORTH

THIS SHEET COVERS CONDENSATE DRAINS FOR BUILDINGS B AND C AND SUPERCEDES CONDENSATE DRAINS SHOWN FOR BUILDINGS B AND C IN BID DOCUMENTS AND ADDENDUMS 1 AND 2.

(#) NEW SHEET NOTES

- CONDENSATE DRAIN PIPE ABOVE ACT. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. INSTALL CONDENSATE PUMP AT LEFT SIDE OF UNIT.
- ENSURE PUMP AND PIPE DO NOT BLOCK FILTER ACCESS. PUMP CD UP TO ENCLOSURE CEILING AND CONNECT TO CD HEADER ABOVE ACT. 3. PUMP CONDENESATE UP AND RUN EXPOSED BELOW HARDLID CEILING.
- 4. RUN CONDENSATE PIPE INSIDE WIREMOLD ON WALL, DOWN TO SINK TAILPIECE.
- CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. DROP PIPE AT LEFT SIDE OF UNIT. ENSURE PIPE DOES NOT BLOCK FILTER ACCESS. COMBINE WITH CD HEADER. RUN PIPE ALONG LEFT ENCLOSURE WALL AND PENETRATE BACK OF ENCLOSURE. ROUTE TO CD DRYWELL.
- DROP CD PIPE AT EXTERIOR WALL AND ROUTE TO CD DRYWELL. SAWCUT, REPAIR, AND PATCH TO MATCH EXISTING. SEE SHEET A8.10 ON ARCHITECT'S DRAWINGS FOR PATCHING AT GRADE. SEE DETAIL 14/MP6.01 FOR CD DRYWELL.

BUILDING KEY









831.218.1802 8 Harris Court, Suite A8 Monterey, CA 93940 cypresseg.com

EXP. JUNE 30, 2023

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HVAC, Plumbing, Fire Protection Building Commissioning Industrial Refrigeration Environmental Compliance Training & Technical Support

387 S. 1st Street, Suite 300 San Jose, CA., 95113



SYMBOL LIST:

l El.J	PLAN, DETAIL OR SECTION DESIGNATION.	
201	ROOM NUMBER.	
	SHEET REFERENCE SYMBOL - SEE ASSOCIATED NOTE ON SAME SHEET.	
3	FEEDER SCHEDULE SYMBOL.	\bigotimes
	MECHANICAL EQUIPMENT TAG.	³⁰ 凶
	INDICATES FIXTURE TYPE	⁶⁰ ⊡' ¹⁰⁰ ⊿'
	<u>RE SYMBOLS</u>	\boxtimes^{Π}
	LUMINAIRE - SEE SCHEDULE.	
├ ────┤	LUMINAIRE - SEE SCHEDULE.	∳ ±
	LUMINAIRE - SEE SCHEDULE.	P
	LUMINAIRE - SEE SCHEDULE.	L
 •	POLE MOUNTED LUMINAIRE - SEE SCHEDULE.	C
	POLE MOUNTED LUMINAIRE - SEE SCHEDULE.	EVI
$\langle \! \circ \!$	LUMINAIRE - SEE SCHEDULE.	E√2
0	LUMINAIRE - SEE SCHEDULE.	
Ю	LUMINAIRE WALL MOUNTED-SEE SCHEDULE.	
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST	POWE
EM I	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST	
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST	د)
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST	↓ ↓
€H	EMERGENCY LUMINAIRE WALL MOUNTED- PROVIDE EM. BATTERY BALLAST	لم ا
⊗	EXIT LIGHT SINGLE FACE - SEE SCHEDULE.	ې^ ا
$\overline{\otimes}$	EXIT LIGHT SINGLE FACE (WITH ARROW)- SEE SCHEDULE.	°,
†⊖†	EXIT LIGHT (DOUBLE FACED WITH ARROW)- SEE SCHEDULE.	
	EMERGENCY BATTERY PACK EXIT LIGHT INSTALL AS DIRECTED.	ا جــــــــــــــــــــــــــــــــــــ
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<u>TYPICAL LUMINAIRE NOMENCLATURE</u>

	INDICATES SWITCHING DESIGNATION
<u>SWITCH SYN</u>	<u>MBOLS</u>
\$	SINGLE POLE SWITCH, + 48" AFF TO THE TOP OF THE OUTLET BOX VON.
\$ a	SINGLE POLE SWITCH, + 48" AFF TO THE TOP OF THE OUTLET BOX, a = CIRCUIT CONTROLLED.
\$ 3	THREE WAY SWITCH + 48" AFF TO THE TOP OF THE OUTLET BOX VON.
\$ 4	FOUR WAY SWITCH + 48" AFF TO THE TOP OF THE OUTLET BOX VON.
\$	MOTOR RATED SWITCH
I∰a a	WALL MOUNTED LOW VOLTAGE "DATALINE SWITCH =48" FROM TOP OF BOX, VON, a = CIRCUIT CONTROLLED
09	LIGHTING OCCUPANCY SENSOR
P	MOTION DETECTOR POWER PACK

ONE CIRCUIT WALL SWITCH WITH BUILT IN OCCUPANCY SENSOR. CONNECT SWITCHING TO LIGHTING FIXTURES AS REQUIRED. MOUNT AT +48"AFF TO THE TOP OF THE SWITCH BOX, UON.

RECEPTACLE SYMBOLS

Φ	CONVENIENCE RECEPTACLE - DUPLEX AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
ø	GFCI CONVENIENCE RECEPTACLE - DUPLEX AT +18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
\	RECEPTACLE - DOUBLE DUPLEX AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
Φ	SINGLE RECEPTACLE - NEMA 5-20R UON, AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
Φ	SINGLE RECEPTACLE - NEMA L21 - 208 VOLT, THREE PHASE, 5 WIRE, AT + 18" AFF UON AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
ŧ	DOUBLE DUPLEX RECEPTACLE WITH (1) CONTROLLED DUPLEX AND (1) UNCONTROLLED DUPLEX, AT +18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
	3-CHANNEL SURFACE RACEWAY, INSTALL AT +36" AFF VON. RACEI SHALL BE WIREMOLD #5500.
₩▽	FLOOR BOX WITH (2) DUPLEX RECEPTACLES AND DATA

OUTLETS. QUANTITY OF DATA OUTLETS AS INDICATED ON THE FLOOR PLANS.





<u>MATTSTOPF</u>
LCP
LMRC IOI 2II LMRC 2I2 LMRC 2I3
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<u>و</u> ل

\$101 **\$**102

POWER DISTRIBUTION SYMBOLS

PANELBOARD - SURFACE OR FLUSH MOUNTED.		19" FLOOR MOUNTED DATA RACK.
LIGHTING CONTROL CABINET.	_	
EMERGENCY POWER INVERTER.	V	DATA/TEL STATION AT +18" AFF UON WITH (1) DATA OUTLET. CONNECT DATA/TEL OUTLETS OUTLETS PER THE DATA/TEL RISER DIAGRAM. STUB CONDUIT INTO AVAILABLE CEILING SPACE.
JUNCTION BOX - CEILING OR WALL MOUNTED, SIZE PER CEC, TAPE AND TAG WIRES.		
MAIN SWITCHBOARD OR DISTRIBUTION PANEL.	$\nabla^{(2)}$	DATA/TEL STATION AT +18" AFF UON WITH (2) DATA OUTLETS. CONNECT DATA/TEL OUTLETS OUTLETS PER THE DATA/TEL RISER DIAGRAM. STUB CONDUIT INTO AVAILABLE CEILING SPACE.
MOTOR		
RATING AS INDICATED.	WAP	(2) DATA OUTLETS FOR WIRELESS ACCESS POINT EQUIPMENT TO BE
UNFUSED DISCONNECT SWITCH - RATING AS INDICATED.		MOUNTED IN CEILING CHASE.
FUSED DISCONNECT SWITCH - SIZE FUSES PER MOTOR MANUFACTURER'S RECOMMENDATIONS. RATING AS INDICATED.	0	INTERIOR SPEAKER WALL MOUNTED AT $+ \delta'-O$ " AFF UON. CONNECT SPEAKER
MAGNETIC STARTER - NEMA SIZE INDICATED.	(S)+	
TRANSFORMER - SEE SINGLE LINE FOR REQUIREMENTS.	9	CEILING MOUNTED SPEAKER. CONNECT SPEAKER PER THE PA/CLOCK RISER DIAGRAM
GROUND ROD.		
IN-GRADE ELECTRICAL PULL BOX WITH TRAFFIC RATED LID.	ତ୍ର	FLUSH MOUNTED EXTERIOR SPEAKER AT $+8'-0"$ AFF UON. CONNECT
IN-GRADE LIGHTING PULL BOX WITH TRAFFIC RATED LID.		exterior spearer per the pavoloor riser diagram.
IN-GRADE COMMUNICATION PULL BOX WITH TRAFFIC RATED LID.		
SINGLE EV CHARGER FOR BUS	<u>©</u> 0	UON. CONNECT CLOCK/SPEAKER PER THE PA/CLOCK RISER DIAGRAM. PROVIDE $\frac{3}{4}$ "C TO ACCESSIBLE CEILING.
DOUBLE EV CHARGER FOR CAR	B	HDMI DEVICE. CONNECT PER A $4\frac{1}{4}$ " EXTRA DEEP BOX WITH A 2 GANG RING

COMMUNICATIONS SYMBOLS

POWER DISTRIBUTION SINGLE LINE SYMBOLS

NORMALLY OPENED, AUXILIARY CONTACT.

NORMALLY CLOSED, AUXILIARY CONTACT.

AUTOMATIC TRANSFER SWITCH.

EXISTING CONDUIT, CABLES OR DEVICE

FLEX CONDUIT WITH CONNECTION.

CONDUIT EMERGENCY SYSTEM.

CONDUIT - STUB UP.

CAPPED CONDUIT.

CONDUIT - STUB DOWN.

CONDUIT CONTINUATION.

EMERGENCY GENERATOR.

	FIRE ALA	RM SYMBOLS
DRAW-OUT CIRCUIT BREAKER.	FACP	FIRE ALARM CONTROL PANEL.
	RPS	REMOTE POWER SUPPLY.
	AMP	EVAC SPEAKER AMPLIFIER.
	FATC	FIRE ALARM TERMINAL CABINET.
	ANN	REMOTE FIRE ALARM ANNUNCIATOR.
FUSED SWITCH.	2	SMOKE DETECTOR
	F	PULL STATION
"PG&E" METER W/ CURRENT TRANSFORMER.	函	HORN STROBE
TRANSFORMER.		

MEP COMPONENT ANCHORAGE NOTE

ALL MECHANICAL, PLUMBING, AND ELECTRICAL COMPONENTS SHALL BE ANCHORED AND INSTALLED PER THE DETAILS ON THE DSA APPROVED CONSTRUCTION DOCUMENTS. WHERE NO DETAIL IS INDICATED, THE FOLLOWING COMPONENTS SHALL BE ANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2016 CBC, SECTIONS 1616A.1.18 THROUGH 1616A.1.26 AND ASCE 7-10 CHAPTER 13, 26 AND 30.

THROUGH I_4^{\perp} 'C TO CEILING.

- I. ALL PERMANENT EQUIPMENT AND COMPONENTS. 2. TEMPORARY OR MOVABLE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.q.
- HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. 3. MOVABLE EQUIPMENT WHICH IS STATIONED IN ONE PLACE FOR MORE THAN 8
- HOURS AND HEAVIER THAN 400 POUNDS ARE REQUIRED TO BE ANCHORED WITH TEMPORARY ATTACHMENTS.

THE FOLLOWING MECHANICAL AND ELECTRICAL COMPONENTS SHALL BE POSITIVELY ATTACHED TO THE STRUCTURE, BUT NEED NOT BE DETAILED ON THE PLANS. THESE COMPONENTS SHALL HAVE FLEXIBLE CONNECTIONS PROVIDED BETWEEN THE COMPONENT AND ASSOCIATED DUCTWORK, PIPING, AND CONDUIT.

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OF 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.

FOR THOSE ELEMENTS THAT DO NOT REQUIRE DETAILS ON THE APPROVED DRAWINGS, THE INSTALLATION SHALL BE SUBJECT TO THE APPROVAL OF THE DESIGN PROFESSIONAL IN GENERAL RESPONSIBLE CHARGE OR STRUCTURAL ENGINEER DELEGATED RESPONSIBILITY AND THE DSA DISTRICT STRUCTURAL ENGINEER. 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 7-10 SECTION 13.3 AS DEFINED IN ASCE 7-10 SECTION 13.6.5.6, 13.6.7, 13.6.8, AND 2016 CBC, SECTIONS 1616A.1.23, 1616A.1.24, 1616A.1.25 AND 1615A.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., SMACNA OR OSHPD OPM), 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 SYSTEM. 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):

 $MP \square MD \square PP \square E \boxtimes - OPTION |: DETAILED ON THE APPROVED DRAWINGS WITH$ PROJECT SPECIFIC NOTES AND DETAILS.

MP || MD || PP || E || - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD PRE-APPROVED (OPM #) #

MP MD PP - OPTION 3: SHALL COMPLY WITH THE SMACNA SEISMIC RESTRAINT MANUAL, OSHPD EDITION (2009), INCLUDING ANY ADDENDA. FASTENERS AND OTHER ATTACHMENTS NOT SPECIFICALLY IDENTIFIED IN THE SMACNA SEISMIC RESTRAINT MANUAL. OSHPD EDITION. ARE DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. THE DETAILS SHALL ACCOUNT FOR THE APPLICABLE SEISMIC HAZARD LEVEL AND CONNECTION LEVEL FOR THE PROJECT AND CONDITIONS.

ΈR	DIGITAL	LIGHTING	MANAGEMENT	CONTROLS

CONDUIT - HOME RUN TO PANEL, TERMINAL CABINET, ETC. RUNS MARKED

CROSSHATCHES WITH "#IO" INDICATES WIRE SIZE OTHER THAN #12'S.

ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.

WITH CROSSHATCHES INDICATE NUMBER OF #12 AWG WIRES. CROSSHATCH WITH SUBSCRIPT "G" INDICATES GREEN GROUND WIRE. SIZE CONDUIT

WATTSTOPPER LMCP24

WATTSTOPPER LMRC-101

WATTSTOPPER LMRC-211

WATTSTOPPER LMRC-212

WATTSTOPPER LMRC-213

WATTSTOPPER LMDC-100, CEILING MOUNT

WATTSTOPPER LMDW-IOI, + 48" AFF TO TOP OF THE BOX, UON. WATTSTOPPER LMLS-500, CEILING/WALL MOUNT

WATTSTOPPER LMSW-101, + 48" AFF TO TOP OF THE BOX, UON.

WATTSTOPPER LMSW-102, + 48" AFF TO TOP OF THE BOX, UON.

GENERAL NOTES:

- THE CONTRACTOR SHALL BE LICENSED BY THE STATE OF CALIFORNIA C-10 AND SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT
- SHALL BE U.L. LISTED AND LABELED FOR THE APPLICATION. 2. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY THIS CONTRACT WORK.
- 3. PRIOR TO SUBMITTING A BID THE CONTRACTOR SHALL VISIT THE SITE, REVIEW THE EXISTING CONDITIONS AND ALLOW FOR LABOR, MATERIAL AND COORDINATION THAT IS NECESSARY TO PROVIDE A COMPLETE INSTALLATION OF EACH SYSTEM. THE CONTRACTOR SHALL OBTAIN AND BE FAMILIAR WITH ALL OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES ON PROJECT.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
- 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 ACCURATE "AS-BUILT" DRAWINGS. "AS-BUILT" DRAWINGS SHALL SHOW ACTUAL CHANGES TO ORIGINAL ELECTRICAL DRAWING, SHOW LOCATIONS OF PULL BOXES, CONDUIT RUNS AND WIRING CHANGES. THE CONTRACTOR SHALL PROVIDE ONE (I) HARDCOPY SET OF DOCUMENT DRAWINGS AND ONE (I) SET OF DOCUMENT DRAWINGS IN ELECTRONIC CAD FILE THAT REPRESENTS THE ACTUAL "AS-BUILTS". CAD FILES SHALL BE AUTOCAD 2000 FORMAT.
- 6. ALL MATERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
- 7. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
- 8. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT START OF WORK. THE CONTRACTOR SHALL CONTACT "UNDERGROUND SERVICES ALERT" FOR LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF UNDERGROUND WORK.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.
- IO. ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN INTO BUILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ELECTRICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS. ALL EXTERIOR CONDUITS SHALL BE "RSG" UNLESS OTHERWISE NOTED ON DRAWINGS.
- II. ALL CONDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM: TWO (2) #12'S WITH ONE (1) #12 GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR "ROUGH" ESTIMATING ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE.
- 12. COORDINATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID CONFLICTS.
- 13. SEE ARCHITECTURAL DOCUMENTS FOR EXACT PLACEMENT OF LIGHTING FIXTURES AND DEVICES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CEILING TYPES FROM ARCHITECTURAL DOCUMENTS AND PROVIDE AND INSTALL ALL REQUIRED FIXTURE MOUNTING HARDWARE. PROVIDE AND INSTALL U.L. LISTED FIRE STOP ENCLOSURES FOR ALL RECESSED FIXTURES IN FIRE RATED CEILINGS.
- 14. THE CONTRACTOR SHALL PROVIDE IN EVERY CONDUIT A DRAW STRING FOR USE IN FUTURE CONSTRUCTION.
- 15. POWER FEEDERS MAY NOT BE SHOWN ON THE DRAWINGS, REFER TO THE SINGLE LINE DIAGRAM FOR CONDUIT AND FEEDER INFORMATION. ALL DRAWINGS ARE DIAGRAMMATIC INDICATING LOCATION OR POSITION OF EQUIPMENT. FIELD VERIFY CONDITIONS PRIOR TO INSTALLATION OF ANY WORK.
- 16. MANUFACTURER'S RECOMMENDATIONS FOR CONDUCTOR SIZING, CIRCUIT BREAKER OR FUSE PROTECTION OF ELECTRICALLY OPERATED EQUIPMENT MAY DIFFER FROM THOSE INDICATED ON DRAWINGS. CONTRACTOR SHALL CONFIRM RATINGS PRIOR TO ORDERING EQUIPMENT. PROVIDE ELECTRICAL PROTECTION TO EQUIPMENT IN ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS AND PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
- 17. CONTRACTOR SHALL REVIEW EQUIPMENT REQUIREMENTS OF OTHER TRADES AND PROVIDE POWER CIRCUITS AND CONNECTIONS TO ELECTRICALLY OPERATED EQUIPMENT.
- 18. EFFECTIVELY BOND ELECTRICAL CABINETS, ENCLOSURES AND CONDUIT RACEWAYS TO CODE APPROVED GROUND AS PART OF THE CONTINUOUS GROUNDING SYSTEM.
- 19. MEASEURE THE 3-PHASE AND PHASE TO NEUTRAL SERVICE VOLTAGE FOR 208/120V PANELS PRIOR TO ENERGIZING ANY PANELS OR EQUIPMENT. AVOID ENERGIZING 208/120V PANELS PHASE TO NEUTRAL VOLTAGE ABOVE 130 VOLTS. TRANSFORMER TAP SETTING MAY REQUIRE CHANGING.
- 20. MEASURE THE I-PHASE AND PHASE TO NEUTRAL SERVICE VOLTAGE FOR 240/120V PANELS PRIOR TO ENERGIZING ANY PANELS OR EQUIPMENT. AVOID ENERGIZING 240/120V PANELS PHASE TO NEUTRAL VOLTAGE ABOVE 130 VOLTS.
- 21. DO NOT SUBSTITUTE SPECIFIED MATERIAL OR EQUIPMENT WITHOUT FIRST OBTAINING APPROVAL FROM THE OWNER OR HIS REPRESENTATIVE.
- 22. IDENTIFY ALL ABOVE CEILING JUNCTION BOXES COVERS WITH PANEL AND CIRCUITS IN LEGIBLE PRINT USING BLACK INDELIBLE INK. ABOVE CEILING JUNCTION BOXES SHALL ALSO BE LABELED AT THE REAR INTERIOR BOX WITH AN INDELIBLE BLACK MARKER.
- 23. LABEL ALL WALL AND/OR WIREMOLD MOUNTED OUTLET DEVICES WITH PANEL CIRCUIT IDENTIFICATION WITH BOLD TYPE-PRINTED LABELING. BLACK LETTERING ON WHITE BACKGROUND PREFERRED.
- 24. DERATE CONDUCTORS IN RACEWAYS IN ACCORDANCE WITH NEC CODE REQUIREMENTS. PANEL FEEDERS TO WIREMOLDS CAN ENTER AT VARIOUS LOCATIONS TO LIMIT CONDUCTOR CIRCUITS PER WIREMOLD CAPACITIES.

DRAWING INDEX				
SHEET NO.	SHEET TITLE			
EO.1	ELECTRICAL COVER SHEET			
E1.1	ELECTRICAL SITE PLAN			
E2.1	DEMO FLOOR PLAN - BUILDINGS I, 2, 3 & 4			
E3.1	NEW FLOOR PLAN - BUILDINGS I, 2, 3 \$ 4			
E4.1	DEMO SINGLE LINE DIAGRAM			
E4.2	NEW SINGLE LINE DIAGRAM			
E4.3	PANEL SCHEDULES			
E5.1	ELECTRICAL DETAILS			
E5.2	ELECTRICAL DETAILS			
E5.3	ELECTRICAL DETAILS			
E5.4	ELECTRICAL DETAILS			







GENERAL NOTES:

- CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONELICTS
 ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE UNDERGROUND CONDUITS AND CABLING.
 - 3. CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND LOCATIONS OF EXISTING UNDERGROUND SYSTEMS, WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.
 - 4. INSTALL PG&E PRIMARY TRENCH PER I/ E5.1.
 - 5. INSTALL PG&E SECONDARY TRENCH PER 3/ E5.I.
 - 6. PG&E TRANSFORMER PAD SHALL BE PER 2/ E5.1.
 - 7. ALL ON SITE TRENCH SHALL BE INSTALLED PER 3/ E5.4.
 - SEE THE DEMO SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
 SEE NEW SINGLE LINE DIAGRAM FOR FEEDER CABLE AND CONDUIT REQUIREMENTS.
 - 10. THE CONTRACTOR SHALL MANDREL THROUGH THE ENTIRE PG&E CONDUIT SYSTEM. COORDINATE WITH PG&E FOR ADDITIONAL REQUIREMENTS AND PROCEDURES.

SHEET NOTES:

- $\left(\right)$ EXISTING PG&E POLE WITH NEW PG&E PRIMARY RISER.
- 2 EXISTING 1600A MAIN SWITCHBOARD, CONCRETE PAD AND ALL ASSOCIATED EQUIPMENT TO BE DEMOLISHED. EXISTING FEEDER TO BUILDING LGI TO REMAIN. PROVIDE B3048 PULL BOX AS REQUIRED TO INTERCEPT THE LGI FEEDER.
- (3) EXISTING PG&E TRANSFORMER TO BE REMOVED BY PG&E. DEMOLISH EXISTING TRANSFORMER PAD AND PATCH SURFACE TO MATCH EXISTING.
- $\langle 4 \rangle$ NEW PG&E TRANSFORMER PAD. REFER TO DETAIL 2/E5.1 FOR
- 6 FUTURE PV DISTRIBUTION PANEL
- NEW 2000A MAIN SWITCHBOARD. REFER TO DETAIL I/E5.I FOR ADDITIONAL REQUIREMENTS.
- ADDITIONAL REQUIREMENTS.
- B
 NEW TRANSFORMER 'TP' AND PAD. REFER TO DETAIL 6/E5.4 FOR

 ADDITIONAL REQUIREMENTS.
- A NEW DISTRIBUTION PANEL 'DPP'. REFER TO DETAIL 8/E5.1 FOR ADDITIONAL REQUIREMENTS.
- $\langle 10 \rangle$ NEW 400A-3P, WALL MOUNT DISCONNECT SWITCH. REFER TO DETAIL 8/E5.1 FOR ADDITIONAL REQUIREMENTS.

PULLBOX SCHEDULE

- E1 NEW 4'-6"x8'-6" ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- E2 NEW B2436 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED
- LID. LABEL LID 'POWER'. E3 - NEW 3'x5' ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED
- LID. LABEL LID 'POWER'. E4 - NEW B3048 ELECTRIC / POWER PULLBOX WITH TRAFFIC
- RATED LID. LABEL LID 'POWER'.
- C1 NEW B2436 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'.
 C2 - NEW B3048 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'.

CONDUIT	SCHEDULE:

	(N) (I) 4"C - PG&E PRIMARY
$\langle 2 \rangle$	(N) (7) 5"C - PG&E SECONDARY
3	(N) (I) I"C - PG#E COMMUNICATIONS
4	(N) (2) 3"C - FUTURE PV DISTRIBUTION PANE
5	(N) (I) 2 "C - FUTURE PV COMMUNICATIONS
6	(N) (I) I"C - PG&E COMMUNICATIONS (N) (I) 2"C - FUTURE PV COMMUNICATIONS
$\langle \gamma \rangle$	(N) (I) 4"C - PNL 'GI'
8	(N) (4) 4"C - FUTURE POWER (MU) (N) (2) 2^{\downarrow}_2 "C - FUTURE PV (MU)
P	(N) (I) 4"C - XFMR 'TA' (N) (I) $2\frac{1}{2}$ "C - FUTURE PV
	(N) (I) 2_2^{\perp} "C - XFMR 'TB' (N) (I) 2_2^{\perp} "C - FUTURE PV
	(N) (I) 4"C - XFMR 'TA' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TB' (N) (2) $2\frac{1}{2}$ "C - FUTURE PV
	(N) (I) $2\frac{1}{2}$ "C - XFMR 'TC' (N) (I) $2\frac{1}{2}$ "C - FUTURE PV
	(N) (I) 4"C - XFMR 'TA'
	(N) (I) $2\frac{1}{2}$ "C - XFMR 'TC' (N) (3) $2\frac{1}{2}$ "C - FUTURE PV
<14>	(N) (I) $2\frac{1}{2}$ "C - XFMR 'TD' (N) (I) $2\frac{1}{2}$ "C - FUTURE PV
(15)	(N) (I) 4"C - XFMR 'TA' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TB' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TC' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TD' (N) (4) $2\frac{1}{2}$ "C - FUTURE PV
(16)	(N) (I) 12"C - XEMR 'TP'
	(N) (I) 4"C - XFMR 'TA'
v	(N) (I) $2\frac{1}{2}$ "C - XFMR 'IB' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TC'
	(N) (I) $2\frac{1}{2}$ "C - XFMR 'TD' (N) (I) $1\frac{1}{2}$ "C - XFMR 'TP' (N) (4) $2\frac{1}{2}$ "C - FUTURE PV
(18)	(N) (I) 12"C - PANEL 'P6'
Iq	(N) (I) 12"C - PANEL 'P7'
20	(N) (I) $2\frac{1}{2}$ "C - PANEL 'DPP'
	(N) (T) 2^{1}_{2} "C - FUTURE PV
< <u>22</u> >	(N) (I) $2\frac{1}{2}$ "C - XFMR 'TB' (N) (I) $2\frac{1}{2}$ "C - XFMR 'TD' (N) (I) $1\frac{1}{2}$ "C - XFMR 'TP' (N) (4) 4"C - FUTURE MULTI-USE
23	(N) (I) 4"C - XFMR 'TA' (N) (I) 2½"C - XFMR 'TC' (N) (4) 4"C - SPARE
24	(N) (4) 4 "C - FUTURE COMMUNICATION



DIMENSIONS

E1.1 SCALE: 1/8"=1'-0"







NOTES

- HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN. 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM
- OF THE PULL BOX. 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS 4. PROVIDE BELL ENDS ON ALL CONDUIT.
- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT
- 6. PROVIDE DRAIN IN BASE AND DRAIN ROCK.





E5.4 NOT TO SCALE

(FULL TRAFFIC COVER)



NOTES:

- REQUIREMENTS.
- 6. PROVIDE BASE WITH DRAIN AND DRAIN ROCK.





NOTES:

- HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE
- PULL BOX.
- 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS. 4. PROVIDE BELL ENDS ON ALL CONDUIT.
- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE DRAIN IN BASE AND DRAIN ROCK.



(FULL TRAFFIC COVER)



NOT TO SCALE

DIMENSION PER

MANUFACTURER FIELD VERIFY.

<u>PLAN VIEM</u>

SECTION A-A

SEE STRUCTURAL --DRAWINGS FOR

REQUIREMENTS

∖E5.4 /

STRUCTURAL SLAB

42"



E5.4 NOT TO SCALE

4'6' x 8'6' ELECTRICAL VAULT





DISTRIBUTION TRANSFORMER INSTALLATION





NOTES:

- HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE PULL BOX.
- 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS. 4. PROVIDE BELL ENDS ON ALL CONDUIT.

B2436 TRAFFIC BOX DETAIL

- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE DRAIN IN BASE AND DRAIN ROCK.

E5.4 NOT TO SCALE





- (4) PROVIDE STAINLESS STEEL 1/2" ϕ X 2 3/8" NOMINAL EMBEDMENT HILTI KWIK BOLT TZ2 EXPANSION ANCHOR (ICC-ES-ESR 4266), IN 2-5/8" DEEP
- HOLE. (4) ANCHOR BOLTS PER POST BASE. 5 SLAB EDGE WHERE OCCURS.

8

- 6) DIMENSIONS OF DISCONNECT 29"H X 19"W X 8.5"D
- (7) PROVIDE UNISTRUT FLOOR SUPPORT P2073A SQ POST BASE.
- (8) PROVIDE DOUBLE UNISTRUT PIOOI HS MINIMUM 12 GA GALV STEEI.
- (9) PROVIDE HEX HEAD CAP SCREWS 3/8"X2" WITH HEX NUTS AND WASHERS. (4) CAP SCREWS ARE FOR ATTACHMENT OF PANEL TO REAR STRUTS.
- (10) PROVIDE (2) 1/2" GALV BOLTS FROM P2073A SQ POST BASE INTO VERTICAL UNISTRUT PIOOI. PROVIDE EACH BOLT WITH PIOIO NUT INSIDE STRUT. TYPICAL FOR BOTH P2073A SQ POST BASE.
- (II) PROVIDE 1/2" & GALV BOLT FASTENERS AT EACH INTERSECTION.

DISTRIBUTION TRANSFORMER INSTALLATION



DISCONNECT INSTALLATION ON



December 22, 2021

Aedis Architects 387 S. First St., Suite 300 San Jose, CA 95113

Subject: North Shoreview Elementary School HVAC Replacement San Mateo - Foster City School District Aedis Project No. 2021005.05 DSA Application #01-119526

ADDENDUM NO. 3

CHANGES AND/OR CLARIFICATIONS OF THE DRAWINGS AND SPECIFICATIONS ARE AS FOLLOWS:

GENERAL

ITEM NO. 3.1:	HVAC AND POWER UPGRADE PROJECT HAZARDOUS MATERIALS SURVEY REPORT		
	<u>Add:</u>	The report in its entirety per attached HVAC And Power Upgrade Project Hazardous Materials Survey Report North Shoreview Montessori School	

- ITEM NO. 3.2: DSA FORM 103-19 LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS
 - <u>Add:</u> The DSA form in its entirety per attached DSA Form 103-19 Listing Of Structural Tests & Special Inspections, 2019 CBC
- ITEM NO. 3.3: REFERENCE DRAWINGS
 - <u>Add:</u> Utility survey for reference only, per attached North Shoreview Campus Utility Survey
 - <u>Add:</u> Topographic survey for reference only, per attached Topographic Survey of 1301 Cypress Avenue

SPECIFICATIONS

- ITEM NO. 3.4:TABLE OF CONTENTS:
 - Add: 02 80 00 HAZARDOUS MATERIALS ABATEMENT
 - Add: 07 62 00 SHEET METAL FLASHING AND TRIM
 - Add: 32 17 23 PAVEMENT MARKINGS
- ITEM NO. 3.1: SECTION 01 56 39 TEMPORARY TREE AND PLANT PROTECTION
 - Add:Part 3.1 paragraph E to read: "Refer to report Evaluation Of Construction EffectsOn Three Trees At The North Shoreview Elementary School 1301 Cypress Ave, San

North Shoreview Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.05

Mateo, California 94401 for additional comments and recommendations to be implemented."

<u>Add:</u> Report: Evaluation Of Construction Effects On Three Trees At The North Shoreview Elementary School 1301 Cypress Ave, San Mateo, California 94401

ITEM NO. 3.5: SECTION 02 80 00 HAZARDOUS MATERIALS ABATEMENT

<u>Add:</u> The specification in its entirety per attached 02 80 00 Hazardous Materials Abatement

ITEM NO. 3.6: SECTION 07 31 13 ASPHALT SHINGLES:

- <u>Revise:</u> Paragraph 2.1 to read: "Acceptable Manufacturer: GAF Corporation; Timberline Prestique. Color: Cool Barkwood to match existing roof."
- <u>*Revise:*</u> Paragraph 2.3A to read: "Underlayment: GAF Corporation; Shingle Mate Underlayment."
- <u>Add:</u> Paragraph 3.10 to read: "Provide water leak test at roof areas where cutting and patching occurs, including flashings, with hose spray test in front of District personnel. Spray flashing in both directions for no less than five (5) minutes and confirm there is no leaking."

ITEM NO. 3.7: SECTION 07 62 00 METAL FLASHING AND TRIM

- Add: The specification in its entirety per attached 07 62 00 Metal Flashing and Trim
- ITEM NO. 3.8: SECTION 09 65 13 RESILIENT BASE AND ACCESSORIES:
 - <u>Revise:</u> Paragraph 2.1H to read: "Colors: Selected from manufacturer's full range to match existing."
- ITEM NO. 3.9: SECTION 32 17 23 PAVEMENT MARKINGS
 - Add: The specification in its entirety per attached 32 17 23 Pavement Markings

DRAWINGS

ARCHITECTURAL

ITEM NO. 3.10: DRAWING SHEET A1.02 – SITE PLAN

Add:Fire department access route in plan per attached AD3-A1.02Add:Site Plan Keynote #26 and associated tag in plan per attached AD3-A1.02Add:(E) Fire department access route graphic to Graphic Key per attached AD3-A1.02

<u>Add:</u> Playground striping graphics and associated keynote 18 in plan per attached AD3-A1.02

ITEM NO. 3.11: DRAWING SHEET A2.01 – DEMOLITION FLOOR PLAN – BLDGS A, B & C

<u>Revise:</u> Demo and prep for drywell at locations indicated on attached AD3-A2.01 <u>Clarification:</u> Existing VCT-1 flooring to remain at new partition wall framing at rooms 1, 4, 7, 9, 10, and 11.

