



November 24, 2021

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

Subject: Abbott Middle School HVAC Replacement
San Mateo - Foster City School District
Aedis Project No. 2021005.06
DSA Application #01-119556

ADDENDUM NO. 1

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

SPECIFICATIONS

ITEM NO. 1.1: TABLE OF CONTENTS

Add: 07 31 13 ASPHALT SHINGLES
Add: 07 51 13 BUILT-UP ASPHALT ROOFING
Add: 31 23 16 TRENCHING
Delete: 07 26 00 UNDER SLAB VAPOR BARRIER
Delete: 09 65 19 RESILIENT TILE FLOORING

ITEM NO. 1.2: SECTION 07 26 00 - UNDER SLAB VAPOR BARRIER

Delete: The specification in its entirety.

ITEM NO. 1.3: SECTION 07 31 13 - ASPHALT SHINGLES

Add: The specification in its entirety per 07 31 13 Asphalt Shingles.

ITEM NO. 1.4: SECTION 07 51 13 - BUILT-UP ASPHALT ROOFING

Add: The specification in its entirety per 07 51 13 Build-Up Asphalt Roofing.

ITEM NO. 1.5: SECTION 09 65 19 – RESILIENT TILE FLOORING

Delete: The specification in its entirety.

ITEM NO. 1.6: SECTION 31 23 16 - TRENCHING

Add: The specification in its entirety per 31 23 16 Trenching.

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DRAWINGS**ARCHITECTURAL****ITEM NO. 1.7: DRAWING SHEET T1 – TITLE SHEET**

Revise: General Notes 7 to read as “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 RESTRIPIING PAVING IN KIND. S.E.D. FOR TRENCH ROUTING. VERIFY IN FIELD AND SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING.”

ITEM NO. 1.8: DRAWING SHEET A1.02 – SITE PLAN

Add: Trench area to New Site Plan 1/A1.02 and Graphic Key per AD1-A1.02

Add: General Sheet Note #G per AD1-A1.02

Add: Striping keynote #3 to New Site Plan 1/A1.02 per AD1-A1.02

ITEM NO. 1.9: DRAWING SHEET A2.01 – DEMOLITION FLOOR PLAN – WINGS 1, 2, & 3

Add: General Sheet Note #I per AD1-A2.01

ITEM NO. 1.10: DRAWING SHEET A2.02 – DEMOLITION FLOOR PLANS – MULTIPURPOSE BLDG

Add: General Sheet Note #I per AD1-A2.02

Add: Mechanical equipment removal keynote #7 at Demolition Floor Plan 1/A2.02 per AD1-A2.02

Add: Keynote #8 at Demolition Floor Plan 1/A2.02 per AD1-A2.02

ITEM NO. 1.11: DRAWING SHEET A3.01 – NEW FLOOR PLANS -WING 1, 2 & 3

Add: RCP and construction access keynote #10 at 1/A3.01 and 2/A3.01 per AD1-A3.01

ITEM NO. 1.12: DRAWING SHEET A5.01 – SITE ROOF PLAN

Revise: Graphic Key per AD1-A5.01

Revise: Roof plan Keynotes #2, #4 & #5 per AD1-A5.01

ITEM NO. 1.13: DRAWING SHEET A8.10 – EXTERIOR DETAILS

Revise: Detail #2 per AD1-A8.10A

Revise: Detail #9 & #19 per AD1-A8.10B

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ITEM NO. 1.14: DRAWING SHEET A9.10 – INTERIOR DETAILS, WALL TYPES, & INTERIOR ELEVATIONS

Revise: Detail 1 & 5 per AD1-A9.10A

Revise: Detail 7 per AD1-A9.10B

ITEM NO. 1.15: DRAWING SHEET A11.01 – FINISH SCHEDULE & OPENING SCHEDULES, LEGENDS, & DETAILS

Revise: Door schedule per AD1-A11.01

MECHANICAL**ITEM NO. 1.16: DRAWING MP0.02 – SCHEDULES – MECHANICAL**

Revise: Classroom Split System Heat Pump Schedule per AD1-MP0.02

ITEM NO. 1.17: DRAWING MP2.01 – FLOOR PLANS – DEMO – WINGS 1 & 2 – MECHANICAL & PLUMBING

Revise: Demolition sheet note #7 per AD1-MP2.01

ITEM NO. 1.18: DRAWING MP2.04 – FLOOR PLANS – DEMO – MULTIPURPOSE BLDG – MECHANICAL & PLUMBING

Add: Demolition sheet note #17 per AD1-MP2.04

Add: Exhaust fan Demolition at work room 13A per AD1-MP2.04

ITEM NO. 1.19: DRAWING MP2.06 – FLOOR PLANS – NEW – WINGS 1 & 2 – MECHANICAL & PLUMBING

Revise: Size of Return register HSR-1 per AD1-MP2.06a

Revise: New Sheet Notes #14, #16, & #19 per AD1-MP2.06a

Revise: General Notes #4 per AD1-MP2.06a

Add: General Notes #8 per AD1-MP2.06a

Add: Dimensions per AD1-MP2.06a

Revise: Keynote #16 to #4 per AD1-MP2.06b

Revise: Keynote #16 to #4 per AD1-MP2.06c

ITEM NO. 1.20: DRAWING MP2.07 – FLOOR PLAN – NEW – WING 3 – MECHANICAL & PLUMBING

Revise: General note #4 per AD1-MP2.07

Add: General note #8 per AD1-MP2.07

ITEM NO. 1.21: DRAWING MP2.08 – FLOOR PLANS – NEW – MUSIC BLDG & MEDIA CENTER – MECHANICAL & PLUMBING

Revise: New Sheet Note #1 per AD1-MP2.08

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ITEM NO. 1.22: DRAWING MP2.09 – FLOOR PLANS – NEW – MULTIPURPOSE BUILDING – MECHANICAL & PLUMBING

Revise: Location of CU-14 and CU-13 per AD1-MP2.09

Add: General note #5 per AD1-MP2.09

ITEM NO. 1.23: DRAWING MP6.01– DETAILS – MECHANICAL & PLUMBING

Revise: Detail 6 per AD1-MP6.01

ITEM NO. 1.24: DRAWING SHEET MP6.02 – DETAILS – MECHANICAL & PLUMBING

Revise: Detail 4 per AD1-MP6.02

Add: Detail 6 per AD1-MP6.02

ELECTRICAL

ITEM NO. 1.25: DRAWING SHEET E1.1 – ELECTRICAL SITE PLAN

Revise: Site Plan layout at 2-Story Multipurpose Bldg. per AD1-E1.1.

Revise: Sheet Note #5 and #6 per AD1-E1.1.

ITEM NO. 1.26: DRAWING SHEET E3.1 – ELECTRICAL NEW FLOOR PLANS – WINGS 1, 2 & 3

Revise: Electrical plan 1/E3.1, 2/E3.1 & 3/E3.1 per AD1-E3.1

Revise: Sheet Noters #1, #2 & #4 per AD1-E3.1

Omit: Sheet Noters #4 per AD1-E3.1

ITEM NO. 1.27: DRAWING SHEET E3.3 – ELECTRICAL NEW FLOOR PLANS – MUSIC BLDG & MEDIA CENTER

Revise: Electrical plan 1/E3.3, 2/E3.3 & 3/E3.3 per AD1-E3.3

Revise: Sheet Noters #1 & #2 per AD1-E3.3

ITEM NO. 1.28: DRAWING SHEET E4.3 – PANEL SCHEDULES

Revise: Panel Schedule per AD1-E4.3

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Attachments:

Specifications:

07 31 13 Asphalt Shingles (11 pages)
07 51 13 Build-Up Asphalt Roofing (12 pages)
31 23 16 Trenching (5 pages)

Drawing:

ARCHITECTURAL:

SHEET AD1-A1.02
SHEET AD1-A2.01
SHEET AD1-A2.02
SHEET AD1-A3.01
SHEET AD1-A5.01
SHEET AD1-A8.10A
SHEET AD1-A8.10B
SHEET AD1-A9.10A
SHEET AD1-A9.10B
SHEET AD1-A11.01

MECHANICAL:

SHEET AD1-MP0.02
SHEET AD1-MP2.01
SHEET AD1-MP2.04
SHEET AD1-MP2.06a
SHEET AD1-MP2.06b
SHEET AD1-MP2.06c
SHEET AD1-MP2.07
SHEET AD1-MP2.08
SHEET AD1-MP2.09
SHEET AD1-MP6.01
SHEET AD1-MP6.02

ELECTRICAL:

SHEET AD1-E1.1
SHEET AD1-E3.1
SHEET AD1-E3.3
SHEET AD1-E4.3

SECTION 073113 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section Includes:
 - 1. Glass-fiber-reinforced asphalt shingles.
 - 2. Underlayment materials.

1.2 DEFINITIONS

- A. Roofing Terminology: See ASTM D1079 for definitions of terms related to roofing Work in this Section.

1.3 PREINSTALLATION MEETINGS

- A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

- A. Product Data: For the following:
 - 1. Asphalt shingles.
 - 2. Underlayment materials.
 - 3. Asphalt roofing cement.
 - 4. Elastomeric flashing sealant.
- B. Shop Drawings: For metal flashing and trim.
- C. Samples for Initial Selection:
 - 1. For each type of asphalt shingle indicated.
 - 2. For each type of accessory involving color selection.
- D. Samples for Verification: For the following products, in sizes indicated:
 - 1. Asphalt Shingles: Full size.
 - 2. Ridge and Hip Cap Shingles: Full size.
 - 3. Ridge Vent: 12-inch- (305-mm-) long Sample.
 - 4. Exposed Valley Lining: 12 inches (305 mm) square.

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1.5 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer.
- B. Product Test Reports: For each type of asphalt shingle and underlayment product indicated, for tests performed by manufacturer and witnessed by a qualified testing agency.
- C. Research Reports: For synthetic underlayment, from ICC-ES, indicating that product is suitable for intended use under applicable building codes.
- D. Sample Warranty: For manufacturer's materials warranty.

1.6 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For asphalt shingles to include in maintenance manuals.
- B. Materials warranties.
- C. Roofing Installer's warranty.

1.7 QUALITY ASSURANCE

- A. Installer Qualifications: An authorized installer who is trained and approved by manufacturer.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing materials in a dry, well-ventilated location protected from weather, sunlight, and moisture in accordance with manufacturer's written instructions.
- B. Store underlayment rolls on end, on pallets or other raised surfaces. Do not double-stack rolls.
- C. Protect unused roofing materials from weather, sunlight, and moisture when left overnight or when roofing Work is not in progress.
- D. Handle, store, and place roofing materials in a manner to prevent damage to roof deck or structural supporting members.

1.9 FIELD CONDITIONS

- A. Environmental Limitations: Proceed with installation only when existing and forecasted weather conditions permit product installation and related Work to be performed in accordance with manufacturer's written instructions and warranty requirements.

1. Install self-adhering, polymer-modified bitumen sheet underlayment within the range of ambient and substrate temperatures recommended in writing by manufacturer.

1.10 WARRANTY

- A. Materials Warranty: Manufacturer agrees to repair or replace asphalt shingles that fail within specified warranty period.
 1. Failures include, but are not limited to, the following:
 - a. Manufacturing defects.
 2. Materials Warranty Period: 40 years from date of Substantial Completion, prorated, with first 20 years nonprorated.
 3. Wind-Speed Warranty Period: Asphalt shingles will resist blow-off or damage caused by wind speeds of up to 110 mph (49 m/s) 130 mph (58 m/s) for 15 years from date of Substantial Completion.
 4. Algae-Resistance Warranty Period: Asphalt shingles will not discolor for 10 years from date of Substantial Completion.
 5. Workmanship Warranty Period: 20 years from date of Substantial Completion.
- B. Roofing Installer's Warranty: On warranty form at end of this Section, signed by Installer, in which Installer agrees to repair or replace components of asphalt shingle roofing that fail in materials or workmanship within specified warranty period.
 1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SOURCE LIMITATIONS

- A. Obtain each type of product from single source from single manufacturer.

2.2 PERFORMANCE REQUIREMENTS

- A. Exterior Fire-Test Exposure: Provide asphalt shingles and related roofing materials identical to those of assemblies tested for Class A fire resistance in accordance with ASTM E108 or UL 790 by Underwriters Laboratories or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify products with appropriate markings of applicable testing agency.
- B. Wind Resistance: Provide asphalt shingles that comply with requirements of ASTM D3161/D3161M, Class F, and with ASTM D7158/D7158M, Class H.
- C. Energy Performance, ENERGY STAR: Provide asphalt shingles that are listed on the DOE's "ENERGY STAR Roof Product List" for steep-slope roof products.

2.3 GLASS-FIBER-REINFORCED ASPHALT SHINGLES

- A. Laminated-Strip Asphalt Shingles: ASTM D3462/D3462M, laminated, multi-ply overlay construction; glass-fiber reinforced, mineral-granule surfaced, and self-sealing.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. GAF; Timberline HD Reflector Series.
 - 2. Butt Edge: Straight cut.
 - 3. Strip Size: Manufacturer's standard.
 - 4. Algae Resistance: Granules resist algae discoloration.
 - 5. Color and Blends: As selected by Architect from manufacturer's full range.
- B. Hip and Ridge Shingles: Manufacturer's standard units to match asphalt shingles.

2.4 UNDERLAYMENT MATERIALS

- A. Fiberglass-reinforced Felt: Asphalt-saturated, fiberglass-reinforced organic felts, nonperforated and complying with ASTM D226 Type II.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. GAF; Shingle-Mate.

2.5 ACCESSORIES

- A. Asphalt Roofing Cement: ASTM D4586/D4586M Type II, asbestos free.
- B. Elastomeric Flashing Sealant: ASTM C920, Type S, Grade NS, one-part, non-sag, elastomeric polymer sealant; of class and use classifications required to seal joints and remain watertight; recommended in writing by manufacturer for installation of flashing systems.
- C. Roofing Nails: ASTM F1667, aluminum, stainless steel, copper, or hot-dip galvanized-steel wire shingle nails, minimum **0.120-inch- (3-mm-)** diameter, sharp-pointed, with a **3/8-to 7/16-inch- (10- to 11-mm-)** diameter flat head and of sufficient length to penetrate **3/4 inch (19 mm)** into solid wood decking or extend at least **1/8 inch (3 mm)** through sheathing less than **3/4 inch (19 mm)** thick.
 - 1. Where nails are in contact with metal flashing, use nails made from same metal as flashing.
- D. Underlayment Nails: Aluminum, stainless steel, or hot-dip galvanized-steel wire nails with low-profile metal or plastic caps, **1-inch- (25-mm-)** minimum diameter.
 - 1. Provide with minimum **0.0134-inch- (0.34-mm-)** thick metal cap, **0.010-inch- (0.25-mm-)** thick power-driven metal cap, or **0.035-inch- (0.89-mm-)** thick plastic cap; and with minimum **0.083-inch- (2.11-mm-)** thick ring shank or **0.091-inch- (2.31-**

mm-) thick smooth shank of length to penetrate at least 3/4 inch (19 mm) into roof sheathing or to penetrate through roof sheathing less than 3/4 inch (19 mm) thick.

2.6 METAL FLASHING AND TRIM

A. Comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."

1. Sheet Metal: Stainless steel.

B. Fabricate sheet metal flashing and trim to comply with recommendations in SMACNA's "Architectural Sheet Metal Manual" that apply to design, dimensions, metal, and other characteristics of the item unless otherwise specified in this Section or indicated on Drawings.

1. Apron Flashings: Fabricate with lower flange a minimum of 4 inches (102 mm) over and 4 inches (102 mm) beyond each side of downslope asphalt shingles and 6 inches (152 mm) up the vertical surface.
2. Step Flashings: Fabricate with a headlap of 2 inches (51 mm) and a minimum extension of 4 inches (102 mm) over the underlying asphalt shingle and up the vertical surface.
3. Counterflashings: Fabricate to cover 4 inches (102 mm) of base flashing measured vertically; and in lengths required so that no step exceeds 8 inches (203 mm) and overall length is no more than 10 feet (3 m).
 - a. Provide metal reglets for installation.
4. Open-Valley Flashings: Fabricate from metal sheet not less than 24 inches (610 mm) wide in lengths not exceeding 10 feet (3 m), with 1-inch- (25-mm-) high, inverted-V profile water diverter at center of valley and equal flange widths of not less than 11 inches (279 mm).
 - a. Hem flange edges for fastening with metal cleats.
 - b. Add stiffening ribs in flashings to promote drainage.
5. Drip Edges: Fabricate in lengths not exceeding 10 feet (3 m) with minimum 2-inch (51-mm) roof-deck flange and 1-1/2-inch (38-mm) fascia flange with 3/8-inch (10-mm) drip at lower edge.
6. Vent-Pipe Flashings: ASTM B749, Type L51121, at least 1/16 inch (1.6 mm) thick. Provide lead sleeve sized to slip over and turn down into pipe, soldered to skirt at slope of roof, and extending at least 4 inches (102 mm) from pipe onto roof.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.
 - 1. Examine roof sheathing to verify that sheathing joints are supported by framing and blocking or metal clips and that installation is within flatness tolerances.
 - 2. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and completely anchored and that provisions have been made for flashings and penetrations through asphalt shingles.
 - 3. Verify that vent stacks and other penetrations through roofing are installed and securely fastened.
- B. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of the Work.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF UNDERLAYMENT MATERIALS

- A. Comply with asphalt shingle and underlayment manufacturers' written installation instructions and with recommendations in NRCA's "The NRCA Roofing Manual: Steep-Slope Roof Systems" applicable to products and applications indicated unless more stringent requirements are specified in this Section or indicated on Drawings.
- B. Asphalt-Saturated, Fiberglass Reinforced Felt: Install on roof deck parallel with and starting at eaves and fasten with underlayment nails.
 - 1. Single-Layer Installation:
 - a. Lap sides a minimum of **4 inches (102 mm)** over underlying course.
 - b. Lap ends a minimum of **4 inches (102 mm)**.
 - c. Stagger end laps between succeeding courses at least **72 inches (1829 mm)**.
 - 2. Double-Layer Installation:
 - a. Install a **19-inch- (483-mm-)** wide starter course at eaves and completely cover with a **36-inch- (914-mm-)** wide second course.
 - b. Install succeeding **36-inch- (914-mm-)** wide courses lapping previous courses **19 inches (483 mm)** in shingle fashion.
 - c. Lap ends a minimum of **4 inches (102 mm)**. Stagger end laps between succeeding courses at least **72 inches (1829 mm)**.
 - d. Apply a continuous layer of asphalt roofing cement over starter course and on felt surface to be concealed by succeeding courses as each felt course is installed. Apply at locations indicated on Drawings.

3. Install felt underlayment on roof deck not covered by self-adhering, polymer-modified bitumen sheet unless otherwise specified in this Section or indicated on Drawings.
 - a. Lap sides of felt over self-adhering sheet not less than 4 inches (102 mm) in direction that sheds water.
 - b. Lap ends of felt not less than 6 inches (152 mm) over self-adhering sheet.
 4. Install fasteners in a grid pattern of 12 inches (305 mm) between side laps with 6-inch (152-mm) spacing at side and end laps.
 5. Terminate felt extended up not less than 4 inches (102 mm) against sidewalls, curbs, chimneys, and other roof projections.
- C. Metal-Flushed, Open-Valley Underlayment: Install two layers of minimum 36-inch- (914-mm-) wide underlayment centered in valley.
1. Use same underlayment as installed on field of roof.
 2. Stagger end laps between layers at least 72 inches (1829 mm).
 3. Lap ends of each layer at least 12 inches (305 mm) in direction that sheds water, and seal with asphalt roofing cement.
 4. Fasten each layer to roof deck with underlayment nails located as far from valley center as possible and only to extent necessary to hold underlayment in place until installation of valley flashing.
 5. Lap roof-deck underlayment over first layer of valley underlayment at least 6 inches (152 mm).

3.3 INSTALLATION OF METAL FLASHING AND TRIM

- A. Install metal flashings and trim to comply with requirements in Section 076200 "Sheet Metal Flashing and Trim."
1. Install metal flashings in accordance with recommendations in NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
 2. Bed flanges of metal flashings using asphalt roofing cement or elastomeric flashing sealant.
- B. Apron Flashings: Extend lower flange over and beyond each side of downslope asphalt shingles and up the vertical surface.
- C. Step Flashings: Install with a headlap of 2 inches (51 mm) and extend over underlying shingle and up the vertical face.
1. Install with lower edge of flashing just upslope of, and concealed by, butt of overlying shingle.
 2. Fasten to roof deck only.
- D. Cricket and Backer Flashings: Install against roof-penetrating elements extending concealed flange beneath upslope asphalt shingles and beyond each side.

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- E. Counterflashings: Coordinate with installation of base flashing and fit tightly to base flashing. Lap joints a minimum of **4 inches (102 mm)** secured in a waterproof manner.
 - 1. Install in reglets or receivers.
- F. Open-Valley Flashings: Install centered in valleys, lapping ends at least **8 inches (203 mm)** in direction that sheds water. Fasten upper end of each length to roof deck beneath overlap.
 - 1. Secure hemmed flange edges into metal cleats spaced **24 inches (610 mm)** apart and fastened to roof deck.
 - 2. Adhere minimum **9-inch- (229-mm-)** wide strips of self-adhering, polymer-modified bitumen sheet to metal flanges and to underlying self-adhering sheet, polymer-modified bitumen sheet.
 - a. Place strips parallel to and over flanges so that they will be just concealed by installed shingles.
 - 3. Provide a closure at the end of the inverted-V profile of the valley metal to minimize water and ice infiltration.
- G. Rake Drip Edges: Install over underlayment materials and fasten to roof deck.
- H. Eave Drip Edges: Install below underlayment materials and fasten to roof deck.
- I. Pipe Flashings: Form flashing around pipe penetrations and asphalt shingles. Fasten and seal to asphalt shingles as recommended by manufacturer.

3.4 INSTALLATION OF ASPHALT SHINGLES

- A. Install asphalt shingles in accordance with manufacturer's written instructions and recommendations in NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."
- B. Install starter strip along lowest roof edge, consisting of an asphalt shingle strip at least **7 inches (178 mm)** wide with self-sealing strip face up at roof edge.
 - 1. Extend asphalt shingles **1/2 inch (13 mm)** over fasciae at eaves and rakes.
 - 2. Install starter strip along rake edge.
- C. Install first and remaining courses of laminated asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- D. Install first and remaining courses of three-tab-strip asphalt shingles stair-stepping diagonally across roof deck with manufacturer's recommended offset pattern at succeeding courses, maintaining uniform exposure.
- E. Fasten asphalt shingle strips with a minimum of four roofing nails, but not less than the number indicated in manufacturer's written instructions for roof slope and design wind speed indicated on Drawings and for warranty requirements specified in this Section.

1. Locate fasteners in accordance with manufacturer's written instructions.
 2. Where roof slope exceeds 18:12, hand seal self-sealing asphalt shingles to improve the shingles' positive bond by applying asphalt roofing cement spots between course overlaps after nailing the upper course.
 3. Where roof slope is less than 4:12, hand seal self-sealing asphalt shingles to improve the shingles' positive bond by applying asphalt roofing cement spots between course overlaps after nailing the upper course.
 4. When ambient temperature during installation is below 50 deg F (10 deg C), hand seal self-sealing asphalt shingles by applying asphalt roofing cement spots between course overlaps after nailing the upper course.
- F. Open Valleys: Cut and fit asphalt shingles at open valleys, trimming upper concealed corners of shingle strips.
1. Maintain uniform width of exposed open valley from highest to lowest point.
 2. Extend shingle a minimum of 4 inches (102 mm) over valley metal.
 3. Set valley edge of asphalt shingles in a 3-inch- (76-mm-) wide bed of asphalt roofing cement.
 4. Do not nail asphalt shingles to metal open-valley flashings.
- G. Ridge Vents: Install continuous ridge vents over asphalt shingles in accordance with manufacturer's written instructions. Fasten with roofing nails of sufficient length to penetrate sheathing.
- H. Hip and Ridge Shingles: Maintain same exposure of cap shingles as roofing-shingle exposure. Lap cap shingles at ridges to shed water away from direction of prevailing winds.
1. Fasten with roofing nails of sufficient length to penetrate sheathing.
 2. Fasten ridge cap asphalt shingles to cover ridge vent without obstructing airflow.

3.5 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS <Insert name> of <Insert address>, herein called the "Roofing Installer," has performed roofing and associated work ("the work") on the following project:
1. Owner: <Insert name of Owner>.
 2. Owner Address: <Insert address>.
 3. Building Name/Type: <Insert information>.
 4. Building Address: <Insert address>.
 5. Area of the Work: <Insert information>.
 6. Acceptance Date: <Insert date>.
 7. Warranty Period: <Insert time>.
 8. Expiration Date: <Insert date>.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant the work against leaks and faulty or defective materials and workmanship for designated Warranty Period,

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- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that, during Warranty Period, Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of the work as are necessary to correct faulty and defective work and as are necessary to maintain the work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
1. Specifically excluded from this Warranty are damages to the work and other parts of the building, and to building contents, caused by:
 - a. Lightning;
 - b. Peak gust wind speed exceeding 90 mph
 - c. Fire;
 - d. Failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. Faulty construction of copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. Vapor condensation on bottom of roofing; and
 - g. Activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
 2. When the work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to the work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of the work.
 4. During Warranty Period, if Owner allows alteration of the work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of the alterations, but only to the extent the alterations affect the work covered by this Warranty. If Owner engages Roofing Installer to perform the alterations, Warranty shall not become null and void unless Roofing Installer, before starting the alterations, notified Owner in writing, showing reasonable cause for claim, that the alterations would likely damage or deteriorate the work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a use or service more severe than originally specified, this Warranty shall become null and void on date of the change, but only to the extent the change affects the work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect the work and to examine evidence of such leaks, defects, or deterioration.
 7. This Warranty is recognized to be the only warranty of Roofing Installer on the work and shall not operate to restrict or cut off Owner from other remedies and

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resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of the work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

END OF SECTION 073113

1.5 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. For insulation and roof system component fasteners, include copy of SPRI's Directory of Roof Assemblies listing.
- B. Shop Drawings: Include plans, sections, details, and attachments to other work, including the following:
 - 1. Extent of patch and repair work.
 - 2. Details of tying into existing roofing.
- C. Samples for Verification: For the following products:
 - 1. Cap Sheet: Samples of manufacturer's standard colors for selection by Architect.
 - 2. Flashing Sheet: Samples of manufacturer's standard colors for selection by Architect.
 - 3. Aggregate surfacing material in gradation and color required.

1.6 INFORMATIONAL SUBMITTALS

- A. Qualification Data: For Installer and manufacturer.
- B. Evaluation Reports: For components of roofing system, from ICC-ES.
- C. Field quality-control reports.

1.7 CLOSEOUT SUBMITTALS

- A. Maintenance Data: For roofing system to include in maintenance manuals.
- B. Certified statement from existing roof membrane manufacturer, stating that existing roof warranty has not been affected by Work performed under this Section.

1.8 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A qualified manufacturer that is listed in SPRI's Directory of Roof Assemblies for roofing system identical to that used for this Project.
- B. Installer Qualifications: A qualified firm that is approved, authorized, or licensed by roofing system manufacturer to install manufacturer's product and that is eligible to receive manufacturer's special warranty.

1.9 DELIVERY, STORAGE, AND HANDLING

- A. Deliver roofing materials to Project site in original containers with seals unbroken and labeled with manufacturer's name, product brand name and type, date of manufacture, approval or listing agency markings, and directions for storing and mixing with other components.
- B. Store liquid materials in their original undamaged containers in a clean, dry, protected location and within the temperature range required by roofing manufacturer.
 - 1. Protect stored liquid material from direct sunlight.
 - 2. Discard and legally dispose of liquid material that cannot be applied within its stated shelf life.
- C. Handle and store roofing materials, and place equipment in a manner to avoid permanent deflection of deck.

1.10 FIELD CONDITIONS

- A. Weather Limitations: Proceed with installation only when existing and forecasted weather conditions permit roofing to be installed according to manufacturer's written instructions and warranty requirements.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

- A. General Performance: Installed roofing system and flashings shall withstand specified uplift pressures, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Roof system and flashings shall remain watertight.
 - 1. Accelerated Weathering: Roof membrane shall withstand 2000 hours of exposure when tested according to ASTM G152, ASTM G154, or ASTM G155.
 - 2. Impact Resistance: Roof membrane shall resist impact damage when tested according to ASTM D3746/C3746M, ASTM D4272/D4272M, or the "Resistance to Foot Traffic Test" in FM Approvals 4470.
- B. Material Compatibility: Roofing materials shall be compatible with one another and adjacent materials under conditions of service and application required, as demonstrated by roof membrane manufacturer based on testing and field experience.
- C. SPRI's Directory of Roof Assemblies Listing: Roof membrane, base flashings, and component materials shall comply with requirements in FM Approvals 4450 or FM Approvals 4470 as part of a roofing system, and shall be listed in SPRI's Directory of Roof Assemblies for roof assembly identical to that specified for this Project.

- D. ENERGY STAR Listing: Roofing system shall be listed on the DOE's ENERGY STAR "Roof Products Qualified Product List" for low-slope roof products.
- E. Energy Performance: Roofing system shall have an initial solar reflectance of not less than 0.70 and an emissivity of not less than 0.75 when tested according to CRRC-1.
- F. Exterior Fire-Test Exposure: ASTM E108 or UL 790, Class A; for application and roof slopes indicated; testing by a qualified testing agency.
 - 1. Identify products with appropriate markings of applicable testing agency.

2.2 MANUFACTURERS

- A. Manufacturers: Subject to compliance with requirements, provide products by the following:
 - 1. GAF.
- B. Source Limitations: Obtain components for roofing system from same manufacturer as roofing membrane.

