99 S. Almaden Road, Suite 600
San Jose, CA 95113
November 25, 2021

Subject: **Bid Package #2**
Abbott Middle School HVAC Replcmt-DSA 01-119556
George Hall Elementary School HVAC Replcmt-DSA 01 119523
Laurel Elementary School HVAC Replcmt DSA 01-119551
San Mateo - Foster City School District

ADDENDUM NO. 1

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

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

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

Part 3. Addendum documentation exclusively for George Hall Elementary School Project.

Part 4. Addendum documentation exclusively for Laurel Elementary School Project.

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

- Please note that Addendum #1 has been issued as part of the initial Issued for Bid Documents.

Part 2. Addendum 1 Items for Abbott Middle School

- Review posted Addendum No. 1 documents as prepared by Aedis Architects, *attached.*

Part 3. Addendum 1 Items for George Hall Elementary School

- Review posted Addendum No. 1 documents as prepared by Aedis Architects, *attached.*

Part 4. Addendum 1 Items for Laurel Elementary School

- Review posted Addendum No. 1 documents as prepared by Aedis Architects, *attached.*

END OF ADDEDUM #1

aedis
architects

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 – RESILENT 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.

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 RESTRIPING 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

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

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/E3.31per 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

Aedis Architects
Thang Do, Principal

Electrical, American Consulting Engineers Electrical
Sammy Fernandez

Mechanical, Cypress Engineering Group
Metin Serttunc

Division of the State Architect

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.

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-Flashed, 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.

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,

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

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.

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**

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.

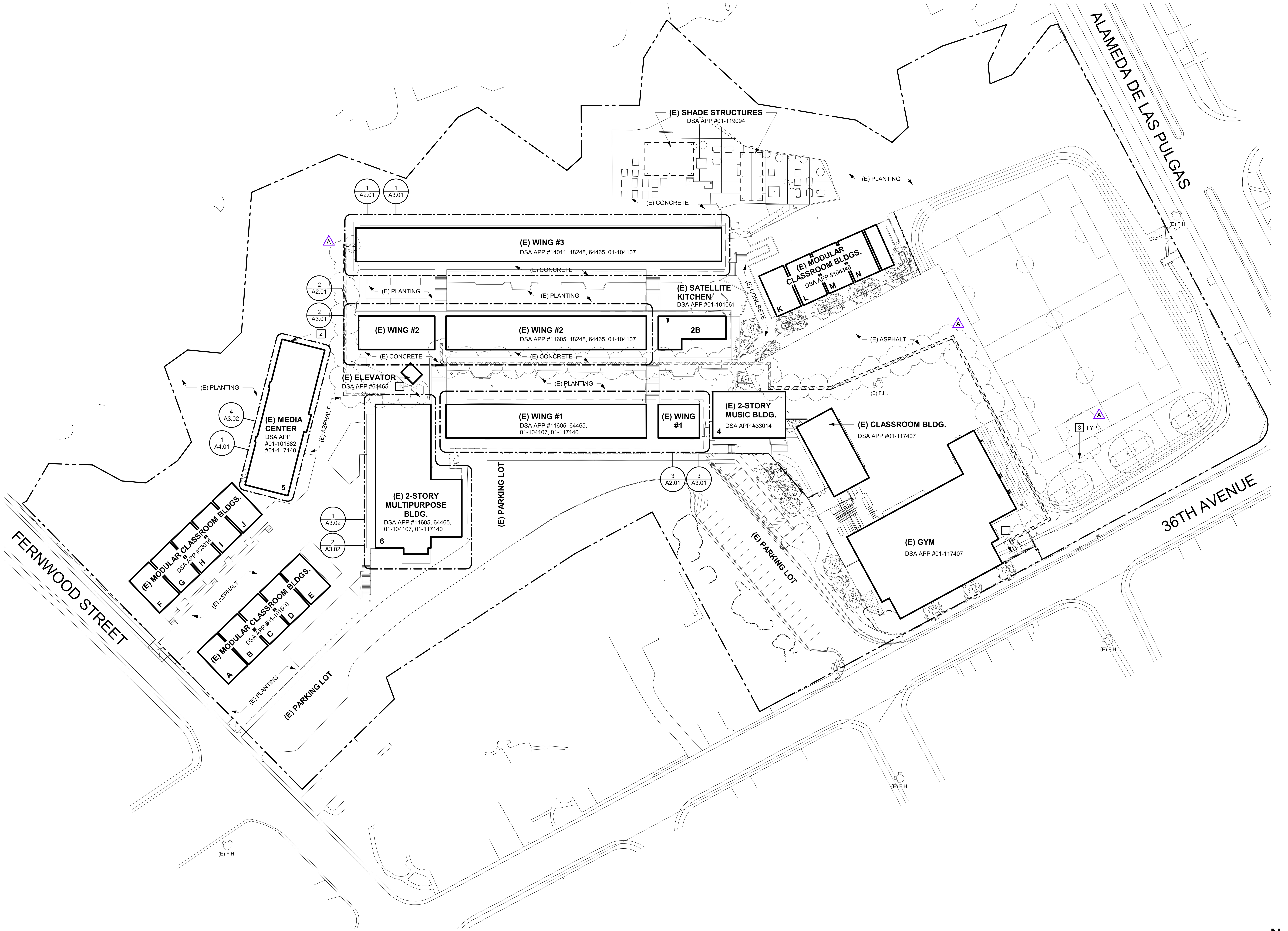
B. If tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

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



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

N

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 RESTRIPING PAVING IN KIND. S.E.D. FOR TRENCH ROUTING. SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING A

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. A

GRAPHIC KEY

- EXISTING CONSTRUCTION TO REMAIN
- EXISTING COVERED STRUCTURE
- TRENCH FOR ELECTRICAL WORK, S.E.D., 8/S5.01 & DETAILS ON SHEET A8.10
- PROPERTY LINE
- (E) F.H. EXISTING FIRE HYDRANT

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PROJECT

ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

STAMP

LICENSED ARCHITECT STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 41-26
APPL # 01-119556

REVISIONS

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

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

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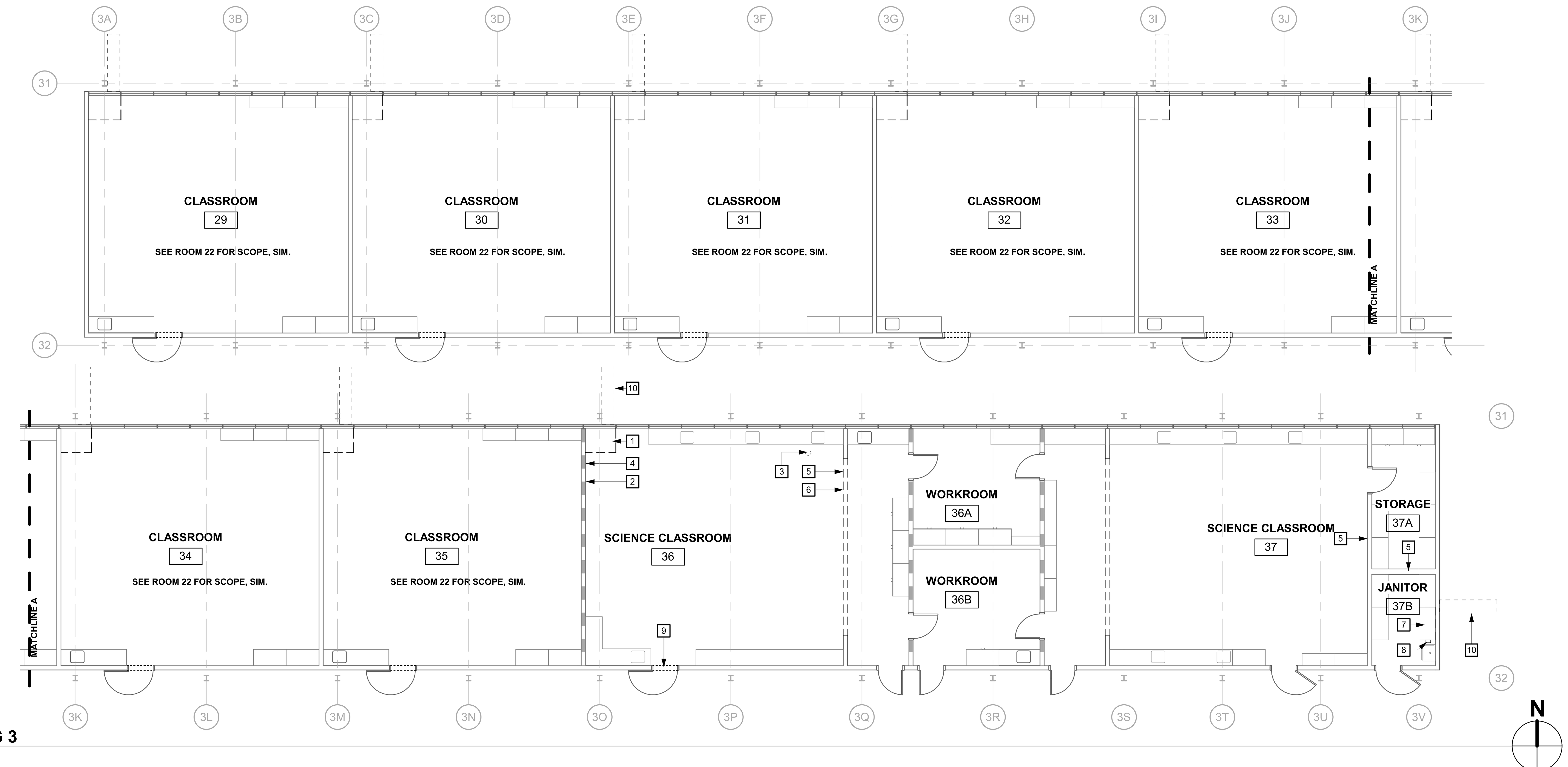
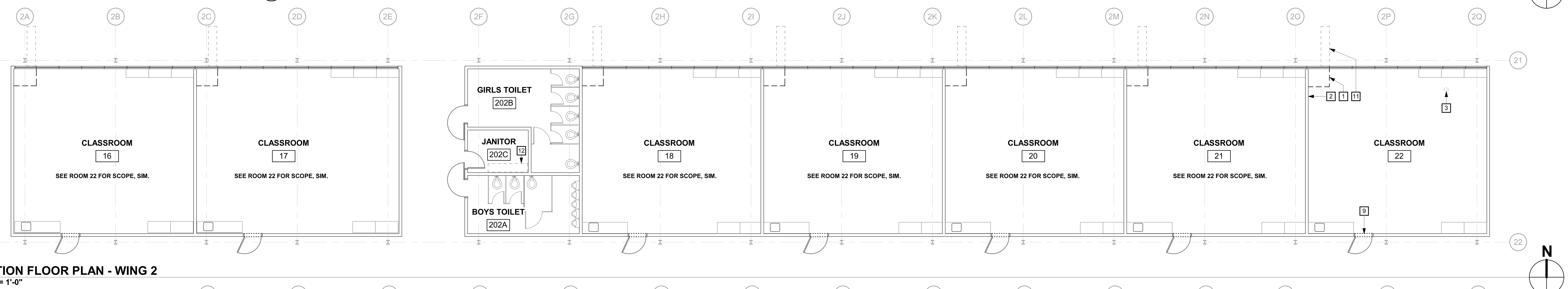
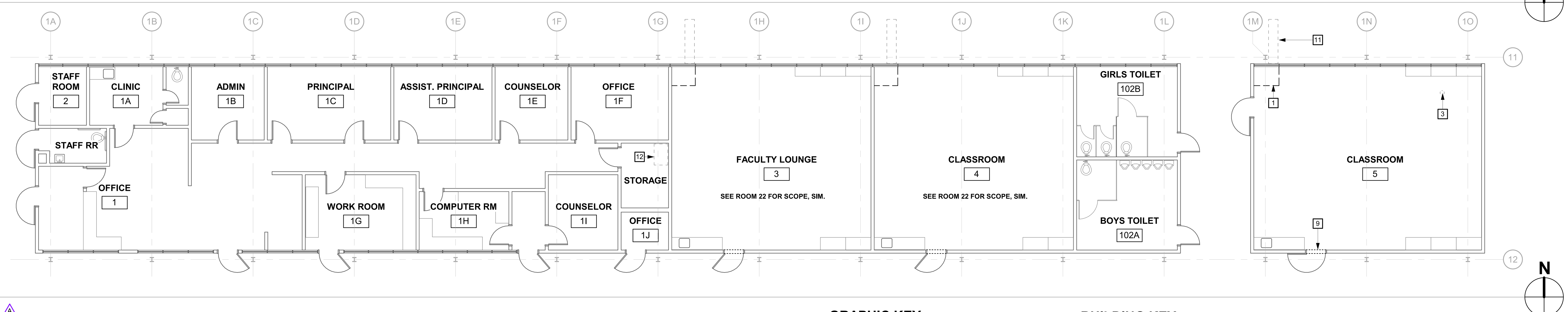


1 DEMOLITION FLOOR PLAN - WING 3
SCALE: 1/8" = 1'-0"



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

I 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 DEMOLTION 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 PLANTING AREA FOR NEW WORK, S.M.D.
12 REMOVE (E) FULL HEIGHT CASEWORK.

GRAPHIC KEY

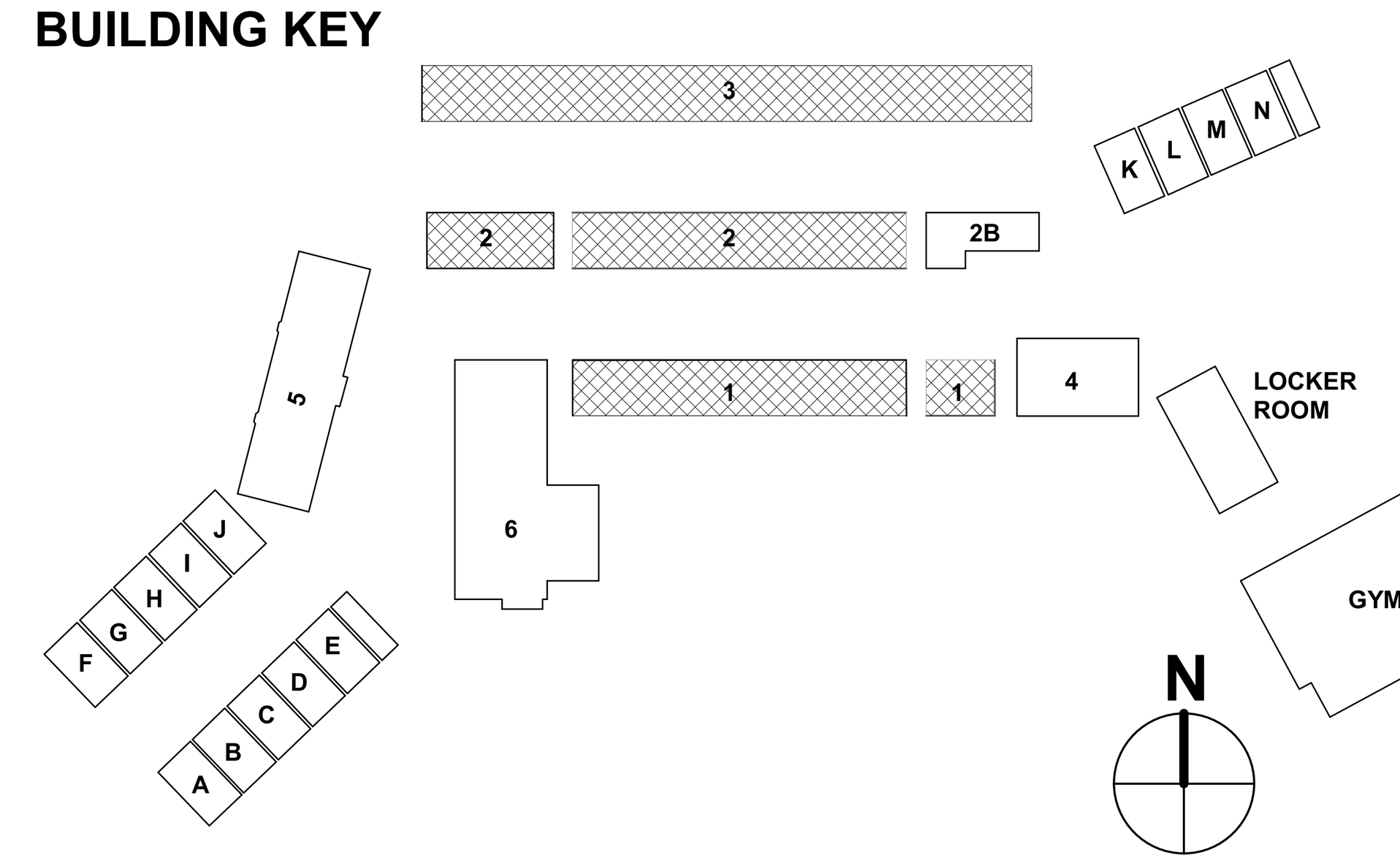
WALL TYPES:

EXISTING NONRATED WALL TO REMAIN.

EXISTING 1 HR. RATED WALL TO REMAIN.

EXISTING STOREFRONT OR WINDOW TO REMAIN.

BUILDING KEY



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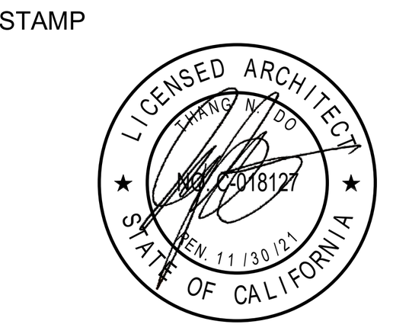
PROJECT
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

STAMP



STATE
DSA FILE NUMBER 41-26
APPL # 01-119556

REVISIONS

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

MILESTONES

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

SHEET
DEMOLITION FLOOR PLAN - WINGS 1, 2, & 3

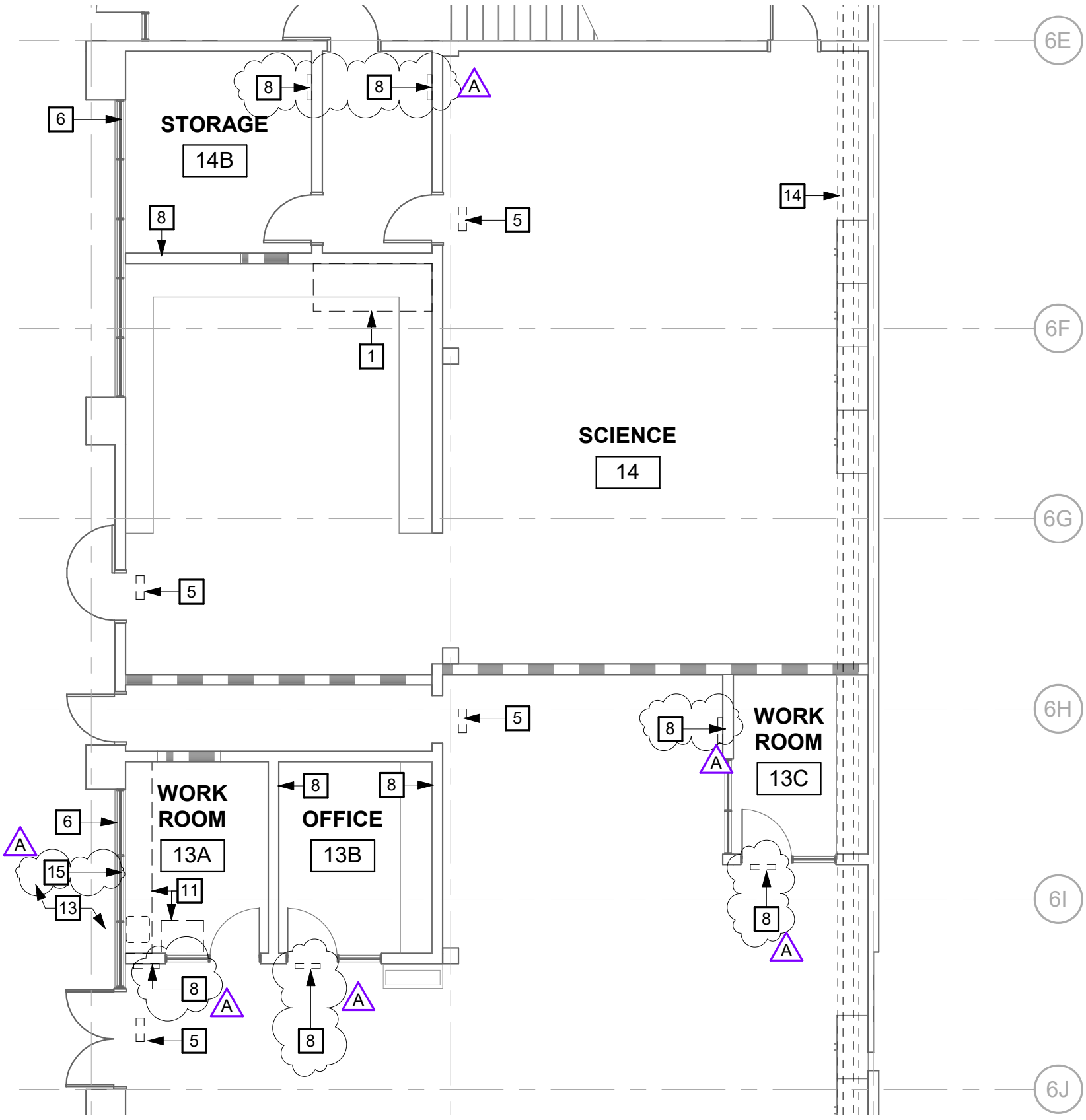
DATE 11/24/2021
JOB # 2021005.06
SHEET # AD1-A2.01

GENERAL SHEET NOTES

I 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. A

DEMOLITION FLOOR PLAN KEYNOTES

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



1 DEMOLITION FIRST FLOOR PLAN - MULTIPURPOSE BLDG

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

N

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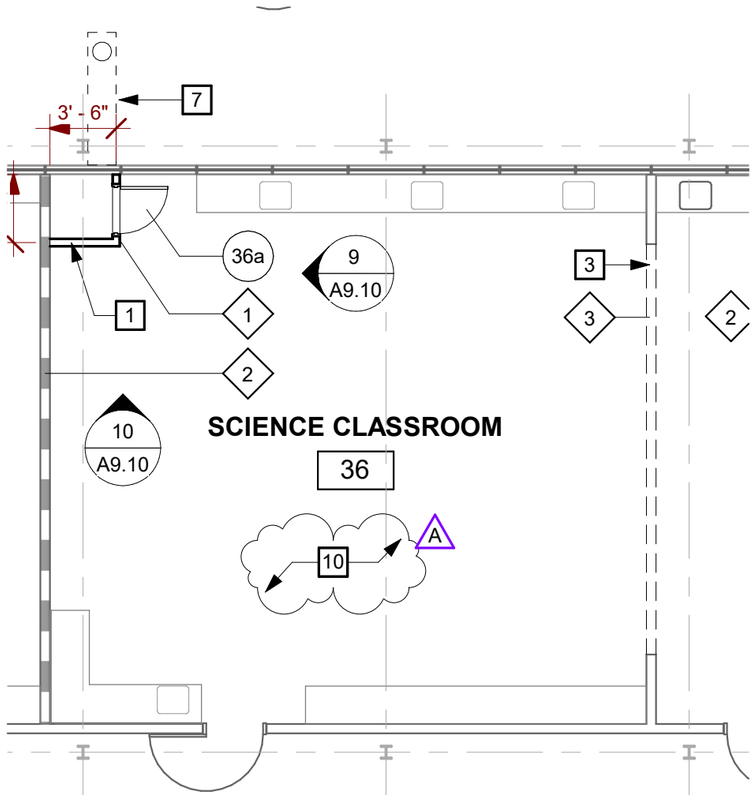
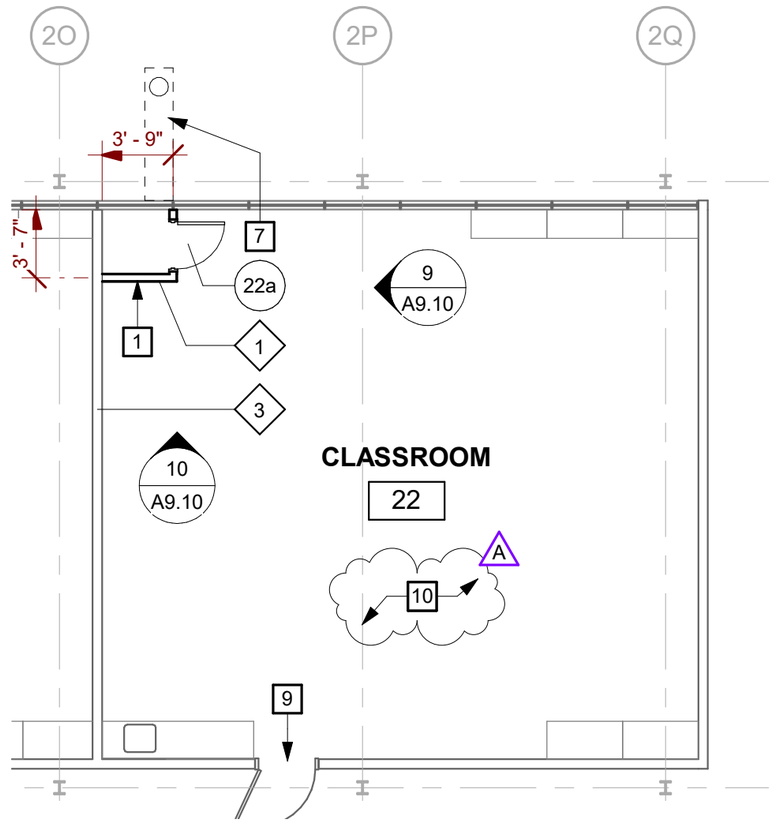
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET AD1-A2.02
APPL NO.: 01-119556	
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. A

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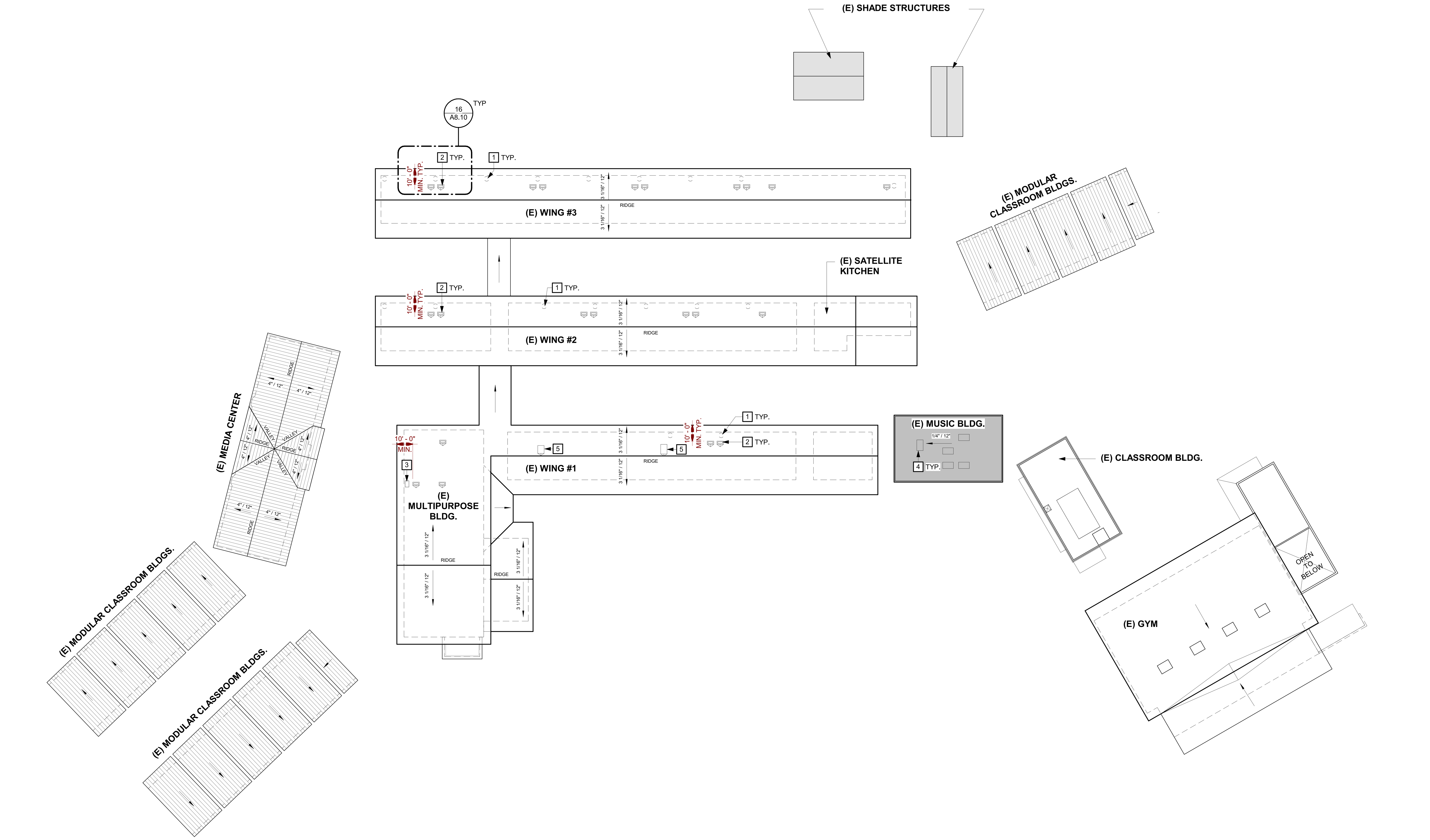
FILE NO.: 41-26	SHEET
APPL NO.: 01-119556	AD1-A3.01
JOB NO. 2021005.06	
DATE 11/24/2021	



1 SITE ROOF PLAN
SCALE: 1/32" = 1'-0"

N

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.

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. (A)

3 (E) AIR INTAKE TO REMAIN, S.M.D.

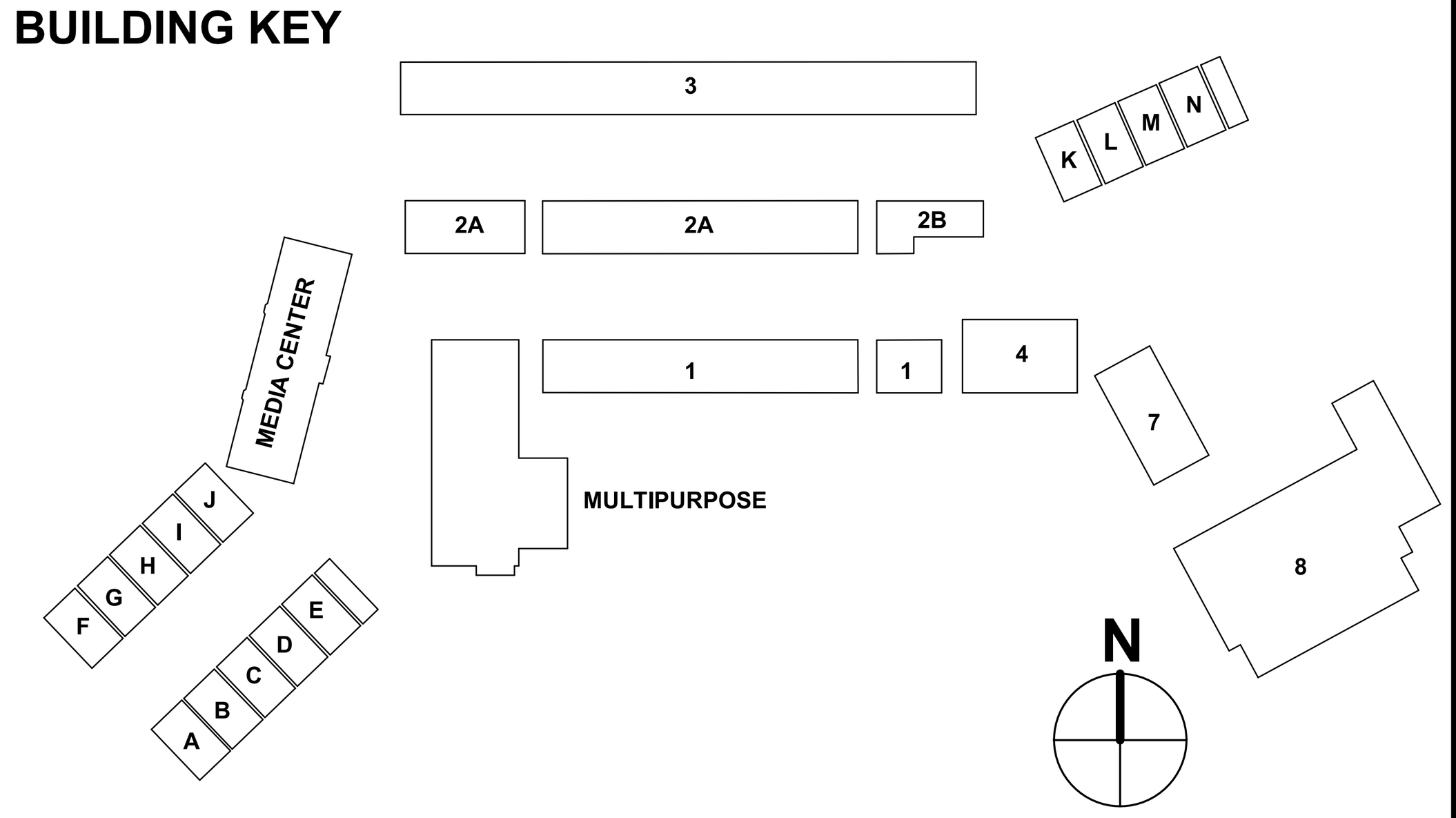
4 MECHANICAL UNIT, S.M.D. REMOVE (E) CURB AND REPLACE WITH NEW IN SAME LOCATION, S.M.D. AND SEE DETAIL 19/A8.10

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 (A)
- (E) STANDING SEAM, CLASS C MINIMUM
- (E) METAL ROOFING
- OUTLINE OF WALL BELOW

BUILDING KEY



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PROJECT
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

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LICENSED ARCHITECT STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 41-26
APPL # 01-119556

REVISIONS

No.	Description	Date
A	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

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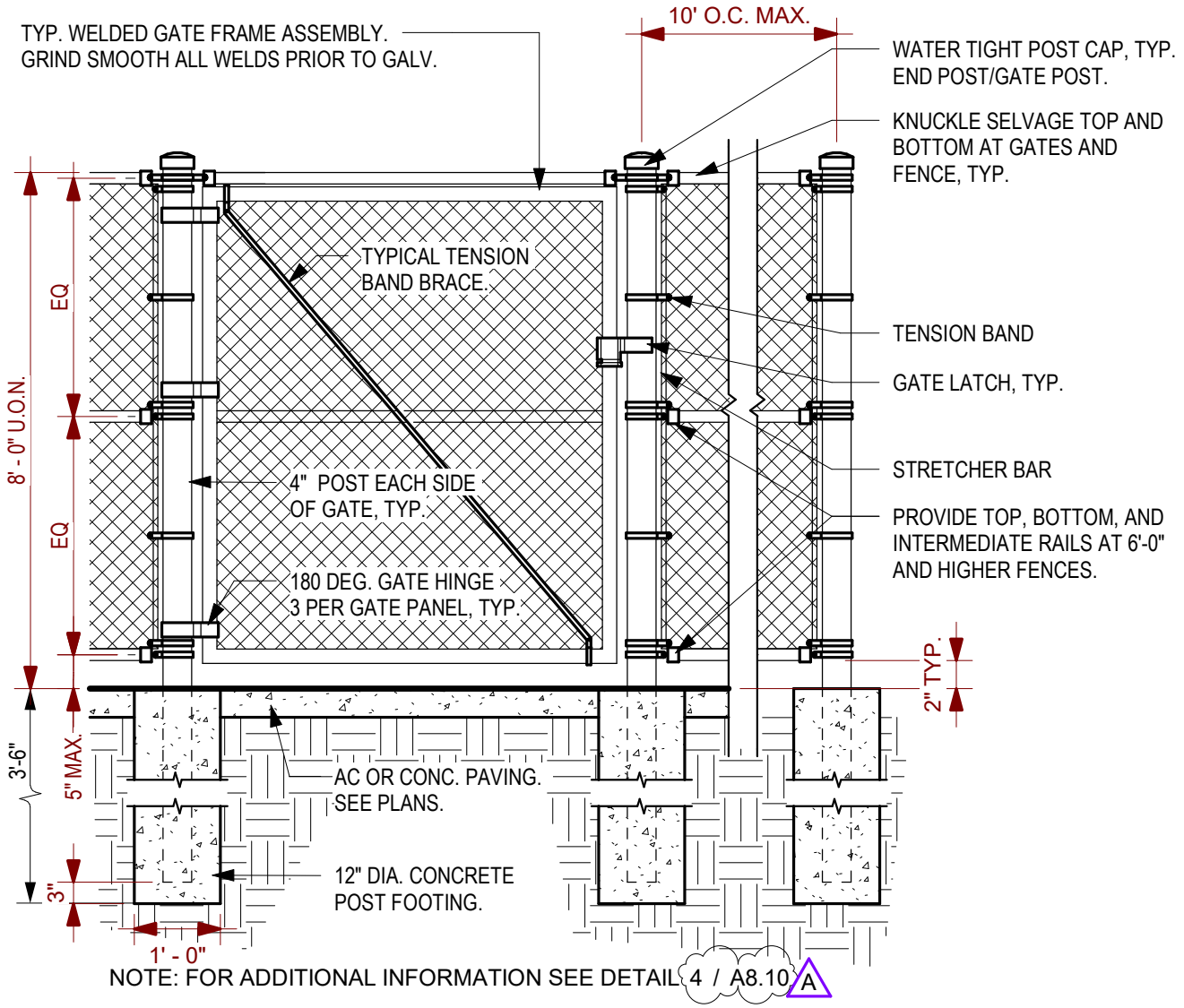