- ITEM NO. 3.12: DRAWING SHEET A3.01 NEW FLOOR PLANS BLDGS A, B & C
 - <u>Add:</u> General Sheet Note #F per attached AD3-A3.01
 - <u>Revise:</u> Drywell at locations indicated on attached AD3-A3.01
 - <u>Add:</u> New Floor Plan Keynotes #18 & #19 and associated tags per attached AD3-A3.01 *Revise:* Framing dimensions per attached AD3-A3.01
- ITEM NO. 3.13: DRAWING SHEET A3.02 NEW FLOOR PLANS BLDGS D & E
 - Add: General Sheet Note #F per attached AD3-A3.02
 - <u>Add:</u> New Floor Plan Keynotes #11 and #12 and associated tags in floor plan per attached AD3-A3.02
 - <u>*Revise:*</u> Framing dimensions per attached AD3-A3.02

ITEM NO. 3.14: DRAWING SHEET A8.10 – EXTERIOR DETAILS

- *<u>Revise:</u>* Detail 6/A8.10 Concrete Patch per attached AD3-A8.10A
- *Revise:* Detail 10/A8.10 Shingle Side Flashing per attached AD3-A8.10B.
- *Revise:* Detail 11/A8.10 Shingle Lower Flashing per attached AD3-A8.10B.
- ITEM NO. 3.15: DRAWING SHEET A9.10 INTERIOR ELEVATIONS & DETAILS

 Revise:
 In typical elevations 9/A9.10, 10/A9.10, 11/A9.10, 12/A9.10, 13/A9.10, 14/A9.10, 15/A9.10, 17/A9.10, and 18/A9.10 revise finish tag VWC-1 to GB-1

 Revise:
 Detail 16/A9.10 Mech Enclosure Clearances, Typ. per attached AD3-A9.10.

ITEM NO. 3.16: DRAWING SHEET A11.01 – FINISH SCHEDULE, OPENING SCHEDULE, LEGENDS, & DETAILS

Remove:In Finish Schedule, remove VWC-1 from Wall Finish at all roomsRevise:In Finish Legend, revise GB-1 from "GYPSUM BOARD" to "GYPSUM BOARD,
PAINTED"

STRUCTURAL

ITEM NO. 3.1: DRAWING SHEET \$8.01 – FRAMING DETAILS AND NAILING SCHEDULE

<u>Remove:</u> Vertical nailing requirement in detail 7 per attached AD3-S8.01

ADDENDUM NO. 3

North Shoreview Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.05

MECHANICAL

ITEM NO. 3.17: DRAWING SHEET MP0.02 – SCHEDULES – MECHANICAL & PLUMBING

<u>Revise:</u> Classroom split system heat pump schedule notes & note 5 per attached AD3-MP0.02

ITEM NO. 3.18: DRAWING SHEET MP2.03 – FLOOR PLAN – NEW – BLDGS A, B & C – MECHANICAL & PLUMBING

<u>*Clarification:*</u> Condensate pipe revisions and associated notes moved to new sheet AD3-P2.03 *Remove:* Keynotes #6, #16 & #17 per attached AD3-MP2.03

<u>Revise:</u> Drywell locations per attached AD3-MP2.03

<u>Revise:</u> Keynote #12 per attached AD3-MP2.03. Intent is damper and actuator are concealed inside the opening and covered with grilles similar to picture below.





Keynote #20 and associated tag in plan per attached AD3-MP2.03. Intent is to provide a duct collar at enclosure penetration similar to the picture below.



12/22/2021

ADDENDUM NO. 3

North Shoreview Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.05

- ITEM NO. 3.19: DRAWING SHEET P2.03 FLOOR PLAN NEW BLDGS A, B & C CONDENSATE DRAINS - PLUMBING
 - Add: New sheet in its entirety per attached AD3-P2.03
- ITEM NO. 3.20: DRAWING SHEET MP2.04 FLOOR PLAN NEW BLDGS D & E MECHANICAL & PLUMBING
 - *<u>Revise:</u>* Keynote #21 per attached AD3-MP2.04
- ITEM NO. 3.21: DRAWING SHEET MP6.01 DETAILS MECHANICAL & PLUMBING
 - *<u>Revise:</u>* Details 5/MP6.01 per attached AD3-MP6.01

ELECTRICAL

- ITEM NO. 3.22: DRAWING SHEET E0.1 Electrical Cover Sheet
 - <u>Revise:</u> Wiring & Conduit Run Symbols for clarity per attached AD3-E0.1
- ITEM NO. 3.23: DRAWING SHEET E1.1 Electrical Site Plan

<u>Revise:</u> General Note #2 per attached AD3-E1.1.

ITEM NO. 3.24: DRAWING SHEET E5.4 Electrical Details.

Revise:Detail 3/E5.4 Note #1 per attached AD3-E5.4.Add:Detail 3/E5.4 Note #5 per attached AD3-E5.4.

ADDENDUM NO. 3 North Shoreview Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.05



Aedis Architects Thang Do, Principal



Structural, BASE Design Gokhan Akalan



Electrical, American Consulting Engineers Electrical Sammy Fernandez



Mechanical, Cypress Engineering Group Metin Serttunc

Division of the State Architect

ADDENDUM NO. 3

North Shoreview Elementary School HVAC Replacement San Mateo – Foster City School District Aedis Project No. 2021005.05

Attachments:

General:

HVAC And Power Upgrade Project Hazardous Materials Survey Report North Shoreview Montessori School (31 pages)

DSA Form 103-19 Listing Of Structural Tests & Special Inspections, 2019 CBC (13 pages)

North Shoreview Campus Utility Survey (1 page)

Topographic Survey of 1301 Cypress Avenue (1 page)

Specifications:

- 01 56 39Temporary Tree and Plant Protection: Evaluation Of Construction Effects On Three Trees At The
North Shoreview Elementary School 1301 Cypress Ave, San Mateo, California 94401 (12 pages)02 02 02North Shoreview Elementary School 1301 Cypress Ave, San Mateo, California 94401 (12 pages)
- 02 80 00 Hazardous Materials Abatement (42 Pages)
- 07 62 00 Metal Flashing and Trim (11 Pages)
- 32 17 23 Pavement Markings (2 Pages)

Drawings:

ARCHITECTURAL

SHEET AD3-A1.02 SHEET AD3-A2.01 SHEET AD3-A3.01 SHEET AD3-A3.02 SHEET AD3-A8.10A SHEET AD3-A8.10B SHEET AD3-A9.10 STRUCTURAL: SHEET AD3-S8.01 **MECHANICAL** SHEET AD3-MP0.02 SHEET AD3-MP2.03 SHEET AD3-P2.03 SHEET AD3-MP2.04 SHEET AD3-MP6.01 **ELECTRICAL** SHEET AD3-E0.1 SHEET AD3-E1.1 SHEET AD3-E5.4

ZNAP C FLY ENVIRONMENTAL TESTING



HVAC and Power Upgrade Project

HAZARDOUS MATERIALS SURVEY REPORT

North Shoreview Montessori School

For



419 Mason Street Suite 109 | Vacaville CA 95688 | 707.999.5234

Email: erica@znapfly.com

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Cover Letter

Monday, September 20, 2021

Kevin Sanders San Mateo Foster City School District 1170 Chess Drive Foster City, California 94404

SUBJECT: HVAC and Power Upgrades Project - Hazardous Materials Survey Report

Dear Mr. Sanders,

At the request of the San Mateo Foster City School District, Znap Fly provided an asbestos and lead survey of suspect building construction materials at North Shoreview Montessori School located at 1301 Cypress Avenue in San Mateo, California as part of the San Mateo Foster City School District (SMFCSD).

Onsite testing was performed on June 30 and July 15, 2021, by Ms. Erica Sattar.

This report is intended as an informational resource for the San Mateo Foster City School District and includes sample/test results, conclusions and recommendations regarding hazardous materials based upon information obtained from samples and tests collected at specific locations, review of information/drawings provided to us, and professional judgment.

Shall you have any questions or concerns regarding this document, following review, please contact us at 707-999-5234.

With Gratitude,

Erica Sattar, CAC, CDPH Principal Consultant / Director of Environmental Znap Fly

Description of Buildings Surveyed

The buildings surveyed at North Shoreview Montessori School are stucco exterior with metal framed windows and metal columns for reinforcement. Interior finishes that are anticipated to be impacted by project work are acoustic ceiling tiles, plaster soffit, sheetrock walls, carpet, cove base and exterior sealants. Floor tile was also sampled in areas outside the scope of work at the request of SMFCSD.

Survey Methodology: Sampling & Analytical

All onsite testing was performed at 7-sites throughout the San Mateo Foster City School District (SMFCSD), with XRF lead testing completed on June 30, 2021 and bulk samples collected on July 15, 2021, by Ms. Erica Sattar. The project was planned and overseen by Ms. Sattar and Mr. Christopher Smith. Both, Ms. Sattar and Mr. Smith, are Cal/OSHA Certified Asbestos Consultants (CACs) and CDPH Lead Consultants, with mold investigation and remediation training. The report was prepared by Ms. Sattar and reviewed by Mr. Smith.

<u>Asbestos</u>

All bulk samples were collected using sampling guidelines established by the Environmental Protection Agency (EPA) and by generally following the methods described in Appendix K of title 8, CCR, Section 1529 of the California Code of Regulations for sample collection. Znap Fly was not prevented and/or instructed by the owner/operator of SMFCSD as to what materials were to be sampled. The following summarizes the sampling procedures utilized.

- Visually identified suspect ACMs were categorized into homogeneous material areas. A homogeneous material
 is defined as being a surfacing material, thermal system insulation, or miscellaneous material which is uniform
 in color and texture.
- A sampling scheme was developed based upon the location and quantity of the various homogeneous materials.
- Trained and certified personnel using appropriate sampling tools and leak-tight containers collected bulk samples.
- Bulk sample collection tools were decontaminated after the collection of each bulk sample to prevent the spread of secondary contamination to subsequent bulk samples.
- Each bulk sample was labeled with a unique sample identification number and recorded on a bulk sample log.
- Bulk samples collected were submitted to a laboratory with a chain of custody record.

All material quantities reported herein are rough order of magnitude estimates and should not be used for bidding purposes without review of available record drawings and on-site field verification by the bidder. The information provided in this report should be used in conjunction with construction documents and the contractor's own field verification of the abatement scope of work including location and extent of removal required for the demolition project being undertaken at each site. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Bulk samples of suspect materials were delivered to EMSL Analytical, Inc. (EMSL) in San Leandro, California and EMSL redirected samples to their sister lab LA Testing in South Pasadena. EMSL/LA Testing is a laboratory accredited under the National Institute of Standards and Technology (NIST)/National Voluntary Laboratory Accreditation Program (NVLAP) and the California Environmental Laboratory Accreditation Program (Cal-ELAP) for bulk asbestos sample analysis. The samples were submitted for analysis by Polarized Light Microscopy (PLM) utilizing dispersion staining techniques in accordance

with the EPA's "Method for the Determination of Asbestos in Bulk Building Materials" US EPA/600/R-93/116, dated July 1993 and adopted by the NVLAP as Test Method Code 18/A01.

Standard PLM analytical method has a limit of quantification of 1% asbestos. For materials with asbestos detected at trace levels or below 1% by standard PLM, the material must be considered to be above 1% (ACM) unless re-analyzed and found to be less than 1% by the PLM point count method (400 points minimum). Each sample of a homogeneous area material with trace result(s) must be re-analyzed by point count and found to be less than 1% in order to avoid assuming the material to be ACM according to EPA regulation. For this project, no materials were analyzed by point count methods.

Lead

Lead-based paint (LBP) is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%), as set forth in the Department of Housing and Urban Development (HUD) guidelines and California Department of Public Health (CDPH) regulations. Lead-Containing Paints (LCPs) are paints and coatings that contain detectable lead as defined by Cal/OSHA. Most paint and coatings on pre-1978 buildings contain some detectable lead subject to Cal/OSHA regulation. Therefore the exhaustive testing required to prove painted coatings do not contain lead is not practical or cost effective. Consequently, all paints and architectural coatings must be considered to contain some detectable levels of lead unless proven otherwise by laboratory analysis.

This survey included screening level LBP testing for the purpose of characterizing the general presence of lead in existing paints and coatings. As such, this survey included paint testing using a C series Vanta XRF direct read lead testing instrument. The results presented herein are representative of typical conditions but are not inclusive of all painted/ coated surfaces present at the site. The results of this survey should assist with compliance to the California Occupational Safety and Health Administration (Cal/OSHA) lead construction standard and preliminary evaluation of potential construction waste streams. All painted/coated surfaces including untested surfaces, must be assumed to contain some detectable level of lead in the absence of representative paint chip analytical results demonstrating that lead levels are below analytical detection limits. This is because the XRF instrument, while providing a cost effective, non-destructive test method, the instrument is calibrated to detect LBP and cannot detect lead at the lowest levels regulated Cal/OSHA and Cal/ EPA. Any detectable level of lead is subject to Cal/OSHA regulation.

Universal Wastes & Other Suspected Hazardous Materials

The building areas were visually surveyed for universal wastes and other hazardous materials. These universal wastes include fluorescent lighting fixtures manufactured prior to 1979 that have the potential to contain Polychlorinated Biphenyl (PCB) ballasts, mercury containing lighting tubes, and other components considered to be "universal wastes" upon disposal. "Universal Wastes" include mercury-containing non-incandescent lamps, batteries, mercury thermostat switches and other hazardous wastes commonly found in building components and equipment. Other suspect hazardous materials include refrigerants, paints, and solvents.

Asbestos Containing Materials

Znap Fly collected a total of 52 bulk samples with 95 sample layers of suspect ACM analyzed by PLM analysis. Samples collected with reported asbestos by laboratory analysis are shown below. The analytical laboratory results for all sampled suspect ACMs are listed below and results can be found in the attached Analytical Laboratory Reports.

Assumed Asbestos-Containing Material

The following list of materials are assumed to contain asbestos, pending testing prior to construction to confirm asbestos content or prove no asbestos is present by laboratory analysis.

- Joint compound associated with sheetrock wall system, joint compound = 2% asbestos, sheetrock = no asbestos detected, Regulated Asbestos Containing Material (RACM) friable asbestos containing material, approximately 15 square feet may be impacted at each work location, refer to project drawings
- Residual floor tile mastic, found in one of seven samples collected at Room 18, 3% asbestos approximately 8 square feet at each work location may be impacted, refer to project drawings
- Stucco, <1% asbestos assumed >1% asbestos without point count analysis, Category II non-friable asbestos containing material, quantity impacted is dependent on the scope of work, refer to project drawings
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location, may not be impacted
- Mastic associated with acoustic ceiling tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, although material may not be impacted by scope of work
- Roof field, shingle with associated mastic (assumed asbestos, this material may be sampled during construction if impacted to prove no asbestos by laboratory analysis, non-friable Category I ACM, quantity impacted is dependent on the scope of work, refer to project drawings

Suspect Asbestos-Containing Materials Sampled with No Asbestos Reported

Materials listed below were sampled and analyzed by an accredited laboratory by PLM analysis reported "none detected" for asbestos. The following list are all materials sampled.

- Plaster
- Floor tile, 12" x 12" blue and beige with associated yellow mastics (in most locations sampled, except Room 18 where residual black mastic reported asbestos)
- Cove base, 4" green and gray with associated beige mastics
- Resilient sheet flooring, tan with mastic
- Acoustic ceiling tile, 12" x 12" white with grey fibrous material, mastic associated with tile is assumed asbestos containing
- Sealant at exterior, tan with white paint
- Sealant at interior, gray/white
- Carpet mastic

Refer to Attachment for a complete set of the laboratory results and sample locations.

5
Lead Containing Paints, Coatings and Materials

Znap Fly performed a total of 37 XRF lead tests from the interior and exterior building components. Lead-based paint (LBP) results of the XRF LBP screening survey are provided in the table shown below. A total of five (5) XRF tests contained lead at LBP levels above the threshold 1.0 mg/cm² of the 37 total tests of painted surfaces tested.

	Component	Substrate	Color	Condition	Result (mg/cm2)
Interior	Lower wall	Wood	White	Intact/good	1.398 - 1.561
Futorior	Window trim	Metal	White	Intact/good	1.839
Exterior	Wall Trim	Metal	White	Intact/good	1.388 - 2.02

The following is a brief summary of types of building components that tested above 1.0 mg/cm² and should be considered lead based paint (LBP) as determined by XRF.

The tabulated data is not intended to be all inclusive and must be extrapolated to similar surfaces that were not tested. Lead content will vary according to painting histories involved. Generally on a building by building basis, component type and substrate are more reliable indicators.

General Interpretation of Lead-Containing Paint Findings Reported:

All painted components must be presumed to contain some detectable levels of lead regardless of non – detection by the XRF method unless exhaustively tested by paint chip analysis. Untested painted/coated components must be presumed to contain some lead at detectable levels. About 13% of the painted/glazed surfaces tested contained high levels of lead considered to be LBP and most of the remaining surfaces contained some detectable lead. In general, LBP was detected on interior lower walls and exterior window and wall trim. The frequency of occurrence was typically low. The tested surfaces that reported low levels of detected lead must be considered lead-containing paints (LCP) and coatings in the absence of exhaustive testing by wet chemistry methods.

Paint Condition Findings:

The condition of paint at this site is generally in good/intact condition. Since even low levels of paint (e.g., just over 50 ppm) may exhibit hazardous waste characteristics, care must be taken to eliminate loose and peeling paint prior to general building demolition. Any loose, peeling or flaking paint should be removed and disposed of as lead hazardous waste.

Universal Wastes & Other Potential Hazardous Materials

Znap Fly visually inspected readily accessible areas of the building for other hazardous materials PCB lighting ballasts, Universal Wastes (such as mercury containing lighting tubes, thermostats, and batteries), and other suspect hazardous waste and contamination. No attempt to disassemble equipment or sample any additionally discovered suspect materials was included. Any suspect hazardous material must be presumed hazardous pending complete identification. For example, fluorescent lighting fixtures must be presumed to contain PCB ballasts pending removal and disassembly of each unit to determine ballast type and/or labeling in the absence of other explicit product specific information to the contrary.

Asbestos Containing Construction Materials

Prior to renovation/demolition construction activities, known or assumed ACMs that are likely to be disturbed by those activities must be removed and disposed of in accordance with all applicable regulations including federal National Emissions Standard for Hazardous Air Pollutants (NESHAPS) and Cal/OSHA regulations. A Cal-OSHA registered and State licensed, registered asbestos contractor (abatement/demolition/roofing) is required for removal of ACM prior to general demolition and renovation. For this project, joint compound associated with sheetrock wall system, residual black floor tile mastic in Room 18, assumed asbestos mastic associated with tack board/white board/chalk board and acoustic ceiling tiles and the roof field shingles and associated roof mastics are to be considered to contain asbestos. Joint compound associated with the sheetrock wall system is a regulated asbestos containing material (RACM), with other materials considered Category I or II non-friable asbestos containing materials. Should any significant discrepancy between this report and existing conditions be discovered, the contractor shall notify the project manager, contracting officer, or inspector immediately. Assumed materials can be sampled on a rush turnaround time to prove a material does not contain asbestos. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

Other Considerations and Rules

Where removal is unavoidable, the contractor's abatement sub-contractor should remove all friable RACM under class I removal requirements and dispose of waste as hazardous asbestos waste at a landfill permitted for asbestos hazardous waste disposal, this work is anticipated for this project at select locations; refer to project documents on-site for extent and materials requiring removal. The contractor's abatement sub-contractor should also remove all category I & II non-friable ACM in a manner that does not produce friable ACM under Cal/OSHA Class I removal requirements and dispose of removed materials as non-hazardous asbestos waste at a landfill permitted for asbestos waste disposal.

The following additional requirements should be adhered to for any maintenance, renovation, or demolition projects requiring asbestos disturbance and/or removal:

•All asbestos-containing wastes shall be manifested as either hazardous or non-hazardous based on asbestos content, friability, and actual waste stream classification.

•All asbestos removal should be overseen by a qualified independent third party, retained by the building owner or manager of the building to ensure proper removal, clean up, work area clearance, and review waste shipping and disposal documentation.

Contractor should perform all work in compliance with contract documents and the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of asbestos.

Lead Containing Paints and Coatings

The painted components tested at the subject buildings typically had detectable levels of lead and should be considered LCP coated. LBP was detected on about 13% of the surfaces or components tested and consisted of interior lower walls and exterior window and wall trim. All paints and coatings should be considered LCP or coatings in the absence of exhaustive sampling and laboratory analysis. The disturbance of these components during demolition and renovation activities will require use of personnel trained in lead hazards for construction and will require compliance with applicable Cal/OSHA and Cal/EPA regulation. Any detectable level of lead is subject to Cal/OSHA regulation.

At present there is no state or federal regulation requiring mandatory lead removal or abatement prior to disturbance, demolition or renovation of structures with identified lead materials. However, prior to hot work on painted metal, the paint either needs to be removed or supplied air respirators worn during welding or cutting operation. In addition, there are applicable lead specific Cal/OSHA worker protection requirements and Cal/EPA waste disposal requirements that do apply to lead-related construction activities and associated wastes:

- Cal/OSHA: The Cal/OSHA regulation, Title 8, CCR, Section 1532.1 Lead governs occupation exposure to lead. This regulation requires that any task that may potentially expose workers to any concentration of lead, be monitored to determine workers eight-hour time weighted average (TWA) exposure to lead. Prior to initiation of certain activities, referred to as "trigger tasks," that are believed to have the capability of creating an excessive lead exposure, such workers must be properly fitted with respiratory protection and protective clothing until personal eight-hour TWA results reveal exposures within acceptable levels. Pertinent examples of trigger tasks are manual demolition, manual paint scraping and power tool removal, and hot work involving lead-containing coatings or materials. Cal/OSHA also has agency pre-start notification requirements and worker training and certification depending on exposure levels. Clearly these requirements will apply to demolition, patch and repair, paint removal, and surface preparation work at this site.
- Cal/EPA: Cal/EPA regulates disposal of lead hazardous waste (22 CCR Division 4.5, Environmental Health Standards for the Management of Hazardous Waste). The Cal/EPA Department of Toxic Substance Control (DTSC) has issued guidance indicating that architectural debris with intact lead paint is normally anticipated to be handled as general construction waste. Since detected LCP was generally in intact/good condition and 87% of paint coatings tested had low to moderate lead content, it is unlikely that most of the demolition debris will be hazardous as a composite sample. However, all lead containing waste streams should be considered potentially lead hazardous pending waste testing. Further, all surface preparation and paint removal wastes must be considered hazardous wastes due to the likelihood of paint chip lead levels exceeding 1,000 total lead or 5 ppm soluble lead.

All construction activities impacting lead must be performed in compliance with the most recent edition of all applicable Federal, State, and local regulations, standards, and codes governing abatement, transport, and disposal of lead containing/contaminated materials. Selective and general demolition activities will involve disturbing lead and possibly creating lead hazardous wastes. These construction activities must be controlled to prevent uncontrolled release of lead contamination and for environmental protection.

The Contractor conducting building demolition and any selective demolition controls the means and methods used and therefore should be required by the contract document to ensure that the demolition processes are conducted in a manner that creates the minimum amount of hazardous waste and leaves the site free of lead contamination exceeding regulatory levels.

Universal Wastes and Other Known or Presumed Hazardous Materials

PCB Lighting Ballasts: Znap Fly's visual inspection indicated that fluorescent light fixtures may contain PCB ballasts are present in the building. However, as it is not practically feasible to check each ballast for labeling prior to renovation, Znap Fly recommends that all light fixtures be visually inspected by the Contractor upon removal to determine if they contain PCB's. Electronic ballasts and ballasts marked "No PCB's" or "PCB Free" should be considered non-hazardous and recycled or disposed of accordingly. However, ballasts that are unmarked must be considered PCB-containing and properly

handled, collected, stored, transported and recycled or disposed of by an approved recycling or disposal facility in accordance with the requirements of 22 CCR, Section 67426.1 and the contract.

Universal Wastes: All potential and identified mercury-containing light tubes, high intensity lamps, and other universal wastes such as batteries should be removed and recycled or disposed of in accordance with the guidelines established by the California Department of Toxic Substance Control Universal Waste Rule, as stated in 22 CCR Sections 66261.9 and 66273.1 thru 66273.90.

Other Suspect Hazardous Materials: Coolant gasses in air conditioning units must be properly extracted and recycled prior to unit removal and disposal by a qualified hazardous materials disposal contractor using EPA certified Refrigerant Reclaimer for the removal and recycling of the gases.

Limitations

Znap Fly conducted this survey in support of the HVAC Power Upgrade Project for San Mateo Foster City School District. Rooms and areas surveyed were based on access to unoccupied classrooms within the work scope in DD 90% CD drawings provided by the District dated 5/24/2021. No excavation or subsurface investigation was conducted to discover buried insulated piping and/or asbestos cement pipes concealed below the surface or interstitial wall spaces. Cement pipe and insulated pipe is assumed below the surface and/or in interstitial wall spaces. No samples were collected in rooms not anticipated to be impacted by this project. In the event, concealed suspect ACMs not previously identified are discovered, the contractor is obligated to stop and notify the owner immediately in compliance with applicable regulations.

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Closing

Znap Fly performed the assessment in a manner consistent with that degree of care and skill ordinarily exercised by members of the same profession currently practicing under similar circumstances.

Conclusions and recommendations made regarding hazardous materials were based upon information obtained from samples and tests collected at specific locations, review of information provided to us, and professional judgment. Recommendations in this report were made based on conditions that Znap Fly reasonably infer to exist between sampling points.

This report is intended as an informational resource for the San Mateo Foster City School District. Any contractor using this document assumes all responsibility for reviewing all available information and for verifying existing site conditions including location and extent of hazardous materials present at specific areas.

Should any significant discrepancy between this report and existing conditions be discovered, the contractor shall notify the project manager, contracting officer, or inspector immediately.

If you have any questions or concerns regarding this document, please contact us at 707-999-5234.

With Gratitude, Znap Fly

Report prepared for the San Mateo Foster City School District by:

nich 1

Erica Sattar, CAC, CDPH Certified Asbestos Consultant #14-5250 CDPH Lead Sampling Technician #20425

Report reviewed for the San Mateo Foster City School District by:

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Attachments

Laboratory Reports with Chain of Custody Record Asbestos Sampling Plan Suspect Asbestos Containing Materials Sample Table Lead Sampling Plan Lead Paint Testing and Sampling Table Znap Fly Personnel Certifications CDPH Lead Hazard Evaluation Report



520 Mission Street South Pasadena, CA 91030 Tel/Fax: (323) 254-9960 / (323) 254-9982 http://www.LATesting.com / pasadenalab@latesting.com

Attention:	Erica Sattar	Phone:	(707) 999-5234
	Znap Fly	Fax:	
	419 Mason Street	Received Date:	07/20/2021 9:50 AM
	Suite 109	Analysis Date:	07/21/2021 - 07/22/2021
	Vacaville, CA 95688	Collected Date:	07/15/2021
Proiect:	EN210601 / 7 School HVAC Project. North Shoreview School / San Mateo	Foster Citv Schoo	l District

		Non-Asbestos			Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
A1-LIB-Sheetrock 322113136-0001	Library - Whtie, sheetrock with joint compound	Brown/White Fibrous Heterogeneous	20% Cellulose	80% Non-fibrous (Other)	None Detected
No joint compound present for	r analysis				
A1-19-Sheetrock	Room 19 - Whtie, sheetrock with joint	Brown/White Fibrous	20% Cellulose	80% Non-fibrous (Other)	None Detected
322113136-0002	compound	Heterogeneous			
A1-19-Joint Compound	Room 19 - Whtie, sheetrock with joint	Beige Non-Fibrous Homogeneous		98% Non-fibrous (Other)	2% Chrysotile
A1 20 Sheetrook	Boom 20 White	Brown/M/bito		80% Non fibrous (Other)	None Detected
A1-20-Sheetrock	sheetrock with joint	Fibrous Heterogeneous	20% Cellulose	80% Non-librous (Other)	None Detected
A1-20-Joint Compound	Room 20 - Whtie,	Beige		98% Non-fibrous (Other)	2% Chrysotile
322113136-0003A	sheetrock with joint compound	Non-Fibrous Homogeneous			·
A1-20-Caulking	Room 20 - Whtie, sheetrock with joint	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0003B	compound	Homogeneous			
A1-18-Sheetrock	Room 18 - Whtie, sheetrock with joint	Brown/White Fibrous	20% Cellulose	80% Non-fibrous (Other)	None Detected
322113136-0004	compound	Heterogeneous			
A1-18-Joint Compound	Room 18 - Whtie, sheetrock with joint	Beige Non-Fibrous		98% Non-fibrous (Other)	2% Chrysotile
322113136-0004A	compound	Homogeneous			
A2-SP 322113136-0005	Speech room - White, sheetrock brown temp wall mat, sheetrock with temp like wall	Brown/White Fibrous Heterogeneous	70% Cellulose	30% Non-fibrous (Other)	None Detected
B1-12	Room 12 - Rough with white paint,	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0006	plaster	Homogeneous			
B1-15	Room 15 - Rough with white paint,	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0007	plaster	Homogeneous			
B1-13	Room 3 - Rough with white paint, plaster	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0008		Homogeneous			
E1-SP-Floor Tile	Speech room - Yellow mastic, floor tile	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0009	12"x12" blue/white pattern	Homogeneous			
E1-SP-Mastic	Speech room - Yellow	Yellow Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0009A	12"x12" blue/white pattern	Homogeneous			



			Non-A	sbestos	Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
E1-1-Floor Tile 1 322113136-0010	Room 1 - Yellow mastic, floor tile 12"x12" blue/white pattern	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E1-1-Mastic 1	Room 1 - Yellow	Yellow		100% Non-fibrous (Other)	None Detected
322113136-0010A	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-1-Floor Tile 2	Room 1 - Yellow	Green		100% Non-fibrous (Other)	None Detected
322113136-0010B	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-1-Mastic 2	Room 1 - Yellow	Yellow		100% Non-fibrous (Other)	None Detected
322113136-0010C	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-11-Floor Tile 1	Room 11 - Yellow	White		100% Non-fibrous (Other)	None Detected
322113136-0011	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-11-Mastic 1	Room 11 - Yellow	Yellow		100% Non-fibrous (Other)	None Detected
322113136-0011A	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-11-Floor Tile 2	Room 11 - Yellow	Green		100% Non-fibrous (Other)	None Detected
322113136-0011B	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-11-Mastic 2	Room 11 - Yellow	Yellow		100% Non-fibrous (Other)	None Detected
322113136-0011C	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-15-Floor Tile 1	Room 15 - Yellow	White		100% Non-fibrous (Other)	None Detected
322113136-0012	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-15-Mastic 1	Room 15 - Yellow	Yellow		100% Non-fibrous (Other)	None Detected
322113136-0012A	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-15-Floor Tile 2	Room 15 - Yellow	Green		100% Non-fibrous (Other)	None Detected
322113136-0012B	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-15-Mastic 2	Room 15 - Yellow	Yellow		100% Non-fibrous (Other)	None Detected
322113136-0012C	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-13-Floor Tile 1	Room 13 - Yellow	White		100% Non-fibrous (Other)	None Detected
322113136-0013	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-13-Mastic 1	Room 13 - Yellow	Yellow		100% Non-fibrous (Other)	None Detected
322113136-0013A	masuc, noor the 12"x12" blue/white pattern	Homogeneous			



			Non-Asbe	estos	Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
E1-13-Floor Tile 2 322113136-0013B	Room 13 - Yellow mastic, floor tile 12"x12" blue/white pattern	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E1-13-Mastic 2	Room 13 - Yellow	Yellow		100% Non-fibrous (Other)	None Detected
322113136-0013C	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			
E1-18-Floor Tile	Room 18 - Yellow mastic, floor tile 12"x12" blue/white	White Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
	pattern				
E1-18-Mastic 1	Room 18 - Yellow mastic, floor tile 12"x12" blue/white	Orange Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
	pattern	riomogeneous			
E1-18-Leveling Compound 322113136-0014B	Room 18 - Yellow mastic, floor tile 12"x12" blue/white pattern	Gray Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
E1-18-Mastic 2	Room 18 - Yellow	Black		97% Non-fibrous (Other)	3% Chrysotile
322113136-0014C	mastic, floor tile 12"x12" blue/white pattern	Non-Fibrous Homogeneous			,
E1-20-Floor Tile 1	Room 20 - Yellow mastic, floor tile	White Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0015	12"x12" blue/white pattern	Homogeneous			
E1-20-Mastic 1/LevelingCompound	Room 20 - Yellow mastic, floor tile 12"x12" blue/white	Gray/Yellow Non-Fibrous Heterogeneous		100% Non-fibrous (Other)	None Detected
322113136-0015A Unable to separate	pattern				
E1-20-Floor Tile 2 322113136-0015B	Room 20 - Yellow mastic, floor tile 12"x12" blue/white	Green Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
	pattern				
E1-20-Mastic 2 322113136-0015C	Room 20 - Yellow mastic, floor tile 12"x12" blue/white pattern	Yellow Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
F1-20-Cove Base	Room 20 - White mastic, codebase 4"	Green Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0016	green	Homogeneous			
F1-20-Mastic	Room 20 - White mastic, codebase 4"	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
522713736-0076A	Boom 20 White	Brown/White	60% Callulasa	40% Non fibrous (Other)	None Detected
200412126 0046B	mastic, codebase 4"	Fibrous			None Delected
Unable to separate	gieen	rieleiogeneous			
F1-13-Cove Base	Room 13 - White	Green Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0017	green	Homogeneous			
F1-13-Mastic	Room 13 - White mastic, codebase 4"	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0017A	green	Homogeneous			



			Non-Asbestos		Asbestos	
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре	
F1-13-Paint/Wood	Room 13 - White mastic, codebase 4"	Brown/White Fibrous	60% Cellulose	40% Non-fibrous (Other)	None Detected	
322113136-0017B Unable to separate	green	Heterogeneous				
F1-18-Cove Base	Room 18 - White	Green		100% Non-fibrous (Other)	None Detected	
322113136-0018	green	Homogeneous				
F1-18-Mastic	Room 18 - White mastic, codebase 4"	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113136-0018A	green	Homogeneous				
F1-15-Cove Base	Room 15 - White mastic, codebase 4"	Green Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113136-0019	green	Homogeneous				
F1-15-Mastic	Room 15 - White mastic, codebase 4"	Beige Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
522115150-0019A		10110geneous			New Datastal	
F1-15-Joint Compound	Room 15 - White mastic, codebase 4"	vvnite Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected	
E1 11 Cava Basa	Boom 11 White	Croop		100% Non fibrous (Other)	None Detected	
322113136-0020	mastic, codebase 4" green	Non-Fibrous Homogeneous			None Delected	
E1-11-Mastic	Room 11 - White	Beige		100% Non-fibrous (Other)	None Detected	
322113136-0020A	mastic, codebase 4" green	Non-Fibrous Homogeneous				
E1-1-Cove Base	Room 1 - White	Green		100% Non-fibrous (Other)	None Detected	
322113136-0021	mastic, codebase 4" green	Non-Fibrous Homogeneous				
E1 1 Mostic 1	Boom 1 - White	White		100% Non-fibrous (Other)	None Detected	
322113136-0021A	mastic, codebase 4"	Non-Fibrous Homogeneous			None Deletted	
E1 1 Mastic 2	Boom 1 - White	Vellow		100% Non-fibrous (Other)	None Detected	
322113136-0021B	mastic, codebase 4" green	Non-Fibrous Homogeneous			None Delected	
E1 SP Cove Base	Speech room - White	Green		100% Non-fibrous (Other)	None Detected	
322113136-0022	mastic, codebase 4" green	Non-Fibrous Homogeneous				
F1-SP-Mastic	Speech room - White	Yellow/Beige		100% Non-fibrous (Other)	None Detected	
322113136-0022A	mastic, codebase 4" green	Non-Fibrous Homogeneous				
F2-12-Cove Base	Room 12 - White	Gray		100% Non-fibrous (Other)	None Detected	
322113136-0023	mastic, codebase 4" grav	Non-Fibrous Homogeneous				
E2_12_Mastic	Boom 12 - White	White		100% Non-fibrous (Other)	None Detected	
322113136-0023A	mastic, codebase 4" gray	Non-Fibrous Homogeneous				
H1-12-Sheet Flooring	Room 12 - Tan with	Grav	5% Cellulose	95% Non-fibrous (Other)	None Detected	
322113136-0024	mastic, resilient sheet flooring	Non-Fibrous Homogeneous				
H1-12-Jute Fibers	Room 12 - Tan with	Brown	98% Cellulose	2% Non-fibrous (Other)	None Detected	
322113136-0024A	mastic, resilient sheet flooring	Fibrous Homogeneous		,		
H1-12-Mastic	Room 12 - Tan with	Beige Non-Fibrous		100% Non-fibrous (Other)	None Detected	
322113136-0024B	flooring	Homogeneous				