2.3 ROOFING MEMBRANE SHEET MATERIALS

- A. Base Sheet: ASTM D4601/D4601M, Type II, nonperforated, asphalt-impregnated and -coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. GAFGLAS #75 Base Sheet.
- B. Ply Sheet: ASTM D2178/D2178M, Type VI, asphalt-impregnated, glass-fiber felt.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. GAFGLAS FlexPly 6.
- C. Cap Sheet: ASTM D3909/D3909M, asphalt-impregnated and -coated, glass-fiber cap sheet, with white coarse mineral-granule top surfacing and fine mineral surfacing on bottom surface.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. GAFGLAS Energy Cap.

2.4 BASE FLASHING SHEET MATERIALS

- A. Backer Sheet: ASTM D2178/D2178M, Type VI, asphalt-impregnated, glass-fiber felt.

- B. Backer Sheet: ASTM D4601/D4601M, Type II, asphalt-impregnated and -coated, glass-fiber sheet, dusted with fine mineral surfacing on both sides.
- C. Glass-Fiber Fabric: Woven glass-fiber cloth, treated with asphalt, complying with ASTM D1668/D1668M, Type I.
- D. Liquid Flashing System: Roof membrane manufacturer's standard one- or two-part moisture curing resin with low solvent content, consisting of a primer, flashing cement, and scrim.

2.5 ASPHALT MATERIALS

- A. Asphalt Primer: ASTM D41/D41M.
- B. Roofing Asphalt: ASTM D312/D312M, Type III or IV as recommended by roofing system manufacturer for application.

2.6 AUXILIARY ROOFING MATERIALS

- A. General: Auxiliary materials recommended by roofing manufacturer for intended use and compatible with other roofing components.
 - 1. Adhesive and Sealants: Comply with VOC limits of authorities having jurisdiction.
- B. Prefabricated Pipe Flashings: As recommended by roof membrane manufacturer.
- C. Roof Vents: As recommended by roof membrane manufacturer.
 - 1. Size: Not less than 4-inch (100-mm) diameter.
- D. Sheathing Paper: Red-rosin type, minimum 3 lb/100 sq. ft. (0.16 kg/sq. m).
- E. Metal Termination Bars: Manufacturer's standard, predrilled stainless-steel or aluminum bars, approximately 1 by 1/8 inch (25 by 3 mm) thick; with anchors.
- F. Asphalt Roofing Cement: ASTM D4586/D4586M, asbestos free, of consistency required by roofing manufacturer for application.
- G. Mastic Sealant: Polyisobutylene, plain or modified bitumen; nonhardening, nonmigrating, nonskinning, and nondrying.
- H. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening built-up roofing components to substrate; tested by manufacturer for required pullout strength, and acceptable to roofing manufacturer.
- I. Miscellaneous Accessories: Provide those recommended by roofing system manufacturer.

2.7 COVER BOARDS

- A. Substrate Board: ASTM C208, Type II, Grade 1 Fiberboard roof insulation coverboard with primed red coating.
 - 1. Products: Subject to compliance with requirements, provide the following:
 - a. STRUCTODEK High Density.
 - 2. Thickness: 1/2 inch (13 mm).
 - 3. Surface finish: Factory primed.
- B. Fasteners: Factory-coated steel fasteners and metal or plastic plates complying with corrosion-resistance provisions in FM Approvals 4470, designed for fastening substrate board to roof deck.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work:
 - 1. Verify that roof openings and penetrations are in place, curbs are set and braced, and roof-drain bodies are securely clamped in place.
 - 2. Verify that wood cants, blocking, curbs, and nailers are securely anchored to roof deck at penetrations and terminations and that nailers match thicknesses of insulation.
 - 3. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch (1.6 mm) out of plane relative to adjoining deck.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrate of dust, debris, moisture, and other substances detrimental to roofing installation according to roofing manufacturer's written instructions.
 - 1. Remove sharp projections.
- B. Prevent materials from entering and clogging roof drains and conductors and from spilling or migrating onto surfaces of other construction.
 - 1. Remove roof-drain plugs when no work is taking place or when rain is forecast.

3.3 INSTALLATION OF ROOFING, GENERAL

- A. Install roofing system according to manufacturer's written instructions, SPRI's Directory of Roof Assemblies listed roof assembly requirements, and FM Global Property Loss Prevention Data Sheet 1-29.
- B. Complete terminations and base flashings, and provide temporary seals to prevent water from entering completed sections of roofing system at the end of the workday or when rain is forecast.
 - 1. Remove and discard temporary seals before beginning work on adjoining roofing.
- C. Install roof membrane and auxiliary materials to tie in to existing roofing to maintain weathertightness of transition and to not void warranty for existing roofing system.
- D. Asphalt Heating:
 - 1. Heat asphalt to its equiviscous temperature, measured at the mop cart or mechanical spreader immediately before application.
 - 2. Circulate asphalt during heating.
 - a. Do not raise asphalt temperature above equiviscous temperature range more than one hour before time of application.
 - 3. Do not exceed asphalt manufacturer's recommended temperature limits during asphalt heating.
 - 4. Do not heat asphalt within **25 deg F (14 deg C)** of flash point.
 - 5. Discard asphalt maintained at a temperature exceeding finished blowing temperature for more than four hours.
 - a. Apply hot roofing asphalt within plus or minus **25 deg F (14 deg C)** of equiviscous temperature.
- E. Substrate-Joint Penetrations: Prevent roofing asphalt and adhesives from penetrating substrate joints, entering building, or damaging roofing components or adjacent building construction.

3.4 INSTALLATION OF COVER BOARDS

- A. Install cover boards over insulation with long joints in continuous straight lines, with end joints staggered between rows. Offset joints of insulation below a minimum of **6 inches (150 mm)** in each direction.
 - 1. Trim cover board neatly to fit around penetrations and projections, and to fit tight to intersecting sloping roof decks.
 - 2. At internal roof drains, conform to slope of drain sump.
 - a. Trim cover board so that the flow of water is not restricted.

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3. Cut and fit cover board tight to nailers, projections, and penetrations.
4. Adhere cover board to substrate using adhesive according to SPRI's Directory of Roof Assemblies listed roof assembly requirements for specified Wind Uplift Load Capacity and FM Global Property Loss Prevention Data Sheet 1-29, as follows:
 - a. Set cover board in a solid mopping of hot roofing asphalt, applied within plus or minus **25 deg F (14 deg C)** of equiviscous temperature.
- B. Install sheathing paper over cover board and immediately beneath roof membrane.

3.5 INSTALLATION OF BUILT-UP ROOFING MEMBRANE

- A. Install roofing according to roofing manufacturer's written instructions and applicable recommendations of ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing" and as follows:
 1. Base Sheet: One.
 2. Number of Ply Sheets: Two.
 3. Surfacing: Mineral-granule-surfaced cap sheet.
 4. Mineral-granule-surfaced cap sheet is in addition to number of ply sheets specified.
- B. Start installation of roofing in presence of roofing system manufacturer's technical personnel.
- C. Where roof slope exceeds **1/2 inch per 12 inches (1:24)**, install roofing ply sheets parallel with slope.
- D. Coordinate installation of roofing, so insulation and other components of roofing system not permanently exposed are not subjected to precipitation or left uncovered at the end of the workday or when rain is forecast.
 1. Provide tie-offs at end of each day's work to cover exposed roofing membrane sheets and insulation with a course of coated felt set in roofing cement or hot roofing asphalt, with joints and edges sealed.
 2. Complete terminations and base flashings, and provide temporary seals to prevent water from entering completed sections of roofing system.
 3. Remove and discard temporary seals before beginning work on adjoining roofing.
- E. Loosely lay one course of sheathing paper, lapping edges and ends a minimum of **2 inches (51 mm)** and **6 inches (150 mm)**, respectively.
- F. Install lapped base sheet course, extending sheet over and terminating beyond cants. Attach base sheet as follows:
 1. Mechanically fasten to substrate.
- G. Install two ply sheets, starting at low point of roof.
 1. Align ply sheets without stretching.

2. Shingle side laps of ply sheets uniformly to achieve required number of plies throughout thickness of roofing membrane.
 - a. Shingle in direction to shed water.
3. Extend ply sheets over and terminate above cants.
4. Embed each ply sheet in a solid mopping of hot roofing asphalt applied at rate required by roofing manufacturer, to form a uniform membrane without ply sheets touching.
5. Install ply sheets without wrinkles, tears, and free from air pockets.

H. Cap Sheet: Install lapped granulated cap sheet, starting at low point of roofing.

1. Offset laps from laps of preceding ply sheets, and align cap sheet without stretching.
2. Lap in direction to shed water.
3. Extend cap sheet over and terminate above cants.
4. Embed cap sheet in a solid mopping of hot roofing asphalt applied at rate required by roofing system manufacturer.
5. Install cap sheet without wrinkles, tears, and free from air pockets.

3.6 INSTALLATION OF FLASHING AND STRIPPING

- A. Install base flashing over cant strips and other sloping and vertical surfaces, at roof edges, and at penetrations through roof; secure to substrates according to roofing system manufacturer's written instructions and as follows:
1. Prime substrates with asphalt primer if required by roofing system manufacturer.
 2. Backer Sheet Application: Mechanically fasten backer sheet to walls or parapets. Adhere backer sheet over roofing membrane at cants in a solid mopping of hot roofing asphalt.
 3. Flashing Sheet Application: Adhere flashing sheet to substrate in a solid mopping of hot roofing asphalt applied at not less than **425 deg F (218 deg C)**. Apply hot roofing asphalt to back of flashing sheet if recommended by roofing manufacturer.
- B. Extend base flashing up walls or parapets a minimum of **8 inches (200 mm)** above built-up roofing and **4 inches (100 mm)** onto field of roofing membrane.
- C. Mechanically fasten top of base flashing securely at terminations and perimeter of roofing.
- D. Install stripping according to roofing system manufacturer's written instructions, where metal flanges and edgings are set on roofing membrane.
1. Flashing Sheet Stripping: Install flashing sheet stripping in a continuous coating of asphalt roofing cement, in a solid mopping of hot roofing asphalt applied at not less than **425 deg F (218 deg C)**, and extend onto roofing membrane, in cold-applied adhesive, or in cold-applied polymer-modified adhesive.
- E. Roof Drains: Set **30-by-30-inch (760-by-760-mm) 4-pound (1.8-kg)** lead flashing in bed of asphaltic adhesive on completed roofing membrane.

1. Cover metal flashing with roofing cap sheet stripping, and extend a minimum of **4 inches (100 mm)** beyond edge of metal flashing onto field of roofing membrane.
2. Clamp roofing membrane, metal flashing, and stripping into roof-drain clamping ring.
3. Install stripping according to roofing manufacturer's written instructions.

3.7 FIELD QUALITY CONTROL

- A. Testing Agency: Engage a qualified testing agency to inspect substrate conditions, surface preparation, roof membrane application, flashings, protection, and drainage components, and to furnish reports to Architect.
- B. Perform the following tests:
 1. High-Voltage Spark Testing: Testing agency shall survey entire roof area, flashings, and parapet walls to locate discontinuity in the roof membrane using an electrically charged metal "broom head."
 - a. Perform tests before overlying construction is placed.
 - b. After testing, repair areas of discontinuities, repeat tests, and make further repairs until roofing and flashing installations are contiguous.
 - 1) Cost of retesting is Contractor's responsibility.
 - c. Testing agency shall prepare survey report indicating locations of initial discontinuities.
- C. Test Cuts: Remove test specimens to evaluate problems observed during quality-assurance inspections of roofing system as follows:
 1. Determine approximate quantities of components within roofing system according to ASTM D3617/D3617M.
 2. Examine test specimens for interply voids according to ASTM D3617/D3617M and to comply with criteria established in Appendix 3 in ARMA/NRCA's "Quality Control Guidelines for the Application of Built-up Roofing."
 3. Repair areas where test cuts were made according to roofing manufacturer's written instructions.
- D. Final Roof Inspection: Arrange for roofing system manufacturer's technical personnel to inspect roofing installation on completion, in presence of Architect, and to prepare inspection report.
 1. Notify Architect and Owner 48 hours in advance of date and time of inspection.
- E. Repair or remove and replace components of roofing system where inspections indicate that they do not comply with specified requirements.
- F. Roofing system will be considered defective if it does not pass tests and inspections.
 1. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.8 PROTECTING AND CLEANING

- A. Protect roofing system from damage and wear during remainder of construction period.
 - 1. When remaining construction does not affect or endanger roofing, inspect roofing system for deterioration and damage, describing its nature and extent in a written report, with copies to Architect and Owner.
- B. Correct deficiencies in or remove roofing components that do not comply with requirements, repair substrates, and repair or reinstall roofing to a condition free of damage and deterioration at time of Substantial Completion and according to warranty requirements.
- C. Clean overspray and spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.9 ROOFING INSTALLER'S WARRANTY

- A. WHEREAS _____ of _____, herein called the "Roofing Installer," has performed roofing and associated work ("work") on the following project:
 - 1. Owner: **<Insert name of Owner>**.
 - 2. Address: **<Insert address>**.
 - 3. Building Name/Type: **<Insert information>**.
 - 4. Address: **<Insert address>**.
 - 5. Area of Work: **<Insert information>**.
 - 6. Acceptance Date: _____.
 - 7. Warranty Period: **<Insert time>**.
 - 8. Expiration Date: _____.
- B. AND WHEREAS Roofing Installer has contracted (either directly with Owner or indirectly as a subcontractor) to warrant said work against leaks and faulty or defective materials and workmanship for designated Warranty Period,
- C. NOW THEREFORE Roofing Installer hereby warrants, subject to terms and conditions herein set forth, that during Warranty Period Roofing Installer will, at Roofing Installer's own cost and expense, make or cause to be made such repairs to or replacements of said work as are necessary to correct faulty and defective work and as are necessary to maintain said work in a watertight condition.
- D. This Warranty is made subject to the following terms and conditions:
 - 1. Specifically excluded from this Warranty are damages to work and other parts of the building, and to building contents, caused by:
 - a. lightning;
 - b. peak gust wind speed exceeding 90 **mph**

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- c. fire;
 - d. failure of roofing system substrate, including cracking, settlement, excessive deflection, deterioration, and decomposition;
 - e. faulty construction of parapet walls, copings, chimneys, skylights, vents, equipment supports, and other edge conditions and penetrations of the work;
 - f. vapor condensation on bottom of roofing; and
 - g. activity on roofing by others, including construction contractors, maintenance personnel, other persons, and animals, whether authorized or unauthorized by Owner.
2. When work has been damaged by any of foregoing causes, Warranty shall be null and void until such damage has been repaired by Roofing Installer and until cost and expense thereof have been paid by Owner or by another responsible party so designated.
 3. Roofing Installer is responsible for damage to work covered by this Warranty but is not liable for consequential damages to building or building contents resulting from leaks or faults or defects of work.
 4. During Warranty Period, if Owner allows alteration of work by anyone other than Roofing Installer, including cutting, patching, and maintenance in connection with penetrations, attachment of other work, and positioning of anything on roof, this Warranty shall become null and void on date of said alterations, but only to the extent said alterations affect work covered by this Warranty. If Owner engages Roofing Installer to perform said alterations, Warranty shall not become null and void unless Roofing Installer, before starting said work, shall have notified Owner in writing, showing reasonable cause for claim, that said alterations would likely damage or deteriorate work, thereby reasonably justifying a limitation or termination of this Warranty.
 5. During Warranty Period, if original use of roof is changed and it becomes used for, but was not originally specified for, a promenade, work deck, spray-cooled surface, flooded basin, or other use or service more severe than originally specified, this Warranty shall become null and void on date of said change, but only to the extent said change affects work covered by this Warranty.
 6. Owner shall promptly notify Roofing Installer of observed, known, or suspected leaks, defects, or deterioration and shall afford reasonable opportunity for Roofing Installer to inspect work and to examine evidence of such leaks, defects, or deterioration.
 7. This Warranty is recognized to be the only warranty of Roofing Installer on said work and shall not operate to restrict or cut off Owner from other remedies and resources lawfully available to Owner in cases of roofing failure. Specifically, this Warranty shall not operate to relieve Roofing Installer of responsibility for performance of original work according to requirements of the Contract Documents, regardless of whether Contract was a contract directly with Owner or a subcontract with Owner's General Contractor.

E. IN WITNESS THEREOF, this instrument has been duly executed this _____ day of _____, _____.

1. Authorized Signature: _____.
2. Name: _____.
3. Title: _____.

END OF SECTION 075113

SECTION 312316 – TRENCHING

PART 1 GENERAL

1.1 SUMMARY

- A. Section includes excavating trenches for utilities from outside building to final connection point or public right-of-way or utility; compacted fill from top of utility bedding to subgrade elevations; and backfilling and compaction.
- B. Related Sections:
 - 1. Section 03 30 00 – Cast-in-Place Concrete.

1.2 DEFINITIONS

- A. Utility: Any buried pipe, duct, conduit, or cable.

1.3 FIELD MEASUREMENTS

- A. Verify field measurements prior to fabrication.

1.4 COORDINATION

- A. Section 01 06 00 - Regulatory Requirements.
- B. Verify Work associated with lower elevation utilities is complete before placing higher elevation utilities.
- C. Verify elevations of existing facilities prior to placing new Work.

PART 2 PRODUCTS

2.1 FILL MATERIALS

- A. Fill and Structural Fill shall be: As specified in the project Soils Report and any supplements to the Soils Report.

2.2 ACCESSORIES

- A. Filter Fabric: Non-biodegradable, woven as manufactured by TC Mirafi, Tenax Corp., Tensar Earth Technologies, Inc. or equal.

PART 3 EXECUTION

3.1 LINES AND GRADES

A. Grades

1. Pipes shall be laid true to the lines and grades indicated.
2. The grade alignment of the pipe shall be maintained by the use of a string line parallel with the grade line and vertically above the centerline of the pipe. This line shall be established on level batter boards at intervals of not more than 25 feet. Batter boards shall span the trench and be rigidly anchored to substantial posts driven into the ground on each side of the trench. Three adjacent batter boards must be set before laying pipe to provide a check on the grades and line. Elevation and position of the string line shall be determined from the elevation and position of offset points or stakes located along the pipe route. Pipe shall not be laid using side lines for line or grade.
3. As an alternative means of establishing alignment and grade, a "Laser-Beam" instrument may be utilized with a competent operator.

B. Location of Pipe Lines:

1. The location and approximate depths of the proposed pipe lines are shown on the Drawings.
2. An underground locate service shall be enlisted to discover the location of existing utilities regardless if they are shown on the drawings.
3. The Architect/Engineer reserves the right to make changes in lines, grades, and depths of pipe lines and manholes when such changes are necessary.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum locations.
- B. Protect plant life, lawns, and other features remaining as a portion of final landscaping.
- C. Protect bench marks, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- D. Maintain and protect above and below grade utilities which are to remain.
- E. Cut out soft areas of subgrade not capable of compaction in place. Backfill and compact to density equal to or greater than requirements for subsequent backfill material.

3.3 EXCAVATING

- A. Excavate subsoil required for utilities.

- B. Cut trenches sufficiently wide to enable installation and allow inspection. Remove water or materials that interfere with Work.
- C. Do not interfere with 45 degree bearing splay of foundations.
- D. Hand trim excavation. Hand trim for bell and spigot pipe joints. Remove loose matter.
- E. Remove lumped subsoil, boulders, and rock as directed by the Soils Engineer or other inspector.
- F. Correct over excavated areas with backfill and compact replacement as specified for authorized excavation.
- G. Stockpile excavated material on site. Remove excess material not being used from site.

3.4 TRENCHING

- A. Excavations:
 - 1. Excavation shall be dug so that the pipe can be laid and jointed properly. The trench shall be made so that the pipe can be laid to the alignment and depth as shown on the Drawings, and it shall be excavated only so far in advance of pipe laying as permitted by the Architect/Engineer. The excavation shall not be more than two feet wider at the bottom than the outside diameter of the pipe or structure. If there is no interference with construction, or adjacent property, and if soil permits, the Contractor at his own expense shall be permitted to slope the side walls of the excavation starting at a point two (2) feet above the top of pipe.
 - 2. The trench shall be excavated to the depth required so as to provide a uniform and continuous bearing and support for the pipe on bedding material at every point between joints, except where pipe slings or other lifting tackle are withdrawn.
 - 3. Excavation Below Grade:
 - 1) Where excavation indicates that the subsurface materials at the bottom of the trench are in a loose or soft state, the Contractor shall be advised to excavate to a depth where suitable material is encountered, as directed by the Architect/Engineer.
 - 2) Where the bottom of the trench has been excavated by mistake to a greater depth than required, the Contractor shall refill this area using approved material. No additional compensation shall be given to the Contractor. Refilling with earth to bring the bottom of the trench to the proper grade will not be permitted.
 - 4. Excavation within 24 inches of existing utilities shall be governed by specifications of the Owner of the respective utility. The Contractor shall obtain these specifications and follow the same at no extra cost.

5. Excavation and shoring shall adhere to the requirements and safety standards set by OSHA.
- B. Trenching in Advance of Pipe Laying: The trench for the pipe lines shall not be opened for a distance of more than 200 feet at any one time, unless authorized by the Architect/Engineer. At no time will the Contractor be permitted to leave more than 50 feet of trench open at the end of a working day. Adequate protection of open trench shall be provided by the Contractor and the Contractor shall be responsible therefore.

3.5 SHEETING AND BRACING

- A. General:
 1. Sheeting and bracing of all excavations shall conform to the latest statutes of the State of California governing safety of workers in the construction industry. When necessary, in the opinion of the Contractor, adequate sheeting and bracing shall be installed to prevent ground movement that may cause damage or settlement to adjacent structures, pipelines and utilities. Any damage due to settlement because of failure to use sheeting or because of inadequate bracing, or through negligence or fault of the Contractor in any other manner, shall be repaired at the Contractor's expense.
 2. Sides of trenches in unsuitable, loose or soft material, five feet or more in depth, shall be shored, sheeted, braced, sloped, or otherwise supported by means of sufficient strength to protect employees working within them.
- B. Sheeting Requirements:
 3. Where excavations are made with vertical sides which require supporting, the sheeting and bracing shall be of sufficient strength to sustain the sides of the excavations and to prevent movement which could in any way injure the Work, or adjacent structures, or diminish the working space sufficiently to delay the Work. Special precautions shall be taken where there is additional pressure due to the presence of other structures.
 4. It shall be the Contractor's responsibility to select sheeting and bracing of sufficient dimensions and strength and type to adequately support the sides of trenches and excavations.
 5. Sheeting and bracing shall be removed before the completion of the Work.

3.6 BACKFILLING

- A. Backfill trenches to contours and elevations shown on the drawings.
- B. Systematically backfill to allow maximum time for natural settlement. Do not backfill over porous, wet, or spongy subgrade surfaces.
- C. Fill materials shall be as specified in the Soils Report and any supplements to the Soils Report.

- D. Employ a placement method that does not disturb or damage utilities in trench. Jetting of backfill materials to achieve compaction shall not be permitted.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Remove surplus fill materials from site.

3.7 TOLERANCES

- A. Section 01 40 00 - Quality Requirements.
- B. Top Surface of Backfilling Under Paved Areas: Plus or minus 0.05 feet from required elevations.
- C. Top Surface of General Backfilling: Plus or minus 1/10 feet from required elevations.

3.8 FIELD QUALITY CONTROL

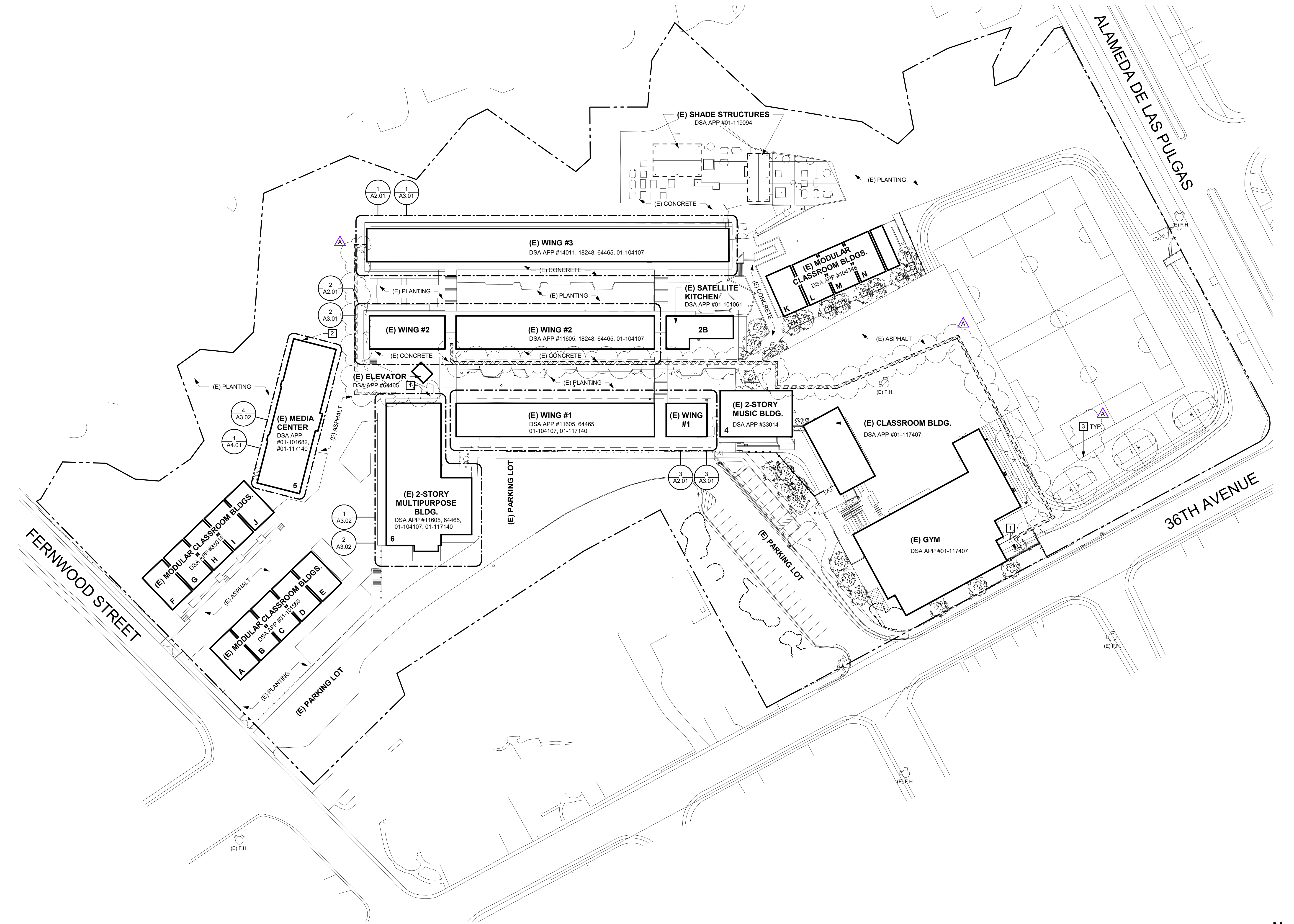
- A. Compaction testing will be performed by the project Soils Engineer.
- B. If tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

3.9 PROTECTION OF FINISHED WORK

- A. Section 01 70 00 - Execution and Closeout Requirements.
- B. Reshape and re-compact fills subjected to vehicular traffic during construction.

END OF SECTION

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1 NEW SITE PLAN
SCALE: 1" = 40'-0"

GENERAL SHEET NOTES

- A BUILDINGS ARE UNSPRINKLERED, TYPE V-B CONSTRUCTION UNLESS OTEHRWISE NOTED.
- B NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN APPROVED BY DSA.
- C CONTRACTOR SHALL MAINTAIN FIRE LANE ACCESS THROUGHOUT PROJECT.
- D DO NOT INTERRUPT EXISTING UTILITY SERVICES SERVING OCCUPIED OR USED FACILITIES, EXCEPT WHEN AUTHORIZED IN WRITING BY AND COORDINATED WITH THE OWNER.
- E PROTECT EXISTING & NEW STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, TREES AND SHRUBS FROM DAMAGE DURING CONSTRUCTION.
- F REFER TO STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXTENT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL 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 RESTRIPIING PAVING IN KIND, S.E.D. FOR TRENCH ROUTING. SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING

SITE PLAN KEYNOTES

- 1 (E) SWITCHBOARD, S.E.D.
- 2 REMOVE (E) MECHANICAL UNITS AND HOUSEKEEPING PAD. PREP FOR NEW WORK, S.M.D. AND SEE A3.02.
- 3 (E) STRIPING TO REMAIN.