2 TYPICAL CHAINLINK GATE (SINGLE)

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

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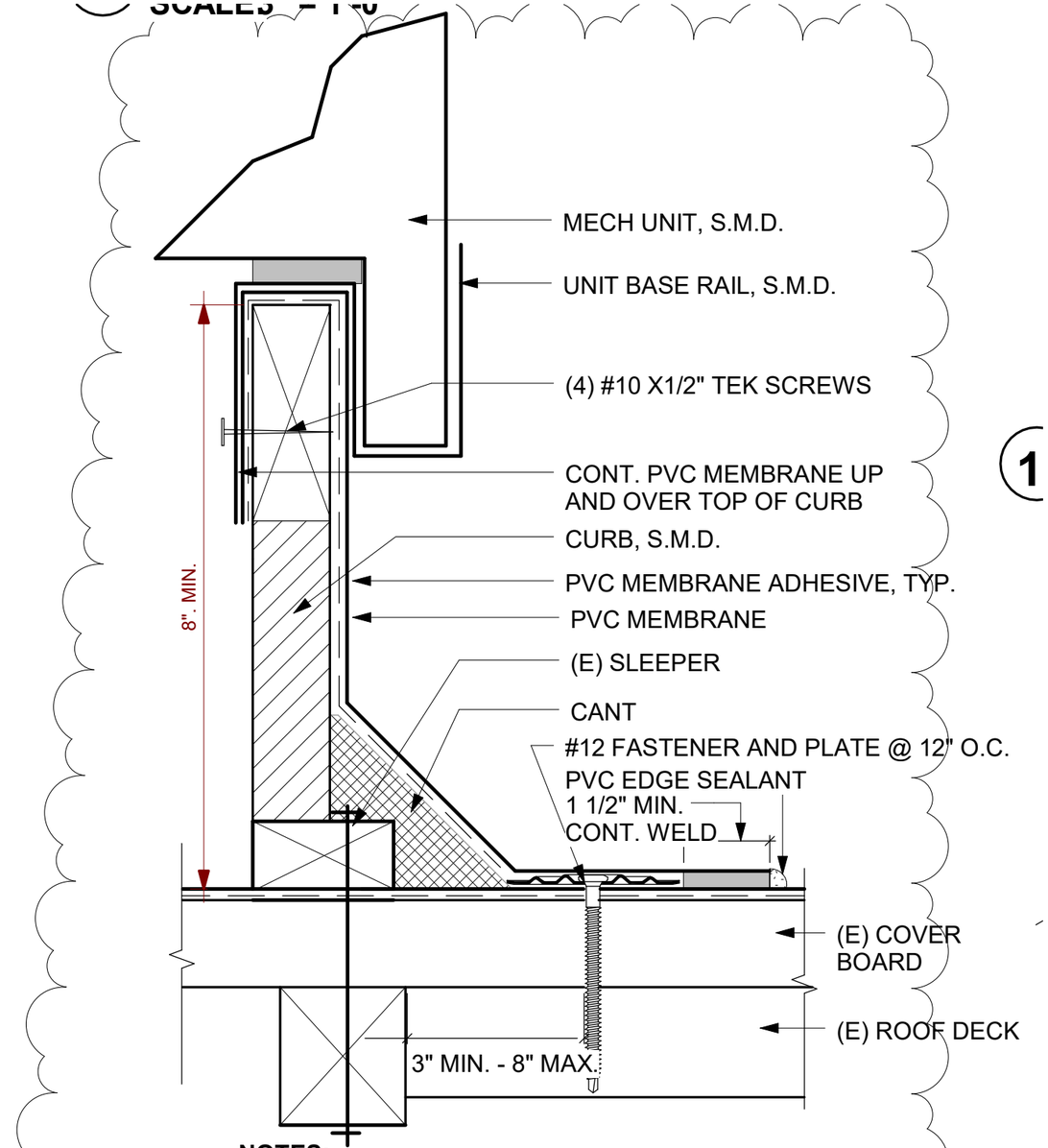
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT
SAN MATEO-FOSTER CITY SCHOOL DISTRIC

FILE NO.:	41-26
APPL NO.:	01-119556
JOB NO.	2021005.06
DATE	11/24/21

SHEET

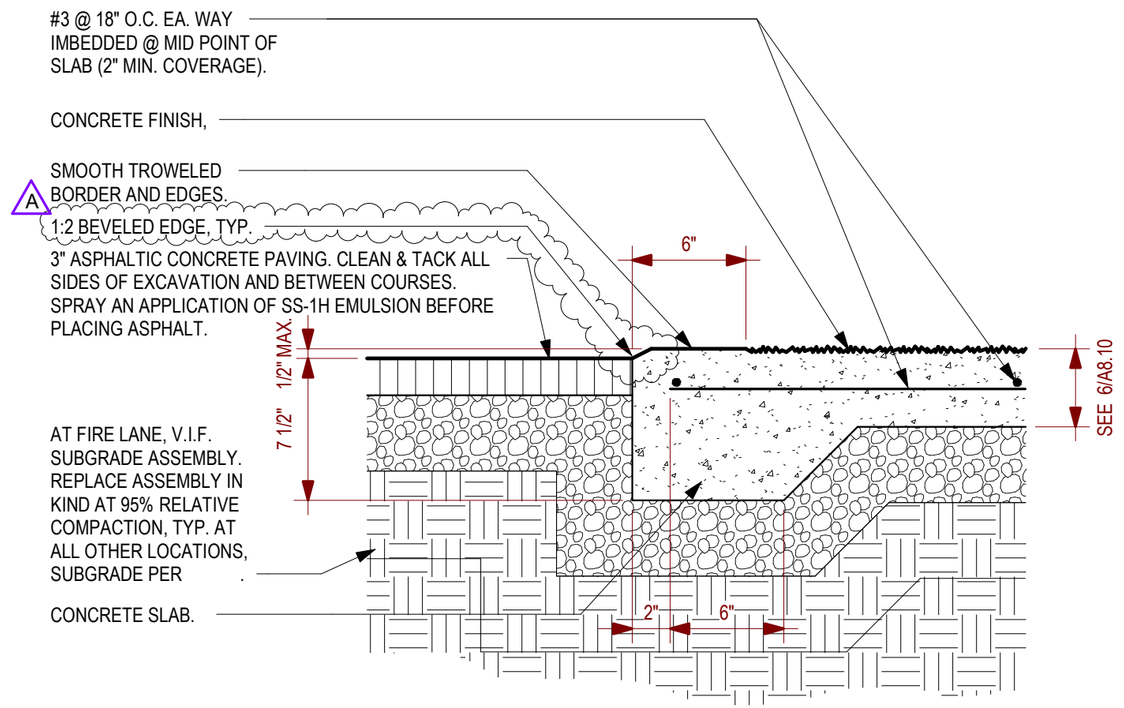
AD1-A8.10A



NOTES:
1. FOR CORNER FLASHING, SEE DETAIL 20/A8.10
2. FOR TRANSITION AT PATCH EDGE, SEE DETAIL 20/A8.10

19 SINGLE PLY CURB FLASHING
SCALE6" = 1'-0"

1



9 ASPHALT/CONCRETE JOINT
SCALE: 1 1/2" = 1'-0"

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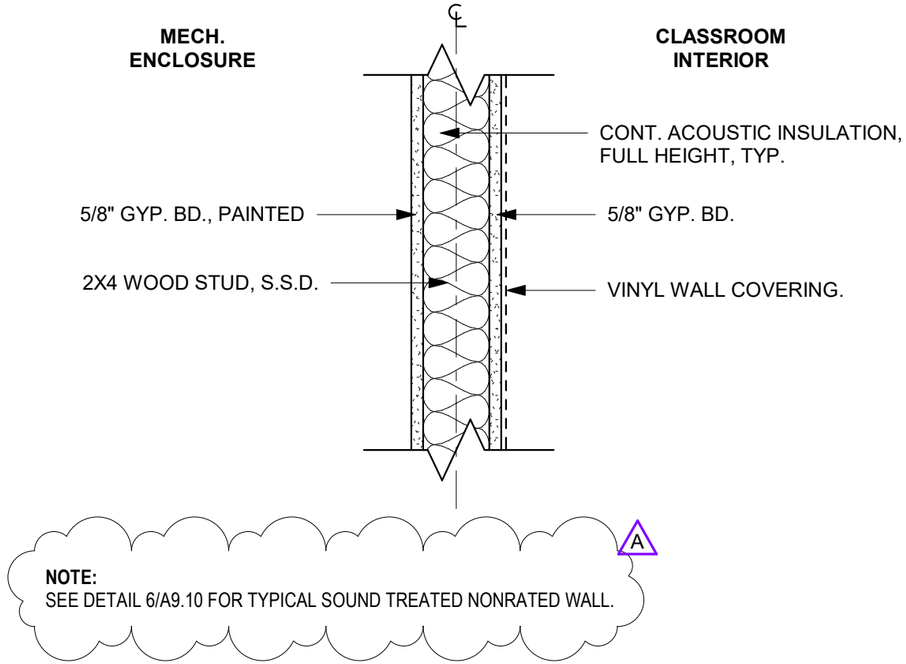
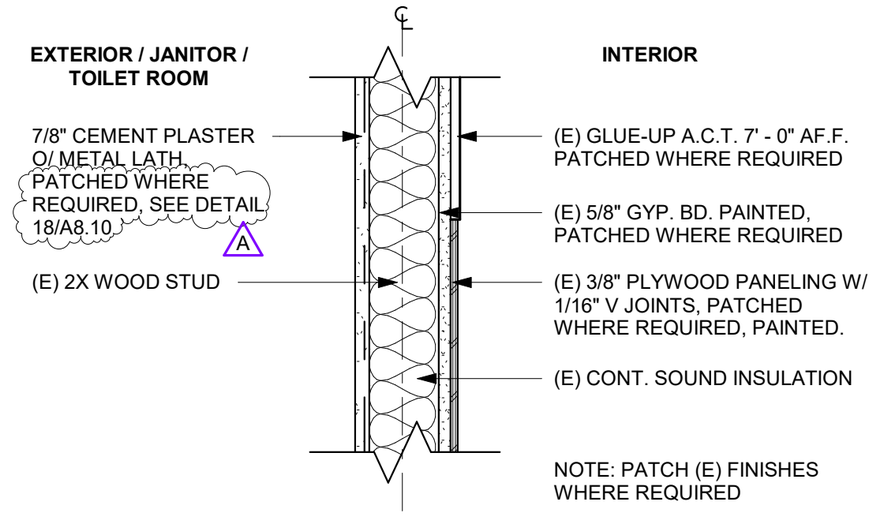
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT
SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET
APPL NO.: 01-119556	AD1-A8.10B
JOB NO. 2021005.06	
DATE 11/24/2021	



1 WALL TYPE - MECHANICAL ENCLOSURE

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



5 (E) WALL TYPE 5 - CEMENT PLASTER

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

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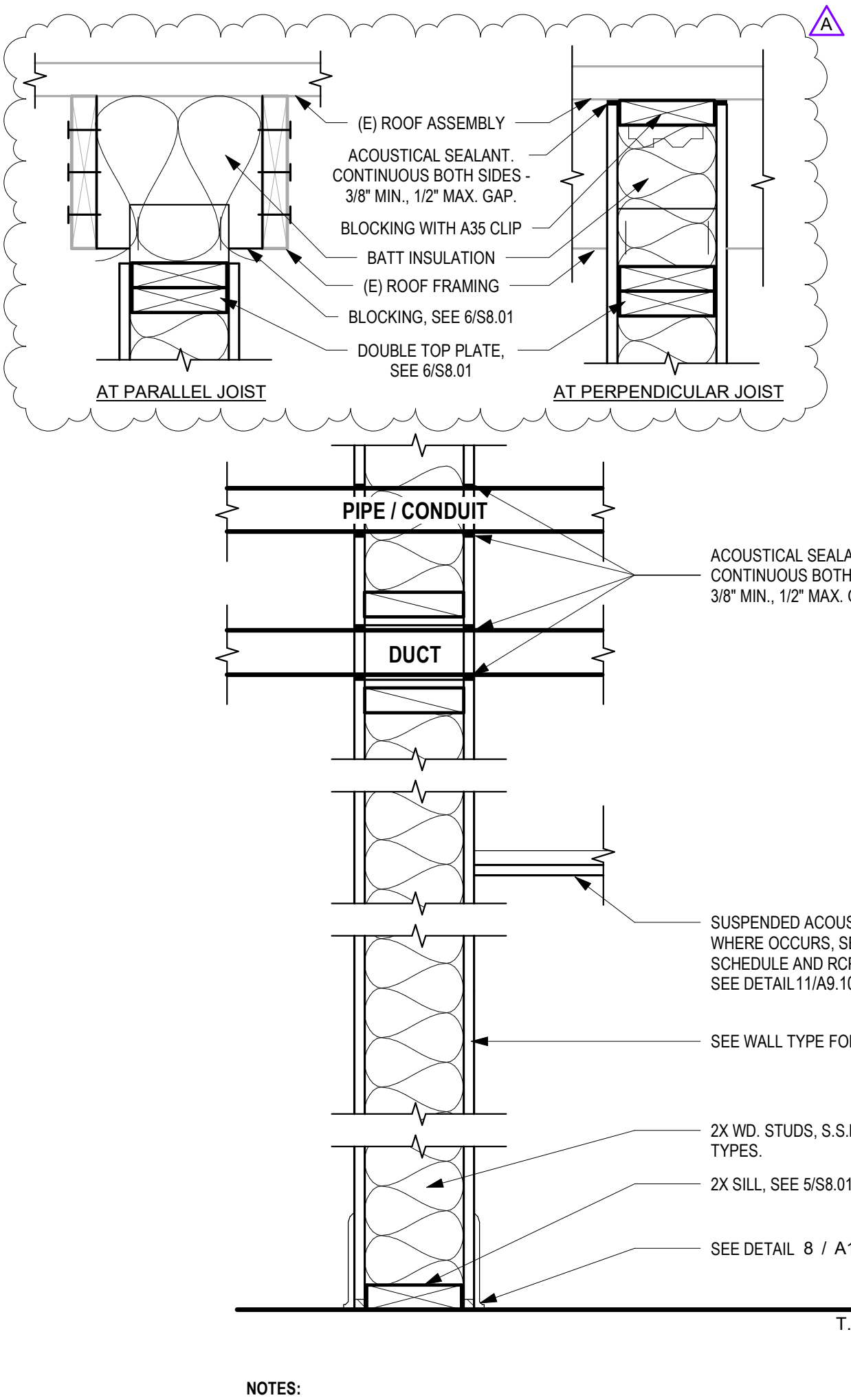
DATE	11/24/2021

SHEET

AD1-A9.10A



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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DATE	11/24/2021

SHEET

AD1-A9.10B

DOOR SCHEDULE

DOOR ID	OPENING SIZE		DOOR		FRAME		DETA
	WIDTH	HEIGHT	TYPE	FINISH	TYPE	FINISH	HEAD
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	MOCP			
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	MUSIC BLDG	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		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

1. WEIGHT INCLUDES ALL OPTIONS AND ACCESSORIES.
2. 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.
3. PROVIDE WITH MERV 13 FILTERS.
4. 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	MOCP			
WHP-1	BARD	Q48H4-B09	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

1. PROVIDE WITH COMMERCIAL ROOM VENTILATOR AND 2" MERV 13 FILTERS.
2. PROVIDE WITH 10 KW ELECTRIC HEAT.
3. PROVIDE WITH WALL SLEEVE WITH SPLITTER PLATE, CABINET EXTENSION AND AMCA RATED OUTDOOR LOUVER. PRIME AND PAINT TO MATCH EXISTING FINISH.
4. 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	ESP IN. W.G.	OUTSIDE AIR CFM	MOTOR HP	EER	COP	ELECTRICAL			WEIGHT LBS	MOUNTING DETAIL	NOTES
												V / PH	MCA	MOCP			
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

1. PROVIDE WITH 5KW ELECTRIC HEAT.
2. PROVIDE WITH COMMERCIAL ROOM VENTILATOR AND 2" MERV 13 FILTERS.
3. 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

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

CLASSROOM SPLIT SYSTEM HEAT PUMPS SCHEDULE

TAG	MANUFACTURER	MODEL	BUILDING	LOCATION	COOLING TOTAL MBH	HEATING TOTAL MBH	AIRFLOW CFM	OUTSIDE AIR CFM	REFRIGERANT PIPING		SEER	HSPF	ELECTRICAL			WEIGHT LBS	MOUNTING DETAIL	NOTES
									LIQUID	GAS			V / PH	MCA	MOCP			
FC-3	SAMSUNG	AM054TNZDCH/AA	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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-4	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-5	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-T-1A	SAMSUNG	AC042KNZDCH/AA	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	AC042KXADCH/AA		EXTERIOR			—	—	3/8"	5/8"	18.4	9.6	208 / 1	26.4	40	195	4/MP6.01	1
FC-T-1B	SAMSUNG	AC042KNZDCH/AA		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	AC042KXADCH/AA		EXTERIOR			—	—	3/8"	5/8"	18.4	9.6	208 / 1	26.4	40	195	4/MP6.01	1
FC-15	SAMSUNG	AC030MNHDCH/AA		CLASSROOM 15	30	32	670	180	3/8"	5/8"	—	—	NOTE 8			125	2/MP6.02	2, 4, 7, 8, 10
HP-15	SAMSUNG	AC030JXSCCH/AA		EXTERIOR			—	—	3/8"	5/8"	19.0	10.1	208 / 1	32	45	212	4/MP6.01	1
FC-16	SAMSUNG	AM054TNZDCH/AA	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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-17	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-18	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-19	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-20	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-21	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-22	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-29	SAMSUNG	AM054TNZDCH/AA	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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-30	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-31	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-32	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-33	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-34	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-35	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-36	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1
FC-37	SAMSUNG	AM054TNZDCH/AA		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	AM053TXMDCH/AA		ROOF			—	—	3/8"	3/4"	17.5	10	208 / 1	34	50	215	4/MP6.01	1

1. SPLIT SYSTEM SHALL BE ABLE TO OPERATE AT 94% HEATING CAPACITY DOWN TO 32°F OUTDOOR AMBIENT TEMPERATURE.
2. CFM BASED ON 0.55 ESP.
3. PROVIDE WITH SAMSUNG MIM-A60UN 24VAC THERMOSTAT ADAPTER AND 24VAC TRANSFORMER.
4. PROVIDE WITH DELTA CONTROLS THERMOSTAT WITH CO2 SENSOR. SEE MP5.01 FOR CONTROLS.
5. PROVIDE CONDENSATE PUMP.
6. PROVIDE WITH 4" MERV- 13 FILTERS WITH FILTER ACCESS PANEL.
7. FAN COIL SHALL BE ADJUSTED TO OPERATE AT CONSTANT SPEED AT INDICATED CFM.
8. INDOOR UNIT POWERED BY OUTDOOR UNIT.
9. PROVIDE WITH DOWNFLOW KIT.
10. PROVIDE WITH FB-DS2 FILTER BOX.

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PROJECT

ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

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STAMP

REGISTERED PROFESSIONAL ENGINEER
JEFFREY SCOTT VANCE
No. M31059
EXP. JUNE 30, 2023
MECHANICAL
STATE OF CALIFORNIA

STATE

DSA FILE NUMBER 41-26

APPL # 01-119557

REVISIONS

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

MILESTONES

DD	
90% CD	
DSA SUB	06/03/2021
BACKCHECK	10/05/2021

SHEET

SCHEDULES- MECHANICAL

DATE 11/24/2021

JOB # 2021005.06

SHEET # AD1-MP0.02

(#) 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 (A) (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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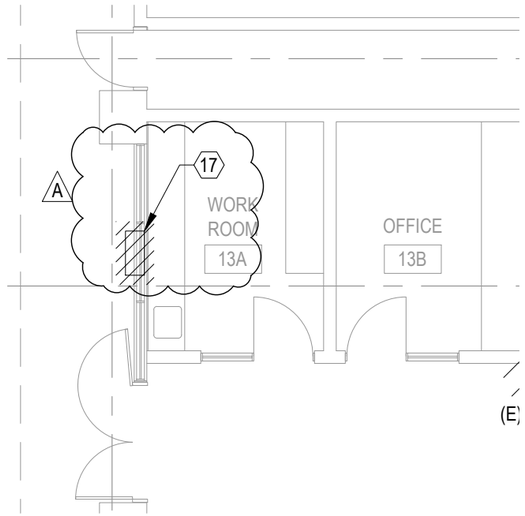
ABBOTT MIDDLE SCHOOL -
HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET REF. SHEET MP2.01
APPL NO.: 01-119556	**AD1-MP2.01**
JOB NO. 2021005.06	
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	SHEET REF. SHEET MP2.04
APPL NO.: 01-119556	
JOB NO. 2021005.06	**AD1-MP2.04**
DATE 11/24/2021	

(#) NEW SHEET NOTES

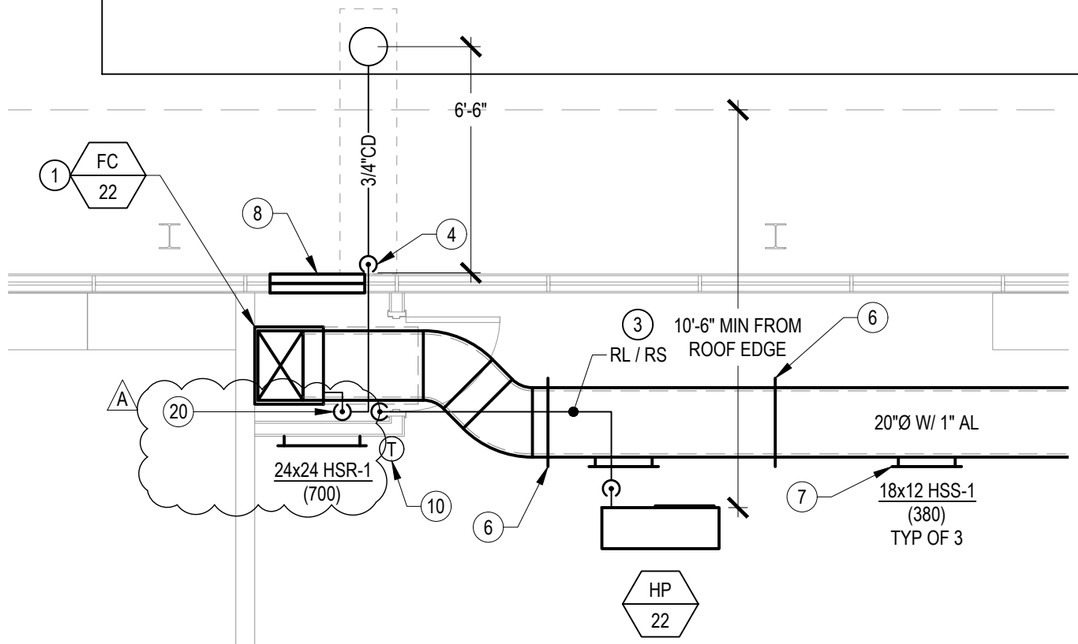
14. PIPE CONDENSATE DRAIN FROM HEAT PUMP TO (E) CONDENSATE DRAIN PIPE. SEE DETAIL 8/MP6.01 FOR CONDENSATE DRAIN CONNECTION TO EQUIPMENT.

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.

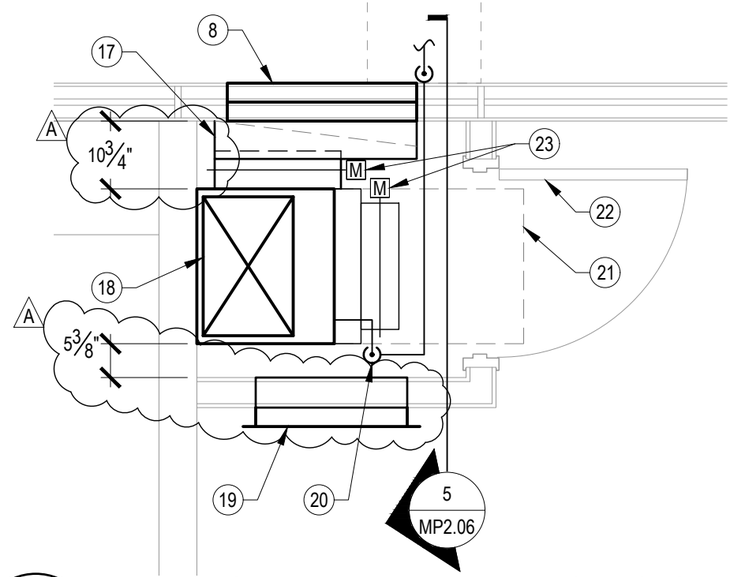
GENERAL NOTES

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 / MP2.06 PARTIAL FLOOR PLAN - TYPICAL CLASSROOM

SCALE: 1/4" = 1'-0"



4 / MP2.06 FLOOR PLAN - ENCLOSURE

SCALE: NONE

REGISTERED PROFESSIONAL ENGINEER
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EXP. JUNE 30, 2023
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CEG JOB NO: 21039

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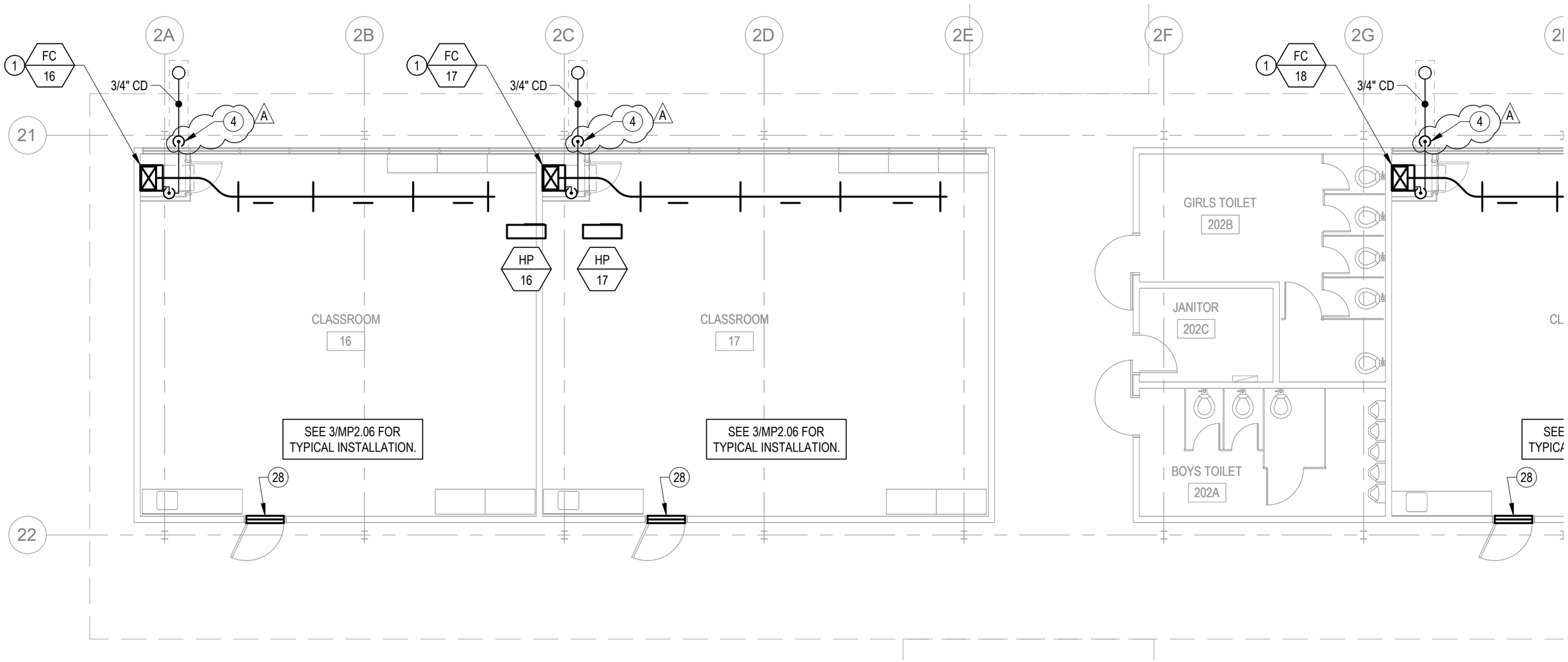
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET: REF. SHEET MP2.06
APPL NO.: 01-119556	**AD1-MP2.06a**
JOB NO. 2021005.06	
DATE 11/24/2021	



2 / MP2.06 FLOOR PLAN - WING 2 - NEW

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

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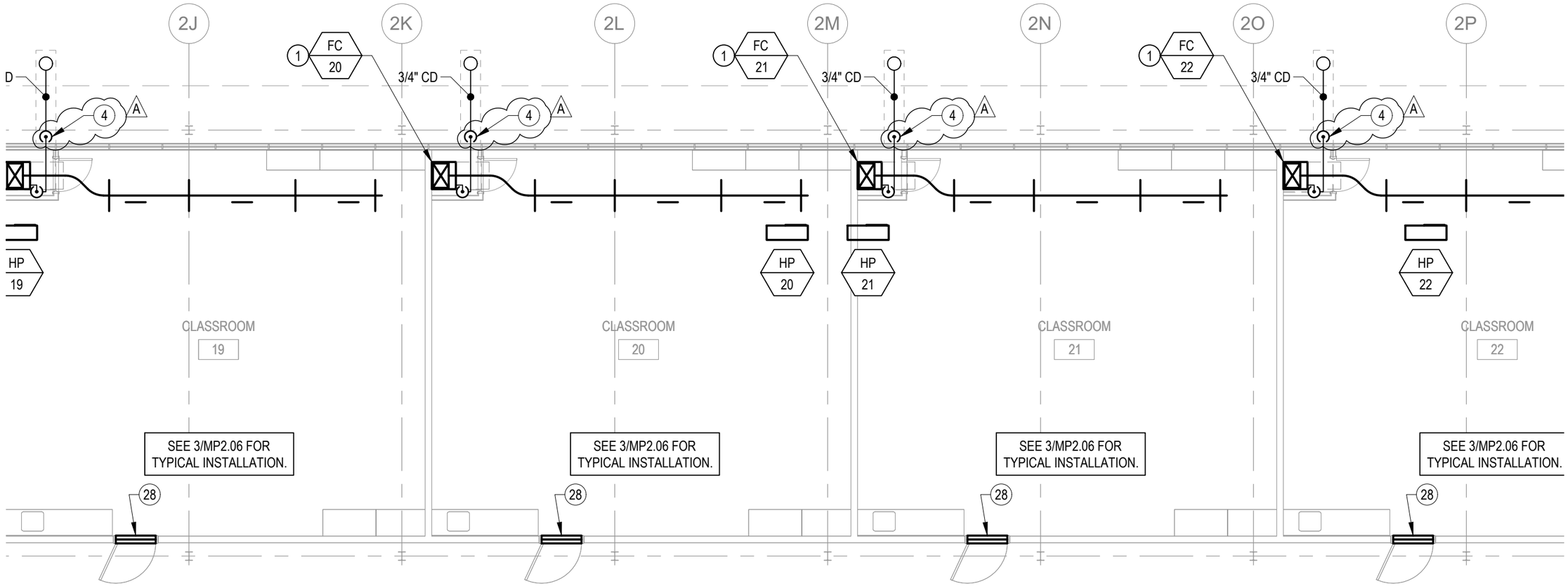
APPL NO.: 01-119556	AD1-MP2.06b
JOB NO. 2021005.06	
DATE 11/24/2021	



2 / MP2.06 FLOOR PLAN - WING 2 - NEW

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

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ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET REF. SHEET MP2.06
APPL NO.: 01-119556	
JOB NO. 2021005.06	**AD1-MP2.06c**
DATE 11/24/2021	

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. A

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. A

REGISTERED PROFESSIONAL ENGINEER
METIN SERTTUNC
No. M31060
EXP. JUNE 30, 2023
MECHANICAL
STATE OF CALIFORNIA

CEG JOB NO: 21039

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ABBOTT MIDDLE SCHOOL -
HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET REF. SHEET MP2.07
APPL NO.: 01-119556	**AD1-MP2.07**
JOB NO. 2021005.06	
DATE 11/24/2021	

(#) NEW SHEET NOTES

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 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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ABBOTT MIDDLE SCHOOL -
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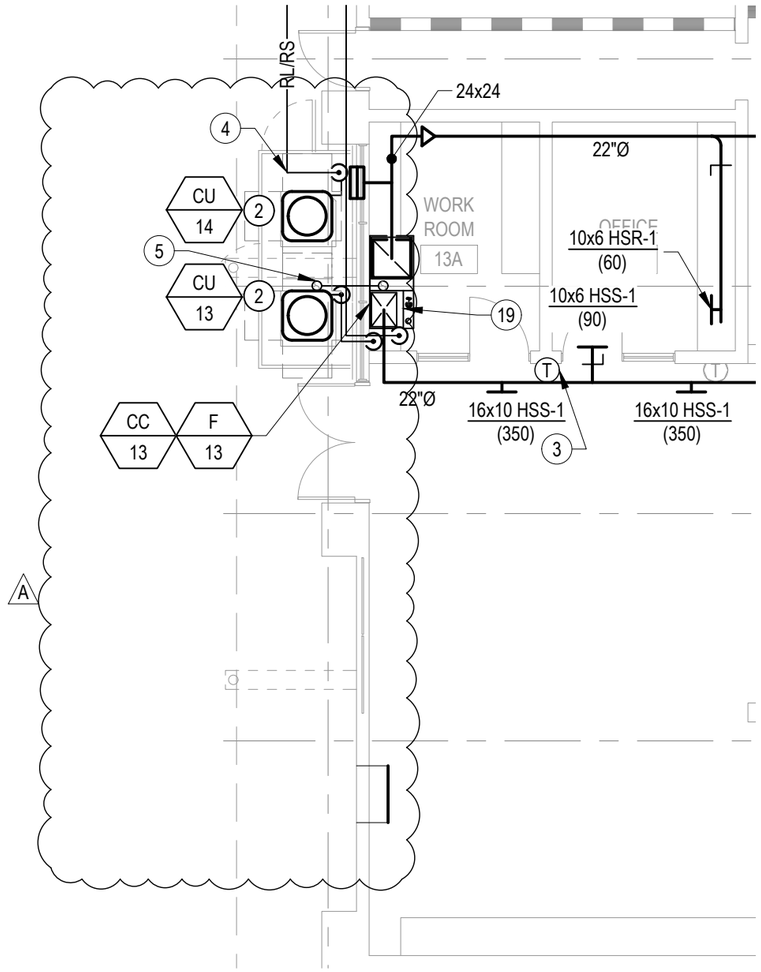
SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET REF. SHEET MP2.08
APPL NO.: 01-119556	
JOB NO. 2021005.06	**AD1-MP2.08**
DATE 11/24/2021	



GENERAL NOTES

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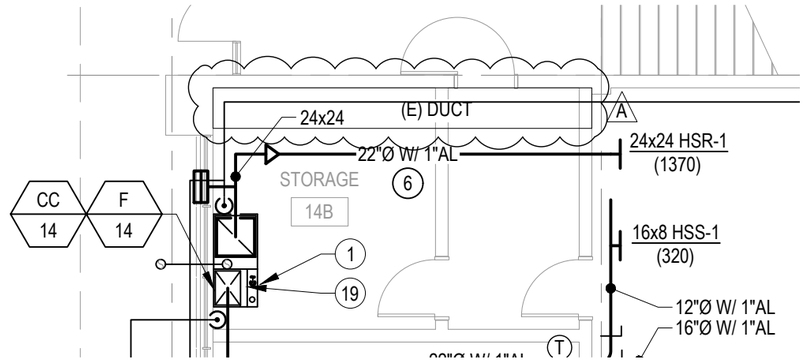
4. CLEAN ALL (E) DUCTWORK AND REGISTERS PER SPECIFICATION 23 01 30.
5. PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT. A



1
MP2.09

PARTIAL FIRST FLOOR PLAN - MULTIPURPSE BLDG - NEW

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

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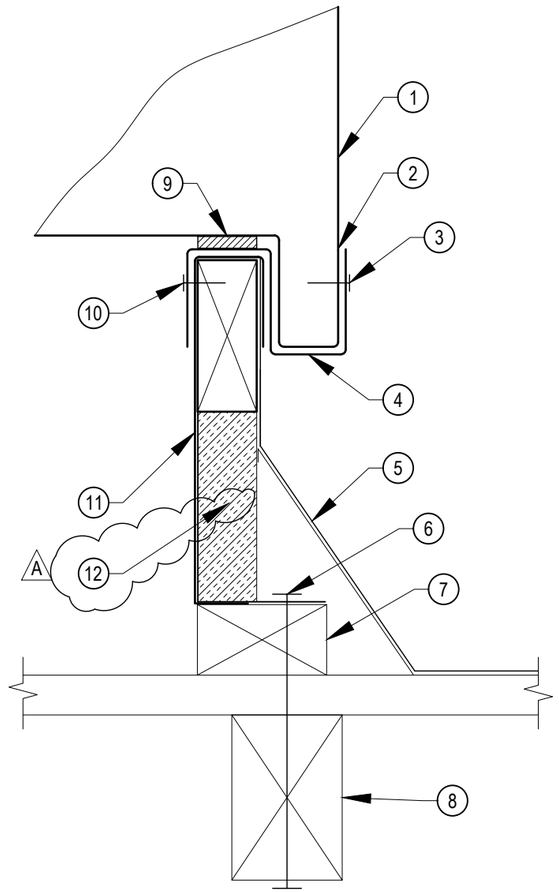
FILE NO.: 41-26	SHEET REF. SHEET MP2.09
APPL NO.: 01-119556	**AD1-MP2.09**
JOB NO. 2021005.06	
DATE 11/24/2021	



DETAIL NOTES:

1. UNIT. FOR LOCATION, SEE PLANS.
2. UNIT BASE RAIL.
3. SECURE HOLD DOWN TO UNIT BASE RAIL WITH (4) #10 x1/2" TEK SCREWS.
4. MICROMETL UNIT HOLD DOWNS, TYPICAL OF 2 PER SIDE.
5. ROOFING, SEE ARCHITECTS DRAWINGS. A
6. (E) 5/8"Ø THRU BOLT @ 36" O.C. VERIFY IN FIELD, RE-ATTACH TO CURB.
7. (E) LEVELING RAIL.
8. (E) 4X6 BLOCKING.
9. SEALING GASKET.
10. SECURE HOLD DOWN TO UNIT CURB WITH (4) #10 x 1/2" TEK SCREWS, TYP.
11. MICROMETL ROOF CURB W/ WOOD NAILER. MATCH EXISTING CURB.
12. RIGID INSULATION. A

6	ROOFTOP AIR CONDITIONER MOUNTING ON ROOF CURB A	N.T.S.

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ABBOTT MIDDLE SCHOOL -
HVAC REPLACEMENT

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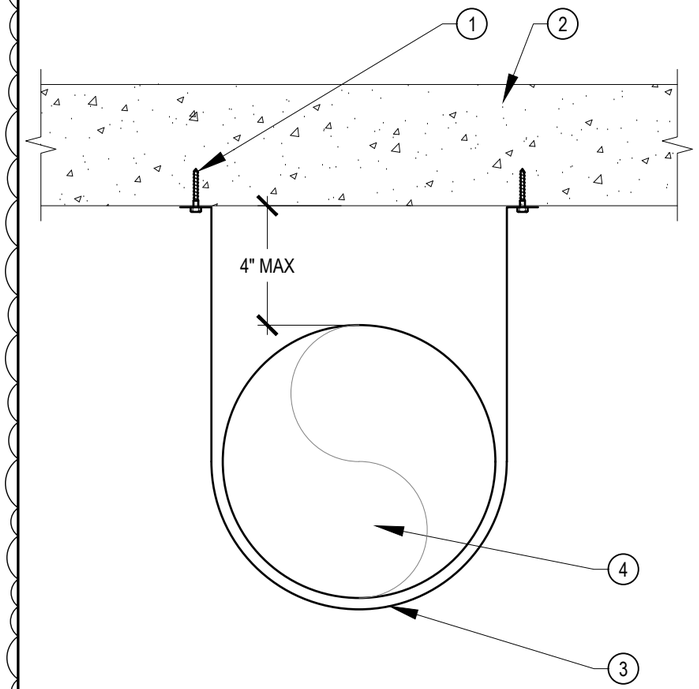
FILE NO.: 41-26	SHEET REF. SHEET MP6.01
APPL NO.: 01-119556	AD1-MP6.01
JOB NO. 2021005.06	
DATE 11/24/2021	



DETAIL NOTES:

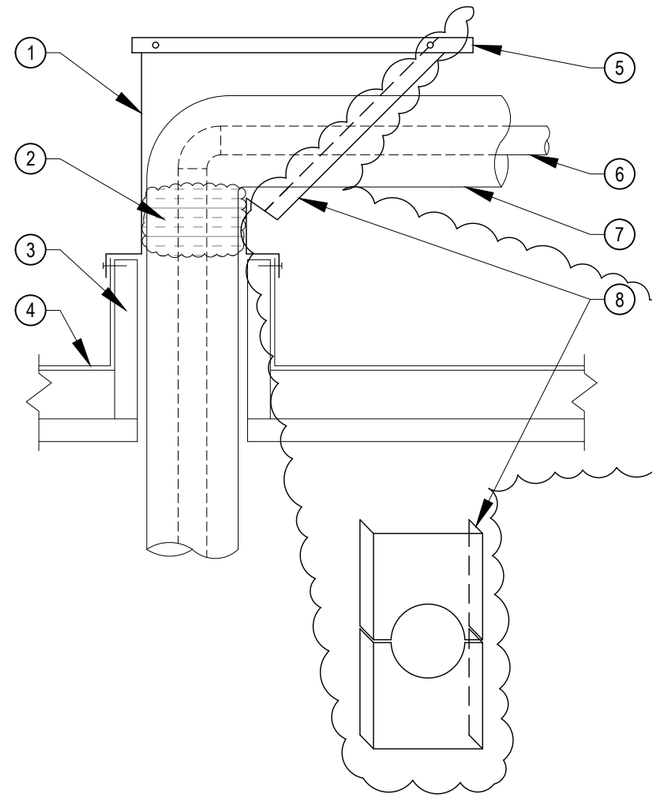
1. HILTI KWIK BOLT KH-EZ 1/4"Ø, 2-1/2" MIN EMBEDMENT ESR-3027, TYP
2. (E) CONCRETE.
3. 1"x16 GA HANGER STRAP TIGHT AROUND DUCT.
4. DUCT. MAX WEIGHT OF DUCT = 10 LB/FT. SEE PLANS FOR SIZES AND LOCATIONS.