	<u>Non-Asbestos</u>		Asbestos		
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
J1-1	Room 1 - 12"x12"	Brown/White	90% Cellulose	10% Non-fibrous (Other)	None Detected
	pinhole pattern,	Fibrous			
322113136-0025	acoustic ceiling tile	Homogeneous			
J1-SP	Speech room -	Brown/White	90% Cellulose	10% Non-fibrous (Other)	None Detected
322113136-0026	pattern acoustic	Heterogeneous			
022770700 0020	ceiling tile	notorogeneoue			
J1-12	Room 12 - 12"x12"	Brown/White	90% Cellulose	10% Non-fibrous (Other)	None Detected
••••	pinhole pattern,	Fibrous			
322113136-0027	acoustic ceiling tile	Homogeneous			
J1-13	Room 13 - 12"x12"	Brown/White	90% Cellulose	10% Non-fibrous (Other)	None Detected
	pinhole pattern,	Fibrous			
322113136-0028		Heterogeneous			
J1-15	Room 15 - 12"x12"	Gray/White	40% Cellulose	20% Perlite	None Detected
322113136-0029	acoustic ceiling tile	Heterogeneous			
11-18	Room 18 - 12"x12"	Brown/White	90% Cellulose	10% Non-fibrous (Other)	None Detected
0110	pinhole pattern,	Fibrous			
322113136-0030	acoustic ceiling tile	Homogeneous			
J1-20	Room 20 - 12"x12"	Gray/White	40% Cellulose	20% Perlite	None Detected
	pinhole pattern,	Fibrous	20% Min. Wool	20% Non-fibrous (Other)	
322113136-0031	acoustic ceiling tile	Heterogeneous			
J1-19	Room 19 - 12"x12"	Brown/White	90% Cellulose	10% Non-fibrous (Other)	None Detected
322113136-0032	pinnole pattern, acoustic ceiling tile	Fibrous Homogeneous			
N1.SP	Speech room -	White		100% Non-fibrous (Other)	None Detected
11-01	White/gray, sealant	Non-Fibrous			None Detected
322113136-0033	.5 ,,	Homogeneous			
N1-11	Room 11 -	Gray		100% Non-fibrous (Other)	None Detected
	White/gray, sealant	Non-Fibrous			
322113136-0034		Homogeneous			
N3-5-Sealant 1	Exterior - Tan with	Tan/White		100% Non-fibrous (Other)	None Detected
322113136-0035	white paint, sealant	Non-Fibrous Homogeneous			
N2 5 Scalant 2	Exterior Top with	Beige		100% Non fibrous (Other)	None Detected
NJ-J-Jealant 2	white paint, sealant	Non-Fibrous			None Detected
322113136-0035A	1 /	Homogeneous			
N3-8	Exterior - Tan with	Beige		100% Non-fibrous (Other)	None Detected
	white paint, sealant	Non-Fibrous			
322113136-0036		Homogeneous			
N3-10	Exterior - Tan with	Beige		100% Non-fibrous (Other)	None Detected
300113136-0037	white paint, sealant	Non-Fibrous			
	Exterior Top with	White		100% Non fibrous (Other)	Nana Datastad
INO-LID	white paint, sealant	Non-Fibrous		100% Non-librous (Other)	None Detected
322113136-0038	i ,	Homogeneous			
N3-12	Exterior - Tan with	White		100% Non-fibrous (Other)	None Detected
	white paint, sealant	Non-Fibrous			
322113136-0039		Homogeneous			
N3-14	Exterior - Tan with	White/Beige		100% Non-fibrous (Other)	None Detected
322113136-0040	white paint, sealant	Non-Fibrous			
04.44.0	Deem 11 Vellow	Variaua	00% Supthatia	20/ Non fibrous (Other)	Nana Datastad
Q1-11-Carpet	carpet mastic	various Fibrous	90% Synthetic	∠% INON-IIDROUS (Uther)	
322113136-0041		Homogeneous			
Q1-11-Mastic	Room 11 - Yellow,	Yellow		100% Non-fibrous (Other)	None Detected
	carpet mastic	Non-Fibrous		· · ·	
322113136-0041A		Homogeneous			
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		Non-Asbestos			Asbestos
Sample	Description	Appearance	% Fibrous	% Non-Fibrous	% Туре
Q1-13-Carpet	Room 13 - Yellow, carpet mastic	Various Fibrous	98% Synthetic	2% Non-fibrous (Other)	None Detected
322113136-0042	•	Homogeneous			
Q1-13-Mastic	Room 13 - Yellow, carpet mastic	Yellow Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0042A		Homogeneous			
Q1-15-Mastic	Room 15 - Yellow, carpet mastic	Gray/Black/Yellow Non-Fibrous		100% Non-fibrous (Other)	None Detected
322113136-0043		Heterogeneous			
Q1-15-Carpet	Room 15 - Yellow, carpet mastic	White Fibrous	98% Synthetic	2% Non-fibrous (Other)	None Detected
322113136-0043A		Homogeneous			
Q1-18-Carpet	Room 18 - Yellow, carpet mastic	Various Fibrous	98% Synthetic	2% Non-fibrous (Other)	None Detected
322113136-0044		Homogeneous			
Q1-18-Mastic	Room 18 - Yellow, carpet mastic	Yellow Non-Fibrous		100% Non-fibrous (Other)	None Detected
04 00 Ma - 4	Doom 20 Vollow	Nellow		100% Non fibrous (Other)	Nana Datastad
Q1-2U-MASTIC	carpet mastic	Non-Fibrous		100% Non-librous (Other)	None Detected
01.00 Correct	Boom 20 Vollow	Brown/Crov	09% Synthetic	2% Non fibrous (Other)	Nana Datastad
322113136-00454	carpet mastic	Fibrous	96% Synthetic	2% Non-hibrous (Other)	None Delected
W1 2 Comp EC/PC	Exterior near room 2 -	Grav/Beige		100% Non-fibrous (Other)	<1% Chrysotile
W1-2-Comp FC/BC	Gray with tan paint,	Non-Fibrous			Chilysoule
322113136-0046	stucco	Heterogeneous			
W <mark>1-5</mark>	Exterior near room 5 -	Beige		100% Non-fibrous (Other)	<1% Chrysotile
	Gray with tan paint,	Non-Fibrous			
322113136-0047	stucco	Homogeneous			
W1-9	Exterior near room 9 -	Beige Non-Eibrous		100% Non-fibrous (Other)	<1% Chrysotile
322113136-0048	stucco	Homogeneous			
W1-10	Exterior near room 10	Beige		100% Non-fibrous (Other)	<1% Chrysotile
	- Gray with tan paint,	Non-Fibrous			
322113136-0049	stucco	Homogeneous			
W1-17	Exterior near room 17	Beige Non-Fibrous		100% Non-fibrous (Other)	<1% Chrysotile
<mark>322113136-0050</mark>	stucco	Homogeneous			
W1-19	Exterior near room 19	Beige		100% Non-fibrous (Other)	<1% Chrysotile
222112126 0051	- Gray with tan paint,	Non-Fibrous			
NIA 40	Succo	Beige			c10/ Chrysotile
<u>81-18</u>	- Gray with tan paint	Deige Non-Fibrous		100% <mark>Non-fibro</mark> us (Other)	
322113136-0052	stucco	Homogeneous			



LA Testing Order: 322113136 Customer ID: ZNAP75 Customer PO: Project ID:

Analyst(s)

Olivia Santiago (31) Rosa Mendoza (64)

Jerry Drapala Ph.D, Laboratory Manager or Other Approved Signatory

LA Testing maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by LA Testing. LA Testing bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. The above analyses were performed in general compliance with Appendix E to Subpart E of 40 CFR (previously EPA 600/M4-82-020 "Interim Method") but augmented with procedures outlined in the 1993 ("final") version of the method. This report not be used by the client to claim produc certification, approval, or endorsement by NVLAP, NIST or any agency of the federal government. Non-friable organically bound materials present a problem matrix and therefore LA Testing recommends gravimetric reduction prior to analysis. Unless requested by the client, building materials manufactured with multiple layers (i.e. linoleum, wallboard, etc.) are reported as a single sample. Estimation of uncertainty is available on request.

Samples analyzed by LA Testing South Pasadena, CA NVLAP Lab Code 200232-0, CA ELAP 2283

Initial report from: 07/22/2021 08:18:51

OrderID: 322113136

ZNAP 🖧 FLY

#322113136

Client: San Mateo Foster City School District

Project: 7 School HVAC project, North Shoreview School

Sample Date: 7/15/21 Project #: EN210601

Collected By: Erica Sattar

номо	SAMPLE NO.		MATERIAL	DESCRIPTION	LOCATION
ID	ID	NO.			
А	A1	LIB	Sheetrock with joint compound	Whtie	library
A	A1	19 -	Sheetrock with joint compound	Whtie	Room 19
А	A1	20	Sheetrock with joint compound	Whtie	Room 20
A	A1	18	Sheetrock with joint compound	Whtie	Room 18
A	A2	SP	Sheetrock with temp like wall	White with brown temp wall mat	Speech room
В	B1	12	Plaster	Rough with white paint	Room 12
В	B1	15	Plaster	Rough with white paint	Room 15
В	B1	13	Plaster	Rough with white paint	Room 13
E	E1	SP	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Speech room
E	E1	1	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 1
E	E1	11	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 11
Е	E1	15	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 15
E	E1	13	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 13
E	E1	18	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 18
E	E1	20	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 20
F	F1	20	Codebase 4" green	White mastic	Room 20
F	F1	13	Codebase 4" green	White mastic	Room 13
F	F1	18	Codebase 4" green	White mastic	Room 18
F	F1	15	Codebase 4" green	White mastic	Room 15
F	F1	11	Codebase 4" green	White mastic	Room 11
Analyti	cal Met	hod: Pl	M	PLEASE SEND BY EMAIL: er	rica@znapfly.com

72 hour TAT

CHAIN OF CUSTODY: DATE&TIME Signatures 116/2

7/19/21 4:00pm

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CHAIN OF CUSTODY: Signatures

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DATE&TIME

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Asbestos Bulk Sample Log

#322113136

Asbestos Bulk Sample Log

ZNAP 🖧 FLY

 Client:
 San Mateo Foster City School District
 Sample Date
 7/15/21

 Project:
 7 School HVAC project, North Shoreview School
 Project #:
 EN210601

 Collected By:
 Erica Sattar

номо	SAMPLE NO.		MATERIAL	DESCRIPTION	LOCATION
ID	ID	NO.			
F	F1	1	Codebase 4" green	White mastic	Room 1
F	F1	SP	Codebase 4" green	White mastic	Speech room
F	F2	12	Codebase 4" gray	White mastic	Room 12
Н	H1	12	Resilient sheet flooring	Tan with mastic	Room 12
J	J1	1	Acoustic ceiling tile	12" x 12" pinhole pattern	Room 1
J	J1	SP	Acoustic ceiling tile	12" x 12" pinhole pattern	Speech room
)	J1	12	Acoustic ceiling tile	12" x 12" pinhole pattern	Room 12
J	J1	13	Acoustic ceiling tile	12" x 12" pinhole pattern	Room 13
J	J1	15	Acoustic ceiling tile	12" x 12" pinhole pattern	Room 15
J	J1	18	Acoustic ceiling tile	12" x 12" pinhole pattern	Room 18
J	J1	20	Acoustic ceiling tile	12" x 12" pinhole pattern	Room 20
J	J1	19	Acoustic ceiling tile	12" x 12" pinhole pattern	Room 19
N -	N1	SP	Sealant	White/gray	Speech room
N	N1	11	Sealant	White/gray	Room 11
N	N3	5	Sealant	Tan with white paint	Exterior
N	N3	8	Sealant	Tan with white paint	Exterior
N	N3	10	Sealant	Tan with white paint	Exterior
N	N3	LIB	Sealant	Tan with white paint	Exterior
N	N3	12	Sealant	Tan with white paint	Exterior
N	N3	14	Sealant	Tan with white paint	Exterior
Analyti	ical Me	thod: PLM 72 ho	our TAT	PLEASE SEND BY EMAIL:	erica@znapfly.com

CHAIN OF CUSTODY:

Signatures

DATE&TIME

CHAIN OF CUSTODY:

Signatures

DATE&TIME

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ZNAP 🖧 FLY

Asbestos Bulk Sample Log

#322113136

Client: San Mateo Foster City School District

Project: 7 School HVAC project, North Shoreview School

Sample Date: 7/15/21 Project #: EN210601

Collected By: Erica Sattar

номо	SAMPLE NO.		MATERIAL	DESCRIPTION	LOCATION
ID	ID	NO.			
Q	Q1	11	Carpet mastic	Yellow	Room 11
Q	Q1	13	Carpet mastic	Yellow	Room 13
Q	Q1	15	Carpet mastic	Yellow	Room 15
Q	Q1	18	Carpet mastic	Yellow	Room 18
Q	Q1	20	Carpet mastic	Yellow	Room 20
W	W1	2	Stucco	Gray with tan paint	Exterior near room 2
W	W1	5	Stucco	Gray with tan paint	Exterior near room 5
W	W1	9	Stucco	Gray with tan paint	Exterior near room 9
W	W1	10	Stucco	Gray with tan paint	Exterior near room 10
W	W1	17	Stucco	Gray with tan paint	Exterior near room 17
W	W1	19	Stucco	Gray with tan paint	Exterior near room 19
W	W1	18	Stucco	Gray with tan paint	Exterior near room 18
L.					
	1	C. Sec.			
-					
er,					
12					
Analyti	cal Met	hod: PL	M 2 hour TAT	PLEASE SEND BY EMAI	L: erica@znapfly.com

CHAIN OF CUSTODY:

Signatures

DATE&TIME

7/16/2

CHAIN OF CUSTODY: Signatures

DATE&TIME

xp FX 7/19/21

4 7/19/21 :00pm

Asbestos Sampling Plan





Suspect Asbestos Containing Materials Sample Table

Sam	ple ID	Material	Description	Sample Location	Results (% asbestos detected)
A1	LIB	Sheetrock with joint compound	White	Library	ND
A1	19	Sheetrock with joint compound	White	Room 19	Sheetrock = ND Joint compound = 2%
A1	20	Sheetrock with joint compound	White with caulk	Room 20	Sheetrock = ND Joint compound = 2% Caulk = ND
A1	18	Sheetrock with joint compound	White	Room 18	Sheetrock = ND Joint compound = 2%
A2	SP	Sheetrock with temp wall	White with brown temp wall material	Speech room	ND
B1	12	Plaster	Rough with white paint	Room 12	ND
B1	15	Plaster	Rough with white paint	Room 15	ND
B1	13	Plaster	Rough with white paint	Room 13	ND
E1	SP	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Speech room	ND
E1	1	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 1	ND
E1	11	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 11	ND
E1	15	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 15	ND
E1	13	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 13	ND
E1	18	Floor tile 12" x 12" blue/white pattern	Yellow mastic and leveling compound and residual mastic	Room 18	Blue tile = ND Yellow mastic = ND Level compound = ND Black mastic = 3%
E1	20	Floor tile 12" x 12" blue/white pattern	Yellow mastic	Room 20	ND
F1	20	Covebase 4″ green	White mastic	Room 20	ND
F1	13	Covebase 4″ green	White mastic	Room 13	ND
F1	18	Covebase 4″ green	White mastic	Room 18	ND
F1	15	Covebase 4″ green	White mastic	Room 15	ND
F1	11	Covebase 4″ green	White mastic	Room 11	ND
F1	1	Covebase 4″ green	White mastic	Room 1	ND
F1	SP	Covebase 4″ green	White mastic	Speech room	ND
F2	12	Covebase 4″ gray		Room 12	ND
H1	12	Resilient sheet flooring	Tan with mastic	Room 12	ND
J1	1	Acoustic ceiling tile 12" x 12"	Pinhole pattern	Room 1	ND
J1	SP	Acoustic ceiling tile 12" x 12"	Pinhole pattern	Speech room	ND
J1	12	Acoustic ceiling tile 12" x 12"	Pinhole pattern	Room 12	ND
J1	13	Acoustic ceiling tile 12" x 12"	Pinhole pattern	Room 13	ND
J1	15	Acoustic ceiling tile 12" x 12"	Pinhole pattern	Room 15	ND
J1	18	Acoustic ceiling tile 12" x 12"	Pinhole pattern	Room 18	ND

Sample ID		Material	Description	Sample Location	Results (% asbestos detected)
J1	20	Acoustic ceiling tile 12" x 12"	Pinhole pattern	Room 20	ND
J1	19	Acoustic ceiling tile 12" x 12"	Pinhole pattern	Room 19	ND
N1	SP	Sealant	White/gray	Speech room	ND
N1	11	Sealant	White/gray	Room 11	ND
N3	5	Sealant	Tan with white paint	Room 5	ND
N3	8	Sealant	Tan with white paint	Room 8	ND
N3	10	Sealant	Tan with white paint	Room 10	ND
N3	LIB	Sealant	Tan with white paint	Library	ND
N3	12	Sealant	Tan with white paint	Room 12	ND
N3	14	Sealant	Tan with white paint	Room 14	ND
Q1	11	Carpet mastic	Yellow	Room 11	ND
Q1	13	Carpet mastic	Yellow	Room 13	ND
Q1	15	Carpet mastic	Yellow	Room 15	ND
Q1	18	Carpet mastic	Yellow	Room 18	ND
Q1	20	Carpet mastic	Yellow	Room 20	ND
*W1	2	Stucco	Gray with tan paint	Room 2	< 1%
*W1	5	Stucco	Gray with tan paint	Room 5	< 1%
*W1	9	Stucco	Gray with tan paint	Room 9	< 1%
*W1	10	Stucco	Gray with tan paint	Room 10	< 1%
*W1	17	Stucco	Gray with tan paint	Room 17	< 1%
*W1	19	Stucco	Gray with tan paint	Room 19	< 1%
*W1	18	Stucco	Gray with tan paint	Room 18	< 1%
NC	DTE:	 ND = No asbestos detected by laborat * = Material is assumed >1% unless proconducted. 	ory analysis. "None Detected". wen otherwise by laboratory ana	lysis. At the time of this rep	oort point count was not

Lead Sampling Plan



Test #	Room	Component	Substrate	Color	Condition	Lead Result (mg/cm2)
68		Upper trim	Wood	White	Intact/good	0.177
69	Wall V		Wood	White	Intact/good	0.347
70	2	Upper wall	Pushboard	White	Intact/good	0.596
71		Lower Wall	Wood	White	Intact/good	<mark>1.39</mark> 8
72		HVAC case	Metal	Beige	Intact/good	0
73		Wall	Wood	White	Intact/good	0.245
74	3	HVAC case	Metal	Beige	Intact/good	0
75		Lower Wall	Wood	White	Intact/good	<mark>1.56</mark> 1
76		Window Casing Wood		White	Intact/good	0
77	5	Wall	Sheetrock	White	Intact/good	0
78		HVAC case	Metal	Beige	Intact/good	0
79	7	HVAC case	Metal	Beige	Intact/good	0
80	,	Wall	ACT	White	Intact/good	0
81	7, exterior	Wall	Concrete/plaster	Tan	Intact/good	0.023
82	6, exterior	Wall	Concrete/plaster	Tan	Intact/good	0.048
83	Teachers work Wall Metal		Metal	White	Intact/good	0.801
84	room	room HVAC case Metal		Beige	Intact/good	0
85		Window panel	Plexiglas	White	Intact/good	0
86		Window trim	Metal	White	Intact/good	<mark>1.8</mark> 39
87	Library exterior	HVAC cage	Metal	Red	Intact/good	0
88		Wall	Stucco	Tan	Intact/good	0
89		Trim	Wood	Tan	Intact/good	0
90	11 exterior	Wall	Stucco	Tan	Intact/good	0
91		Wall trim	Metal	White	Intact/good	<mark>2.0</mark> 2
92	10 exterior	Door frame	Metal	Green	Intact/good	0
93		HVAC case	Metal	Beige	Intact/good	0
94	10	Wall	Wood	White	Intact/good	0
95		Wall	Wood	White	Intact/good	0.027
96	9	HVAC case	Metal	Beige	Intact/good	0
97		Wall	Sheetrock	White	Intact/good	0
98	12 exterior	Window trim	Metal	White	Intact/good	0
99	12, 0,1010	Window casing	Wood	White	Intact/good	0.441
100	12	Soffit	Plaster	White	Intact/good	0
101	12	Wall	ACT	White	Intact/good	0
102		Wall Trim	Metal	White	Intact/good	<mark>1.38</mark> 8

Lead Paint Testing and Sampling Table

Test #	Room	Component	Substrate	Color	Condition	Lead Result (mg/cm2)	
103	14	Window trim	Metal	White	Intact/good	0	
104		HVAC case	Metal	Beige	Intact/good	0	
NOTES:	 Bold represents component is considered lead based paint. Lead-based paint (LBP) is defined as any painted surface with lead levels exceeding 5,000 parts per million (ppm), 1.0 milligrams per square centimeter (mg/cm²) or greater than 0.5 percent by weight (wt%) 						



LEAD HAZARD EVALUATION REPORT

Section 1 Date of Load Hazard Evaluation 6/30/2021								
Section 1 – Date of Lead Hazard Evaluation								
Section 2 – Type of Lead Hazard Evaluation (Check one box only)								
X Lead Inspection Other (specify)								
Section 3 — Structure Where Lead Hazard Evaluation Was Conducted								
Address [number, street, apartment (if applicable)]	City	County	Zip Code					
1301 Cypress Avenue	San Mateo	San Mateo	94401					
Construction date (year) Type of structure		Children living in structure?	1					
unknown Single family dwelling	Other	Don't Know						
Section 4 — Owner of Structure (if business/agency	y, list contact person)	,						
Name		Telephone number						
San Mateo Foster City School District, Kevin	Sanders	650-655-3331						
Address [number, street, apartment (if applicable)]	City	State	Zip Code					
1170 Chess Drive	Foster City	CA	94404					
Section 5 — Results of Lead Hazard Evaluation (ch	eck all that apply)		·					
No lead-based paint detected X Intact lead-based paint detected Deteriorated lead-based paint detected								
No lead hazards detected Lead-contaminated of	dust found 📃 Lead-contar	ninated soil found 📃 Othe	r					
Section 6 — Individual Conducting Lead Hazard Ev	aluation							
Name		Telephone number						
Chris Smith		707-999-5234						
Address [number, street, apartment (if applicable)]	City	State	Zip Code					
419 Mason Street	Vacaville	CA	95688					
CDPH certification number 5	Signature		Date					
00006885/0006884 7/6/2021								
Name and CDPH certification number of any other individuals conducting sampling or testing (if applicable)								
Erica Sattar, 00003791								
Section 7 — Attachments								
A. A foundation diagram or sketch of the structure indic lead-based paint;B. Each testing method, device, and sampling procedu	ating the specifc locations o re used;	f each lead hazard or presen	ce of					

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

Application Number: 01-119526 DSA File Number: 41-26

KEV TO COLLIMNIS

School Name: North Shoreview Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-13 10:04:28

2019 CBC

IMPORTANT: This form is only a summary list of structural tests and some of the special inspections required for the project. Generally, the structural tests and special inspections noted on this form are those that will be performed by the Geotechnical Engineer of Record, Laboratory of Record, or Special Inspector. The actual complete test and inspection program must be performed as detailed on the DSA approved documents. The appendix at the bottom of this form identifies work NOT subject to DSA requirements for special inspection or structural testing. The project inspector is responsible for providing inspection of all facets of construction, including but not limited to, special inspections not listed on this form such as structural wood framing, high-load wood diaphragms, cold-formed steel framing, anchorage of non-structural components, etc., per Title 24, Part 2, Chapter 17A (2019 CBC).

**NOTE: Undefined section and table references found in this document are from the CBC, or California Building Code.

1. TYPE	2. PERFORMED BY			
Continuous – Indicates that a continuous special inspection is required	GE – Indicates that the special inspection shall be performed by a registered geotechnical engineer or his or her authorized representative.			
Periodic – Indicates that a periodic special inspection is required	LOR – Indicates that the test or special inspection shall be performed by a testing laboratory accepted in the DSA Laboratory Evaluation and Acceptance (LEA) Program. See CAC Section 4-335.			
	PI – Indicates that the special inspection may be performed by a project inspector when specifically approved by DSA.			
Test – Indicates that a test is required	SI – Indicates that the special inspection shall be performed by an appropriately qualified/approved special inspector.			

Application Number: 01-119526 DSA File Number: 41-26 School Name: North Shoreview Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-13 10:04:28

Geotechnical Reports: Project does NOT have and does NOT require a geotechnical report

1. GENERAL:	Table 1705A.6		
Test or Special Inspection	Туре	Performed By	Code References and Notes
 a. Verify that: Site has been prepared properly prior to placement of controlled fill and/or excavations for foundations. Foundation excavations are extended to proper depth and have reached proper material. Materials below footings are adequate to achieve the design bearing capacity. 	See Notes	PI	Refer to specific items identified in the Appendix listing exemptions for limitations. Placement of controlled fill exceeding 12" depth under foundations is not permitted without a geotechnical report.

2. SOIL COMPACTION AND FILL:	Table 1705A.6			
Test or Special Inspection	Туре	Performed By	Code References and Notes	
a. Verify use of proper materials, densities and inspect lift thicknesses, placement and compaction during placement of fill.	Continuous	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	
b. Compaction testing.	Test	LOR*	* Under the supervision of a geotechnical engineer or LOR's engineering manager. Refer to specific items identified in the Appendix listing exemptions for limitations.	

3. DRIVEN DEEP FOUNDATIONS (PILES):

Table 1705A.7

DGS DSA 103-19 (Revised 07/16/2020)

Application Number: 01-119526 DSA File Number: 41-26 School Name: North Shoreview Elementary School Increment Number:

Test or Special Inspection	Туре	Performed By	Code References and Notes	
a. Verify pile materials, sizes and lengths comply with the requirements.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.	
b. Determine capacities of test piles and conduct additional load tests as required.	Test	LOR*	* Under the supervision of the geotechnical engineer.	
c. Inspect driving operations and maintain complete and accurate records for each pile.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.	
d. Verify locations of piles and their plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and record any pile damage.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.	
e. Steel piles.	Provide tests and inspections per STEEL section below.			
f. Concrete piles and concrete filled piles.	Provide tests and inspections per CONCRETE section below.			
g. For specialty piles, perform additional inspections as determined by the registered design professional in responsible charge.	*	*	* As defined on drawings or specifications.	

4. CAST-IN-PLACE DEEP FOUNDATIONS (PIERS):	Table 1705A.8		
 Test or Special Inspection	Туре	Performed By	Code References and Notes

Application Number: 01-119526 DSA File Number: 41-26 School Name: North Shoreview Elementary School Increment Number:

a. Inspect drilling operations and maintain complete and accurate records for each pier.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
b. Verify pier locations, diameters, plumbness and lengths.Record concrete or grout volumes.	Continuous	PI	Continuous inspection to be provided by project inspector. Refer to specific items identified in the Appendix listing exemptions for limitations.
c. Concrete piers.	Provide tests and inspections per CONCRETE section below.		

5. RETAINING WALLS:					
Test or Special Inspection	Туре	Performed By	Code References and Notes		
a. Placement, compaction and inspection of backfill.	Continuous	GE*	1705A.6.1. * By geotechnical engineer or his or her qualified representative. (See Section 2 above).		
b. Placement of soil reinforcement and/or drainage devices.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.		
c. Segmental retaining walls; inspect placement of units, dowels, connectors, etc.	Continuous	GE*	* By geotechnical engineer or his or her qualified representative. See DSA IR 16-3.		
d. Concrete retaining walls.	Provide tests and inspections per CONCRETE section below.				
e. Masonry retaining walls.	Provide tests a	Provide tests and inspections per MASONRY section below.			

6. OTHER SOILS:			
Test or Special Inspection	Туре	Performed By	Code References and Notes

Application Number: 01-119526 DSA File Number: 41-26 School Name: North Shoreview Elementary School Increment Number:

a. Soil Improvements	Test	GE*	Submit a comprehensive report documenting final soil improvements constructed, construction observation and the results of the confirmation testing and analysis to CGS for final acceptance. * By geotechnical engineer or his or her qualified representative.
b. Inspection of Soil Improvements	Continuous	GE*	* By geotechnical engineer or his or her qualified representative.
C.			

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119526	North Shoreview Elementary School	San Mateo-Foster City School District
DSA File Number:	Increment Number:	Date Created:
41-26		2021-10-13 10:04:28

	7. CAST-IN-PLACE CONCRETE			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
Mate	rial Verification and Testing:			
V	a. Verify use of required design mix.	Periodic	SI	Table 1705A.3 Item 5, 1910A.1.
V	b. Identifiy, sample, and test reinforcing steel.	Test	LOR	1910A.2; ACI 318-14 Section 26.6.1.2; DSA IR 17-10. (See Appendix for exemptions.)
	c. During concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.	Test	LOR	Table 1705A.3 Item 6; ACI 318-14 Sections 26.5 & 26.12.
V	d. Test concrete (f'c).	Test	LOR	1905A.1.15 ; ACI 318-14 Section 26.12.
Inspe	ction:			
	e. Batch plant inspection: Eliminated	See Notes	SI	Default of 'Continuous' per 1705A.3.3 . If approved by DSA, batch plant inspection may be reduced to ' Periodic' subject to requirements in Section 1705A.3.3.1 , or eliminated per 1705A.3.3.2 . (See Appendix for exemptions.)
	f. Welding of reinforcing steel.	Provide spec	Provide special inspection per STEEL, Category 19.1(d) & (e) and/or 19.2(g) & (h) below.	

8. PRESTRESSED / POST-TENSIONED CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119526	North Shoreview Elementary School	San Mateo-Foster City School District
DSA File Number:	Increment Number:	Date Created:
41-26		2021-10-13 10:04:28

Test or Special Inspection	Туре	Performed By	Code References and Notes
a. Sample and test prestressing tendons and anchorages.	Test	LOR	1705A.3.4, 1910A.3
b. Inspect placement of prestressing tendons.	Periodic	SI	1705A.3.4, Table 1705A.3 Items 1 & 9.
c. Verify in-situ concrete strength prior to stressing of post-tensioning tendons.	Periodic	SI	Table 1705A.3 Item 11. Special inspector to verify specified concretestrength test prior to stressing.
d . Inspect application of post-tensioning or prestressing forces and grouting of bonded prestressing tendons.	Continuous	SI	1705A.3.4, Table 1705A.3 Item 9; ACI 318-14 Section 26.13

9. PRECAST CONCRETE (in addition to Cast-in-Place Concrete tests and inspections):					
Test or Special Inspection	Туре	Performed By	Code References and Notes		
a. Inspect fabrication of precast concrete members.	Continuous	SI	ACI 318-14 Section 26.13.		
b. Inspect erection of precast concrete members.	Periodic	SI*	Table 1705A.3 Item 10. * May be performed by PI when specifically approved by DSA.		

10. SHOTCRETE (in addition to Cast-in-Place Concrete tests and inspections):				
Test or Special Inspection	Туре	Performed By	Code References and Notes	

Table 1705A.3; ACI 318-14 Sections 26.12 & 26.13

Application Number:	School Name:	School District:
01-119526	North Shoreview Elementary School	San Mateo-Foster City School District
DSA File Number:	Increment Number:	Date Created:
41-26		2021-10-13 10:04:28

a. Inspect shotcrete placement for proper application techniques.	Continuous	SI	1705A.19, Table 1705A.3 Item 7, 1908A.6, 1908A.7, 1908A.8, 1908A.9, 1908A.11, 1908A.12. See ACI 506.2-13 Section 3.4, ACI 506R-16.
b. Sample and test shotcrete (f [*] c).	Test	LOR	1908A.5, 1908A.10.

	11. POST-INSTALLED ANCHORS:			
	Test or Special Inspection	Туре	Performed By	Code References and Notes
	a. Inspect installation of post-installed anchors	See Notes	SI*	1617A.1.19, Table 1705A.3 Item 4a (Continuous) & 4b (Periodic), 1705A.3.8 (See Appendix for exemptions). ACI 318-14 Sections 17.8 & 26.13. * May be performed by the project inspector when specifically approved by DSA.
V	b. Test post-installed anchors.	Test	LOR	1910A.5. (See Appendix for exemptions.)

12. OTHER CONCRETE:			
Test or Special Inspection	Туре	Performed By	Code References and Notes
а.			

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number: 01-119526 DSA File Number: 41-26 School Name: North Shoreview Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-13 10:04:28

Exempt items given in DSA IR A-22 or the 2019 CBC (including DSA amendments) and those items identified below with a check mark by the design professional are NOT subject to DSA requirements for the structural tests / special inspections noted. Items marked as exempt shall be identified on the approved construction documents. The project inspector shall verify all construction complies with the approved construction documents.

SOILS:
1. Deep foundations acting as a cantilever footing designed based on minimum allowable pressures per CBC Table 1806A.2 and having no geotechnical report for the following cases: A) free standing sign or scoreboard, B) cell or antenna towers and poles less than 35'-0" tall (e.g., lighting poles, flag poles, poles supporting open mesh fences, etc.), C) single-story structure with dead load less than 5 psf (e.g., open fabric shade structure), or D) covered walkway structure with an apex height less than 10'-0" above adjacent grade.
2. Shallow foundations, etc. are exempt from special inspections and testing by a Geotechnical Engineer for the following cases: A) buildings without a geotechnical report and meeting the exception item #1 criteria in CBC Section 1803A.2 supported by native soil (any excavation depth) or fill soil (not exceeding 12" depth per CBC Section 1804A.6), B) soil scarification/recompaction not exceeding 12" depth, C) native or fill soil supporting exterior non-structural flatwork (e.g., sidewalks, site concrete ramps, site stairs, parking lots, driveways, etc.), D) unpaved landscaping and playground areas, or E) utility trench backfill.

	CONCRETE/MASONRY:
	1. Post-installed anchors for the following: A) exempt non-structural components (e.g., mechanical, electrical, plumbing equipment - see item 7 for "Welding") given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) or B) interior nonstructural wall partitions meeting criteria listed in exempt item 3 for "Welding."
\checkmark	2. Concrete batch plant inspection is not required for items given in CBC Section 1705A.3.3.2 subject to the requirements and limitations in that section.

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:Sc01-119526NoDSA File Number:Inc41-26Value

School Name: North Shoreview Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-13 10:04:28

	3. Non-bearing non-shear masonry walls may be exempt from certain DSA masonry testing and special inspection items as allowed per DSA IR 21-1.16. Refer to construction documents for specific exemptions accordingly for each applicable wall condition.
\checkmark	4. Epoxy shear dowels in site flatwork and/or other non-structural concrete.
V	5. Testing of reinforcing bars is not required for items given in CBC Section 1910A.2 subject to the requirements and limitations in that section.