GRAPHIC KEY

- EXISTING CONSTRUCTION TO REMAIN
- EXISTING COVERED STRUCTURE
- TRENCH FOR ELECTRICAL WORK, S.E.D., 8/55.01 & DETAILS ON SHEET A8.10
- PROPERTY LINE
- EXISTING FIRE HYDRANT

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PROJECT

ABBOTT MIDDLE
SCHOOL - HVAC
REPLACEMENT

SAN MATEO-FOSTER CITY
SCHOOL DISTRICT

CONSULTANT

STAMP



STATE

DSA FILE NUMBER 41-26

APPL # 01-119556

REVISIONS

No.	Description	Date
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1	Addendum 1	11/16/2021
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MILESTONES

DD	
90% CD	
DSA SUB	06/03/21
BACKCHECK	09/29/21

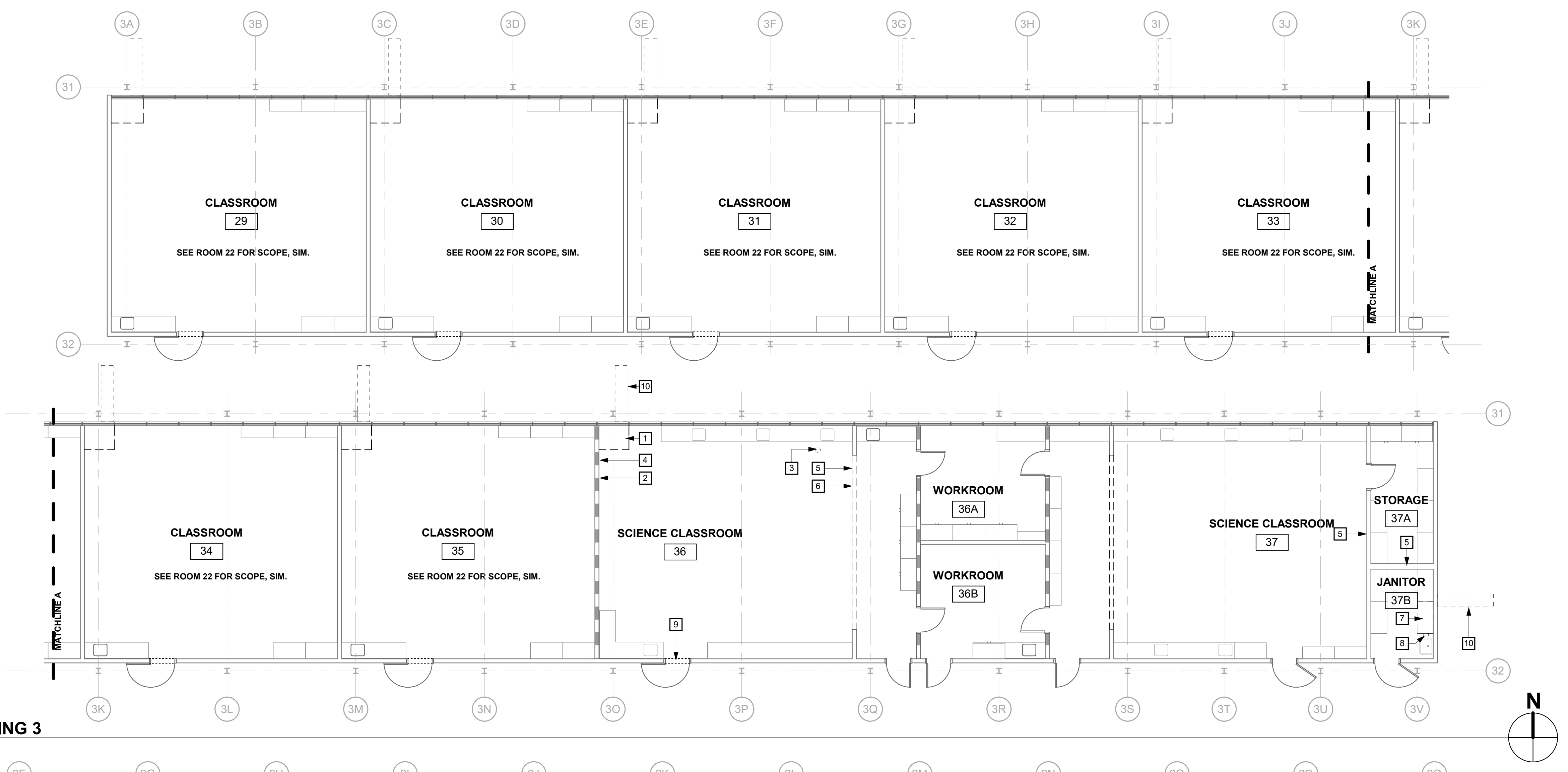
SHEET

SITE PLAN

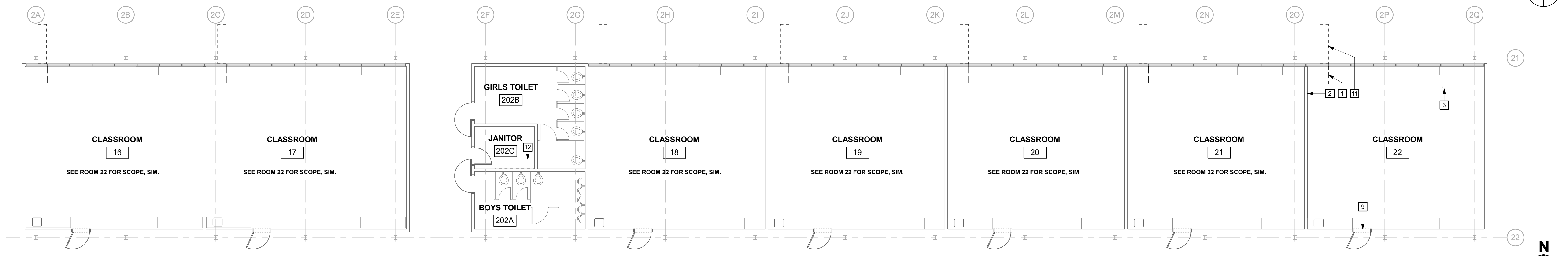
DATE 11/24/2021

JOB # 2021005.06

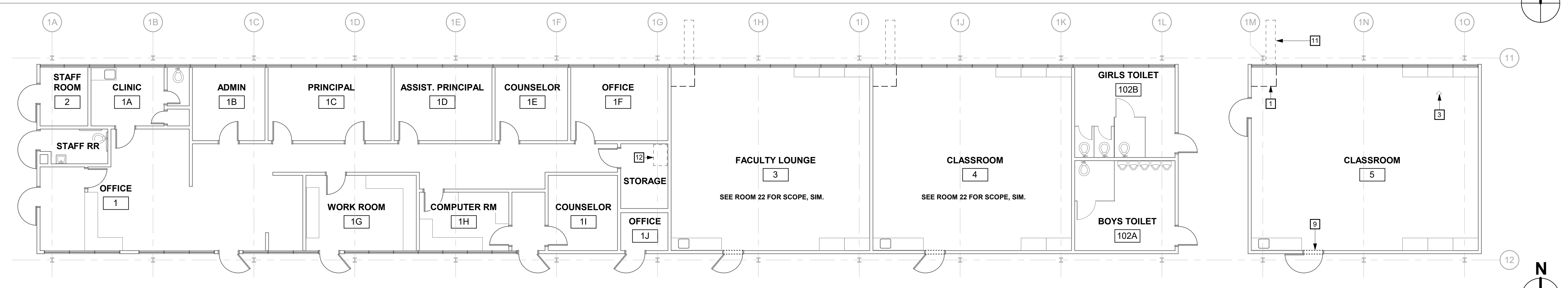
SHEET # AD1-
A1.02



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



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



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

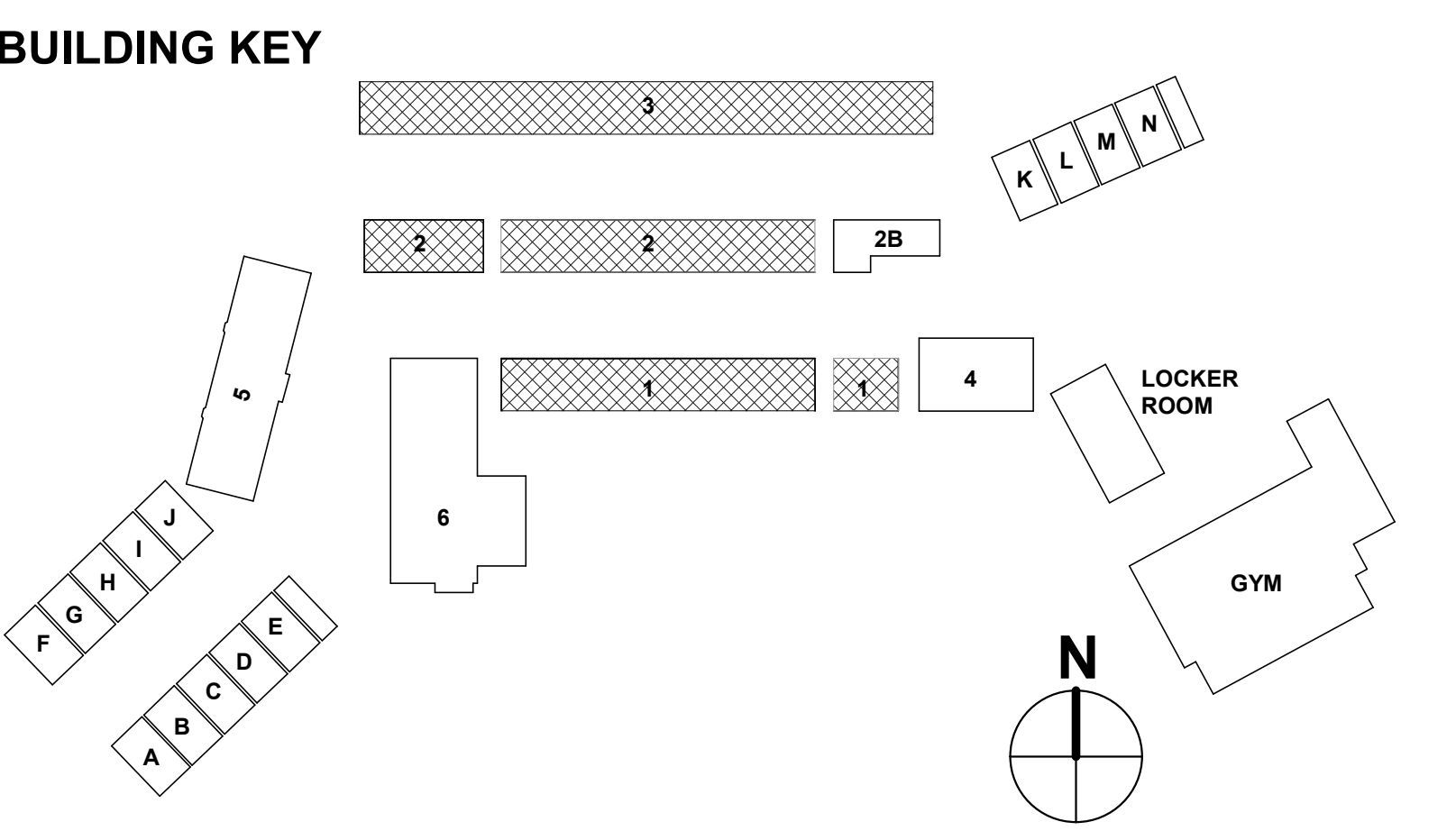
GENERAL SHEET NOTES CONTINUED

1 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.

- GENERAL SHEET NOTES
- A ROOM NAMES OR NUMBERS MAY NOT BE CONSISTENT BETWEEN DEMOLITION AND NEW FLOOR PLANS.
 - B REFER TO STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXTENT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL DEMOLITION WORK.
 - C VERIFY LIMITS OF DEMOLITION WITH SCOPE OF NEW WORK PRIOR TO COMMENCING WORK.
 - D ALL ITEMS SHOWN DASHED ARE TO BE DEMOLISHED UNLESS OTHERWISE NOTED ON PLANS.
 - E REMOVE ALL MISCELLANEOUS TRIM, CASEWORK, EQUIPMENT, CONDUIT, BASES, AND OTHER SURFACE MOUNTED ITEMS WHETHER SHOWN OR NOT, 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.
 - F REMOVE ADJACENT FINISHES AS REQUIRED TO FACILITATE SCOPE OF WORK. PATCH BACK IN KIND.
 - G EXISTING EQUIPMENT INDICATED TO BE RELOCATED PER NEW PLAN IS TO BE STORED AND PROTECTED DURING CONSTRUCTION.
 - H NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN APPROVED BY DSA

- DEMOLITION FLOOR PLAN KEYNOTES
- 1 REMOVE (E) MECHANICAL UNIT AND ENCLOSURE. S.M.D.
 - 2 RECONFIGURE (E) WIREMOLD. SHORTEN CONFIGURATION TIGHT TO NEW ENCLOSURE AND PROVIDE END CAP. SEE NEW FLOOR PLAN FOR MORE INFORMATION.
 - 3 RELOCATE (E) CEILING MOUNTED OCCUPANCY SENSOR, COORDINATED TO NEW DUCT LAYOUT. S.M.D. REPLACE CEILING TILE.
 - 4 RELOCATE (E) DATA OUTLET, COORDINATED TO RECONFIGURED WIREMOLD. LOCATE A.F.F. 15" MIN. TO 48" MAX.
 - 5 CUT AND PREP OPENING FOR MECHANICAL WORK. S.M.D.
 - 6 (E) CASED OPENING ABOVE TO REMAIN.
 - 7 REMOVE (E) CABINET
 - 8 SALVAGE (E) CLEANER DISPENSER FOR REINSTALLATION
 - 9 REMOVE (E) WINDOW GLAZING ABOVE AND PREP FOR NEW WORK. S.M.D.
 - 10 REMOVE PAVING AND PREP FOR NEW WORK. S.M.D.
 - 11 REMOVE PAVING AND PREP PLAYING AREA FOR NEW WORK. S.M.D.
 - 12 REMOVE (E) FULL HEIGHT CASEWORK.

- GRAPHIC KEY
- WALL TYPES:
- EXISTING NONRATED WALL TO REMAIN.
 - EXISTING 1 HR. RATED WALL TO REMAIN.
 - EXISTING STOREFRONT OR WINDOW TO REMAIN.



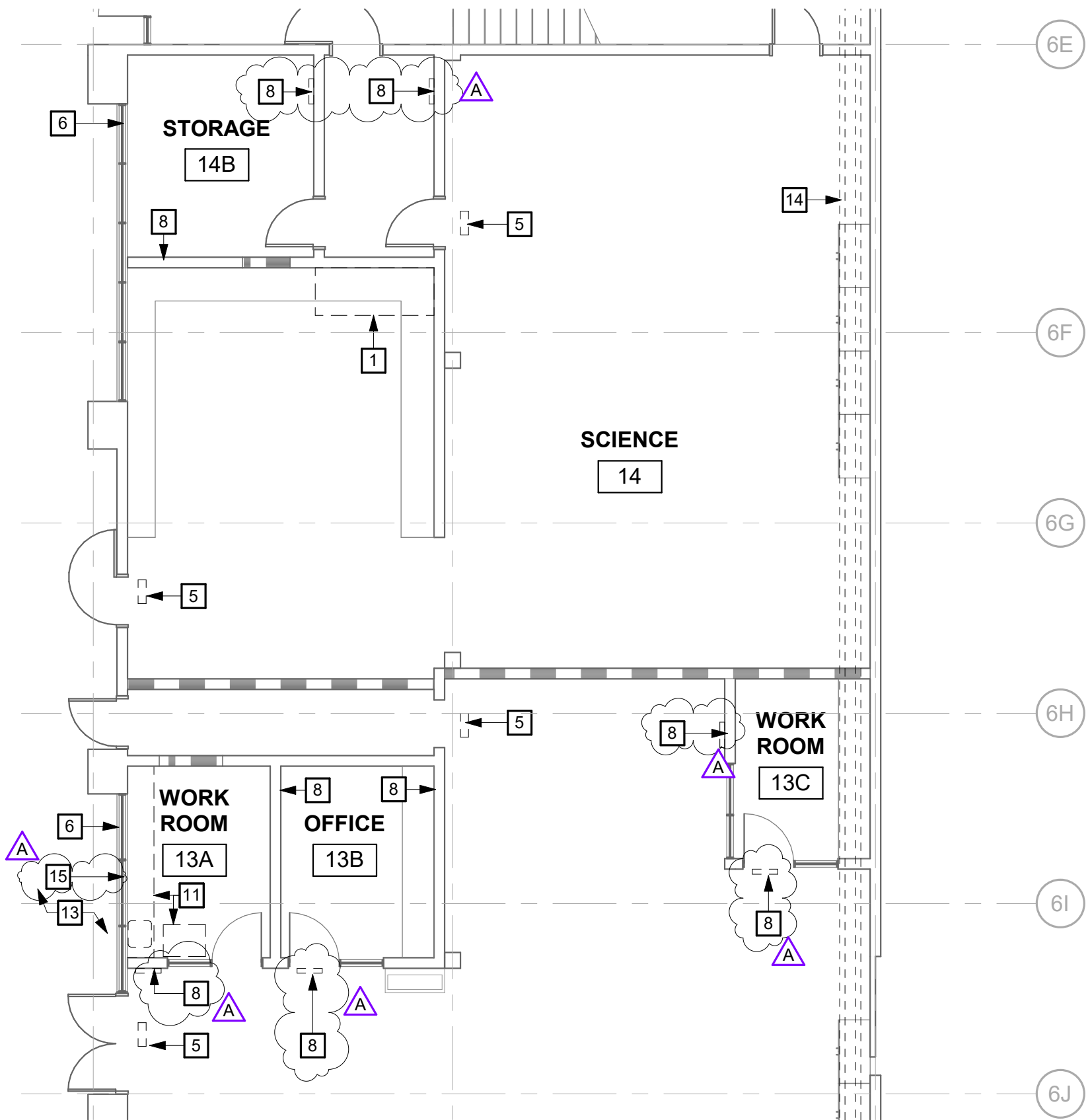
GENERAL SHEET NOTES

1 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.

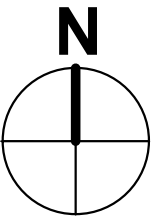


DEMOLITION FLOOR PLAN KEYNOTES

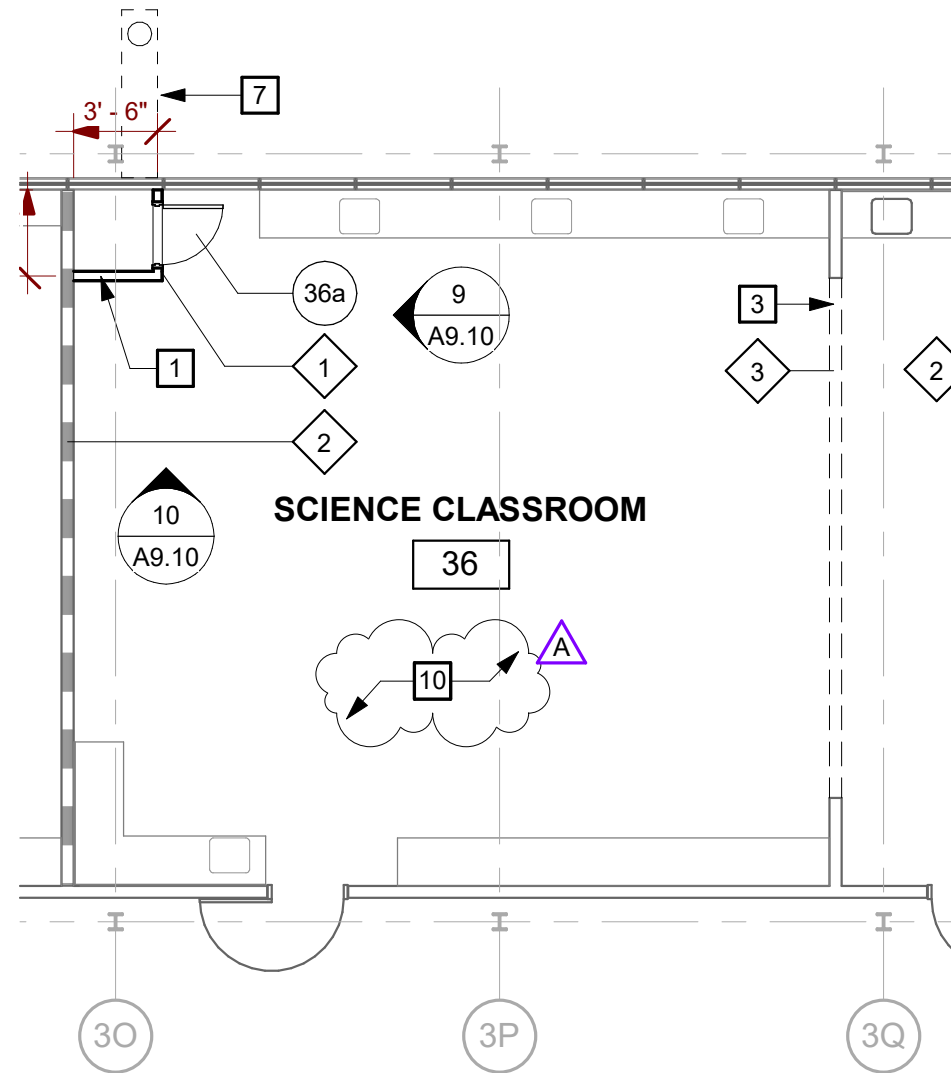
15 REMOVE (E) MECH EQUIPMENT & INFILL PANEL FOR NEW WORK



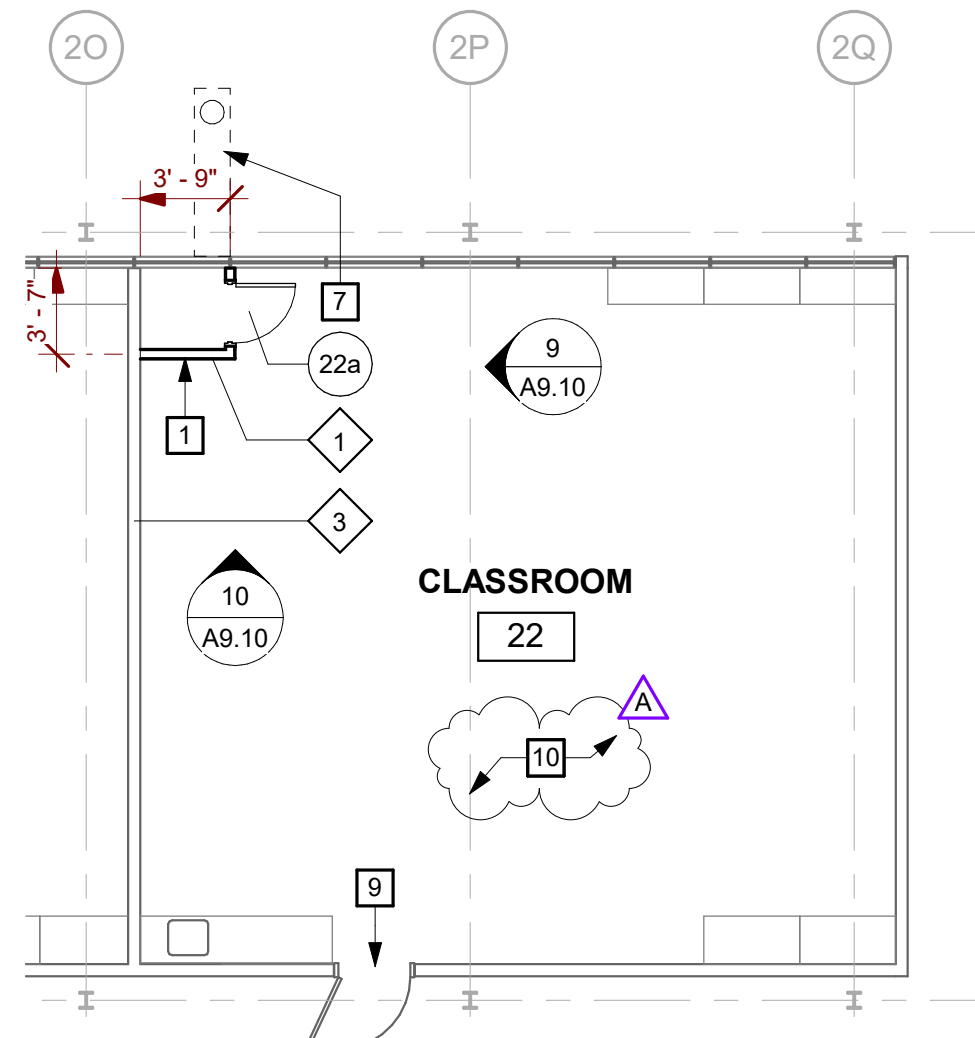
1 DEMOLITION FIRST FLOOR PLAN - MULTIPURPOSE BLDG
SCALE: 1/8" = 1'-0"



 387 S. 1st Street, Suite 300 San Jose, CA., 95113 tel: (408) 300 - 5160 fax: (408) 300 - 5121	ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT SAN MATEO-FOSTER CITY SCHOOL DISTRICT	
	FILE NO.: 41-26	SHEET
	APPL NO.: 01-119556	AD1-A2.02
	JOB NO. 2021005.06 DATE 11/24/2021	



1 NEW FLOOR PLAN - WING 3
SCALE: 1/8" = 1'-0"




2 NEW FLOOR PLAN - WING 2
SCALE: 1/8" = 1'-0"

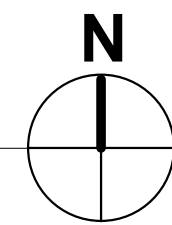
NEW FLOOR PLAN KEYNOTES

- 8 INTERIOR CONDUIT ENCLOSURE, SEE 20/A9.10 AND S.E.D.
- 9 DAMPER @ (E) WINDOW FRAME, S.M.D.
- 10 REFER TO 2/A4.01 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.



		ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT	
		SAN MATEO-FOSTER CITY SCHOOL DISTRICT	
		FILE NO.: 41-26	SHEET AD1-A3.01
		APPL NO.: 01-119556	
JOB NO. 2021005.06			
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1 SITE ROOF PLAN
SCALE: 1/32" = 1'-0"



GENERAL SHEET NOTES

- A REFER TO STRUCTURAL, MECHANICAL, AND ELECTRICAL DRAWINGS FOR EXTENT OF STRUCTURAL, MECHANICAL, AND ELECTRICAL WORK.
- B SIZE OF MECHANICAL EQUIPMENT PADS ARE FOR REFERENCE ONLY. THE CONTRACTOR SHALL VERIFY REQUIRED PAD DIMENSION WITH EQUIPMENT MANUFACTURER.