NOTES:

1. 10 FT OC MAX SPACING.

6 | ROUND DUCT HANGER AT CONCRETE CEILING | N.T.S.

A



DETAIL NOTES:

1. GALVANIZED SHEET METAL ROOF JACK WITH CAP.
2. FILL OPENING WITH FOAM.
3. ROOF OPENING. SEE STRUCTURAL DRAWING FOR CURB, SEE ARCHITECT'S DRAWINGS FOR FLASHING.
4. ROOFING.
5. REMOVABLE SHEET METAL COVER ATTACHED WITH TWO (2) #8 SELF TAPPING SCREWS EACH SIDE, PAINTED.
6. PIPE.
7. PIPE INSULATION.
8. 2 PIECE 20 GA. GALVANIZED SHEET METAL COVER W/ 1-1/2" FLANGES ATTACHED W/ #12 SMS @4" O.C.

A

NOTES:

1. EXPOSED PIPING SHALL HAVE ALUMINUM JACKET.

4 | PIPING ROOF JACK | N.T.S.

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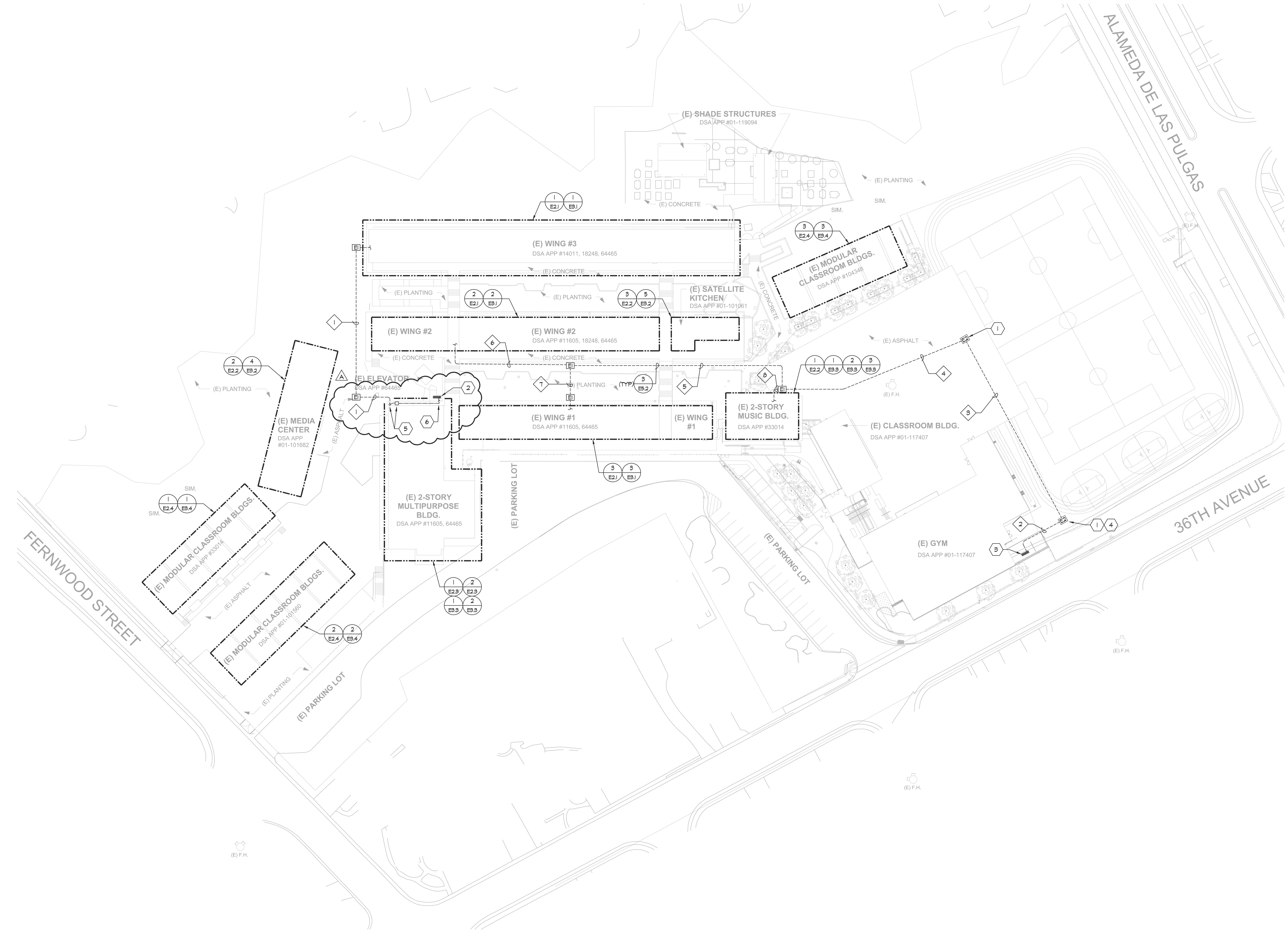
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET REF. SHEET MP6.02
APPL NO.: 01-119556	
JOB NO. 2021005.06	AD1-MP6.02
DATE 11/24/2021	



1 / E1.1 **ELECTRICAL SITE PLAN**

SCALE: 1" = 40'-0"

N

GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAW CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT SURFACES TO MATCH ADJACENT.
3. CONTRACTOR TO SITE SURVEY EXISTING CONDITIONS AND LOCATIONS OF EXISTING UNDERGROUND SYSTEMS, WHERE NEW TRENCH WORK OCCURS PRIOR TO BIDDING. CONTRACTOR SHALL TAKE PROPER PRECAUTIONS TO ENSURE EXISTING UNDERGROUND SYSTEMS/CONDUIT/PIPES ARE NOT DAMAGED DURING INSTALLATION. CONTRACTOR IS RESPONSIBLE FOR ANY REPAIRS REQUIRED IN THE EVENT THE EXISTING UNDERGROUND SYSTEMS ARE DAMAGED AS A RESULT OF THE NEW ELECTRICAL TRENCH WORK.
4. ALL ON-SITE TRENCHING SHALL BE INSTALLED PER DETAIL 3/E5.2.
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 PULL BOX. PROVIDE POLARIS SUBMERSIBLE SPLICE CONNECTORS.
5. TRANSITION CONDUITS FROM UNDERGROUND TO ABOVE GROUND AT THE EXTERIOR WALL. ROUTE CONDUITS ON WALL TO ABOVE OVERHANG. PROVIDE NEMA-3R PULL CAN AND ROUTE CONDUITS UNDERNEATH OVERHANG.
6. ROUTE CONDUITS UNDERNEATH OVERHANG TO EXISTING SWITCHGEAR LOCATION. PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT AND TRANSITION CONDUITS INTO THE TOP OF THE SWITCHGEAR.

(A)

CONDUIT SCHEDULE:

1. (N) (3) 3"C - PANEL 'EM'
2. (E) (1) 4"C - PNL 'A' (MUSIC BUILDING)
   (E) (1) 4"C - PNL 'A' (WING 1)
   (N) (1) 4"C - PNL 'DM' (WING 2)
3. (E) (2) 4"C - PNL 'A' (MUSIC BUILDING)
   (N) (3) 4"C - PNL 'A' (WING 1)
   (N) (3) 4"C - PNL 'DM' (WING 2)
4. (E) (2) 4"C - PNL 'A' (MUSIC BUILDING)
   (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 BUILDING)

PULLBOX SCHEDULE:

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

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

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PROJECT
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

American Consulting Engineers Electrical, Inc.

STAMP

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

REVISIONS

No.	Description	Date
A	ADDENDUM 1	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 REQUREMENTS.
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.

SHEET NOTES:

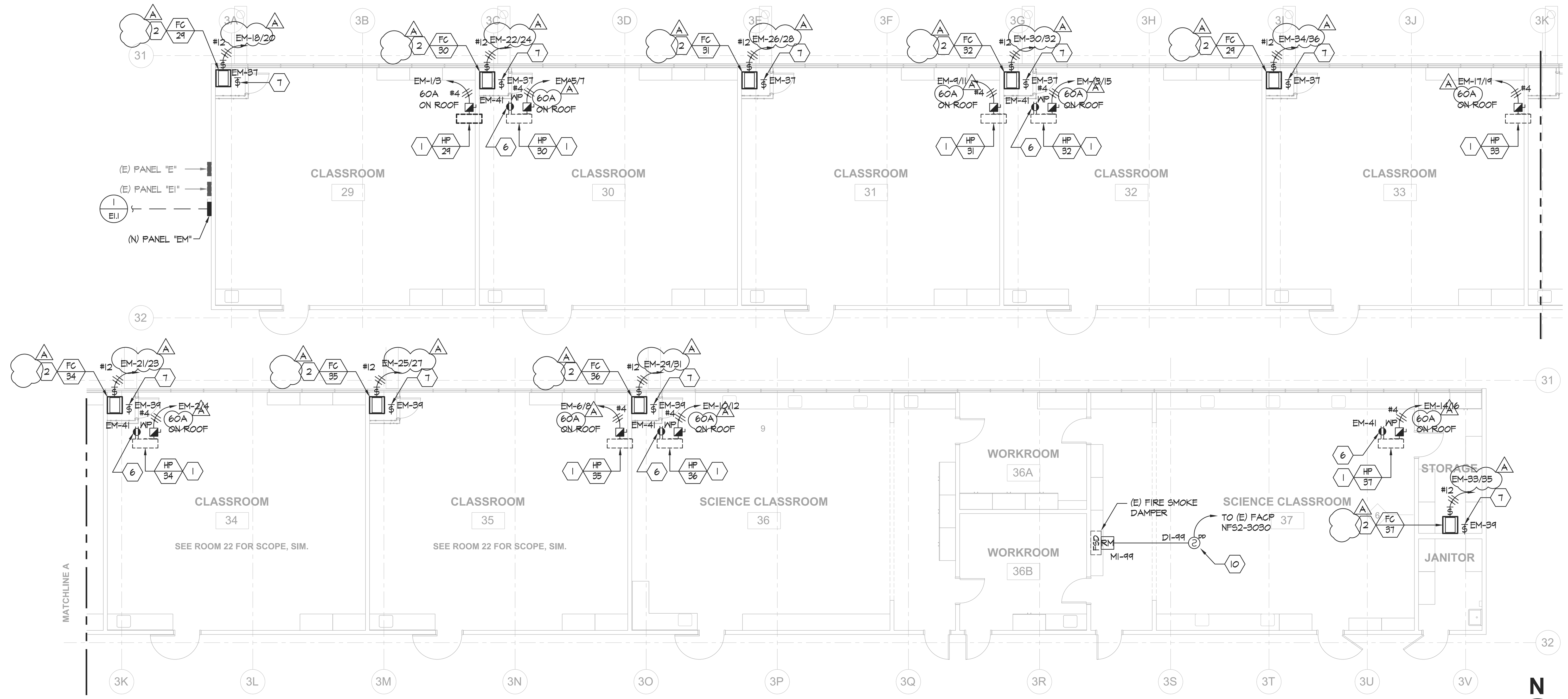
1. NEW 60A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
2. NEW 30A-2P, NEMA-1, MOTOR-RATED DISCONNECT SWITCH FOR MECHANICAL UNIT.
3. NEW 30A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
4. NOT USED.
5. NEW 60A-3P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
6. PROVIDE NEW WEATHERPROOF GFCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC WP1010MXD "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.

CABLE SCHEDULE:

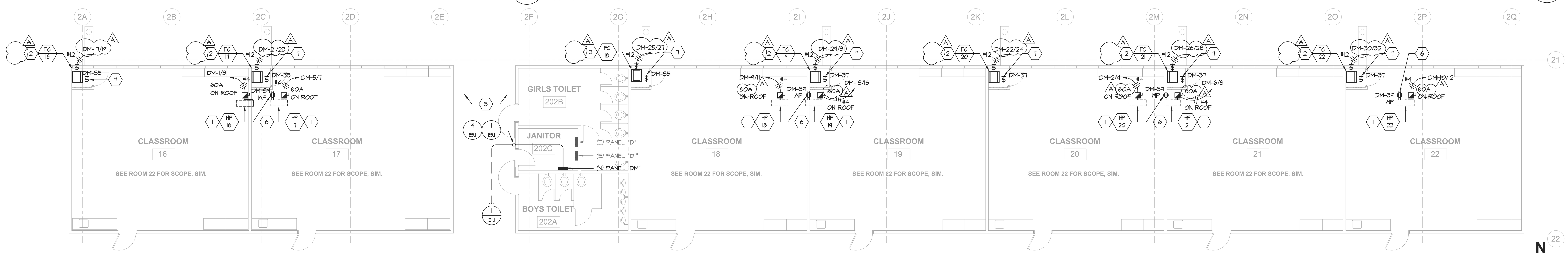
A - (1) #14 UNSHIELDED TWISTED PAIR FOR SIGNALING LINE CIRCUITS.
B - (2) #12 FOR 24V POWER (CO DETECTOR)

EQUIPMENT SCHEDULE:

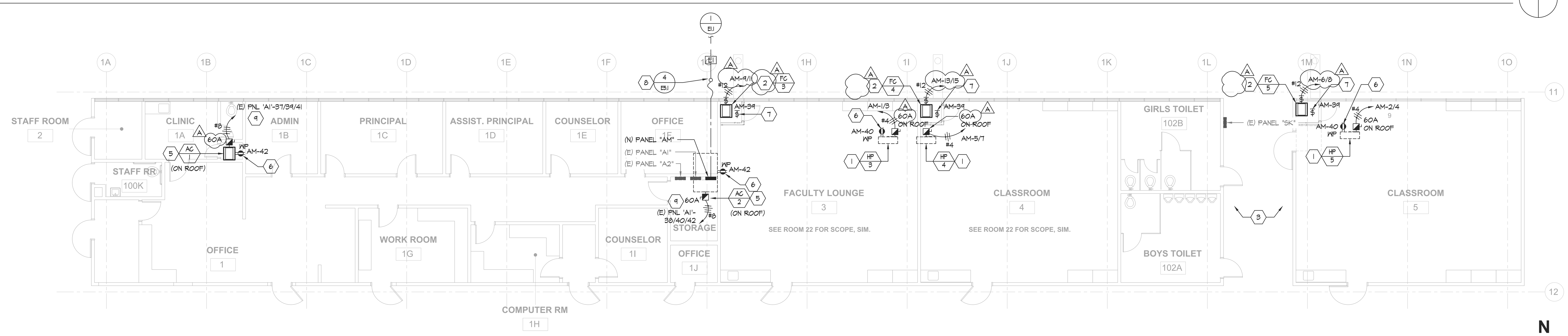
RM	FIRE ALARM: (N) RELAY MODULE MODEL: NOTIFIER FRM-1 CSFM: 7300-0028:219
DD	FIRE ALARM: (N) SMOKE DETECTOR W/ DUCT HOUSING MODEL: NOTIFIER FSP-951/DNR CSFM: 7272-0028:503/3240-1653:209



1 E3.1 ELECTRICAL NEW FLOOR PLAN - WING 3
SCALE: 1/8" = 1'-0"

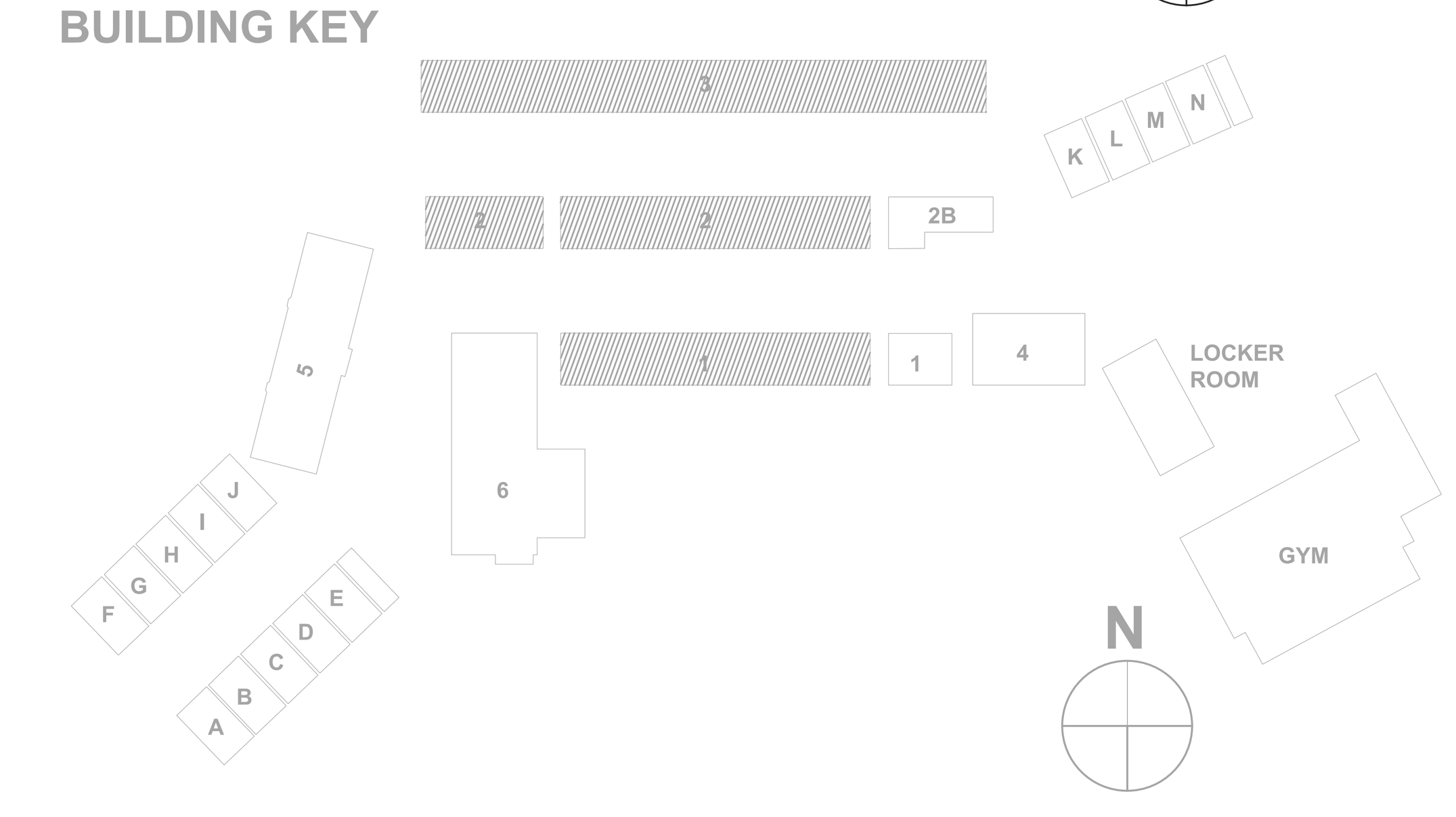


2 E3.1 ELECTRICAL NEW FLOOR PLAN - WING 2
SCALE: 1/8" = 1'-0"



3 E3.1 ELECTRICAL NEW FLOOR PLAN - WING 1
SCALE: 1/8" = 1'-0"

BUILDING KEY



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PROJECT
ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER SAMMY S. FERNANDEZ E16890 Exp. 06/30/23 ELECTRICAL STATE OF CALIFORNIA

American Consulting Engineers Electrical, Inc.
1590 The Alameda, Suite 200 San Jose, CA 95126 408/236-2312 Fax: 408/236-2316
JOB # EK21030.00

STAMP

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

REVISIONS

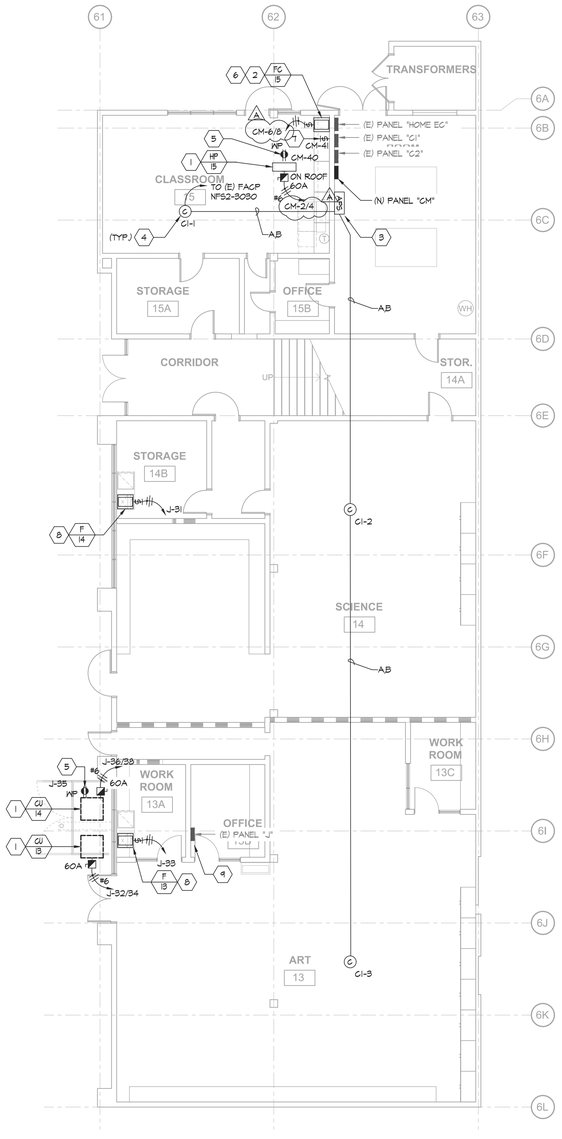
No.	Description	Date
A	ADDENDUM 1	11/24/2021

MILESTONES

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

SHEET
ELECTRICAL NEW FLOOR PLANS - WING 1, 2 & 3

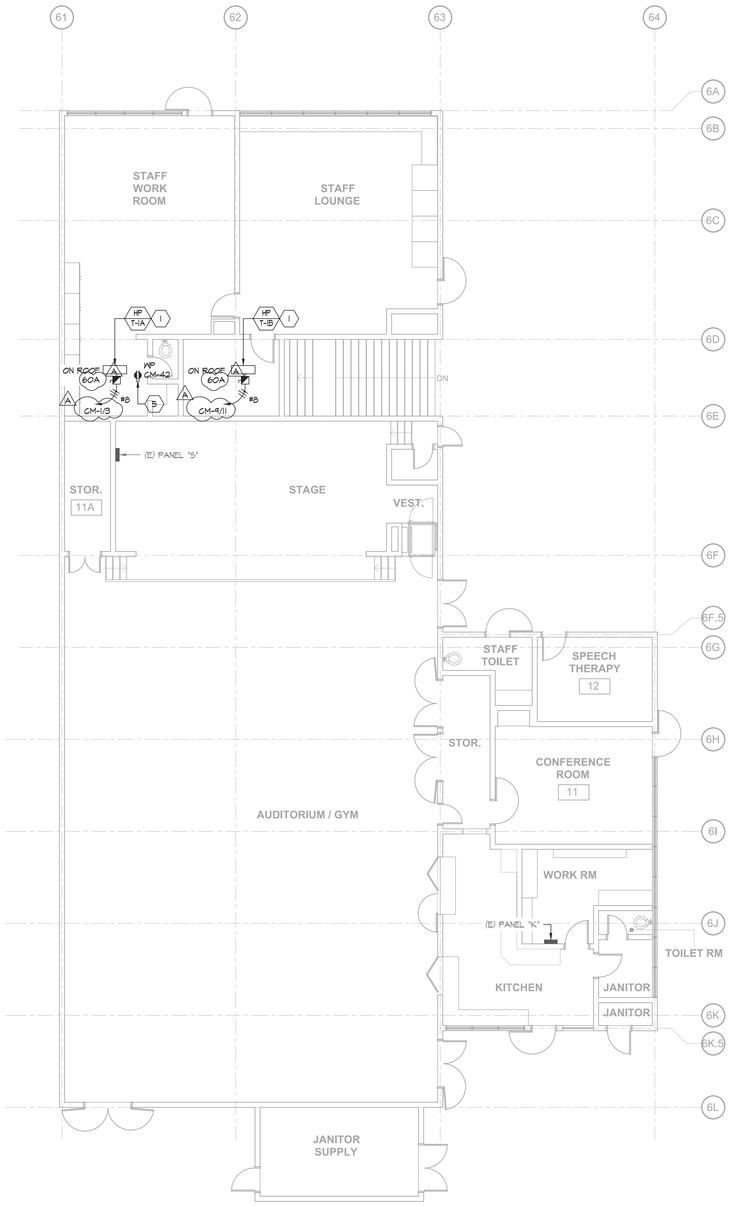
DATE 11/24/2021
JOB # 2021005.06
SHEET # AD-1
E3.1



ELECTRICAL NEW FIRST FLOOR PLAN - MULTIPURPOSE BLDG.

1 / E3.3

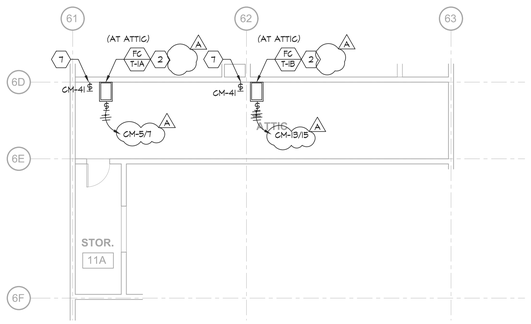
SCALE: 1/8" = 1'-0"



ELECTRICAL NEW SECOND FLOOR PLAN - MULTIPURPOSE BLDG.

2 / E3.3

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



ELECTRICAL NEW ATTIC PLAN - MULTIPURPOSE BLDG.

3 / E3.3

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

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 DISCONNECT SWITCHES SHALL BE 600V RATED, HEAVY DUTY CYCLE. FUSES FOR MECHANICAL UNITS SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATION.
6. VISUAL NOTIFICATION IS NOT REQUIRED FOR CO DETECTION PER CBC 1IB-215.1.

SHEET NOTES:

1. NEW 60A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
2. NEW 30A-2P, NEMA-3R, MOTOR-RATED DISCONNECT SWITCH FOR MECHANICAL UNIT.
3. NEW AUXILIARY 24V POWER SUPPLY FOR CARBON MONOXIDE DETECTORS.
4. NEW CARBON MONOXIDE DETECTOR. ROUTE NEW SLC CONNECTION BACK TO EXISTING FIRE ALARM CONTROL PANEL NOTIFIER NFS2-3030 AS REQUIRED.
5. PROVIDE NEW WEATHERPROOF GFCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC WP1031MXD "BOSS".
6. INDOOR UNIT IS POWER BY THE OUTDOOR UNIT. ROUTE HOMERUN CIRCUIT TO ASSOCIATED OUTDOOR UNIT. REFER TO MECHANICAL SCHEDULE MP0.02 FOR ADDITIONAL REQUIREMENTS.
7. PROVIDE MOTOR RATED SWITCH AND 120V POWER FOR CONDENSATION PUMP.
8. PROVIDE 120V MOTOR RATED SWITCH.
9. 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 FSCO-951/B200S CSFM: 5278-0028:511/1300-1653:109
APS	FIRE ALARM, (N) AUXILIARY POWER SUPPLY MODEL: NOTIFIER FCPS 24S6 CSFM: 7315-0028:225

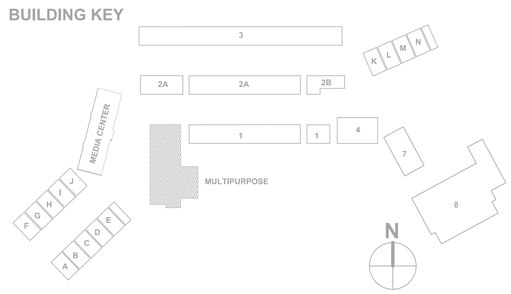
(E) FIRE ALARM CONTROL PANEL - BATTERY CALCULATION

QUANTITY	MODEL #	DEVICE	SUPV. CURRENT PER	TOTAL SUPV. CURRENT	ALARM 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	LDACT-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	0.1000	0.20	0.1000	0.2
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-KD	DIGITAL VOICE COMMAND KEYPAD	0.0600	0.0600	0.0600	0.0600
1	AMPS-24	POWER SUPPLY/BATTERY CHARGER	0.1300	0.1300	0.0000	0.0000
		(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	NBG-12LX	PULL STATION	0.0004	0.0004	0.0050	0.0050
4	FRM-1	RELAY MODULE	0.0004	0.0015	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	0.08	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	FSCO-951	CARBON MONOXIDE	0.0002	0.0008	0.0045	0.018
			Max. Supv. Current	1.48	Max. Alarm Current	7.59

Maximum Supervisory Current:	1.48
Standby Period 24 hour:	24
Total Supervisory Reserve:	35.53 (A)
Maximum Alarm Current:	7.59
Alarm Period (15 minute)	0.249
Total Alarm Reserve:	1.89 (B)
Total Reserve Current: (A + B)	37.42
Safety Margin (20%)	1.2
Total Ampere Hours Required:	44.90

(N) Battery: 2- 12V 100 Ampere Hour

BUILDING KEY



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DSA FILE NUMBER 41-26

APPL # 01-119557

REVISIONS

No.	Description	Date
1	ADDENDUM 1	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:	AM	FED FROM:	(E)PNL. A
VOLTAGE:	208/120V	MAIN C/B:	200 AMP
PHASE:	3	BUSSING:	200 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 1	SUB-FEED C/B:	
MOUNTING:	SURFACE	FEED THRU LUGS:	YES

CIRCUIT DESCRIPTION	LOAD TYPE (KVA)				CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA)				CIRCUIT DESCRIPTION
	LTG	REC	MTR	NCL						LTG	REC	MTR	NCL	
(N) HEAT PUMP 3 - CLASSROOM 3				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 5 - CLASSROOM 5
" " " " "				3.74	2P	3	B	4	2P				3.74	" " " " "
(N) HEAT PUMP 4 - CLASSROOM 4				3.74	50A	5	C	6	15A				0.89	(N) FAN COIL 5 - CLASSROOM 5
" " " " "				3.74	2P	7	A	8	2P				0.89	" " " " "
(N) FAN COIL 3 - CLASSROOM 3				0.89	15A	9	B	10	20A/1P					SPARE
" " " " "				0.89	2P	11	C	12	20A/1P					SPARE
(N) FAN COIL 4 - CLASSROOM 4				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
(N) MOTOR RATED SWITCH FOR COND. PUMP - WING 1			0.36		20A/1P	39	B	40	20A/1P		0.36			(N) WEATHERPROOF GFCI REC. ROOF MOUNT - WING 1
SPARE					20A/1P	41	C	42	20A/1P		0.36			(N) WEATHERPROOF GFCI REC. ROOF MOUNT - WING 1
	0	0	0.4	18.6						0	0.7	0	9.3	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.7	1.00	0.7
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125%	0.4	1.25	0.5
+ REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	27.8	1.00	27.8

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	13.0
KVA PHASE B (CONNECTED)	10.0
KVA PHASE C (CONNECTED)	5.9
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	29.0
TOTAL LOAD AMPERES	80.6

PANEL NAME:	CM	FED FROM:	(E)PNL C
VOLTAGE:	208/120V	MAIN C/B:	100 AMP
PHASE:	3	BUSSING:	100 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 1	SUB-FEED C/B:	
MOUNTING:	SURFACE	FEED THRU LUGS:	YES

CIRCUIT DESCRIPTION	LOAD TYPE (KVA)				CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA)				CIRCUIT DESCRIPTION
	LTG	REC	MTR	NCL						LTG	REC	MTR	NCL	
(N) HEAT PUMP T1A - MEZZANINE				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 15 - CLASSROOM 15
" " " " "				3.74	2P	3	B	4	2P				3.74	" " " " "
(N) FAN COIL T1A - 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 T1A - MEZZANINE				3.74	50A	9	B	10	20A/1P					SPARE
" " " " "				3.74	2P	11	C	12	20A/1P					SPARE
(N) FAN COIL T1A - 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 MOUN-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	0.7	0	9.3	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	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
(NCL) NON CONTINOUS LOAD x 100%	27.8	1.00	27.8

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
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 AMPERES	79.7

PANEL NAME:	DM	FED FROM:	(E)MSB-2
VOLTAGE:	208/120V	MAIN C/B:	400 AMP
PHASE:	3	BUSSING:	400 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 1	SUB-FEED C/B:	
MOUNTING:	SURFACE	FEED THRU LUGS:	YES

CIRCUIT DESCRIPTION	LOAD TYPE (KVA)				CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA)				CIRCUIT DESCRIPTION
	LTG	REC	MTR	NCL						LTG	REC	MTR	NCL	
(N) HEAT PUMP 16 - CLASSROOM 16				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 20 - CLASSROOM 20
" " " " "				3.74	2P	3	B	4	2P				3.74	" " " " "
(N) HEAT PUMP 17 - CLASSROOM 17				3.74	50A	5	C	6	50A				3.74	(N) HEAT PUMP 21 - CLASSROOM 21
" " " " "				3.74	2P	7	A	8	2P				3.74	" " " " "
(N) HEAT PUMP 18 - CLASSROOM 18				3.74	50A	9	B	10	50A				3.74	(N) HEAT PUMP 22 - CLASSROOM 22
" " " " "				3.74	2P	11	C	12	2P				3.74	" " " " "
(N) HEAT PUMP 19 - CLASSROOM 19				3.74	50A	13	A	14	50A				2.75	(N) HEAT PUMP T-1A, FAN COIL T-1A - TEACHERS AREA
" " " " "				3.74	2P	15	B	16	2P				2.75	" " " " "
(N) FAN COIL 16 - CLASSROOM 16				0.89	15A	17	C	18	20A				2.75	(N) HEAT PUMP T-1B, FAN COIL T-1B - STORAGE
" " " " "				0.89	2P	19	A	20	2P				2.75	" " " " "
(N) FAN COIL 17 - CLASSROOM 17				0.89	15A	21	B	22	15A				0.89	(N) FAN COIL 20 - CLASSROOM 20
" " " " "				0.89	2P	23	C	24	2P				0.89	" " " " "
(N) FAN COIL 18 - CLASSROOM 18				0.89	15A	25	A	26	15A				0.89	(N) FAN COIL 21 - CLASSROOM 21
" " " " "				0.89	2P	27	B	28	2P				0.89	" " " " "
(N) FAN COIL 19 - CLASSROOM 19				0.89	15A	29	C	30	15A				0.89	(N) FAN COIL 22 - CLASSROOM 22
" " " " "				0.89	2P	31	A	32	2P				0.89	" " " " "
SPARE					20A/1P	33	B	34	20A/1P					SPARE
(N) MOTOR RATED SWITCH FOR COND. PUMP - WING 2			0.36		20A/1P	35	C	36	20A/1P					SPARE
" " " " "			0.48		20A/1P	37	A	38	400A					(E) PNL. 'E'
(N) WEATHERPROOF GFCI REC. ROOF MOUNT - WING 2		0.72			20A/1P	39	B	40						" " " " "
SPARE					20A/1P	41	C	42	3P					" " " " "
	0	0.7	0.8	37.1						0	0	0	38.8	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.7	1.00	0.7
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125%	0.5	1.25	0.6
+ REMAINING MOTORS x 100%	0.4	1.00	0.4
(NCL) NON CONTINOUS LOAD x 100%	75.9	1.00	75.9

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	29.2
KVA PHASE B (CONNECTED)	25.8
KVA PHASE C (CONNECTED)	22.6
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	77.6
TOTAL LOAD AMPERES	215.6

PANEL NAME:	EM	FED FROM:	(E)MSB-1
VOLTAGE:	208/120V	MAIN C/B:	600 AMP
PHASE:	3	BUSSING:	600 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 3	SUB-FEED C/B:	400 AMP
MOUNTING:	SURFACE	FEED THRU LUGS:	YES

CIRCUIT DESCRIPTION	LOAD TYPE (KVA)				CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA)				CIRCUIT DESCRIPTION
	LTG	REC	MTR	NCL						LTG	REC	MTR	NCL	
(N) HEAT PUMP 29 - CLASSROOM 29				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 34 - CLASSROOM 34
" " " " "				3.74	2P	3	B	4	2P				3.74	" " " " "
(N) HEAT PUMP 30 - CLASSROOM 30				3.74	50A	5	C	6	50A				3.74	(N) HEAT PUMP 35 - CLASSROOM 35
" " " " "				3.74	2P	7	A	8	2P				3.74	" " " " "
(N) HEAT PUMP 31 - CLASSROOM 31				3.74	50A	9	B	10	50A				3.74	(N) HEAT PUMP 36 - CLASSROOM 36
" " " " "				3.74	2P	11	C	12	2P				3.74	" " " " "
(N) HEAT PUMP 32 - CLASSROOM 32				3.74	50A	13	A	14	50A				3.74	(N) HEAT PUMP 37 - CLASSROOM 37
" " " " "				3.74	2P	15	B	16	2P				3.74	" " " " "
(N) HEAT PUMP 33 - CLASSROOM 33				3.74	50A	17	C	18	15A				0.89	(N) FAN COIL 29 - CLASSROOM 29
" " " " "				3.74	2P	19	A	20	2P				0.89	" " " " "
(N) FAN COIL 34 - CLASSROOM 34				0.89	15A	21	B	22	15A				0.89	(N) FAN COIL 30 - CLASSROOM 30
" " " " "				0.89	2P	23	C	24	2P				0.89	" " " " "
(N) FAN COIL 35 - CLASSROOM 35				0.89	15A	25	A	26	15A				0.89	(N) FAN COIL 31 - CLASSROOM 31
" " " " "				0.89	2P	27	B	28	2P				0.89	" " " " "
(N) FAN COIL 36 - CLASSROOM 36				0.89	15A	29	C	30	15A				0.89	(N) FAN COIL 32 - CLASSROOM 32
" " " " "				0.89	2P	31	A	32	2P				0.89	" " " " "
(N) FAN COIL 37 - CLASSROOM 37				0.89	15A	33	B	34	15A				0.89	(N) FAN COIL 33 - CLASSROOM 33
" " " " "				0.89	2P	35	C	36	2P				0.89	" " " " "
(N) MOTOR RATED SWITCH FOR COND. PUMP - WING 3			0.60		20A/1P	37	A	38	400A					(E) PNL. 'E'
" " " " "			0.48		20A/1P	39	B	40						" " " " "
(N) WEATHERPROOF GFCI REC. ROOF MOUNT - WING 3		0.90			20A/1P	41	C	42	3P					" " " " "
	0	0.9	1.1	41.6						0	0	0	38.9	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.9	1.00	0.9
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125%	0.6	1.25	0.8
+ REMAINING MOTORS x 100%	0.5	1.00	0.5
(NCL) NON CONTINOUS LOAD x 100%	83.5	1.00	83.5