	Welding:
	1. Solid-clad and open-mesh gates with maximum leaf span or rolling section for rolling gates of 10' and apex height less than 8'-0" above lowest adjacent grade. When located above circulation or occupied space below, these gates are not located within 1.5x gate/fence height (max 8'-0") to the edge of floor or roof.
	2. Handrails, guardrails, and modular or relocatable ramps associated with walking surfaces less than 30" above adjacent grade (excluding post base connections per the 'Exception' language in Section 1705A.2.1); fillet welds shall not be ground flush.
	3. Non-structural interior cold-formed steel framing spanning less than 15'-0", such as in interior partitions, interior soffits, etc. supporting only self weight and light-weight finishes or adhered tile, masonry, stone, or terra cotta veneer no more than 5/8" thickness and apex less than 20'-0" in height and not over an exit way. Maximum tributary load to a member shall not exceed the equivalent of that occurring from a 10'x10' opening in a 15' tall wall for a header or king stud.
V	4. Manufactured support frames and curbs using hot rolled or cold-formed steel (i.e., light gauge) for mechanical, electrical, or plumbing equipment weighing less than 2000# (equipment only) (connections of such frames to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).
V	5. Manufactured components (e.g., Tolco, B-Line, Afcon, etc.) for mechanical, electrical, or plumbing hanger support and bracing (connections of such components to superstructure elements using welding will require special inspection as noted in selected item(s) for Sections 19, 19.1 and/or 19.2 of listing above).

DGS DSA 103-19 (Revised 07/16/2020)

Appendix: Work Exempt from DSA Requirements for Structural Tests / Special Inspections

Application Number:Sc01-119526NoDSA File Number:Inc41-26No

School Name: North Shoreview Elementary School Increment Number:

6. TV Brackets, projector mounts with a valid listing (see DSA IR A-5) and recreational equipment (e.g., playground structures, basketball backstops, etc.) (connections of such elements to superstructure elements using welding will require special inspection as noted in selected item(s) for section 19, 19.1 and/or 19.2 located in the Steel/Aluminum category).
7. Any support for exempt non-structural components given in CBC Section 1617A.1.18 (which replaces ASCE 7-16, Section 13.1.4) meeting the following: A) when supported on a floor/roof, <400# and resulting composite center of mass (including component's center of mass) \leq 4' above supporting floor/roof, B) when hung from a wall or roof/floor, <20# for discrete units or <5 plf for distributed systems.
DSA 103-19: LISTING OF STRUCTURAL TESTS & SPECIAL INSPECTIONS(SIGNATURE), 2019 CBC

Application Number: 01-119526 DSA File Number: 41-26 School Name: North Shoreview Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-13 10:04:28

Name of Architect or Engineer in general responsible charge:				
Name of Structural Engineer (When structural design has been delegated):				
Gokhan Akalan				
Signature of Architect or Structural Engineer:	Date:			
Salthur	10/14/2021			

Note: To facilitate DSA electronic mark-ups and identification stamp application, DSA recommends against using secured electronic or digital signatures.

DSA STAMP			
IDENTIFICATION STAMP DIV. OF THE STATE ARCHITECT			
APP: 01-119526 INC: REVIEWED FOR			
SS 🗹 FLS 🗌 ACS 🗌			
DATE: <u>10/27/2021</u>			

DSA 103-19: LIST OF REQUIRED VERIFIED REPORTS, CBC 2019

Application Number: 01-119526 DSA File Number: 41-26 School Name: North Shoreview Elementary School Increment Number: School District: San Mateo-Foster City School District Date Created: 2021-10-13 10:04:28

1. Structural Testing and Inspection: Laboratory Verified Report Form DSA 291

2. Post-installed Anchors: Laboratory Verified Report Form DSA 291, or, for independently contracting SI, Special Inspection Verified Report Form DSA 292

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NOTES

- 1. THIS IS NOT A BOUNDARY SURVEY. NO LIABILITY IS ASSUMED, BY KIER & WRIGHT, FOR THE EXISTENCE OF ANY EASEMENTS, ENCUMBRANCES, DISCREPANCIES IN BOUNDARY, OR TITLE DEFECTS NOT MENTIONED IN SAID DOCUMENTS AND THEREFORE NOT SHOWN ON THIS DRAWING. PROPERTY LINE PLOT ONLY (NO EASEMENTS SHOWN)
- 2. ALL DISTANCES SHOWN HEREON ARE IN FEET AND DECIMALS THEREOF.
- THIS IS NOT A UTILITY SURVEY. PHYSICAL ITEMS SHOWN ON THIS SURVEY ARE LIMITED TO THOSE ITEMS VISIBLE AS OF THE DATE OF THIS SURVEY. SUBSURFACE STRUCTURES, IF ANY, ARE NOT SHOWN. SAID SUBSURFACE OBJECTS MAY INCLUDE, BUT ARE NOT LIMITED TO, CONCRETE FOOTINGS, SLABS, SHORING, STRUCTURAL PILES, UTILITY VAULTS, PIPING, UNDERGROUND TANKS, AND ANY OTHER SUBSURFACE STRUCTURES NOT REVEALED BY A SURFACE INSPECTION.
- 4. THE SUBJECT PROPERTY IS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) FLOOD INSURANCE RATE MAP (FIRM) FOR SAN MATEO COUNTY, CALIFORNIA, MAP NUMBER 06081C0154G FOR COMMUNITY NUMBER 060328 (CITY OF SAN MATEO), WITH AN EFFECTIVE DATE OF APRIL 5, 2019, AS BEING LOCATED IN FLOOD ZONE "X-SHADED" AND ZONE "AE". ACCORDING TO FEMA THE DEFINITION OF ZONE "X-SHADED" IS: AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND ZONE "AE" IS: WITH BASE FLOOD ELEVATION OR DEPTH OF 10.

INFORMATION WAS OBTAINED FROM THE FEMA WEBSITE (WWW.FEMA.GOV) ON JULY 20, 2021.

LEGEND

_____ __ ____ _____ 100 101 _ __ __ _ —X X X _____ ____ +-100.00 o**∷**o ÷Č+ +0+ • ----●12"TR

CENTERLINE CONCRETE CURB & GUTTER MAJOR CONTOUR LINE MINOR CONTOUR LINE DRIVEWAY FEMA BORDER LINE FENCE LINE LOT LINE MONUMENT/MONUMENT LINE PROPERTY LINE SANITARY SEWER-MANHOLE & CLEANOUT SIDEWALK SPOT ELEVATION STORM DRAIN-MANHOLE & CATCH BASIN STORM DRAIN-MANHOLE & CATCH BACKFLOW PREVENTION DEVICE ELECTROLIER FIRE DEPARTMENT CONNECTION FIRE HYDRANT POWER POLE/JOINT POLE TRAFFIC SIGN TREE UTILITY BOX WATER VALVE

ABBREVIATIONS

BACK OF CURB BC BACK OF WALK EDGE OF WALK CATCH BASIN CONCRETE CONC. INVERT ELEVATION LIP OF GUTTER TELEPHONE MANHOLE PAVEMENT RIM ELEVATION SANITARY SEWER CLEAN OUT SSC0 TOP OF CURB TC

8 - 4002		
7	BENCHMARK #: 020-009 YEAR SET: 1966 YEAR RESET: DESCRIPTION: RAMSET NAIL AND WASHER LOCATION: NE'LY RETURN N-S STREET: BAYSHORE BLVD E-W STREET: CYPRESS AVE	
*	SAN MATEO DATUM: SAN MATEO DATUM +100; 105.205 MSL DATUM: MSL DATUM +100; 107.565 NGVD 29 + 100 +3.071 (MSL	NGVD
)88)

CURRENT ELEVATIONS ARE (MSL/NGVD29 +100) IN ORDER TO COMPARE TO CURRENT FLOOD (EL=10) (NAVD 88)

SUBTRACT 100 AND ADD 3.071 or SUBTRACT 96.929







Dennis Yniguez

Registered Consulting Arborist Board Certified Master Arborist Dennis@TreeDecisions.com



1428 Spruce Street Berkeley, CA 94709

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EVALUATION OF CONSTRUCTION EFFECTS ON SIX TREES AT THE NORTH SHOREVIEW ELEMENTARY SCHOOL 1301 CYPRESS AVE, SAN MATEO, CALIFORNIA 94401



North Shoreview Montessori

For

MARK SHERRILL—PROJECT MANAGER SAN MATEO-FOSTER CITY SCHOOL DISTRICT 1410 SOUTH AMPHLETT BOULEVARD SAN MATEO, CALIFORNIA 94402 <u>MSHERRILL@SMFC.K12.CA.US</u> (408) 315-0043

ΒY

DENNIS YNIGUEZ, REGISTERED CONSULTING ARBORIST TREE DECISIONS, 1428 SPRUCE STREET BERKELEY, CALIFORNIA 94709 TEL 510.649.9291 dennis@treedecisions.com

DECEMBER 17, 2021

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Exhibit		
1. Site Plan with tree locations		

1

EXECUTIVE SUMMARY

Installation of electrical upgrades at North Shoreview Montessori Elementary School will require excavation of trenches for installation of upgraded electrical conduits.

This report includes specifications for excavation of conduit trenches at proper distances from relevant trees. If trenching cannot be accomplished at the recommended distances from trunks, tree removal should be considered.

BACKGROUND AND ASSIGNMENT

On November 18, 2021, I was contacted by Mark Sherrill, a Project Manager for the San Mateo-Foster City School District. Mr. Sherrill informed me that the SMFC School District is preparing plans to install robust electrical upgrades to accommodate new air conditioning equipment at three elementary schools in San Mateo.

Installation of upgraded electrical equipment will require considerable trenching for installation of underground conduits between utility power sources and sizable new electrical boxes.

I was asked to schedule a time to meet with Mr. Sherrill at each of the three elementary schools to discuss proposed locations for new trench excavations and to consider how best to avoid significant damage to established trees.

I was not retained to do a formal tree risk assessment. My assignment did not include the use of invasive diagnostic techniques to examine or test any trees for structural integrity.

OBSERVATIONS AND DISCUSSION

On November 29, 2021, an associate and I visited the North Shoreview Montessori Elementary School site to examine, measure, and photograph trees adjacent to proposed trench locations, and to recommend measures for avoiding damage to nearby trees when conduit trenches are excavated.

Table 1. Relevant Trees at North Shoreview Montessori School					
Tree Number	Species	Tree Diameter (inches)	Location	Comments	
1	Sawleaf Zelkova (Zelkova serrata)	8	Outside the wire-mesh fence that parallels the sidewalk on the northwest side of Cypress Avenue	The nearest edge of the conduit trench should not be closer than 4' from the trunk.	
2	Chinese Pistache (Pistacia chinensis)	2.5	Inside the wire- mesh fence on Cypress Avenue	The nearest edge of the conduit trench should not be closer than 2' from the trunk.	
3	Callery Pear (Pyrus calleryana sp.)	8.25	Outside the wire-mesh fence on Cypress Avenue	The nearest edge of the conduit trench should not be closer than 4' from the trunk.	
4	Mimosa (Albizia julibrissin)	10	Inside the wire- mesh fence on Cypress Avenue	The nearest edge of the conduit trench should not be closer than 4' from the trunk; 5' distance is better.	
5	Sawleaf Zelkova (Zelkova serrata)	6	Outside the wire-mesh fence on Cypress Avenue	The nearest edge of the conduit trench should not be closer than 3' from the trunk.	
6	Chinese Pistache (Pistacia chinensis)	8.25	Inside the wire- mesh fence on Cypress Avenue	The nearest edge of the conduit trench should not be closer than 4' from the trunk; 5' distance is better.	
Note: Tree rests over 1/ inch in diameter must be suit with a sharp test such as a					

Note: Tree roots over ½ inch in diameter must be cut with a sharp tool such as a handsaw, reciprocating saw, loppers, or hand pruners. Roots that are cleanly cut will be significantly more resistant to decay. * Tree Diameters are described as DBH (Diameter Breast Height), a forestry term to indicate measurements of tree diameter at 54" above ground.

CONCLUSION

Recommended tree protection measures set forth in this report include proper root severance and avoidance of soil excavation and root severance closer than recommended distances.

If trenching cannot be accomplished at the recommended distances from trunks, tree removal should be considered.

Respectfully submitted,

Vinn ynn

Dennis Yniguez Registered Consulting Arborist (ASCA No. 362) Board Certified Master Arborist (ISA WE-0130)



1. North Shoreview Montessori Elementary School. 1301 Cypress Avenue, San Mateo, California. Six trees are growing adjacent to an area where a trench will be excavated for installation of an electrical conduit.



2. [Google Street View – December 2020] This photo shows the planting locations of Tree No. 1, a Sawleaf Zelkova *(Zelkova serrata);* Tree No. 2, a Chinese Pistache *(Pistacia chinensis);* and Tree No. 3, a Callery Pear *(Pyrus calleryana sp.).*



3. [Google Street View – December 2020] This photo shows the planting locations of Tree No. 4, a Mimosa (*Albizia julibrissin*); Tree No. 5, a Sawleaf Zelkova (*Zelkova serrata*); and Tree No. 6, a Chinese Pistache (*Pistacia chinensis*).



4. [November 29, 2021] The **white arrow** indicates a sprayed blue paint mark where the new conduit will be installed parallel to the fence and not closer than four to five feet from the trunk of Tree No. 4.



5. [November 29, 2021] The **white arrow** indicates a sprayed blue paint mark where the new conduit will be installed parallel to the fence and not closer than four to five feet from the trunk of Tree No. 4.

Any legal description provided to the consultant is assumed to be correct. Any titles or ownership of properties are assumed to be valid and marketable. All property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

QUALIFICATIONS, ASSUMPTIONS, AND LIMITING CONDITIONS

All property is presumed to be in conformance with applicable codes, ordinances, statutes, or other regulations.

Care has been taken to obtain information from reliable sources. However, the consultant cannot be responsible for the accuracy of information provided by others.

The consultant shall not be required to give testimony or to attend meetings, hearings, conferences, mediations, arbitrations, or trials by reason of this report unless subsequent contractual arrangements are made, including payment of an additional fee for such services.

This report represents the opinion of the consultant, and the consultant's fee is not contingent upon making any recommendation.

Sketches, drawings, and photographs in this report are intended for use as visual aids, are not necessarily to scale, and should not be construed as engineering or architectural reports or surveys. The reproduction of information generated by architects, engineers, or other consultants on any sketches, drawings, or photographs is only for coordination and ease of reference. Inclusion of said information with any drawings or other documents does not constitute a representation by Dennis Yniguez or Tree Decisions as to the sufficiency or accuracy of said information.

Unless otherwise expressed: a) this report covers only the examined items and their condition at the time of inspection; and b) the inspection is limited to visual examination of accessible items without dissection, excavation, probing, or coring. There is no warranty or guarantee, expressed or implied, that structural problems or deficiencies of plants or property may not arise in the future.



The placement of the six trees on this site plan was approximated from photographs. The recommended minimum distance of the electrical conduit trench from each tree *is set forth in Table 1* of this report. If minimum spacing cannot be maintained between conduit trenches and tree trunks, trees may have to be removed.

This Hazardous Material Abatement & Related Construction Specification 02 80 00 was prepared for San Mateo Foster City School District in support of the HVAC and Power Upgrade Project for the following schools:

School Name	Address
Abbott Middle School	600 36th Avenue, San Mateo, CA 94403
Borel Middle School	425 Barenson Avenue, San Mateo, CA 94403
College Park	715 Indian Avenue, San Mateo, CA 94402
Laurel Elementary	316 36th Avenue, San Mateo, CA 94403
Meadow Heights	2619 Dolores Street, San Mateo, CA 94403
North Shoreview	1301 Cypress Avenue, San Mateo, CA 94401
George Hall	130 San Miguel Way, San Mateo, CA 94403

Prepared for:

San Mateo Foster City School District 1170 Chess Drive Foster City, CA 94404

Prepared by:



419 Mason Street Vacaville, CA 95688

SECTION 02 80 00

HAZARDOUS MATERIAL ABATEMENT & RELATED CONSTRUCTION

PART 1. GENERAL

1.1 <u>SCOPE</u>

A. The work of this section includes removal, clean up and disposal of the below listed hazardous materials prior to the general building and structure renovation and/or demolition work of the project. These work scope items are generally described as follows for the buildings and structures indicated. Contractor is to review all demolition/construction project plans and field verify location and extent of hazardous materials-related work.

1. Asbestos-Containing Materials – Remove all:

a. Abbott Middle School

- Plaster, < 1% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Category II ACM, approximately 5 square feet may be impacted at each work location
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location

b. Borel Middle School

- Window putty at window HVAC unit, 2% asbestos, Category II ACM, approximately 2 square feet limited to Room 34
- Mastic Associate with tack board/white board/chalkboard, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Roof mastic, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work location

c. College Park Elementary School

- Texture coat associated with sheetrock above acoustical ceiling panel, < 1 - 2% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Regulated Asbestos Containing Material (RACM), approximately 5 square feet may be impacted at each work location, however may not be impacted with the given scope of work
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 3. Roof shingle & roof mastics, assumed asbestos, located throughout the roof system, non-friable Category I ACM, approximately 5 square feet may be impacted at each work location

d. George Hall Elementary School

- Stucco, < 1% asbestos (assumed to be >1% unless proven otherwise by point count analysis), Category II ACM, approximately 2 square feet may be impacted at each work location, however this material may not be impacted by scheduled work
- Floor tile beneath existing tile and/or carpet, 2% asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 4. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, however this material may not be impacted by scheduled work

e. Laurel Elementary School

- 1. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location
- 2. Mastic associated with acoustic wall tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location
- 3. Roof field shingle mastic (below the top layer), 6% asbestos, located throughout the roof system, non-friable Category I ACM, found at one sample location and assumed throughout homogenous roofing system of Buildings A, B, C, D, approximately 41,150 square feet

f. Meadow Heights Elementary School

- Floor tile, tan tile beneath existing flooring, 5% asbestos, with residual mastic (insufficient material to analyze) Category I non-friable ACM, approximately 5 square feet to be impacted at each work area location
- 2. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work area location
- 3. Roof shingles, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location
- Roof mastics, assumed asbestos, Category I ACM, approximately 1 square feet may be impacted at each work area location

g. North Shoreview Montessori School

- Joint compound associated with sheetrock wall system, joint compound = 2% asbestos, sheetrock = no asbestos detected, Regulated Asbestos Containing Material (RACM) - friable asbestos containing material, approximately 15 square feet may be impacted at each work location, refer to project drawings
- 2. Residual floor tile mastic, found in one of seven samples collected at Room 18, 3% asbestos approximately 8 square feet at each work location may be impacted, refer to project drawings
- 3. Stucco, <1% asbestos assumed >1% asbestos without point count analysis, Category II non-friable asbestos containing material, quantity impacted is dependent on the scope of work, refer to project drawings
- 4. Mastic associated with tack board/white board/chalk board, assumed asbestos, Category I ACM, approximately 6 square feet at each work location, may not be impacted.
- 5. Mastic associated with acoustic ceiling tiles, assumed asbestos, Category I ACM, approximately 5 square feet may be impacted at each work location, although material may not be impacted by scope of work
- 6. Roof field, shingle with associated mastic (assumed asbestos, this material may be sampled during construction if impacted to prove no asbestos by laboratory analysis, non-friable Category I ACM, quantity impacted is dependent on the scope of work, refer to project drawings

2. Lead-Based Paint (LBP). Remove loose and peeling LBP where occurs on lead-based components including:

a. Abbott Middle School

- 1. Exterior plexiglas windows/window covers (wall panels)
- 2. Exterior metal window frames
- 3. Exterior wood window trims
- 4. Window panels (windows/window covers)

b. Borel Middle School

1. Exterior wood window frames

c. George Hall Elementary School

- 1. Interior wood window sills
- 2. Interior wood wall trim
- 3. Exterior metal collars
- 4. Exterior metal equipment

d. Laurel Elementary School

- 1. Exterior wood window sills
- 2. Exterior wood window casings
- 3. Exterior metal roof collars
- 4. Exterior metal roof HVAC/mechanical equipment

e. Meadow Heights Elementary School

- 1. Interior wood window sills
- 2. Exterior wood wall trim

f. North Shoreview Montessori School

- 1. Interior wood lower walls
- 2. Exterior metal window trims
- 3. Exterior metal wall trims
- 3. Presumed Polychlorinated Biphenyl (PCB) lighting ballasts. Remove presumed PCB items, verify PCB content by labeling or manufacturing information and dispose of as PCB items unless proven non-PCB and/or labeled 'PCB FREE'. Recycle non-PCB components to extent possible.
- 4. Universal Waste including lighting tubes and exterior non-incandescent lighting. Remove and properly recycle.
- 5. Chlorofluorocarbons (CFCs) coolant gases in air conditioning units must be properly extracted and recycled prior to unit removal and disposal by a qualified hazardous materials disposal contractor using EPA certified Refrigerant Re-claimer for the removal and recycling of the CFC gases.
- B. The Contractor's work scope includes all removal, waste testing, and disposal or recycling costs associated with removed materials and removal operations for this project.

- C. Subsurface concrete piping shall be presumed to be asbestos cement (Transite®).
- D. The Contractor shall make any necessary arrangements for temporary water and power necessary to conduct the work of this project. Power and water are available on site but will require Contractor to make any necessary temporary connections. Coordinate schedule and phasing with architectural.
- E. Contractor shall review the demolition/construction project plans, reports, related documents identified herein, and shall visit the site during the scheduled bid walk and field verify the location and extent of hazardous materials removal work prior to submitting bid.
- F. The Contractor's work scope includes all removal, waste testing, and disposal and/or recycling of removed and demolished materials. The Contractor is responsible for all costs associated with removed hazardous materials and removal/demolition operations during abatement, disposal, and testing for waste stream during renovation and demolition work.
 - 1. Removed friable asbestos, including but not limited to texture coat and doing compound associated with sheetrock/wallboard and mechanically removed floor tile and flooring mastic, is to be disposed of as hazardous asbestos waste. Non-friable asbestos materials removed in a non-friable state shall be disposed of as a non-hazardous asbestos waste at an asbestos permitted landfill.
 - 2. Lead debris resulting from removal of loose LBP prior to demolition shall be disposed of as lead hazardous waste.
 - 3. PCB ballasts are to be disposed of as hazardous PCB wastes at a Class I landfill or permitted PCB incineration facility.
 - 4. All remaining hazardous materials wastes, including lighting tubes & lamps, batteries, refrigerants/coolants, and other universal wastes are to be recycled by a permitted facility or disposed of as hazardous wastes as it pertains to this project.
- G. The Contractor's work scope also includes removal of loose LBP and all required lead-related protective measures for Cal/OSHA, CDPH, and Cal/EPA compliance associated with renovation/demolition of the buildings and associated structures or other components on this site.
- H. The Contractors shall be responsible for all agency permits, notices, and fees required to conduct the abatement and demolition and shall be responsible for all costs of removal, demolition, waste characterization and profiling, and disposal associated with abatement and demolition.

1.2. <u>RELATED DOCUMENTS / WORK IN OTHER SECTIONS</u>

- A. HVAC and Power Upgrade Project, Hazardous Materials Survey Reports, prepared for each school by Znap Fly.
- B. Project Drawings.
- C. All other sections of the specifications.

1.3. <u>REFERENCES</u>

- A. General: Codes, regulations, and references to hazardous materials abatement work include, but are not limited to the most current versions of the following:
 - 1. California Code of Regulations (CCR):
 - a. Title 8, Article 2.5 Registration Asbestos-Related Work
 - b. Title 8, Section 1529 Construction Safety Orders, Asbestos Regulations
 - c. Title 8, Section 1531 Construction Safety Orders, Respiratory Protection
 - d. Title 8, Section 1532.1 Construction Safety Orders, Lead in Construction
 - e. Title 17, Div. 1, Ch. 8 Accreditation, Certification and Work Practices for Lead-Based Paint and Lead Hazards
 - f. Title 22, Div. 4.5 Environmental Health Standards for Management of Hazardous Waste
 - g. Title 22, Div. 4.5, Ch 23 Universal Waste Rule
 - 2. Bay Area Air Quality Management District (BAAQMD):
 - a. Regulation 11 Hazardous pollutants Rule 2 Asbestos Demolition, Renovation and Manufacturing
 - 3. Other Local Regulations
 - a. California Health and Safety Code 25249-25249.13
 - b. California Health and Safety Code 25915-25919.7

1.4. <u>DEFINITIONS</u>

- A. Definitions specific to Work of this Section.
 - 1. Abatement Procedures to control airborne contaminate and other releases from hazardous material-containing building materials. Includes removal, repair, encapsulation, and enclosure.
 - 2. Airlock A system for permitting ingress and egress with minimum air movement between a contaminated area and an uncontaminated area.

- 3. Air Monitoring The processing of measuring the air contaminants such as asbestos or lead for measured volume of air collected over the specific period of time being monitored.
- 4. Air Sampling Professional The professional contracted or employed to supervise air monitoring and analysis schemes. This individual is also responsible for recognition of technical deficiencies in Worker protection equipment and procedures during both planning and on-site phases of an abatement project.
- 5. Amended Water A water to which a surfactant has been added.
- 6. Asbestos The term asbestos includes chrysotile, amosite, crocidolite, tremolite, anthophyllite, and actinolite.
- 7. Asbestos Containing Construction Material (ACCM) Any construction material with asbestos content of 0.1 percent or greater by weight.
- 8. Asbestos Containing Material (ACM) Any material which contains over one percent asbestos as determined by current EPA bulk sample analysis method.
- 9. Asbestos Fibers This expression refers to asbestos fibers longer than five micrometers with an aspect ratio of 3:1 or larger under phase contrast microscopy (PCM) analytical procedures.
- 10. Authorized Visitor Any Owner Representative, Consultant or Agent and any representative of a regulatory of other agency having jurisdiction over the project.
- 11. Certified Supervisor An individual who is capable of identifying asbestos or lead hazards in the workplace and who has sufficient experience and authority to take prompt corrective measures to eliminate them. In addition, the Certified Supervisor is responsible for conducting and approving all required inspections as specified. Also known as the "Competent Person."
- 12. Class I Asbestos Removal Class I Asbestos work means activities involving the removal of thermal system insulation (TSI) and surfacing ACM.
- 13. Class II Asbestos Work Class II Asbestos Work means activities associated with removal of any asbestos containing material that is not a Class I surfacing material or thermal system insulation.
- 14. Clean Room An uncontaminated area or room that is a part of the Worker decontamination enclosure with provisions for storage of Workers' street clothes and protective equipment.
- 15. Critical Barrier A unit of temporary construction of air-tight and impermeable barrier which provides the only separation between a contained asbestos Work Area and an adjacent, potentially occupied area.
- 16. Decontamination Enclosure System A series of connected rooms, with air-tight doorways between any two adjacent rooms, for the

decontamination of Workers and of materials and equipment. A decontamination enclosure system always contains at least one airlock.

- 17. Differential Pressure Equipment A portable local exhaust system equipped with HEPA filtration and capable of maintaining a constant, low velocity air flow into contaminated area from adjacent uncontaminated areas. Also referred to as HEPA Exhaust Units or Negative Pressure Units (NPUs).
- 18. Encapsulant (sealant) A liquid material which can be applied to asbestos-containing material or surface and which controls the possible release of asbestos fiber from the material or surface by creating a membrane over the surface (bridging encapsulant), or by penetrating into the material and binding its components together (penetrating encapsulant), or by locking down invisible fibers (lockdown encapsulant).
- 19. Fluorescent Light Ballast (FLB) A device that electrically controls fluorescent light fixtures. Most existing FLBs include a capacitor containing 0.1 kilograms or less of dielectric fluid that may contain PCBs. Ballasts manufactured prior to 1979 may contain PCB capacitors. More recently, electronic ballasts have come into use that do not have dielectric fluids or PCBs. Ballasts with PCB capacitors also contain asphalt potting compounds which are likely to contain PCBs.
- 20. Hazardous Materials Hazardous materials include, but are not limited to: asbestos containing materials, lead and lead-based paint, mercury, PCB, coolant gases, universal wastes, solvents, fuels and other chemical products or wastes.
- 21. HEPA Filter A high-efficiency particulate absolute (HEPA) filter capable of trapping and retaining 99.97 percent of particles greater than 0.3 micrometers in mass median aerodynamic equivalent diameter.
- 22. HEPA Vacuum Equipment Vacuuming equipment with a HEPA (UL 586 labeled) filter system.
- 23. Lead-Based Paint (LBP) Lead-Containing Paint (LCP) that is at least 5,000 ppm, 0.5% lead by weight, or 1.0 milligrams of lead per square centimeter of surface area (as measured by XRF lead analyzer). Note: any untested paints or coatings must be presumed to be LBP.
- 24. Lead Hazardous Waste Lead-based paint waste or other debris that has been classified as hazardous due to the characteristic of toxicity, as determined by testing in accordance with the California Code of Regulations, Title 22, Division 4, Chapter 30, Article 11. A hazardous waste is any substance(s) listed in Article 11 Section 66699 at concentrations greater than its listed Soluble Threshold Limit Concentration (STLC) or Total Threshold Limit Concentration (TTLC). The STLC for lead is 5.0 parts per million (ppm) and the TTLC for lead is 1,000 ppm lead. If either of these values are exceeded, the lead related waste will need to be further characterized by the Toxicity Characteristic

Leaching Procedure (TCLP) in accordance with 40 CFR 261 and possibly other tests prior to disposal as a hazardous waste. Waste testing for proper disposal is the responsibility of the Contractor.

- 25. Negative Pressure Enclosure (NPE) An enclosed or contained area of any configuration constructed of polyethylene sheeting with a minimum of four (4) air changes per hour and a negative pressure of -0.022 inches of water as compared to surrounding areas outside the enclosure. NPE must be maintained until post abatement sampling.
- 26. Non-Friable Asbestos Material Material that contains asbestos in which the fibers have been locked in by a bonding agent, coating binder, or other material so that the asbestos is well bound and will not release fibers in excess of the asbestos control limit during any appropriate use, handling, demolition, storage, transportation, processing, or disposal.
- 27. Non-hazardous Asbestos Waste Wastes which are non-friable and/or are below one percent asbestos by weight as determined by objective testing. These wastes require OSHA Asbestos Hazard warning labels and disposal at landfills that accept such asbestos wastes.
- 28. Observation Service Environmental Consultant hired to conduct compliance observation and air monitoring services on behalf of the Owner. Sometimes referred to as the Owner's Observation Service.
- 29. Owner The San Mateo Foster City School District and any of its designated representatives for this project.
- **30**. Owner's Representative Representative(s) the District (Owner) has assigned to manage, oversee, and inspect this project. This may include an architectural and/or construction management consultant hired by the Owner to oversee the project.
- 31. Polychlorinated Biphenyl (PCB) PCB's are any chemical substances consisting of the biphenyl molecule chlorinated to varying degrees or any combination of such molecules. PCBs have had a wide variety of uses in the past including dielectric fluids in capacitors. PCBs are clear to yellow oily substances which are toxic to the liver and reproductive system. PCBs are also suspect human carcinogens.
- **32**. PCB Ballast An FLB that is known or suspected to contain PCBs. All FLBs must be considered PCB ballasts unless they are:
 - a. Labeled or marked "No PCB" by the manufacturer.
 - b. Manufactured in 1979 or later as indicated and verified on a date stamp or code, located on the ballast.
 - c. Labeled as "Electronic Ballasts" by the manufacturer.
 - d. General Electric HDF Ballasts manufactured from 1977 to 1978 and which have a "W" added to their catalogue number on the label of the ballast.
- 33. Removal Procedures necessary to remove hazardous materials such as, but not limited to, asbestos or lead from designated areas and to

dispose of these materials at an acceptable properly permitted waste disposal site.

- **34**. Surfactant A chemical wetting agent added to water to improve penetration.
- 35. Universal Waste Certain common designated hazardous wastes that are required to be handled and disposed of or recycled in accordance with special rules. Includes fluorescent light tubes, HID lamps, sodium vapor lamps, mercury switches, mercury thermostats, NiCad, Silver, & Mercury & other batteries (often used in building alarms and emergency systems), and other items.
- 36. Visually Clean Free of visible dust, paint chips, dirt, debris, or films removable by vacuuming or wet cleaning methods specified. For outside soil or ground cover areas, visually clean shall mean free of construction or paint debris, chips or dust distinguishable from the initial soil or ground conditions.
- **37**. Waste Generator Label Waste Generator label shall include the Generator's Name, ID Number, Address, and Waste Manifest Number.
- 38. Wet Cleaning The process of eliminating asbestos or lead contamination from building surfaces and objects by using cloths, mops, or other cleaning tools that have been dampened with water or water/ detergent solution, and by afterwards disposing of these cleaning tools and materials as contaminated waste.
- 39. Work Area Designated rooms, spaces, or areas of the project in which hazardous material removal actions are to be undertaken or which may become contaminated as a result of such removal actions during the process and prior to final clean-up and decontamination. A contained Work Area is a Work Area that has been sealed and equipped with a Decontamination Enclosure System. Also referred to as a "Regulated Area."
- 40. Worker Decontamination Enclosure System (Worker Decon) That portion of a Decontamination Enclosure System designed for controlled passage of workers, and other personnel and authorized visitors, typically consisting of a clean room, a shower room, and an equipment room.

1.5. <u>SUBMITTALS</u>

- A. General:
 - 1. Requirements are as set forth in the General Conditions documents (001 000 to 019 9999) that are prepared by aedis architects for items required to be submitted under this section.
 - 2. Submittals that are incomplete, disorganized, unreadable, or not project specific will be rejected.

- B. Pre-Start Submittal-Part A; Submit and obtain approval prior to starting on-site set-up for asbestos removal work. Submit the following:
 - 1. Licensing and Registration for Contractor or Subcontractor responsible for removal of hazardous materials. Submit copies of current and valid:
 - a. The Contractor's license and Contractor's asbestos certificate issued by the California State Contractor's Licensing Board (CSLB);
 - Registration for Asbestos-Related Work from the Division of Occupational Safety and Health in accordance with CCR, Title 8, Article 2.5 of the California Administrative Code and C-22 Asbestos Abatement Contractor in accordance with CCR, Title 16, Div 8, Article 3.
 - 2. Notifications, Communications, and Postings.
 - a. Submit copies of notifications to appropriate government agencies where required, including the following:

Division of Occupational Safety and Health 1065 East Hillsdale Blvd., Suite 110 Foster City, California 94404 (650) 573– 3812 Email: DOSHFC@dir.ca.gov Notifications shall be in accordance with the Title 8 CCR Section 341.9 for asbestos and Section 1532.1 for lead.

Bay Area Air Quality Management District (BAAQMD) Attn: Asbestos Section 375 Beale Street, Suite 600 San Francisco, California 94105 (415) 749-4900 Notifications shall be in accordance with the Regulation 11 Rule 2 for Asbestos.