PROJECT
ABBOTT MIDDLE
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REPLACEMENT

SAN MATEO-FOSTER CITY
SCHOOL DISTRICT

CONSULTANT

STAMP



STATE

DSA FILE NUMBER

41-26

APPL #

01-119556

REVISIONS

No.	Description	Date
1	Addendum 1	11/24/2021

MILESTONES

DD

90% CD

DSA SUB

06/03/21

BACKCHECK

09/29/21

SHEET

SITE ROOF PLAN

DATE 11/24/2021

JOB # 2021005.06

SHEET #

AD-1
A5.01

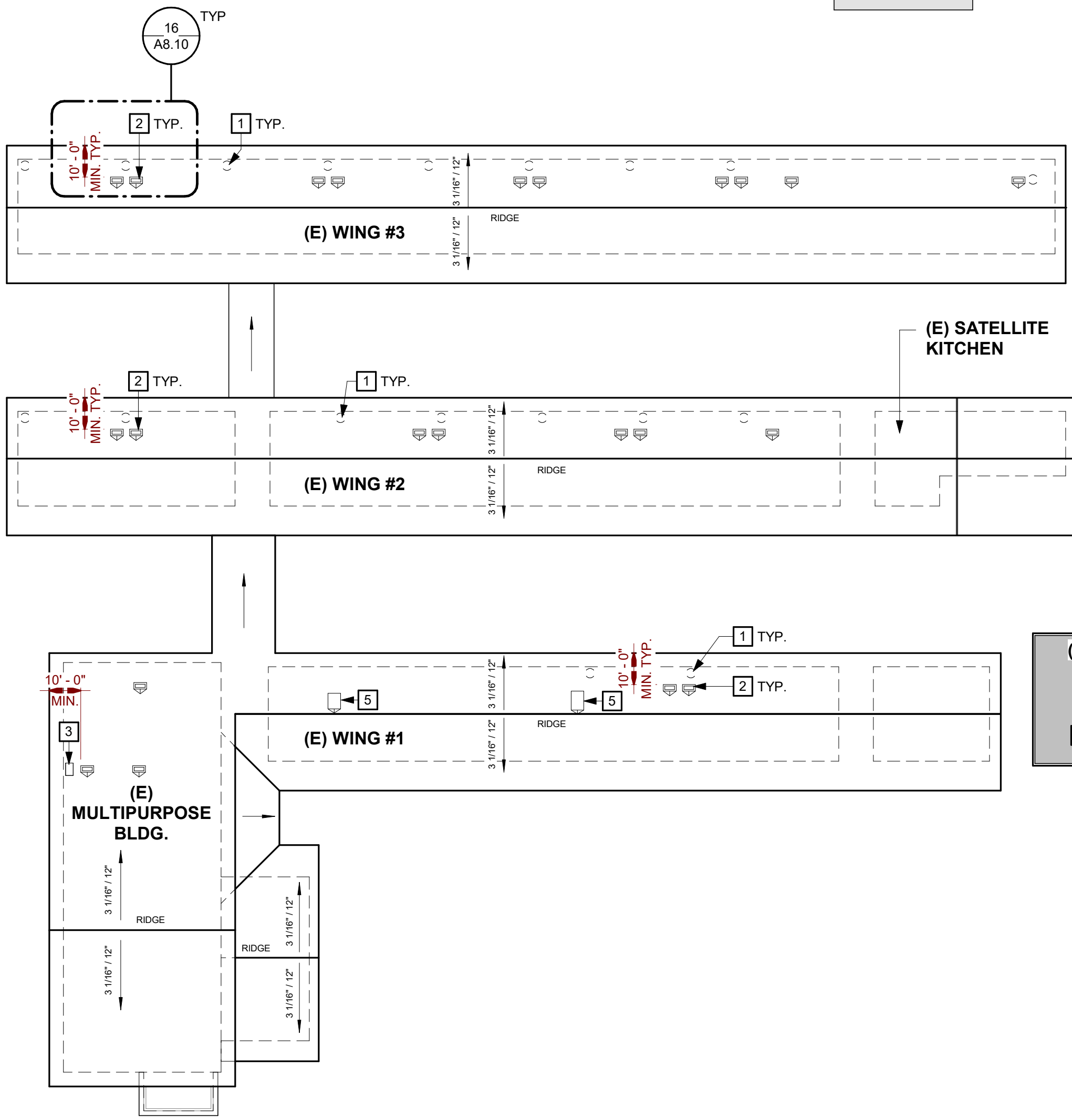
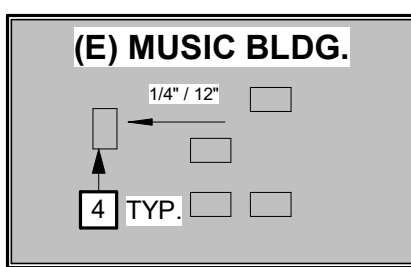
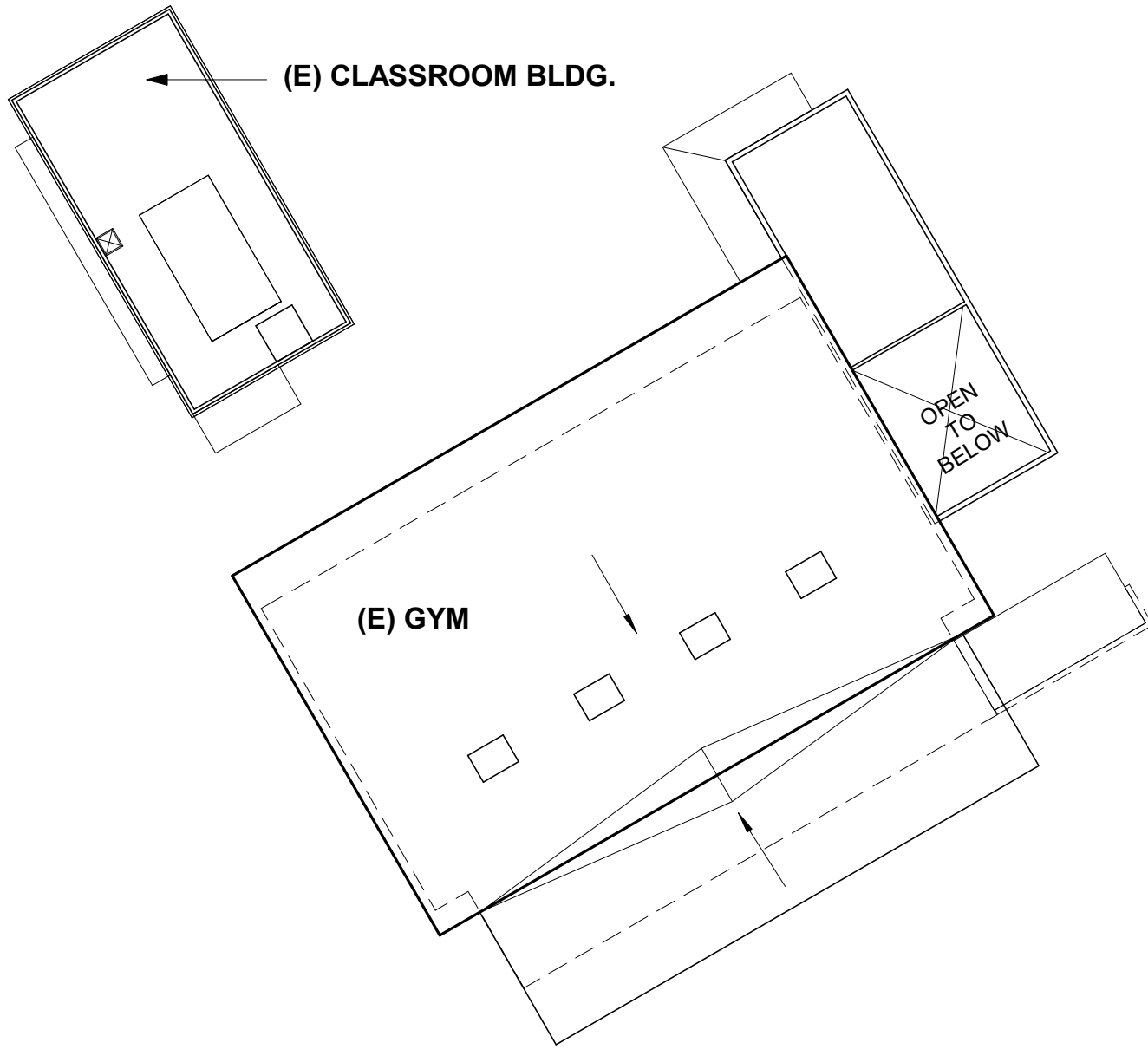
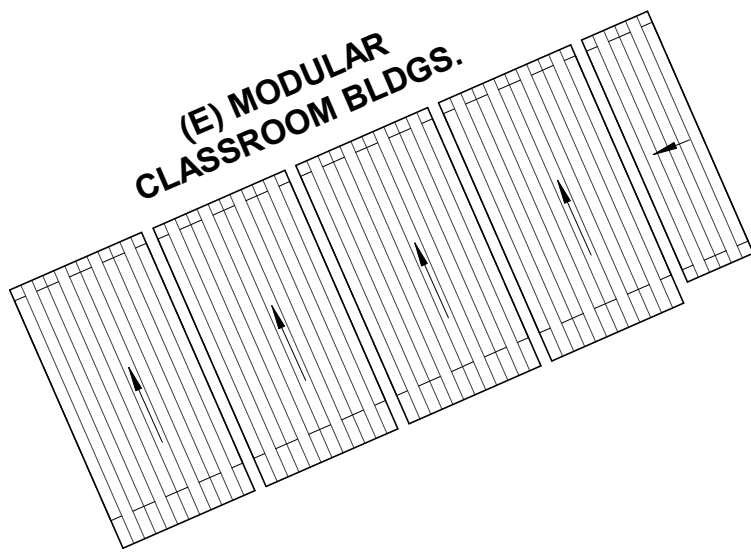
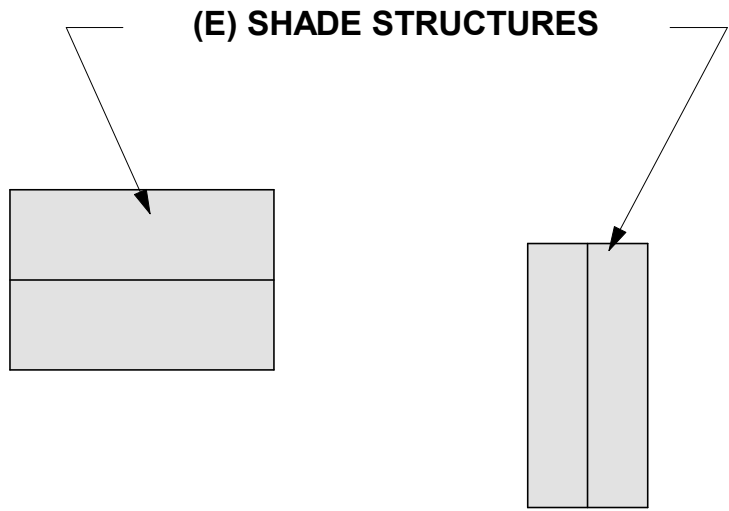
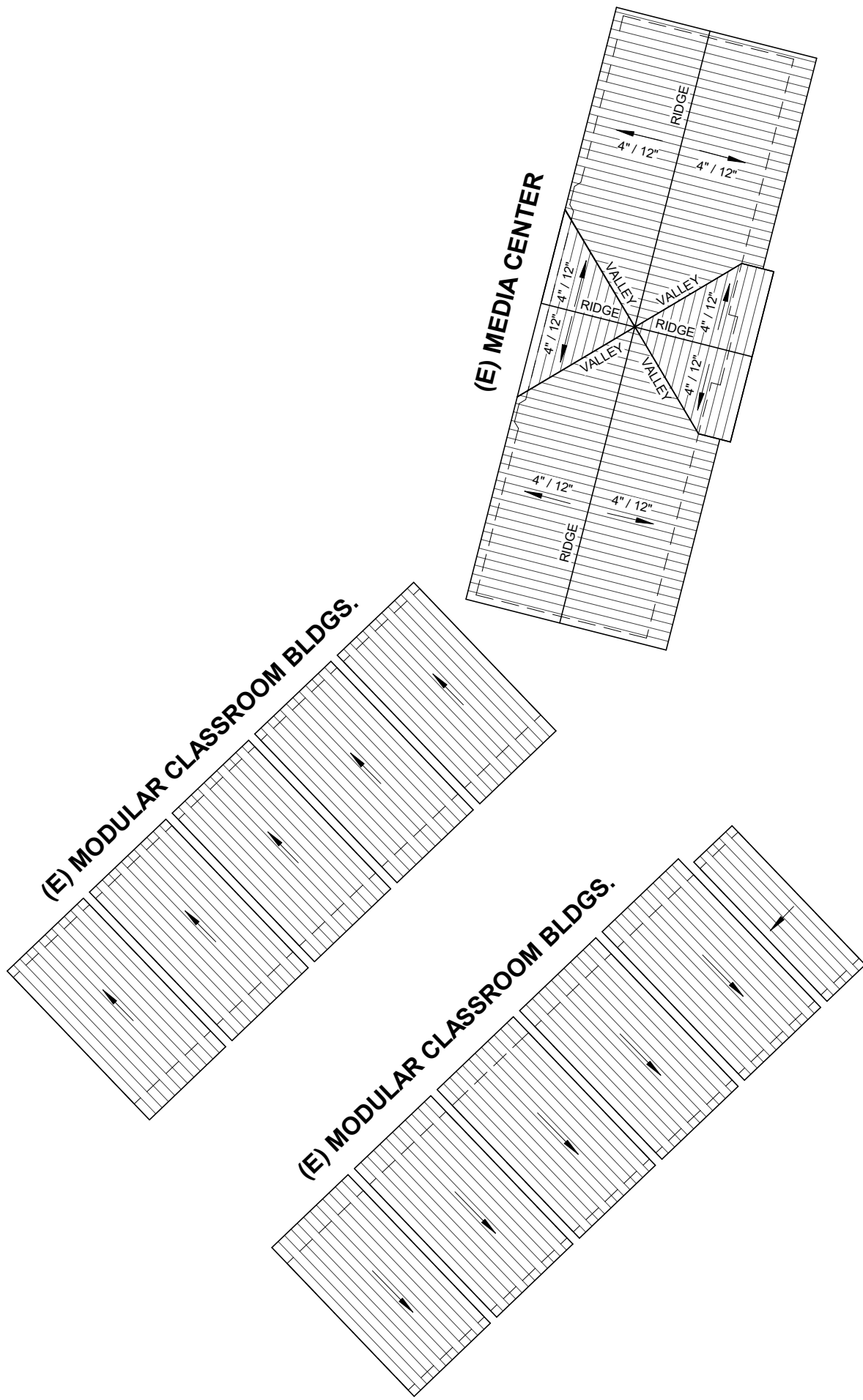
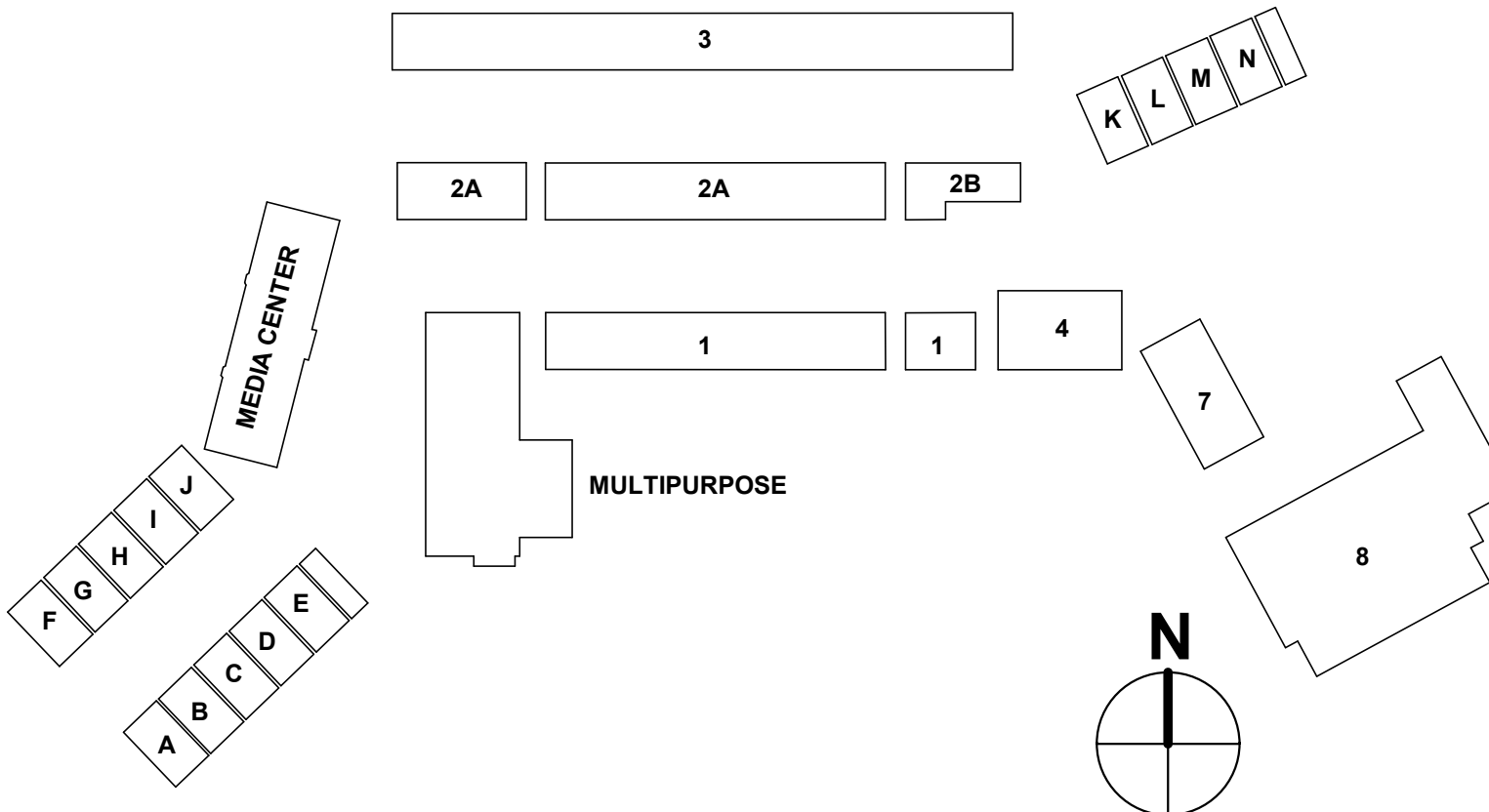
ROOF PLAN KEYNOTES

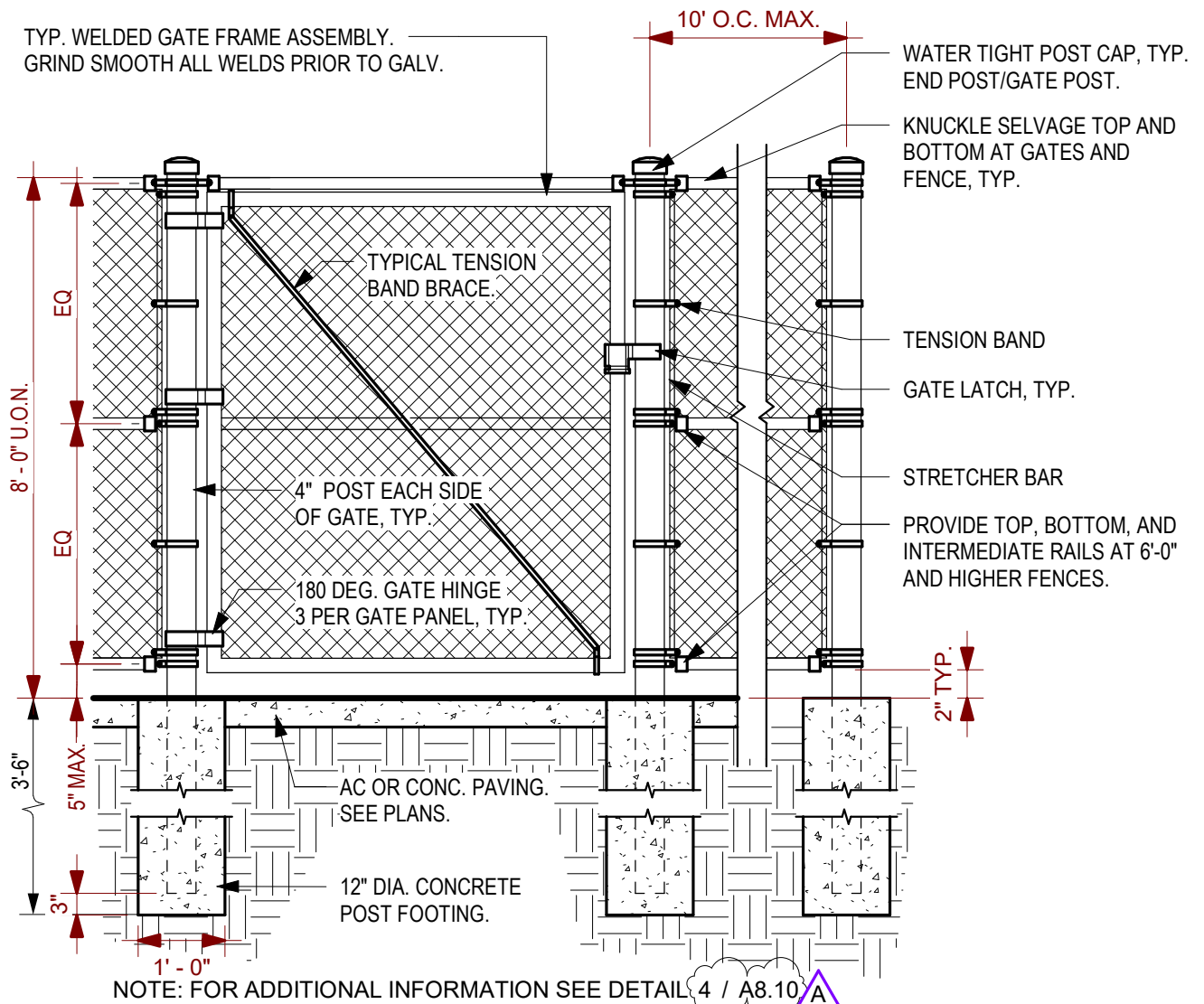
- 1 PATCH (E) PENETRATION AT REMOVED FLUE AND COMBUSTION AIR INTAKE AND PATCH (N) PENETRATIONS. S.M.D. AND SEE DETAIL 17/A8.10
- 2 MECHANICAL UNIT ON PLATFORM WITH CRICKET. S.M.D. AND SEE DETAIL 10/A8.10. REMOVE (E) ROOFING TO SUBSTRATE FOR CONSTRUCTION ACCESS
- 3 (E) AIR INTAKE TO REMAIN. S.M.D.
- 4 MECHANICAL UNIT. S.M.D. REMOVE (E) CURB AND REPLACE WITH NEW IN SAME LOCATION. S.M.D. AND SEE DETAIL 19/A8.10
- 5 MECHANICAL UNIT WITH CRICKET. S.M.D. AND SEE DETAIL 10/A8.10. REMOVE (E) CURB AND REPLACE WITH NEW IN SAME LOCATION.

GRAPHIC KEY

- (E) ASPHALT SHINGLE, CLASS C MINIMUM
- (E) BUILT-UP ASPHALT ROOFING, CLASS C MINIMUM
- (E) STANDING SEAM, CLASS C MINIMUM
- (E) METAL ROOFING
- OUTLINE OF WALL BELOW

BUILDING KEY





2

TYPICAL CHAINLINK GATE (SINGLE)

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



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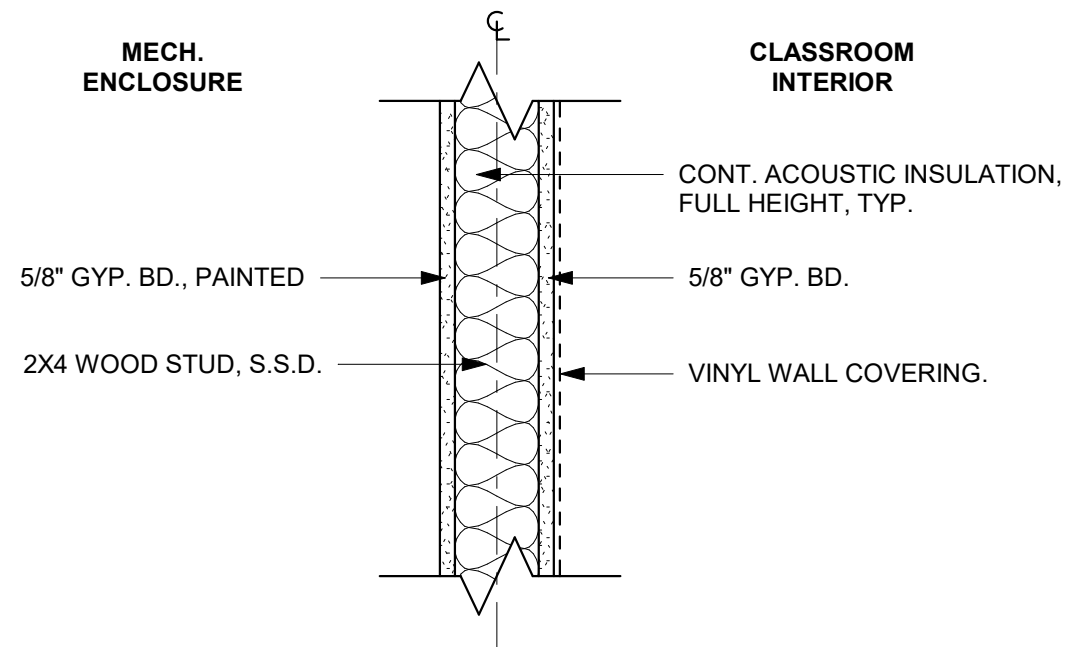
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ABBOTT MIDDLE SCHOOL - HVAC
REPLACEMENT
SAN MATEO-FOSTER CITY SCHOOL DISTRICT

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DATE 11/24/21

SHEET

AD1-A8.10A

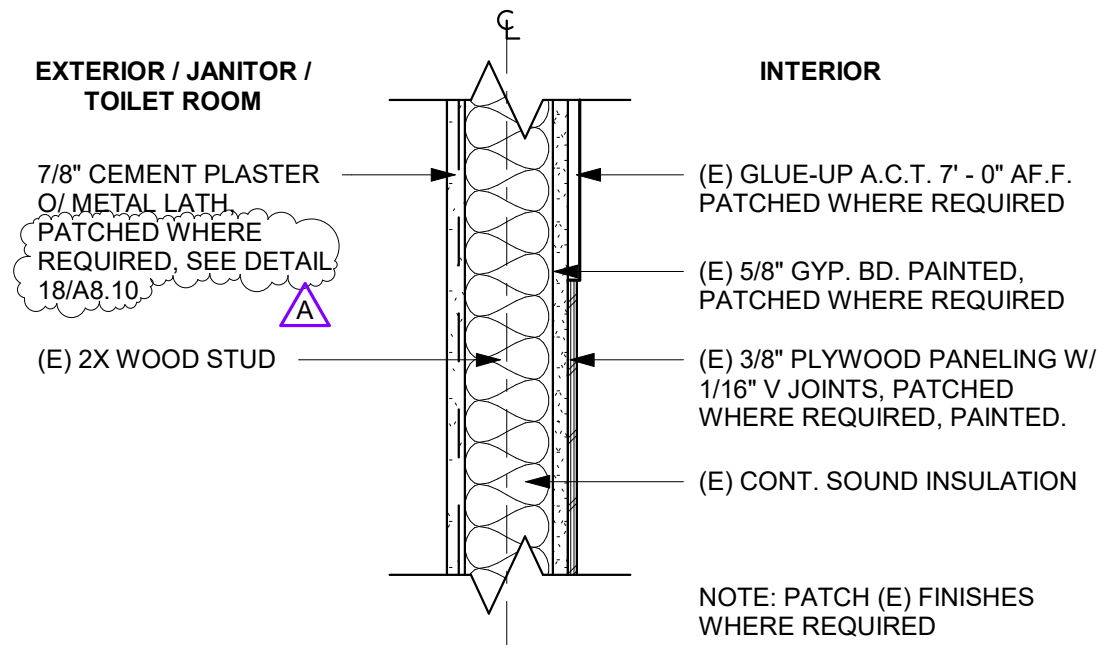


NOTE:
SEE DETAIL 6/A9.10 FOR TYPICAL SOUND TREATED NONRATED WALL.

1

WALL TYPE - MECHANICAL ENCLOSURE

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




NOTE: PATCH (E) FINISHES
WHERE REQUIRED

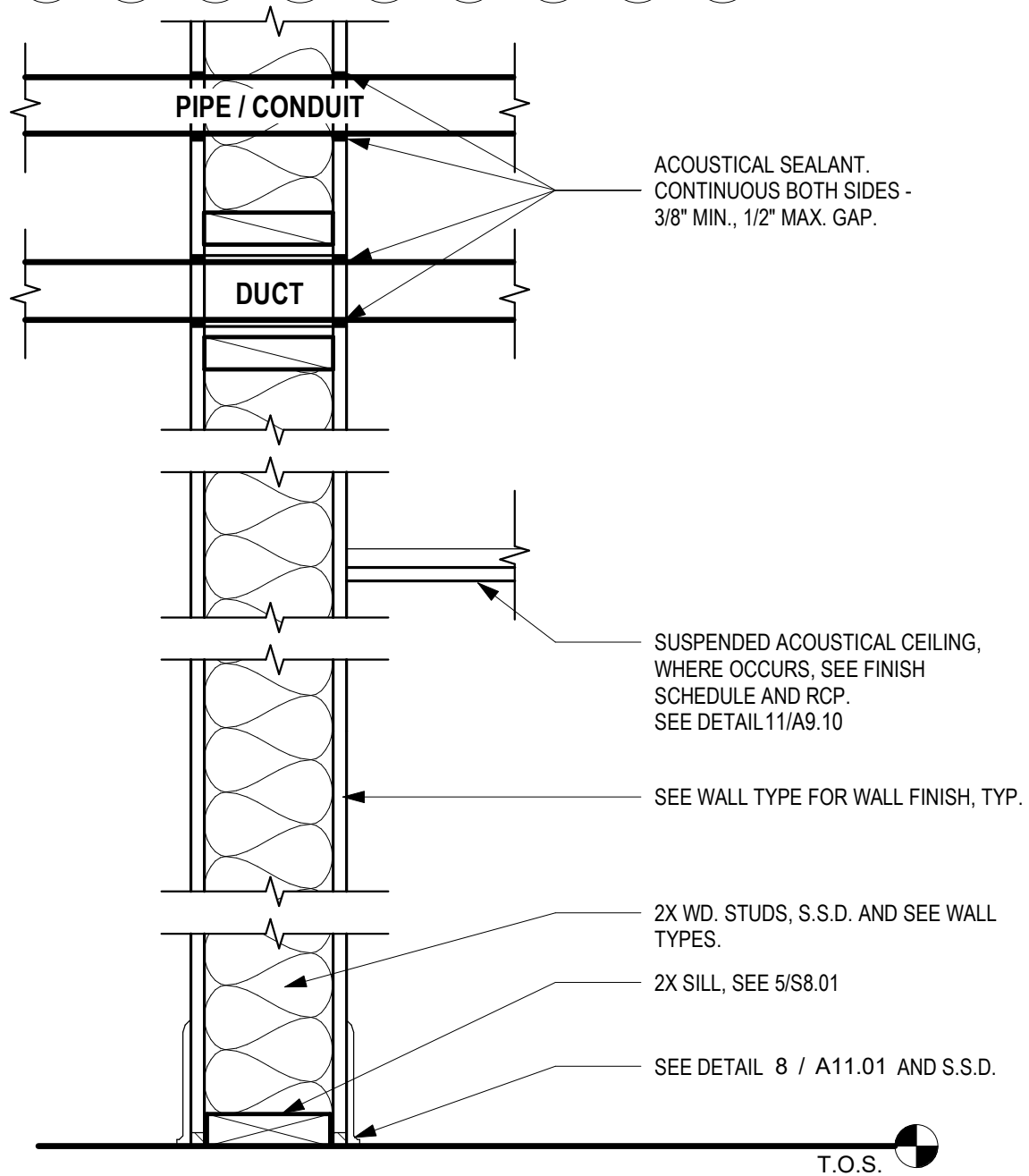
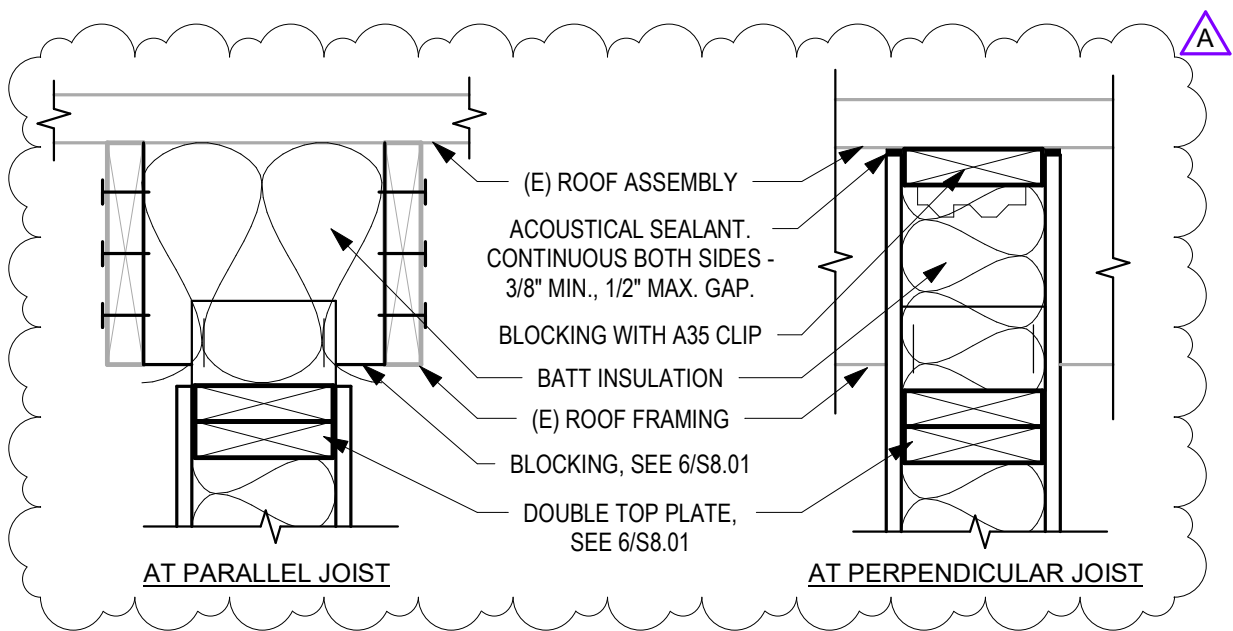
5

(E) WALL TYPE 5 - CEMENT PLASTER

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



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	APPL NO.:	01-119556	
	JOB NO.	2021005.06	
		DATE	11/24/2021




- NOTES:**
1. FOR RECESSED ACCESSORIES OR CABINETS, PROVIDE BLOCKING, GYPSUM BOARD AND ACOUSTICAL SEALANT SIMILAR TO DETAIL AT DUCT.