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	31.3
KVA PHASE B (CONNECTED)	28.3
KVA PHASE C (CONNECTED)	25.9
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	85.6
TOTAL LOAD AMPERES	237.8

PANEL NAME:	(E)SK	FED FROM:	MSB-1
VOLTAGE:	208/120V	MAIN C/B:	MLO
PHASE:	3	BUSSING:	225 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 1	SUB-FEED C/B:	
MOUNTING:	SURFACE	FEED THRU LUGS:	YES

CIRCUIT DESCRIPTION	LOAD TYPE (KVA)				CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA)				CIRCUIT DESCRIPTION
	LTG	REC	MTR	NCL						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)80A				3.00	(N) WHP 1 - PREP AREA 207
SPARE					20A/1P	39	B	40					3.00	" " " " "
SPARE					20A/1P	41	C	42	3P				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) RECEPTS PER 220.44;	10.0	1.00	10.0
10KVA x 100% + REMAINDER x 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 CONTINOUS LOAD x 100%	9.0	1.00	9.0

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	7.3
KVA PHASE B (CONNECTED)	6.6
KVA PHASE C (CONNECTED)	5.9
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	19.4
TOTAL LOAD AMPERES	53.9

PANEL NAME:	(E)BL	FED FROM:	MSB-1
VOLTAGE:	208/120V	MAIN C/B:	MLO
PHASE:	3	BUSSING:	225 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 1	SUB-FEED C/B:	
MOUNTING:	SURFACE	FEED THRU LUGS:	YES

CIRCUIT DESCRIPTION	LOAD TYPE (KVA)				CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA)				CIRCUIT DESCRIPTION
	LTG	REC	MTR	NCL						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
EXISTING LOAD		0.72			20A/1P	15	B	16	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	17	C	18	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	19	A	20	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	21	B	22	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	23	C	24	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	25	A	26	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	27	B	28	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	29	C	30	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	31	A	32	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	33	B	34	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	35	C	36	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	37	A	38	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	39	B	40	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	41	C	42	20A/1P		0.72			EXISTING LOAD

PANEL NAME:	(E)BR	FED FROM:	FEED THRU LUG
VOLTAGE:	208/120V		
PHASE:	3	BUSSING:	225 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 1	SUB-FEED C/B:	
MOUNTING:	SURFACE	FEED THRU LUGS:	NO

EXISTING LOAD		0.72			20A/1P	43	A	44	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	45	B	46	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	47	C	48	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	49	A	50	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	51	B	52	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	53	C	54	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	55	A	56	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	57	B	58	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	59	C	60	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	61	A	62	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	63	B	64	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	65	C	66	20A/1P		0.72			EXISTING LOAD
EXISTING LOAD		0.72			20A/1P	67	A	68	20A/1P		0.72			EXISTING LOAD
(N) EXTERIOR GFCI REC. - MEDIA CENTER		0.36			(N)20A/1P	69	B	70	(N)40A				2.31	(N) CONDENSING UNIT C - MEDIA CENTER
(N) CONDENSING UNIT A - MEDIA CENTER				2.31	(N)40A	71	C	72	2P				2.31	" " " " "
" " " " "				2.31	2P	73	A	74	(N)40A				2.31	(N) CONDENSING UNIT D - MEDIA CENTER
(N) CONDENSING UNIT B - MEDIA CENTER				2.31	(N)40A	75	B	76	2P				2.31	" " " " "
" " " " "				2.31	2P	77	C	78	(N)35A				1.65	(N) CONDENSING UNIT E - MEDIA CENTER
(N) FURNACE A - MEDIA CENTER				1.38	(N)20A/1P	79	A	80	2P				1.65	" " " " "
(N) FURNACE B - MEDIA CENTER				1.38	(N)20A/1P	81	B	82	(N)20A/1P				1.38	(N) FURNACE D - MEDIA CENTER
(N) FURNACE C - MEDIA CENTER				1.38	(N)20A/1P	83	C	84	(N)20A/1P				1.38	(N) FURNACE E - MEDIA CENTER
	0	24.8	0	13.4						0	24.5	0	15.3	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	10.0	1.00	10.0
10KVA x 100% + REMAINDER x 50%	39.3	0.50	19.7
(MTR) LARGEST MOTOR X 125%	0	1.25	0.0
+ REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	28.7	1.00	28.7

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	24.9
KVA PHASE B (CONNECTED)	25.9
KVA PHASE C (CONNECTED)	27.2
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	58.3
TOTAL LOAD AMPERES	162.1

PANEL NAME:	(E)A	FED FROM:	MSB-2
VOLTAGE:	208/120V	MAIN C/B:	400 AMP
PHASE:	3	BUSSING:	400 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 1	SUB-FEED C/B:	
MOUNTING:	SURFACE	FEED THRU LUGS:	YES

CIRCUIT DESCRIPTION	LOAD TYPE (KVA)				CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA)				CIRCUIT DESCRIPTION
	LTG	REC	MTR	NCL						LTG	REC	MTR	NCL	
(E) LTG - 103, 106					20A/1P	1	A	2	20A/1P					(E) LTG - 101, 104
(E) LTG - 103, 106					20A/1P	3	B	4	20A/1P					(E) LTG - 101, 104
(E) LTG - 103, 106					20A/1P	5	C	6	20A/1P					(E) LTG - 101, 104
(E) LTG - 102, 105					20A/1P	7	A	8	20A/1P					(E) EXIT LIGHTS
(E) LTG - 102, 105					20A/1P	9	B	10	20A/1P					SPARE
(E) LTG - 102, 105					20A/1P	11	C	12	20A/1P					SPARE
(E) REC - 101, 102, 103					20A/1P	13	A	14	20A/1P					(E) REC - 104, 105, 107
(E) REC - 101, 102, 103					20A/1P	15	B	16	20A/1P					(E) REC - 104, 105, 107
(E) REC - 101, 102, 103					20A/1P	17	C	18	20A/1P					(E) REC - 102, 103
(N) AC 3 - MUSIC BUILDING			1.40		(N)40A	19	A	20	(N)40A			1.45		(N) AC 6 - MUSIC BUILDING
" " " " "			1.40			21	B	22				1.45		" " " " "
" " " " "			1.40		3P	23	C	24	3P			1.45		" " " " "
(N) AC 4 - MUSIC BUILDING			1.40		(N)40A	25	A	26	(N)40A			1.45		(N) AC 7 - MUSIC BUILDING
" " " " "			1.40			27	B	28				1.45		" " " " "
" " " " "			1.40		3P	29	C	30	3P			1.45		" " " " "
(N) AC 5 - MUSIC BUILDING			1.40		(N)40A	31	A	32	(N)90A					(E) PNL. 'B'
" " " " "			1.40			33	B	34						" " " " "
" " " " "			1.40		3P	35	C	36	3P					" " " " "
SPARE					20A/1P	37	A	38	(N)20A/1P		0.18			(N) EXTERIOR GFCI REC. - MUSIC BUILDING
SPARE					20A/1P	39	B	40	20A/1P					SPARE
SPARE					20A/1P	41	C	42	20A/1P					SPARE
	0	0	12.6	0						0	0.2	8.7	0	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.2	1.00	0.2
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125%	4.4	1.25	5.4
+ REMAINING MOTORS x 100%	17.0	1.00	17.0
(NCL) NON CONTINOUS LOAD x 100%	0	1.00	0.0

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	7.3
KVA PHASE B (CONNECTED)	7.1
KVA PHASE C (CONNECTED)	7.1
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	22.6
TOTAL LOAD AMPERES	62.7

PANEL NAME:	(E)J	FED FROM:	MSB
VOLTAGE:	208/120V	MAIN C/B:	100 AMP
PHASE:	3	BUSSING:	100 AMP
WIRE:	4	MIN. AIC:	10,000
TYPE:	NEMA 1	SUB-FEED C/B:	
MOUNTING:	SURFACE	FEED THRU LUGS:	YES

CIRCUIT DESCRIPTION	LOAD TYPE (KVA)				CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA)				CIRCUIT DESCRIPTION
	LTG	REC	MTR	NCL						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.12
(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) HV-4					15A	25	A	26	40A					(E) LOAD
" " " " "						27	B	28						(E) LOAD
" " " " "					3P	29	C	30	3P					(E) LOAD
(N) FURNACE 13 - CLASSROOM 13				2.40	(N)20A/1P	31	A	32	(N)60A				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)60A				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	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.4	1.00	0.4
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125%	0	1.25	0.0
+ REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	17.2	1.00	17.2

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	8.6
KVA PHASE B (CONNECTED)	5.5
KVA PHASE C (CONNECTED)	3.5
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	17.6
TOTAL LOAD AMPERES	48.8

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PROJECT

ABBOTT MIDDLE SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

SAMMY S. FERNANDEZ
E16890
Exp. 06/30/23

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1590 The Alameda, Suite 200
San Jose, CA 95126
JOB # EK21030.00
408/236-2312
Fax: 408/236-2316

STAMP

STATE

DSA FILE NUMBER 41-26

APPL # 01-119557

REVISIONS

No.	Description	Date
A	ADDENDUM 1	11/24/2021

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

aedis
architects

November 24, 2021

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

Subject: George Hall Elementary School HVAC Replacement
San Mateo - Foster City School District
Aedis Project No. 2021005.02
DSA Application #01-119523

ADDENDUM NO. 1

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

SPECIFICATIONS

ITEM NO. 1.1: TABLE OF CONTENTS

Add: 26 24 13 SWITHCHBOARDS, 600 VOLTS AND BELOW
Add: 31 23 16 TRENCHING

ITEM NO. 1.2: SECTION 31 23 16 - TRENCHING

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

ITEM NO. 1.3: SECTION 32 31 13 - CHAIN LINK FENCES AND GATES

Add: 2.4 SWING GATES D. Hardware
Item 5.: Panic Hardware: CD 990AX-L-WH-6280 SNB with Gate closer/Hinge: SureClose Pivot: SM AT90W"

DRAWINGS

ARCHITECTURAL

ITEM NO. 1.4: 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 RESTRIPING PAVING IN KIND. S.E.D. FOR TRENCH ROUTING. VERIFY IN FIELD AND SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING."
Delete: Drawing Index: "S2.02- EXISTING FRAMING PLAN - ESCALON BLDG"

ITEM NO. 1.5: DRAWING SHEET A1.02 – DEMOLITION & NEW SITE PLAN

Add: Trench area to New Site Plan 1/A1.02 & Graphic Key per AD1-A1.02
Add: General Sheet Note item G per AD1-A1.02
Add: Striping keynote 25 to New Site Plan 1/A1.02 per AD1-A1.02

ITEM NO. 1.6: DRAWING SHEET A2.01 – DEMOLITION FLOOR PLANS – WINGS 1, 2, 3, 4

Add: General Sheet Note #J per AD1-A2.01
Add: Demolition Floor plan Keynotes #9 & #10 per AD1-A2.01
Add: Partial ceiling demolition keynote #9 at Demolition Floor Plans 2/A2.01, 3/A2.01, and 4/A2.01 per AD1-A2.01
Revise: At Classroom 5 replace keynote 2 with keynote 10 per AD1-A2.01

ITEM NO. 1.7: DRAWING SHEET A2.02 – DEMOLITION FLOOR PLAN - ESCALON BLDG

Revise: Floor Plan Keynote #6 locations per AD1-A2.02
Add: General Sheet Note #J per AD1-A2.02

ITEM NO. 1.8: DRAWING SHEET A3.01 – NEW FLOOR PLANS – WINGS 1, 2, 3 & 4

Add: Door tags 3b, 9b & 15b to New Floor Plans 2/A3.01, 3/A3.01, and 4/A3.01 per AD1-A3.01
Add: Ceiling patching keynote #10 to New Floor Plans 1/A3.01, 2/A3.01, and 3/A3.01 per AD1-A3.01
Revise: New Floor Plan Keynotes #8 & #9 per AD1-A3.01

ITEM NO. 1.9: DRAWING SHEET A5.01 – PARTIAL SITE ROOF PLAN

Add: Exhaust fans per AD1-A5.01
Add: Partial Site Roof Plan Keynotes #3 per AD1-A5.01
Revise: Partial Site Roof Plan Keynotes #2 per AD1-A5.01

ITEM NO. 1.10: DRAWING SHEET A8.10 – EXTERIOR DETAILS

Revise: Detail 9 Asphalt/Concrete Joint per AD1-A8.10

ITEM NO. 1.11: DRAWING SHEET A9.10 – INTERIOR DETAILS, WALL TYPES, AND INTERIOR ELEVATIONS

Revise: Details 1 & 5 per AD1-A9.10a
Revise: Detail 6 per AD1-A9.10b
Revise: At Detail 8/A9.10 revise "1"x2"x2.5" GA" to "1"x2"x25 GA"

ITEM NO. 1.12: DRAWING SHEET A11.01 – FINISH SCHEDULE & FURNITURE SCHEDULE, OPENING SCHEDULE, LEGENDS, & DETAILS

Add: Doors 3b, 9b & 15b to Door Schedule per AD1-A11.01
Add: Door Schedule Comments per AD1-A11.01
Add: Door Type B per AD1-A11.01

MECHANICAL

ITEM NO. 1.13: DRAWING SHEET MP0.02 – SCHEDULES – MECHANICAL & PLUMBING

Revise: Classroom Split System Heat Pump Schedule per AD1-MP0.02
Revise: Air Distribution Schedule per AD1-MP0.02
Add: Roof exhaust Fan Schedule per AD1-MP0.02

ITEM NO. 1.14: DRAWING SHEET MP2.03 – FLOOR PLAN – NEW – WINGS 1, 2, 3, 4 – MECHANICAL & PLUMBING

Add: Roof exhaust fan per AD1-MP2.03a
Revise: General Notes #4 & #5 per AD1-MP2.03a
Add: New Sheet Note #23 per AD1-MP2.03a
Add: Roof exhaust Fan per AD1-MP2.03b
Add: New Sheet Note #23 per AD1-MP2.03b

ITEM NO. 1.15: DRAWING SHEET MP2.04 – FLOOR PLAN – NEW – ESCALON BLDG – MECHANICAL & PLUMBING

Revise: Location of HP-32 per AD1-MP2.04a
Revise: General Notes #4 & #5 per AD1-MP2.04a
Add: Dimension per AD1-MP2.04a
Add: View 5/AD1-MP2.04 Partial Floor Plan - Wing 2 - New – Mechanical & Plumbing per AD1-MP2.04b
Add: New Sheet Note #38 per AD1-MP2.04b
Add: Exhaust Fan per AD1-MP2.04c

ITEM NO. 1.1: DRAWING SHEET MP6.01 – DETAILS – MECHANICAL & PLUMBING

Revise: Detail 4 per AD1-MP6.01
Add: Detail 16 perAD1-MP6.01

ELECTRICAL

ITEM NO. 1.16: DRAWING SHEET E1.1 – ELECTRICAL SITE PLAN

Revise: Conduit Tag #8 per AD1-E1.1

Revise: Conduit Schedule #8 per AD1-E1.1

ITEM NO. 1.17: DRAWING SHEET E2.1 – ELECTRICAL DEMO FLOOR PLANS - WINGS #1, 2, 3 & 4 AND TYP. RELOCATABLE

Revise: Demolition Sheet Note #4 per AD1-E2.1

ITEM NO. 1.18: DRAWING SHEET E2.2 – ELECTRICAL DEMO FLOOR PLANS, ESCALON

Revise: Demolition Sheet Note #4 per AD1-E2.2

ITEM NO. 1.19: DRAWING SHEET E3.1 – ELECTRICAL NEW FLOOR PLANS, WINGS #1, 2, 3 & 4

Revise: Electrical plans 1/E3.1. 2/E3.1, 3/E3.1 & 4/E3.1 per AD1-E3.1
Add: General Note #6 per AD1-E3.1
Revise: Sheet Note #6 per AD1-E3.1
Add: Sheet Notes #11 & #12 per AD1-E3.1
Add: Solar Conduit stub ups at each wing per AD1-E3.1
Add: Power for exhaust fan per AD1-E3.1

ITEM NO. 1.20: DRAWING SHEET E3.2 – ELECTRICAL DEMO FLOOR PLANS, ESCALON

Revise: Electrical plan 1/E3.2 per AD1-E3.2
Add: Power for exhaust fan at building per AD1-E3.2
Add: General Note #6 per AD1-E3.2
Revise: Sheet Note #5 per AD1-E3.2
Omit: Sheet Note #10 per AD1-E3.2
Add: Sheet Note 11 per AD1-E3.2
Revise: Location of HP-2 per AD1-E3.2

ITEM NO. 1.21: DRAWING SHEET E4.2 – NEW SINGLE LINE DIAGRAM

Revise: Switchboard to be OFCI per AD1-E4.2

ITEM NO. 1.22: DRAWING SHEET E4.3 – PANEL SCHEUDLES

Revise: Panel Schedule per AD1-E4.3

Aedis Architects
Thang Do, Principal

Electrical, American Consulting Engineers Electrical
Sammy Fernandez

Mechanical, Cypress Engineering Group
Metin Serttunc

Division of the State Architect

Attachments:

Specifications:
31 23 16 Trenching (5 pages)

Drawings:

ARCHITECTURAL:
SHEET AD1-A1.02
SHEET AD1-A2.01
SHEET AD1-A2.02
SHEET AD1-A3.01
SHEET AD1-A5.01
SHEET AD1-A8.10
SHEET AD1-A9.10a
SHEET AD1-A9.10b
SHEET AD1-A11.01

MECHANICAL:
SHEET AD1-MP0.02
SHEET AD1-MP2.03a
SHEET AD1-MP2.03b
SHEET AD1-MP2.04a
SHEET AD1-MP2.04b
SHEET AD1-MP2.04c
SHEET AD1-MP6.01

ELECTRICAL:
SHEET AD1-E1.1
SHEET AD1-E2.1
SHEET AD1-E2.2
SHEET AD1-E3.1
SHEET AD1-E3.2
SHEET AD1-E4.2
SHEET AD1-E4.3

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

GENERAL SHEET NOTES

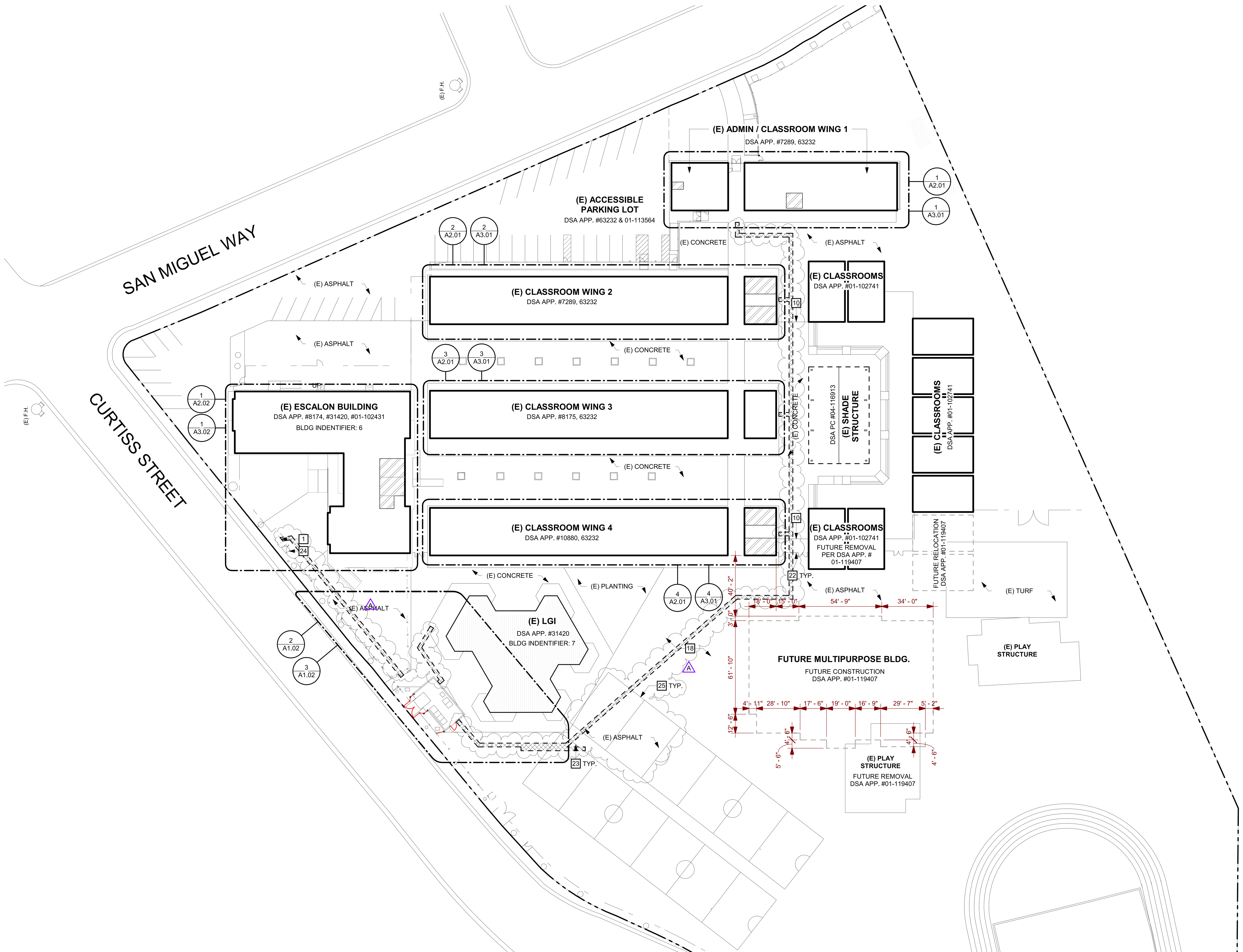
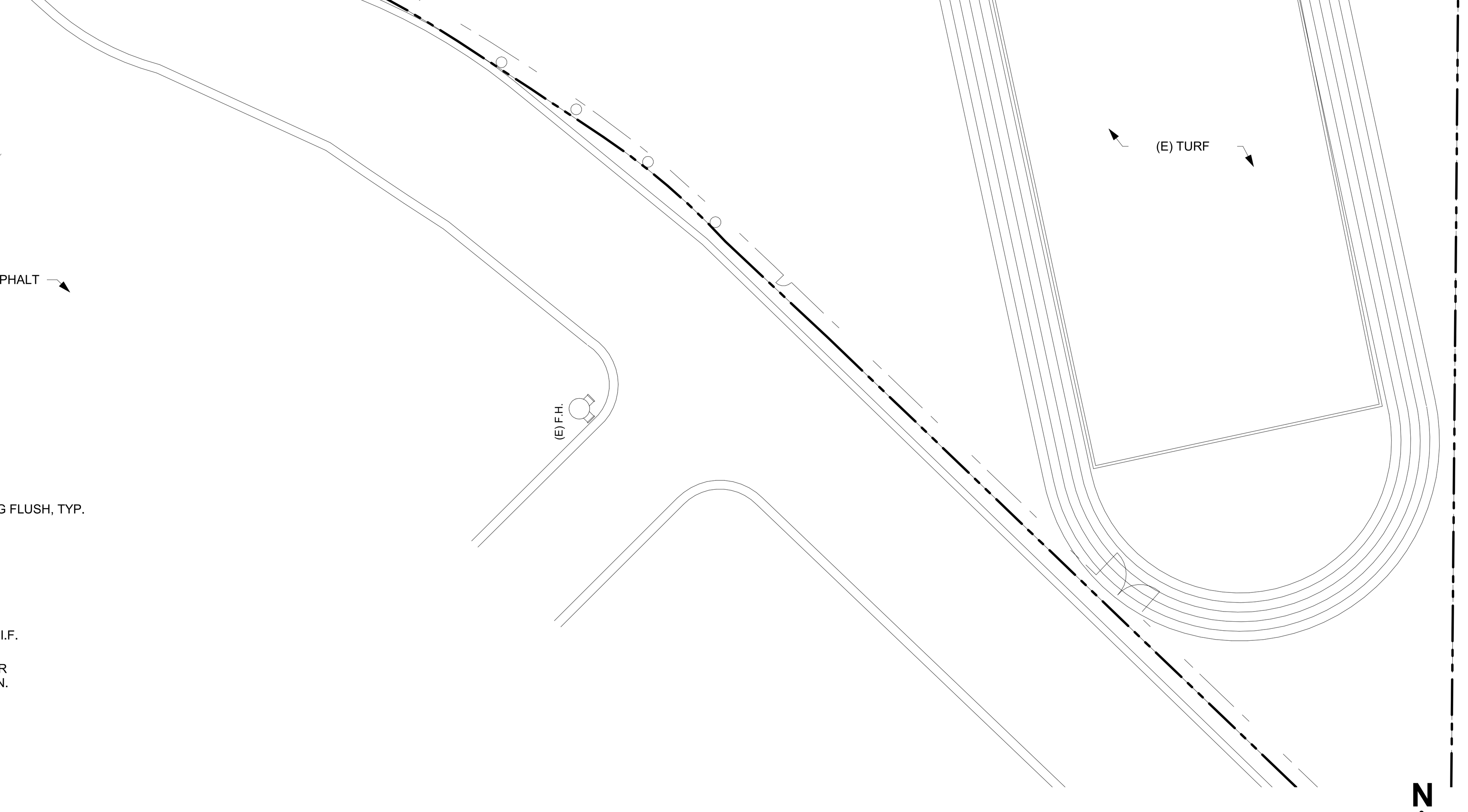
- A BUILDINGS ARE UNSPRINKLERED, TYPE V-B CONSTRUCTION UNLESS OTHERWISE NOTED
- B NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN APPROVED BY DSA
- C CONTRACTOR SHALL MAINTAIN FIRE LANE ACCESS THROUGHOUT PROJECT.
- D DO NOT INTERRUPT EXISTING UTILITY SERVICES SERVING OCCUPIED 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 ELECTRICAL AND MECHANICAL DRAWINGS FOR EXTENT OF ELECTRICAL AND MECHANICAL WORK.
- G ALL EXISTING FINISHES OR MATERIALS DAMAGED OR DEMOLISHED DUE TO NEW CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL STATE, INCLUDING BUT NOT LIMITED TO REINSTALLING OR REPLACING EXISTING CHAINLINK FENCING AS REQUIRED AND RESTRIPING PAVING IN KIND. S.E.D. FOR TRENCH ROUTING. SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING

DEMO & NEW SITE PLAN KEYNOTES

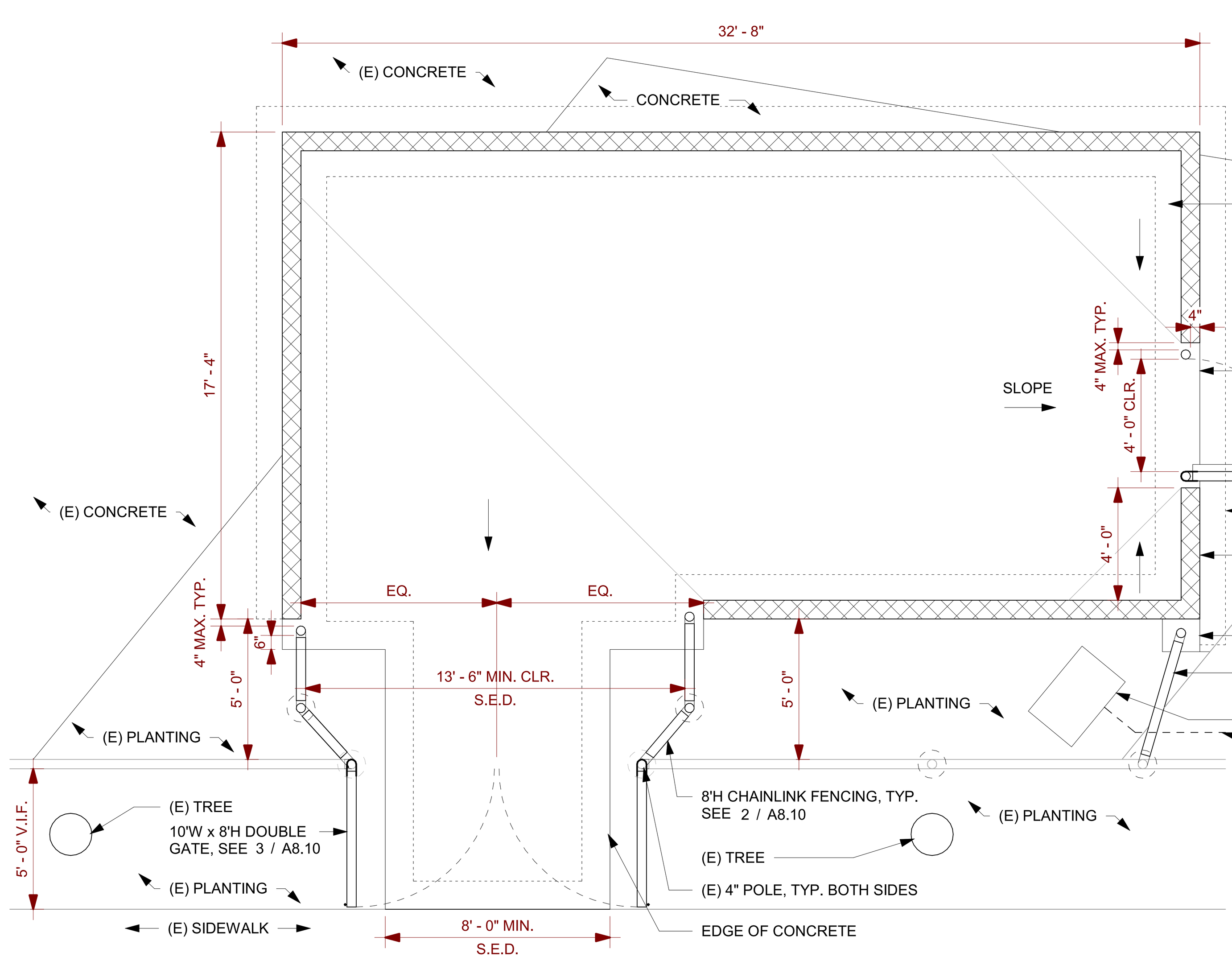
1. REMOVE (E) ELECTRICAL EQUIPMENT AND PAD, S.E.D.
2. (E) CHAINLINK FENCING TO REMAIN. SALVAGE AND REINSTALL FABRIC AND BOTTOM BAR AS REQUIRED FOR CONSTRUCTION ACCESS.
3. (E) GATE TO REMAIN
4. (E) ELECTRICAL BOX, S.E.D. CAP CONDUIT AND REMOVE ABANDONED PULL BOX.
5. (E) PLANTING AND IRRIGATION TO BE REMOVED. CAP IRRIGATION BEFORE REMOVAL. PREP FOR NEW WORK.
6. (E) IRRIGATION BOX TO REMAIN.
7. (E) PLANTING TO REMAIN
8. (E) SIDEWALK TO REMAIN
9. (E) CHAINLINK FENCING TO REMAIN.
10. PAVING MATERIAL TRANSITION, SEE DETAIL 9/A8.10
11. INFILL CONCRETE AT REMOVED PLANTING. SEE DETAIL 6/A8.10
12. AT CHAINLINK FENCING AND POSTS, 4" SPHERE SHALL NOT PASS BETWEEN FENCING AND ADJACENT SURFACES, TYP.
13. CHAINLINK FENCE, SEE DETAIL 2/A8.10 AND S.E.D.
14. AT (E) 8'H CHAINLINK FENCING TO REMAIN ADJACENT REMOVED CHAINLINK, RECONNECT (E) CHAINLINK FABRIC TO (E) POLE. SEE DETAIL 4/A8.10 SIM. FOR REQUIREMENTS.
15. 10'-0"W DOUBLE GATE, SEE DETAIL 3/A8.10 AND S.E.D.
16. FEATHER CONCRETE FINISH AT (N) PAVING TO FACILITATE DRAINAGE TOWARD OPENINGS IN CMU
17. 4'-0"W GATE. SEE DETAIL 2/A8.10 AND S.E.D.
18. ROUTE ELECTRICAL CONDUIT 5' MIN. CLR. OF FUTURE CONSTRUCTION, S.E.D. FOR MORE INFORMATION
19. REMOVE (E) 8'H CHAINLINK FENCING FOR INSTALLATION OF (N) GATE. SEE NEW SITE PLAN FOR ADDITIONAL INFORMATION.
20. ELECTRICAL EQUIPMENT, S.E.D.
21. INFILL CONCRETE AT REMOVED PLANTING. SEE DETAIL 6/A8.10. CONFORM TO ADJACENT PAVING. SLOPE 2% MIN AWAY FROM (E) BUILDING.
22. REMOVE AND REINSTALL CHAINLINK RAILS AND FABRIC AS REQUIRED FOR TRENCHING, TYP.
23. RESTRIPE (E) PLAYGROUND STRIPING IN KIND AT TRENCHING, S.E.D.
24. (E) ELECTRICAL EQUIPMNET. S.E.D.
25. (E) STRIPING TO REMAIN

GRAPHIC KEY

- EXISTING TOILET ROOMS.
- EXISTING CONSTRUCTION TO REMAIN
- EXISTING COVERED STRUCTURE
- TRENCH FOR ELECTRICAL WORK, S.E.D. , 8/S5.01 & DETAILS ON SHEET A8.10
- ASSUMED PROPERTY LINE
- (E) CHAINLINK FENCE
- (N) CHAINLINK FENCE
- EXISTING FIRE HYDRANT

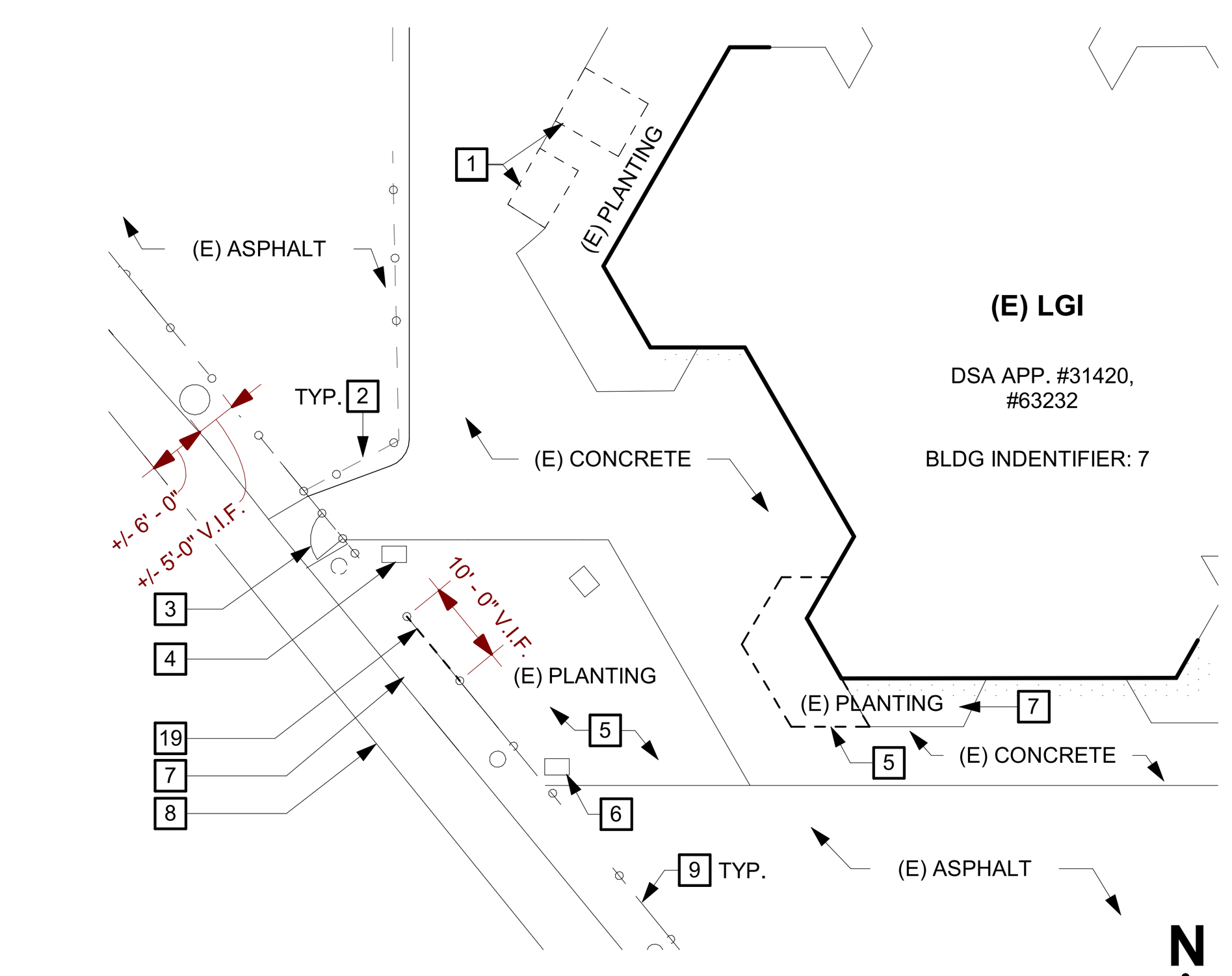



1 NEW SITE PLAN
SCALE: 1/32" = 1'-0"

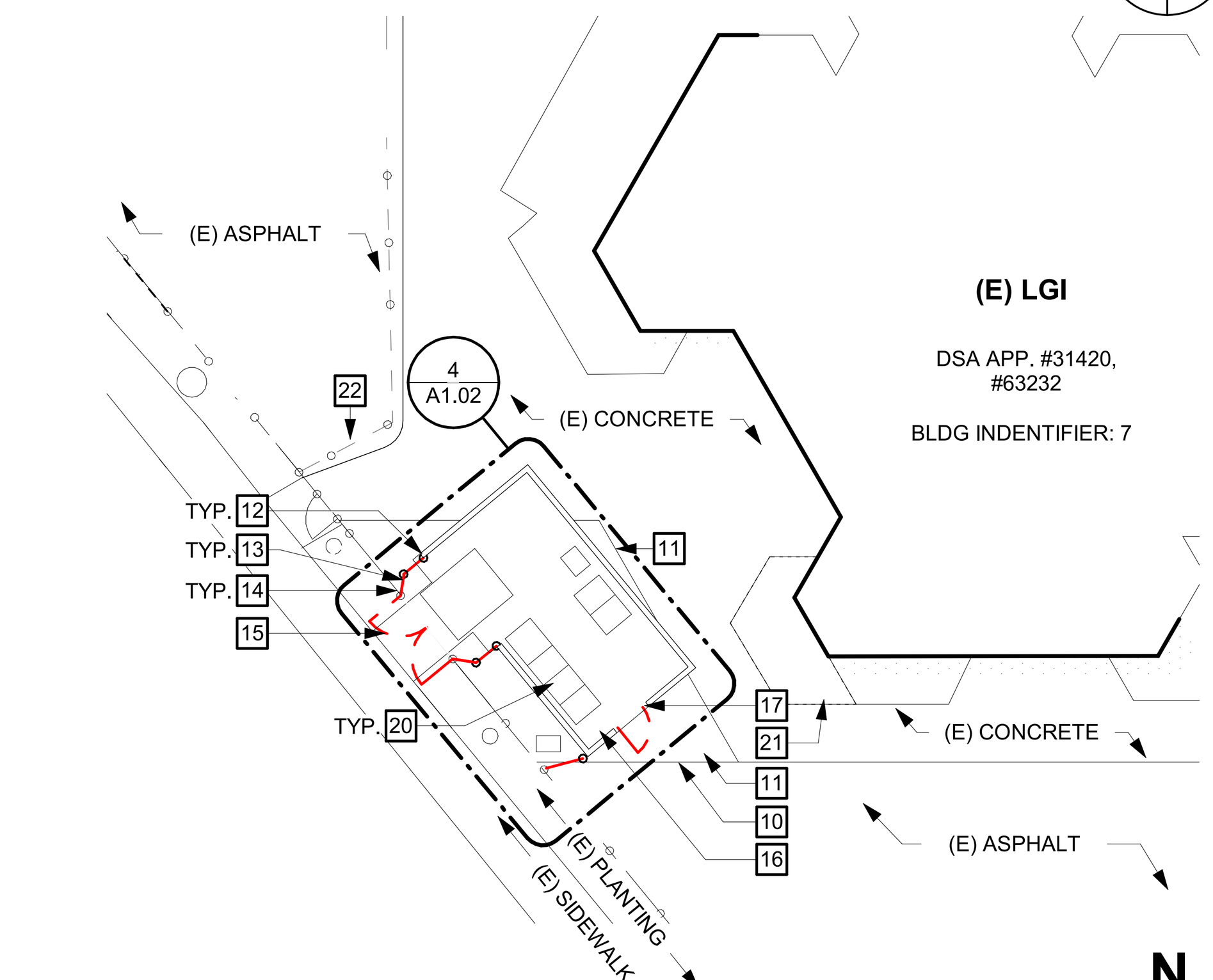


NOTES:
1. ELECTRICAL EQUIPMENT OBSCURED FOR CLARITY. S.E.D. FOR MORE INFORMATION.
2. ALL EXISTING PAVING DEMOLISHED DUE TO NEW CONSTRUCTION SHALL BE REPLACED WITH NEW MATERIALS FINISHED TO MATCH EXISTING.
3. S.O.G. TO CONFORM TO SIDEWALK ELEVATION. MAINTAIN FLAT AND LEVEL TRANSFORMER CLEARANCE, S.E.D.