- b. Copies of Government agency correspondence shall be included in the submittals.
- 3. Respiratory Protection Plan: Submit a written standard operating procedure governing selection, fit-testing, and use of respirators for asbestos and lead removal.
- 4. Detailed Work Plan: Submit a detailed work plan proposed for use in complying with the requirements of these specifications. The detailed work plan shall include, at a minimum, the following information:
 - a. Procedures: Job-specific procedures proposed for completing the scope of work outlined herein including: means of Work Area containment including barriers and other protective measures for

removal at each location; means for provision of decontamination units; removal methods to be employed;

- b. Detailed schedule with calendar dates showing all phases of work. Where scheduled start dates have not been confirmed, provide the number of consecutive work days to complete each phase of work.
- 5. Plan for personnel air monitoring required by law by the Contractor for Worker protection. The Plan shall include, but not be limited to the following:
 - Personnel Air Monitoring conducted in strict accordance with 8 CCR 1529. Include calibration data for the secondary standard to be used for air sampling pump calibration on-site. This data must be within six (6) months of the projected completion of this project.
 - b. Name, address and accreditation and/or certification of laboratory selected by the contractor to analyze personal air samples for workers.
- 6. Hazardous Waste Transporter. Submit name, address and EPA# for each transporter to be used.
- 7. Waste Disposal Sites: Submit name location, class, and EPA# for each waste disposal site to be used for asbestos, lead, PCB, and other hazardous wastes for this project.
- 8. Method of disposal (i.e., landfill or incineration) for PCB ballasts and PCB contaminated materials shall be indicated. List transporter and disposal site(s) and their respective EPA ID number(s).
- 9. Method of on-site storage and shipping for packaging to keep lighting tubes and lamps intact from removal until their delivery to a recycling facility.
- 10. Product Data: Manufacturers product data for all items required for complete and proper execution of the work, this includes product data for all items listed under Part 2 Products. Product data shall include manufacturing product data, specifications, samples and application instructions, material safety data sheet (MSDS), and other pertinent information as necessary.
- C. Pre-Start Submittal-Part B; Submit and obtain approval prior to any asbestos and/or lead removal work. Submit the following:
 - 1. Personnel Qualifications: Personnel documents required per this section shall be organized by individual employee and include the following information:
 - a. Personnel Training (asbestos)
 - 1. Competent Person/Supervisor: Submit a copy of current AHERA asbestos training certificates for the Contractor's

Competent Person and Quality Control Person documenting successful completion of a training course in asbestos abatement project supervision offered by a Cal/ OSHA accredited educational institution. Designate by name, the person who will act as the Certified Supervisor/ Competent Person and Qualified Person for the project.

- 2. Workers: Submit a copy of the current asbestos training certificates for the Contractor's asbestos abatement workers documenting successful completion of a training course in asbestos abatement for workers offered by an EPA accredited education institution.
- 3. For lead abatement or removal work, supervisors and workers shall have appropriate training and CDPH certification documentation. For lead related demolition work, comply with CAL/OSHA training and certification requirements as applicable and submit documentation.
- b. Medical Examination: Submit proof that personnel who will be performing asbestos-related work, lead related work, or otherwise wearing respirators shall have had medical examinations within the last 12 months in conformance with Title 8 CCR; Section 1529 asbestos, and furnish the results of each exam in the form of the physician's written opinion or approval with regard to worker fitness to wear a respirator and perform asbestos and lead work as applicable.
- c. Respirator fit tests: Submit proof that personnel who will be entering asbestos Work Areas have had a qualitative respiratory fit test performed within 12 months from the scheduled completion date of the project.
- 2. HEPA Filtration Certifications:
 - a. Provide third party test certificates for al Differential Pressure Equipment and HEPA Vacuums to be used on this project. Such certificates shall document that each item of equipment has been tested on-site prior to start-up and that the results have demonstrated that each HEPA equipment assembly meets the efficiency requirement for HEPA filtration as an installed system or unit of equipment.
 - b. All HEPA filtration testing must be conducted by challenging the installed filter system with 0.3 micrometer diameter particles using a dioctyl-phthalate (DOP) particle generator and appropriate aerosol measurement test equipment designed for this purpose. Alternate test methods may be accepted if certified to be equivalent. Test certificate stickers shall be placed on each machine tested and a copy of the testing certification shall be

submitted. The test result, date and time of testing, testing firm, and signature of qualified test technician shall be included on each certification along with equipment identification information.

- D. Daily & Other Progress Submittals: Submit the following within 24 hours following the completion of each Work Shift. The Contractor shall submit the following information to the Observation Service.
 - 1. A complete asbestos worker/employee roster for each work shift prior to the commencement of each shift.
 - 2. Work Area entry/exit logs completed for each Work Area and each Work Shift.
 - 3. Worker exposure ("OSHA") sample results for asbestos including eight (8) hour Time Weighted Average (TWA) sampling and 30-minute excursion limit sampling. Sample results must indicate the person sampled, description of work activity, start and stop times, liters per minute, total volume and laboratory result expressed as an eight-hour TWA or excursion limit sample.
 - 4. Waste Manifests:
 - a. Each time hazardous waste (asbestos, lead, PCB, etc) is picked up from the site the Contractor is responsible for preparing an accurate hazardous waste manifest, presenting the manifest to the Owner's Representative for review and signature, and submitting the generator and DTSC copies to the Owner's Representative.
 - b. Each time a non-hazardous asbestos waste is shipped, the Contractor shall submit the non-hazardous shipping manifests to the Owner's Representative for review and signature and provide the Owner's Representative a signed copy.
 - c. All asbestos and other hazardous material waste manifests are to be reviewed and signed by an Owner Representative.
 - d. All materials shipped for recycling (lighting tubes, mercury, etc.) shall be accompanied by a manifest prepared by the Contractor, review and signed by the Owner's Representative. A copy of the signed manifest shall be provided to the Owner Representative.
 - e. Land Disposal Restrictions: Submit a copy of the completed Notice and Certification with each Hazardous Waste Manifest for wastes intended for land disposal pursuant to Section 67740 of 22 CCR) signed by the co-generator to the Owner's Representative.
 - 5. Land Disposal Restrictions: Submit a copy of the completed Notice and Certification with each Hazardous Waste Manifest for wastes intended for land disposal pursuant to Section 67740 of 22 CCR) signed by the co-

generator to the San Mateo Foster City School District's Construction Supervisor.

- 6. Special Reports: (Submit to the Owner's Observation Service within 24 hours of occurrence.)
 - a. The Contractor shall complete a report of unusual events when an event of unusual significance occurs at the site including loss of negative pressure, power failures, breeches in containment, etc. This report shall include the date and time of the event, activities leading up to the event, a detailed account of the event, persons involved, corrective action taken, and action taken to prevent a reoccurrence.
 - b. The Contractor shall submit a detailed accident report in the event of an accident or injury at the site. This report shall include the date and time of the injured, persons involved, cause of injury, detailed description of loss or injury, response actions taken and action taken to prevent a reoccurrence.
- E. Close-Out Submittals:
 - 1. Within 10 days of completion of all hazardous material removal work, submit to the Owner's Observation Service:
 - a. One copy of all outstanding daily submittals;
 - b. One copy of each hazardous waste manifest and one copy of each non-hazardous asbestos waste manifest;
 - c. One copy of Work Area entry/exit logs completed for each Work Area and each Work Shift.

1.6. <u>CERTIFICATIONS</u>

- A. Inspection Certifications (Asbestos)
 - 1. Pre-Abatement Visual Inspection Forms and Final Visual Inspection and Post Abatement Certification Forms will be provided at the preconstruction start up meeting by the Observation Service.
 - 2. Pre-Abatement Visual Inspection: Upon inspection and approval of each Work Area by the Contractor's Certified Supervisor, a Pre-Visual Inspection Form shall be signed and submitted to the Observation Service for review and approval. The approved inspection form shall be considered notice to proceed with abatement operations within the Work Area.
 - 3. Final Visual Inspection and Post Abatement Certification: Upon completion of asbestos abatement and before encapsulation in each Work Area, the Contractor's Certified Supervisor shall thoroughly inspect the Work Area for completeness of work. The Contractor's Competent Person shall sign and submit a completed Final Visual Inspection and

Post Abatement Certification Form for review and approval by the Observation Service. The approved inspection form shall be considered notice to proceed with encapsulation.

1.7. <u>POSTINGS</u>

- A. Before the commencement of any asbestos related work at the site, Cal/OSHA warning signs in and around the Work Area to comply with Cal/OSHA regulations.
- B. Copies of the Contractor's SCLB license, Cal/OSHA registration certificate, temporary job-site notifications, pre-start LBP notifications to Cal/OSHA, local agency notifications, emergency exit diagram, emergency phone numbers, Cal/ OSHA poster on worker's rights, and worker's compensation poster shall be posted proximate to the entrance to each Work Area.
- C. The Contractor shall have at least one copy of the Contract Documents including project plans and specifications, and a current copy of 8 CCR 1529 & 1532.1.

PART 2. PRODUCTS

2.1. <u>GENERAL</u>

- A. Submit manufacturer's product data for all items to be used including the items listed below.
- B. All materials to be used on the project shall be new in original packages, containers, or bundles bearing the name of the manufacturer and the brand name. Used materials will not be permitted.

2.2. PROTECTIVE COVERING (PLASTIC SHEETING)

A. For standard containment and critical barrier usage: Fire Retardant Polyethylene sheets six (6) mil and four (4) mil in sizes to minimize frequency of joints, approved and listed by the State Fire Marshall per Section 13121 and/or 13144.1 of the California Health and Safety Code.

2.3. <u>TAPE, ADHESIVE, SEALANTS</u>

A. Duct tape two inches or wider, or equivalent, capable of sealing joints of adjacent sheets of plastic sheets and for attachment of plastic sheets to finished

or unfinished surfaces of dissimilar materials and capable of adhering under both dry and wet conditions.

B. Spray adhesives for sealing polyethylene to polyethylene shall contain no methylene chloride compounds.

2.4. <u>PROTECTIVE PACKAGING</u>

- A. Appropriately labeled six (6) mil sealable polyethylene bags as a minimum.
- B. Appropriately labeled, impermeable drum containers with sealable lids.
- C. Bilingual labels (English and Spanish) on waste packages, contaminated material packages and other containers shall be in accordance with applicable Cal/EPA and Cal/OSHA standards.

2.5 WARNING LABELS AND SIGNS

- A. All warning signs and labels must meet all applicable regulatory requirements for wording, size of lettering, and use of language, pictographs, and graphics to effectively convey the warning. Additional requirements apply for hazardous waste containers and shipments for transportation to disposal sites.
- B. Lead Caution Signs must include phrase "WARNING, LEAD WORK AREA, POISON, NO SMOKING OR EATING" in minimum two-inch high letters. These shall be posted at each approach to each lead paint stabilization/surface preparation and manual demolition Work Area.
- C. Cal/OSHA Lead Warning Posters: "DANGER, LEAD WORK AREA, MAY DAMAGE FERTILITY OR THE UNBORN CHILD, CAUSES DAMAGE TO THE CENTRAL NERVOUS SYSTEM, DO NOT EAT, DRINK OR SMOKE IN THIS AREA" shall be posted at the entrance to each LBP stabilization/surface preparation and manual demolition Work Area.
- D. Asbestos Warning signs for Regulated Areas must contain the following wording:

DANGER ASBESTOS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA AUTHORIZED PERSONNEL ONLY

E. Labels for packaging and containers containing ACM waste must contain the following wording:

DANGER CONTAINS ASBESTOS FIBERS MAY CAUSE CANCER CAUSES DAMAGE TO LUNGS DO NOT BREATHE DUST AVOID CREATING DUST

2.6. <u>SURFACTANT</u>

A. Surfactant, or wetting agent, for amending water will be 50 percent polyethylene ether and 50 percent polyethylene ester, or equivalent, at a concentration of one ounce per five gallons of water.

2.7. <u>VENTILATION EQUIPMENT</u>

- A. Provide differential pressure equipment in areas as shown on Contractor's work plans. High-efficiency particulate absolute (HEPA) filtration systems shall be equipped with filtration equipment in compliance with ANSI Z9.2, local exhaust ventilation. No air movement system or air filtering equipment shall discharge unfiltered air outside the work area. Differential pressure within the work area shall be maintained at negative 0.022 inches of water during abatement.
- B. Provide air filtration equipment with HEPA filtration system to cleanse air of particulate matter during abatement. Replace HEPA filters when filters become clogged with particulate matter. Provide enough air filtration devices within the work area to maintain fiber levels within the protection factors of workers' respirators.

2.8. <u>PERSONAL PROTECTIVE EQUIPMENT</u>

- A. Personal Protective Equipment shall comply with the requirements of 29 CFR 1910, Subpart 1 and 8CCR 1514, 1515, 1516, and 1517.
- B. Work clothes shall consist of impervious disposable, full-body coveralls, head covers, boots, rubber gloves, and work boots (or sneakers). Sleeves at wrists and cuffs at ankles shall be secure.
- C. Eye protection and hard hats shall be available and worn when required by applicable safety regulations and shall conform to ANSI 87.1 and 89.1.

D. Provide Authorized Visitors with suitable protection clothing, headgear, eye protection, and footwear whenever they enter the Work Area.

2.9. <u>RESPIRATORS</u>

- A. Provide all workers, foremen, superintendents, authorized visitors, and inspectors' personally-issued and marked, clean and sanitized respiratory equipment approved by NIOSH. When respirators with disposable filters are employed, provide sufficient filters for replacement as recommended by manufacturers or this specification. Selection of respirators shall be made according to the guidance of 8 CCR 1529 and 1532.1.
- B. The minimum respiratory protection required for this project is a half mask respirator as long as the airborne levels do not exceed one tenth of the applicable PEL established by regulation.

PART 3. EXECUTION

3.1. <u>PROJECT PROCEDURES</u>

- A. Prior to the start of on-site work, the Contractor shall hold an on-site start-up safety meeting for all of contractor and facility employees that addresses at least the following issues specific for the project.
 - 1. Safety and health hazards;
 - 2. Procedures and work practices;
 - 3. Respiratory protection and instruction; and
 - 4. Special conditions and/or work requirements.
- B. Worker Protection Procedures
 - 1. Provide Authorized Visitors with suitable protective clothing, respirators, headgear, eye protection, and footwear whenever they are required to enter the Work Area. All provided equipment shall be new or in good working condition and clean, sanitized, and inspected by a competent person since last use.
 - 2. Each Worker and Authorized Visitor shall, upon entering the job site: remove street clothes in the clean-change rooms and put on a respirator and clean protective clothing before entering the Work Area.
 - 3. Workers shall, each time they leave the Work Area, remove gross contamination from protective clothing before leaving the Work Area, proceed to the Equipment Room or decontamination area and remove protective clothing except respirators; still wearing the respirator, proceed to the showers or wash area, clean the outside of the respirator
with soap and water while showering; remove the respirator, and thoroughly shampoo and wash themselves.

- 4. Following washing and/or showering and drying off, each Worker shall proceed directly to the clean change room/area and dress in clean clothes at the end of each day's work, or before eating, smoking, or drinking. Before re-entering the Work Area from the clean change room, each Worker and Authorized Visitor shall put on a clean respirator and shall dress in clean protective clothing.
- 5. Contaminated work footwear shall be stored in the Decontamination Area when not in use in the Work Area. Upon completion of abatement, dispose of footwear as contaminated waste.
- 6. Workers removing waste containers from the Equipment Decontamination Enclosure shall enter the Holding Area from outside wearing a respirator and dressed in clean disposable coveralls. No Worker shall use this system as a means to leave or enter the Wash Room or the Work Area.
- 7. Workers shall not eat, drink, smoke, or chew gum or tobacco while in the Work Area.
- 8. Workers and Authorized Visitors with beards shall not enter the Work Area unless equipped with respirators approved for use with beards.

3.2. <u>COORDINATION REQUIREMENTS</u>

- A. Coordinate with the Observation Service and Owner's Representative the locations of the Worker Decontamination Unit, waste load out, staging areas, and emergency egress exits.
- B. Coordinate timing of waste bag-out and waste shipping activities with the Owner's Representative and Observation Service. All asbestos and hazardous waste manifests shall be signed by the owner or designated owners's representative. The Contractor shall be aware that these activities may need to take place during times when it is most convenient to the facility.
- C. Coordinate and provide to the Observation Service the required number of GFCI protected energized 110 Volt AC power outlets needed inside and outside each Work Area. These outlets shall be solely dedicated for the use of the Owner's Observation Service.

3.3. <u>PREPARATION</u>

- A. General Preparation Requirements for All Interior Work Areas. Not each area will require abatement of all materials. Each school differs. Refer to project plans/ drawings.
 - 1. Prior to Work Area set up and preparation, remove all movable objects that will not disturb existing ACM or asbestos contaminated materials in the process.
 - 2. Provide temporary power and lighting and ensure safe installation of temporary power sources and equipment per applicable electrical code requirements and provide ground-fault interrupter circuits as power source for electrical equipment.
 - 3. Clean and decontaminate all accessible areas above ceiling prior to hazardous material remediation, demolition, and other construction activities.
 - 4. Install a Decontamination Enclosure System or equivalent prefabricated portable decontamination unit(s) as approved. This system will be the primary entrance and exit to the Work Area.
 - 5. Seal off all other accesses to the Work Area with hard barriers and polyethylene sheeting sealed with tape.
 - 6. Install Differential Pressure Equipment for all Class I and Class II Asbestos Removal Operations in accordance with the requirements herein. Establish a negative pressure of -0.022 inches water or greater inside the Work Area containment with respect to the outside and non-involved building areas.
 - 7. Install an adequate number of HEPA Units to obtain the required negative pressure continuously and achieve at least four (4) complete air changes per hour inside the containment.
 - 8. Conduct any required non-ACM selective demolition including demolition to reveal concealed ACM prior to starting ACM removal work to ensure such areas are prepared with additional critical barriers to ensure negative pressure can be maintained at a negative (-) 0.022 inches or better during asbestos removal.
 - 9. Pre-clean fixed objects and surfaces within the proposed Work Areas, using HEPA filtered vacuum equipment and/or wet cleaning methods as appropriate, and enclose with protective barriers. Protective barriers will consist of plastic sheeting and plywood as appropriate.
 - 10. Seal all remaining openings, including but limited to ducts, grills, diffusers, and any other penetrations of the Work Areas, with two (2) layers of six (6) mil polyethylene sheeting sealed with tape.
 - 11. Seal all joints of conduit, junction boxes, and ductwork with duct tape and plastic sheeting. Cover and protect during abatement.

- 12. Install Viewing Ports of size, quantity, and location to meet local AQMD/ APCD requirements. Where no requirements are specified, install an adequate number of windows to view the entire removal Work Areas as feasible.
- 13. Establish and maintain emergency and fire exits from each Work Area.
- B. Decontamination Enclosure System (General)
 - 1. Construct or establish Decontamination Enclosure System or area contiguous to the work area for proper decontamination of worker as they exit a Regulated Area or containment system.
 - 2. Provide separate designated areas or chambers for: removal of contaminated clothing prior to exiting the contaminated area; for washing or showering (as appropriate); and for donning clean protective clothing and equipment prior to re-entry. The decontamination system shall comply with applicable regulation taking into account the Cal/ OSHA asbestos removal work class as well as site conditions.
 - 3. In the event that the Decontamination Enclosure System is not contiguous with the Work Area, there must be at least an established area for removing and properly disposing of contaminated clothing and equipment, minimum amenities for washing hands, respirator and face, to allow exiting the work areas prior to going to a remote decontamination enclosure on site. Under these conditions, double suit procedures are required.
- C. Mini Containments
 - 1. The use of mini-containments shall be permitted only if entire removal can be completely contained by the enclosure or as needed to isolate the HVAC, Plumbing, Electrical or other system as part of localized preparatory activities.
 - 2. Mini-containments shall shall be constructed with rigid framing and shall have a minimum of one layer of 6 mil polyethylene sheeting sealed with tape.
 - 3. The mini-containment enclosure shall have a decontamination enclosure system in accordance with the requirements herein or as approved by the Observation Service.
 - 4. The The mini-containment enclosure shall be placed under negative pressure for the duration of work in the containment until final air clearance is obtained.
- D. Maintenance of Enclosure Systems
 - 1. Ensure that all barriers intact and are effectively sealed and taped. Repair damaged barriers and remedy defects immediately upon discovery.

- 2. Visually inspect enclosures at the beginning of each work period and periodically throughout each shift. Inspection shall include, but not be limited to, the protective critical barriers and the worker Decon unit barriers, warning signage, and Work Area barriers or barricades.
- 3. Use smoke test methods to evaluate effectiveness of barriers prior to implementing asbestos removal and when directed by the Observation Service.
- 4. Ensure all negative pressure containment enclosures for regulated asbestos-containing material removal meet all BAAQMD requirements at all times from start up through completion and post abatement sampling.
- E. Asbestos, lead, and hazardous material removal work shall not commence until:
 - 1. Submittals as required herein have been reviewed and approved in writing by the Observation Service;
 - 2. Arrangements have been made for secure temporary storage of asbestos wastes and other hazardous wastes on-site and for disposal of such wastes at an acceptable permitted disposal sites;
 - 3. Work Areas and Decontamination Enclosure Systems (or equivalent) have been installed and approved and all parts of the building or facility required to remain in use are effectively segregated and isolated;
 - 4. Tools, equipment, and secure material waste receptors are on hand;
 - 5. Arrangements have been made for buildings' and Work Area security during removal operations including periods when no work is in progress such as off hours, weekends, and holidays; and
 - 6. Differential pressure systems, as required for interior asbestos removal, are installed, operating, and recording properly.

3.4. CLASS I & II ASBESTOS REMOVAL OPERATIONS

- A. General Requirements. Not each area will require abatement of all materials. Each school differs. Refer to project plans/drawings.
 - 1. Class I Asbestos Work is defined as removal of ACM that is a surfacing material or thermal system insulation. Class II Asbestos Work is defined as the removal of ACM that is not a surfacing material or thermal system insulation.
 - 2. The Class I Asbestos Work of this project includes but is not limited to removal of: non-friable ACM and PACM if made friable by removal process.
 - 3. The Class II Asbestos Work means activities involving removal of ACM which is not thermal system insulation or surfacing materials. For this project materials include, but is not limited to removal of the following

materials: wallboard, floor tile, roofing and siding shingles, and construction mastics.

- B. Class I & II Asbestos Work Preparation Requirements
 - 1. All interior work shall be conducted within negative pressure containments with contiguous decontamination units for worker enter & exit.
 - 2. Negative pressure shall be maintained at -0.025 inches of differential pressure (water column) or higher compared to the exterior pressure.
 - 3. All negative pressure exhaust units shall be HEPA filtered and exhausted to the building exterior. All HEPA exhaust units shall be DOP (or equivalent) tested on-site and certified to meet HEPA efficiency standards.
 - 4. Interior walls and other non-movable objects shall be covered with at least one layer of four (4) mil plastic sheeting. Wall covering may be reduced to 4' splash guards in Work Areas where glove bags or "cut, wrap, and remove" methods are the sole method used for pipe and fitting insulation removal.
 - 5. Floor areas shall be covered with two (2) layers of six (6) mil plastic sheeting unless glove bags and/or cut, wrap and remove methods for pipe insulation are used. Where glove bags and cut & wrap methods are used, six (6) mil plastic drop sheets extending at least 5 feet on each side of pipe at minimum are required.
- C. General Removal Procedures
 - 1. Spray asbestos materials with amended water, using only spray equipment capable of dispensing a fine mist application. Apply amended water sufficiently to wet material surfaces without causing excess dripping or pooling. Spray materials and Work Area repeatedly during work process to control airborne fiber levels.
 - 2. Place asbestos waste in clear asbestos-labeled plastic bags or lined drums. Plastic bags must be sealed using the "goose neck" technique by twisting the neck of the bag, bending it over and taping it with multiple wraps of tape. Clean external surfaces of containers thoroughly prior to setting down on a clean plastic drop cloth.
 - 3. Move waste containers to washroom or wash area, wet clean each container thoroughly, and move to holding area pending removal to uncontaminated areas.
 - 4. After completion of removal work, equipment surfaces from which asbestos has been removed shall be wet cleaned and/or wet sponged by an equivalent method to remove all visible material and residue. During this work, the surfaces being cleaned shall be kept damp. Do not allow water to pond at any time.

- 5. Clean all surfaces of the Work Area including remaining sheeting by use of damp cleaning and/or HEPA filtered vacuum.
- 6. Proceed with final decontamination of the Work Area.
- D. Glove bag Technique
 - 1. Removal of Class I and II asbestos-containing materials from piping may be accomplished using approved glove bag techniques in specified areas. In all cases, removal shall be conducted in secondary negative pressure containment or mini-containment.
 - 2. After installation of glove bag, smoke test the glove bag to verify that it is air tight.
 - 3. Thoroughly wet material to be removed with amended water before and during the removal process.
 - 4. Thoroughly wash the inside of the bag, the piping surfaces and the tools upon completion.
 - 5. Encapsulate all surfaces inside the glove bag including the piping and ends of exposed coating material.
 - 6. Evacuate bag with an approved HEPA vacuum; tie off waste area; remove tools from bag; remove bag from pipe, folding inward the sides of the bag; then twist and tape the open end, the wand opening, and the vacuum opening.
 - 7. Place glove bag directly into another six (6) mil sealable labeled plastic waste bag or other appropriate waste container. Seal the outer bag using the "goose neck" technique by twisting the neck of the bag, bending it over and taping it with multiple wraps of tape. Seal container with duct tape.
- E. Modified Cut, Wrap, and Remove Technique
 - 1. Removal of pipe insulation may be accomplished using approved Modified Cut, Wrap, and Removal Techniques where piping is to be demolished or abandoned in place unless otherwise noted.
 - 2. Verify the piping being removed scheduled for removal or abandonment in place prior to proceeding.
 - 3. Verify pipe lines have be isolated and drained prior to cutting pipe(s).
 - 4. Use glove bag technique to remove insulation at location of pipe to be cut. Wrap pipe including all insulation being removed with two layers of six (6) mil polyethylene sheeting secured with duct tape.
 - 5. Cut the pipe and remove wrapped pipe with ACM insulation for disposal.
- F. Floor Tile Removal
 - 1. Remove wall base, cabinets, and any other components and materials as necessary to expose and access all resilient floor tiles for removal.

- 2. Thoroughly wet floor tiles with amended water but do not let water pool or pond.
- 3. Remove tile by prying with scrapers or spud bars taking care to minimize breakage.
- 4. Place removed tiles in appropriately labeled impervious bags or containers and seal.
- 5. Do not subject floor tiles to any sanding, grinding, cutting, abrading activities likely to create friable ACM.
- G. Flooring Mastics Removal
 - 1. Remove all overlaying non-asbestos carpet and other materials concealing the flooring mastics.
 - 2. Remove all asbestos and/or asbestos mastic contaminated floor tiles prior to initiating mastic removal in the Work Area.
 - 3. Remove all flooring mastics using a suitable mastic solvent along with manual scraping and/or mechanical removal methods as necessary for complete removal.
 - 4. Where removal solvents are used, clean up slurry as the mastic is removed and place in properly labeled containers for disposal as a hazardous waste.
 - 5. As an alternative to solvent removal, use bead blast systems for removal is acceptable if permitted by the AQMD and any required variance or waiver is obtained in advance by the Contractor. Likewise, removal by high pressure water systems is allowable if water is fully contained and removal is complete. All floor mastic removal operations must be conducted as a Class I removal operations unless removal is limited to manual scraping methods.
 - 6. Regardless of removal method used, all three dimensional mastic residues must be removed and extent of removal must sufficient to allow for recycling of concrete foundations and decks.
- H. Mastic behind chalkboard/ACT
 - 1. Removal of non-friable shall be conducted using wet methods using hand

scrapers and cutting tools to remove the ACM mastic from the non-ACM substrate materials.

- 2. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
- 3. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- I. Texture coat, wallboard (sheetrock) and joint tape compound

1. Mist the gypsum board/joint tape compound/texture continuously with amended.

water during removal.

- 2. Remove gypsum board in larger sections or pieces where possible. Use pry bars, utility knives, claw hammers and other appropriate tools to loosen and remove wallboard from framing. Remove all wallboard fasteners.
- 3. Place removed gypsum board/joint tape compound/texture in impervious containers with asbestos warning labels as it is removed. Wall insulation shall be placed in same bags as asbestos contaminated.
- 4. Complete Work Area clean-up including: all remaining nails; framing; electrical junction boxes, outlets, wiring, and conduit; plumbing fixtures, piping, and hanger, and all other surfaces in the work area.
- J. Window Glazing/putty
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable sealants and caulking to be removed.
 - 2. Removal of non-friable shall be conducted using wet methods using hand scrapers and cutting tools to remove the ACM mastic/sealant from the non-ACM substrate materials.
 - **3**. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
 - 4. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- K. Exterior Stucco wall
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable stucco to be removed.
 - 2. Removal of non-friable shall be conducted using wet methods using manual demolition.
 - **3**. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
 - 4. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the Owner or Owner's representative.
- L. Roofing Materials (shingles and mastic)
 - 1. Establish a regulated area with barrier tape, asbestos warning signs, and decontamination area surrounding the non-friable roofing mastic or penetration mastic to be removed.

- 2. Removal of non-friable roofing shall be conducted using wet methods and appropriate cutting tools. Remove roofing in small sections and place in waste bags or containers.
- 3. If a chute is used to remove ACM roofing waste from the roof, it must be totally enclosed and air tight to and including the bin it is connected to.
- 4. Removal of roofing flashing and sealants shall be conducted using hand scrapers and cutting tools to remove the ACM mastic/sealant from the non-ACM substrate materials.
- 5. Bag debris as it is removed, HEPA vacuum and wet wipe substrate to remain.
- 6. Dispose of non-friable ACM as non-hazardous asbestos waste and transport to waste disposal site with a non-hazardous asbestos manifest signed by the State or State's representative.
- M. Cutting, Tapping, Demolition of Asbestos Cement (AC) Piping
 - 1. Carefully machine excavate to exposed AC pipe as necessary. Once exposed, hand excavate areas where cuts, breaks or taps are to be made to prevent pipe breakage.
 - 2. Establish a regulated Work Area surrounding the location of pipe cutting and/or modification. At minimum, use barrier tape and signage.
 - 3. Place plastic sheeting under the area to be cut or altered to catch any resulting chips or dust debris.
 - 4. The methods and procedures used to cut or modify pipe shall not cause the pipe to shatter, crumble, be pulverized or release airborne asbestos dust.
 - 5. Keep the AC pipe wet at all times during cutting or tapping work.
 - 6. Use only industry recommended practices for cutting, splicing and tapping AC pipe. At minimum:
 - a. Cutting is to be by special carbide tipped blade cutters that are frame adjustable to the circumference of the pipe and that have self -tracking rollers or "snap cutters" that operate with cutting wheels on a chain wrapper around the pipe barrel.
 - b. Machining, if necessary, shall be conducted wet using manual field lathe or manual rasp.
 - c. Tapping, whether under pressure or on non-pressured lines, shall be conducted wet and include provisions for internal pipe cleaning by flushing, purging or other means to prevent asbestos dust and chips from entering the drinking water system.
 - d. Do not blow out with compressed air or dry sweep. Do not vacuum dust and debris without a HEPA filtered vacuum.
 - e. All cutting, machining, tapping procedures must be conducted wet and all resulting AC pipe dust and debris must be cleaned up and disposed of as asbestos contaminated waste.

- f. Piping sections to be demolished shall be carefully cut into manageable sections, wrapped and sealed and plastic sheeting, and carefully placed in a lined asbestos waste disposal bin.
- g. All intact AC pipe waste and debris shall be disposed of as nonhazardous asbestos waste under a non-hazardous asbestos manifest at a permitted asbestos landfill.

3.5. FINAL ASBESTOS DECONTAMINATION AND TESTING

- A. Previous Work: During completion of the interior asbestos removal and visible debris clean up work specified, the first cleaning of all exposed equipment and building surfaces should be completed. Likewise for exterior Work Areas, all visible debris and removed materials must be bagged up for disposal.
- B. Clean all surfaces within the Work Area by wet wiping and HEPA vacuuming.
- C. Clean any remaining materials and debris exposed by the plastic barrier removal. Final independent layer of polyethylene sheeting and all isolation barriers, vents, grilles, diffusers, etc., shall remain in place.
- D. At the completion of this cleaning phase, the Work Area shall be free of all unnecessary equipment/materials and waste containers.
- E. The Contractor's Competent Person/Supervisor shall perform a complete visual inspection of the Work Area under adequate lighting to ensure that the Work Area is free of visible asbestos material, debris, and dust.
- F. The Contractor's Competent Person/Supervisor shall ensure that additional cleaning is completed if the area is not acceptably clean. The Contractor shall submit a completed and signed Final Visual Certification Form along with a request for a final visual inspection by the Observation Service once the Competent Person/Supervisor concludes that the area is acceptable for final visual inspection.
- G. After final visual inspection of the Work Area shall be conducted by the Observation Service. The standard for visual acceptance shall be no visible dust, debris or three dimensional suspect ACM residues within the Work Area. After written notification to proceed from the Observation Service, encapsulate all surfaces within the Work Area.
- H. For interior work areas, the Observation Service will conduct post abatement air testing to evaluate the final acceptability of the Work Area for release to unprotected personnel and the environment. Each interior containment will be evaluated by collection and analysis of a minimum of three and up to five (5)

phase contract microscopy (PCM) air samples collected by the Observation Services and analyzed in accordance with NIOSH Method 7400 or equivalent. The standard for acceptance shall be that each sample result for the containment shall be less than 0.010 fibers per cubic centimeter of air (f/cc). The Contractor shall allow for up to 24 hours for collection of post abatement air samples to allow Work Area and encapsulants drying and up to another 24 hours for air test results.

- I. The Contractor shall re-clean and re-encapsulate all surfaces within any Work Area Containment that fails post abatement air testing at no additional cost to the Owner. Likewise, the Contractor is responsible for all costs associated with failed visual inspections including additional cleaning and inspection. All costs associated with failed inspections shall be borne by the Contractor.
- J. After written notification from the Observation Service in the form of a fully completed Final Visual Inspection/Post Abatement Certification Form accepting decontamination of the Work Area as acceptable, proceed with removal of critical barriers.
- K. For exterior non-friable ACM removals such as sealants, mastics, Transite® pipe and/or similar materials, following abatement inspection will consist of a visual inspection by the Observation Service. If all ACM materials have been removed and the Work Area is free of visible ACM material, dust and debris, the removal will be considered complete.

3.6. LOOSE LEAD-BASED PAINT SURFACE PREPARATION

- A. Prepare the exterior Work Area with plastic flooring and another plastic drop sheet, place lead caution tape demarkation around removal area.
- B. Wet the surfaces with loose LBP by misting lightly with water.
- C. Wet scrape loose LBP until remaining paint is intact.
- D. Clean up removed LBP chips, debris and dust using HEPA vacuuming and wet wiping. Containerize all lead waste including vacuum bags for disposal as hazardous lead waste. Label and place container into secure storage pending waste characterization testing and disposal.
- E. Clean up plastic sheeting and place in separate lead related waste bags or drums along with protective clothing and related potentially contaminated materials.

F. Conduct final clean up and all necessary waste profiling, evaluation, and testing of lead-related waste as specified herein.

3.7. LEAD WASTE CLEAN UP AND WASTE EVALUATION

- A. Clean up paint chips and debris using wet cleaning methods and HEPA vacuuming. All surfaces shall be free of all visible paint chips, dust and debris. Place all paint chips in a labeled waste bag or container.
- B. Place all contaminated cleaning materials, disposal personal protective equipment (PPE) and contaminated plastic in separate waste bags. The Contractor shall assume all lead-related waste is RCRA hazardous waste and shall conduct required waste testing as necessary for disposal at a permitted waste disposal site.
- C. All waste streams and waste categories listed below shall be considered lead hazardous waste until proven otherwise through testing. All testing of demolition waste wastes is the responsibility of the Contractor. The Contractor shall be responsible for segregating suspect lead hazardous waste based on potential for exhibiting hazardous waste characteristics. Lead-related wastes are to be segregated into the below listed categories at a minimum.
 - 1. Category I: LBP paint chips, vacuum bags, used cleaning materials. These materials are typically hazardous wastes.
 - 2. Category II: Plastic sheeting and tape, disposable clothing, and equipment. These materials should be non-hazardous if properly cleaned and decontaminated. However, these items are to be considered hazardous subject to testing.
- D. Based on the testing protocols, any waste greater than or equal to five (5) ppm lead using STLC or TCLP tests or any waste greater than or equal to 1,000 ppm lead using the TTLC test shall be considered a California hazardous waste.
- E. When the TTLC test result is less than 50 ppm lead, no further testing is required for that waste category sampled unless the waste stream or waste generating process changes.