7 TYPICAL SOUND TREATED NONRATED WALL

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



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tel: (408) 300 - 5160 fax: (408) 300 - 5121		JOB NO. 2021005.06	
		DATE 11/24/2021	

DOOR SCHEDULE

DOOR ID	OPENING SIZE		DOOR		FRAME		DETAIL
	WIDTH	HEIGHT	TYPE	FINISH	TYPE	FINISH	
3a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
4a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
5a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
11a	3' - 0"	2' - 6"	A	P-2	F1	P-3	11/A11.01
16a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
17a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
18a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
19a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
20a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
21a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
22a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
29a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
30a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
31a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
32a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
33a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
34a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
35a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01
36a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01

A



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ABBOTT MIDDLE SCHOOL
- HVAC REPLACEMENT
SAN MATEO FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26
APPL NO.: 01-119556
JOB NO.: 2021005.06
DATE 11/24/2021

SHEET
AD1-A11.01

PACKAGED ROOFTOP AIR CONDITIONING UNITS SCHEDULE																					
TAG	MANUFACTURER	MODEL NO.	BUILDING	AREA SERVED	COOLING MBH		GAS HEATING MBH		AIRFLOW CFM	ESP IN. W.G.	OUTSIDE AIR CFM	FAN RPM	MOTOR BHP	SEER	AFUE %	ELECTRICAL			WEIGHT LBS	MOUNTING DETAIL	NOTES
					TOTAL	SENSIBLE	INPUT	OUTPUT								V / PH	MCA	MOC			
AC-1	CARRIER	48JCEV06	WING 1	ADMINISTRATION	59.06	53.82	82 110	65 88	1990	0.60	450	1959	0.80	19	80	208 / 3	26	30	750	6/MP6.01	1, 2, 3, 4
AC-2	CARRIER	48VCE05		ADMINISTRATION	47.81	44.72	82 110	65 88	1600	0.60	450	1682	0.51	20	80	208 / 3	25	30	740	6/MP6.01	1, 2, 3, 4
AC-3	CARRIER	48VCE05		PE STORAGE 8	47.81	44.72	82 110	65 88	1600	0.60	450	1682	0.51	20	80	208 / 3	25	30	740	6/MP6.01	1, 2, 3, 4
AC-4	CARRIER	48VCE05	MUSIC BLDG	CLUB ROOM 9	47.81	44.72	82 110	65 88	1600	0.60	450	1682	0.51	20	80	208 / 3	25	30	740	6/MP6.01	1, 2, 3, 4
AC-5	CARRIER	48VCE05		CLUB ROOM 9	47.81	44.72	82 110	65 88	1600	0.60	450	1682	0.51	20	80	208 / 3	25	30	740	6/MP6.01	1, 2, 3, 4
AC-6	CARRIER	48JCEV06		BAND ROOM 6	59.06	53.82	82 110	65 88	1990	0.60	450	1959	0.80	19	80	208 / 3	26	30	750	6/MP6.01	1, 2, 3, 4
AC-7	CARRIER	48JCEV06		CLASSROOM 7, STORAGE, OFFICES, PRACTICE ROOM, CONF.	59.06	53.82	82 110	65 88	1990	0.60	450	1959	0.80	19	80	208 / 3	26	30	750	6/MP6.01	1, 2, 3, 4

- WEIGHT INCLUDES ALL OPTIONS AND ACCESSORIES.
- PROVIDE WITH LOW LEAK ECONOMIZER WITH BAROMETRIC RELIEF, MEDIUM GAS HEAT, VARIABLE SPEED COOLING CAPACITY, HIGH STATIC DIRECT DRIVE FAN, LOUVERED HAIL GUARDS, HINGED ACCESS PANELS, UNPOWERED CONVENIENCE OUTLET, PHASE MONITOR, AND E-COAT COILS.
- PROVIDE WITH MERV 13 FILTERS.
- PROVIDE WITH DELTA CONTROLS THERMOSTAT WITH CO2 SENSOR. SEE MP5.01 FOR CONTROLS.

PACKAGED INDOOR WALL HEAT PUMPS SCHEDULE																		
TAG	MANUFACTURER	MODEL NO.	AREA SERVED	COOLING MBH		HEATING MBH	AIRFLOW CFM	ESP IN. W.G.	OUTSIDE AIR CFM	MOTOR HP	EER	COP	ELECTRICAL			WEIGHT LBS	MOUNTING DETAIL	NOTES
				TOTAL	SENSIBLE								V / PH	MCA	MOC			
WHP-1	BARD	Q48H4-809	PREP AREA 207, SERVING AREA 207A	49.8	31.5	39.5	1500	0.5	200	1/2	11.0	3.3	208/3	54	60	530	12/MP6.01	1, 2, 3, 4

- PROVIDE WITH COMMERCIAL ROOM VENTILATOR AND 2" MERV 13 FILTERS.
- PROVIDE WITH 10 KW ELECTRIC HEAT.
- PROVIDE WITH WALL SLEEVE WITH SPLITTER PLATE, CABINET EXTENSION AND AMCA RATED OUTDOOR LOUVER, PRIME AND PAINT TO MATCH EXISTING FINISH.
- PROVIDE WITH DELTA CONTROLS THERMOSTAT. SEE MP5.02 FOR CONTROLS.

WALL HEAT PUMPS SCHEDULE																	
TAG	MANUFACTURER	MODEL NO.	AREA SERVED	COOLING MBH	HEATING MBH	AIRFLOW CFM	W.S.P. IN. W.G.	OUTSIDE AIR CFM	MOTOR HP	EER	COP	ELECTRICAL			WEIGHT LBS	MOUNTING DETAIL	NOTES
												V / PH	MCA	MOC			
WHP-23	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-24	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-25	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-26	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-38	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-39	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-40	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-41	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-42	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-43	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-44	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-45	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-46	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3
WHP-47	BARD	T42S1-A05	SEE PLANS	39.5	39	1250	0.25"	300	3/4	11.0	3.3	208 / 1	57	60	600	7/MP6.01	1, 2, 3

- PROVIDE WITH 9KW ELECTRIC HEAT.
- PROVIDE WITH COMMERCIAL ROOM VENTILATOR AND 2" MERV 13 FILTERS.
- PROVIDE WITH DELTA CONTROLS THERMOSTAT WITH CO2 SENSOR. SEE MP5.02 FOR CONTROLS.

AIR DISTRIBUTION SCHEDULE						
TAG	MANUFACTURER	MODEL NO.	DESCRIPTION	BORDER TYPE	MOUNTING DETAIL	NOTES
HSS-1	TITUS	S300FL	HIGH SIDEWALL SUPPLY	TYPE 1	13/MP6.01	1, 2, 4
HSS-2	TITUS	300RL	HIGH SIDE SUPPLY	TYPE 1	14/MP6.01	1, 2
HSR-1	TITUS	350RL	HIGH SIDEWALL RETURN	TYPE 1	14/MP6.01	2
LSR-1	TITUS	350RL	LOW SIDEWALL RETURN	TYPE 1	14/MP6.01	2, 3
RG-1	TITUS	30RL	RELIEF GRILLE	TYPE 1	17/MP6.01	2, 5

- SET BLADES AT 22.5° DEFLECTION.
- PRIME AND PAINT PER ARCHITECT'S INSTRUCTIONS. REGISTER COLOR SELECTED BY ARCHITECT.
- PROVIDE WITH ARSAN COMPACT DUCT SILENCER.
- PROVIDE WITH ASD AIR SCOOP DEVICE.
- CONTRACTOR TO FIELD VERIFY (E) DIMENSIONS PRIOR TO ORDERING.

CLASSROOM SPLIT SYSTEM HEAT PUMPS SCHEDULE																		
TAG	MANUFACTURER	MODEL	BUILDING	LOCATION	COOLING	HEATING	AIRFLOW CFM	OUTSIDE AIR CFM	REFRIGERANT PIPING		SEER	HSPF	ELECTRICAL			WEIGHT LBS	MOUNTING DETAIL	NOTES
					TOTAL MBH	TOTAL MBH			LIQUID	GAS			V / PH	MCA	MOC			
FC-3	SAMSUNG	AM054TNZDCHIAA	WING 1	CLASSROOM 3	53	61	1150	450	3/8"	3/4"	—	—	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-3	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-4	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 4	53	61	1150	450	3/8"	3/4"	—	—	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-4	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-5	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 5	53	61	1150	450	3/8"	3/4"	—	—	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-5	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-T-1A	SAMSUNG	AC042KNZDCHIAA	MULTI-PURPOSE BUILDING	STAFF WORK ROOM	42	47	1000	350	3/8"	5/8"	—	—	NOTE 8			125	1/MP6.02	2, 3, 4, 5, 6, 7, 8, 9
HP-T-1A	SAMSUNG	AC042KXADCHIAA		EXTERIOR			—	—	3/8"	5/8"	18.4	9.6	208 / 1	26.4	40	195	4/MP6.01	1
FC-T-1B	SAMSUNG	AC042KNZDCHIAA		STAFF LOUNGE	42	47	1000	350	3/8"	5/8"	—	—	NOTE 8			125	1/MP6.02	2, 3, 4, 5, 6, 7, 8, 9
HP-T-1B	SAMSUNG	AC042KXADCHIAA		EXTERIOR			—	—	3/8"	5/8"	18.4	9.6	208 / 1	26.4	40	195	4/MP6.01	1
FC-15	SAMSUNG	AC030MNHDCCHIAA		CLASSROOM 15	30	32	670	180	3/8"	5/8"	—	—	NOTE 8			125	2/MP6.02	2, 4, 7, 8, 10
HP-15	SAMSUNG	AC030JXSCCCHIAA		EXTERIOR			—	—	3/8"	5/8"	19.0	10.1	208 / 1	32	45	212	4/MP6.01	1
FC-16	SAMSUNG	AM054TNZDCHIAA	WING 2	CLASSROOM 16	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-16	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-17	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 17	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-17	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-18	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 18	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-18	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-19	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 19	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-19	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-20	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 20	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-20	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-21	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 21	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-21	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-22	SAMSUNG	AM054TNZDCHIAA	CLASSROOM 22	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7	
HP-22	SAMSUNG	AM053TXMDCHIAA	ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1	
FC-29	SAMSUNG	AM054TNZDCHIAA	WING 3	CLASSROOM 29	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-29	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-30	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 30	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-30	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-31	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 31	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-31	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-32	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 32	53	61	1150	450	3/8"	3/4"	—	—	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-32	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-33	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 33	53	61	1150	450	3/8"	3/4"	—	—	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-33	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-34	SAMSUNG	AM054TNZDCHIAA		CLASSROOM 34	53	61	1150	450	3/8"	3/4"	—	—	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7
HP-34	SAMSUNG	AM053TXMDCHIAA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-35	SAMSUNG	AM054TNZDCHIAA	CLASSROOM 35	53	61	1150	450	3/8"	3/4"	—	—	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7	
HP-35	SAMSUNG	AM053TXMDCHIAA	ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1	
FC-36	SAMSUNG	AM054TNZDCHIAA	CLASSROOM 36	53	61	1400	450	3/8"	3/4"	—	—	208/1	2.6	15	165	1/MP6.01	2, 3, 4, 6, 7	
HP-36	SAMSUNG	AM053TXMDCHIAA	ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1	
FC-37	SAMSUNG	AM054TNZDCHIAA	JANITOR 37B	53	61	1400	450	3/8"	3/4"	—	—	208/1	2.6	15	165	2/MP6.01	2, 3, 4, 6, 7	
HP-37	SAMSUNG	AM053TXMDCHIAA	ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1	

DEMOLITION SHEET NOTES

1. REMOVE (E) FURNACE ENCLOSURE AND FURNACE, COMPLETE, TYP. SEE 3/MP2.01 FOR TYPICAL FURNACE DEMO.

2. REMOVE (E) THERMOSTAT AND WIRING BACK TO (E) FURNACE. SALVAGE (E) THERMOSTAT AND UNIT CONTROLLERS. 30% OF THE EQUIPMENT NEEDS TO BE RETURNED TO THE DISTRICT.

3. REMOVE (E) CONDENSATE DRAIN BRANCH PIPE BACK ABOVE CEILING. CAP AND ABANDON (E) CD MAIN ABOVE CEILING. PATCH AND REPAIR CEILING PER ARCHITECT'S DRAWINGS.

4. REMOVE (E) GAS BRANCH PIPE BACK TO (E) GAS MAIN. CAP AND ABANDON (E) GAS MAIN ABOVE CEILING. PATCH AND REPAIR CEILING TILES / ROOF PER ARCHITECT'S DRAWINGS.

5. (E) GAS SHUT OFF VALVE IN VALVE BOX. CLOSE VALVE BEFORE STARTING GAS DEMO WORK ON THIS WING.

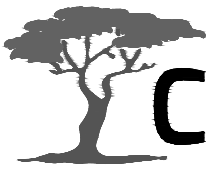
6. (E) GAS SHUT OFF VALVE ON MANIFOLD RISER FURTHER UPSTREAM. CLOSE VALVE BEFORE STARTING DEMO WORK ON THIS WING.

7. REMOVE (E) ROOFTOP AC UNIT AND (E) ROOF CURB. PROTECT (E) OPENINGS FOR CONNECTION TO NEW AC UNIT. DISCONNECT (E) GAS PIPE FROM (E) AC UNIT. REMOVE (E) GAS PIPE UP TO AND INCLUDING SHUT OFF VALVE. DISCONNECT (E) CD PIPE FROM (E) AC UNIT. REMOVE (E) CD PIPE UP TO AND INCLUDING TRAP.
8. REMOVE (E) THERMOSTAT AND WIRING BACK TO (E) AC UNIT. SALVAGE (E) THERMOSTAT AND UNIT CONTROLLERS AND RETURN TO DISTRICT.

9. REMOVE (E) INDOOR WALL HEAT PUMP. PRESERVE (E) WALL OPENING FOR NEW UNIT. (E) DUCTWORK TO REMAIN. (SEE EXISTING REFERENCE DRAWINGS ON 1/MP7.02.) DISCONNECT (E) CONDENSATE DRAIN PIPE AT THE UNIT. PRESERVE OPEN END FOR CONNECTION TO NEW UNIT. REMOVE (E) THERMOSTAT AND WIRING. SALVAGE (E) THERMOSTAT AND RETURN TO DISTRICT.

10. ABANDON (E) GAS AND (E) CONDENSATE DRAIN PIPES ABOVE CEILING, TYP.






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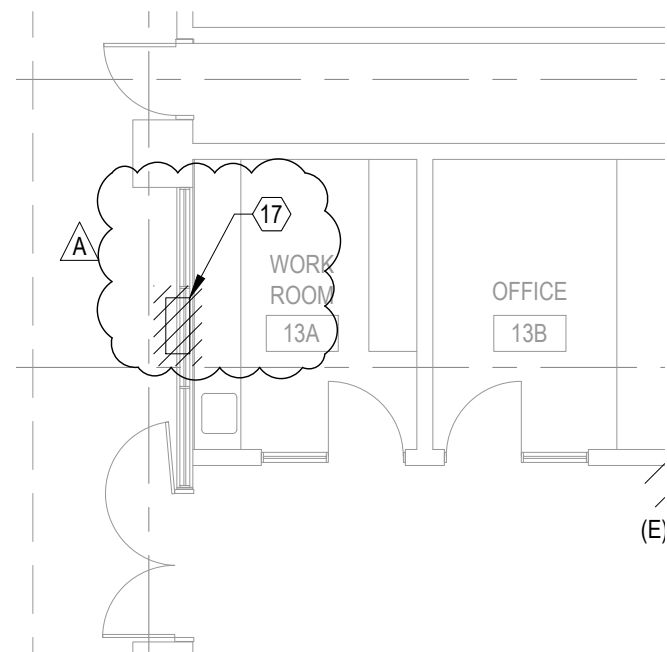
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 <div>387 S. 1st Street, Suite 300 San Jose, CA., 95113</div>	ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT	
	SAN MATEO-FOSTER CITY SCHOOL DISTRICT	
	FILE NO.: 41-26	SHEET
	APPL NO.: 01-119556	REF. SHEET MP2.01
	JOB NO. 2021005.06	AD1-MP2.01
	DATE 11/24/2021	

DEMOLITION SHEET NOTES

1. REMOVE (E) HEATING VENTILATING UNIT.
2. REMOVE (E) FAN COIL.
3. REMOVE (E) EXHAUST FAN.
4. (E) INTAKE HOOD ON ROOF TO REMAIN.
5. REMOVE (E) HOT WATER SUPPLY AND RETURN PIPING FOR ALL (E) UNITS BEING REMOVED. REMOVE (E) ABANDONED HOT WATER SUPPLY AND RETURN PIPING.
6. REMOVE (E) THERMOSTAT AND WIRING BACK TO THE UNIT IT SERVES. SALVAGE (E) THERMOSTAT AND RETURN TO DISTRICT.
7. (E) DUCTWORK ABOVE CEILING AND (E) REGISTERS TO REMAIN.
8. REMOVE (E) SUPPLY DUCT FROM (E) HV UNIT TO POC. PROTECT OPEN END FOR CONNECTION TO NEW UNIT.
9. REMOVE (E) SUPPLY DUCT. CAP WHERE SHOWN. PRESERVE OTHER END FOR CONNECTION TO NEW UNIT.
10. REMOVE (E) RETURN DUCT UP TO POC. PROTECT OPEN END FOR CONNECTION TO NEW UNIT.
11. REMOVE (E) OUTSIDE AIR DUCT.
12. (E) OUTSIDE AIR LOUVER TO REMAIN.
13. REMOVE (E) SUPPLY DUCT AND REGISTERS.
14. REMOVE (E) SINK AND CAP ALL UTILITIES.
15. REMOVE (E) RETURN DUCT.
16. CAP (E) OUTSIDE AIR INTAKE AFTER PLENUM.
17. REMOVE (E) EF, SEE ARCHITECTS DRAWINGS FOR PATCHING AND REPAIR.

A



1
MP2.04

FIRST FLOOR PLAN - MULTIPURPOSE BLDG - DEMO

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



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ABBOTT MIDDLE SCHOOL -
HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26
APPL NO.: 01-119556
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DATE 11/24/2021

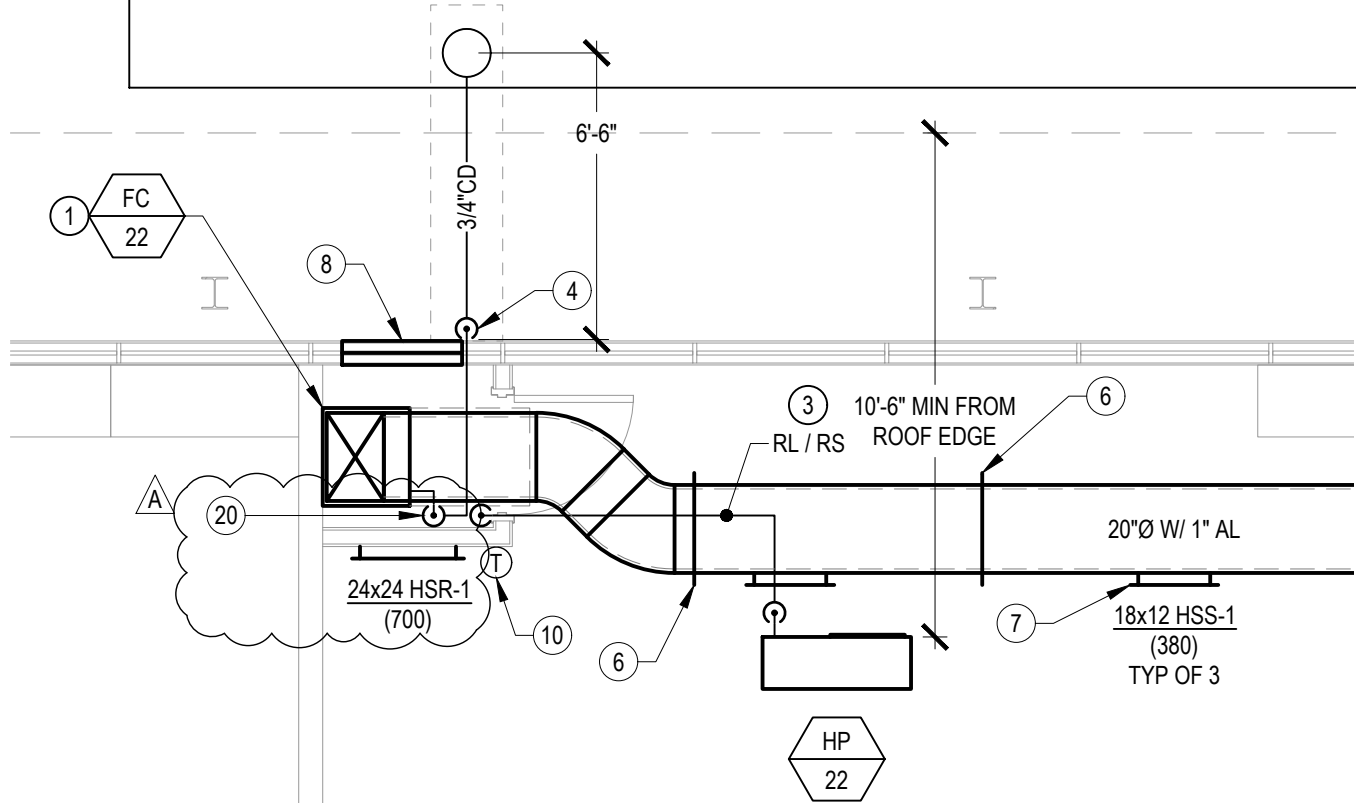
SHEET
REF. SHEET MP2.04
AD1-MP2.04

NEW SHEET NOTES

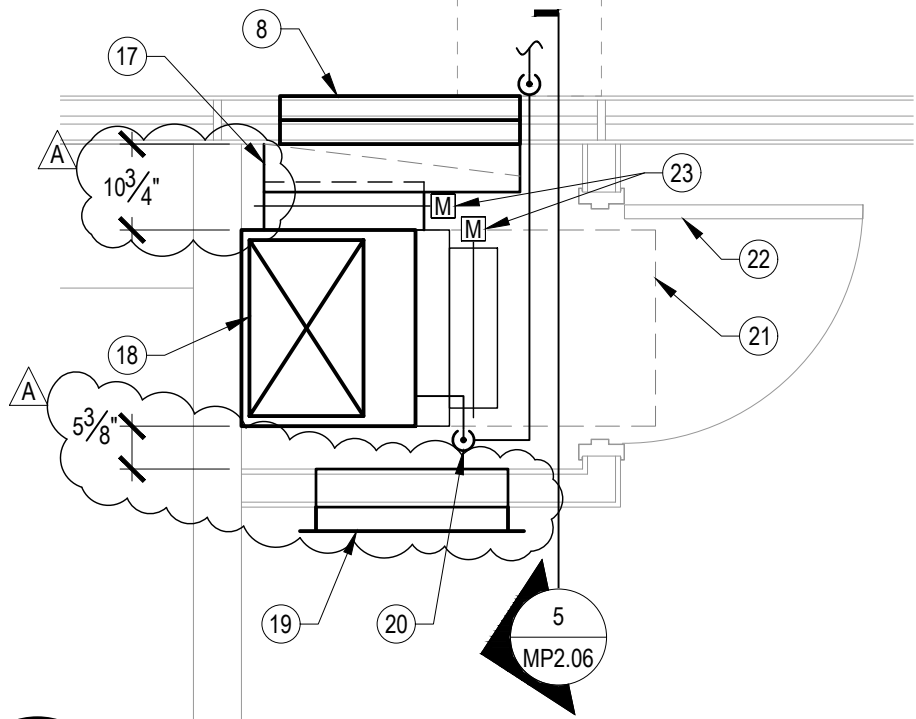
14. PIPE CONDENSATE DRAIN FROM HEAT PUMP TO (E) CONDENSATE DRAIN PIPE. SEE DETAIL 8/MP6.01 FOR CONDENSATE DRAIN CONNECTION TO EQUIPMENT.
16. CD FROM FAN COIL. DROP CD TIGHT TO EXTERIOR WALL TO ABOVE EXTERIOR CONCRETE WALL, DROP CD TIGHT TO EXTERIOR CONCRETE WALL TO BELOW GRADE, ROUTE TO CD DRYWELL IN LANDSCAPE AREA. SEE DETAILS 8/MP6.01 FOR CD CONNECTION TO EQUIPMENT AND 5/MP6.02 FOR CD DRYWELL.
19. 24"x24" RETURN REGISTER HSR-1 WITH GRILLE SILENCER.

GENERAL NOTES

1. 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 EQUIPMENT WITH RESPECT TO BUILDING STRUCTURE AND OTHER BUILDING SERVICES TO AVOID CONFLICT.
3. FOR CLARITY, ABANDONED CONDENSATE DRAIN PIPES 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. SEE DETAIL 11/MP6.01 FOR PIPE SUPPORT ON ROOF.
6. EQUIPMENT MOUNTING DETAIL REFERENCE SHOWN ON SCHEDULES ON SHEETS MP0.02 AND MP0.03.
7. CLEAN ALL (E) DUCTWORK AND REGISTERS PER SPECIFICATION 23 01 30.
8. PAINT ALL EXPOSED CONDENSATE PIPING AT EXTERIOR TO MATCH ADJACENT.