4 ELECTRICAL ENCLOSURE ENLARGED LAYOUT
SCALE: 1/4" = 1'-0"



2 DEMOLITION ENLARGED SITE PLAN
SCALE: 1" = 20'-0"



3 NEW ENLARGED SITE PLAN
SCALE: 1" = 20'-0"

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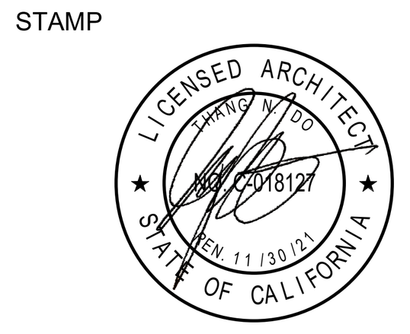
PROJECT

GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

STAMP



STATE
DSA FILE NUMBER 41-26
APPL # 01-119523

REVISIONS

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

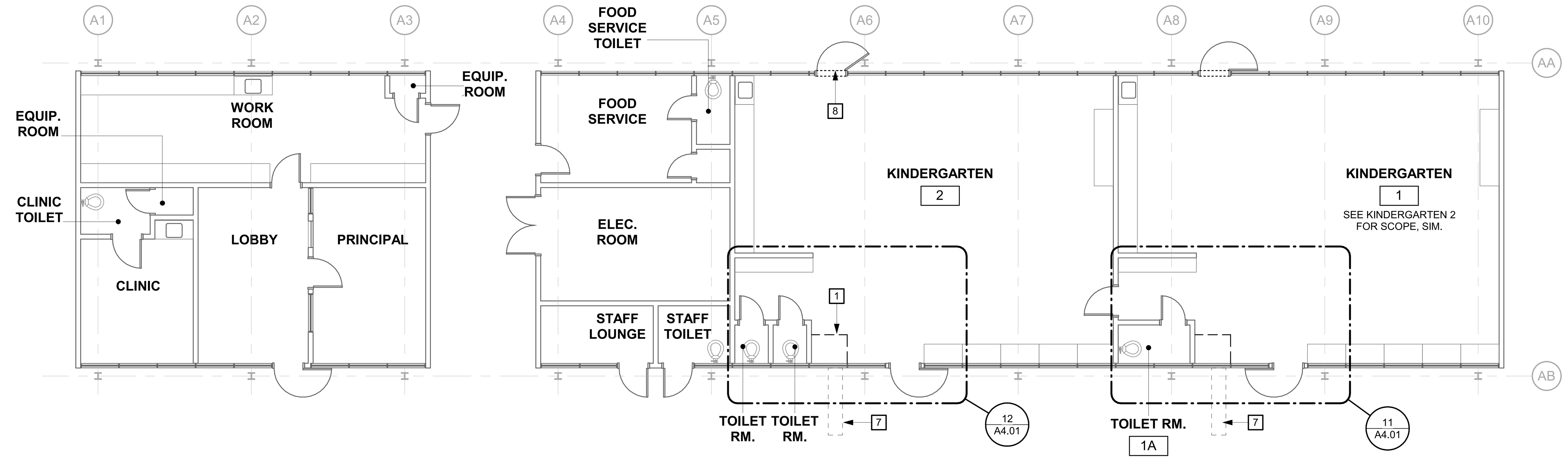
MILESTONES

DD	
90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/04/2021

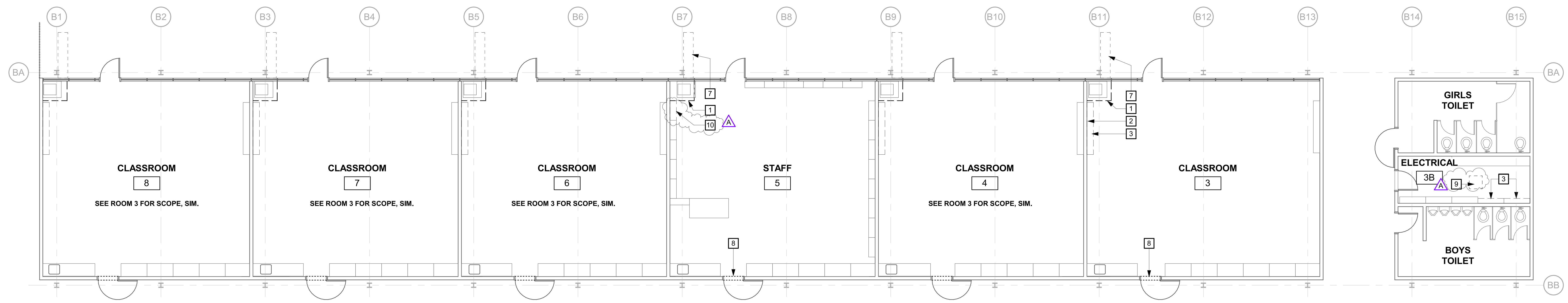
SHEET

DEMOLITION & NEW SITE PLAN

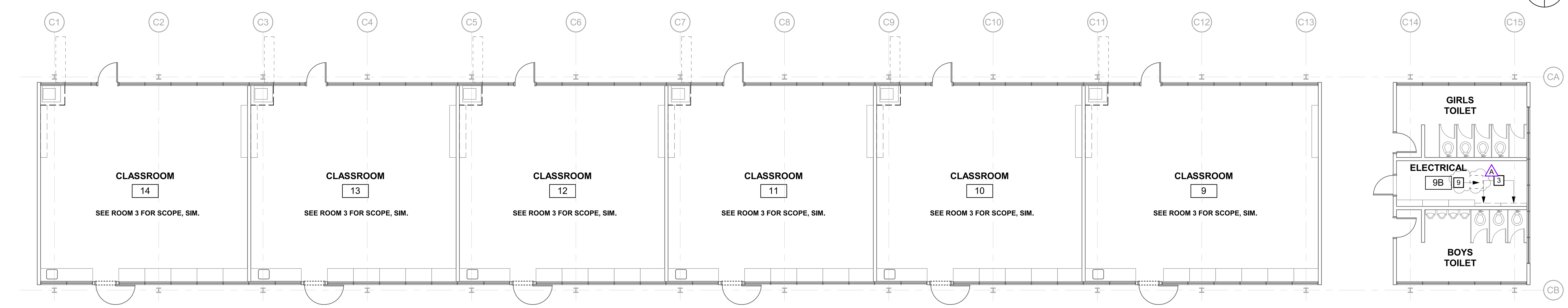
DATE 11/24/2021
JOB # 2021005.02
SHEET # AD1-A1.02



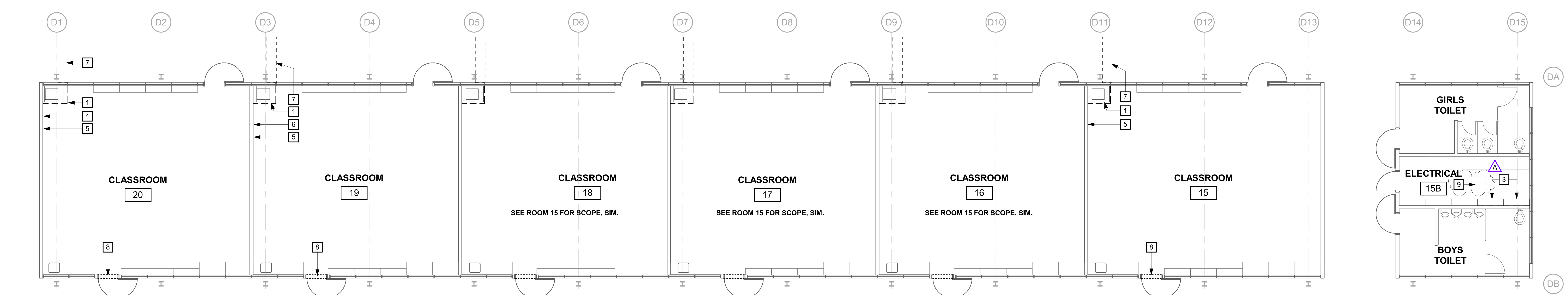
1 DEMOLITION FLOOR PLAN - WING 1
SCALE: 1/8" = 1'-0"



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



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



4 DEMOLITION FLOOR PLAN - WING 4
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

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

B REFER TO 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

I DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO START OF CONSTRUCTION.

J 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. A

DEMOLITION FLOOR PLAN KEYNOTES

1 REMOVE (E) MECHANICAL UNIT AND ENCLOSURE, S.M.D.
2 REMOVE (E) 4'x 8' TACK PANEL
3 REMOVE (E) CABINET
4 SALVAGE (E) 8'x 4' WHITEBOARD AND TURN OVER TO OWNER
5 SHORTEN (E) RACEWAY. COORDINATE LENGTH TIGHT TO NEW ENCLOSURE, SEE NEW FLOOR PLANS.
6 SALVAGE (E) 36" x 48" TACK PANEL AND TURN OVER TO DISTRICT
7 REMOVE PAVING AND PREP FOR NEW WORK, S.M.D.
8 REMOVE (E) WINDOW GLAZING ABOVE AND PREP FOR NEW WORK, S.M.D
9 REMOVE (E) GYP. BD CEILING FOR EXHAUST FAN INSTALLATION, S.M.D.
10 REMOVE FIRST SECTION OF CASEWORK. CUT TOP AND BOTTOM SHELF FLUSH TO ADJACENT CASEWORK TO REMAIN. REMOVE SHELVING. A

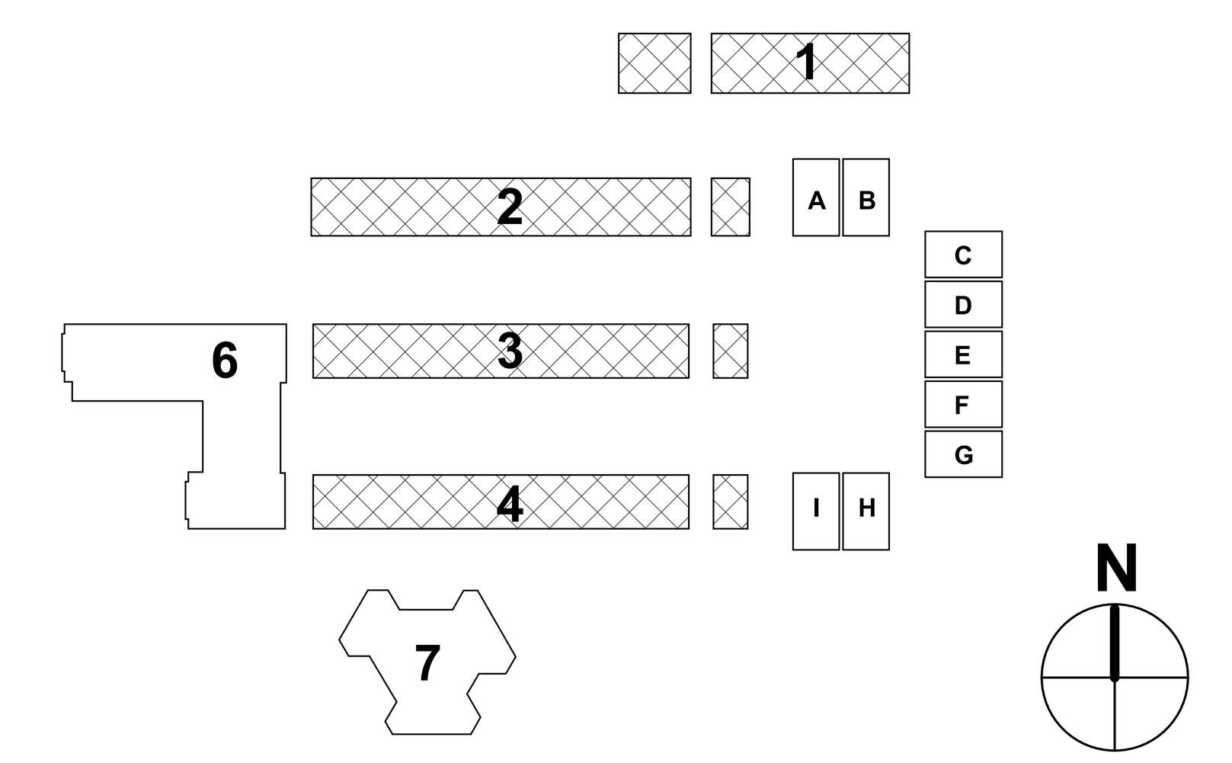
GRAPHIC KEY

EXISTING WALL TO BE DEMOLISHED.

EXISTING WALL TO REMAIN.

EXISTING STOREFRONT OR WINDOW TO REMAIN.

BUILDING KEY



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PROJECT

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CONSULTANT

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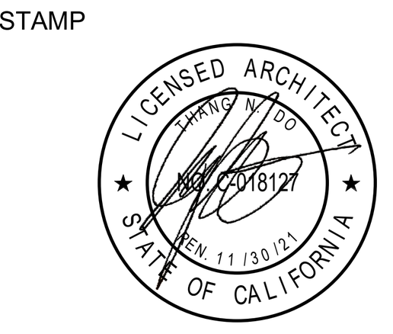


STATE
DSA FILE NUMBER 41-26
APPL # 01-119523

REVISIONS

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

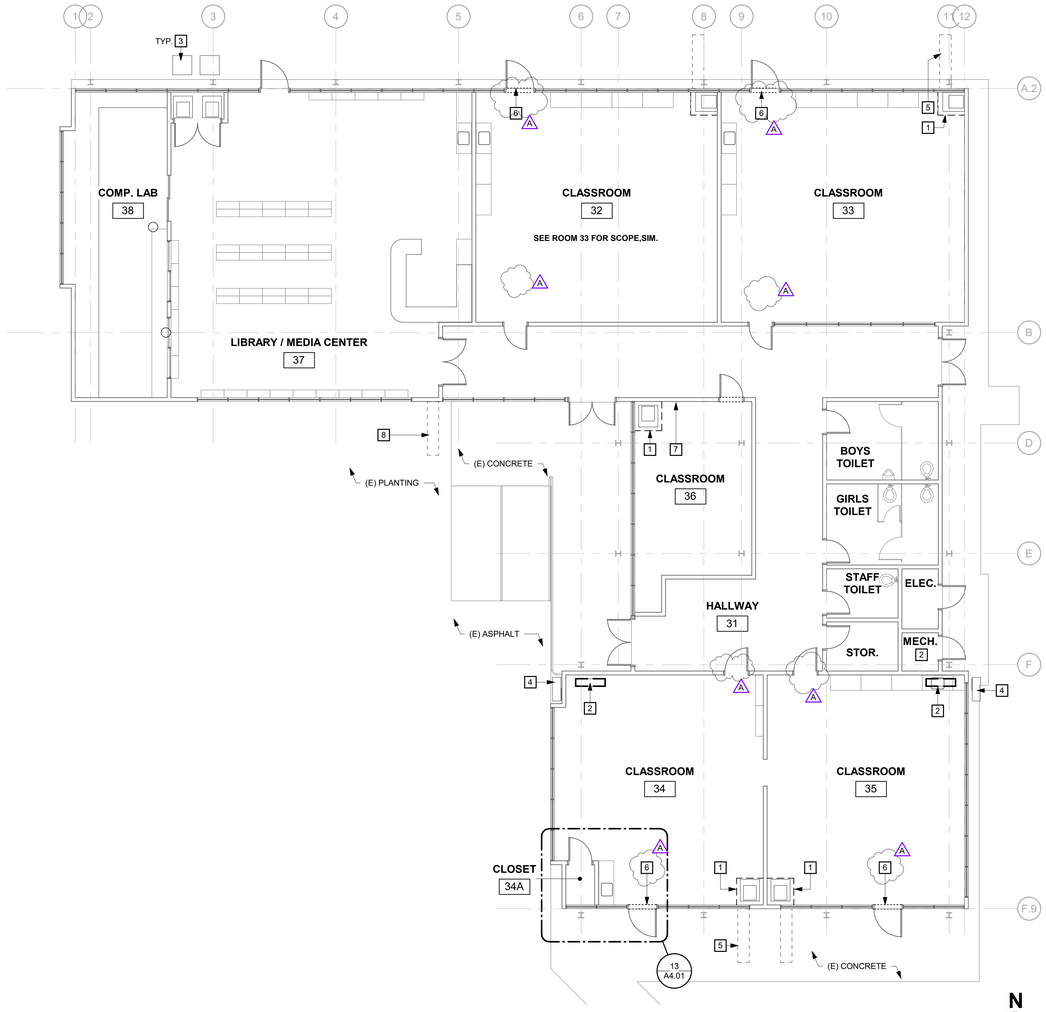
MILESTONES

DD	
90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/04/2021

SHEET

DEMOLITION FLOOR PLANS - WINGS 1, 2, 3 & 4

DATE 11/24/2021
JOB # 2021005.02
SHEET # AD1-A2.01



1 DEMOLITION FLOOR PLAN - ESCALON BLDG.
SCALE: 1/8" = 1'-0"

GENERAL SHEET NOTES

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

B REFER TO 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

I DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO START OF CONSTRUCTION.

J 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. A

DEMOLITION FLOOR PLAN KEYNOTES

1 REMOVE (E) MECHANICAL UNIT AND ENCLOSURE, S.M.D. RECONFIGURE (E) ADJACENT WIREMOLD
2 REMOVE (E) MECHANICAL UNIT; PATCH AND PAINT WALL TO MATCH ADJACENT
3 (E) EQUIPMENT TO REMAIN, S.M.D.
4 REMOVE (E) MECHANICAL UNIT AND ENCLOSURE; PATCH AND PAINT WALL TO MATCH ADJACENT
5 REMOVE PAVING AND PREP FOR NEW WORK, S.M.D.
6 REMOVE (E) WINDOW GLAZING ABOVE AND PREP FOR NEW WORK, S.M.D
7 SALVAGE (E) TACK PANEL AND PROJECTOR SCREEN, TURN OVER TO DISTRICT
8 REMOVE PLANTING AND PREP FOR NEW WORK. DO NOT CUT TREE ROOTS OVER 2" DIA. SEE NEW FLOOR PLAN FOR MORE INFORMATION

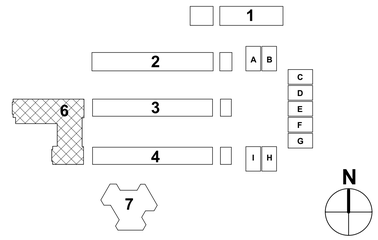
GRAPHIC KEY

EXISTING WALL TO BE DEMOLISHED.

EXISTING WALL TO REMAIN.

EXISTING STOREFRONT OR WINDOW TO REMAIN.

BUILDING KEY



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PROJECT

GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

STAMP

LICENSED ARCHITECT STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 41-26
APPL # 01-119523

REVISIONS

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

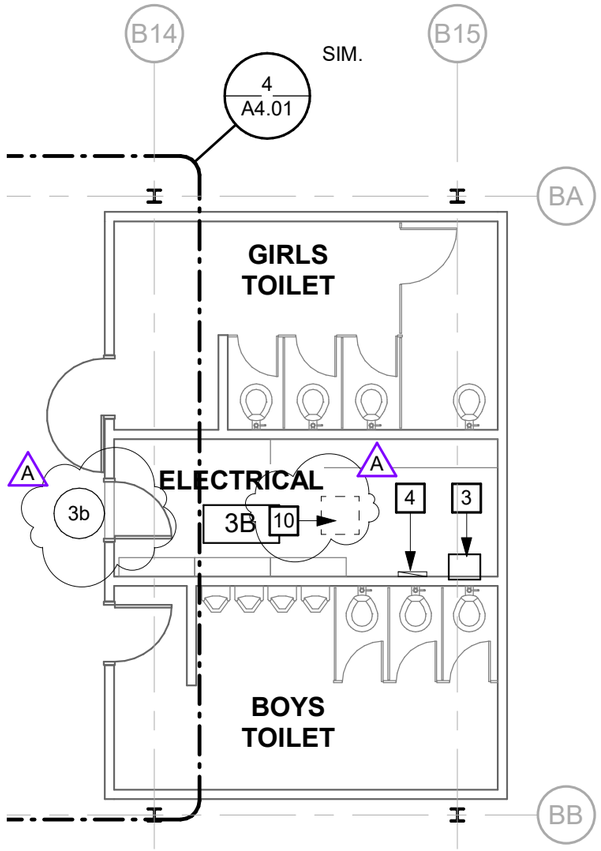
MILESTONES

DD	
90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/04/2021

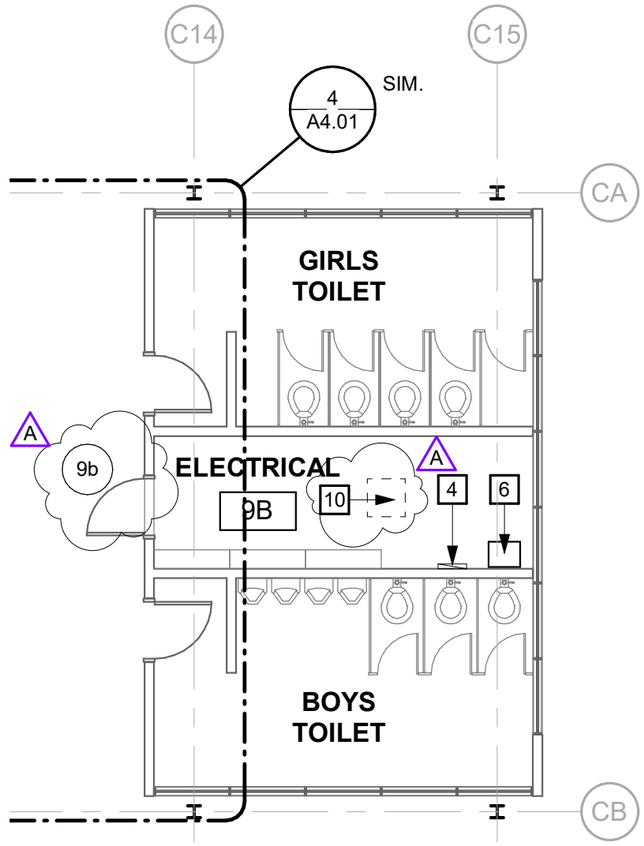
SHEET

DEMOLITION FLOOR PLAN - ESCALON BLDG.

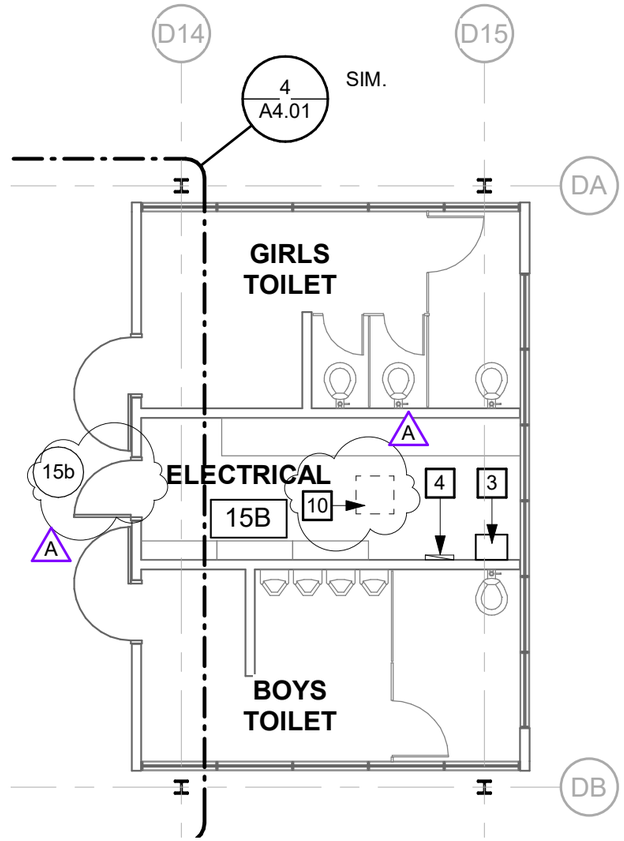
DATE 10/04/2021
JOB # 2021005.02
SHEET # AD1-A2.02



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



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



4 **NEW FLOOR PLAN - WING 4**
SCALE: 1/8" = 1'-0"

NEW FLOOR PLAN KEYNOTES

7 PATCH PAVING AT DRY WELL. SEE 6/A8.10 AND S.M.D.

8 PATCH AND PAINT EXTERIOR FACE WHERE FIRST SECTION OF CASEWORK HAS BEEN REMOVED

9 REFER TO 5/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.

10 PATCH AND PAINT GYP. BD. CEILING ADJACENT EXHAUST FAN, S.M.D.

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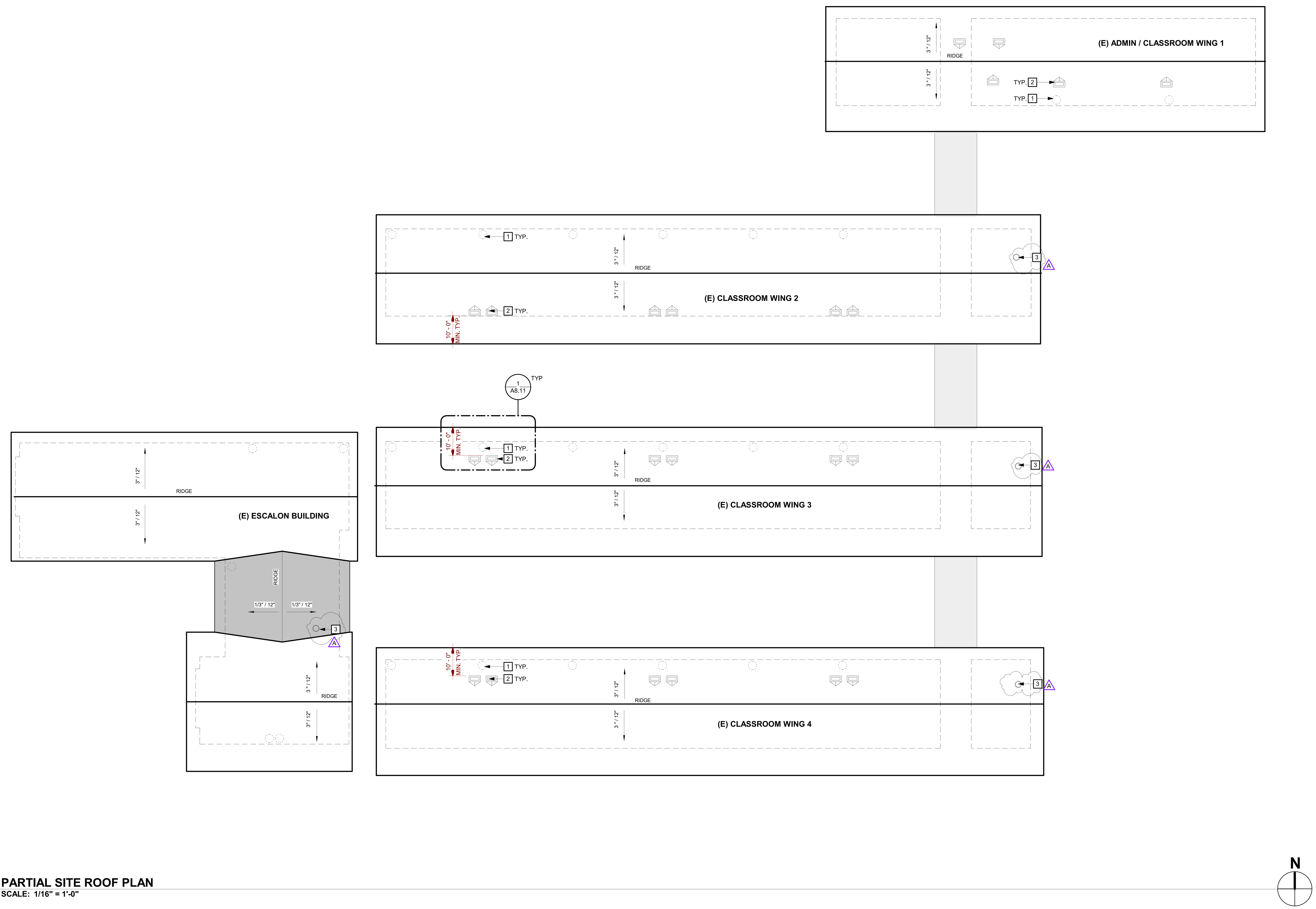
GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT
SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET
APPL NO.: 01-119523	AD1-3.01
JOB NO. 2021005.02	
DATE 11/24/2021	

GENERAL SHEET NOTES

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

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



1 **PARTIAL SITE ROOF PLAN**
SCALE: 1/16" = 1'-0"

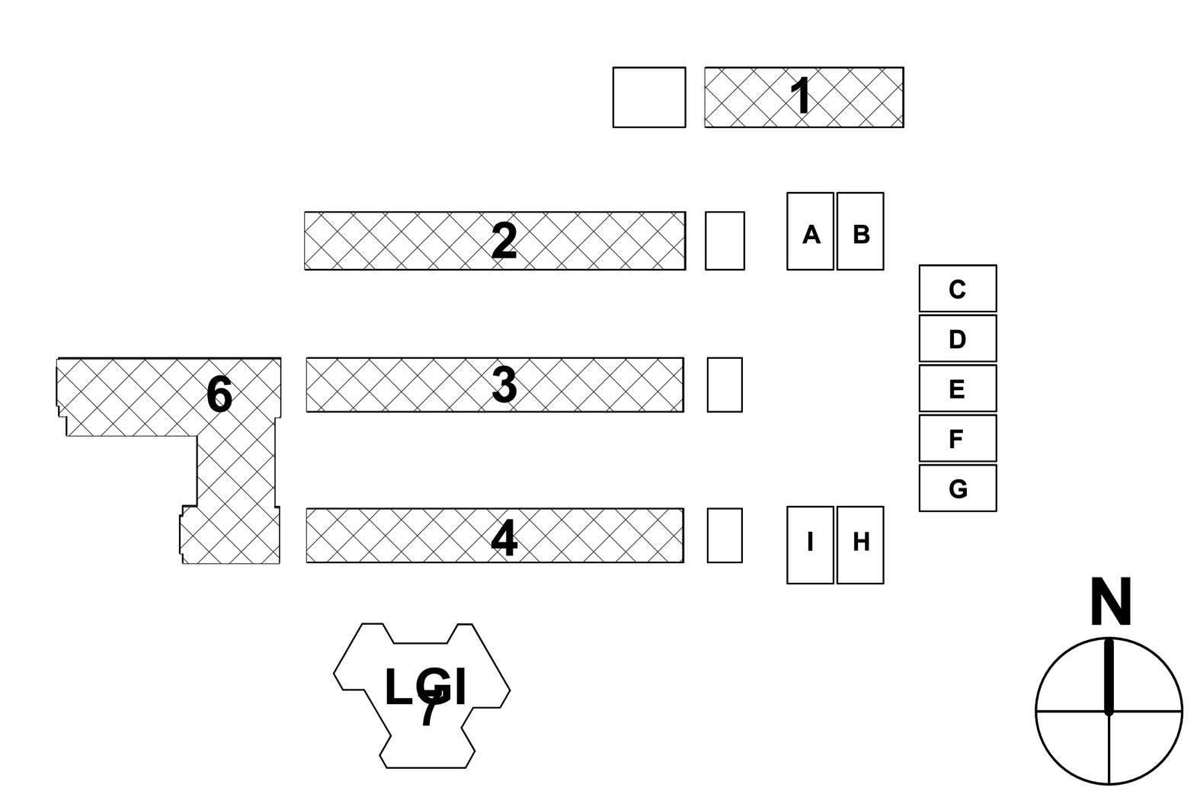
PARTIALSITE ROOF PLAN KEYNOTES

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 19/A8.10. REMOVE (E) ROOFING TO SUBSTRATE FOR CONSTRUCTION ACCESS.
3. EXHAUST FAN SEE 10/A8.10 SIM. S.M.D. REMOVE (E) ROOFING TO SUBSTRATE AND PREP OPENING AS REQUIRED FOR NEW WORK.

GRAPHIC KEY

- (E) ASPHALT SHINGLE, CLASS C MINIMUM
- (E) TPO SINGLE PLY ROOFING, CLASS C MINIMUM
- (E) MINERAL CAP SHEET, CLASS C MINIMUM
- OUTLINE OF WALL BELOW.

BUILDING KEY



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PROJECT

GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

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STATE
DSA FILE NUMBER 41-26
APPL # 01-119523

REVISIONS

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

MILESTONES

DD	
90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/04/2021

SHEET

PARTIAL SITE ROOF PLAN

DATE 10/04/2021
JOB # 2021005.02
SHEET # AD1-A5.01

11/19/2021 7:59:23 PM
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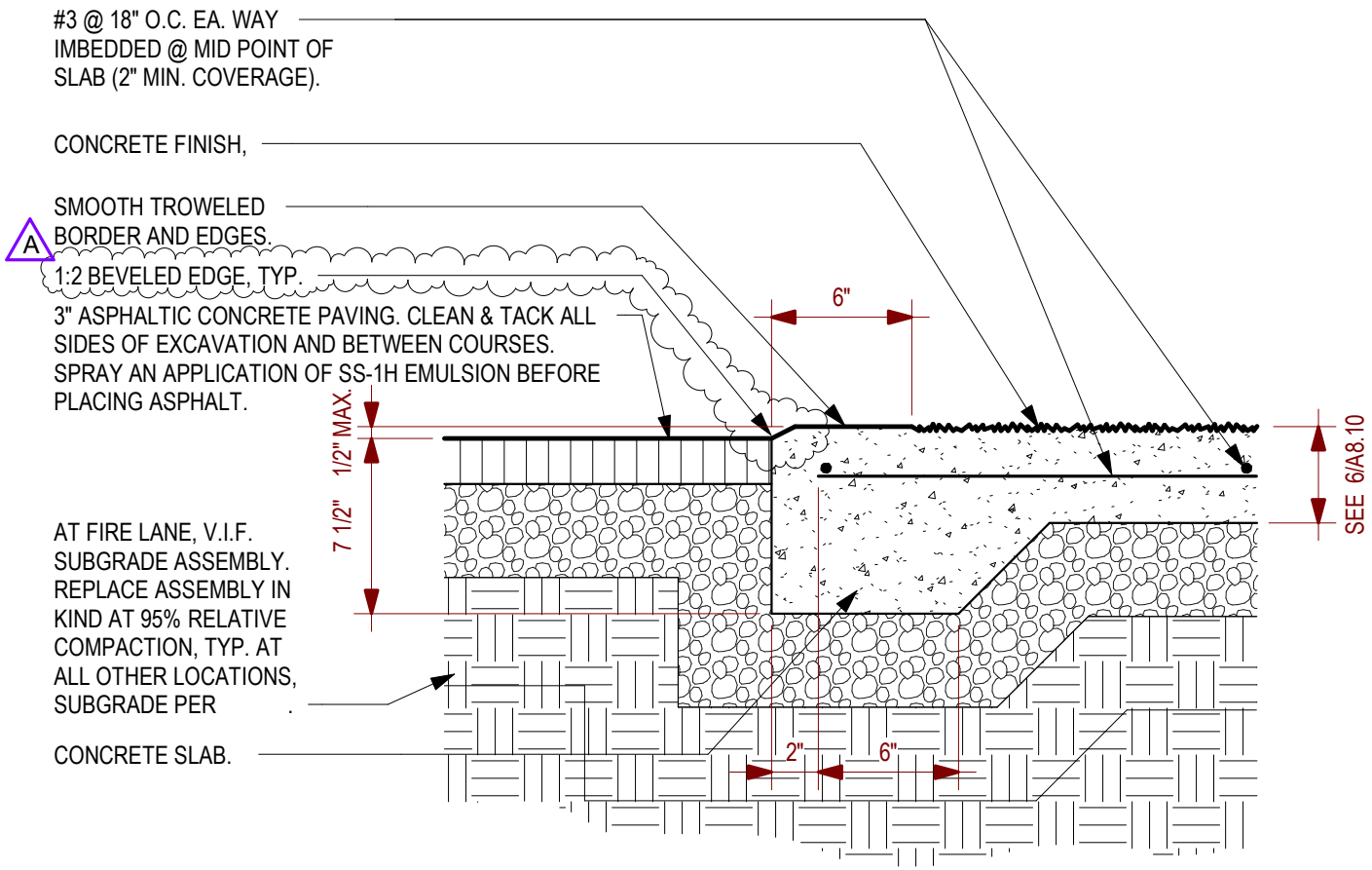

9 ASPHALT/CONCRETE JOINT

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

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REN. 11/30/21
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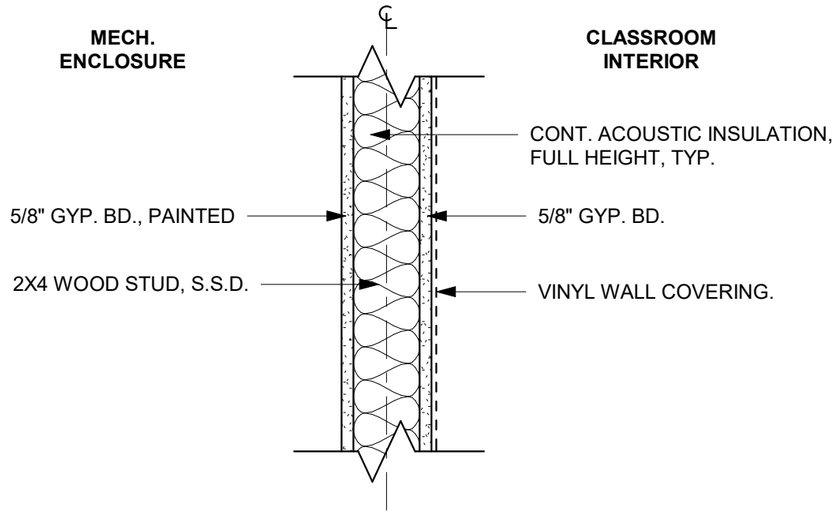
GEORGE HALL ELEMENTARY SCHOOL
- HVAC REPLACEMENT

SAN MATEO FOSTER CITY SCHOOL DISTRICT

FILE NO.:	41-26
APPL NO.:	01-119523
JOB NO.	2021005.02
DATE	11/24/2021

SHEET

AD1-A8.10

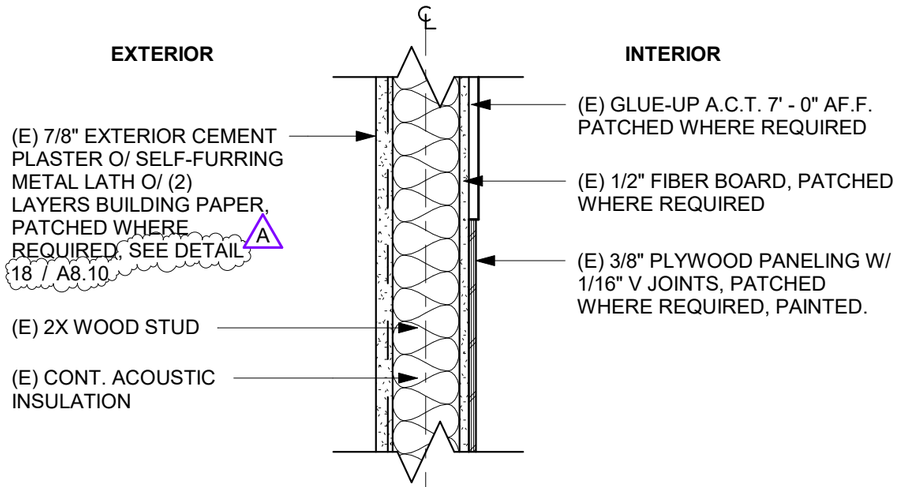


A

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

1 WALL TYPE - MECHANICAL ENCLOSURE

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



ADDITIONAL WALL TYPES

5A - REPLACE (E) GLUE-UP A.C.T., (E) 3/8" PLYWOOD PANELING, AND (E) 1/2" FIBER BOARD WITH (E) 5/8" GYP. BD. AT INTERIOR.