3.8. <u>LEAD- RELATED DEMOLITION</u>

A. General: All painted or coated surfaces are known or presumed to contain lead subject to worker protection and environmental regulations. Refer to related documents identified herein for additional information including components with LBP requiring agency notification.

- B. Conduct selective as well as general building and structural demolition in a manner that does not result in site contamination above background levels.
 - 1. Remove any loose, peeling, or flaking paint before demolition in accordance with this section.
 - 2. Clean up any demolition-related lead wastes including any resulting paint chips and debris.
 - 3. Do not let any wetting agents or water enter soil or storm drain.
- C. The Contractor shall evaluate each demolition debris waste stream and ensure proper disposal of all generated wastes. All waste profiling and testing required by the disposal site is the responsibility of the Contractor.

3.9. FLUORESCENT LIGHTING & BALLASTS

- A. Remove fluorescent lighting tubes from fixtures in and on buildings to be renovation/demolished, in accordance with project documents.
 - 1. Carefully place all tubes in storage or shipping containers so the risk of breakage is minimized.
 - 2. Place containerized light tubes in a safe and secure storage area pending shipping to the recycler or reuse.
- B. Remove presumed PCB ballasts from all fluorescent lighting fixtures presumed PCB transformers in buildings to be renovation/demolished.
 - 1. Any ballast not marked "PCB Free" or "No PCB" shall be lab packed with adsorbent in a waste drum for disposal as hazardous PCB ballast waste.
 - 2. Ballasts that are clearly marked "PCB Free" shall be set aside for verification inspection by the Observation Service. All ballasts verified to be PCB free may be disposed of as ordinary construction waste or recycled.
 - 3. Ensure PCB ballast drum is properly labeled for PCB wastes and shipping.
 - 4. Any electrical transformer that cannot be determined to be PCB free by labeling, date of manufacture, or manufacturer's information shall be disposed of as a PCB item.

3.10. UNIVERSAL WASTES AND OTHER HAZARDOUS WASTES

A. Refrigerators, air conditioners, and other equipment with refrigerant or coolant gases shall be assumed to contain chlorofluorocarbon (CFC) gases and shall have those gases removed by appropriately certified mechanics or technicians and recycled according to state and federal regulation.

- B. Carefully segregate waste by type and lab pack for disposal in impervious labeled waste containers.
- C. Dispose of or recycle each type of waste in accordance with applicable regulation at permitted facilities. Maintain all shipping and disposal record and provide copies to Owner's Representative and the Observation Service.

3.11. PACKAGING & LABELING

- A. All asbestos wastes shall be adequately wetted prior to packaging.
- B. Place asbestos waste in six (6) mil labeled asbestos waste bags or approved equivalent containers.
- C. Goose neck and seal each bag and place in a second clean-labeled bag, drum or impervious container.
- D. Decontaminate waste bags and containers prior to removing from regulated or contained area.
- E. Label all asbestos waste bags or containers with OSHA warning label: "DANGER CONTAINS ASBESTOS FIBERS MAY CAUSE CANCER. CAUSES DAMAGE TO LUNGS. DO NOT BREATHE DUST. AVOID CREATING DUST" and other information as required by regulation.
- F. All other hazardous lead, PCB, and universal wastes shall be properly labeled and containerized in leak tight containers.

3.12. WASTE DISPOSAL

- A. Waste Transportation: Submit the method of transport of hazardous asbestos wastes including name, address, EPA ID number, and telephone number of transporter.
- B. Waste Disposal Site(s): Submit for approval the name, class, address, EPA ID number, and telephone number of waste disposal site(s) to be utilized for:
 - 1. Disposal of non-hazardous non-friable asbestos wastes;
 - 2. Disposal of hazardous lead, PCB, and Mercury wastes; and
 - 3. Disposal of any other universal wastes.
- C. Waste Manifest: Submit for approval at the Pre-construction meeting a filled out Waste Manifest form. For Waste Manifest purposes, the Generator is the facility of the subject work.

- 1. Obtain necessary information including generator EPA number for this purpose from the Owner or Owner's Representative prior to start up of any abatement or demolition.
- 2. After removal and packaging waste for shipment, provide a copy of the Waste Manifest to the Observation Service for each required shipment.
- 3. Use the uniform hazardous waste manifest for hazardous wastes including lead, PCBs, universal wastes and other hazardous wastes. Include a properly completed Land Disposal Restriction Notice and Certification form with each manifest submitted for signature by the generator (Owner).
- 4. Use a non-hazardous wastes manifest for disposal of non-friable asbestos wastes.
- D. Each hazardous waste manifest and each non-hazardous asbestos waste manifest shall be prepared for the Owner or Owner's Representative's review and approval prior to shipment.
- E. The sealed hazardous waste containers shall be delivered to the Contractor's pre-designated, approved hazardous waste treatment and waste disposal site for burial in accordance with applicable state and federal regulations. Likewise, non-hazardous asbestos waste shall be delivered under manifest to a permitted asbestos waste disposal site.
- F. Notify the Owner's facility representative 48 hours in advance of the time when hazardous waste materials of all types and non-hazardous asbestos wastes are to be removed and transported from the site to allow for manifest review and approval.
- G. The Contractor shall be responsible for safe handling and transportation of all hazardous waste generated by this Contract to the designated Hazardous Waste Site and shall hold the Owner and the Owner's agents and consultants harmless for claims, damages, losses, and expenses against the Owner, including attorney's fees arising out of our resulting from asbestos and hazardous materials spills on the site or en route to the disposal site.

3.13. <u>AIR MONITORING</u>

- A. Area Air Monitoring
 - 1. Throughout the asbestos removal process, area air monitoring may be conducted by the Observation Service to ensure work is done in conformance with the fiber concentration limits of these specifications. Likewise, lead removal work areas may be visually inspected and/or monitored during removal.

- 2. If results of area air monitoring outside the Work Area are in excess of 0.010 f/cc for asbestos or 50 micrograms per cubic meter of airborne lead per cubic meter of air for lead, the Contractor shall make changes in work procedures to assure compliance with minimum standards. At a minimum, the Contractor shall stop all work and implement additional remedial controls and conduct decontamination as necessary in response to exceeding these limits.
- 3. Unsatisfactory asbestos results are fiber counts in excess of 0.010 fibers/ cc by PCM Method NIOSH 7400 determined as a TWA outside the Work Area by general air monitoring. All results greater than 0.010 fibers/cc shall be subject to further laboratory analysis by the TEM method at the Contractor's sole expense.
- B. The Contractor shall submit a written report to the Owner's Observation Service of the Contractor's personnel exposure monitoring within 48 hours of sample collection. The Contractor shall take all necessary control and protective measures to ensure airborne contaminate levels based on personnel air monitoring results do not exceed the levels recommended for the type of respiratory gear in use.
- C. Interior Asbestos Post Abatement Air Sampling. The Owner's Observation Service, upon receipt of the post abatement certification from the Contractor, will take a minimum of one (1,200-2,800) liter air sample(s) "post abatement tests" upon completion of each Work Area. For the purpose of this work, adequate decontamination shall be defined as an air sample showing less than 70 structures/cc by TEM AHERA.
- D. Lead Post Abatement Inspections. All LBP Work Areas will be cleared by visual inspection by the San Mateo Foster City School District Observation Service.

3.14. <u>CLOSE-OUT</u>

A. All submittal and punch list items must be complete and provided to the Observation Service. These include daily work-force rosters, work area sign-in/ out sheets, and waste test data and waste manifests.

END OF SECTION

CERTIFICATE OF WORKER'S ACKNOWLEDGEMENT

PROJECT NAME: _	
PROJECT ADDRES	S:
CONTRACTOR'S N	IAME:

WORKING WITH ASBESTOS CAN BE DANGEROUS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER. IF YOU SMOKE AND INHALE ASBESTOS FIBERS THE CHANCE THAT YOU WILL DEVELOP LUNG CANCER IS GREATER THAN THAT OF THE NON-SMOKING PERSON.

Your employer's contract with the Owner for the above project requires that: You will be supplied with the proper respirator and be trained in its use. You will be trained in safe work practices and in the use of the equipment found on the job. You will receive a medical examination. These things are to have been done at no cost to you.

RESPIRATORY PROTECTION: I have been trained in the proper use of respirators, and informed of the type respirator to be used on the above referenced project. I have a copy of the written respiratory protection manual issued by my employer. I have been equipped at no cost with the respirator to be used on the above project.

TRAINING COURSE: I have completed an asbestos-training course of not less than 3 days. I have been trained in the dangers inherent in handling asbestos and breathing asbestos dust and in proper work procedures and personal and area protective measures. The topics covered in the course included the following:

1) Physical characteristics of asbestos; 2) Health hazards associated with asbestos; 3:) Respiratory protection; 4) Use of personal protective equipment; 5) Pressure Differential Systems; 6) Work practices including handson or on-the-job training; 7) Personal decontamination procedures; and 8) Air monitoring, personal, and area.

MEDICAL EXAMINATION: I have had a medical examination within the past 12 months which was paid for by my employer. This examination included: health history, pulmonary function tests, and may have included an evaluation of a chest x-ray.

By signing this document you are acknowledging only that the Owner of the building you are about to work in has advised you of your rights to training and protection relative to your employer, the Contractor.

Printed Name:	
Signature:	_ Date:
Social Security No.:	
Witness:	

FMPI	OYFF	DAILY	ROSTER
			NOSIEN

DATE: ______PROJECT NO. _____

PROJECT TITLE: _____

CONTRACTOR: _____

COMPETENT PERSON: _____

IMPORTANT NOTE: ALL PERSONS ENTERING AND EXITING THE WORK AREA MUST SIGN IN AND OUT EVERY TIME.

PERSON'S NAME (PRINT)	SOCIAL SECURITY #	START TIME	STOP TIME

WORK AREA ENTRY / EXIT LOG

DATE:	PROJECT NO	
PROJECT TITLE:		_
BUILDING NAME:		
LOCATION OF WOR	?K AREA:	
DESCRIPTION OF W	'ORK:	

IMPORTANT NOTE: ALL PERSONS ENTERING AND EXITING THE WORK AREA MUST SIGN IN AND OUT EVERY TIME.

PERSON'S NAMI (PRINT)	E SIGNATURE	SECURITY #	SOCIA	l In/out	TIME IN/OUT	TIME

DAILY MANOMETER REPORT

PROJECT TITLE:				
CONTRACTOR:				
COMPETENT PE	RSON:			
LOCATION OF V	VORK AREA:			-
START TIME:	START DATE:	STOP TIME:	STOP DATE:	

(CONTRACTOR TO ATTACH A COPY OF THE NEGATIVE PRESSURE RECORDING HERETO AND COMPLETE THIS FORM FOR EACH WORK AREA ON A DAILY BASIS).

I hereby declare the above data is true and correct.

COMPETENT PERSON'S SIGNATURE: _____ DATE: _____

PRE-ABATEMENT VISUAL INSPECTION FORM

CLIENT NAME:	
PROJECT NAME:	
BUILDING NAME	
LOCATION OF WORK AREA:	
OWNER REF. NUMBER:	PROJECT NO:

VISUAL INSPECTION

CONTRACTOR hereby certifies that he has visually inspected the Work Area and has found it to be prepared in accordance with the project specifications. This inspection included the verification that Primary Barriers have been installed and are sealed, specified number of layers of polyethylene sheeting has been installed properly, Decontamination Enclosure System(s) is fully functional, HEPA units are operational, negative air pressure is >0.02 inches of water, manometer unit recording properly, HVAC and electrical systems have been locked and tagged out, there is adequate power and lighting, and all electric sources are supplied from GFIs outside the Work Area.

Name:	Inspection Date:
Signature:	Certification No

OWNER'S CONSULTANT hereby certifies that he has conducted a pre-abatement visual inspection of the referenced Work Area and verifies that the Contractor has prepared the Work Area in accordance with the Specifications and is ready to start abatement operations.

Name:_____ Inspection Date: _____

Signature:_____ Certification No. _____

FINAL VISUAL INSPECTION/CLEARANCE CERTIFICATION FORM

CLIENT NAME:	
PROJECT NAME:	
BUILDING NAME:	
LOCATION OF WORK AREA:	
OWNER REF. NUMBER:	_ PROJECT NO:

VISUAL INSPECTION

CONTRACTOR hereby certifies that he has visually inspected the Work Area and has found no dust, debris or residue. This inspection included all surfaces including pipes, beams, ledges, walls, ceiling, floor, Decontamination Unit, sheet plastic, etc.

OWNER'S CONSULTANT hereby certifies that he has performed the final visual inspection of the referenced Work Area and verifies that this inspection has been thorough and to the best of his knowledge and belief, the Contractor's Certification above is a true and honest one.

 Name:______
 Inspection Date: ______

 Signature:______
 Certification No.______

CLEARANCE AIR SAMPLING

Pre-Abatement/Background fiber levels: ______

OWNER'S CONSULTANT hereby certifies that the results of air samples collected and analyzed in this work area meet the clearance criteria indicated below:

PCM samples at or below ______ fibers/cc. TEM samples at or below ______ structures/mm².

Circle One: Aggressive Non-Aggressive

Other criteria:

Name:	Inspection Date:
Signature:	Certification No.:
Reviewer:	CAC Cert. No.:

SECTION 076200 - SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Formed roof-drainage sheet metal fabrications.
 - 2. Formed low-slope roof sheet metal fabrications.
 - 3. Formed steep-slope roof sheet metal fabrications.
- B. Related Requirements:
 - 1. Section 061000 "Rough Carpentry" for wood nailers, curbs, and blocking.

1.3 COORDINATION

- A. Coordinate sheet metal flashing and trim layout and seams with sizes and locations of penetrations to be flashed, and joints and seams in adjacent materials.
- B. Coordinate sheet metal flashing and trim installation with adjoining roofing and wall materials, joints, and seams to provide leakproof, secure, and noncorrosive installation.

1.4 PREINSTALLATION MEETING

- A. Preinstallation Conference: Conduct a conference at Project Site.
 - 1. Review construction schedule. Verify availability of materials, installer's personnel, equipment, and facilities needed to make progress and avoid delays.
 - 2. Review special roof details, roof drainage, roof-penetration flashing, equipment curbs, and condition of other construction that affect sheet metal flashing and trim.
 - 3. Review requirements for insurance and certificates if applicable.
 - 4. Review sheet metal flashing observation and repair procedures after flashing installation.

1.5 ACTION SUBMITTALS

- A. Product Data: For each of the following, including manufacturer's product data, installation instructions and general recommendations for each specified sheet material and fabricated product.
 - 1. Underlayment materials.
 - 2. Elastomeric sealant.
 - 3. Butyl sealant.
- B. Shop Drawings: For sheet metal flashing and trim.
 - 1. Include plans, elevations, sections, and attachment details.
 - 2. Detail fabrication and installation layouts, expansion-joint locations, and keyed details. Distinguish between shop- and field-assembled Work.
 - 3. Include identification of material, thickness, weight, and finish for each item and location in Project.
 - 4. Include details for forming, including profiles, shapes, seams, and dimensions.
 - 5. Include details for joining, supporting, and securing, including layout and spacing of fasteners, cleats, clips, and other attachments. Include pattern of seams.
 - 6. Include details of termination points and assemblies.
 - 7. Include details of roof-penetration flashing.
 - 8. Include details of edge conditions, including eaves, ridges, valleys, rakes, crickets, flashings, and counterflashings.
 - 9. Include details of special conditions.
 - 10. Include details of connections to adjoining work.
 - 11. Detail formed flashing and trim at scale of not less than 1-1/2 inches per 12 inches (1:10).
- C. Samples: For each exposed product and for each color and texture specified, 12 inches (300 mm) long by actual width.

1.6 INFORMATIONAL SUBMITTALS

A. Qualification Data: For fabricator.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For sheet metal flashing and trim, and its accessories, to include in maintenance manuals.
- B. Special warranty.

1.8 QUALITY ASSURANCE

- A. Fabricator Qualifications: Employs skilled workers who custom fabricate sheet metal flashing and trim similar to that required for this Project and whose products have a record of successful in-service performance.
- B. Sheet Metal Flashing and Trim Standard: Comply with SMACNA "Architectural Sheet Metal Manual" and NRCA "Roofing and Waterproofing Manual" unless more stringent requirements are indicated or specified.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting, or other surface damage.
 - 1. Store sheet metal flashing and trim materials away from uncured concrete and masonry.
 - 2. Protect stored sheet metal flashing and trim from contact with water.
- B. Deliver sheet metal flashing materials and fabrications undamaged. Protect sheet metal flashing, trim materials, and fabrications during transportation and handling.
- C. Unload, store and install sheet metal flashing materials and fabrications in a manner to prevent bending, warping, twisting and surface damage.
- D. Stack materials on platforms or pallets, covered with suitable weathertight and ventilated covering. Do not store sheet metal flashing and trim materials in contact with other materials that might cause staining, denting or other surface damage.
- E. Protect strippable protective covering on sheet metal flashing and trim from exposure to sunlight and high humidity, except to extent necessary for period of sheet metal flashing and trim installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. Sheet metal flashing and trim assemblies, including cleats, anchors, and fasteners, shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight. Coordinate with work of other Sections for watertight installation at interface with other materials and systems.
- B. Sheet Metal Standard for Flashing and Trim: Comply with NRCA's "The NRCA Roofing Manual: Architectural Metal Flashing, Condensation and Air Leakage Control, and

Reroofing" and SMACNA's "Architectural Sheet Metal Manual" requirements for dimensions and profiles shown unless more stringent requirements are indicated.

- C. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.
 - 1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.
- D. Water Infiltration: Provide sheet metal flashing and trim that to not allow water infiltration to building interior.
- E. Provide materials that are compatible with one another under conditions or service and application required, as demonstrated by testing and field experience.

2.2 SHEET METALS

- A. Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.
- B. Metallic-Coated Steel Sheet: Provide zinc-coated (galvanized) steel sheet in accordance with ASTM A653/A653M, G90 (Z275) coating designation; prepainted by coil-coating process to comply with ASTM A755/A755M.
 - 1. Surface: Smooth, flat and mill phosphatized for field painting or with manufacturer's standard clear acrylic coating on both sides.
- C. Lead Sheet: ASTM B749 lead sheet.

2.3 UNDERLAYMENT MATERIALS

- A. Felt: ASTM D226/D226M, Type II (No. 30), asphalt-saturated organic felt; nonperforated.
- B. Slip Sheet: Rosin-sized building paper, 3 lb/100 sq. ft. (0.16 kg/sq. m) minimum.

2.4 MISCELLANEOUS MATERIALS

- A. Provide materials and types of fasteners, solder, protective coatings, sealants, and other miscellaneous items as required for complete sheet metal flashing and trim installation and as recommended by manufacturer of primary sheet metal or manufactured item unless otherwise indicated.
- B. Fasteners: Wood screws, annular threaded nails, self-tapping screws, self-locking rivets and bolts, and other suitable fasteners designed to withstand design loads and recommended by manufacturer of primary sheet metal or manufactured item.

- 1. General: Blind fasteners or self-drilling screws, gasketed, with hex-washer head.
 - a. Exposed Fasteners: Heads matching color of sheet metal using plastic caps or factory-applied coating. Provide metal-backed EPDM or PVC sealing washers under heads of exposed fasteners bearing on weather side of metal.
 - b. Blind Fasteners: High-strength aluminum or stainless steel rivets suitable for metal being fastened.
- 2. Fasteners for Zinc-Coated (Galvanized) Steel Sheet: Series 300 stainless steel or hotdip galvanized steel in accordance with ASTM A153/A153M or ASTM F2329.
- C. Solder:
 - 1. For Zinc-Coated (Galvanized) Steel: ASTM B32, Grade Sn50, 50 percent tin and 50 percent lead or Grade Sn60, 60 percent tin and 40 percent lead.
- D. Sealant Tape: Pressure-sensitive, 100 percent solids, polyisobutylene compound sealant tape with release-paper backing. Provide permanently elastic, nonsag, nontoxic, nonstaining tape 1/2 inch (13 mm) wide and 1/8 inch (3 mm) thick.
- E. Elastomeric Sealant: ASTM C920, elastomeric silicone polymer sealant; of type, grade, class, and use classifications required to seal joints in sheet metal flashing and trim and remain watertight.
- F. Butyl Sealant: ASTM C1311, single-component, solvent-release butyl rubber sealant; polyisobutylene plasticized; heavy bodied for hooked-type expansion joints with limited movement.
- G. Asphalt Roofing Cement: ASTM D4586, asbestos free, of consistency required for application.
- H. Reglets: Units of type, material, and profile required, formed to provide secure interlocking of separate reglet and counterflashing pieces, and compatible with flashing indicated and with interlocking counterflashing on exterior face, of same metal as reglet.
 - 1. Source Limitations: Obtain reglets from single source from single manufacturer.
 - 2. Material: Galvanized steel, 0.022 inch (0.56 mm) thick.
 - 3. Surface-Mounted Type: Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
 - 4. Accessories:
 - a. Flexible-Flashing Retainer: Provide resilient plastic or rubber accessory to secure flexible flashing in reglet where clearance does not permit use of standard metal counterflashing or where Drawings show reglet without metal counterflashing.
 - b. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of counterflashing's lower edge.
 - 5. Finish: With manufacturer's standard color coating.

I. Metal Accessories: Provide sheet metal clips, cleats, straps, anchoring devices, and similar accessory units as required for installation of work, matching or compatible with material being installed, noncorrosive, size and gauge required for performance.

2.5 FABRICATION, GENERAL

- A. Custom fabricate sheet metal flashing and trim to comply with details indicated and recommendations in cited sheet metal standard that apply to design, dimensions, geometry, metal thickness, and other characteristics of item required.
 - 1. Fabricate sheet metal flashing and trim in shop to greatest extent possible.
 - 2. Fabricate sheet metal flashing and trim in thickness or weight needed to comply with performance requirements, but not less than that specified for each application and metal.
 - 3. Verify shapes and dimensions of surfaces to be covered and obtain field measurements for accurate fit before shop fabrication.
 - 4. Form sheet metal flashing and trim to fit substrates without excessive oil-canning, buckling, and tool marks; true to line, levels, and slopes; and with exposed edges folded back to form hems.
 - 5. Conceal fasteners and expansion provisions where possible. Do not use exposed fasteners on faces exposed to view.
- B. Fabrication Tolerances:
 - 1. Fabricate sheet metal flashing and trim that is capable of installation to a tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.
 - 2. Fabricate sheet metal flashing and trim that is capable of installation to tolerances specified.
- C. Expansion Provisions: Form metal for thermal expansion of exposed flashing and trim.
 - 1. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with butyl sealant concealed within joints.
 - 2. Use lapped expansion joints only where indicated on Drawings.
- D. Sealant Joints: Where movable, nonexpansion-type joints are required, form metal in accordance with cited sheet metal standard to provide for proper installation of elastomeric sealant.
- E. Fabricate cleats and attachment devices from same material as accessory being anchored or from compatible, noncorrosive metal.
- F. Seams:
 - 1. Fabricate nonmoving seams with flat-lock seams. Tin edges to be seamed, form seams, and solder.

G. Do not use graphite pencils to mark metal surfaces.

2.6 LOW-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Roof and Roof-to-Wall Transition Expansion-Joint Cover: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.034 inch (0.86 mm) thick.
- B. Base Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- C. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- D. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- E. Roof-Penetration Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.

2.7 STEEP-SLOPE ROOF SHEET METAL FABRICATIONS

- A. Apron, Step, Cricket, and Backer Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- B. Valley Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- C. Eave, Rake, Ridge, and Hip Flashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- D. Counterflashing: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- E. Flashing Receivers: Fabricate from the following materials:
 - 1. Galvanized Steel: 0.022 inch (0.56 mm) thick.
- F. Roof-Penetration Flashing: Fabricate from the following materials:

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- 1. Galvanized Steel: 0.028 inch (0.71 mm) thick.
- 2. Lead: 4 lb (1.8 kg).

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with installer present, for compliance with requirements for installation tolerances, substrate, and other conditions affecting performance of the Work.
 - 1. Verify compliance with requirements for installation tolerances of substrates.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.
 - 3. Verify that air- or water-resistant barriers have been installed over sheathing or backing substrate to prevent air infiltration or water penetration.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT

- A. Felt Underlayment: Install felt underlayment, wrinkle free, using adhesive to minimize use of mechanical fasteners under sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lap joints not less than 2 inches (50 mm).
- B. Install slip sheet, wrinkle free, directly on substrate before installing sheet metal flashing and trim.
 - 1. Install in shingle fashion to shed water.
 - 2. Lapp joints not less than 4 inches (100 mm).

3.3 INSTALLATION, GENERAL

- A. Install sheet metal flashing and trim to comply with details indicated and recommendations of cited sheet metal standard that apply to installation characteristics required unless otherwise indicated on Drawings.
 - 1. Install fasteners, solder, protective coatings, separators, sealants, and other miscellaneous items as required to complete sheet metal flashing and trim system.
 - 2. Install sheet metal flashing and trim true to line, levels, and slopes. Provide uniform, neat seams with minimum exposure of solder, welds or sealant.
 - 3. Anchor sheet metal flashing and trim and other components of the Work securely in place, with provisions for thermal and structural movement.

- 4. Install sheet metal flashing and trim to fit substrates and to result in watertight performance.
- 5. Install continuous cleats with fasteners spaced not more than 12 inches (300 mm) o.c.
- 6. Space individual cleats not more than 12 inches (300 mm) apart. Attach each cleat with at least two fasteners. Bend tabs over fasteners.
- 7. Install exposed sheet metal flashing and trim with limited oil-canning, and free of buckling and tool marks.
- 8. Do not field cut sheet metal flashing and trim by torch.
- 9. Do not use graphite pencils to mark metal surfaces.
- B. Metal Protection: Where dissimilar metals contact each other, or where metal contacts pressure-treated wood or other corrosive substrates, protect against galvanic action or corrosion by painting contact surfaces with bituminous coating or by other permanent separation as recommended by sheet metal manufacturer or cited sheet metal standard.
 - 1. Underlayment: Where installing sheet metal flashing and trim directly on cementitious or wood substrates, install underlayment and cover with slip sheet.
- C. Expansion Provisions: Provide for thermal expansion of exposed flashing and trim.
 - 1. Space movement joints at maximum of 10 feet (3 m) with no joints within 24 inches (600 mm) of corner or intersection.
 - 2. Form expansion joints of intermeshing hooked flanges, not less than 1 inch (25 mm) deep, filled with sealant concealed within joints.
 - 3. Use lapped expansion joints only where indicated on Drawings.
- D. Fasteners: Use fastener sizes that penetrate wood blocking or sheathing not less than 1-1/4 inches (32 mm) for nails and not less than 3/4 inch (19 mm) for wood screws.
- E. Conceal fasteners and expansion provisions where possible in exposed work and locate to minimize possibility of leakage. Cover and seal fasteners and anchors as required for a tight installation.
- F. Seal joints as required for watertight construction.
 - 1. Use sealant-filled joints unless otherwise indicated.
 - a. Embed hooked flanges of joint members not less than 1 inch (25 mm) into sealant.
 - b. Form joints to completely conceal sealant.
 - c. When ambient temperature at time of installation is between 40 and 70 deg F (4 and 21 deg C), set joint members for 50 percent movement each way.
 - d. Adjust setting proportionately for installation at higher ambient temperatures.
 - 1) Do not install sealant-type joints at temperatures below 40 deg F (4 deg C).
 - 2. Prepare joints and apply sealants to comply with requirements in Section 079200 "Joint Sealants."

- G. Soldered Joints: Clean surfaces to be soldered, removing oils and foreign matter.
 - 1. Pretin edges of sheets with solder to width of 1-1/2 inches (38 mm); however, reduce pretinning where pretinned surface would show in completed Work.
 - 2. Do not use torches for soldering.
 - 3. Heat surfaces to receive solder, and flow solder into joint.
 - a. Fill joint completely.
 - b. Completely remove flux and spatter from exposed surfaces.

3.4 INSTALLATION OF ROOF FLASHINGS

- A. Install sheet metal flashing and trim to comply with performance requirements and cited sheet metal standard.
 - 1. Provide concealed fasteners where possible, and set units true to line, levels, and slopes.
 - 2. Install work with laps, joints, and seams that are permanently watertight and weather resistant.
- B. Pipe or Post Counterflashing: Install counterflashing umbrella with close-fitting collar with top edge flared for elastomeric sealant, extending minimum of 4 inches (100 mm) over base flashing. Install stainless steel draw band and tighten.
- C. Counterflashing: Coordinate installation of counterflashing with installation of base flashing.
 - 1. Insert counterflashing in reglets or receivers and fit tightly to base flashing.
 - 2. Extend counterflashing 4 inches (100 mm) over base flashing.
 - 3. Lap counterflashing joints minimum of 4 inches (100 mm).
 - 4. Secure in waterproof manner by means of interlocking folded seam or blind rivets and sealant unless otherwise indicated.
- D. Roof-Penetration Flashing: Coordinate installation of roof-penetration flashing with installation of roofing and other items penetrating roof. Seal with elastomeric sealant and clamp flashing to pipes that penetrate roof.

3.5 INSTALLATION TOLERANCES

A. Installation Tolerances: Shim and align sheet metal flashing and trim within installed tolerance of 1/4 inch in 20 feet (6 mm in 6 m) on slope and location lines indicated on Drawings and within 1/8-inch (3-mm) offset of adjoining faces and of alignment of matching profiles.

3.6 CLEANING

- A. Clean exposed metal surfaces of substances that interfere with uniform oxidation and weathering.
- B. Clean and neutralize flux materials. Clean off excess solder.
- C. Clean off excess sealants.

3.7 **PROTECTION**

- A. Remove temporary protective coverings and strippable films as sheet metal flashing and trim are installed unless otherwise indicated in manufacturer's written installation instructions.
- B. On completion of sheet metal flashing and trim installation, remove unused materials and clean finished surfaces as recommended in writing by sheet metal flashing and trim manufacturer.
- C. Maintain sheet metal flashing and trim in clean condition during construction.
- D. Replace sheet metal flashing and trim that have been damaged or that have deteriorated beyond successful repair by finish touchup or similar minor repair procedures, as determined by Architect.

END OF SECTION 076200

SECTION 321723 - PAVEMENT MARKINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes:
 - 1. Painted markings applied to asphalt paving.
 - 2. Painted markings applied to concrete surfaces.

1.3 ACTION SUBMITTALS

- A. Product Data: Include technical data and tested physical and performance properties.
 - 1. Pavement-marking paint, acrylic.
- B. Shop Drawings:
 - 1. Indicate areas to be re-striped.
- C. Samples: For each exposed product and for each color and texture specified; on rigid backing, 8 inches (200 mm) square.

1.4 FIELD CONDITIONS

A. Environmental Limitations: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F (12.8 deg C) for water-based materials, and not exceeding 95 deg F (35 deg C).

PART 2 - PRODUCTS

2.1 PAVEMENT-MARKING PAINT

- A. Pavement-Marking Paint, Acrylic: Acrylic, waterborne emulsion, lead and chromate free, ready mixed, complying with FS TT-P-1952F, Type II, with drying time of less than three minutes.
 - 1. Color: White.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verify that pavement-marking substrate is dry and in suitable condition to begin pavement marking in accordance with manufacturer's written instructions.
- B. Proceed with pavement marking only after unsatisfactory conditions have been corrected.

3.2 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Sweep and clean surface to eliminate loose material and dust.
- C. Apply paint with mechanical equipment to produce pavement markings, of dimensions indicated, with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils (0.4 mm).
 - 1. Apply graphic symbols and lettering with paint-resistant, die-cut stencils, firmly secured to asphalt paving or concrete surface. Mask an extended area beyond edges of each stencil to prevent paint application beyond stencil. Apply paint so that it cannot run beneath stencil.

3.3 PROTECTING AND CLEANING

- A. Protect pavement markings from damage and wear during remainder of construction period.
- B. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION 321723



1 NEW SITE PLAN SCALE: 1/32" = 1'-0"



GENERAL SHEET NOTES

- A BUILDINGS ARE UNSPRINKLERED, TYPE V-B CONSTRUCTION UNLESS OTHERWISE NOTED.
- NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN в APPROVED BY DSA.
- C CONTRACTOR SHALL MAINTAIN FIRE LANE ACCESS THROUGOUT PROJECT
- DO NOT INTERRUPT EXISTING UTILITY SERVICES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AND COORDINATED WITH THE OWNER.
- PROTECT EXISTING & NEW STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, TREES AND SHRUBS FROM DAMAGE DURING CONSTRUCTION.
- REFER TO ELECTRICAL AND MECHANICAL DRAWINGS FOR EXTENT OF ELECTRICAL AND MECHANICAL WORK.
- TOP OF EXTERIOR ELECTRICAL EQUIPMENT PADS TO BE LOCATED 12" MIN. ABOVE 10' FEMA BASE FLOOD ELEVATION, PER ASCE 24-14 TABLE 1-1. 10' FEMA BASE FLOOD ELEVATION CORRELATES G TO 106.929' ON SAN MATEO SURVEY DATUM.
- ALL EXISTING FINISHES OR MATERIALS DAMAGED OR DEMOLISHED DUE TO NEW CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL STATE, INCLUDING BUT NOT LIMITED TO REINSTALLING OR REPLACING EXISTING CHAINLINK FENCING AS REQUIRED AND RESTRIPING PAVING IN KIND. S.E.D. FOR TRENCH ROUTING. SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING

NEW SITE PLAN KEYNOTES

- 1 (E) CHAINLINK FENCING TO REMAIN 2 (E) GATE TO REMAIN
- 3 (E) CONCRETE STAIRS.
- 4 AT (E) CONCRETE PAVING, UTILIZE POST ANCHORAGE DETAIL 3/A8.10 5 CHAINLINK FENCE, SEE DETAIL 2/A8.10 AND S.E.D. 4" SPHERE SHALL NOT PASS BETWEEN FENCING AND
- ADJACENT SURFACES. 6 ELECTRICAL EQUIPMENT, SEE SHEET E1.1. TOP OF CONCRETE TO BE 108' ELEVATION PER SAN MATEO
- DATUM. ADJACENT A.C. TO BE 107.5' ELEVATION. 7 REMOVE (E) ELECTRICAL EQUIPMENT AND PAD, S.E.D.
- 8 ATTACH CHAINLINK TO (E) POLE. 9 CONFORM A.C. GRADING FLUSH TO ADJACENT (E) A.C. TO REMAIN. SEE 9/A8.10 FOR A.C. ASSEMBLY. GRADE A.C. TO DRAIN AROUND ELECTRICAL EQUÍPMENT. COORDINATE WITH PULLBOXES INSTALLED FLUSH TO GRADE, SEE 2/E1.1.
- 10 (E) TREE TO REMAIN. ADJACENT NEW ELECTRICAL EQUIPMENT 11 LEVEL CLEARANCE AT FRONT OF TRANSFORMER, S.E.D.
- 12 REMOVE PAVING EXTENTS AS REQUIRED AND PREP FOR NEW WORK. SEE 2/E1.1 AND SEE 2/A1.02 FOR
- MORE INFORMATION. 13 CONTOUR LINE OF ELEVATION 107' PER SAN MATEO SURVEY DATUM, EQUIVALENT TO 10.071' PER FEMA
- SURVEY DATUM. 14 SALVAGE AND REINSTALL (E) CHAINLINK FENCING AS REQUIRED FOR CONSTRUCTION ACCESS.
- 15 (E) STEEL GRATE TO TUNNEL CRAWL SPACE BELOW. 16 PATCH (E) STAIRS AT ELECTRICAL TRENCHING, SEE E1.1 AND DETAIL 20/A9.10
- 17 (E) PULLBOX TO REMAIN. 18 (E) STRIPING TO REMAIN
- 19 REMOVE (E) RETAINING WALL
- 20 AT (E) CHAINLINK FENCING TO REMAIN ADJACENT REMOVED CHAINLINK, PREP (E) CHAINLINK FOR RECÓNNECTION 21 10'W DOUBLE GATE, SEE DETAIL 19/A9.10
- 22 REMOVE (E) POLE AND FOOTING 23 RETAINING WALL, SEE 10/S5.02
- 24 AT (E) CHAINLINK FENCING TO REMAIN, RECONNECT (E) CHAINLINK TO (N) POLE. SEE DETAIL 2/A8.10 SIM. FOR SIM. REQUIREMENTS.
- 25 4" DIA. POLE, 8'H. SEE 10/S5.02 (26 (É) ARTWORK TO REMAIN. RESTRIPE IN KIND. DISTRICT TO PROVIDE ARTWORK)



GRAPHIC KEY

EXISTING TOILET ROOMS. EXISTING CONSTRUCTION TO REMAIN EXISTING COVERED STRUCTURE TRENCH FOR ELECTRICAL WORK, S.E.D. , 8/S5.01 & DETAILS ON SHEET A8.10

-O- - O- - (N) CHAINLINK FENCE

EXISTING FIRE HYDRANT

RE DEPARTMENT ACCESS IS 20'-0" WIDE AND RATED FOR 96,000 LBS.