3 PARTIAL FLOOR PLAN - TYPICAL CLASSROOM
MP2.06 SCALE: 1/4" = 1'-0"



4 FLOOR PLAN - ENCLOSURE
MP2.06 SCALE: NONE

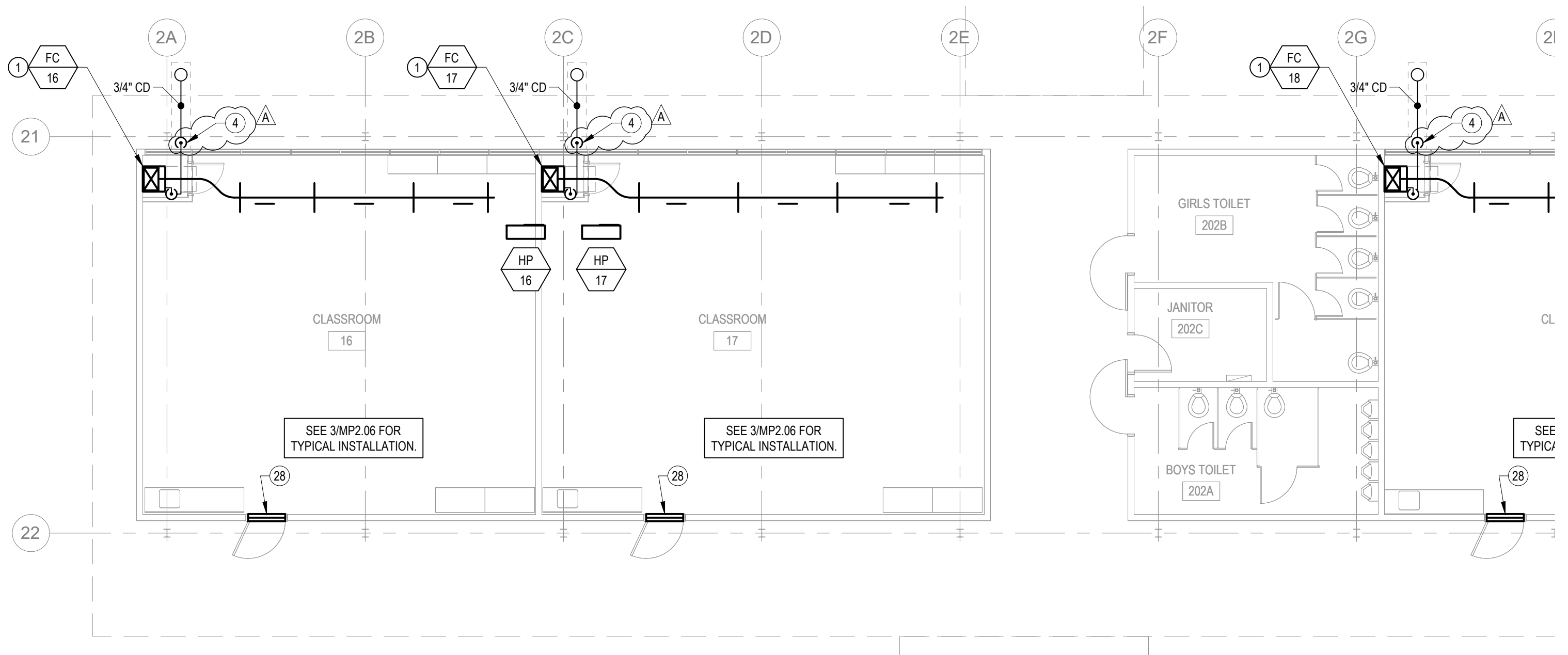


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		SAN MATEO-FOSTER CITY SCHOOL DISTRICT	
387 S. 1st Street, Suite 300 San Jose, CA., 95113		FILE NO.: 41-26 APPL NO.: 01-119556 JOB NO.: 2021005.06 DATE: 11/24/2021	SHEET REF. SHEET MP2.06 AD1-MP2.06a



2 FLOOR PLAN - WING 2 - NEW
MP2.06 SCALE: 1/8" = 1'-0"

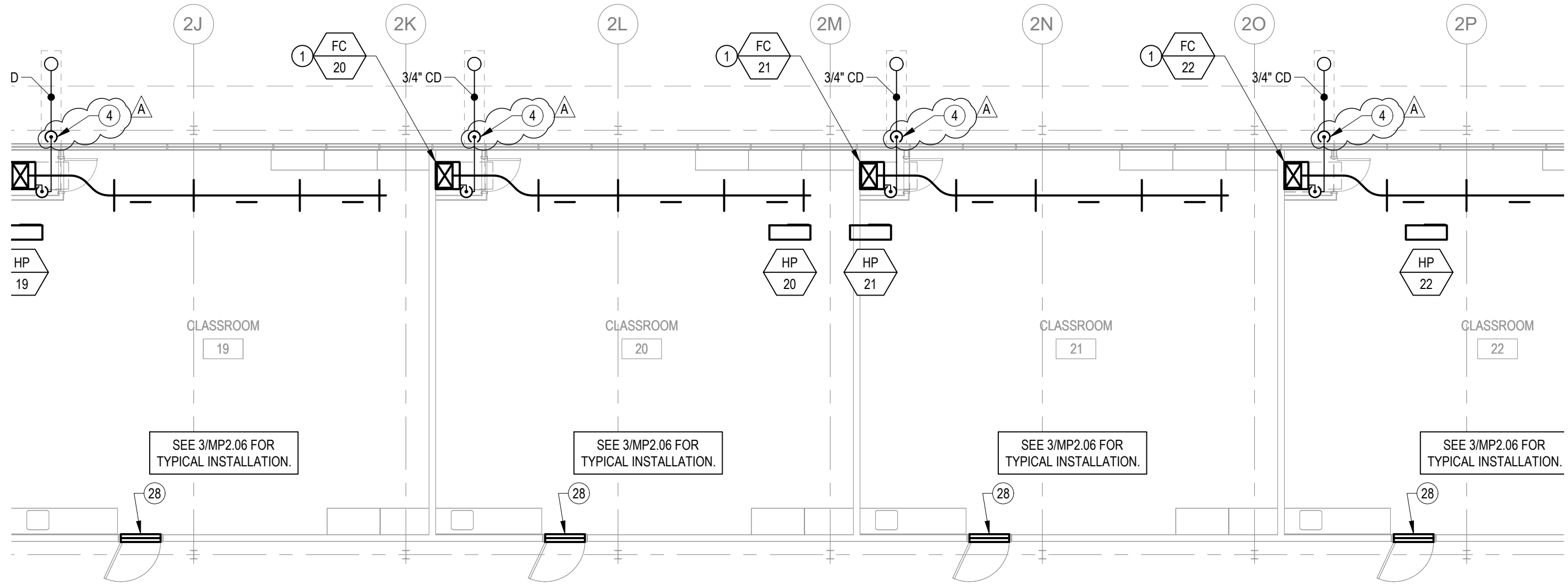


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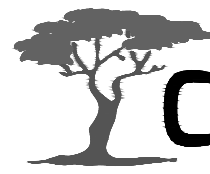
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		FILE NO.: 41-26 APPL NO.: 01-119556 JOB NO.: 2021005.06 DATE: 11/24/2021	SHEET REF. SHEET MP2.06 AD1-MP2.06b
387 S. 1st Street, Suite 300 San Jose, CA., 95113		tel: (408) 300 - 5160 fax: (408) 300 - 5121	



2 FLOOR PLAN - WING 2 - NEW
MP2.06 SCALE: 1/8" = 1'-0"



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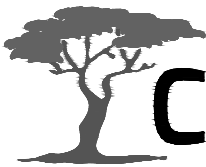
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CEG JOB NO: 21039

aedis architects		ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT SAN MATEO-FOSTER CITY SCHOOL DISTRICT	
		FILE NO.: 41-26 APPL NO.: 01-119556 JOB NO.: 2021005.06 DATE: 11/24/2021	SHEET REF. SHEET MP2.06 AD1-MP2.06c
387 S. 1st Street, Suite 300 San Jose, CA., 95113		tel: (408) 300 - 5160 fax: (408) 300 - 5121	

GENERAL NOTES


1. 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 EQUIPMENT WITH RESPECT TO BUILDING STRUCTURE AND OTHER BUILDING SERVICES TO AVOID CONFLICT.
3. FOR CLARITY, ABANDONED CONDENSATE DRAIN PIPES AND (E) GAS MAINS ARE NOT SHOWN ON THIS PLAN. SEE MP2.02.
4. PAINT ALL EXPOSED DUCTWORK AND REGISTERS TO MATCH ADJACENT.
5. SEE DETAIL 11/MP6.01 FOR PIPE SUPPORT ON ROOF.
6. EQUIPMENT MOUNTING DETAIL REFERENCE SHOWN ON SCHEDULES ON SHEETS MP0.02 AND MP0.03.
7. CLEAN ALL (E) DUCTWORK AND REGISTERS PER SPECIFICATION 23 01 30.
8. PAINT ALL EXPOSED CONDENSATE PIPING AT EXTERIOR TO MATCH ADJACENT.



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CEG JOB NO: 21039

		ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT	
		SAN MATEO-FOSTER CITY SCHOOL DISTRICT	
387 S. 1st Street, Suite 300 San Jose, CA., 95113	FILE NO.:	41-26	SHEET REF. SHEET MP2.07 AD1-MP2.07
	APPL NO.:	01-119556	
	JOB NO.	2021005.06	
		DATE	11/24/2021
		tel: (408) 300 - 5160 fax: (408) 300 - 5121	

A

1. INSTALL ROOFTOP AC UNIT ON NEW ROOF CURB. ENSURE CORRECT UNIT ORIENTATION AND CONNECT TO (E) SUPPLY AND RETURN DUCTWORK, TYP.
2. INSTALL GAS PIPE FROM POC TO AC UNIT. INSTALL GAS PIPE WITH SHUTOFF VALVE, DIRT LEG, AND FLEX CONNECTION AT AC UNIT. INSTALL CONDENSATE DRAIN PIPE WITH TRAP AND CONNECT TO (E) CD PIPE. FOR PIPE SUPPORT ON ROOF, SEE DETAIL 11/MP6.01. CONNECT TO AC UNIT PER 8/MP6.01.
3. INSTALL CONDENSATE DRAIN PIPE WITH TRAP AND CONNECT TO (E) CD PIPE. CONNECT TO AC UNIT PER 8/MP6.01.
4. INSTALL THERMOSTAT ON WALL AND WIRE TO AC UNIT, TYP OF (5).
5. INSTALL CONDENSING UNIT ON HOUSEKEEPING PAD, CONNECT REFRIGERANT PIPING TO COOLING COIL.
6. INSTALL COOLING COIL IN CEILING SPACE AND CONNECT TO (E) DUCTWORK. PROVIDE FLEX CONNECTOR AT DUCT CONNECTION. INSTALL DRAIN PAN UNDER COIL. CONNECT CONDENSATE DRAIN TO (E) CD AND ADD SECONDARY CD PIPE.
7. INSTALL FURNACE IN CEILING SPACE AND CONNECT TO (E) DUCTWORK. INSTALL COMBUSTION AIR INTAKE. CONNECT FLUE PIPE TO (E) FLUE AT BOTTOM OF ROOF STRUCTURE.
8. INSTALL FILTER BOX AND CONNECT TO FURNACE. PROVIDE FLEX CONNECTOR AT FURNACE CONNECTION. FILTER

NEW SHEET NOTES

- BOX SHALL HAVE SIDE ACCESS, WITH HINGED ACCESS PANEL AND TOOL-LESS CAM LOCKS.
9. CONNECT (E) GAS TO NEW FURNACE PER 8/MP6.01.
10. INSTALL REFRIGERANT PIPE FROM CONDENSING UNIT TO COOLING COIL. SIZE PER MANUFACTURER'S REQUIREMENTS. PROVIDE ALUMINUM JACKETING AT EXTERIOR.
11. INSTALL THERMOSTAT ON WALL AND WIRE TO HVAC EQUIPMENT.



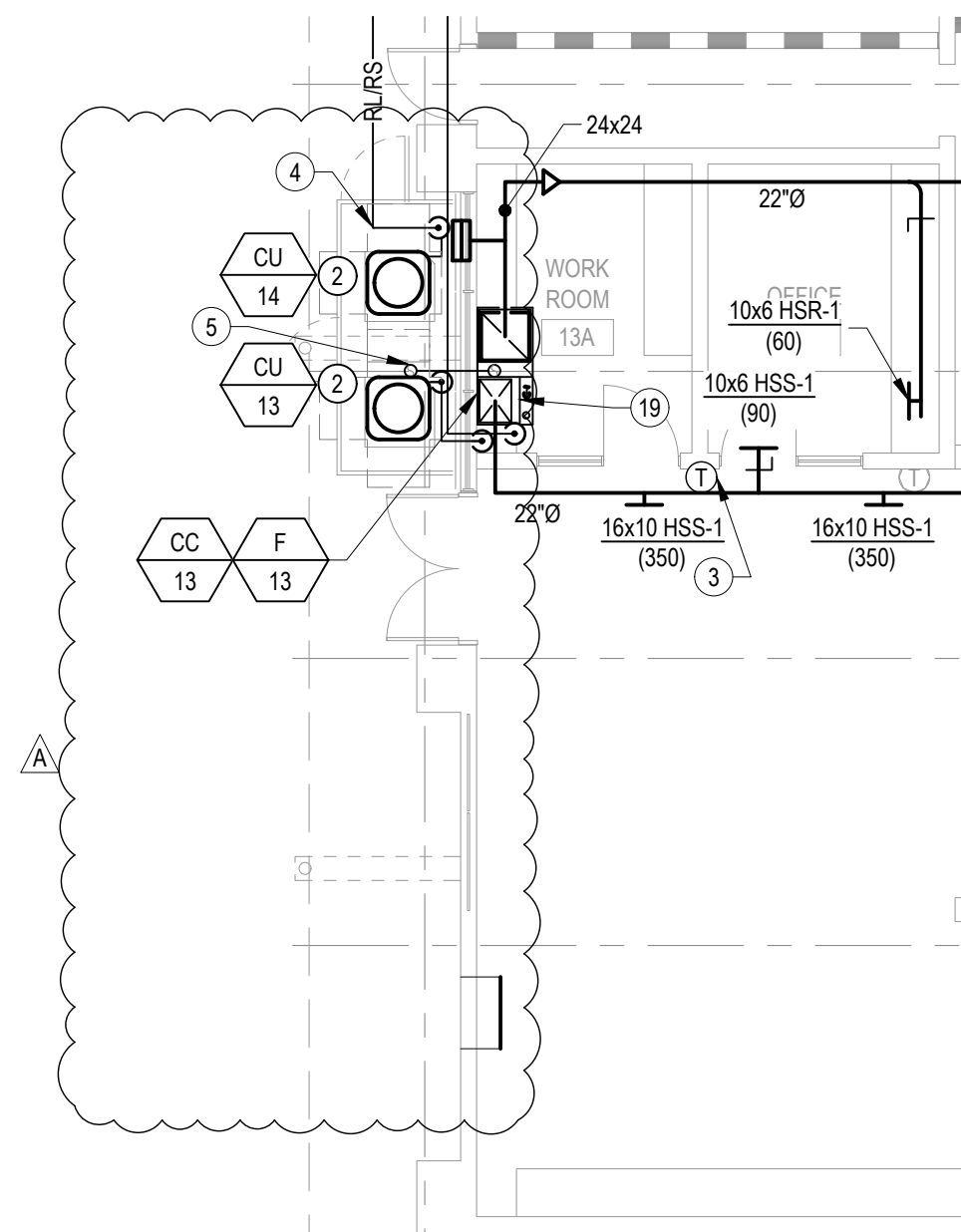
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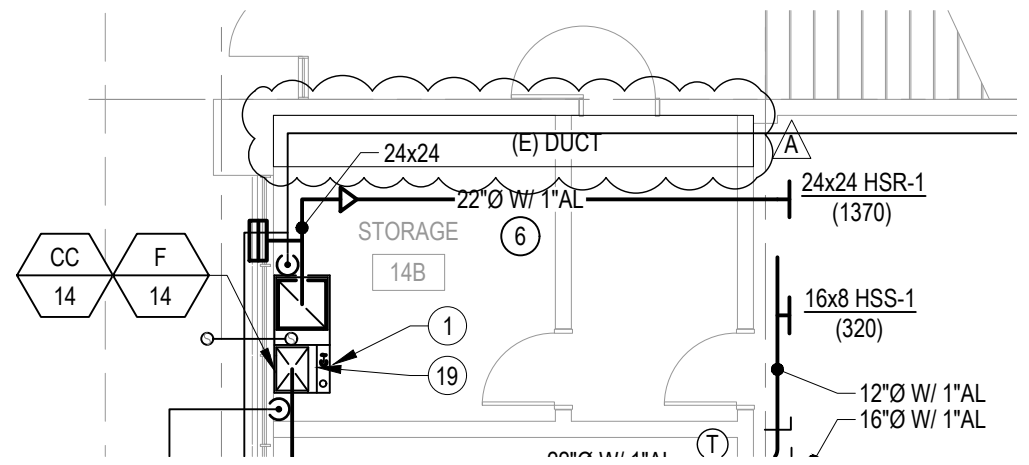
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		ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT	
		SAN MATEO-FOSTER CITY SCHOOL DISTRICT	
387 S. 1st Street, Suite 300 San Jose, CA., 95113	FILE NO.:	41-26	SHEET REF. SHEET MP2.08 AD1-MP2.08
	APPL NO.:	01-119556	
	JOB NO.	2021005.06	
		DATE	11/24/2021
		tel: (408) 300 - 5160 fax: (408) 300 - 5121	



- ### GENERAL NOTES
1. 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 EQUIPMENT WITH RESPECT TO BUILDING STRUCTURE AND OTHER BUILDING SERVICES TO AVOID CONFLICT.
 3. EQUIPMENT MOUNTING DETAIL REFERENCE SHOWN ON SCHEDULES ON SHEETS MP0.02 AND MP0.03.
 4. CLEAN ALL (E) DUCTWORK AND REGISTERS PER SPECIFICATION 23 01 30.
 5. PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT.



1 PARTIAL FIRST FLOOR PLAN - MULTIPURPOSE BLDG - NEW

MP2.09 SCALE: 1/8" = 1'-0"



CEG JOB NO: 21039

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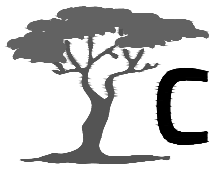
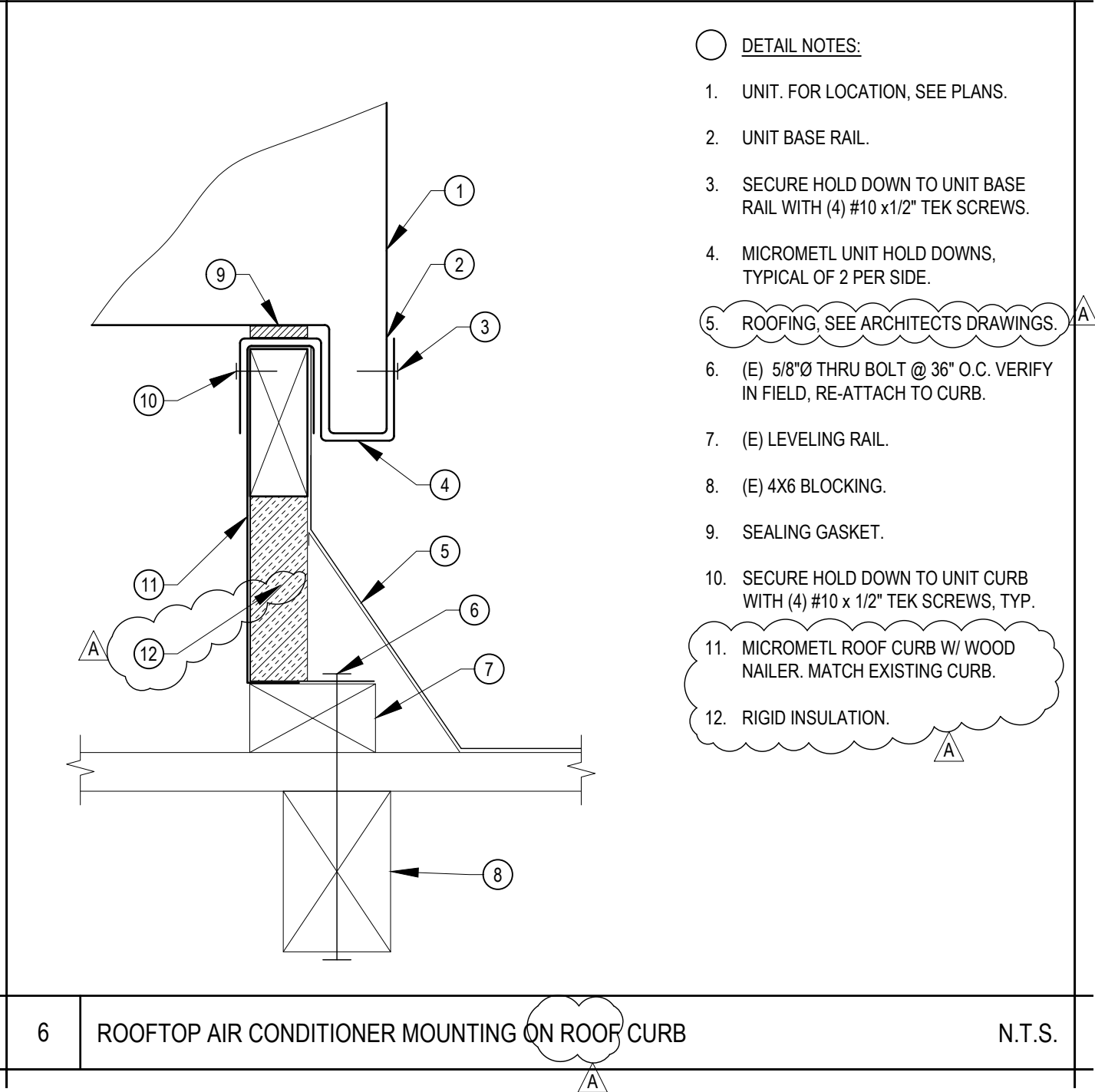
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		FILE NO.: 41-26 APPL NO.: 01-119556 JOB NO.: 2021005.06 DATE: 11/24/2021	SHEET REF. SHEET MP2.09 AD1-MP2.09

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ABBOTT MIDDLE SCHOOL -
HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26

APPL NO.: 01-119556

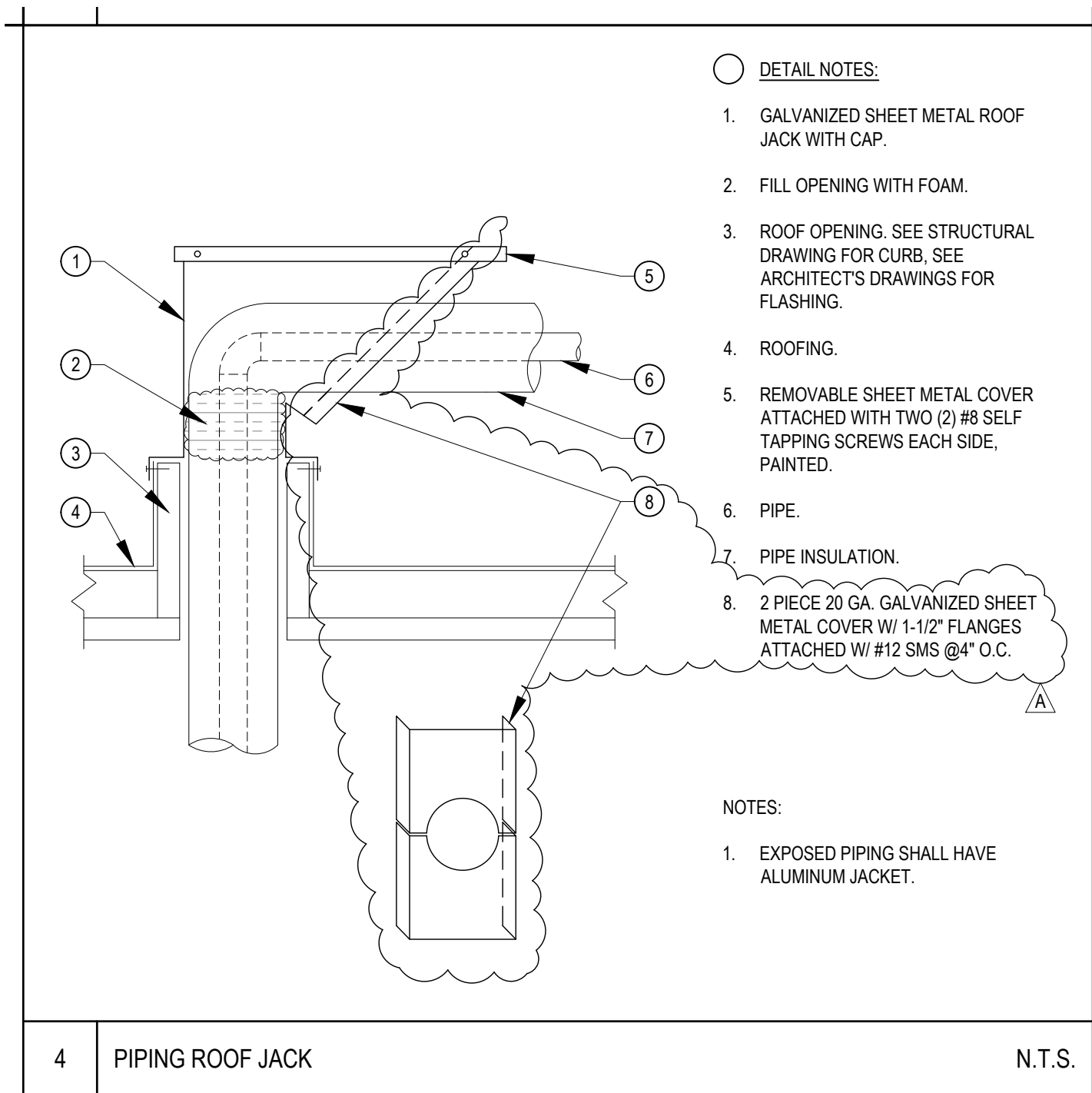
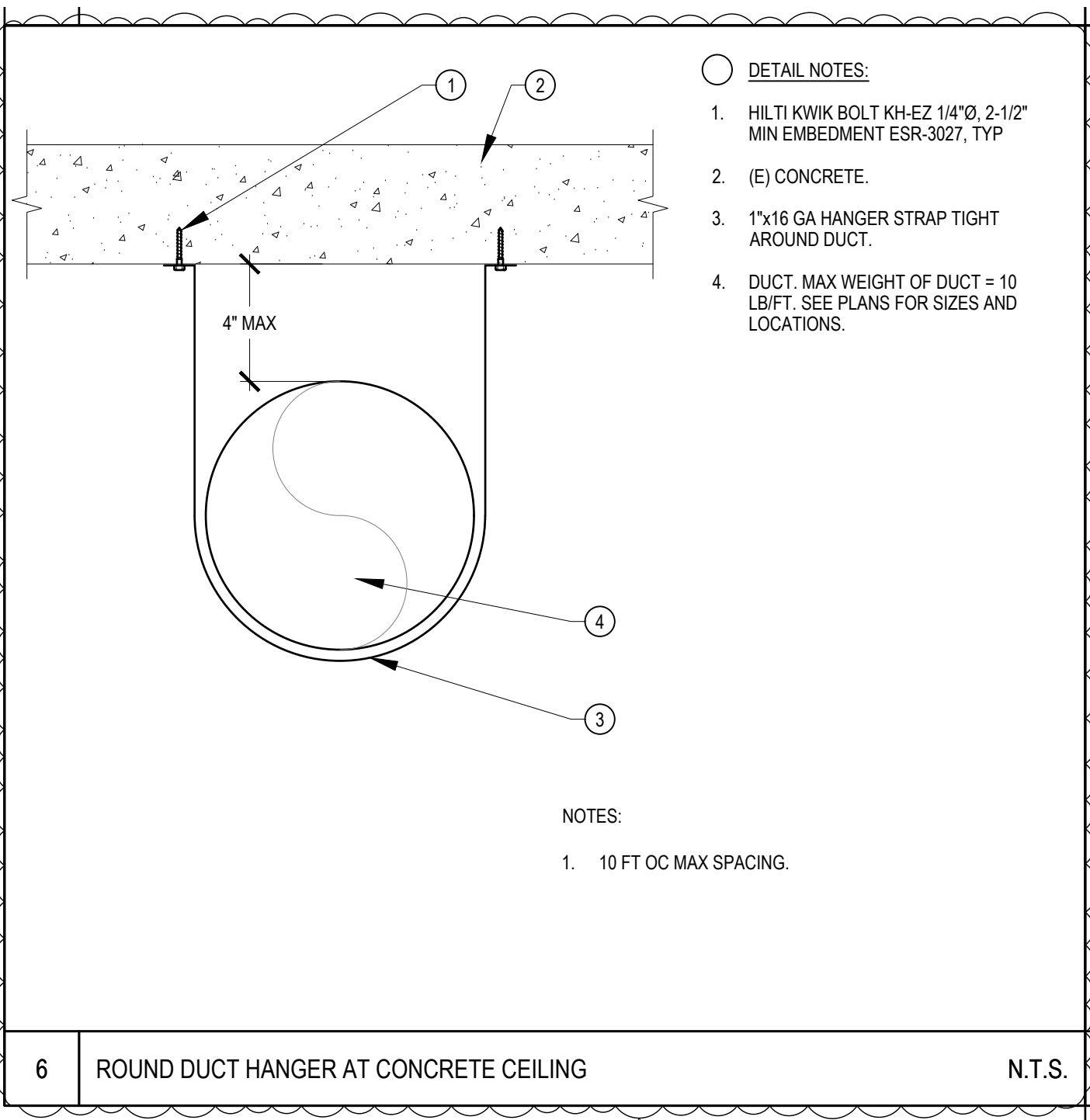
JOB NO. 2021005.06

DATE 11/24/2021

SHEET

REF. SHEET MP6.01

AD1-MP6.01



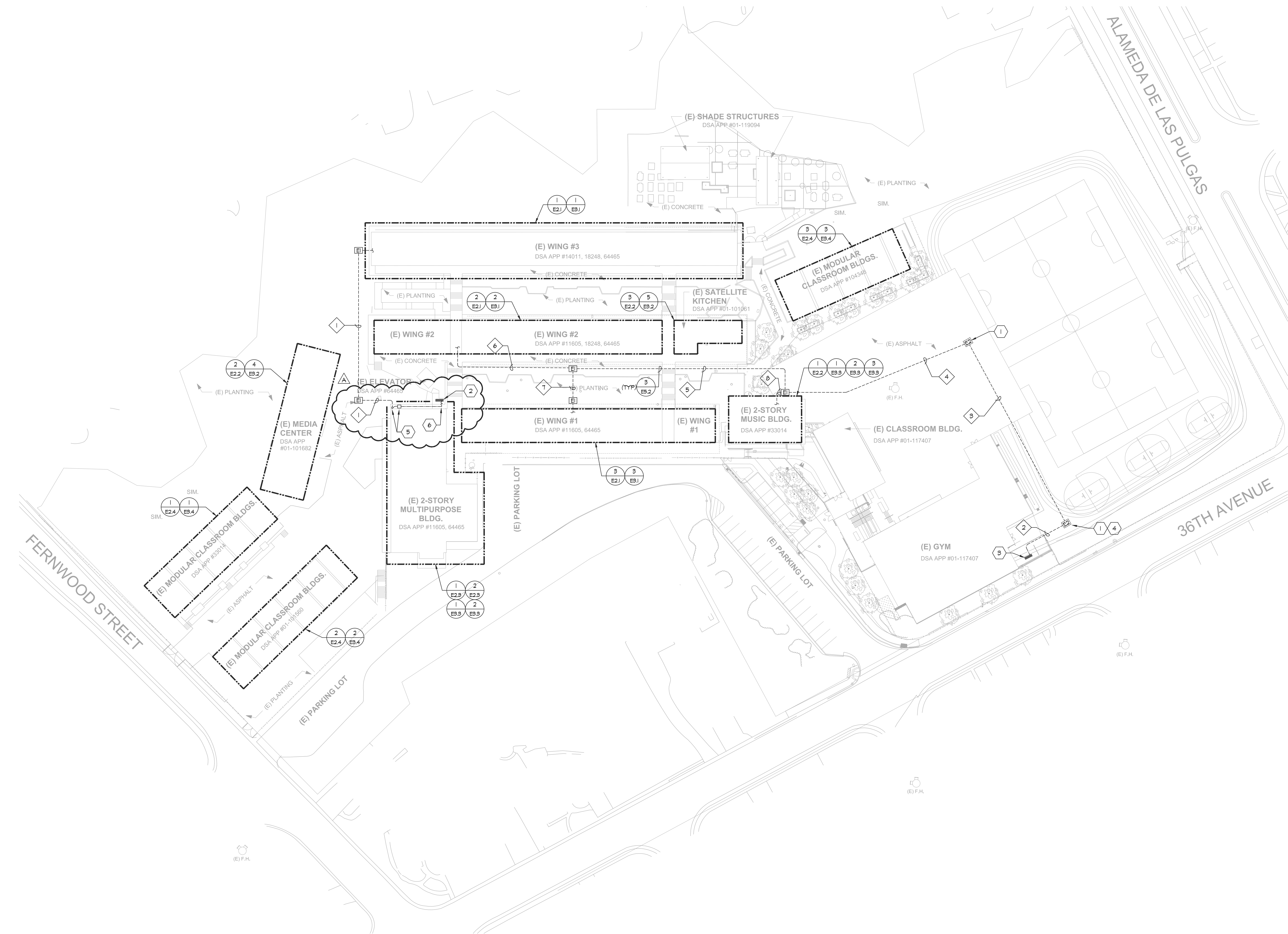
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		FILE NO.: 41-26 APPL NO.: 01-119556 JOB NO.: 2021005.06 DATE: 11/24/2021	SHEET REF. SHEET MP6.02 AD1-MP6.02
387 S. 1st Street, Suite 300 San Jose, CA., 95113		tel: (408) 300 - 5160 fax: (408) 300 - 5121	



1
E1.1

ELECTRICAL SITE PLAN

SCALE: 1" = 40'-0"

GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAN 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 TRENCHING SHALL BE INSTALLED PER DETAIL 3/ES.2.
5. SEE DEMOLITION SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.
6. SEE NEW SINGLE LINE DIAGRAM FOR FEEDER, CABLE, AND CONDUIT REQUIREMENTS.