5 WALL TYPE - CEMENT PLASTER / GLUE-UP ACT

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

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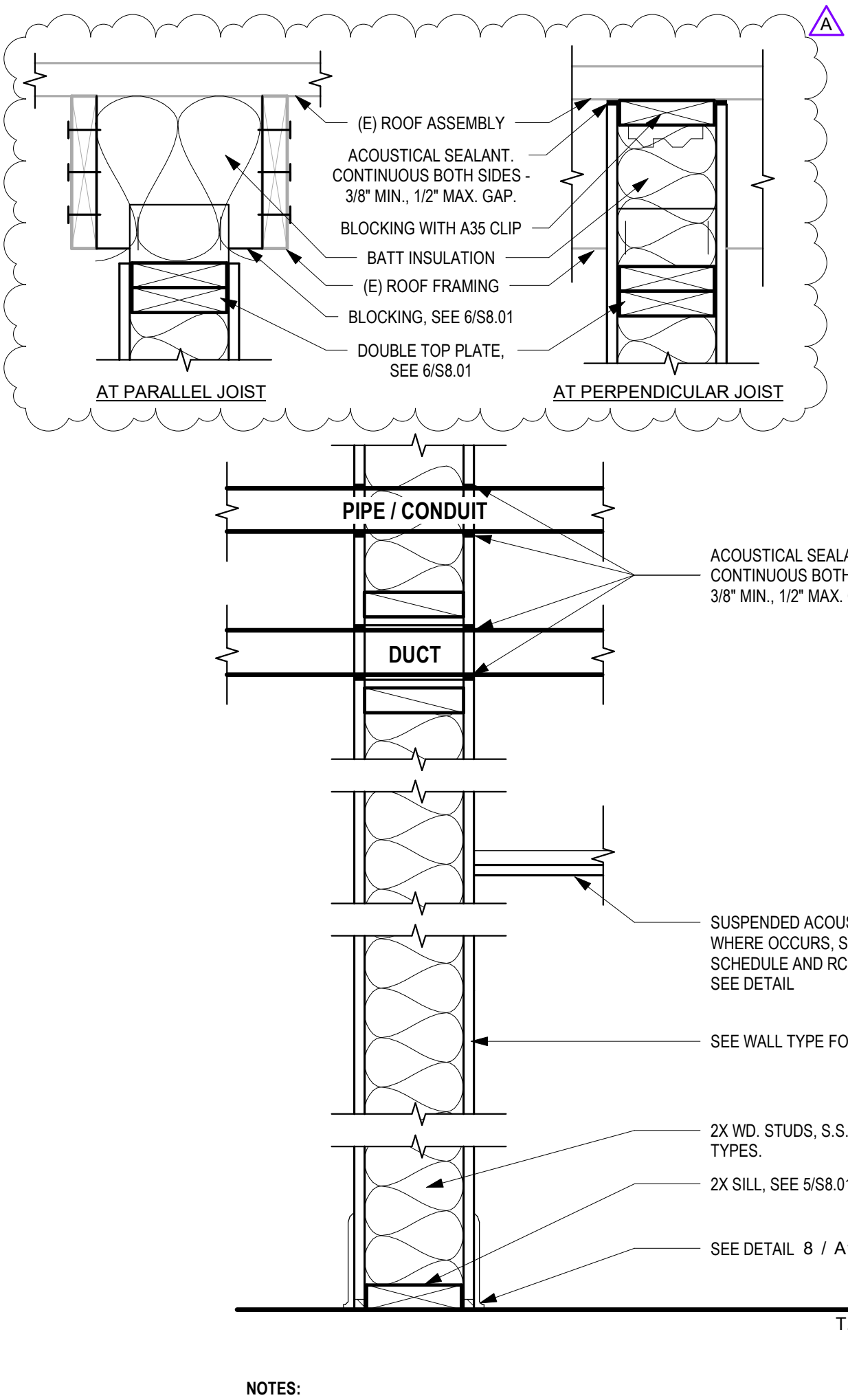
GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.:	41-26
APPL NO.:	01-119523
JOB NO.	2021005.02
DATE	11/24/2021

SHEET

AD1-A9.10A



NOTES:

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

6 TYPICAL SOUND TREATED NONRATED WALL

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

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GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET
APPL NO.: 01-119523	**AD1-A9.10B**
JOB NO. 2021005.02	
DATE 11/24/2021	

DOOR SCHEDULE

DOOR ID	OPENING SIZE		DOOR		FRAME		DETAILS				HARDWARE GROUP	COMMENTS
	WIDTH	HEIGHT	TYPE	FINISH	TYPE	FINISH	HEAD	JAMB-1	JAMB-2	SILL		
1a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
2a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
3a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
A 3b	3' - 0"	7' - 0"	B	-	-	-	-	-	-	-	-	1
4a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
5a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
6a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
7a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
8a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
A 9a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
9b	3' - 0"	7' - 0"	B	-	-	-	-	-	-	-	-	1
10a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
11a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
12a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
13a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
14a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
A 15a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
15b	3' - 0"	7' - 0"	B	-	-	-	-	-	-	-	-	1
16a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
17a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
18a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
19a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
20a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
32a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
33a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
34a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
35a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	
36a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	3/A11.01	01	

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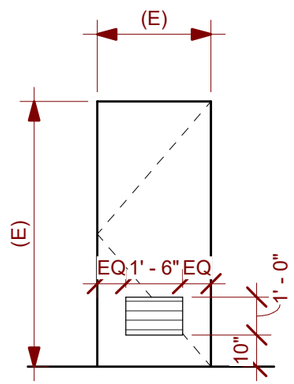

B (E) WOOD

DOOR TYPES

SCALE: 1/4" = 1'-0"

DOOR SCHEDULE COMMENTS

1 PROVIDE NEW LOUVER AT EXISTING DOOR. CUT AND PREP AS REQUIRED. PAINT LOUVER TO MATCH DOOR

A

LICENSED ARCHITECT
THANG N. DO
C018127
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GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26
APPL NO.: 01-119523
JOB NO. 2021005.02
DATE 11/24/2021

SHEET AD1-A11.01

SPLIT SYSTEM AIR CONDITIONERS SCHEDULE

TAG	MANUFACTURER	MODEL	WING / BUILDING	LOCATION	COOLING	HEATING	AIRFLOW	REFRIGERANT PIPING		SEER	ELECTRICAL			WEIGHT	MOUNTING	NOTES
					TOTAL MBH	TOTAL MBH	CFM	LIQUID	GAS		V / PH	MCA	MOCP	LBS	DETAIL	
SSO-1	SAMSUNG	AR24TSFYBWKXCV	WING 1	ROOF	22	24	--	1/4"	5/8"	18	208 / 1	20	30	125	2/MP6.01	
SSI-1	SAMSUNG	AR24TSFYBWKNCV		KITCHEN			657	1/4"	5/8"	--	NOTE 1			30	3/MP6.01	2, 3, 4, 5
SSO-2	SAMSUNG	AR09TSFYBWKXCV	WING 1	ROOF	9	11	--	1/4"	3/8"	23.5	208 / 1	12	20	70	2/MP6.01	
SSI-2	SAMSUNG	AR09TSFYBWKNCV		PSYCH 2A			371	1/4"	3/8"	--	NOTE 1			25	3/MP6.01	2, 3, 4, 5
SSO-3	SAMSUNG	AR24TSFYBWKXCV	WING 1	ROOF	22	NOTE 6	--	1/4"	5/8"	18	208 / 1	20	30	125	2/MP6.01	
SSI-3	SAMSUNG	AR24TSFYBWKNCV		ELECTRICAL ROOM			657	1/4"	5/8"	--	NOTE 1			30	3/MP6.01	2, 3, 4, 5

1. INDOOR UNITS ARE POWERED BY OUTDOOR UNIT.
2. PROVIDE WITH WALL MOUNTING BRACKET.
3. PROVIDE WITH SAMSUNG WALL MOUNTED THERMOSTAT.
4. PROVIDE WITH BACNET INTERFACE CARD. SEE MP5.01 FOR CONTROLS.
5. PROVIDE WITH CONDENSATE PUMP.
6. LOCK OUT HEATING.

AIR DISTRIBUTION SCHEDULE

TAG	MANUFACTURER	MODEL NO.	DESCRIPTION	BORDER TYPE	MOUNTING DETAIL	NOTES
HSS-1	TITUS	S300FL	HIGH SIDEWALL SUPPLY	TYPE 1	12/MP6.01	1, 2, 4
HSS-2	TITUS	300RL	HIGH SIDEWALL SUPPLY	TYPE 1	13/MP6.01	1, 2
HSR-1	TITUS	350RL	HIGH SIDEWALL RETURN	TYPE 1	13/MP6.01	2, 3
RG-1	TITUS	30RL	RELIEF GRILLE	TYPE 1	10/MP6.01	2, 5
EG-1	TITUS	8R	EXHAUST GRILLE	LAY-IN	17/MP6.01	2

1. SET BLADES AT 22.5° DEFLECTION.
2. PRIME AND PAINT PER ARCHITECTS INSTRUCTIONS. REGISTER COLOR SELECTED BY ARCHITECT.
3. PROVIDE WITH AIRSAN COMPACT DUCT SILENCER.
4. PROVIDE WITH ASD AIR SCOOP DEVICE.
5. CONTRACTOR TO FIELD VERIFY (E) DIMENSIONS PRIOR TO ORDERING.

ROOF EXHAUST FANS SCHEDULE

TAG	MANUFACTURER	MODEL NO.	AREA SERVED	AIRFLOW CFM	ESP IN. W.G.	FAN RPM	SOUND POWER SONES	MOTOR		WEIGHT LBS	MOUNTING DETAIL	NOTES
								HP / WATTS	V / PH			
REF-2-1	GREENHECK	G-098-VG	ELEC. RM 3B	450	0.25	1125	6.0	1/4	115 / 1	45	16/MP6.01	1, 2
REF-3-1	GREENHECK	G-098-VG	ELEC. RM 9B	450	0.25	1125	6.0	1/4	115 / 1	45	16/MP6.01	1, 2
REF-4-1	GREENHECK	G-098-VG	ELEC. RM 15B	450	0.25	1125	6.0	1/4	115 / 1	45	16/MP6.01	1, 2
REF-E-1	GREENHECK	G-070-VG	ELEC	250	0.25	1479	4.1	1/15	115 / 1	45	16/MP6.01	1, 2

1. PROVIDE WITH UL LISTING, FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, BIRDSCREEN, AND ROOF CURB.
2. PROVIDE WITH LINE VOLTAGE TSTAT.

CLASSROOM SPLIT SYSTEM HEAT PUMPS SCHEDULE

TAG	MANUFACTURER	MODEL	BUILDING / WING	LOCATION	COOLING	HEATING	AIRFLOW	OUTSIDE AIR CFM	REFRIGERANT PIPING		SEER	HSPF	ELECTRICAL			WEIGHT	MOUNTING	NOTES
					TOTAL MBH	TOTAL MBH	CFM		LIQUID	GAS			V / PH	MCA	MOCP	LBS	DETAIL	
FC-1	SAMSUNG	AM054TNZDCH/AA	WING 1	CLASSROOM 1	53	61	1600	450	3/8"	3/4"	-	-	208/1	2.6	15	164	15	2, 3, 4, 6, 7
HP-1	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	50	1
FC-2	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 2	53	61	1600	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-2	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-3	SAMSUNG	AM054TNZDCH/AA	WING 2	CLASSROOM 3	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-3	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-4	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 4	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-4	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-5	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 5	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-5	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-6	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 6	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-6	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-7	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 7	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-7	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-8	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 8	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-8	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-9	SAMSUNG	AM054TNZDCH/AA	WING 3	CLASSROOM 9	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-9	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-10	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 10	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-10	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-11	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 11	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-11	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-12	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 12	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-12	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-13	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 13	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-13	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-14	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 14	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-14	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-15	SAMSUNG	AM054TNZDCH/AA	WING 4	CLASSROOM 15	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-15	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-16	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 16	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-16	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-17	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 17	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-17	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-18	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 18	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-18	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-19	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 19	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-19	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-20	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 20	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-20	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-32	SAMSUNG	AM054TNZDCH/AA	ESCALON BLDG	CLASSROOM 32	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-32	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	15/MP6.01	1
FC-33	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 33	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-33	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	15/MP6.01	1
FC-34	SAMSUNG	AM054TNZDCH/AA		CLASSROOM 34	53	61	1155	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7
HP-34	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	15/MP6.01	1
FC-35	SAMSUNG	AM054TNZDCH/AA	A	CLASSROOM 35	53	61	900	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 6, 7 A
HP-35	SAMSUNG	AM053TXMDCH/AA		ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	15/MP6.01	1
FC-36	SAMSUNG	ACO24KNZDCH/AA		CLASSROOM 36	24	27 A	760	150	1/4"	5/8"	A	-	NOTE 8			100	1/MP6.01	2, 3, 4, 5, 6, 7, 8
HP-36	SAMSUNG	AM024JXADCH/AA		ROOF			-	-	1/4"	5/8"	17.5	10	208 / 1	34	50	145	15/MP6.01	1

1. SPLIT SYSTEM SHALL BE ABLE TO OPERATE AT 94% HEATING CAPACITY DOWN TO 32°F OUTDOOR AMBIENT TEMPERATURE.
2. CFM BASED ON 0.55 ESP.
3. PROVIDE WITH SAMSUNG MIM-A60UN 24VAC THERMOSTAT ADAPTER AND 24VAC TRANSFORMER.
4. PROVIDE WITH DELTA CONTROL THERMOSTAT WITH CO2 SENSOR. SEE MP5.01 FOR CONTROLS.
5. PROVIDE WITH CONDENSATE PUMP.
6. PROVIDE WITH MERV-13 FILTERS WITH FILTER ACCESS PANEL.
7. FAN COIL SHALL BE ADJUSTED TO OPERATE AT CONSTANT SPEED AT INDICATED CFM.
8. INDOOR UNIT POWERED BY OUTDOOR UNIT.

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PROJECT

GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

CEG JOB NO. 21034
CYPRESS Engineering Group
HVAC, Plumbing, Fire Protection
Building Commissioning
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STAMP

REGISTERED PROFESSIONAL ENGINEER
MEETA SERTSU
No. M31059
EXP. JUNE 30, 2023
MECHANICAL
STATE OF CALIFORNIA

STATE

DSA FILE NUMBER 41-26

APPL # 01-119523

REVISIONS

No.	Description	Date
1		

MILESTONES

DD	
90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/07/2021

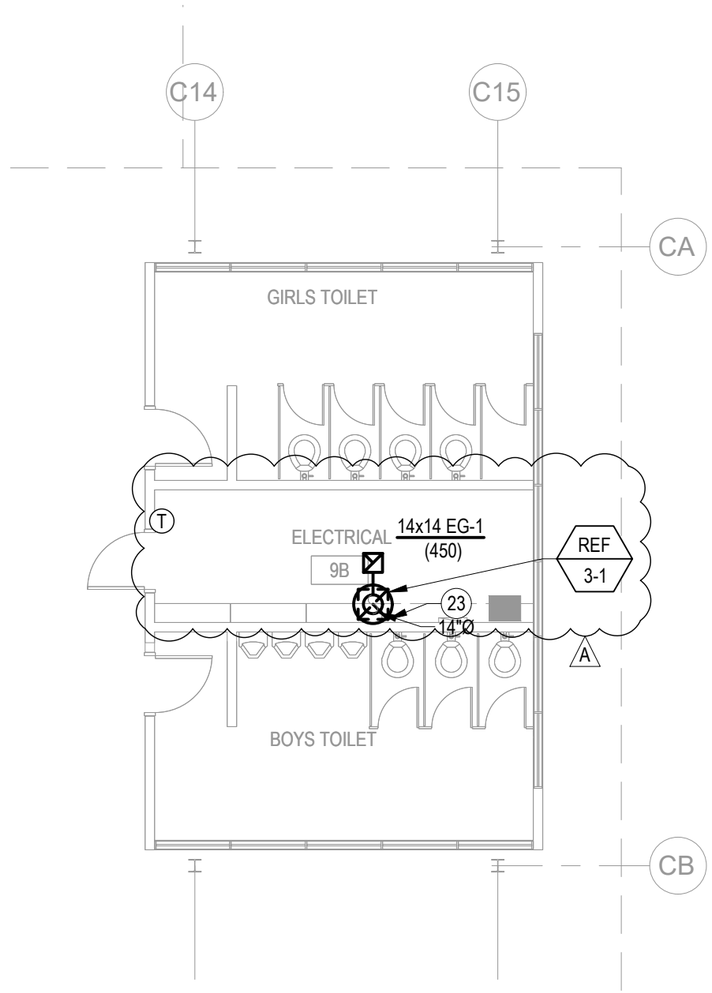
SHEET

SCHEDULES- MECHANICAL & PLUMBING

DATE 10/04/2021

JOB # 2021005.02

SHEET # AD1-MP0.02



GENERAL NOTES

4. PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT.
5. PAINT CONDENSATE PIPING AT EXTERIOR OF BUILDING TO MATCH ADJACENT.

A

(#) NEW SHEET NOTES

23. INSTALL EXHAUST FAN ON ROOF.

A

3 / MP2.03 PARTIAL FLOOR PLAN - WING 3 - NEW - MECHANICAL & PLUMBING

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

NORTH

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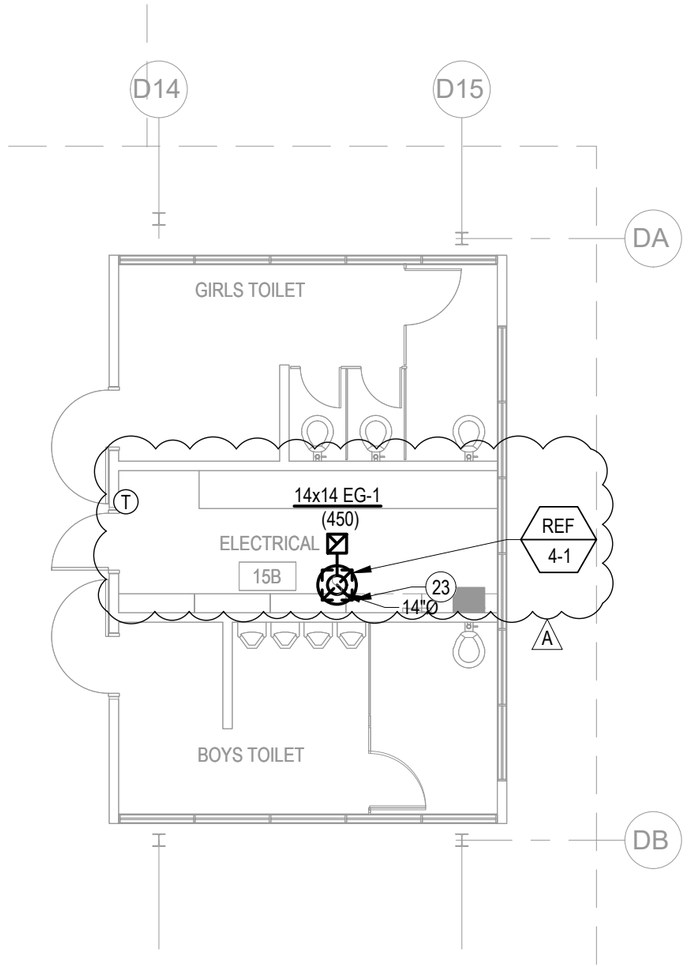
FILE NO.: 41-26	SHEET REF. SHEET MP2.03
APPL NO.: 01-119523	AD1-MP2.03a
JOB NO. 2021005.02	
DATE 11/19/2021	



NEW SHEET NOTES

23. INSTALL EXHAUST FAN ON ROOF. A

4 / MP2.03

PARTIAL FLOOR PLAN - WING 4 - NEW - MECHANICAL & PLUMBING

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

NORTH

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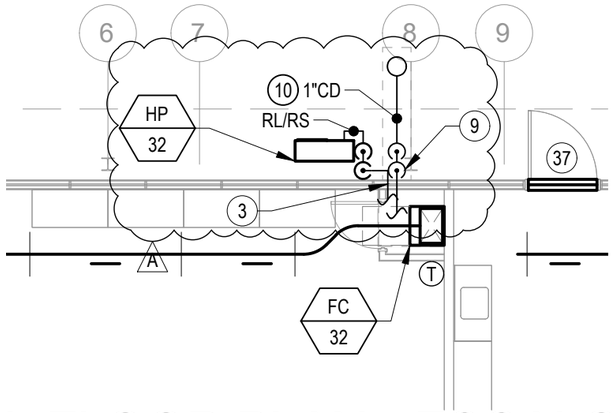
APPL NO.: 01-119523	AD1-MP2.03b
JOB NO. 2021005.02	
DATE 11/19/2021	



GENERAL NOTES

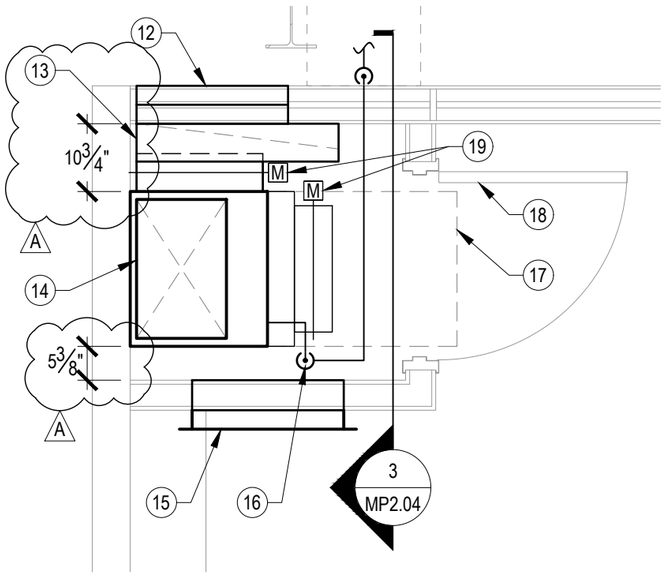
4. PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT.
5. PAINT CONDENSATE PIPING AT EXTERIOR OF BUILDING TO MATCH ADJACENT.

A

1 / MP2.04

PARTIAL FLOOR PLAN - ESCALON BLDG - NEW - MECHANICAL & PLUMBING

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



2 / MP2.04

FLOOR PLAN - ENCLOSURE

SCALE: NONE

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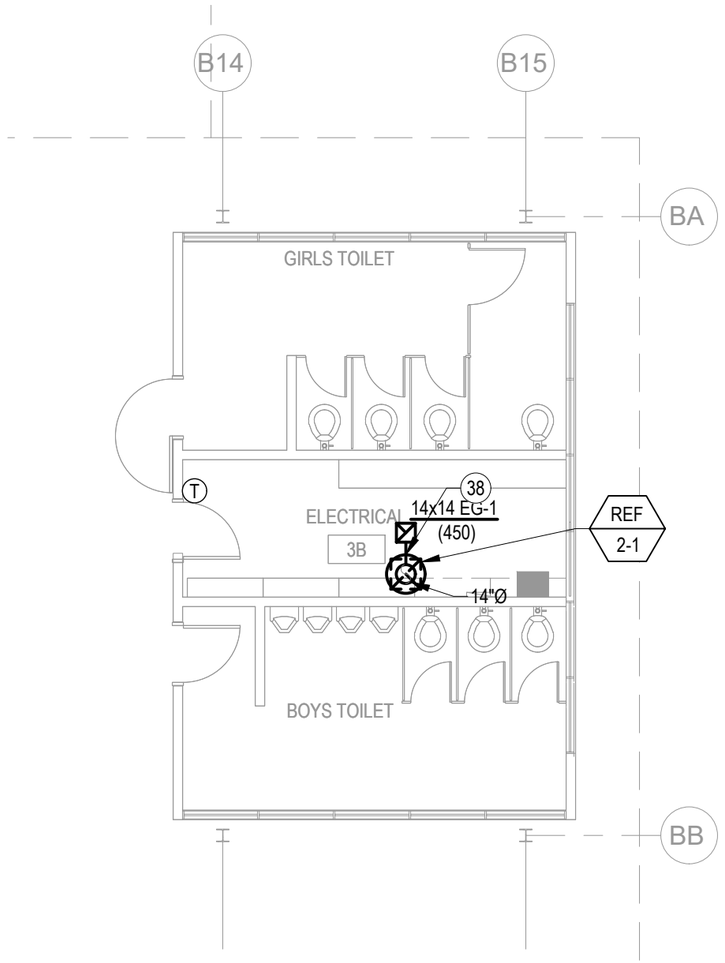
APPL NO.: 01-119523	AD1-MP2.04a
JOB NO. 2021005.02	
DATE 11/19/2021	



NEW SHEET NOTES

38. INSTALL EXHAUST FAN ON ROOF.

5 PARTIAL FLOOR PLAN - WING 2 - NEW - MECHANICAL & PLUMBING

AD1-MP2.04 SCALE: 1/8" = 1'-0"

NORTH

A

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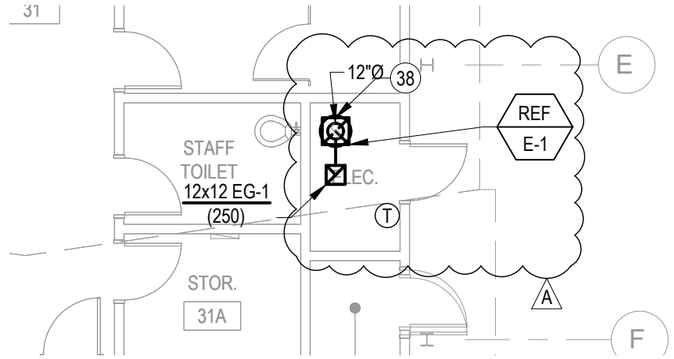
APPL NO.: 01-119523	**AD1-MP2.04b**
JOB NO. 2021005.02	
DATE 11/19/2021	



5
MP2.04

PARTIAL FLOOR PLAN - ESCALON BLDG - NEW - MECHANICAL & PLUMBING

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

NORTH

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APPL NO.: 01-119523	**AD1-MP2.04c**
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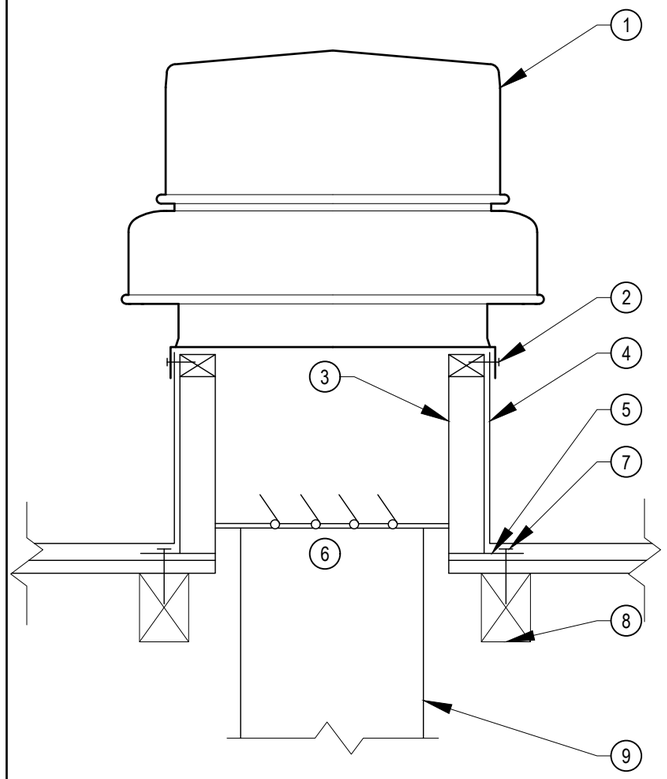
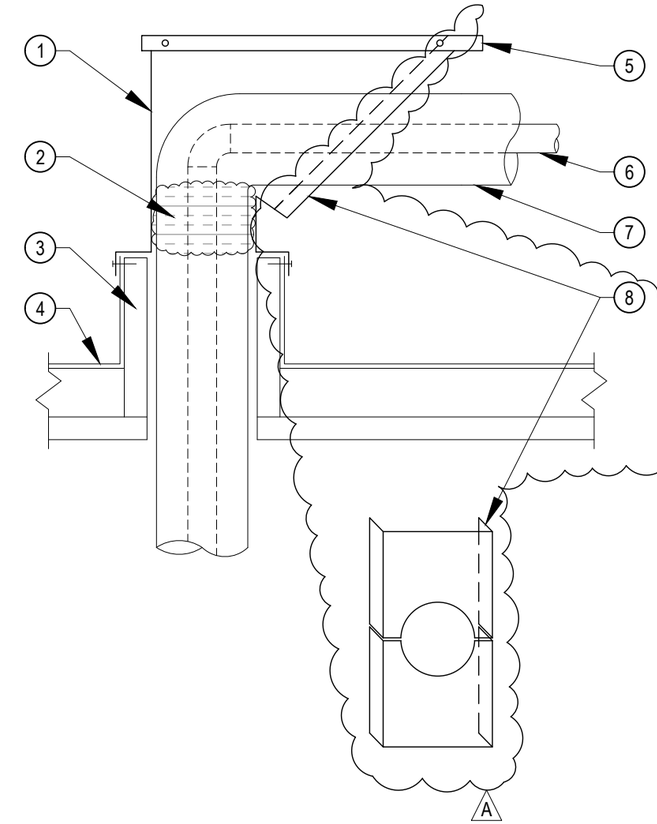


DETAIL NOTES:

1. EXHAUST FAN.
2. SECURE TO ROOF CURB WITH #12 SELF TAPPING SCREWS AT 12" ON CENTER. MINIMUM 2 PER SIDE.
3. FACTORY CURB WITH NAILER.
4. FOR ROOFING AND FLASHING, SEE ARCHITECT'S DRAWINGS.
5. ROOF DECK.
6. BACKDRAFT DAMPER.
7. 3/8"Ø LAG SCREW THRU CURB AND ROOF WITH 3" MINIMUM EMBEDMENT INTO BLOCKING.
8. 4x BLOCKING. SECURE TO STRUCTURE WITH SIMPSON HU44 HANGERS EACH END.
9. DUCT SIZE PER PLAN

16 EXHAUST FAN MOUNTING N.T.S.



DETAIL NOTES:

1. GALVANIZED SHEET METAL ROOF JACK WITH CAP.
2. FILL OPENING WITH FOAM.
3. ROOF OPENING. SEE STRUCTURAL DRAWING FOR CURB, SEE ARCHITECT'S DRAWINGS FOR FLASHING.
4. ROOFING.
5. REMOVABLE SHEET METAL COVER ATTACHED WITH TWO (2) #8 SELF TAPPING SCREWS EACH SIDE, PAINTED.
6. PIPE.
7. PIPE INSULATION.
8. 2 PIECE 20 GA. GALVANIZED SHEET METAL COVER W/ 1-1/2" FLANGES ATTACHED W/ #12 SMS @4" O.C.

NOTES:

1. EXPOSED PIPING SHALL HAVE ALUMINUM JACKET.

4 PIPING ROOF JACK N.T.S.

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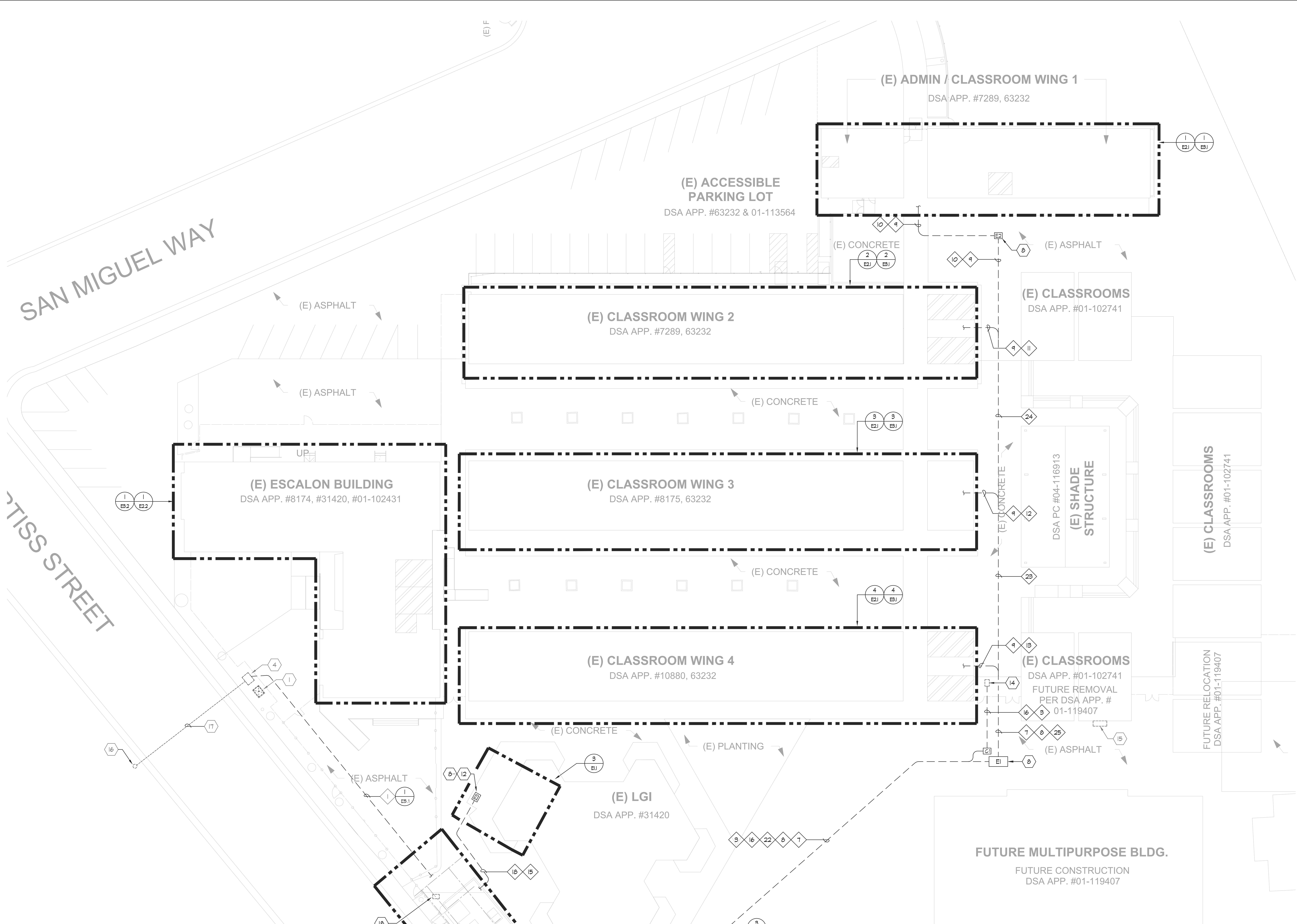
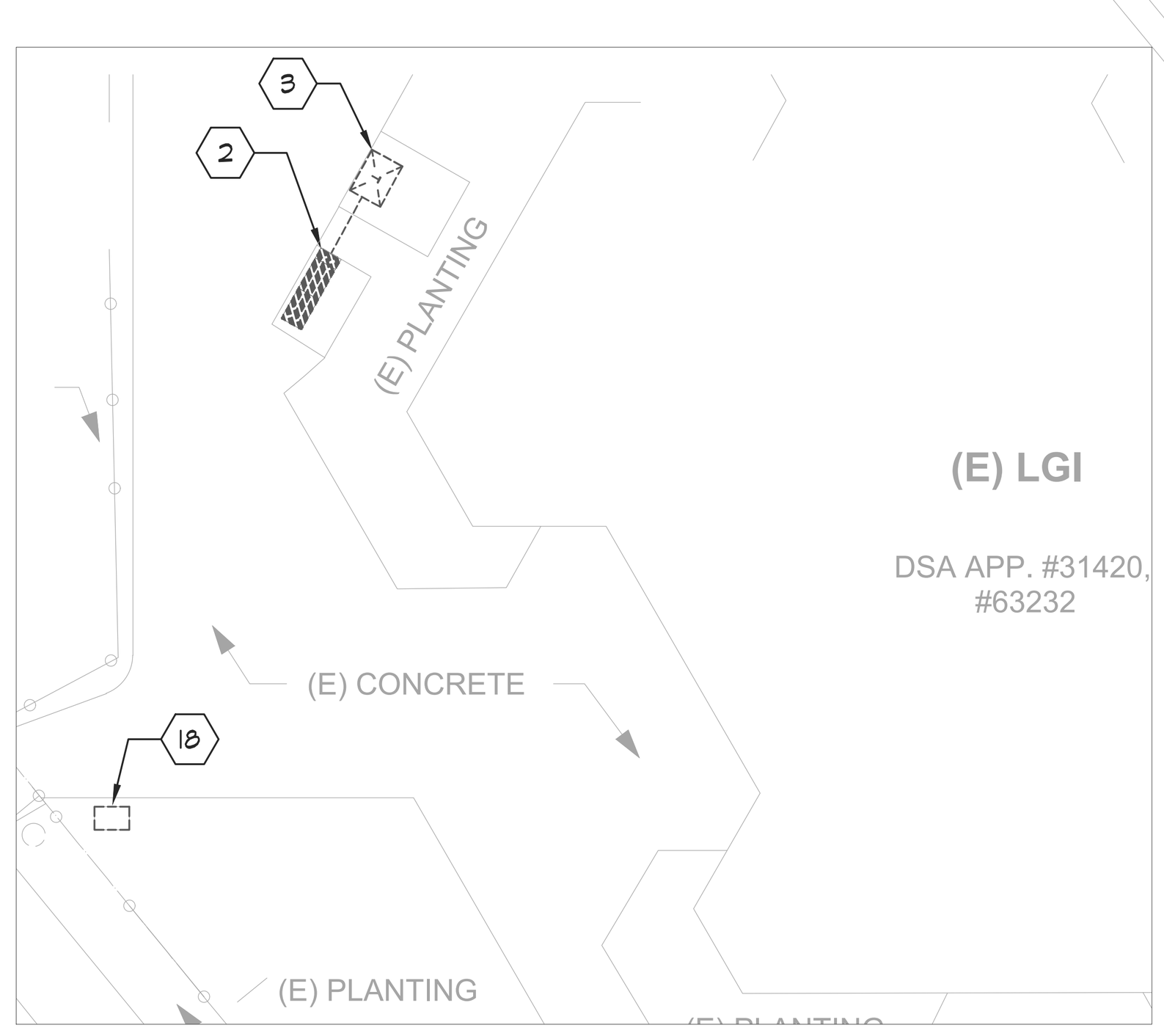
APPL NO.: 01-119523	AD1-MP6.01
JOB NO. 2021005.02	
DATE 11/19/2021	



PULLBOX SCHEDULE:

- E1 - NEW 4'-6"x8'-6" ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'. SEE DETAIL 2/E5.4.
- E2 - NEW B2436 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'. SEE DETAIL 4/E5.4.
- E3 - NEW B3048 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'. SEE DETAIL 6/E5.4.
- C1 - NEW B1017 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'. SEE DETAIL 5/E5.4.