2 DEMOLITION FLOOR PLAN - BLDG B SCALE: 1/8" = 1'-0"



3 DEMOLITION FLOOR PLAN - BLDG C SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

- ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND А NEW FLOOR PLANS.
- В
- WORK.
- PLANS.
- E REMOVE ALL MISCELLANEOUS TRIM, CASEWORK, EQUIPMENT, CONDUIT, BASES, AND OTHER SURFACE MOUNTED ITEMS WHETHER SHOWN OR NOT, AS REQUIRED TO FACILITATE SCOPE OF WORK. REMOVE AND CAP ALL OUTLETS, SWITCHES, WIRES, THERMOSTATS, ETC. TO THEIR SOURCE AS REQUIRED. SEE MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION AND SCOPE OF WORK.
- BACK IN KIND.
- EXISTING EQUIPMENT INDICATED TO BE RELOCATED PER NEW PLAN IS TO BE STORED G AND PROTECTED DURING CONSTRUCTION.
- BEEN APPROVED BY DSA
- REFER TO "HVAC AND POWER UPGRADE PROJECT HAZARDOUS MATERIALS SURVEY REPORT." CONTRACTOR TO ABATE AREAS AFFECTED BY SCOPE OF WORK. REMOVE AND DISPOSE OF MATERIALS PER REPORT RECOMMENDATIONS.

- REFER TO STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXTENT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL DEMOLITION WORK.
- VERIFY LIMITS OF DEMOLITION WITH SCOPE OF NEW WORK PRIOR TO COMMENCING
- D ALL ITEMS SHOWN DASHED ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED ON
 - REMOVE ADJACENT FINISHES AS REQUIRED TO FACILITATE SCOPE OF WORK. PATCH
- H NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE

DEMOLITION FLOOR PLAN KEYNOTES

- 1 REMOVE (E) MECHANICAL UNIT AND METAL ENCLOSURE, T-BAR AND GYP SOFFIT, S.M.D.
- RECONFIGURE (E) WIREMOLD. SHORTEN CONFIGURATION TIGHT TO NEW ENCLOSURE AND PROVIDE END CAP. SEE NEW FLOOR PLAN FOR MORE INFORMATION.
- REMOVE (E) STORAGE ENCLOSURE ON TOP OF CASEWORK SHORTEN (E) RACEWAY. COORDINATE LENGTH TIGHT TO NEW ENCLOSURE, SEE NEW FLOOR 4
- PLANS.
- SALVAGE (E) 4'x 8' TACK PANEL AND TURN OVER TO DISTRICT RELOCATE (E) DATA OUTLET, COORDINATED TO RECONFIGURED WIREMOLD. LOCATE A.F.F. 15" MIN. TO 48" MAX.
- CUT AND PREP OPENING, S.M.D. AND S.S.D.
- REMOVE PAVING AND PREP FOR NEW WORK, S.M.D. REMOVE (E) WINDOW GLAZING ABOVE AND PREP FOR NEW WORK, S.M.D
- (E) SUSPENDED 24"X48" A.C.T. CEILING ABOVE. S.E.D. AND REMOVE AND REINSTALL TILES AS
- REQUIRED FOR CONSTRUCTION ACCESS. DO NOT ALTER SUSPENDED GRID. 11 REMOVE (E) GYP. BD. CEILING FINISH FOR MECHANICAL UNIT CURB BLOCKING. S.M.D., S.S.D., AND SEE ROOF PLAN. 12 REMOVE (E) GLUE UP A.C.T. O/ GYP. BD. CEILING ASSEMBLY FOR MECHANICAL UNIT CURB
- BLOCKING. S.M.D., S.S.D., AND SEE ROOF PLAN. 13 REMOVE (E) GLUE UP CEILING TILES FOR MECHANICAL UNIT CURB INSTALLATION AT ROOF.
- S.M.D., S.S.D., AND SEE ROOF PLAN.
- 14 SALVAGE AND REINSTALL (E) LAY IN A.C.T. AT SUSPENDED A.C.T. GRID FOR MECHANICAL UNIT CURB BLOCKING. S.M.D., S.S.D., AND SEE ROOF PLAN. 15 REMOVE (E) CEMENT PLASTER CEILING FINISH FOR MECHANICAL UNIT CURB BLOCKING. S.M.D.,
- S.S.D., AND SEE ROOF PLAN. REMOVE (E) FILLER PANEL/W LOUVER, PREP FOR NEW WORK, S.M.D. 16
- PREP FOR NEW WORK, S.M.D. 17
- SALVAGE AND REINSTALL IN KIND (E) CASEWORK AND WALL BASE AS REQUIRED FOR 18 CONSTRUCTION ACCESS.
- 19 SALVAGE AND TURN OVER TO DISTRICT (E) PROJECTOR AND MOUNTING BRACKET. 20 REMOVE PARTIAL GYP. BD CEILING FOR FUTURE EXHAUST FAN, S.M.D.

GRAPHIC KEY

EXISTING WALL TO REMAIN.

EXISTING STOREFRONT OR WINDOW TO REMAIN.

BLDG KEY







1 NEW FLOOR PLAN - BLDG A SCALE: 1/8" = 1'-0"



2 NEW FLOOR PLAN - BLDG B SCALE: 1/8" = 1'-0"







- START OF CONSTRUCTION. C PATCH AND PAINT WALL AT REMOVED CASEWORK, REMOVED WALL MOUNTED BOARDS, OR
- SCRIBE FINISHES TIGHT TO ADJACENT CONDITIONS INCLUDING WALL FINISHES, WINDOWS, AND D DUCTWORK.
- Е
- FLOORING. AT INTERIOR AND EXTERIOR PAINT ALL NEW EXPOSED CONDUITS, PIPES, HANGERS AND ATTACHMENTS, AND DUCTWORK.

GENERAL SHEET NOTES

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

- B DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO
 - RECONFIGURED RACEWAY.
- PROVIDE NEW WALL BASE AT ALL REMOVED CASEWORK, NEW PARTITION WALLS, OR PATCHED

NEW FLOOR PLAN KEYNOTES

- 1 FULL HEIGHT FRAMED MECHANICAL ENCLOSURE. MAINTAIN MIN. INTERIOR CLR. PER DETAIL 16/A9.10. PATCH ADJACENT FINISHES INCLUDING BUT NOT LIMITED TO WALLS AND CEILINGS.
- 2 4' x 6' TACK PANEL. PATCH AND PAINT (E) WALL AT REMOVED TACK PANEL EXTENTS 3 ELECTRICAL PANEL, PROVIDE BACKING, S.E.D. 4 TRANSFORMER, S.E.D.
- 5 PATCH OPENING TIGHT TO MECHANICAL WORK, S.M.D AND SEE DETAIL 6/A9.10.
- 6 PATCH PAVING AT DRY WELL. SEE 6/A8.10 AND S.M.D. REFER TO 1/A4.01 FOR TYPICAL REFLECTED CEILING PLAN
- 8 REFER TO 2/A4.01 FOR TYPICAL REFLECTED CEILING PLAN. REMOVE AND REINSTALL (E) ACOUSTICAL CEILING TILES ABOVE AS REQUIRED FOR CONSTRUCTION ACCESS INCLUDING BUT NOT LIMITED TO ELECTRICAL ROUTING, MECHANICAL DUCTWORK ANCHORAGE, BLOCKING FOR ROOFTOP PLATFORMS. DO NOT ALTER SUSPENDED A.C.T. GRID.
- 9 REFER TO 3/A4.01 FOR TYPICAL REFLECTED CEILING PLAN. REMOVE AND REINSTALL (E) ACOUSTICAL CEILING TILES ABOVE AS REQUIRED FOR CONSTRUCTION ACCESS INCLUDING BUT NOT LIMITED TO ELECTRICAL ROUTING, MECHANICAL DUCTWORK ANCHORAGE, BLOCKING FOR ROOFTOP PLATFORMS. DO NOT ALTER SUSPENDED A.C.T. GRID.
- 10 PATCH AND PAINT GYP. BD CEILING. 11 REPLACE GLUE UP CEILING TILE ASSEMBLY REMOVED FOR CONSTRUCTION ACCESS. SCRIBE LAYOUT TIGHT TO STRUCTURE. PAINT CEILING TILES AND STRUCTURE TO MATCH ADJACENT.
- 12 REPLACE GLUE UP CEILING TILES REMOVED FOR CONSTRUCTION ACCESS. SCRIBE LAYOUT TIGHT TO STRUCTURE. PAINT CEILING TILES AND STRUCTURE TO MATCH ADJACENT.
- 13 PATCH AND PAINT CEMENT PLASTER CEILING. SEE DETAIL 18/A8.10, SIM. 14 PATCH AND PAINT WALL FINISH, S.M.D.
- 15 MECHANICAL UNIT, S.M.D. PATCH AND PAINT WALL TO MATCH ADJACENT. 16 (E) WALL MOUNTED LIGHT FIXTURE AT 97" A.F.F. TO REMAIN. ROUTE DUCTWORK ÀBOVE LIGHT FIXTURE. SALVAGE AND REINSTALL AS REQUIRED FOR CONSTRUCTION ACCESS.
- 17_PATCH AND PAINT GYP, BD, CEILING ADJACENT EXHAUST FAN, S.M.D. 18 DAMPER @ (E) WINDOW FRAME, S.M.D. CONT. CAULKING AT INTERIOR AND EXTERIOR
- OF MOTORIZED RELIEF DAMPER. 19 CONT. CAULKING AT INTERIOR AND EXTERIOR OF LOUVER man man the





GRAPHIC KEY WALL TYPES:



WALL TYPE. REFER TO SHEET A9.10 FOR WALL TYPE DESCRIPTION, TYP. STUD WALL

12/2 C:\U



GENERAL SHEET NOTES

- A REFER TO STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXTENT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL WORK.
- DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO START OF CONSTRUCTION.
- C PATCH AND PAINT WALL AT REMOVED CASEWORK, REMOVED WALL MOUNTED BOARDS, OR RECONFIGURED RACEWAY.
- SCRIBE FINISHES TIGHT TO ADJACENT CONDITIONS INCLUDING WALL FINISHES, WINDOWS, AND D DUCTWORK.

E PROVIDE NEW WALL BASE AT ALL REMOVED CASEWORK, NEW PARTITION WALLS, OR PATCHED FLOORING. AT INTERIOR AND EXTERIOR PAINT ALL NEW EXPOSED CONDUITS, PIPES, HANGERS AND ATTACHMENTS, AND DUCTWORK.



- 1 FULL HEIGHT FRAMED MECHANICAL ENCLOSURE. MAINTAIN MIN. INTERIOR CLR. PER DETAIL 16/A9.10. PATCH ADJACENT FINISHES INCLUDING BUT NOT LIMITED TO WALLS
- AND CEILINGS. ELECTRICAL PANEL, PROVIDE BACKING, S.E.D.
- TRANSFORMER, S.E.D. PATCH AND PAINT WALL FINISH, S.M.D.
- MECHANICAL UNIT, S.M.D. PATCH AND PAINT WALL TO MATCH ADJACENT. PATCH PAVING AT DRY WELL. SEE 6/A8.10 AND S.M.D. 6
- REFER TO 3/A4.01 FOR TYPICAL REFLECTED CEILING PLAN. REMOVE AND REINSTALL (E) ACOUSTICAL CEILING TILES ABOVE AS REQUIRED FOR CONSTRUCTION ACCESS INCLUDING BUT NOT LIMITED TO ELECTRICAL ROUTING, MECHANICAL DUCTWORK ANCHORAGE, BLOCKING FOR ROOFTOP PLATFORMS. DO NOT ALTER SUSPENDED A.C.T. GRID.
- REPLACE GLUE UP CEILING TILE ASSEMBLY REMOVED FOR CONSTRUCTION ACCESS. SCRIBE LAYOUT TIGHT TO STRUCTURE. PAINT CEILING TILES AND STRUCTURE TO MATCH ADJACENT.
- PATCH AND PAINT GYP. BD. CEILING ADJACENT EXHAUST FAN. S.M.D. DAMPER @ (E) WINDOW FRAME, S.M.D. CONT. CAULKING AT INTERIOR AND EXTERIOR -10 OF MOTORIZED RELIEF DAMPER.
- CONT. CAULKING AT INTERIOR AND EXTERIOR OF LOUVER. Munumun munumun



GRAPHIC KEY



WALL TYPES:

EXISTING WALL TO REMAIN. WALL TYPE. REFER TO SHEET A9.10 FOR WALL TYPE DESCRIPTION, TYP.

STUD WALL

BLDG KEY







NOTES:

6

1. PROVIDE EXPANSION JOINT @ 24'-0" O.C. MAX.

SCALE: 1 1/2" = 1'-0"









CAP MUST BE AT LEAST 2" (51MM) ABOVE THE ROOF SURFACE AND COVERING FLASHING AT LEAST 2" (51MM).

11 SHINGLE LOWER FLASHING

SCALE: 1" = 1'-0"



aedi	S	NORTH SA	I SHOREVIEW HVAC RE N MATEO-FOSTEF	ELEMENTARY SCHOOL - PLACEMENT & CITY SCHOOL DISTRICT
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San Jose, CA., 95113	fax: (408) 300 - 5121	DATE	12/22/2021	



NOTE: NOT ALL MECHANICAL ELEMENTS SHOWN. S.M.D. FOR MORE INFORMATION.





FASTENIN	IG SCHEDULE	
DESCRIPTION OF BUILDING ELEMENTS	NUMBER AND TYPE OF FASTENER	SPACING AND LOCATION
1. Blocking between ceiling joists, rafters or trusses to top plate or other framing below	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Each end, toenail
Blocking between rafters or truss not at the wall top plate, to rafter or truss	2-8d common (2 1/2" × 0.131") 2-3" × 0.131" nails 2-3" 14 gage staples	Each end, toenail
	2-16 d common (3 1/2" × 0.162") 3-3" × 0.131" nails 3-3" 14 gage staples	End nail
Flat blocking to truss and web filler	16d common (3 1/2" × 0.162") @ 6" o.c. 3" × 0.131" nails @ 6" o.c. 3" × 14 gage staples @ 6" o.c	Face nail
2. Ceiling joists to top plate	3-8d common (2 1/2" × 0.131"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples 7/16" crown	Each joist, toenail
3. Ceiling joist not attached to parallel rafter, laps over partitions (no thrust)	3-16d common (3 1/2" x 0.163") 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
4. Ceiling joist attached to parallel rafter (heel joint)	Per Table 2308.7.3.1, CBC 2019	Face nail
5. Collar tie to rafter	3-10d common (3" × 0.148"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Face nail
6. Rafter or roof truss to top plate	3-10 common (3" × 0.148"); or 3-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131 nails; or 4-3" 14 gage staples, 7/16" crown	Toenail ^c
7. Roof rafters to ridge valley or hip rafters; or roof rafter to 2-inch ridge beam	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3"14 gage staples, 7/16" crown; or	End nail
	3-10d common (3 1/2" × 0.148"); or 4-16d box (3 1/2" × 0.135"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	Toenail
8. Stud to stud (not at braced wall panels)	WALL 16d common (3 1/2" × 0.162"):	24" o.c. face nail
	10d box (3" × 0.128"); or	16" o.c. face nail
	3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	
9. Stud to stud and abutting studs at intersecting wall corners (at braced wall panels)	16d common (3 1/2" × 0.162"); or	16" o.c. face nail
	3" × 0.131" nails; or	12" o.c. face nail
10. Built-up header (2" to 2" header)	3-3" 14 gage staples, 7/16" crown 16d common (3 1/2" × 0.162"); or	16" o.c. each edge, face nail
	16d box (3 1/2" × 0.135")	12" o.c. each edge, face nail
11. Continuous header to stud	4-8d common (2 1/2" × 0.131"); or 4-10d box (3" × 0.128")	Toenail
12. Top plate to top plate	16d common (3 1/2" × 0.162"); or	16" o.c. face nail
	10d box (3" × 0.128"); or 3" × 0.131" nails; or 3" 14 gage staples. 7/16" crown	12" o.c. face nail
13. Top plate to top plate, at end joints	8-16d common (3 1/2" × 0.162"); or 12-10d box (3" × 0.128"); or 12-3" × 0.131" nails; or 12-3" 14 gage staples. 7/16" crown	Each side of end joint, face nail (minimum 24" lap splice length each side of end joint)
14. Bottom plate to joist, rim joist, band joist	16d common (3 1/2"x0.163"); or	16" o.c. face nail
or blocking (not at braced wall panels)	16d box (3 1/2" × 0.135"); or 3" × 0.131" nails; or 3" 14 gage staples, 7/16" crown	12" o.c. face nail
15. Bottom plate to joist, rim joist, band joist or blocking at braced wall panels	2-16d common (3 1/2 " × 0.162"); or 3-16d box (3 1/2" × 0.135"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown	16" o.c. face nail
16. Stud to top or bottom plate	4-8d common (2 1/2" × 0.131"); or 4-10d box (3" × 0.128"); or 4-3" × 0.131" nails; or 4-3" 14 gage staples, 7/16" crown: or	Toenail
	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	End nail
17. Top plates, laps at corners and intersections	2-16d common (3 1/2" × 0.162"); or 3-10d box (3" × 0.128"); or 3-3" × 0.131" nails; or 3-3" 14 gage staples, 7/16" crown	Face nail
18. 1" brace to each stud and plate	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128"); or 2-3" × 0.131" nails; or 2-3" 14 gage staples, 7/16" crown	Face nail
19. 1" × 6" sheathing to each bearing	2-8d common (2 1/2" × 0.131"); or 2-10d box (3" × 0.128")	Face nail
20. 1" \times 8" and wider sheathing to each bearing	3-8d common (2 1/2" × 0.131"); or	Face nail

For SI: 1 inch = 25.4 mm.

a. Nails spaced at 6 inches at intermediate supports where spans are 48 inches or more. Nails for wall sheathing are permitted to be common, box or casing.

b. Spacing shall be 6 inches on center on the edges and 12 inches on center at intermediate supports for nonstructural applications.

Panel supports at 16 inches (20 inches if strength axis in the long direction of the panel, unless otherwise marked).

c. Where a rafter is fastened to an adjacent parallel ceiling joist in accordance with this schedule and the ceiling joist is fastened to the top plate in accordance with this schedule, the number of toenails in the rafter shall be permitted to be reduced by one nail. d. RSRS-01 is a Roof Sheathing Ring Shank nail meeting the specifications in ASTM F1667.

(12) NAILING SCHEDULE

(E) PLY



AIR DISTRIBUTION SCHEDULE										
TAG	MANUFACTURER	MODEL NO.	DESCRIPTION	BORDER TYPE	MOUNTING DETAIL	NOTES				
HSS-1	TITUS	S300FL	HIGH SIDEWALL SUPPLY	TYPE 1	12/MP6.01	1, 2, 4				
LSR-1	TITUS	350RL	LOW SIDEWALL RETURN	TYPE 1	13/MP6.01	2, 3				
RG-1	TITUS	30RL	RELIEF GRILLE	TYPE 1	10/MP6.01	2, 5				
EG-1	TITUS	8R	EXHAUST GRILLE	LAY-IN	16/MP6.01	2				

							AIR DIST	RIBUTION	SCHED	ULE		_						(CLASSROON	/I SPLIT S	YSTEM HE	EAT PUMPS	S SCHED	ULE						
				TAG	MANUF	ACTURER	MODEL NO.	DESCRIF	PTION	BORDER TYPE	MOUNTING DETAIL	NOTES	TAC	G	MANUFACTURER	MODEL	LOCATION	COOLING TOTAL MBH	HEATING	AIRFLOW CFM	OUTSIDE AIR CFM	REFRIGERAN	NT PIPING GAS	SEER	HSPF	ELE V / PH	ECTRICAL MCA	MOCP	WEIGHT LBS	
				HSS-1	Т	ITUS	S300FL	HIGH SIDE SUPP	EWALL LY	TYPE 1	12/MP6.01	1, 2, 4	FC-	-1	SAMSUNG	AM054TNZDCH/AA	BLDG A CLASSROOM 1	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
				LSR-1	T	ITUS	350RL	LOW SIDE RETUI	EWALL RN	TYPE 1	13/MP6.01	2, 3	HP-	-1	SAMSUNG	AM053TXMDCH/AA	ROOF	55		-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
				RG-1	Т	ITUS	30RL	RELIEF G	RILLE	TYPE 1	10/MP6.01	2, 5	FC-	-2	SAMSUNG	AM054TNZDCH/AA	BLDG A CLASSROOM 2	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
				EG-1	Т	ITUS	8R	EXHAL GRILL	JST LE	LAY-IN	16/MP6.01	2	HP-	-2	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
				1. SET 2. PRI	BLADES AT	22.5° DEFLE	ECTION. HITECT'S INSTRU	ICTIONS. REG	ISTER CO	LOR SELECTED I	BY ARCHITEC	;T.	FC-	-3	SAMSUNG	AM054TNZDCH/AA	BLDG A CLASSROOM 3	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
				4. PRO 5. COI	OVIDE WITH / OVIDE WITH / NTRACTOR T	ASD AIR SCC	OOP DEVICE. RIFY (E) DIMENSI	ONS PRIOR TO	O ORDERI	NG.			HP-	-3	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-	-4	SAMSUNG	AM054TNZDCH/AA	BLDG A CLASSROOM 4	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-	-4	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-	-5	SAMSUNG	AC024KNZDCH/AA	BLDG A CLASSROOM 5	24	27	760	150	1/4"	5/8"	-	-	N	NOTE 8		100	1/MP6.01 2, 3, 4,
·														-5	SAMSUNG	AC024JXADCH/AA	ROOF			-	-	1/4"	5/8"	19.5	11.5	208 / 1	13.6	20	145	3/MP6.01 1
					KHAUST F	ANS SCH		мотс	DR	WEIGHT MC			FC-	-6	SAMSUNG	AM054TNZDCH/AA	BLDG A CLASSROOM 6	53	61	1360	450	3/8"	3/4"	-	_	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
	MANUFACTURER	MODEL NO.	AREA SERVED	CFM	IN. W.G.	RPM	SONES	HP / WATTS	V / PH	LBS	DETAIL	NOTES	HP-	-6	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
REF-A-1	GREENHECK	G-070-VG	JANITOR 8A	250	0.25	1479	4.1	1/15	115 / 1	45 15	5/MP6.01 1,	2	FC-	-7	SAMSUNG	AM054TNZDCH/AA	BLDG A CLASSROOM 7	53	61	1360	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
REF-B-1	GREENHECK	G-098-VG	TABLE	450	0.25	1125	6.0	1/4	115/1	45 15	5/MP6.01 1,	2	HP-	-7	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
	GREENHECK	G-098-VG	STORAGE MECH ROOM	450	0.25	1479	6.0	1/15	115/1	45 15	5/MP6.01 1	2	FC-	-8	SAMSUNG	AC024KNZDCH/AA	CLASSROOM 8	24	27	760	150	1/4"	5/8"	-	-	N			100	1/MP6.01 2, 3, 4,
1. PROV	IDE WITH UL LISTING, FAI	N MOUNTED SPEED	20A) CONTROL, BACKE		PER,		0.0	1/-			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		-4H	-8	SAMSUNG	AC024JXADCH/AA	ROOF BLDG B			-	-	1/4"	5/8"	19.5	11.5	208/1	13.58	20	145	3/MP6.01 1
BIRDS 2. PROV	CREEN, AND ROOF CURE IDE WITH LINE VOLTAGE	3. TSTAT.												8a	SAMSUNG		ROOM 8a	24	27	760	150	1/4"	5/8"	- 10.5	-	209 / 1	12 59	- 20	100	2/MP6.01 2, 3, 4,
													FC-1	10	SAMSUNG		BLDG B			- 1150	- 450	3/8"	3/4"	19.5		208/1	2.6	15	145	
													HP-1	10	SAMSUNG		CLASSROOM 10	53	61			3/8"	3/4"	17.5	10	208/1	34	50	212	3/MP6 01 1
													FC-	11	SAMSUNG	AM054TNZDCH/AA	BLDG B			1150	450	3/8"	3/4"	-		208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-	.11	SAMSUNG	AM053TXMDCH/AA	ROOF	53	61	-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-1	12	SAMSUNG	AM054TNZDCH/AA	BLDG B			1150	450	3/8"	3/4"	-		208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-1	12	SAMSUNG	AM053TXMDCH/AA	ROOF	53	61	-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-1	13	SAMSUNG	AM054TNZDCH/AA	BLDG C CLASSROOM 13			1150	450	3/8"	3/4"	-		208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-1	13	SAMSUNG	AM053TXMDCH/AA	ROOF	53	61	-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-1	14	SAMSUNG	AM054TNZDCH/AA	BLDG C CLASSROOM 14			1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-1	14	SAMSUNG	AM053TXMDCH/AA	ROOF	53	61	-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-1	15	SAMSUNG	AM054TNZDCH/AA	BLDG C CLASSROOM 15	52	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-1	15	SAMSUNG	AM053TXMDCH/AA	ROOF	55		-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-1	16	SAMSUNG	AM054TNZDCH/AA	BLDG C CLASSROOM 16	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-1	16	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-1	17	SAMSUNG	AM054TNZDCH/AA	BLDG D CLASSROOM 17	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-1	17	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-1	18	SAMSUNG	AM054TNZDCH/AA	BLDG D CLASSROOM 18	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
						HP-1	18	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1							
													FC-1	19	SAMSUNG	AM054TNZDCH/AA	BLDG D CLASSROOM 19	53	61	1150	450	3/8"	3/4"	-	_	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-1	19	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1
													FC-2	20	SAMSUNG	AM054TNZDCH/AA	CLASSROOM 20	53	61	1150	450	3/8"	3/4"	-	_	208/1	2.6	15	164	1/MP6.01 2, 3, 4,
													HP-2	20	SAMSUNG	AM053TXMDCH/AA	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01 1

SPLIT SYSTEM SHALL BE ABLE TO OPERATE AT 94% HEATING CAPACITY DOWN TO 32°F OUTDOOR AMBIENT TEMPERATURE.

 CFM BASED ON 0.55 ESP.
 PROVIDE WITH SAMSUNG MIM-A60UN 24VAC THERMOSTAT ADAPTER AND 24VAC TRANSFORMER. 4. PROVIDE WITH DELTA CONTROLS THERMOSTAT WITH CO2 SENSOR. SEE MP5.01 FOR CONTROLS.

5. PROVIDE CONDENSATE PUMP, LITTLE GIANT VCMX-20ULS WITH OVERFLOW PROTECTION, OR APPROVED EQUAL
PROVIDE WITH 4" MERV- 13 FILTERS WITH FILTER ACCESS PANEL.
FAN COIL SHALL BE ADJUSTED TO OPERATE AT CONSTANT SPEED AT INDICATED CFM. 8. INDOOR UNIT POWERED BY OUTDOOR UNIT.

	SPLIT SYSTEMS SCHEDULE																
TAG		MODEL	WING /		COOLING	HEATING	AIRFLOW CFM	REFRIGER	-RIGERANT PIPING		E	LECTRIC	AL	WEIGHT	MOUNTING		
		MODEL	BUILDING	LOCATION	TOTAL MBH	TOTAL MBH		LIQUID	GAS	JLLIN	V / PH	MCA	MOCP	LBS	DETAIL		
SSO-14	SAMSUNG	AR24TSFYBWKXCV		ROOF			_	1/4"	5/8"	18	208 / 1	20	30	125	2/MP6.01		
SSI-14	SAMSUNG	AR24TSFYBWKNCV	BLDGC	MECH ROOM 14	MECH ROOM 14			657	1/4"	5/8"	-	NOTE 1			30	3/MP6.01	2,
SSO-29	SAMSUNG	AR24TSFYBWKXCV		ROOF	22	24	-	1/4"	5/8"	18	208 / 1	20	30	125	2/MP6.01		
SSI-29	SAMSUNG	AR24TSFYBWKNCV		OFFICE 29B	22		657	1/4"	5/8"	_		NOTE 1		30	3/MP6.01	2,	

INDOOR UNITS ARE POWERED BY OUTDOOR UNIT.
 PROVIDE WITH WALL MOUNTING BRACKET.
 PROVIDE WITH SAMSUNG WALL MOUNTED THERMOSTAT.

PROVIDE WITH BACNET INTERFACE CARD. SEE MP5.01 FOR CONTROLS.
 PROVIDE WITH CONDENSATE PUMP.
 LOCK OUT HEATING.





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FLOOR PLAN - BLDG C - NEW - MECHANICAL & PLUMBING

(#)	NEW SHEET NOTES	GENERAL NOTES	
"SEE 3/MP2.04 AND 4/MP2.04 FOR TYPICAL FAN COIL INSTALLATION. SEE 1/MP6.01 FOR TYPICAL FAN COIL MOUNTING.	12. MOTORIZED RELIEF DAMPER AND RETURN GRILLE (RG-1) MOUNTED TO BOTH SIDES OF RELIEF OPENING. DAMPER WITH ACTUATOR TO MATCH (E) FRAME APPROXIMATELY 44"x32", ENSURE DAMPER AND ACTUATOR FIT WITHIN RELIEF OPENING, RETURN GRILLE TO FILL ENTIRE	1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING AND NEW BUILDING STRUCTURES, SERVICES AND OWNER'S PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION.	
MP ON ROOF, MIN 10 FT AWAY FROM EDGE OF ROOF, TYP. KEEP CLEAR OF (E) GAS PIPE ON ROOF.	(E) WINDOW PANEL. VERIFY EXACT DIMENSIONS IN FIELD. RUN LOW VOLTAGE CABLE IN CONDUIT, REFER TO DIVISION 26 FOR CONDUIT,		
RANT PIPING FROM HEAT PUMP TO FAN COIL, TYP. RUN PIPES ON ROOF AND PENETRATE ABOVE FAN COIL ENCLOSURE.		EQUIPMENT WITH RESPECT TO BUILDING STRUCTURE AND OTHER BUILDING SERVICES TO AVOID CONFLICT.	
RANT PIPING FROM HEAT PUMP TO FAN COIL ON ROOF PENETRATE ROOF AND RUN PIPING AT WALL. TO FAN COIL	13. INSTALL 12 X42 RUSKIN L375 OUTSIDE AIR LOUVER WITH BIRDSCREEN.	3. FOR CLARITY, ABANDONED CD PIPING AND (E) GAS MAINS ARE NOT SHOWN ON THIS PLAN. SEE MP2.01.	BLDG KEY
T AT EXPOSED STRUCTURE CEILING WHERE WIRE MOLD CANNOT BE INSTALLED.		4. PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT.	F
		5. PAINT CONDENSATE PIPING AT EXTERIOR OF BUILDING TO MATCH ADJACENT.	
	17. NOT USED	6. SEE DETAIL 7/MP6.01 FOR PIPE SUPPORT ON ROOF.	
STAT ON WALL, 48" AFF MAX, AND WIRE TO FAN COIL, TYP. SEE MP5.01.		7. INSTALL REFRIGERANT AND CONDENSATE PIPING PER 1/8" SCALE FLOOR PLANS WHERE SHOWN. OTHERWISE,	
Z DUCT INSIDE CLASSROOM.	18. INSTALL ROOFTOP EXHAUST FAN ON PITCHED ROOF CURB. ENSURE EXHAUST FAN IS A MINIMUM OF 10 FT AWAY FROM ANY OUTSIDE AIR INTAKES.	INSTALL PER TYPICAL ENLARGED VIEW SHOWN IN 4/MP2.03.	
EE DETAILS 5/MP6.01 FOR DUCT SUPPORT TO EXPOSED STRUCTURE AND 6/MP6.01 FOR HARD LID CEILING CONDITIONS.	19, INSTALL THERMOSTAT-ON-INTERIOR WALL AND WIRE TO EXHAUST FAN EXHAUST FANS, TYP.	8. CONTRACTOR TO PROVIDE AND INSTALL THERMOSTAT WIRING AND ASSOCIATED CONDUITS FOR ALL NEW HVAC EQUIPMENT AND CONNECTIONS.	
KEY EXTRACTOR, TYP. FOR ALL SUPPLY REGISTERS.	{20.~PROVIDE DUCT COLLAR TO CONCEAL DUCT OPENING AT ENCLOSURE.	9. EQUIPMENT MOUNTING DETAIL REFERENCE SHOWN ON SCHEDULES ON SHEET MP0.2	
USKIN L375 OUTSIDE AIR LOUVER WITH BIRDSCREEN UNLESS OTHERWISE NOTED ON FLOOR PLAN.			