SHEET NOTES:

1. EXISTING IN-GRADE BOX.
2. EXISTING MAIN SWITCHBOARD #1.
3. EXISTING MAIN SWITCHBOARD #2.
4. SPLICE CABLES INSIDE THIS EXISTING IN-GRADE ELECTRICAL FULL BOX. PROVIDE POLARIS SUBMERSIBLE SPLICE CONNECTORS.
5. TRANSITION CONDUITS FROM UNDERGROUND TO ABOVE GROUND AT THE EXTERIOR WALL. ROUTE CONDUITS ON WALL TO ABOVE OVERHANGS. PROVIDE NEMA-3R FULL CAN AND ROUTE CONDUITS UNDERNEATH OVERHANGS.
6. ROUTE CONDUITS UNDERNEATH OVERHANG TO EXISTING SWITCHGEAR LOCATION. PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT AND TRANSITION CONDUITS INTO THE TOP OF THE SWITCHGEAR.

CONDUIT SCHEDULE:

- 1 (N) (3) 3" C - PANEL 'EM'
- 2 (E) (1) 4" C - PNL 'A' (MUSIC BUILDINGS)
(E) (1) 4" C - PNL 'A' (WING 1)
(N) (1) 4" C - PNL 'DM' (WING 2)
- 3 (E) (2) 4" C - PNL 'A' (MUSIC BUILDINGS)
(N) (3) 4" C - PNL 'A' (WING 1)
(N) (3) 4" C - PNL 'DM' (WING 2)
- 4 (E) (2) 4" C - PNL 'A' (MUSIC BUILDINGS)
(N) (3) 4" C - PNL 'A' (WING 1)
(N) (3) 4" C - PNL 'DM' (WING 2)
- 5 (N) (4) 4" C - PNL 'DM' (WING 2)
(N) (3) 4" C - PNL 'A' (WING 1)
- 6 (N) (3) 4" C - PNL 'DM' (WING 2)
- 7 (N) (3) 4" C - PNL 'A' (WING 1)
- 8 (N) (2) 4" C - PNL 'A' (MUSIC BUILDINGS)

PULLBOX SCHEDULE:

- | | |
|-----|--|
| (E) | - NEW B2436 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID, LABEL LID 'POWER'. |
| (E) | - EXISTING B2436 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID, LABEL LID 'POWER'. |

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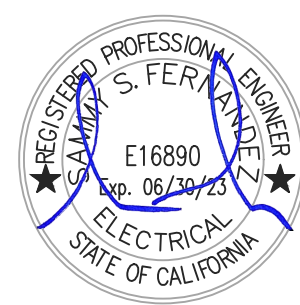
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PROJECT

**ABBOTT MIDDLE
SCHOOL - HVAC
REPLACEMENT**

SAN MATEO-FOSTER CITY
SCHOOL DISTRICT

CONSULTANT



**American Consulting Engineers
Electrical, Inc.**
1380 The Alameda, Suite 200
San Jose, CA 95126
408/234-2312
Fax: 408/234-2316

STAMP

STATE

DSA FILE NUMBER **41-26**
APPL # **01-119557**

REVISIONS

No.	Description	Date
A	APPENDUM I	11/24/2021

MILESTONES

DD	
90% CD	
DSA SUB	06/03/2021
BACKCHECK	

SHEET

**ELECTRICAL
SITE PLAN**

DATE **11/24/2021**

JOB # **2021005.06**

SHEET #

E1.1

GENERAL NOTES:

- 1. ALL CONDUITS SHALL BE ROUTED CONCEALED IN CEILING BELOW WHERE POSSIBLE.
- 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 REQUIREMENTS.
- 5. FUSED AND UNFUSED DISCONNECT SWITCHES SHALL BE 600V RATED, HEAVY DUTY CYCLE. FUSES FOR MECHANICAL UNITS SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATION.

CABLE SCHEDULE:

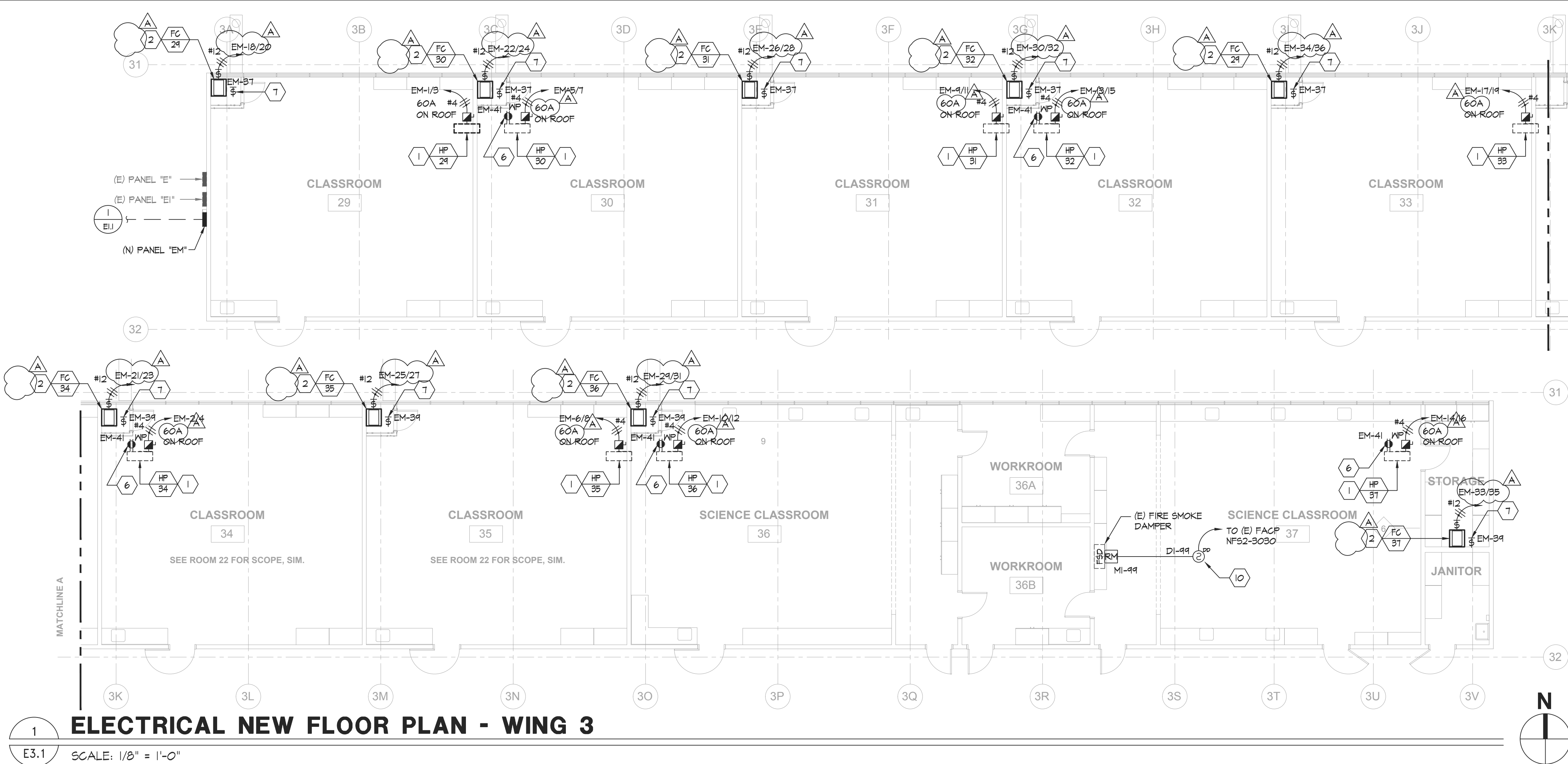
- A - (1) #14 UNSHIELDED TWISTED PAIR FOR SIGNALING LINE CIRCUITS.
- B - (2) #12 FOR 24V POWER (CO DETECTOR)

EQUIPMENT SCHEDULE:

FM	FIRE ALARM: (N) RELAY MODULE MODEL: NOTIFIER FPM-1 CSFM: 1300-0028-214
DD	FIRE ALARM: (N) SMOKE DETECTOR W/ DUCT HOUSING MODEL: NOTIFIER FSP-451/DNR CSFM: 1212-0028-503/3240-1653-204

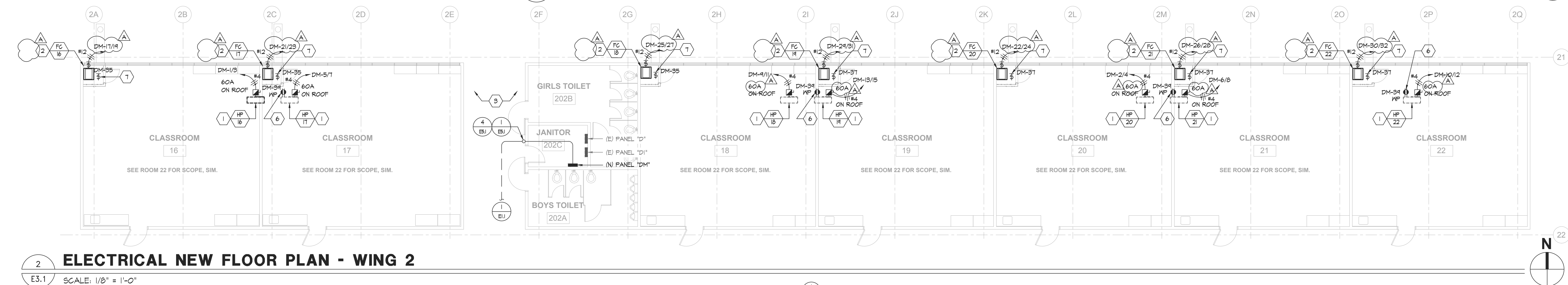
SHEET NOTES:

- 1. NEW 60A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- 2. NEW 30A-2P, NEMA-1, MOTOR-RATED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- 3. NEW 30A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- 4. NOT USED.
- 5. NEW 60A-3P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- 6. PROVIDE NEW WEATHERPROOF 6FCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC W/10101MD "BOSS".
- 7. PROVIDE MOTOR RATED SWITCH AND 120V POWER FOR CONDENSATION PUMP.
- 8. TRANSITIONING CONDUIT FROM UNDERGROUND TO ABOVE GRADE BEFORE COLUMN AND FOOTING TO AVOID. EXTEND CONDUIT TO WALL.
- 9. PROVIDE (N) 40A-3P CIRCUIT BREAKER IN PANEL AND CIRCUIT SPACE INDICATED.
- 10. PROVIDE NEW DUCT SMOKE DETECTOR AND RELAY MODULE FOR EXISTING FIRE SMOKE DAMPER SHUTDOWN. CONNECT NEW DUCT SMOKE DETECTOR TO EXISTING FIRE ALARM PULL STATION IN THE ROOM AS REQUIRED.



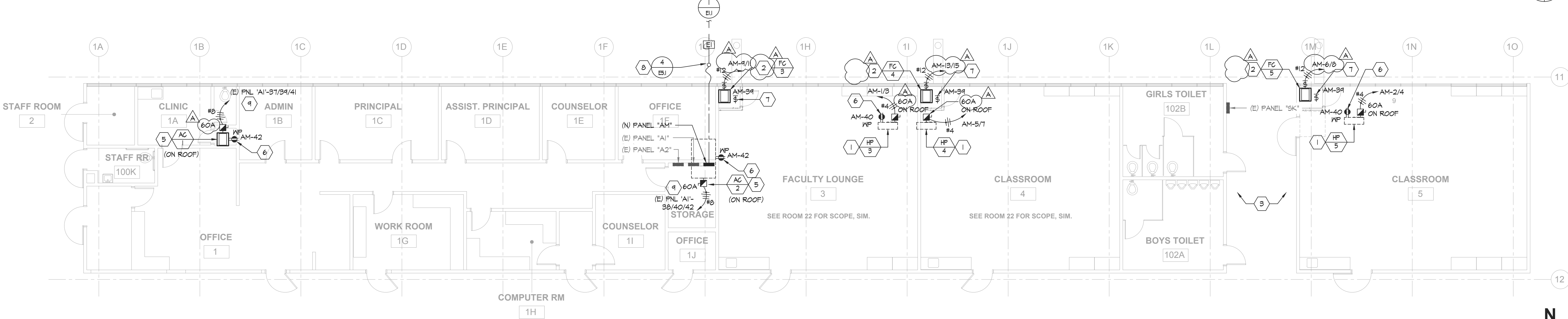
ELECTRICAL NEW FLOOR PLAN - WING 3

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



ELECTRICAL NEW FLOOR PLAN - WING 2

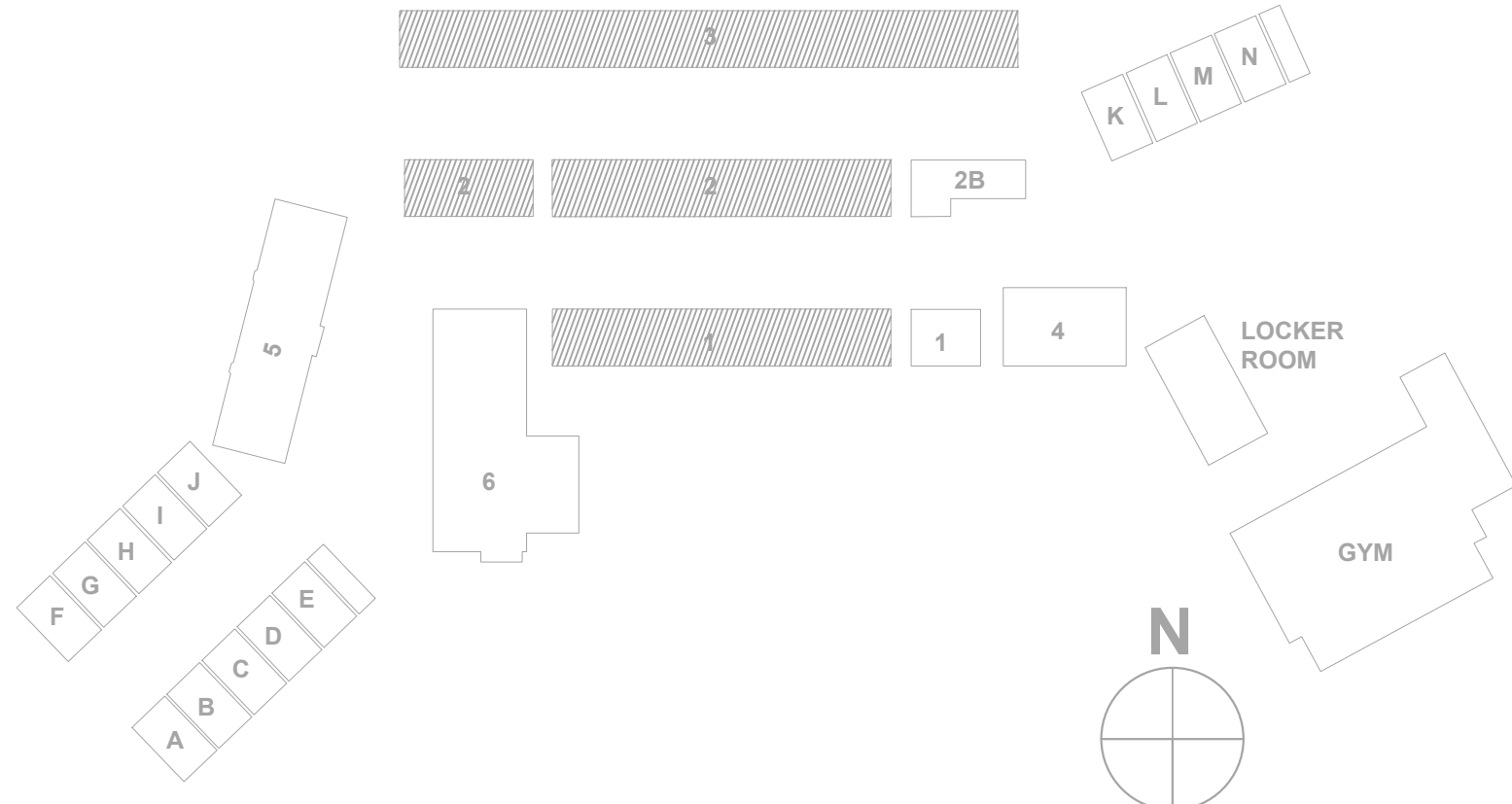
SCALE: 1/8" = 1'-0"



ELECTRICAL NEW FLOOR PLAN - WING 1

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

BUILDING KEY



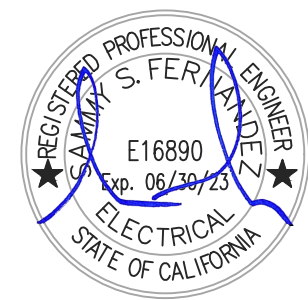
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PROJECT

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STAMP

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APPL # 01-119557

REVISIONS

No. Description Date
APPENDUM I 11/24/2021

MILESTONES

DD
90% CD
DSA SUB 06/03/2021
BACKCHECK

SHEET

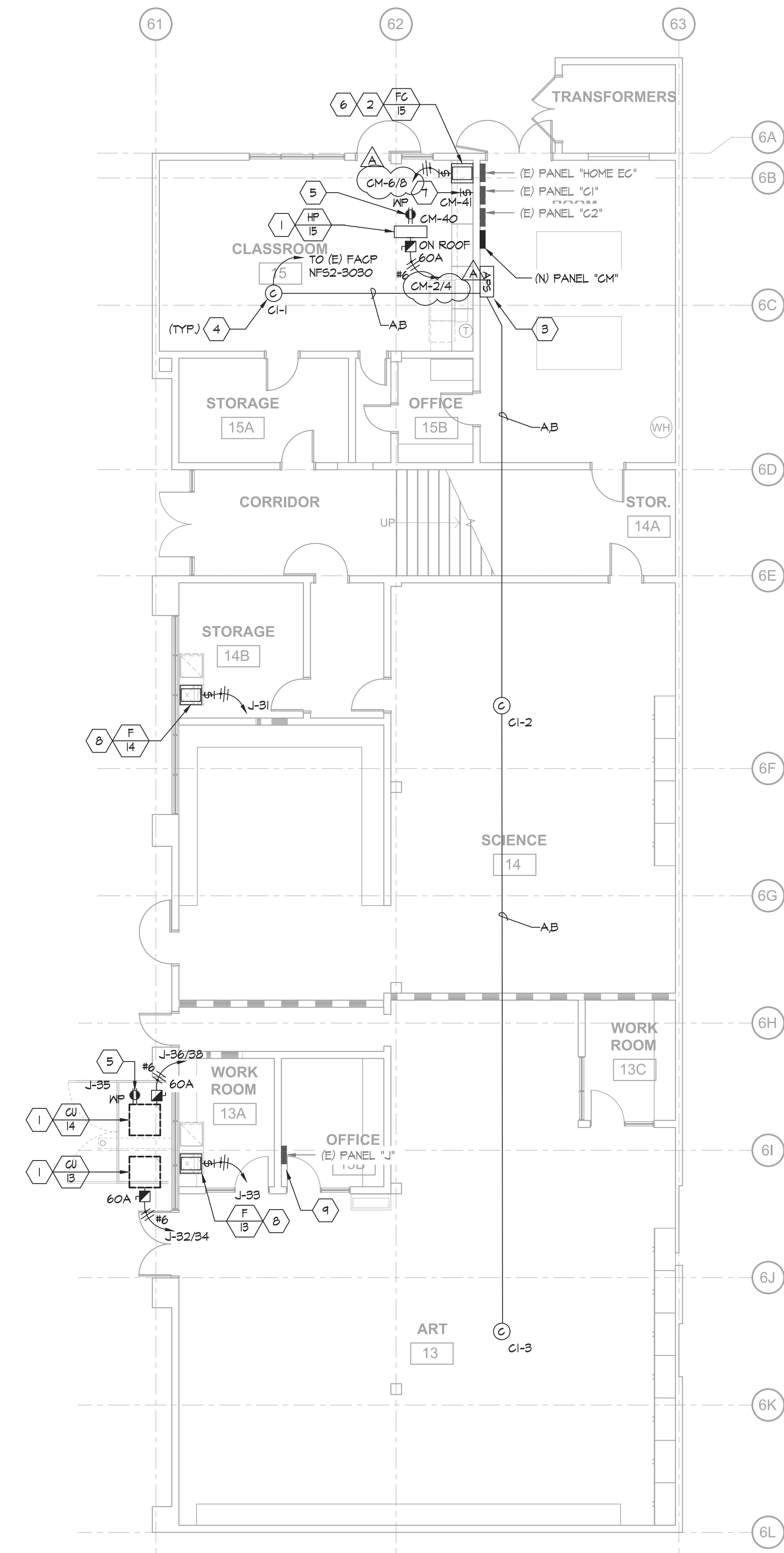
ELECTRICAL
NEW FLOOR
PLANS -
WING 1, 2 & 3

DATE

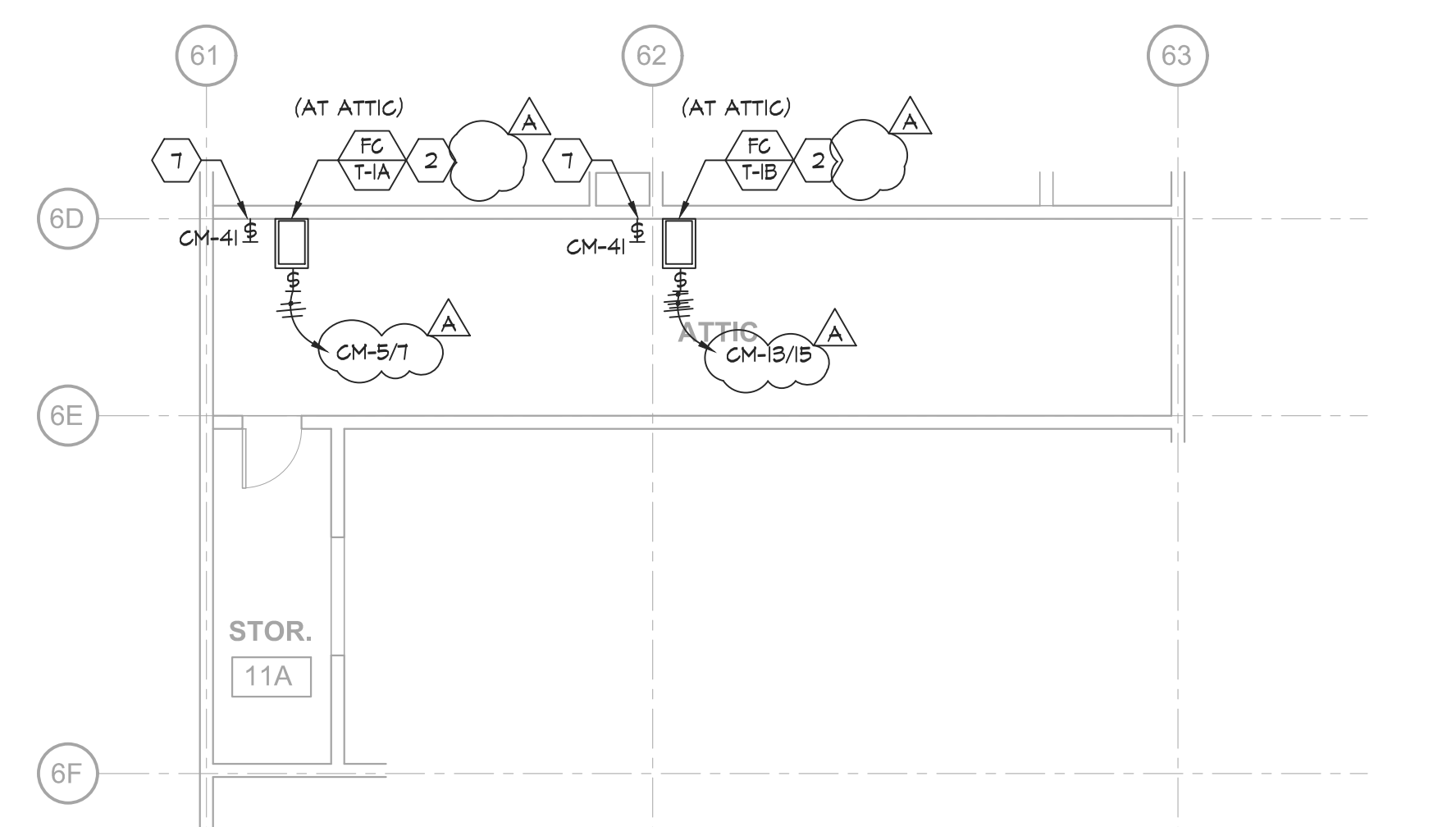
11/24/2021
JOB # 2021005.06

SHEET #

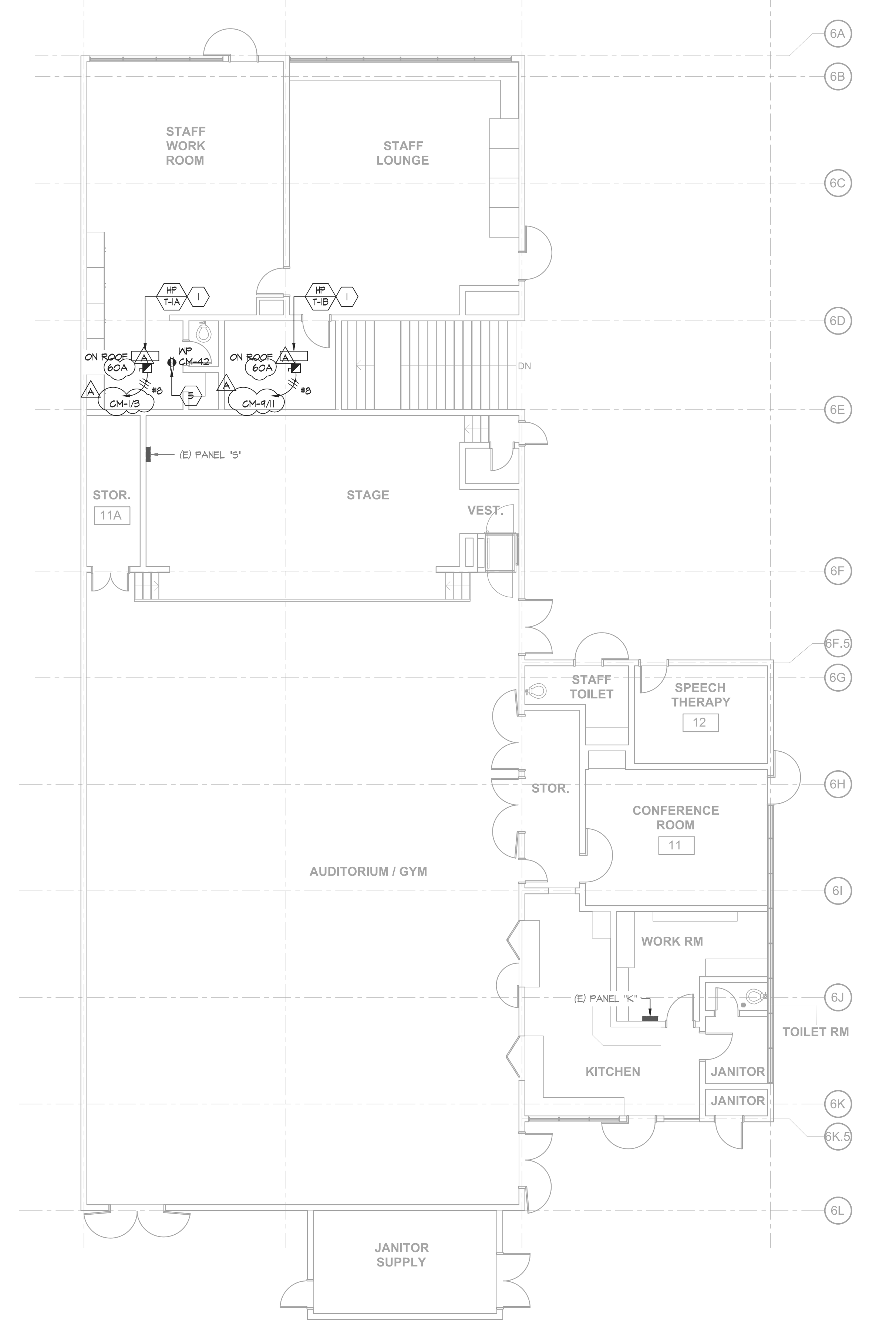
AD-1
E3.1



1
E3.3 ELECTRICAL NEW FIRST FLOOR PLAN - MULTIPURPOSE BLDG. SCALE: 1/8" = 1'-0" N



3
E3.3 ELECTRICAL NEW ATTIC PLAN - MULTIPURPOSE BLDG. SCALE: 1/8" = 1'-0" N



2
E3.3 ELECTRICAL NEW SECOND FLOOR PLAN - MULTIPURPOSE BLDG. SCALE: 1/8" = 1'-0" N

GENERAL NOTES:

- ALL CONDUITS SHALL BE ROUTED CONCEALED IN CEILING BELOW WHERE POSSIBLE.
- CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND POINTS OF CONNECTION FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR, ADJUST LOCATION AND CONNECTION POINTS AS NEEDED.
- SEE PANEL SCHEDULES AND SINGLE LINE DIAGRAM FOR POWER CONNECTION REQUIREMENTS.
- COORDINATE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- FUSED DISCONNECT SWITCHES SHALL BE 600V RATED, HEAVY DUTY CYCLE. FUSES FOR MECHANICAL UNITS SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATION.
- VISUAL NOTIFICATION IS NOT REQUIRED FOR CO DETECTION PER CBC 11B-2151.