3 / E1.1 **PARTIAL ELECTRICAL DEMOLITION SITE PLAN**
SCALE: 1/16" = 1'-0"

1 / E1.1 **ELECTRICAL SITE PLAN**
SCALE: 1" = 20'-0"

GENERAL NOTES:

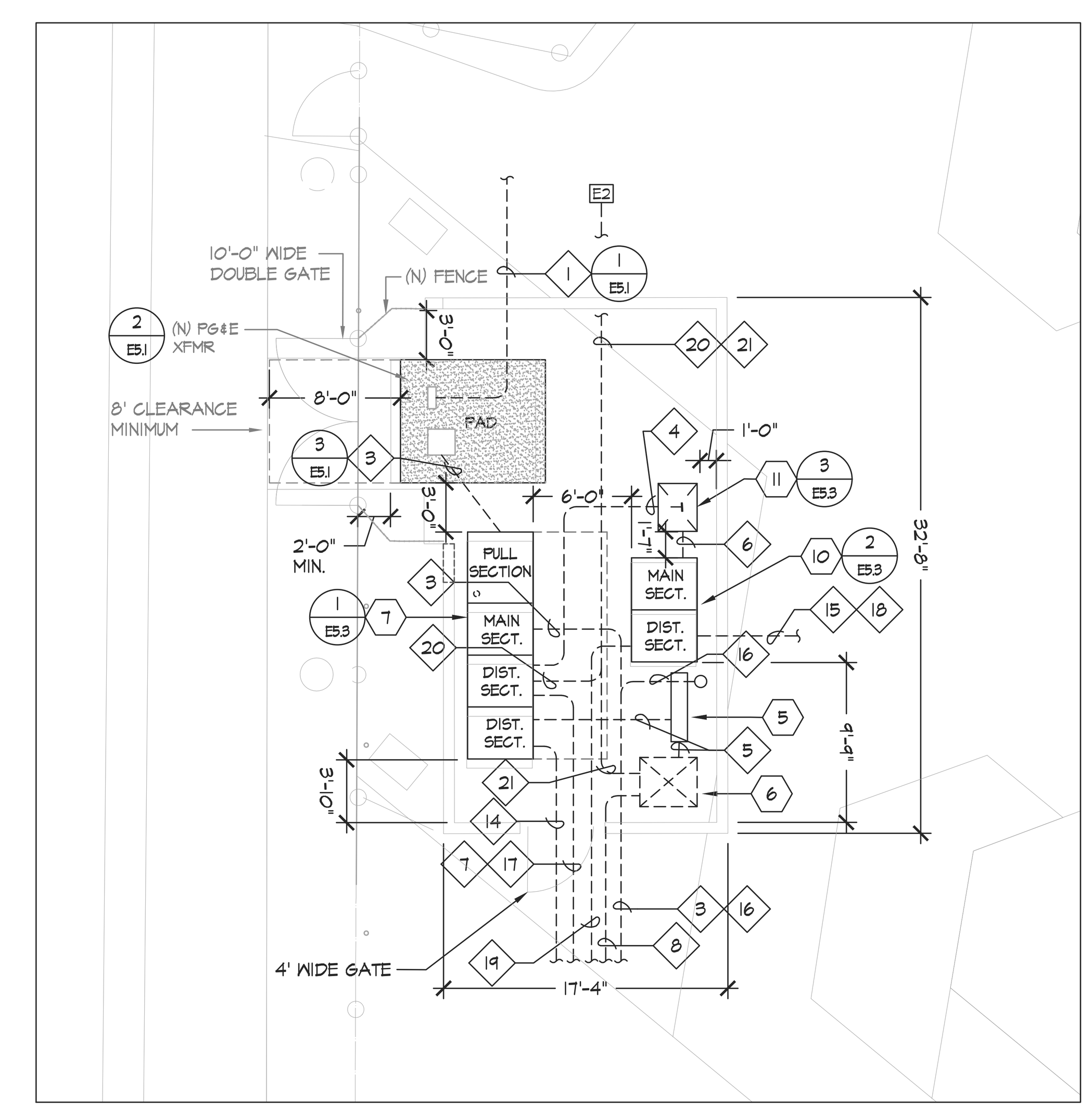
1. CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAW CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT SURFACES TO MATCH ADJACENT.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

SHEET NOTES:

1. EXISTING PG&E TRANSFORMER TO REMAIN.
2. EXISTING 1200A MAIN SWITCHBOARD AND PAD TO BE DEMOLISHED AND REPLACED WITH AN IN-GRADE PULL BOX. INTERCEPT LGI CONDUIT AT THIS LOCATION.
3. EXISTING PG&E TRANSFORMER TO BE REMOVED BY PG&E. DEMOLISH EXISTING TRANSFORMER PAD AND PATCH SURFACE TO MATCH EXISTING.
4. EXISTING PG&E ABOVE GRADE SWITCH LOCATION TO REMAIN.
5. FUTURE PV DISCONNECT SWITCH.
6. FUTURE PV DISTRIBUTION PANEL.
7. NEW 2500A MAIN SWITCHBOARD.
8. NEW IN-GRADE ELECTRICAL PULL BOX. LABEL LID "ELECTRICAL".
9. STUB CONDUIT FOR FUTURE MU TO THIS LOCATION AND CAP FOR FUTURE USE.
10. (N) 1000A DISTRIBUTION PANEL "DP1".
11. (N) 300KVA TRANSFORMER "T-DP".
12. PROVIDE NEW PULL BOX IN PLACE OF THE EXISTING MAIN SWITCHBOARD. INTERCEPT THE EXISTING FEEDER AND CONDUIT FOR EXISTING PANEL 'LG1', 'E' AND 'DP2' AT THIS LOCATION.
13. NEW SIGNAL PULL BOX LABEL LID "SIGNAL".
14. EXISTING SIGNAL PULL BOX STUB NEW CONDUIT INTO EXISTING BOX AS REQUIRED.
15. EXISTING PANEL 'DP2' TO REMAIN.
16. EXISTING PG&E POLE TO REMAIN.
17. EXISTING PG&E UNDERGROUND PRIMARY STREET CROSSING TO REMAIN.
18. EXISTING UNUSED UNDERGROUND IN-GRADE PULL BOX TO BE DEMOLISHED AND REMOVED. CAP EXISTING CONDUIT

CONDUIT SCHEDULE:

1. (N) (1) 4"C - PG&E PRIMARY.
2. (N) (7) 5"C - PG&E SECONDARY.
3. (N) (1) 1"C - PG&E COMMUNICATIONS.
4. (N) (2) 2.5"C - XFMR "TDP1".
5. (N) (2) 3"C - FUTURE PV DISTRIBUTION PANEL.
6. (N) (3) 3"C - PANEL "DP1".
7. (N) (1) 2.5"C - XFMR "AM".
   (N) (1) 2.5"C - XFMR "BM".
   (N) (1) 2.5"C - XFMR "CM".
   (N) (1) 2.5"C - XFMR "DM".
8. (N) (6) 2.5"C - FUTURE PV. (A)
9. (N) (1) 2.5"C - FUTURE PV.
10. (N) (1) 2.5"C - XFMR "AM".
11. (N) (1) 2.5"C - XFMR "BM".
12. (N) (1) 2.5"C - XFMR "CM".
13. (N) (1) 2.5"C - XFMR "DM".
14. (N) (4) 4"C - (FUTURE MU BLDG).
15. (N) (1) 4"C - PANEL 'E".
16. (N) (1) 2"C - FUTURE PV COMMUNICATIONS.
17. (N) (4) 4"C - SPARE POWER.
18. (N) (1) 4"C - PANEL 'LG1'
    (N) (2) 4"C - (E) PANEL 'DP2'
19. (N) (2) 2.5"C - SPARE
20. (1) (2) 2.5"C - FUTURE EV
21. (N) (2) 2.5"C - FUTURE PV
22. (N) (2) 4"C - SPARE
23. (N) (1) 2.5"C - XFMR 'AM'
    (N) (1) 2.5"C - XFMR 'BM'
    (N) (1) 2.5"C - XFMR 'CM'
    (N) (3) 2.5"C - FUTURE PV
24. (N) (1) 2.5"C - XFMR 'AM'
    (N) (1) 2.5"C - XFMR 'BM'
    (N) (2) 2.5"C - FUTURE PV
25. (N) (4) 2.5"C - FUTURE PV



2 / E1.1 **ELECTRICAL SWITCHGEAR DIMENSIONS**
SCALE: 1/8"=1'-0"

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PROJECT
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SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

American Consulting Engineers Electrical, Inc.

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STATE
DSA FILE NUMBER 41-26
APPL # 01-119523

REVISIONS

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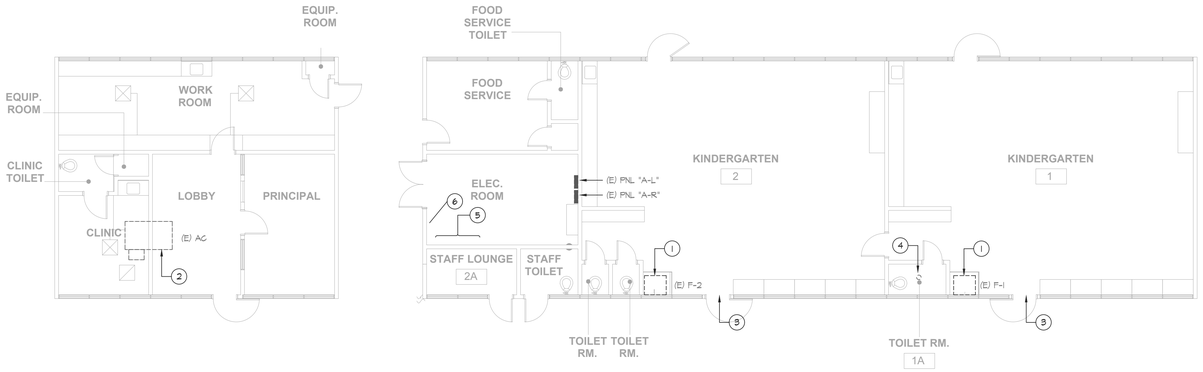
A	ADDENDUM 1	11/24/2021

MILESTONES

DD	
90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/01/2021

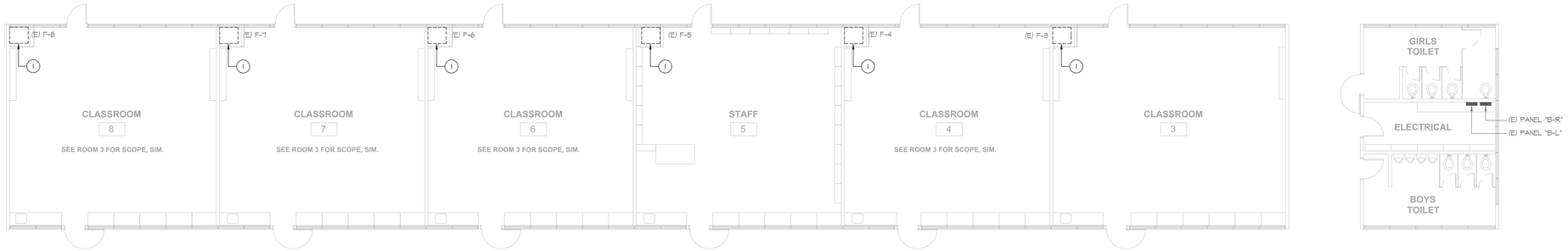
SHEET
ELECTRICAL SITE PLAN

DATE 11/24/2021
JOB # 2021005.02
SHEET # AD-1
E1.1



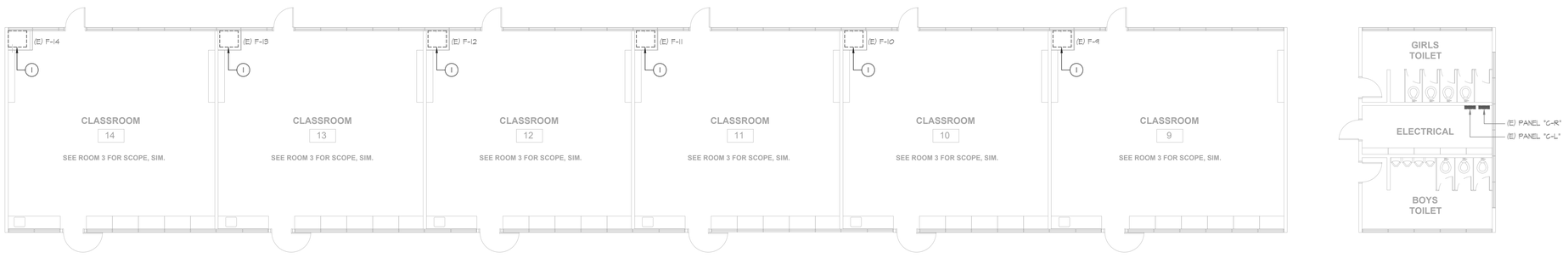
1 E2.1 ELECTRICAL DEMO FLOOR PLAN - WING #1

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



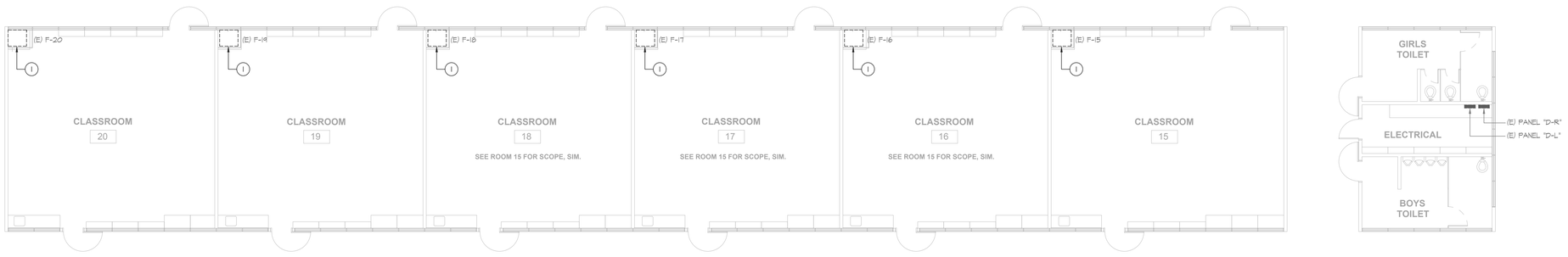
2 E2.1 ELECTRICAL DEMO FLOOR PLAN - WING #2

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



3 E2.1 ELECTRICAL DEMO FLOOR PLAN - WING #3

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



4 E2.1 ELECTRICAL DEMO FLOOR PLAN - WING #4

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

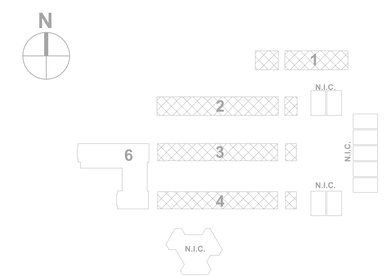
GENERAL NOTES:

1. CONTRACTOR SHALL REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS.
2. EXISTING ELECTRICAL PANELS ARE TO REMAIN.
3. SEE NEW ELECTRICAL FLOOR PLANS FOR ADDTIONAL REQUIREMENTS.
4. SEE DEMO AND NEW SINGLE LINE DIAGRAMS FOR ADDTIONAL REQUIREMENTS.

DEMOLITION SHEET NOTES:

1. EXISTING MECHANICAL UNIT TO BE DEMOLISHED. FULL EXISTING ELECTRICAL CIRCUITRY BACK TO SOURCE AND REMOVE. REMOVE ALL CONDUITS, J-BOXES AND DISCONNECT SWITCH ASSOCIATED WITH THE DEMOLISHED UNIT.
2. EXISTING MECHANICAL UNIT AND CONNECTIONS TO REMAIN.
3. EXISTING EXIT SIGN TO BE DISCONNECTED AND RELOCATED TO FACILITATE NEW WORK. EXISTING CIRCUITRY TO BE REUSED AND EXTENDED.
4. EXISTING LIGHT SOCKET AND FIXTURE TO BE DEMOLISHED AND REPLACED WITH NEW. EXISTING CIRCUITRY AND CONTROLS TO BE REUSED.
5. THE EXISTING FIRE ALARM EQUIPMENT LOCATED ON THE WALL IS TO BE RELOCATED TO FACILITATE NEW WORK. RELOCATE EXISTING FIRE ALARM EQUIPMENT IN THE SAME ROOM, OUTSIDE THE AREA OF THE NEW WORK. VERIFY EXISTING CIRCUITY AND EXTEND AS REQUIRED.
6. REMOVE ABANDONED AND UNUSED ELECTRICAL EQUIPMENT FROM THE WALL AT THIS LOCATION. COORDINATE WITH ARCHITECT.

BUILDING KEY



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90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/01/2021

SHEET

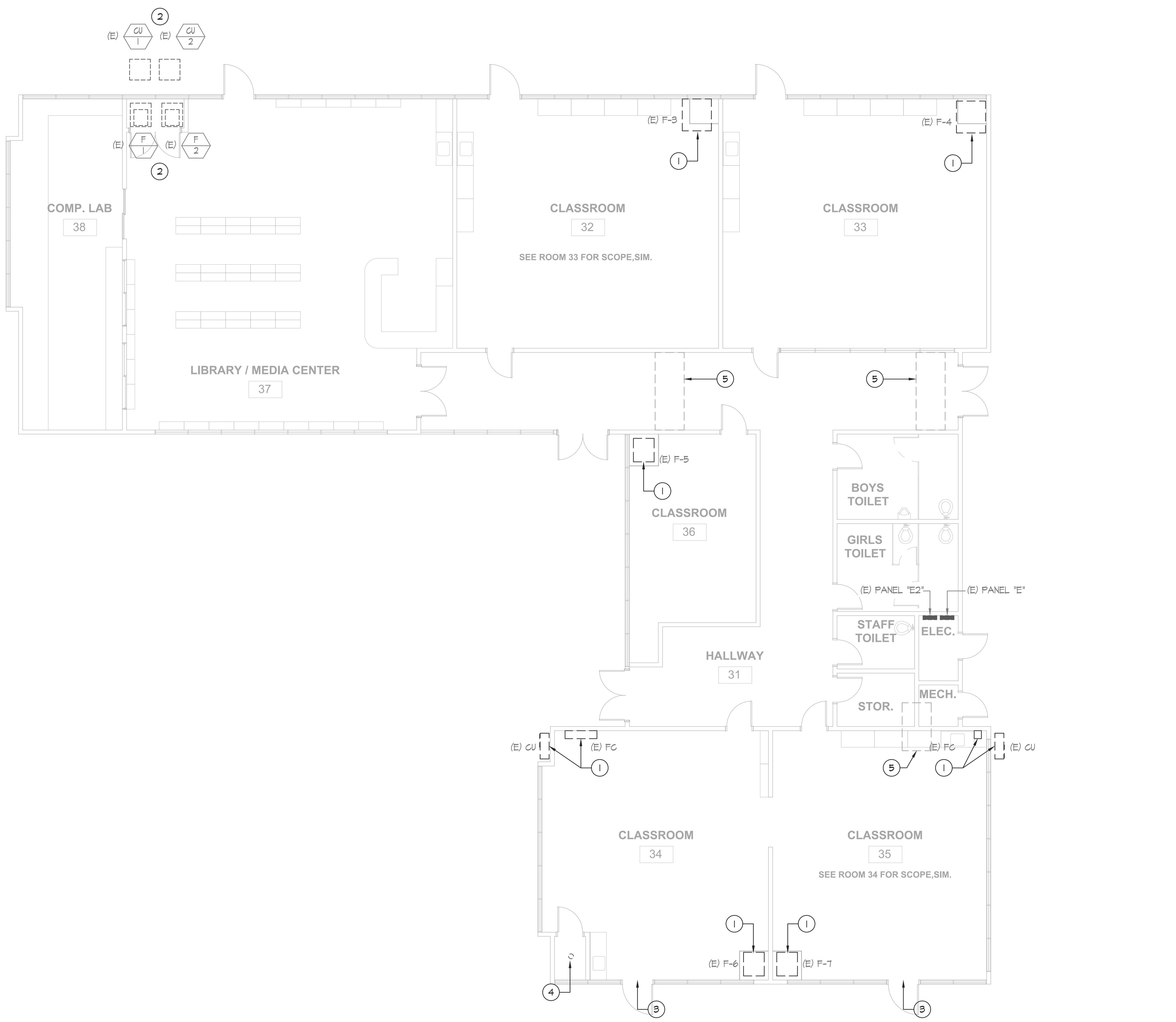
ELECTRICAL DEMO FLOOR PLANS - WINGS #1, #2, #3, #4 AND TYP. RELOCATABLE

DATE 11/24/2021

JOB # 2021005.02

SHEET # AD-1

E2.1



1 / E2.2 **ELECTRICAL DEMO FLOOR PLAN - ESCALON BLDG.**

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

N

GENERAL NOTES:

1. CONTRACTOR SHALL REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL DEMO REQUIREMENTS.
2. EXISTING ELECTRICAL PANELS ARE TO REMAIN.
3. SEE NEW ELECTRICAL FLOOR PLANS FOR ADDTIONAL REQUIREMENTS.
4. SEE DEMO AND NEW SINGLE LINE DIAGRAMS FOR ADDTIONAL REQUIREMENTS.

DEMOLITION SHEET NOTES:

(1) EXISTING MECHANICAL UNIT TO BE DEMOLISHED. PULL EXISTING ELECTRICAL CIRCUITRY BACK TO SOURCE AND REMOVE. REMOVE ALL CONDUITS, J-BOXES AND DISCONNECT SWITCH ASSOCIATED WITH THE DEMOLISHED UNIT.

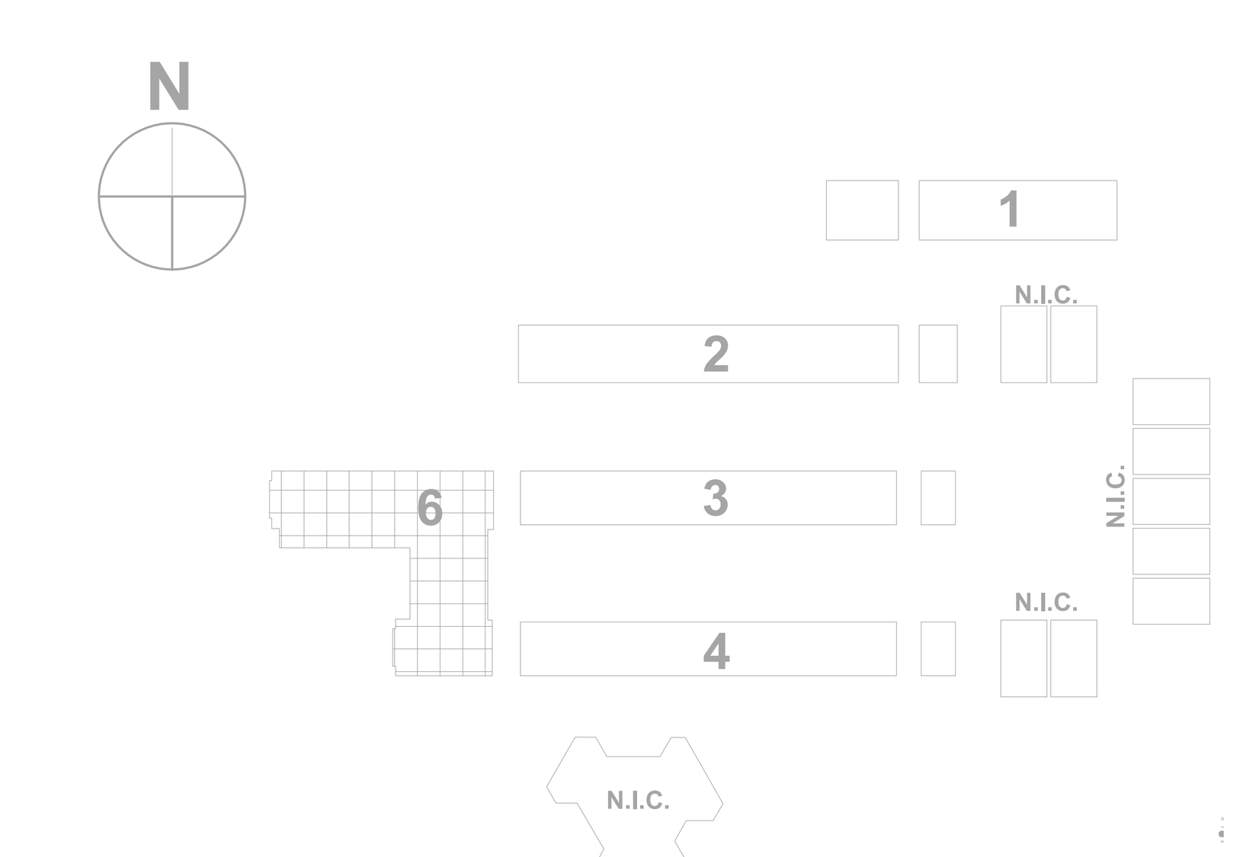
(2) EXISTING MECHANICAL UNIT AND CONNECTIONS TO REMAIN.

(3) EXISTING EXIT SIGN TO BE DISCONNECTED AND RELOCATED TO FACILITATE NEW WORK. EXISTING CIRCUITRY TO BE REUSED AND EXTENDED.

A (4) EXISTING LIGHT SOCKET AND FIXTURE TO BE DEMOLISHED AND REPLACED WITH NEW. EXISTING CIRCUITRY AND CONTROLS TO BE REUSED.

(5) REMOVE CEILING FINISH AND ROUTE NEW CONDUITS CONCEALED IN CHASE. PATCH AND REPAIR.

BUILDING KEY



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SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER SAMMY S. FERNANDEZ E16891 ELECTRICAL STATE OF CALIFORNIA

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SHEET

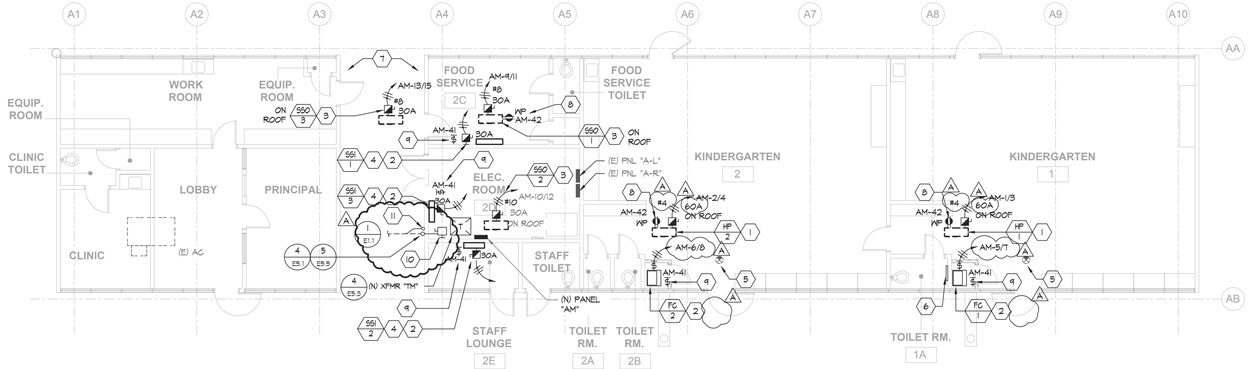
ELECTRICAL DEMO FLOOR PLANS - ESCALON BLDG & LGI

DATE 11/24/2021

JOB # 2021005.02

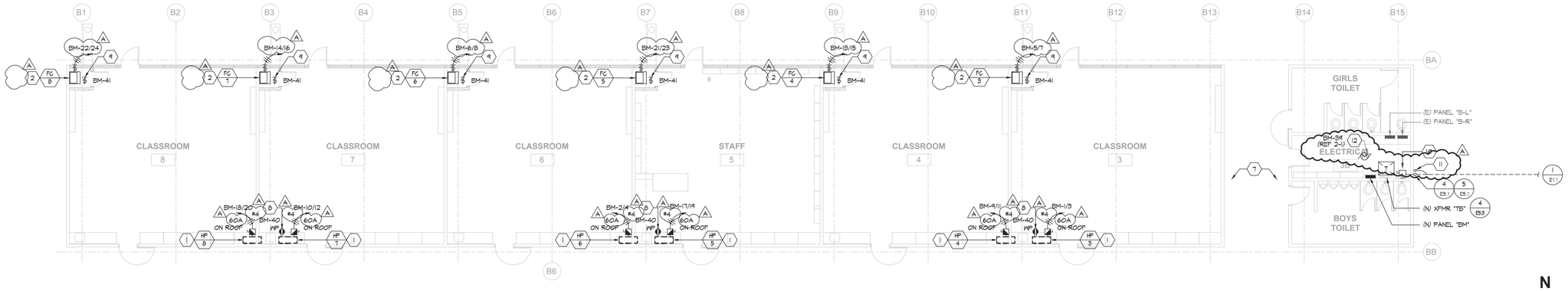
SHEET # AD-1

E2.2



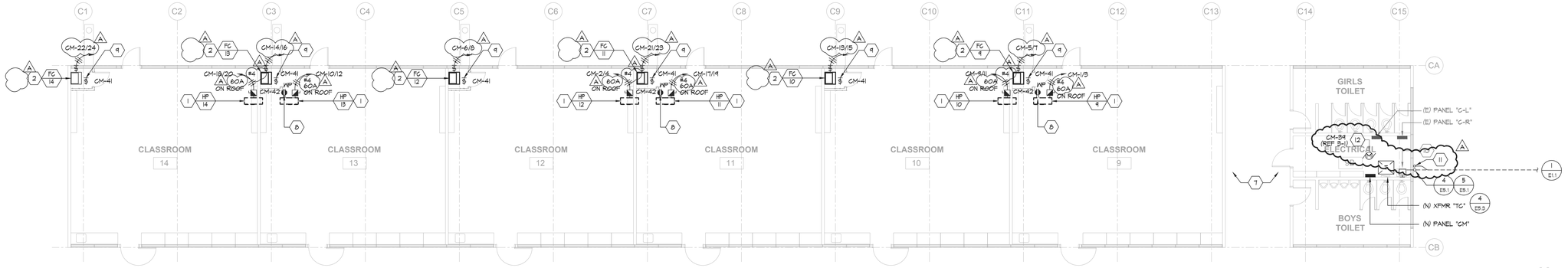
1 ELECTRICAL NEW FLOOR PLAN - WING #1

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



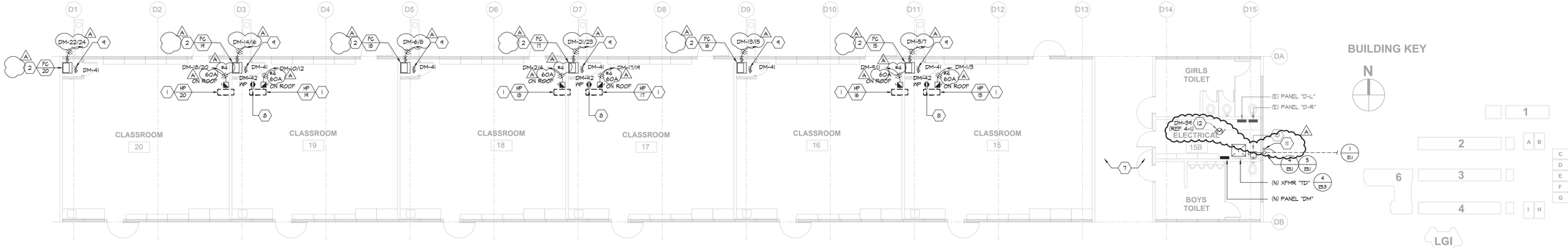
2 ELECTRICAL NEW FLOOR PLAN - WING #2

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



3 ELECTRICAL NEW FLOOR PLAN - WING #3

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



4 ELECTRICAL NEW FLOOR PLAN - WING #4

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

GENERAL NOTES:

1. ALL CONDUITS SHALL BE ROUTED CONCEALED IN CEILING BELOW WHERE POSSIBLE. ALL EXPOSED CONDUITS SHALL BE PAINTED.
2. CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND POINTS OF CONNECTION FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR. ADJUST LOCATION AND CONNECTION POINTS AS NEEDED.
3. SEE PANEL SCHEDULES AND SINGLE LINE DIAGRAM FOR POWER CONNECTION REQUIREMENTS.
4. COORDINATE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL 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.

A 6. PROVIDE CONDUIT ROOF PENETRATIONS REQUIRED. COORDINATE ROOF PENETRATION LOCATIONS WITH MECHANICAL'S PIPING ROOF PENETRATIONS. ROOF PENETRATION SHALL BE PER DETAIL 4/MP6.01.

SHEET NOTES:

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. INDOOR UNIT IS POWER BY THE OUTDOOR UNIT. ROUTE HOMERUN CIRCUIT TO ASSOCIATED OUTDOOR UNIT. REFER TO MECHANICAL SCHEDULE MP0.02 FOR ADDITIONAL REQUIREMENTS.
5. EXISTING EXIT SIGN TO BE RELOCATED TO FACILITATE THE NEW MECHANICAL WORK. EXTEND EXISTING CIRCUITRY TO NEW LOCATION. RECONNECT AS REQUIRED.

A 6. PROVIDE NEW WALL MOUNTED LIGHT FIXTURE IN NEW LOCATION. FIXTURE SHALL BE HE WILLIAMS SLF-2LIB-835-HIA-120. REUSE EXISTING CIRCUITRY AND LIGHTING CONTROLS. EXTEND WITH NEW CIRCUITRY AS REQUIRED.

7. MOUNT CONDUIT ADJACENT TO CHASE AND ROUTE ACROSS THE HALLWAY.
8. PROVIDE NEW WEATHERPROOF GFCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC WP101MXD "BOSS".
9. PROVIDE MOTOR RATED SWITCH AND 120V POWER FOR CONDENSATION PUMP.
10. NEW 400A-3P, NEMA 1, UNFUSED DISCONNECT SWITCH.

A 11. STUB FUTURE SOLAR CONDUIT 18" ABOVE GRADE AT THIS APPROXIMATE LOCATION AND CAP.

12. PROVIDE 120V MOTOR RATED SWITCH FOR EXHAUST FAN. PROVIDE #10'S HOMERUN AND CONNECT TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR.

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DSA SUB	05/21/2021
BACKCHECK	10/01/2021

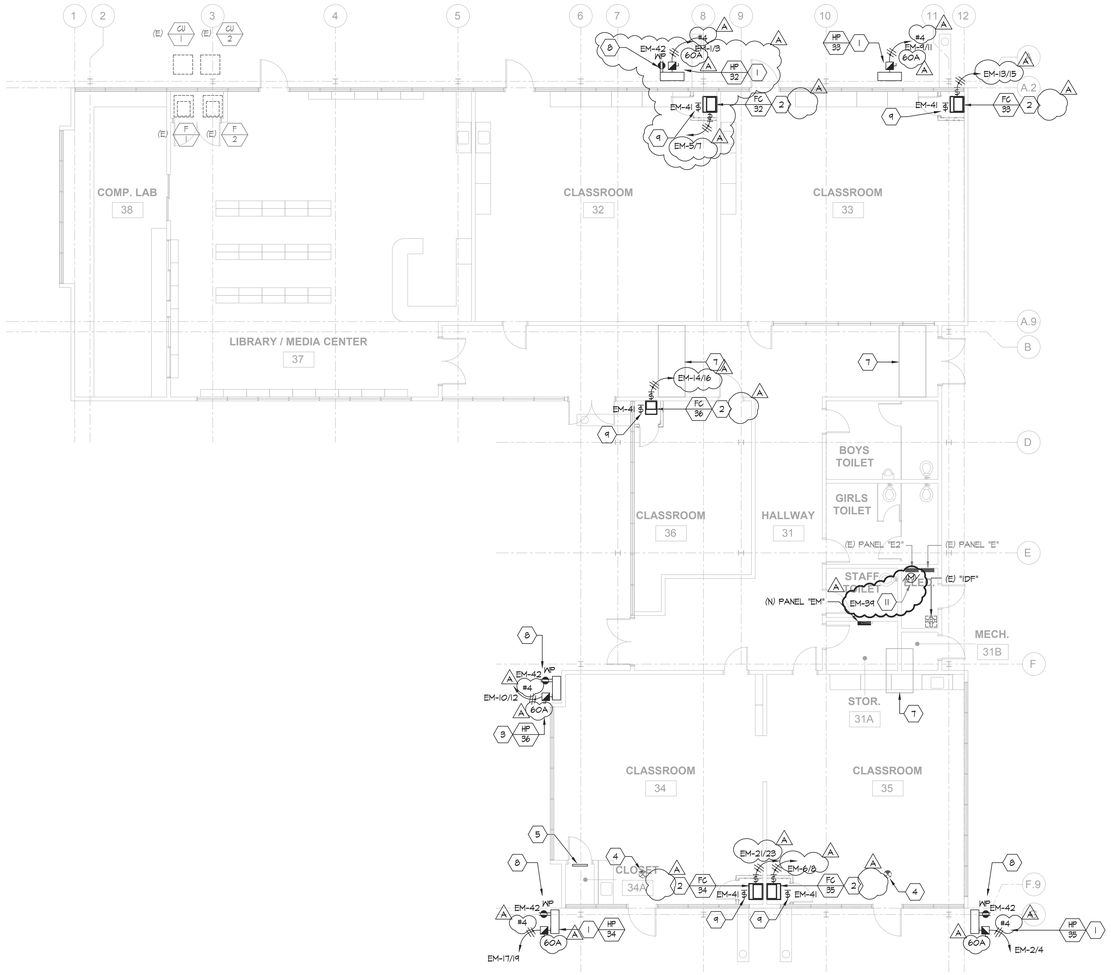
SHEET

ELECTRICAL NEW FLOOR PLANS - WINGS #1, #2, #3, #4 AND TYP. RELOCATABLE

DATE 11/24/2021

JOB # 2021005.02

SHEET # E3.1



1 ELECTRICAL NEW FLOOR PLAN - ESCALON BLDG.

E3.2 SCALE: 1/8" = 1'-0"

N

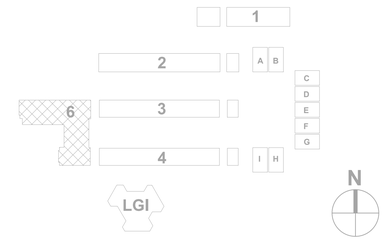
GENERAL NOTES:

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 DISCONNECT SWITCHES SHALL BE 600V RATED, HEAVY DUTY CYCLE. FUSES FOR MECHANICAL UNITS SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATION.
6. PROVIDE CONDUIT ROOF PENETRATIONS REQUIRED. COORDINATE ROOF PENETRATION LOCATIONS WITH MECHANICAL'S PIPING ROOF PENETRATIONS. ROOF PENETRATION SHALL BE PER DETAIL 4/MP8.01.