MP2.03 SCALE: 1/4" = 1'-0"















(#) NEW SHEET NOTES

- 1. CONDENSATE DRAIN PIPE EXPOSED UNDER CEILING. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL 7. RUN CD PIPE EXPOSED IN CORRIDOR TO ELECTRICAL CONDUIT SHROUD. CHANGE IN DIRECTION EXCEEDING 135°.
- 2. CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. INSTALL CONDENSATE PUMP AT LEFT SIDE OF UNIT. ENSURE PUMP AND PIPE DO NOT BLOCK FILTER ACCESS. PUMP CD UP TO ENCLOSURE CEILING AND CONNECT TO CD HEADER UNDER CEILING.
- 3. COMBINE CD HEADERS INTO A SINGLE PIPE. DROP DOWN WALL AND CONNECT TO SINK TAILPIECE.
- 4. CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. DROP PIPE AT LEFT SIDE OF UNIT. ENSURE PIPE DOES NOT BLOCK FILTER ACCESS. RUN PIPE ALONG LEFT ENCLOSURE WALL AND PENETRATE BACK OF ENCLOSURE. ROUTE TO CD DRYWELL. SAWCUT, REPAIR, AND PATCH TO MATCH EXISTING. SEE SHEET A8.10 ON ARCHITECT'S DRAWINGS FOR PATCHING AT GRADE. SEE DETAIL 14/MP6.01 FOR CD DRYWELL.
- CD FROM FAN COIL. SEE 9/MP6.01 FOR CONNECTION TO UNIT. INSTALL CONDENSATE PUMP AT LEFT SIDE OF UNIT. ENSURE PUMP AND PIPE DO NOT BLOCK FILTER ACCESS. PUMP CD UP TO ENCLOSURE CEILING AND ROUTE TO (E) MOP SINK. SPILL TO (E) MOP SINK WITH 1" AIR GAP.
- 6. DROP CD PIPE AT EXTERIOR WALL AND ROUTE TO CD DRYWELL. SAWCUT, REPAIR, AND PATCH TO MATCH EXISTING. SEE SHEET A8.10 ON ARCHITECT'S DRAWINGS FOR PATCHING AT GRADE. SEE DETAIL 14/MP6.01 FOR CD DRYWELL.
- 8. RUN INSIDE CONDUIT ENCLOSURE (SEE 5/A4.01) TO (E) MOP SINK IN JANITOR'S ROOM. SPILL

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- AIR GAP.
- 9. ROUTE CD PIPE TO TEACHERS WORKROOM AND CONNECT TO SINK TAILPIECE.



	ADDENDUM 3 NOTES
LL TO (E) MOP SINK WITH 1"	 THIS SHEET COVERS CONDENSATE DRAINS FOR BUILDINGS A, B, AND C AND SUPERCEDES CONDENSATE DRAINS SHOWN FOR BUILDINGS A, B, AND C IN BID DOCUMENTS AND ADDENDUMS 1 AND 2.

BLDG KEY



(///A///) DE BA

















GENERAL NOTES

- CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING AND NEW BUILDING STRUCTURES, SERVICES AND OWNER'S PROPERTY DURING THE ENTIRE PERIOD OF CONSTRUCTION.
- 2. COORDINATE THE LOCATIONS OF ROOF/ WALL OPENINGS, PENETRATIONS, DUCTWORK AND ALL MECHANICAL
- 3. FOR CLARITY, ABANDONED CD PIPING AND (E) GAS MAINS ARE NOT SHOWN ON THIS PLAN. SEE MP2.01.
- 4. PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT.
- 5. PAINT CONDENSATE PIPING AT EXTERIOR OF BUILDING TO MATCH ADJACENT.
- 6. SEE DETAIL 7/MP6.01 FOR PIPE SUPPORT ON ROOF.
- 7. CONTRACTOR TO PROVIDE AND INSTALL THERMOSTAT WIRING AND ASSOCIATED CONDUITS FOR ALL NEW HVAC EQUIPMENT AND CONNECTIONS.
- 8. EQUIPMENT MOUNTING DETAIL REFERENCE SHOWN ON SCHEDULES ON SHEET MP0.2.

(#) NEW SHEET NOTES

- INSTALL FAN COIL, TYP. SEE 3/MP2.04 AND 4/MP2.04 FOR TYPICAL FAN COIL INSTALLATION. SEE 1/MP6.01 FOR TYPICAL FAN COIL MOUNTING. 2. NOT USED
- 3. CONDENSATE DRAIN PIPE TO PENETRATE WALL UNDER SINK IN ADJACENT CLASSROOM. CONNECT CD PIPE TO SINK TAILPIECE.
- 4. INSTALL 12"x42" RUSKIN L375 OUTSIDE AIR LOUVER WITH BIRD SCREEN, TYP.
- 5. INSTALL FAN COIL. COORDINATE EXACT HEIGHT WITH DISTRICT. INSTALL CONDENSATE DRAIN PIPING FROM FAN
- 6. INSTALL HEAT PUMP ON ROOF, MIN 10'-6" AWAY FROM EDGE OF ROOF. INSTALL REFRIGERANT PIPING FROM HEAT PUMP TO FAN COIL.
- 7. INSTALL THERMOSTAT ON WALL, 48" AFF MAX, AND WIRE TO FAN COIL, TYP. SEE MP5.01.
- 8. 6"x32" OUTSIDE AIR DUCT DOWN TO MIXING PLENUM.
- 9. FAN COIL. SEE PLANS FOR LOCATION.
- 10. 24"x24" RETURN REGISTER HSR-1 WITH GRILLE SILENCER.
- 11. CD FROM FAN COIL. DROP PIPE DOWN TO ENCLOSURE FLOOR AT LEFT SIDE OF UNIT, ENSURING PIPE DOES NOT BLOCK FILTER ACCESS. THEN RUN ALONG FLOOR TO EXTERIOR WALL TO DRYWELL. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. SEE 9/MP6.01 FOR CONNECTION TO UNIT AND 14/MP6.01 FOR CD DRYWELL.
- 12. CLEARANCE REQUIRED FOR FILTER REPLACEMENT.
- 13. 30" FULL HEIGHT DOOR. SEE ARCHITECTS DRAWINGS.
- 14. 20"X16" MOTORIZED DAMPER (LOW VOLTAGE).
- 15. INSTALL OUTSIDE AIR LOUVER. SIZE TO MATCH FULL WIDTH AND HEIGHT OF (E) WINDOW PANEL (46"x26" NOMINAL). FIELD VERIFY EXACT FRAME SIZE BEFORE ORDERING LOUVER.
- 16. REFRIGERANT PIPING FROM HEAT PUMP TO FAN COIL. SEE 11/MP6.01 FOR PIPE SUPPORT.
- 17. FLEX DUCT AT CONNECTION TO UNIT.
- 18. MIXING PLENUM BELOW FAN COIL.
- 19. DUCT TRANSITION TO ALLOW DAMPER CONNECTION.
- 20. FILTER BOX THAT CAN FIT 4" OR 2" FILTER.
- MOTORIZED RELIEF DAMPER AND RETURN GRILLE (RG-1) MOUNTED TO BOTH SIDES OF RELIEF OPENING. DAMPER WITH ACTUATOR TO MATCH (E) FRAME APPROXIMATELY 44"x32". ENSURE DAMPER AND ACTUATOR FIT WITHIN RELIEF OPENING. RETURN GRILLE TO FILL ENTIRE (E) WINDOW PANEL. VERIFY EXACT DIMENSIONS IN FIELD. RUN LOW VOLTAGE CABLE IN CONDUIT, REFER TO DIVISION 26 FOR CONDUIT. PAINT EXPOSED CONDUIT TO MATCH
- ADJACENT FINISHES. _____ 22. INSTALL EXHAUST FAN ON ROOF.





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archite	cts	FILE NO.	:	41-26	SHEET
alchilects		APPL NO.:01-119526		-119526	REF. SHEET MP6.01
	tel: (408) 300 - 5160	JOB NO.	202	21005.05	AD3-MP6.01
	fax: (408) 300 - 5121	DATE ·	12/2	22/2021	

SYMBOL LIST:

EI.J	PLAN, DETAIL OR SECTION DESIGNATION.	
201	ROOM NUMBER.	
$\langle \rangle$	SHEET REFERENCE SYMBOL - SEE ASSOCIATED NOTE ON SAME SHEET.	
3	FEEDER SCHEDULE SYMBOL.	Ø
CH I	MECHANICAL EQUIPMENT TAG.	³⁰ ⊠'
A	INDICATES FIXTURE TYPE	۲- ۱ <i>00</i>
LUMINAIRE	E SYMBOLS	\boxtimes^{Π}
	LUMINAIRE - SEE SCHEDULE.	
I	LUMINAIRE - SEE SCHEDULE.	∮ ±
	LUMINAIRE - SEE SCHEDULE.	9
	LUMINAIRE - SEE SCHEDULE.	L
 •	POLE MOUNTED LUMINAIRE - SEE SCHEDULE.	ى
	POLE MOUNTED LUMINAIRE - SEE SCHEDULE.	EVI
$\langle\!\!\!O$	LUMINAIRE - SEE SCHEDULE.	E√2
0	LUMINAIRE - SEE SCHEDULE.	
Ю	LUMINAIRE WALL MOUNTED-SEE SCHEDULE.	
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST	POM
EM	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST	~ ~
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST	د ک
	EMERGENCY LUMINAIRE - PROVIDE EMERGENCY BATTERY BALLAST	↓ ↓
€H	EMERGENCY LUMINAIRE WALL MOUNTED- PROVIDE EM. BATTERY BALLAST	ڔ
۲	EXIT LIGHT SINGLE FACE - SEE SCHEDULE.	ې ا
$\overline{\otimes}$	EXIT LIGHT SINGLE FACE (WITH ARROW)- SEE SCHEDULE.	°,
	EXIT LIGHT (DOUBLE FACED WITH ARROW)- SEE SCHEDULE.	
	EMERGENCY BATTERY PACK EXIT LIGHT INSTALL AS DIRECTED.	t a

TYPICAL LUMINAIRE NOMENCLATURE

	INDICATES SWITCHING DESIGNATION TES CIRCUIT NUMBER
SWITCH SYM	1BOLS
\$	SINGLE POLE SWITCH, + 48" AFF TO THE TOP OF THE OUTLET BOX VON.
\$ a	SINGLE POLE SWITCH, + 48" AFF TO THE TOP OF THE OUTLET BOX, a = CIRCUIT CONTROLLED.
\$ 3	THREE WAY SWITCH + 48" AFF TO THE TOP OF THE OUTLET BOX VON.
\$ 4	FOUR WAY SWITCH + 48" AFF TO THE TOP OF THE OUTLET BOX UON.
\$	MOTOR RATED SWITCH
₩ Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma Ma	WALL MOUNTED LOW VOLTAGE "DATALINE SWITCH =48" FROM TOP OF BOX, UON $a = CIRCUIT CONTROLLED$
09	LIGHTING OCCUPANCY SENSOR

MOTION DETECTOR POWER PACK

FLOOR PLANS.

ONE CIRCUIT WALL SWITCH WITH BUILT IN OCCUPANCY SENSOR. CONNECT SWITCHING TO LIGHTING FIXTURES AS REQUIRED. MOUNT AT +48"AFF TO THE TOP OF THE SWITCH BOX, UON.

RECEPTACLE SYMBOLS

Φ	CONVENIENCE RECEPTACLE - DUPLEX AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
ø	GFCI CONVENIENCE RECEPTACLE - DUPLEX AT +18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
\$	RECEPTACLE - DOUBLE DUPLEX AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
Φ	SINGLE RECEPTACLE - NEMA 5-20R UON, AT + 18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
⊕	SINGLE RECEPTACLE - NEMA L2I - 208 VOLT, THREE PHASE, 5 WIRE, AT + 18" AFF VON AND NOT LESS THAN 15" FROM BOTTOM OF BOX V.O.N.
ŧ	DOUBLE DUPLEX RECEPTACLE WITH (I) CONTROLLED DUPLEX AND (I) UNCONTROLLED DUPLEX, AT +18" AFF AND NOT LESS THAN 15" FROM BOTTOM OF BOX U.O.N.
	3-CHANNEL SURFACE RACEWAY, INSTALL AT +36" AFF VON. RACE SHALL BE WIREMOLD #5500.
$\mathbf{\Phi} \nabla$	FLOOR BOX WITH (2) DUPLEX RECEPTACLES AND DATA OUTLETS. QUANTITY OF DATA OUTLETS AS INDICATED ON THE

$\sim\sim\sim\sim$	
	CONDUIT - CONCEALED IN WALLS OR CEILING.
	CONDUIT - EXPOSED.
	CONDUIT - UNDERGROUND OR BELOW FLOOR
	EXISTING CONDUIT, CABLES OR DEVICE
*10 *10 /5	CONDUIT - HOME RUN TO PANEL, TERMINAL CABINET, WITH CROSSHATCHES INDICATE NUMBER OF #12 AWG WITH SUBSCRIPT "G" INDICATES GREEN GROUND WIRE ACCORDING TO SPECIFICATIONS AND APPLICABLE C CROSSHATCHES WITH "#10" INDICATES WIRE SIZE OTH
\sim	FLEX CONDUIT WITH CONNECTION.
o	CONDUIT - STUB UP.
●	CONDUIT - STUB DOWN.
-88	CONDUIT EMERGENCY SYSTEM.
E	CAPPED CONDUIT.

 \mathcal{M}

 \sim

<u>MATT</u>
LCP
LMRC 101
LMRC 211
LMRC 212
LMRC 213
PC
$\mathbf{p}_{ o }$
A

\$101 **\$**102

POWER DISTRIBUTION SYMBOLS

PANELBOARD - SURFACE OR FLUSH MOUNTED.		19" FLOOR MOUNTED DATA RACK.		
LIGHTING CONTROL CABINET.	_			
EMERGENCY POWER INVERTER.	Y	DATA/TEL STATION AT +18" AFF UON WITH (1) DATA OUTLET. CONNECT DATA/TEL OUTLETS OUTLETS PER THE DATA/TEL RISER DIAGRAM. STUB CONDUIT INTO AVAILABLE CEILING SPACE.		
JUNCTION BOX - CEILING OR WALL MOUNTED, SIZE PER CEC, TAPE AND TAG WIRES.				
MAIN SWITCHBOARD OR DISTRIBUTION PANEL.	$\nabla^{(2)}$	DATA/TEL STATION AT +18" AFF VON WITH (2) DATA OUTLETS. CONNECT DATA/TEL OUTLETS OUTLETS PER THE DATA/TEL RISER DIAGRAM. STUB CONDUIT INTO AVAILABLE CEILING SPACE.		
MOTOR				
RATING AS INDICATED.	(WAP)	(2) DATA OUTLETS FOR WIRELESS ACCESS POINT EQUIPMENT TO BE		
UNFUSED DISCONNECT SWITCH - RATING AS INDICATED.)	MOUNTED IN CEILING CHASE.		
FUSED DISCONNECT SWITCH - SIZE FUSES PER MOTOR MANUFACTURER'S RECOMMENDATIONS. RATING AS INDICATED.	0	INTERIOR SPEAKER WALL MOUNTED AT + $8'-0$ " AFF UON. CONNECT SPEAK		
MAGNETIC STARTER - NEMA SIZE INDICATED.	(5)+			
TRANSFORMER - SEE SINGLE LINE FOR REQUIREMENTS.	9	CEILING MOUNTED SPEAKER. CONNECT SPEAKER PER THE PA/CLOCK RISER DIAGRAM		
GROUND ROD.				
IN-GRADE ELECTRICAL PULL BOX WITH TRAFFIC RATED LID.	ବ	FLUSH MOUNTED EXTERIOR SPEAKER AT +8'-0" AFF UON. CONNECT		
IN-GRADE LIGHTING PULL BOX WITH TRAFFIC RATED LID.	_	EXIERIOR SPEARER PER THE PA/CLOCK RISER DIAGRAM.		
IN-GRADE COMMUNICATION PULL BOX WITH TRAFFIC RATED LID.				
SINGLE EV CHARGER FOR BUS	00	UON. CONNECT CLOCK/SPEAKER PER THE PA/CLOCK RISER DIAGRAM. PROVIDE $\frac{3}{4}$ "C TO ACCESSIBLE CEILING.		
DOUBLE EV CHARGER FOR CAR	8	HDMI DEVICE, CONNECT PER A 4 " EXTRA DEEP BOX WITH A 2 GANG RING		

COMMUNICATIONS SYMBOLS

POWER DISTRIBUTION SINGLE LINE SYMBOLS

NORMALLY OPENED, AUXILIARY CONTACT.

NORMALLY CLOSED, AUXILIARY CONTACT.

AUTOMATIC TRANSFER SWITCH.

CONDUIT CONTINUATION.

EMERGENCY GENERATOR.

WIRING & CONDUIT RUN SYMBOLS

	FIRE ALARM SYMBOLS		
DRAW-OUT CIRCUIT BREAKER.	FACP	FIRE ALARM CONTROL PANEL.	
	RPS	REMOTE POWER SUPPLY.	
	AMP	EVAC SPEAKER AMPLIFIER.	
	FATC	FIRE ALARM TERMINAL CABINET.	
	ANN	REMOTE FIRE ALARM ANNUNCIATOR.	
FUSED SWITCH.	2	SMOKE DETECTOR	
	Ē	PULL STATION	
"PG&E" METER W/ CURRENT TRANSFORMER.	M	HORN STROBE	
TRANSFORMER.			

MEP 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 BEANCHORED OR BRACED TO MEET THE FORCE AND DISPLACEMENT REQUIREMENTS PRESCRIBED IN THE 2019 CBC, SECTIONS 1617A.1.18 THROUGH 1617A.1.26 AND ASCE 7-16 CHAPTER 13, 26 AND 30.

I. ALL PERMANENT EQUIPMENT AND COMPONENTS.

THROUGH I_4^{\perp} 'C TO CEILING.

- 2. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT THAT IS PERMANENTLY ATTACHED (e.q., HARD WIRED) TO THE BUILDING UTILITY SERVICES SUCH AS ELECTRICITY, GAS OR WATER. "PERMANENTLY ATTACHED" SHALL INCLUDE ALL ELECTRICAL CONNECTIONS EXCEPT PLUGS FOR 110/220 VOLT RECEPTACLE HAVING A FLEIXBLE
- 3. TEMPORARY, MOVABLE OR MOBILE EQUIPMENT WHICH IS HEAVIER THAN 400 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 LINGITUDINAL DIRECTIONS:

- A. COMPONENTS WEIGHING LESS THAN 400 POUNDS AND HAVE A CENTER OF MASS LOCATED 4 FEET OR LESS ABOVE THE ADJACENT FLOOR OF 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 THE 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., SMACNA OR 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 SYSTEM. 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□EX - OPTION I: DETAILED ON THE APPROVED DRAWINGS WITH PROJECT SPECIFIC NOTES AND DETAILS. MP MD PP E - OPTION 2: SHALL COMPLY WITH THE APPLICABLE OSHPD

PRE-APPROVED (OPM #) #

CONDUIT - HOME RUN TO PANEL, TERMINAL CABINET, ETC. RUNS MARKED

WITH SUBSCRIPT "G" INDICATES GREEN GROUND WIRE. SIZE CONDUIT

CROSSHATCHES WITH "#10" INDICATES WIRE SIZE OTHER THAN #12'S.

ACCORDING TO SPECIFICATIONS AND APPLICABLE CODE.

WITH CROSSHATCHES INDICATE NUMBER OF #12 AWG WIRES. CROSSHATCH

<u>STOPPER DIGITAL LIGHTING MANAGEMENT CONTROLS</u>

WATTSTOPPER LMCP24

WATTSTOPPER LMRC-101

WATTSTOPPER LMRC-211

WATTSTOPPER LMRC-212

WATTSTOPPER LMRC-213

WATTSTOPPER LMDC-100, CEILING MOUNT

WATTSTOPPER LMDW-IOI, + 48" AFF TO TOP OF THE BOX, UON. WATTSTOPPER LMLS-500, CEILING/WALL MOUNT

WATTSTOPPER LMSW-101, + 48" AFF TO TOP OF THE BOX, UON.

WATTSTOPPER LMSW-102, + 48" AFF TO TOP OF THE BOX, UON.

GENERAL NOTES:

- THE CONTRACTOR SHALL BE LICENSED BY THE STATE OF CALIFORNIA C-10 AND SHALL COMPLY WITH ALL APPLICABLE CODES AND REGULATIONS. MATERIALS AND EQUIPMENT
- SHALL BE U.L. LISTED AND LABELED FOR THE APPLICATION. 2. THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, LICENSES AND INSPECTION FEES REQUIRED BY THIS CONTRACT WORK.
- 3. PRIOR TO SUBMITTING A BID THE CONTRACTOR SHALL VISIT THE SITE, REVIEW THE EXISTING CONDITIONS AND ALLOW FOR LABOR, MATERIAL AND COORDINATION THAT IS NECESSARY TO PROVIDE A COMPLETE INSTALLATION OF EACH SYSTEM. THE CONTRACTOR SHALL OBTAIN AND BE FAMILIAR WITH ALL OTHER TRADES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ELECTRICAL WORK NOTED AND CALLED OUT ON ALL CONTRACT DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATION BETWEEN OTHER TRADES ON PROJECT.
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFETY OF PERSONS AND PROPERTY AND SHALL PROVIDE INSURANCE COVERAGE AS NECESSARY FOR LIABILITY, PERSONAL, PROPERTY DAMAGE, TO FULLY PROTECT THE OWNER, ARCHITECT AND ENGINEER FROM ANY AND ALL CLAIMS RESULTING FROM THIS WORK.
- 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 ACCURATE "AS-BUILT" DRAWINGS. "AS-BUILT" DRAWINGS SHALL SHOW ACTUAL CHANGES TO ORIGINAL ELECTRICAL DRAWING, SHOW LOCATIONS OF PULL BOXES, CONDUIT RUNS AND WIRING CHANGES. THE CONTRACTOR SHALL PROVIDE ONE (I) HARDCOPY SET OF DOCUMENT DRAWINGS AND ONE (I) SET OF DOCUMENT DRAWINGS IN ELECTRONIC CAD FILE THAT REPRESENTS THE ACTUAL "AS-BUILTS". CAD FILES SHALL BE AUTOCAD 2010 FORMAT.
- 6. ALL MATERIALS PROVIDED TO THE PROJECT SHALL BE NEW. THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE AND INSTALL ALL INCIDENTAL MATERIALS REQUIRED FOR A COMPLETE INSTALLATION.
- 7. THE CONTRACTOR SHALL PROVIDE TO THE ARCHITECT A CONSTRUCTION SCHEDULE OF ELECTRICAL WORK. THE CONSTRUCTION SCHEDULE SHALL IDENTIFY ALL SIGNIFICANT MILESTONES WITH COMPLETION DATES.
- 8. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED "CUTTING, PATCHING, EXCAVATION, BACKFILL AND REPAIRS" NECESSARY TO RESTORE DAMAGED SURFACES TO EQUAL OR BETTER THAN ORIGINAL CONDITIONS EXISTING AT START OF WORK. THE CONTRACTOR SHALL CONTACT "UNDERGROUND SERVICES ALERT" FOR LOCATION OF EXISTING UTILITIES PRIOR TO COMMENCEMENT OF UNDERGROUND WORK.
- 9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAINTING ALL EXPOSED CONDUITS AND ELECTRICAL EQUIPMENT. REFER TO ARCHITECTS PAINTING SECTION FOR REQUIREMENTS.
- IO. ALL ELECTRICAL EQUIPMENT INSTALLED OUTDOORS SHALL BE WEATHERPROOF. EXTERIOR CONDUITS RUN INTO BUILDINGS SHALL BE INSTALLED WITH FLASHING, CAULKED AND SEALED. CONDUITS FOR EXTERIOR ELECTRICAL DEVICES SHALL BE RUN INSIDE BUILDING UNLESS OTHERWISE NOTED ON DRAWINGS. ALL EXTERIOR CONDUITS SHALL BE "RSG" UNLESS OTHERWISE NOTED ON DRAWINGS.
- II. ALL CONDUITS UNLESS OTHERWISE NOTED ON DRAWINGS SHALL HAVE AS A MINIMUM: TWO (2) #12'S WITH ONE (1) #12 GROUND. "TICK" MARKS SHOWN ON CIRCUITRY ARE FOR "ROUGH" ESTIMATING ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WIRES AND WIRE SIZES REQUIRED BY LATEST CODE.
- 12. COORDINATE ALL CONDUIT RUNS, ELECTRICAL EQUIPMENT AND PANELS WITH ALL OTHER WORK TO AVOID CONFLICTS.
- 13. SEE ARCHITECTURAL DOCUMENTS FOR EXACT PLACEMENT OF LIGHTING FIXTURES AND DEVICES. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF CEILING TYPES FROM ARCHITECTURAL DOCUMENTS AND PROVIDE AND INSTALL ALL REQUIRED FIXTURE MOUNTING HARDWARE. PROVIDE AND INSTALL U.L. LISTED FIRE STOP ENCLOSURES FOR ALL RECESSED FIXTURES IN FIRE RATED CEILINGS.
- 14. THE CONTRACTOR SHALL PROVIDE IN EVERY CONDUIT A DRAW STRING FOR USE IN FUTURE CONSTRUCTION.
- 15. POWER FEEDERS MAY NOT BE SHOWN ON THE DRAWINGS, REFER TO THE SINGLE LINE DIAGRAM FOR CONDUIT AND FEEDER INFORMATION. ALL DRAWINGS ARE DIAGRAMMATIC INDICATING LOCATION OR POSITION OF EQUIPMENT. FIELD VERIFY CONDITIONS PRIOR TO INSTALLATION OF ANY WORK.
- 16. MANUFACTURER'S RECOMMENDATIONS FOR CONDUCTOR SIZING, CIRCUIT BREAKER OR FUSE PROTECTION OF ELECTRICALLY OPERATED EQUIPMENT MAY DIFFER FROM THOSE INDICATED ON DRAWINGS. CONTRACTOR SHALL CONFIRM RATINGS PRIOR TO ORDERING EQUIPMENT. PROVIDE ELECTRICAL PROTECTION TO EQUIPMENT IN ACCORDANCE TO MANUFACTURER'S SPECIFICATIONS AND PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
- 17. CONTRACTOR SHALL REVIEW EQUIPMENT REQUIREMENTS OF OTHER TRADES AND PROVIDE POWER CIRCUITS AND CONNECTIONS TO ELECTRICALLY OPERATED EQUIPMENT.
- 18. EFFECTIVELY BOND ELECTRICAL CABINETS, ENCLOSURES AND CONDUIT RACEWAYS TO CODE APPROVED GROUND AS PART OF THE CONTINUOUS GROUNDING SYSTEM.
- 19. MEASEURE THE 3-PHASE AND PHASE TO NEUTRAL SERVICE VOLTAGE FOR 208/120V PANELS PRIOR TO ENERGIZING ANY PANELS OR EQUIPMENT. AVOID ENERGIZING 208/120V PANELS PHASE TO NEUTRAL VOLTAGE ABOVE 130 VOLTS. TRANSFORMER TAP SETTING MAY REQUIRE CHANGING.
- 20. MEASURE THE I-PHASE AND PHASE TO NEUTRAL SERVICE VOLTAGE FOR 240/120V PANELS PRIOR TO ENERGIZING ANY PANELS OR EQUIPMENT. AVOID ENERGIZING 240/120V PANELS PHASE TO NEUTRAL VOLTAGE ABOVE 130 VOLTS.
- 21. DO NOT SUBSTITUTE SPECIFIED MATERIAL OR EQUIPMENT WITHOUT FIRST OBTAINING APPROVAL FROM THE OWNER OR HIS REPRESENTATIVE.
- 22. IDENTIFY ALL ABOVE CEILING JUNCTION BOXES COVERS WITH PANEL AND CIRCUITS IN LEGIBLE PRINT USING BLACK INDELIBLE INK. ABOVE CEILING JUNCTION BOXES SHALL ALSO BE LABELED AT THE REAR INTERIOR BOX WITH AN INDELIBLE BLACK MARKER.
- 23. LABEL ALL WALL AND/OR WIREMOLD MOUNTED OUTLET DEVICES WITH PANEL CIRCUIT IDENTIFICATION WITH BOLD TYPE-PRINTED LABELING. BLACK LETTERING ON WHITE BACKGROUND PREFERRED.
- 24. DERATE CONDUCTORS IN RACEWAYS IN ACCORDANCE WITH NEC CODE REQUIREMENTS. PANEL FEEDERS TO WIREMOLDS CAN ENTER AT VARIOUS LOCATIONS TO LIMIT CONDUCTOR CIRCUITS PER WIREMOLD CAPACITIES.

	DRAWING INDEX
SHEET NO.	SHEET TITLE
EO.1	ELECTRICAL COVER SHEET
E1.1	ELECTRICAL SITE PLAN
E2.1	ELECTRICAL DEMO FLOOR PLAN - BLDGS A, B & C
E2.2	ELECTRICAL DEMO FLOOR PLAN - BLDGS D & E
E3.1	ELECTRICAL NEW FLOOR PLAN - BLDGS A, B & C
E3.2	ELECTRICAL NEW FLOOR PLAN - BLDGS D & E
E4.1	DEMO SINGLE LINE DIAGRAM
E4.2	NEW SINGLE LINE DIAGRAM
E4.3	PANEL SCHEDULES
E5 .1	ELECTRICAL DETAILS
E5.2	ELECTRICAL DETAILS
E5.3	ELECTRICAL DETAILS
E5.4	ELECTRICAL DETAILS







E1.1 SCALE: |" = 20'-0"

GENERAL NOTES

CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONELICTS ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF THE UNDERGROUND CONDUITS AND CABLING.

CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND EXISTING UNDERGROUND SYSTEMS, WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.

- 4. INSTALL PG&E PRIMARY TRENCH PER I/ E5.1.
- 5. INSTALL PG&E SECONDARY TRENCH PER 3/ E5.1.
- 6. PG&E TRANSFORMER PAD SHALL BE PER 2/ E5.1.
- 7. ALL ON SITE TRENCH SHALL BE INSTALLED PER 3/ E5.4.
- 8. SEE THE DEMO SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS
- 9. SEE NEW SINGLE LINE DIAGRAM FOR FEEDER CABLE AND CONDUIT REQUIREMENTS.
- IO. THE CONTRACTOR SHALL MANDREL THROUGH THE ENTIRE PG&E CONDUIT SYSTEM. COORDINATE WITH PG&E FOR ADDITIONAL REQUIREMENTS AND PROCEDURES.

SHEET NOTES:

- $\langle | \rangle$ EXISTING PG&E TRANSFORMER TO BE REMOVED.
- $\left< 2 \right>$ Existing main switchboard to be converted to
- DISTRIBUTION PANEL 'DPI'. 3 INTERCEPT EXISTING PG&E PRIMARY CONDUIT.
- $\langle 4 \rangle$ EXISTING PG#E UTILITY POLE WITH RISER.
- 5 EXISTING PG&E PRIMARY STREET CROSSING TO REMAIN. INTERCEPT THE PRIMARY CONDUIT ON THE SCHOOL SIDE OF THE STREET AND EXTEND AS SHOWN.
- $\langle 6 \rangle$ EXISTING PG&E GAS METER LOCATION.
- 7 NEW 3'X5' PG&E PULLBOX.

AT +18" A.F.F AND CAP.

 $\langle s \rangle$ STUB PV CONDUIT IN THIS LOCATION. CONDUIT TO BE STUBBED TO JUST OUTSIDE CONCRETE SIDEWALK. STUB UP

CONDUIT SCHEDULE:

 $\langle | \rangle$ (N) (I) 4"C - PG&E PRIMARY $\langle 2 \rangle$ (N) (7) 5"C - PG&E SECONDARY (E) (I) 4"C - PG&E PRIMARY (N) (2) 4"C - PANEL 'DPI' (N) (1) $2\frac{1}{2}$ "C - PANEL 'BM' (N) (1) $2\frac{1}{2}$ "C - PANEL 'BM' (N) (1) $2\frac{1}{2}$ "C - PANEL 'CM' (N) (2) $2\frac{1}{2}$ "C - FUTURE PV (N) (2) $2\frac{1}{2}$ "C - FUTURE EV 5 (N) (I) 4"C - PANEL 'AM' (N) (I) 4"C - PANEL 'EM' (FUTURE) (N) (I) $2\frac{1}{2}$ "C - PANEL 'DM' (N) (3) $2\frac{1}{2}$ "C - FUTURE PV (N) (2) 4"C - FUTURE POWER 6 (N) (2) 4"C - PANEL 'DPI' (N) (I) 2½"C - PANEL 'BM' (N) (I) 2½"C - PANEL 'CM' 8 (N) (I) 21/2"C - PANEL 'CM'

$\langle q \rangle$ (N) (I) 2^{L}_{2} "C - PANEL 'BM'
$\langle 10 \rangle$ (N) (1) 2 ¹ / ₂ "C - FUTURE PV
(N) (2) 4"C - PANEL 'DPI' (N) (1) $2\frac{1}{2}$ "C - PANEL 'BM' (N) (1) $2\frac{1}{2}$ "C - PANEL 'BM' (N) (1) $2\frac{1}{2}$ "C - PANEL 'CM' (N) (2) 4"C - FUTURE POWER
$(N) (1) 4"C - PANEL 'AM'(N) (1) 4"C - PANEL 'AM'(N) (1) 4"C - PANEL 'EM' (FUTURE)(N) (1) 2\frac{1}{2}"C - PANEL 'DM'(N) (2) 4"C - FUTURE POWER(N) (2) 2\frac{1}{2}"C - FUTURE EV$
(N) (2) 3"C - FUTURE PV
(N) (5) 2^{1}_{2} C - FUTURE PV (N) (2) 4"C - FUTURE PV
(N) (I) 4"C - XFMR 'DPI'
(N) (2) 4"C - PANEL 'DPI'

- (q) FUTURE PV DISCONNECT SWITCH.
- $\langle 10 \rangle$ FUTURE PV DISTRIBUTION PANEL.
- || > NEW 225KVA TRANSFORMER "TDPI".
- \langle 12 \rangle STUB CONDUIT HIGH ON THE WALL INSIDE THE ROOM AT CEILING LEVEL. VERIFY LOCATION WITH EXISTING ROOM CONDITION AND LAYOUT.
- $\langle 13 \rangle$ STUB PV CONDUIT IN THIS LOCATION. CONDUIT TO BE STUBBED UP AT BUILDING'S WALL. STUB UP AT +18" A.F.F AND CAP.
 - $\langle 18 \rangle$ (N) (I) 2¹/₂"C PANEL 'DM'
 - (N) (I) 4"C PANEL 'AM'
 - (N) (I) I"C PG&E COMMUNICATIONS
 - $\langle 2| \rangle$ (N) (I) 2"C FUTURE PV COMMUNICATIONS
 - $\langle 22 \rangle$ (N) (2) 2¹/₂"C FUTURE EV











(FULL TRAFFIC COVER)

- 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.
- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS. 4. PROVIDE BELL ENDS ON ALL CONDUIT.
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE PULL BOX.
- NOTES: HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.

- CONCRETE BASE WITH DRAIN, CHRISTY B36SL



NOTES:

- I. HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE PULL BOX.
- 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE
- REQUIREMENTS. 4. PROVIDE BELL ENDS ON ALL CONDUIT.
- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.





NOTES:

PULL BOX.

- HIGH DENSITY REINFORCED CONCRETE BOX WITH NON-SETTING SHOULDERS POSITIONED TO MAINTAIN GRADE AND FACILITATE BACK FILLING. APPROXIMATE DIMENSIONS SHOWN.
- 2. ALL CONDUITS SHALL ENTER FROM SIDES OF PULL BOX. CONTRACTOR SHALL PROVIDE PULL BOX EXTENSION AS REQUIRED. NO CONDUITS SHALL BE ALLOWED FROM THE BOTTOM OF THE
- 3. CONTRACTOR SHALL STACK CONDUITS AS REQUIRED TO MEET THE NEC CODE REQUIREMENTS.
- 4. PROVIDE BELL ENDS ON ALL CONDUIT.
- 5. ALL PENETRATIONS INTO BOXES SHALL BE SEALED WITH GROUT.
- 6. PROVIDE BASE WITH DRAIN. PROVIDE DRAIN ROCK.









NOTE: A HEAVY DUTY REINFORCED CONCRETE BOX WITH STANDARD KNOCKOUTS AND PULLING IRONS MADE IN CONFORMANCE WITH PG&E REQUIREMENTS.