SHEET NOTES:

- NEW 60A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- NEW 30A-2P, NEMA-1, MOTOR-RATED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- NEW AUXILIARY 24V POWER SUPPLY FOR CARBON MONOXIDE DETECTORS.
- NEW CARBON MONOXIDE DETECTOR. ROUTE NEW SLC CONNECTION BACK TO EXISTING FIRE ALARM CONTROL PANEL NOTIFIER NFS2-3030 AS REQUIRED.
- PROVIDE NEW WEATHERPROOF 6FCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC WP101MND "BOSS".
- INDOOR UNIT IS POWER BY THE OUTDOOR UNIT. ROUTE HOMERUN CIRCUIT TO ASSOCIATED OUTDOOR UNIT. REFER TO MECHANICAL SCHEDULE MPO.02 FOR ADDITIONAL REQUIREMENTS.
- PROVIDE MOTOR RATED SWITCH AND 120V POWER FOR CONDENSATION PUMP.
- PROVIDE 120V MOTOR RATED SWITCH.
- NEW MECHANICAL CU UNITS CONNECTED TO EXISTING PANEL 'J' ARE SINGLE PHASE. ALL LIGHTING CIRCUITS IN EXISTING PANEL 'J' ARE TO BE REARRANGED SO THEY ARE ON PHASE A AND PHASE B. THE INTENT IS TO PROVIDE A BALANCED LOAD PANEL.

CABLE SCHEDULE:

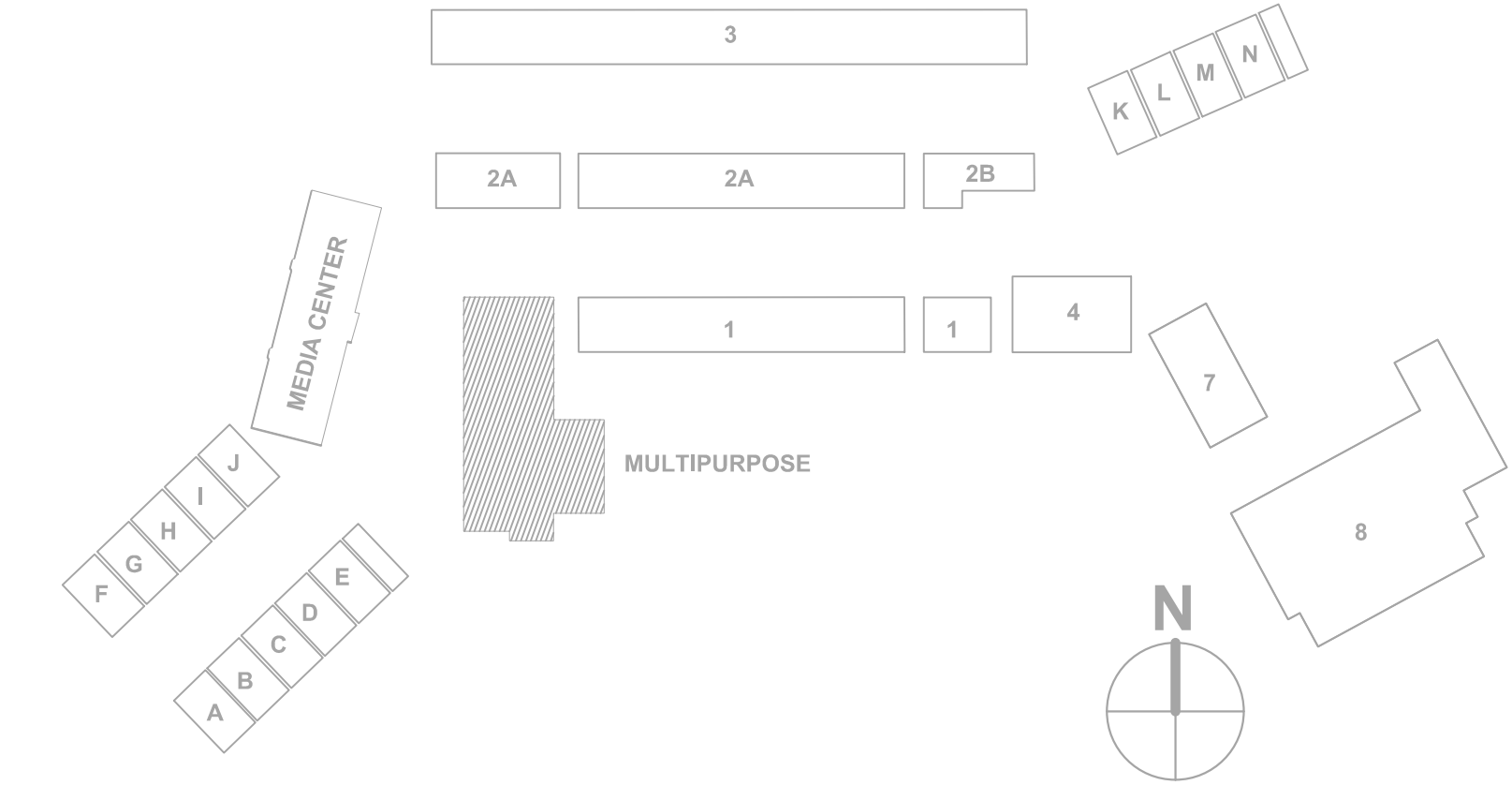
A - (1) #14 UNSHIELDED TWISTED PAIR FOR SIGNALING LINE CIRCUITS.
B - (2) #12 FOR 24V POWER (CO DETECTOR)

EQUIPMENT SCHEDULE:

Ⓒ	FIRE ALARM: (N) CARBON MONOXIDE DETECTOR W/ BASE MODEL: NOTIFIER FSCG-851B220S CSFM: 5218-0028.51/1800-1653.104
APS	FIRE ALARM: (N) AUXILIARY POWER SUPPLY MODEL: NOTIFIER FGPS 2450 CSFM: 1315-0028.225

(E) FIRE ALARM CONTROL PANEL - BATTERY CALCULATION							
QUANTITY	MODEL #	DEVICE	SUPV. CURRENT PER	TOTAL SUPV. CURRENT	ALARM CURRENT	TOTAL ALARM CURRENT	
FIRE ALARM CONTROL PANEL							
1	CPUNFS2-3030	FACP CENTRAL PROCESSING UNIT	0.1200	0.12	0.1200	0.12	
1	KDM-R2	LCD DISPLAY	0.2200	0.22	0.2200	0.22	
1	UDACT-2	DIGITAL COMMUNICATOR	0.0520	0.05	0.0870	0.087	
1	LCD2-80	REMOTE ANNUNCIATOR	0.0450	0.0450	0.0980	0.0980	
2	LEM-320	LOOP EXPANDER MODULE	0.1300	0.26	0.1300	0.26	
2	LCM-320	LOOP CONTROL MODULE	0.1300	0.26	0.1300	0.26	
1	DVC-EM	DIGITAL VOICE COMMAND MODULE	0.3000	0.3000	0.3000	0.3000	
1	DVC-KO	DIGITAL VOICE COMMAND KEYPAD	0.0600	0.0600	0.0600	0.0600	
1	AMPS-24	POWER SUPPLY/BATTERY CHARGER	0.1300	0.1300	0.0500	0.0500	
(E) SLC DEVICES							
114	FAPT-851	SMOKE DETECTOR/BASE	0.0003	0.0342	0.0065	0.7410	
185	FST-851H	HIGH ATTIC HEAT DETECTOR/BASE	0.0003	0.0555	0.0065	1.2025	
0	FST-851	HEAT DETECTOR/BASE	0.0003	0.0000	0.0065	0.0000	
0	FAPT-851	DUCT DETECTOR/DNR HOUSING	0.0003	0.0000	0.0065	0.0000	
1	NBS-12LX	PULL STATION	0.0004	0.0004	0.0050	0.0050	
4	FRM-1	RELAY MODULE	0.0004	0.0016	0.0065	0.0260	
2	ISO-X	ISOLATOR MODULE	0.0004	0.0007	0.0170	0.0340	
(E) NOTIFICATION DEVICES							
14	SPSCR	CEILING SPEAKER/STROBE 75CD - 0.50 WATT	0.00	0.00	0.16	2.212	
13	SPSCR	CEILING SPEAKER/STROBE 30CD - 0.50 WATT	0.00	0.00	0.09	1.222	
10	SPSCR	CEILING SPEAKER/STROBE 15CD - 0.50 WATT	0.00	0.00	0.04	0.77	
0	SPSCR	CEILING SPEAKER/STROBE 15CD - 0.25 WATT	0.00	0.00	0.08	0	
(N) SLC DEVICES							
1	RRM-1	RELAY MODULE	0.000	0.000	0.0065	0.0065	
1	FSP-951 DNR	DUCT SMOKE DETECTOR	0.0002	0.0002	0.0045	0.0045	
8	FSCG-951	CARBON MONOXIDE	0.0002	0.0008	0.0045	0.018	
			Max. Superv. Current	Max. Alarm Current			
			7.59	148		7.58	
Maximum Supervisory Current:			148				
Standby Period 24 hour:			24				
Total Supervisory Reserve:			35.53 (A)				
Maximum Alarm Current:			7.59				
Alarm Period (15 mins):			0.249				
Total Alarm Reserve:			189 (B)				
Total Reserve Current: (A + B)			3742				
Safety Margin (20%) :			12				
Total Ampere Hours Required:			44.90				
(N) Battery: 2 - 12V 100 Ampere Hour							

BUILDING KEY



aedis architects
www.aedisarchitects.com
387 S. 1st Street, Suite 300
San Jose, CA 95113
tel: (408) 300-5160
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PROJECT
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT
CONSULTANT

REGISTERED PROFESSIONAL ENGINEER
E16880
DATE: 06/24/2021
ELECTRICAL
STATE OF CALIFORNIA

American Consulting Engineers Electrical, Inc.
1380 The Alameda, Suite 202
San Jose, CA 95126
JOB # E021032.001 Fax: 408/238-2316

STAMP

STATE
DSA FILE NUMBER 41-26
APPL # 01-119557

REVISIONS
No. Description Date
APPENDUM I 11/24/2021

MILESTONES
DD
90% CD
DSA SUB 06/03/2021
BACKCHECK

SHEET
ELECTRICAL NEW FLOOR PLANS - MULTIPURPOSE BLDG

DATE 11/24/2021
JOB # 2021005.06
SHEET # AD-1
E3.3

PANEL NAME	CM	FED FROM (E)IN. C																										
VOLTAGE	208/120V	MAIN CB 100 AMP																										
PHASE	3	BUSSING 100 AMP																										
WIRE	4	MIN A.C. 10,000																										
TYPE	NEMA 1	SUB-FEED CB																										
MOUNTING	SURFACE	FEED THRU LUGS YES																										
CIRCUIT DESCRIPTION	LTG	REC	MTR	NC	CB	A&P	#	OKT	#	OKT	CB	A&P	LTG	REC	MTR	NC	CIRCUIT DESCRIPTION											
(N) HEAT PUMP 11A - MEZZANINE				3.74	50A		1	A	2	50A			3.74				(N) HEAT PUMP 15 - CLASSROOM 15											
" " " " " "				0.89	2P		6	B	4	2P			3.74				" " " " " "											
(N) FAN COIL 11A - MEZZANINE				0.89	15A		5	C	6	15A			0.89				(N) FAN COIL 15 - CLASSROOM 15											
" " " " " "				0.89	2P		7	A	8	2P			0.89				" " " " " "											
(N) HEAT PUMP 11A - MEZZANINE				3.74	50A		9	B	10	20A/1P							SPARE											
" " " " " "				3.74	2P		11	C	12	20A/1P							SPARE											
(N) FAN COIL 11A - MEZZANINE				0.89	15A		13	A	14	20A/1P							SPARE											
" " " " " "				0.89	2P		15	B	16	20A/1P							SPARE											
SPARE					20A/1P		17	C	18	20A/1P							SPARE											
SPARE					20A/1P		19	A	20	20A/1P							SPARE											
SPARE					20A/1P		21	B	22	20A/1P							SPARE											
SPARE					20A/1P		23	C	24	20A/1P							SPARE											
SPARE					20A/1P		25	A	26	20A/1P							SPARE											
SPARE					20A/1P		27	B	28	20A/1P							SPARE											
SPARE					20A/1P		29	C	30	20A/1P							SPARE											
SPARE					20A/1P		31	A	32	20A/1P							SPARE											
SPARE					20A/1P		33	B	34	20A/1P							SPARE											
SPARE					20A/1P		35	C	36	20A/1P							SPARE											
SPARE					20A/1P		37	A	38	20A/1P							SPARE											
SPARE					20A/1P		39	B	40	20A/1P			0.36				(N) WEATHERPROOF GFCI REC. ROOF MOUNT-MULTI-PURPOSE											
(N) MOTOR RATED SWITCH - MULTIPURPOSE BLDG				0.12	20A/1P		41	C	42	20A/1P			0.36				" " " " " "											
	0	0	0.1	18.6									0	0	0.7	9.3												
LOAD SUMMARY																												
CONNECTED KVA	DEMAND FACTOR			DEMAND KVA																								
LTG LIGHTING x 125%	0	1.25			0.0																							
REC RECEPTS FIP 220 A/C	0.7	1.00			0.7																							
10KVA x 100% + REMAINDER x 50%	0	0.50			0.0																							
(MTR) LARGEST MOTOR x 125%	0.1	1.25			0.2																							
+ REMAINING MOTORS x 100%	0	1.00			0.0																							
(NC) NON-CONTINUOUS LOAD x 100%	27.8	1.00			27.8																							
FULL RATED A/C YES NO																												
SERIES RATED A/C Y																												
SPD N																												
COPPER BUSSING Y																												
ALUMINUM BUSSING N																												
KVA PHASE A (CONNECTED) 10.2																												
KVA PHASE B (CONNECTED) 12.5																												
KVA PHASE C (CONNECTED) 6.0																												
SUB FEED CONNECTED LOAD																												
TOTAL DEMAND KVA 28.7																												
TOTAL LOAD DIFFERES 28.7																												

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SAN MATEO-FOSTER CITY
SCHOOL DISTRICT



1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022, 2023, 2024, 2025, 2026, 2027, 2028, 2029, 2030, 2031, 2032, 2033, 2034, 2035, 2036, 2037, 2038, 2039, 2040, 2041, 2042, 2043, 2044, 2045, 2046, 2047, 2048, 2049, 2050, 2051, 2052, 2053, 2054, 2055, 2056, 2057, 2058, 2059, 2060, 2061, 2062, 2063, 2064, 2065, 2066, 2067, 2068, 2069, 2070, 2071, 2072, 2073, 2074, 2075, 2076, 2077, 2078, 2079, 2080, 2081, 2082, 2083, 2084, 2085, 2086, 2087, 2088, 2089, 2090, 2091, 2092, 2093, 2094, 2095, 2096, 2097, 2098, 2099, 2100, 2101, 2102, 2103, 2104, 2105, 2106, 2107, 2108, 2109, 2110, 2111, 2112, 2113, 2114, 2115, 2116, 2117, 2118, 2119, 2120, 2121, 2122, 2123, 2124, 2125, 2126, 2127, 2128, 2129, 2130, 2131, 2132, 2133, 2134, 2135, 2136, 2137, 2138, 2139, 2140, 2141, 2142, 2143, 2144, 2145, 2146, 2147, 2148, 2149, 2150, 2151, 2152, 2153, 2154, 2155, 2156, 2157, 2158, 2159, 2160, 2161, 2162, 2163, 2164, 2165, 2166, 2167, 2168, 2169, 2170, 2171, 2172, 2173, 2174, 2175, 2176, 2177, 2178, 2179, 2180, 2181, 2182, 2183, 2184, 2185, 2186, 2187, 2188, 2189, 2190, 2191, 2192, 2193, 2194, 2195, 2196, 2197, 2198, 2199, 2200, 2201, 2202, 2203, 2204, 2205, 2206, 2207, 2208, 2209, 2210, 2211, 2212, 2213, 2214, 2215, 2216, 2217, 2218, 2219, 2220, 2221, 2222, 2223, 2224, 2225, 2226, 2227, 2228, 2229, 2230, 2231, 2232, 2233, 2234, 2235, 2236, 2237, 2238, 2239, 2240, 2241, 2242, 2243, 2244, 2245, 2246, 2247, 2248, 2249, 2250, 2251, 2252, 2253, 2254, 2255, 2256, 2257, 2258, 2259, 2260, 2261, 2262, 2263, 2264, 2265, 2266, 2267, 2268, 2269, 2270, 2271, 2272, 2273, 2274, 2275, 2276, 2277, 2278, 2279, 2280, 2281, 2282, 2283, 2284, 2285, 2286, 2287, 2288, 2289, 2290, 2291, 2292, 2293, 2294, 2295, 2296, 2297, 2298, 2299, 2300, 2301, 2302, 2303, 2304, 2305, 2306, 2307, 2308, 2309, 2310, 2311, 2312, 2313, 2314, 2315, 2316, 2317, 2318, 2319, 2320, 2321, 2322, 2323, 2324, 2325, 2326, 2327, 2328, 2329, 2330, 2331, 2332, 2333, 2334, 2335, 2336, 2337, 2338, 2339, 2340, 2341, 2342, 2343, 2344, 2345, 2346, 2347, 2348, 2349, 2350, 2351, 2352, 2353, 2354, 2355, 2356, 2357, 2358, 2359, 2360, 2361, 2362, 2363, 2364, 2365, 2366, 2367, 2368, 2369, 2370, 2371, 2372, 2373, 2374, 2375, 2376, 2377, 2378, 2379, 2380, 2381, 2382, 2383, 2384, 2385, 2386, 2387, 2388, 2389, 2390, 2391, 2392, 2393, 2394, 2395, 2396, 2397, 2398, 2399, 2400, 2401, 2402, 2403, 2404, 2405, 2406, 2407, 2408, 2409, 2410, 2411, 2412, 2413, 2414, 2415, 2416, 2417, 2418, 2419, 2420, 2421, 2422, 2423, 2424, 2425, 2426, 2427, 2428, 2429, 2430, 2431, 2432, 2433, 2434, 2435, 2436, 2437, 2438, 2439, 2440, 2441, 2442, 2443, 2444, 2445, 2446, 2447, 2448, 2449, 2450, 2451, 2452, 2453, 2454, 2455, 2456, 2457, 2458, 2459, 2460, 2461, 2462, 2463, 2464, 2465, 2466, 2467, 2468, 2469, 2470, 2471, 2472, 2473, 2474, 2475, 2476, 2477, 2478, 2479, 2480, 2481, 2482, 2483, 2484, 2485, 2486, 2487, 2488, 2489, 2490, 2491, 2492, 2493, 2494, 2495, 2496, 2497, 2498, 2499, 2500, 2501, 2502, 2503, 2504, 2505, 2506, 2507, 2508, 2509, 2510, 2511, 2512, 2513, 2514, 2515, 2516, 2517, 2518, 2519, 2520, 2521, 2522, 2523, 2524, 2525, 2526, 2527, 2528, 2529, 2530, 2531, 2532, 2533, 2534, 2535, 2536, 2537, 2538, 2539, 2540, 2541, 2542, 2543, 2544, 2545, 2546, 2547, 2548, 2549, 2550, 2551, 2552, 2553, 2554, 2555, 2556, 2557, 2558, 2559, 2560, 2561, 2562, 2563, 2564, 2565, 2566, 2567, 2568, 2569, 2570, 2571, 2572, 2573, 2574, 2575, 2576, 2577, 2578, 2579, 2580, 2581, 2582, 2583, 2584, 2585, 2586, 2587, 2588, 2589, 2590, 2591, 2592, 2593, 2594, 2595, 2596, 2597, 2598, 2599, 2600, 2601, 2602, 2603, 2604, 2605, 2606, 2607, 2608, 2609, 2610, 2611, 2612, 2613, 2614, 2615, 2616, 2617, 2618, 2619, 2620, 2621, 2622, 2623, 2624, 2625, 2626, 2627, 2628, 2629, 2630, 2631, 2632, 2633, 2634, 2635, 2636, 2637, 2638, 2639, 2640, 2641, 2642, 2643, 2644, 2645, 2646, 2647, 2648, 2649, 2650, 2651, 2652, 2653, 2654, 2655, 2656, 2657, 2658, 2659, 2660, 2661, 2662, 2663, 2664, 2665, 2666, 2667, 2668, 2669, 2670, 2671, 2672, 2673, 2674, 2675, 2676, 2677, 2678, 26

PANEL NAME	IESK										FEED FROM										MEB-1	
VOLTAGE	208/120V																				MAIN CB. M.O.	
PHASE	3																				BUSSING 225 AMP	
WIRE	4																				MIN A/C 10,000	
TYPE	NEMA 1																				SUB FEED CB	
MOUNTING	SURFACE																				FEED THRU LUGS: YES	
CIRCUIT DESCRIPTION	LOAD TYPE (KVA)										LOAD TYPE (KVA)										CIRCUIT DESCRIPTION	
	LTG	REC	MTR	NCL	CB	AMPP	#	OKT	PH	OKT	#	LTG	REC	MTR	NCL							
EXISTING LOAD		0.72			20A/1P	1	A	2	20A/1P		0.72					EXISTING LOAD						
EXISTING LOAD		0.72			20A/1P	3	B	4	20A/1P		0.72					EXISTING LOAD						
EXISTING LOAD		0.72			20A/1P	5	C	6	20A/1P		0.72					EXISTING LOAD						
EXISTING LOAD		0.72			20A/1P	7	A	8	20A/1P		0.72					EXISTING LOAD						
EXISTING LOAD		0.72			20A/1P	9	B	10	20A/1P		0.72					EXISTING LOAD						
EXISTING LOAD		0.72			20A/1P	11	C	12	20A/1P		0.72					EXISTING LOAD						
EXISTING LOAD		0.72			20A/1P	13	A	14	20A/1P		0.72					EXISTING LOAD						
SPARE					20A/1P	15	B	16	20A/1P		0.72					EXISTING LOAD						
SPARE					20A/1P	17	C	18	20A/1P							SPARE						
SPARE					20A/1P	19	A	20	20A/1P							SPARE						
SPARE					20A/1P	21	B	22	20A/1P							SPARE						
SPARE					20A/1P	23	C	24	20A/1P							SPARE						
SPARE					20A/1P	25	A	26	20A/1P							SPARE						
SPARE					20A/1P	27	B	28	20A/1P							SPARE						
SPARE					20A/1P	29	C	30	20A/1P							SPARE						
SPARE					20A/1P	31	A	32	20A/1P							SPARE						
SPARE					20A/1P	33	B	34	20A/1P							SPARE						
SPARE					20A/1P	35	C	36	20A/1P							SPARE						
SPARE					20A/1P	37	A	38	(N)B80A					3.00	(N) WHP 1 - PREP AREA 207							
SPARE					20A/1P	39	B	40							3.00	-	-	-	-	-		
SPARE					20A/1P	41	C	42							3.00	-	-	-	-	-		
					0	5.0	0	0							0	5.8	0	9.0				
LOAD SUMMARY																						
CONNECTED KVA	DEMAND FACTOR					DEMAND KVA																
(LTG) LIGHTING X 125%	0					1.25	0.0															
(REC) REFRIG X 220-404	10.0					1.00	10.0															
10KVA X 100% + REMAINING 50%	0.8					0.50	0.4															
(MTR) LARGEST MOTOR X 125%	0					1.25	0.0															
+ REMAINING MOTORS x 100%	0					1.00	0.0															
(NCL) NON-CONTINUOUS LOAD x 100%	9.0					1.00	9.0															
										Yes/No		KVA PHASE A (CONNECTED)					7.3					
										FULL RATED A/C		KVA PHASE B (CONNECTED)					6.6					
										SPD		SUB PHASE C (CONNECTED)					5.9					
										COPPER BUSSING		SUB FEED CONNECTED LOAD										
										ALUMINUM BUSSING		TOTAL DEMAND KVA					18.4					
												TOTAL LOAD AMPS					53.8					

STATE
DSA FILE NUMBER 41-26
APPL # 01-119557

No.	Description	Date
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A ADDENDUM I 11/24/2021

PANEL NAME (EJ)										FED FROM MSB						
VOLTAGE 208/120V										MAIN CB 100 AMP						
PHASE 3										BUSSING 100 AMP						
WIRE 4										MIN. A.C. 10,000						
TYPE NEWA 1										SUB-FEED CB						
MOUNTING SURFACE										FEED THRU LUGS: YES						
CIRCUIT DESCRIPTION		LOAD TYPE (KVA)			CB	OKT	PH	OKT	CB	LOAD TYPE (KVA)			CIRCUIT DESCRIPTION			
LTG	REC	MTR	NCL	AMP	#					LTG	REC	MTR	NCL			
(E) LIGHTING - RM 13				20A/1P	1	A	2		20A/1P					(E) LIGHTING - RM 12		
(E) LIGHTING - RM 13				20A/1P	3	B	4		20A/1P					(E) LOAD		
(E) LIGHTING - RM 13				20A/1P	5	C	6		20A/1P					(E) LIGHTING - RM 13		
(E) LIGHTING - RM 13				20A/1P	7	A	8		20A/1P					(E) REC - RM 13 B		
(E) LIGHTING - RM 13				20A/1P	9	B	10		20A/1P					(E) REC - RM 13 A		
(E) LIGHTING - RM 13				20A/1P	11	C	12		20A/1P					(E) REC - RM 13		
(E) TV - RM 13				20A/1P	13	A	14		20A/1P					(E) REC - RM 12 A & C		
(E) FAN - RM 13				20A/1P	15	B	16		20A/1P					(E) REC - RM 13		
(E) LOAD				20A/1P	17	C	18		20A/1P					(E) REC - RM 13		
(E) LOAD				20A/1P	19	A	20		20A/1P					(E) REC - RM 13		
(E) LOAD				20A/1P	21	B	22		20A/1P					(E) LOAD		
(E) LOAD				20A/1P	23	C	24		20A/1P					(E) LOAD		
(E) H-4				15A	25	A	26		40A					(E) LOAD		
" - - - - -"					27	B	28							(E) LOAD		
" - - - - -"					3P	29	30		3P					(E) LOAD		
(N) FURNACE 13 - CLASSROOM 13			2.40	(N)20A/1P	31	A	32		(N)80A		3.10			(N) CONDENSING UNIT 13		
(N) FURNACE 14 - CLASSROOM 14			2.40	(N)20A/1P	33	B	34		2P		3.10	" - - - - -"				
(N) WEATHERPROOF GFCI REC			0.36	(N)20A/1P	35	C	36		(N)80A		3.10			(N) CONDENSING UNIT 14		
SPARE				20A/1P	37	A	38		2P		3.10	" - - - - -"				
SPARE				20A/1P	39	B	40		20A/1P					SPARE		
SPARE				20A/1P	41	C	42		20A/1P					SPARE		
	0	0.4	0	4.8						0	0	0	12.4			
LOAD SUMMARY														Yes/No	KVA PHASE A (CONNECTED)	8.6
(LTG) LIGHTING x 125%	0	1.25	0.0						C	Y	KVA PHASE B (CONNECTED)	5.5				
(REC) REFRIG x 120.44	0.4	1.00	0.4						N	Y	KVA PHASE C (CONNECTED)	3.5				
(10KVA x 100% + REMAINDER x 50%)	0	0.50	0.0								(SUB FEED CONNECTED LOAD)					
(MTR) LARGEST MOTOR x 125%	0	1.25	0.0								COPPER BUSSING					
+ REMAINING MOTORS x 100%	0	1.00	0.0								ALUMINUM BUSSING					
(NCL) NON CONTINUOUS LOAD x 100%	17.2	1.00	17.2								TOTAL DEMAND KVA	17.6				
											TOTAL LOAD AMPS	48.8				

MILESTONES

DD

90% CD

DSA SUB 06/03/2021

BACKCHECK

SHEET

**PANEL
SCHEDULES**

DATE 11/24/2021

JOB # 2021005.06

SHEET # AD-1
E4.3