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. EXISTING EXIT SIGN TO BE RELOCATED TO FACILITATE THE NEW MECHANICAL WORK. EXTEND EXISTING CIRCUITRY TO NEW LOCATION. RECONNECT AS REQUIRED.
5. PROVIDE NEW WALL MOUNTED LIGHT FIXTURE IN NEW LOCATION. FIXTURE SHALL BE H.E. WILLIAMS SLF-2L13-835-HIA-I20. REUSE EXISTING CIRCUITRY AND LIGHTING CONTROLS. EXTEND WITH NEW CIRCUITRY AS REQUIRED.
6. ROUTE CONDUIT EXPOSED ON CEILING TO NEW PANEL.
7. PATCH AND REPAIR CEILING CHASE WHERE DEMO WORK OCCURRED.
8. PROVIDE NEW WEATHERPROOF 5FIC1 RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC WP101MXD "BOSS".
9. PROVIDE MOTOR RATED SWITCH AND 120V POWER FOR CONDENSATION PUMP.
10. NOT USED.
11. PROVIDE 120V MOTOR RATED SWITCH FOR EXHAUST FAN. PROVIDE #10'S HOMERUN AND CONNECT TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR.

BUILDING KEY



N

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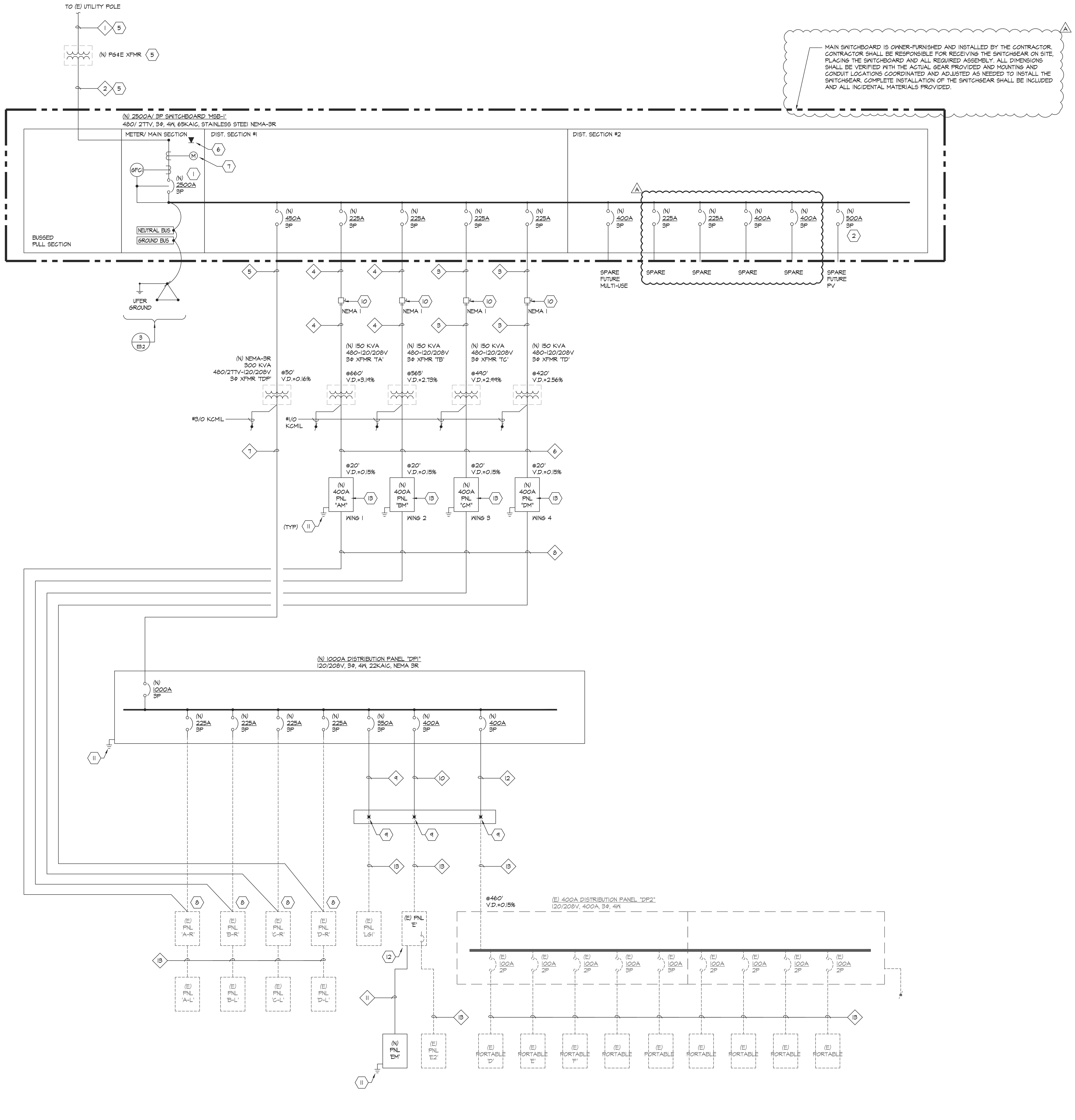
SHEET

ELECTRICAL NEW FLOOR PLANS - ESCALON BLDG & LGI

DATE 11/24/2021

JOB # 2021005.02

SHEET # AD-1 E3.2



1 E4.2 **NEW SINGLE LINE DIAGRAM**

NOT TO SCALE

GENERAL NOTES:

1. SEE DETAIL 2/E3.2 FOR GROUNDING AT SWITCHBOARD ENCLOSURE REQUIREMENTS.
2. SEE DETAIL 3/E3.2 FOR MAIN SWITCHBOARD GROUNDING REQUIREMENTS.
3. SEE DETAIL 5/E3.2 FOR TRANSFORMER GROUNDING REQUIREMENTS.
4. ALL TRANSFORMERS SHALL BE CLASS 155 INSULATION - COMPLETELY ENCLOSED EXCEPT FOR VENTILATION.
5. SEE ENLARGED SWITCHGEAR PLAN FOR ADDITIONAL REQUIREMENTS.
6. THE CONTRACTOR SHALL OBTAIN THE PG&E SUBSTRUCTURE PACKAGE PRIOR TO ANY RELATED WORK. THE CONTRACTOR SHALL COORDINATE ALL PG&E INSTALLATION REQUIREMENTS WITH PG&E GREENBOOK AND PG&E SUBSTRUCTURE PACKAGE.
7. SEE THE ENLARGED SITE DEMO SITE PLAN AND DEMO SINGLE LINE DIAGRAM FOR ADDITIONAL INFORMATION.
8. PROVIDE THE REQUIRED ARC FLASH HAZARD WARNING LABEL TO MEET THE REQUIREMENTS OF CEC 110.16. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
9. PROVIDE MAINTENANCE SWITCH FOR ARC ENERGY REDUCTION TO MEET THE REQUIREMENTS OF CEC 240.87.

SHEET NOTES:

1. MAIN BREAKER SHALL BE GFCI PER NEC.
2. PV BREAKER TO BE INSTALLED AT THE FURTHEST POINT ON THE BUS BAR.
3. INTERCEPT EXISTING FEEDER CONDUIT WITH NEW CONDUIT. CONTRACTOR TO VERIFY EXACT (E) CONDUIT SIZES AND MATCH AS REQUIRED TO INTERCEPT. EXTEND (N) CONDUITS AND FEEDERS TO (N) XFRM "TA". SEE SITE PLAN FOR APPROXIMATE LOCATION. SITE VERIFY EXACT LOCATIONS.
4. CONNECT NEW FEEDERS TO (E) 800A DISTRIBUTION PANEL. CONTRACTOR SHALL PROVIDE EQUIPMENT REQUIRED TO TERMINATE NEW FEEDERS. SEE SITE PLAN FOR APPROXIMATE LOCATION. SITE VERIFY EXACT LOCATION.
5. INSTALL PER PG&E AND PG&E GREENBOOK REQUIREMENTS.
6. PROVIDE TWO DEDICATED TELEPHONE LINES FROM THE MAIN SWITCHBOARD TO THE TELEPHONE MPOE PER PG&E REQUIREMENTS. MOUNT TELEPHONE OUTLETS INSIDE METER SECTION FOR THE MAIN SWITCHBOARD BEHIND THE SWITCHBOARDS DOORS. MOUNT IN NEMA-3R JUNCTION BOX.
7. PROVIDE PG&E METER PER PG&E REQUIREMENTS.
8. COORDINATE THE DISCONNECT AND REMOVAL OF THE EXISTING FEEDERS WITH THE PROJECT SCHEDULE AFTER REMOVAL OF EXISTING FEEDER AND CONDUITS, CONTRACTOR SHALL RECONNECT PANEL WITH NEW FEEDERS AND CONDUIT AS SHOWN.
9. PROVIDE INGRADE PULL BOX TO INTERCEPT EXISTING FEEDER CIRCUIT. PROVIDE POLARIS SUBMERSIBLE SPLICE. SEE SITE PLAN FOR ADDITIONAL REQUIREMENTS.
10. PROVIDE 400A-3P, 600V, HEAVY DUTY, DISCONNECT SWITCH FOR TRANSFORMER.
11. GROUND PER CEC.
12. PROVIDE 200A-3P CIRCUIT BREAKER IN EXISTING PANEL'S SUBFEED POSITION.
13. PROVIDE 225A-3P CIRCUIT BREAKER IN NEW PANEL'S SUBFEED POSITION.

CABLE SCHEDULE:

1. (N)(1) 4"C - PG&E PRIMARY.
2. (N)(7) 5"C - PG&E SECONDARY
3. (N)(1) 2-1/2"C WITH (N) (3)#4/0 + (1)#4 GND.
4. (N)(1) 2-1/2"C WITH (N) (3)#4/0 + (1)#4 GND.
5. (N)(2) 2-1/2"C EACH CONDUIT WITH (N) (4)#4/0 + (1)#2 GND.
6. (N)(1) 4"C WITH (N) (4)#600 + (1)#1/0 GND.
7. (N)(3) 3"C EACH CONDUIT WITH (N) (4)#400 + (1)#3/0 GND.
8. (N)(1) 2-1/2"C WITH (N) (4)#4/0 + (1)#4 GND.
9. (N)(1) 4"C WITH (N) (4)#500 + (1)#3 GND.
10. (N)(1) 4"C WITH (N) (4)#600 + (1)#3 GND.
11. (N)(1) 2"C WITH (N) (4)#3/0 + (1)#6 GND.
12. (N)(1) 4"C WITH (N) (4)#600 + (1)#3 GND.
13. EXISTING CONDUITS AND CABLES TO REMAIN.

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PROJECT

GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

American Consulting Engineers Electrical, Inc.

STAMP

STATE

DSA FILE NUMBER 41-26

APPL # 01-119523

REVISIONS

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

MILESTONES

DD	
90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/01/2021

SHEET

NEW SINGLE LINE DIAGRAM

DATE 11/24/2021

JOB # 2021005.02

SHEET # AD-1 E4.2

PANEL NAME: (N) "AM"
VOLTAGE: 208/120V
PHASE: 3
WIRE: 4
TYPE: NEMA 1
MOUNTING: SURFACE

FED FROM: (N) MSB-1
MAIN C/B: 400A-3P
BUSSING: 400 AMP
MIN. AIC: 10,000
SUB-FEED C/B: 225A-3P
FEED THRU LUGS: YES

CIRCUIT DESCRIPTION	LTG	REC	MTR	NCL	CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LTG	REC	MTR	NCL	CIRCUIT DESCRIPTION
(N) HEAT PUMP 1 - KINDERGARTEN 1				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 2 - KINDERGARTEN 2
" " " "				3.74	2P	3	B	4	2P				3.74	" " " "
(N) FAN COIL 1 - KINDERGARTEN 1				0.89	15A	5	C	6	15A				0.89	(N) FAN COIL 2 - KINDERGARTEN 2
" " " "				0.89	2P	7	A	8	2P				0.89	" " " "
(N) SPLIT SYSTEM AC UNIT 1 - ROOF				2.08	30A	9	B	10	20A				1.25	(N) SPLIT SYSTEM AC UNIT 2 - ROOF
" " " "				2.08	2P	11	C	12	2P				1.25	" " " "
(N) SPLIT SYSTEM AC UNIT 3 - ROOF				2.08	30A	13	A	14	20A/1P					SPARE
" " " "				2.08	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			0.18		(N) WEATHER PROOF GFCI RECEPTACLE - WING #1
(N) MOTOR RATED SWITCH FOR COND. PUMP - WING 1			0.60		20A/1P	41	C	42	20A/1P			0.36		" " " "
	0	0	0.60	17.60						0	0.54	0	11.77	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.5	1.00	0.5
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125% +	0.6	1.25	0.8
REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	29.4	1.00	29.4

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SURGE PROTECTIVE DEVICE	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	11.4
KVA PHASE B (CONNECTED)	13.1
KVA PHASE C (CONNECTED)	6.1
TOTAL DEMAND KVA	30.7
TOTAL LOAD AMPERES	36.9

PANEL NAME: (N) "BM"
VOLTAGE: 208/120V
PHASE: 3
WIRE: 4
TYPE: NEMA 1
MOUNTING: SURFACE

FED FROM: (N) MSB-1
MAIN C/B: 400A-3P
BUSSING: 400 AMP
MIN. AIC: 10,000
SUB-FEED C/B: 225A-3P
FEED THRU LUGS: YES

CIRCUIT DESCRIPTION	LTG	REC	MTR	NCL	CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LTG	REC	MTR	NCL	CIRCUIT DESCRIPTION
(N) HEAT PUMP 3 - CLASSROOM 3				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 6 - CLASSROOM 6
" " " "				3.74	2P	3	B	4	2P				3.74	" " " "
(N) FAN COIL 3 - CLASSROOM 3				0.89	15A	5	C	6	15A				0.89	(N) FAN COIL 6 - CLASSROOM 6
" " " "				0.89	2P	7	A	8	2P				0.89	" " " "
(N) HEAT PUMP 4 - CLASSROOM 4				3.74	50A	9	B	10	50A				3.74	(N) HEAT PUMP 7 - CLASSROOM 7
" " " "				3.74	2P	11	C	12	2P				3.74	" " " "
(N) FAN COIL 4 - CLASSROOM 4				0.89	15A	13	A	14	15A				0.89	(N) FAN COIL 7 - CLASSROOM 7
" " " "				0.89	2P	15	B	16	2P				0.89	" " " "
(N) HEAT PUMP 5 - STAFF 5				3.74	50A	17	C	18	50A				3.74	(N) HEAT PUMP 8 - CLASSROOM 8
" " " "				3.74	2P	19	A	20	2P				3.74	" " " "
(N) FAN COIL 5 - CLASSROOM 5				0.89	15A	21	B	22	15A				0.89	(N) FAN COIL 8 - CLASSROOM 8
" " " "				0.89	2P	23	C	24	2P				0.89	" " " "
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			0.54		(N) WEATHER PROOF GFCI RECEPTACLE - WING #2
(N) MOTOR RATED SWITCH FOR COND. PUMP - WING 2			0.72		20A/1P	41	C	42	20A/1P					SPARE
	0	0	0.72	27.83						0	0.54	0	27.83	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.5	1.00	0.5
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125% +	0.7	1.25	0.9
REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	55.7	1.00	55.7

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SURGE PROTECTIVE DEVICE	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	18.6
KVA PHASE B (CONNECTED)	19.1
KVA PHASE C (CONNECTED)	19.3
TOTAL DEMAND KVA	57.1
TOTAL LOAD AMPERES	68.8

PANEL NAME: (N) "CM"
VOLTAGE: 208/120V
PHASE: 3
WIRE: 4
TYPE: NEMA 1
MOUNTING: SURFACE

FED FROM: (N) MSB-1
MAIN C/B: 400A-3P
BUSSING: 400 AMP
MIN. AIC: 10,000
SUB-FEED C/B: 225A-3P
FEED THRU LUGS: YES

CIRCUIT DESCRIPTION	LTG	REC	MTR	NCL	CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LTG	REC	MTR	NCL	CIRCUIT DESCRIPTION
(N) HEAT PUMP 9 - CLASSROOM 9				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 12 - CLASSROOM 12
" " " "				3.74	2P	3	B	4	2P				3.74	" " " "
(N) FAN COIL 9 - CLASSROOM 9				0.89	15A	5	C	6	15A				0.89	(N) HEAT PUMP 12 - CLASSROOM 12
" " " "				0.89	2P	7	A	8	2P				0.89	" " " "
(N) HEAT PUMP 10 - CLASSROOM 10				3.74	50A	9	B	10	50A				3.74	(N) HEAT PUMP 13 - CLASSROOM 13
" " " "				3.74	2P	11	C	12	2P				3.74	" " " "
(N) FAN COIL 10 - CLASSROOM 10				0.89	15A	13	A	14	15A				0.89	(N) HEAT PUMP 13 - CLASSROOM 13
" " " "				0.89	2P	15	B	16	2P				0.89	" " " "
(N) HEAT PUMP 11 - CLASSROOM 11				3.74	50A	17	C	18	50A				3.74	(N) HEAT PUMP 14 - CLASSROOM 14
" " " "				3.74	2P	19	A	20	2P				3.74	" " " "
(N) FAN COIL 11 - CLASSROOM 11				0.89	15A	21	B	22	15A				0.89	(N) HEAT PUMP 14 - CLASSROOM 14
" " " "				0.89	2P	23	C	24	2P				0.89	" " " "
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					SPARE
(N) MOTOR RATED SWITCH FOR COND. PUMP - WING 3			0.72		20A/1P	41	C	42	20A/1P			0.54		(N) WEATHER PROOF GFCI RECEPTACLE - WING #3
	0	0	0.72	27.83						0	0.54	0	27.83	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.5	1.00	0.5
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125% +	0.7	1.25	0.9
REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	55.7	1.00	55.7

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SURGE PROTECTIVE DEVICE	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	18.6
KVA PHASE B (CONNECTED)	18.6
KVA PHASE C (CONNECTED)	19.8
TOTAL DEMAND KVA	57.1
TOTAL LOAD AMPERES	68.8

PANEL NAME: (N) "DM"
VOLTAGE: 208/120V
PHASE: 3
WIRE: 4
TYPE: NEMA 1
MOUNTING: SURFACE

FED FROM: (N) MSB-1
MAIN C/B: 400A-3P
BUSSING: 400 AMP
MIN. AIC: 10,000
SUB-FEED C/B: 225A-3P
FEED THRU LUGS: YES

CIRCUIT DESCRIPTION	LTG	REC	MTR	NCL	CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LTG	REC	MTR	NCL	CIRCUIT DESCRIPTION
(N) HEAT PUMP 15 - CLASSROOM 15				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 18 - CLASSROOM 18
" " " "				3.74	2P	3	B	4	2P				3.74	" " " "
(N) FAN COIL 15 - CLASSROOM 15				0.89	15A	5	C	6	15A				0.89	(N) HEAT PUMP 18 - CLASSROOM 18
" " " "				0.89	2P	7	A	8	2P				0.89	" " " "
(N) HEAT PUMP 16 - CLASSROOM 16				3.74	50A	9	B	10	50A				3.74	(N) HEAT PUMP 19 - CLASSROOM 19
" " " "				3.74	2P	11	C	12	2P				3.74	" " " "
(N) FAN COIL 16 - CLASSROOM 16				0.89	15A	13	A	14	15A				0.89	(N) HEAT PUMP 19 - CLASSROOM 19
" " " "				0.89	2P	15	B	16	2P				0.89	" " " "
(N) HEAT PUMP 17 - CLASSROOM 17				3.74	50A	17	C	18	50A				3.74	(N) HEAT PUMP 20 - CLASSROOM 20
" " " "				3.74	2P	19	A	20	2P				3.74	" " " "
(N) FAN COIL 17 - CLASSROOM 17				0.69	15A	21	B	22	15A				0.89	(N) HEAT PUMP 20 - CLASSROOM 20
" " " "				0.69	2P	23	C	24	2P				0.89	" " " "
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					SPARE
(N) MOTOR RATED SWITCH FOR COND. PUMP - WING 4			0.72		20A/1P	41	C	42	20A/1P			0.54		(N) WEATHER PROOF GFCI RECEPTACLE - WING #4
	0	0	0.72	27.83						0	0.54	0	27.83	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.5	1.00	0.5
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125% +	0.7	1.25	0.9
REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	55.7	1.00	55.7

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SURGE PROTECTIVE DEVICE	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	18.6
KVA PHASE B (CONNECTED)	18.6
KVA PHASE C (CONNECTED)	19.8
TOTAL DEMAND KVA	57.1
TOTAL LOAD AMPERES	68.8

PANEL NAME: (N) "EM"
VOLTAGE: 208/120V
PHASE: 3
WIRE: 4
TYPE: NEMA 1
MOUNTING: SURFACE

FED FROM: (N) MSB-1
MAIN C/B: 200A-3P
BUSSING: 200 AMP
MIN. AIC: 42,000
SUB-FEED C/B:
FEED THRU LUGS: YES

CIRCUIT DESCRIPTION	LTG	REC	MTR	NCL	CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LTG	REC	MTR	NCL	CIRCUIT DESCRIPTION
(N) HEAT PUMP 32 - CLASSROOM 32				3.74	50A	1	A	2	50A				3.74	(N) HEAT PUMP 35 - CLASSROOM 35
" " " "				3.74	2P	3	B	4	2P				3.74	" " " "
(N) FAN COIL 32 - CLASSROOM 32				0.89	15A	5	C	6	15A				0.89	(N) FAN COIL 35 - CLASSROOM 35
" " " "				0.89	2P	7	A	8	2P				0.89	" " " "
(N) HEAT PUMP 33 - CLASSROOM 33				3.74	50A	9	B	10	50A				3.74	(N) HEAT PUMP 36 - HALLWAY
" " " "				3.74	2P	11	C	12	2P				3.74	" " " "
(N) FAN COIL 33 - CLASSROOM 33				0.89	15A	13	A	14	15A				0.89	(N) FAN COIL 36 - CLASSROOM 36
" " " "				0.89	2P	15	B	16	2P				0.89	" " " "
(N) HEAT PUMP 34 - CLASSROOM 34				3.74	50A	17	C	18	20A/1P					SPARE
" " " "				3.74	2P	19	A	20	20A/1P					SPARE
(N) FAN COIL 34 - CLASSROOM 34				0.89	15A	21	B	22	20A/1P					SPARE
" " " "				0.89	2P	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					SPARE
(N) MOTOR RATED SWITCH FOR COND. PUMP-ESC, LGI			0.60		20A/1P	41	C	42	20A/1P			0.72		(N) WEATHER PROOF GFCI RECEPTACLE - ESC, LGI
	0	0	0.60	27.83						0	0.72	0	18.55	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	0.7	1.00	0.7
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125% +	0.6	1.25	0.8
REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	46.4	1.00	46.4

	Yes/No
FULL RATED AIC	Y
SERIES RATED AIC	N
SURGE PROTECTIVE DEVICE	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	14.8
KVA PHASE B (CONNECTED)	17.7
KVA PHASE C (CONNECTED)	15.2
TOTAL DEMAND KVA	47.9
TOTAL LOAD AMPERES	57.6

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PROJECT

GEORGE HALL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER MARK S. FERNANDEZ E16859 Exp. 06/30/23 ELECTRICAL STATE OF CALIFORNIA

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STAMP

STATE
DSA FILE NUMBER 41-26
APPL # 01-119523

REVISIONS

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

MILESTONES

DD	
90% CD	
DSA SUB	05/21/2021
BACKCHECK	10/01/2021

SHEET

ELECTRICAL PANEL SCHEDULES

DATE 11/24/2021
JOB # 2021005.02
SHEET # AD-1
E4.3

aedis
architects

November 24, 2021

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

Subject: Laurel Elementary School HVAC Replacement
San Mateo - Foster City School District
Aedis Project No. 2021005.03
DSA Application #01-119551

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: 09 91 14 EXTERIOR PAINTING
Add: 26 24 13 SWITHCHBOARDS, 600 VOLTS AND BELOW
Add: 31 23 16 TRENCHING

ITEM NO. 1.2: SECTION 07 31 13 – ASPHALT SHINGLES

Replace: Remove specification 07 31 13 Asphalt Shingles and replace in its entirety per attached 07 31 13 Asphalt Shingles.

ITEM NO. 1.3: SECTION 09 91 14 – EXTERIOR PAINTING

Add: The specification in its entirety per 09 91 14 Exterior Painting.

ITEM NO. 1.4: SECTION 31 23 16 - TRENCHING

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

ITEM NO. 1.5: SECTION 32 31 13 - CHAIN LINK FENCES AND GATES

Revise: 2.2 CHAIN-LINK FENCE FABRIC Item 2 subparagraph b. to read as:
Zinc- Coated Fabric: ASTM A392, Type II, Class 1, 1.2 oz/sq. ft with zinc coating applied after weaving.
Add: 2.4 SWING GATES D. Hardware
Item 5.: Panic Hardware: CD 990AX-L-WH-6280 SNB with Gate closer/Hinge: SureClose Pivot: SM AT90W”

DRAWINGS

ARCHITECTURAL

ITEM NO. 1.6: DRAWING SHEET T1 – TITLE SHEET

Revise: General Note 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 RESTRIPING PAVING IN KIND. S.E.D. FOR TRENCH ROUTING. VERIFY IN FIELD AND SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING."

ITEM NO. 1.7: DRAWING SHEET A1.02 – SITE PLAN

Add: Trench area to New Site Plan 1/A1.02 & Graphic Key per AD1-A1.02
Add General Sheet Note #G per AD1-A1.02
Add: Site Plan Keynotes #17 to New Site Plan 1/A1.02 per AD1-A1.02
Add: Enlarged plan call outs to 2/A2.02 & 4/A3.02 in New Site Plan 1/A1.02 per AD1-A1.02

ITEM NO. 1.8: DRAWING SHEET A2.01 – DEMOLITION FLOOR PLANS - BLDG B & C

Add: General Sheet Note #J per AD1-A2.01
Revise: Demolition Floor Plan Keynote #1 per AD1-A2.01
Add: Filler panel removal keynote #8 to Demolition Floor Plans 1/A2.01 and 2/A2.01 per AD1-A2.01
Add: Partial ceiling demolition keynote #9 to Demolition Floor Plans 1/A2.01 and 2/A2.01 per AD1-A2.01

ITEM NO. 1.9: DRAWING SHEET A2.02 – DEMOLITION FLOOR PLAN - BLDG A

Add: General Sheet Note #J per AD1-A2.02
Revise: Demolition Floor Plan Keynote #1 per AD1-A2.02
Add: Filler panel removal keynote #8 to Demolition Floor Plans 1/A2.02 per AD1-A2.01
Add: Partial ceiling demolition keynote #9 to Demolition Floor Plans 1/A2.02 per AD1-A2.01
Add: View 2/A2.02 Demolition Partial Floor Plan – Bldg D per AD1-A2.02

ITEM NO. 1.10: DRAWING SHEET A3.01 – NEW FLOOR PLANS - BLDGS B & C

Add: Door tags 15ab & 7ab to 1/A3.01 and 2/A3.01 per AD1-A3.01
Add: Ceiling patching keynote #4 in New Floor Plans 1/A3.01 and 2/A3.01 per AD1-A3.01
Revise: New Floor Plan Keynote #3 per AD1-A3.01

ITEM NO. 1.11: DRAWING SHEET A3.02 – NEW FLOOR PLANS - BLDG A

Add: View 4/A3.02 New Partial Floor Plan - Bldg. D per AD1-A3.02
Revise: New Floor Plan Keynote #6 per AD1-A3.02
Add: New Floor Plan Keynote #13 @ per AD1-A3.02

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

Add: Exhaust fans per AD1-A5.01
Add: General Note #C per AD1-A5.01
Revise: Site Roof Plan Keynote #2 per AD1-A5.01
Add: Site Roof Plan Keynote #4 per AD1-A5.01

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

Revise: Detail 9 per AD1-A8.10

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

Revise: Details 1 & 4 per AD1-A9.10A
Revise: Detail 6 per AD1-A9.10A

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

Add: Doors 7ab, 15ab & 41ab to Door Schedule per AD1-11.01
Add: Door Schedule Comments per AD1-11.01
Add: Door Type B per AD1-11.01

MECHANICAL

ITEM NO. 1.16: DRAWING MP0.02 – SCHEDULES – MECHANICAL & PLUMBING

Revise: Classroom split system heat pump schedule per AD1-MP0.02.
Add: Roof exhaust fan schedule added per AD1-MP0.02.

ITEM NO. 1.17: DRAWING SHEET MP2.03 – FLOOR PLAN – NEW – BLDG B, C, & TYPICAL CLASSROOM – MECHANICAL & PLUMBING

Revise: General notes #4 & #5 per AD1-MP2.03a.
Add: New Sheet Notes #28 per AD1-MP2.03a.
Add: Roof exhaust fan added to plan per AD1-MP2.03a.
Add: Roof exhaust fan added to plan per AD1-MP2.03b.

ITEM NO. 1.18: DRAWING SHEET MP2.04 – FLOOR PLAN – NEW – BLDG A– MECHANICAL & PLUMBING

Revise: General notes #4 & #5 per AD1-MP2.04

Add: Multi-Purpose Floor Plan per AD1-MP2.04
Add: New Sheet Notes #14 per AD1-MP2.04

ITEM NO. 1.19: DRAWING SHEET MP6.01 – DETAILS – MECHANICAL & PLUMBING

Revise: Detail 4 per AD1-MP6.01a
Add: Detail 6 per AD1-MP6.01a
Revise: Detail 14 as shown clouded on AD1-MP6.01b

ELECTRICAL

ITEM NO. 1.20: DRAWING SHEET E1.1 – ELECTRICAL SITE PLAN

Revise: Conduit Tag #9 per AD1-E1.1
Revise: Sheet Notes #10 & 11 per AD1-E1.1
Add: Conduit Tag #22 and #23 per AD1-E1.1
Add: Power for exhaust fan at building D per AD1-E1.1
Revise: Conduit tag callouts per AD1-E1.1

ITEM NO. 1.21: DRAWING SHEET E3.1 – ELECTRICAL NEW FLOOR PLANS – BLDGS B & C

Add: General Note #7 per AD1-E3.1
Add: Sheet Note #12 and #13 per ad1-E3.1
Add: Conduit Tag #4 per AD1-E3.1
Add: Solar Conduit stub ups at each wing per AD1-E3.1
Revise: Sheet notes #1, #2, and #4 per AD1-E3.1
Revise: Classroom power plans per AD1-E3.1

ITEM NO. 1.22: DRAWING SHEET E3.2 – ELECTRICAL NEW FLOOR PLANS – BLDG A

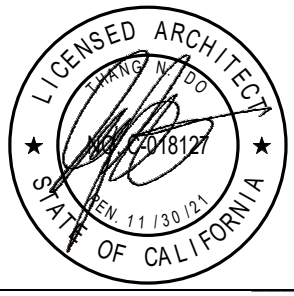
Add: General Note #7 per AD1-E3.2
Add: Sheet Note #11 per AD1-E3.2
Add: Conduit Tag #2 per AD1-E3.2
Add: Solar Conduit stub ups at each wing per AD1-E3.2
Revise: Classroom power plans per AD1-E3.2

ITEM NO. 1.23: DRAWING SHEET E4.2 – NEW SINGLE LINE DIAGRAM

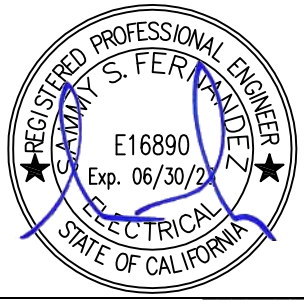
Revise: Feeders to existing panel P1 and P2 per AD1-E4.2
Add: Conduit Tag #15 per AD1-E4.2
Revise: Switchboard to be OFCI per AD1-E4.2

ITEM NO. 1.24: DRAWING SHEET E4.3 – PANEL SCHEDULES

Revise: Main Circuit breakers on the panels per AD1-E4.3
Revise: Panel Schedule per AD1-E4.3



Aedis Architects
Thang Do, Principal



Electrical, American Consulting Engineers Electrical
Sammy Fernandez

Mechanical, Cypress Engineering Group
Metin Serttunc

Division of the State Architect

Attachments:

Specifications:
07 31 13 Asphalt Shingles (12 pages)
09 91 14 Exterior Painting (8 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-A3.02
SHEET AD1-A5.01
SHEET AD1-A8.10
SHEET AD1-A9.10A
SHEET AD1-A9.10B
SHEET AD1-A11.01
MECHANICAL:
SHEET AD1-MP0.02
SHEET AD1-MP2.03a
SHEET AD1-MP2.03b
SHEET AD1-MP2.04
SHEET AD1-MP6.01a
SHEET AD1-MP6.01b
ELECTRICAL:
SHEET AD1-E1.1
SHEET AD1-E3.1
SHEET AD1-E3.2
SHEET AD1-E4.2
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.

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. CertainTeed; Landmark.

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. Organic Felt: Asphalt-saturated organic felts, nonperforated and complying with the following:

1. ASTM D4869/D4869M: Type II.

B. Synthetic Underlayment: UV-resistant polypropylene, polyolefin, or polyethylene polymer fabric with surface coatings or treatments to improve traction underfoot and abrasion resistance; evaluated and documented to be suitable for use as a roof underlayment under applicable codes by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Products: Subject to compliance with requirements, provide the following:

a. CertainTeed; Diamond Deck

C. Self-Adhering, Polymer-Modified Bitumen Sheet: ASTM D1970/D1970M, minimum 40-mil- (1.0-mm-) thick sheet; glass-fiber-mat-reinforced, polymer-modified asphalt; with slip-resistant top surface and release backing; cold applied.

1. Products: Subject to compliance with requirements, provide the following:

a. CertainTeed; WinterGuard

2. Top Surface: Textured polymer film.

D. Granular-Surfaced Valley Lining: ASTM D3909/D3909M, mineral-granular-surfaced, glass-felt-based, asphalt roll roofing; 36 inches (914 mm) wide.

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 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 [**2 inches (51 mm)**] [**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. Synthetic Underlayment:

1. Install on roof deck parallel with and starting at the eaves.

a. Lap sides and ends as recommended in writing by manufacturer, but not less than 4 inches (102 mm) for side laps and 6 inches (152 mm) for end laps.
b. Stagger end laps between succeeding courses at interval recommended in writing by manufacturer, but not less than 72 inches (1829 mm).
c. Fasten with underlayment nails in accordance with manufacturer's written instructions.
d. Cover underlayment within period recommended in writing by manufacturer.

2. Install in single layer on roofs sloped at 4:12 and greater.
3. Install in double layer on roofs sloped at less than 4:12.
4. Install synthetic 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 underlayment over self-adhering sheet not less than 4 inches (102 mm) in direction to shed water.

b. Lap ends of underlayment not less than 6 inches (152 mm) over self-adhering sheet.

5. 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.
6. Terminate synthetic underlayment extended up not less than 4 inches (102 mm) against sidewalls, curbs, chimneys, and other roof projections.

D. Granular-Surfaced, Concealed Valley Lining: For woven valleys. Comply with recommendations in NRCA's "NRCA Guidelines for Asphalt Shingle Roof Systems."

1. Lap roof-deck underlayment over valley lining at least 6 inches (152 mm).
2. Install a 36-inch- (914-mm-) wide strip of granular-surfaced valley lining, with granular-surface face up, centered in valley and fastened to roof deck.
3. Lap ends of strips at least 12 inches (305 mm) in direction to shed water, and seal with asphalt roofing cement.
4. Fasten to roof deck.

E. Metal-Flashed, 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).

F. Granular-Surfaced, Open-Valley Lining: Before installing valley lining, install 36-inch- (914-mm-) wide felt underlayment centered in valley. Fasten to roof deck with underlayment nails.

1. Lap roof-deck felt underlayment over valley felt underlayment at least 6 inches (152 mm).
2. Install an 18-inch- (457-mm-) wide strip of valley lining centered in valley, with granular-surface face down.
3. Install a second 36-inch- (914-mm-) wide strip of valley lining centered in valley, with granular-surface face up.
4. Lap ends of each strip at least 12 inches (305 mm) in direction to shed water, and seal with asphalt roofing cement.
5. Stagger end laps between succeeding strips at least 72 inches (1829 mm).
6. Fasten each strip to roof deck.

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.

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,

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 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

SECTION 099114 - EXTERIOR PAINTING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Surface preparation and application of paint systems on exterior substrates.

a. Concrete.
b. Galvanized metal.
c. Aluminum (not anodized or otherwise coated).
d. Wood.
e. Portland cement plaster (stucco).

1.2 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include preparation requirements and application instructions.
2. Indicate VOC content.

B. Samples: For each type of topcoat product.

C. Samples for Initial Selection: For each type of topcoat product.

D. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches (200 mm) square.
2. Apply coats on Samples in steps to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

E. Product List: Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in the Exterior Painting Schedule to cross-reference paint systems specified in this Section. Include color designations.

1.3 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: 5 percent, but not less than 1 gal. (3.8 L) of each material and color applied.

1.4 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify selections made under Sample submittals, to demonstrate aesthetic effects, and to set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system.

    a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
    b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

    a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.6 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Kelly-Moore Paint Company Inc.: District Standard

B. Source Limitations: Obtain paint from single source from single manufacturer.

2.2 PAINT GENERAL

A. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by topcoat manufacturers for use in paint system and on substrate indicated.

B. Colors: As selected by Architect from manufacturer's full range.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Wood: 15 percent.
3. Portland Cement Plaster: 12 percent.

C. Portland Cement Plaster Substrates: Verify that plaster is fully cured.

D. Verify suitability of substrates, including surface conditions and compatibility, with existing finishes and primers.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions applicable to substrates and paint systems indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Steel Substrates: Remove rust, loose mill scale, and shop primer if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. SSPC-SP 2.
2. SSPC-SP 3.
3. SSPC-SP 7/NACE No. 4.
4. SSPC-SP 11.

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and areas where shop paint is abraded. Paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

A. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal with Krud Kutter Metal Clean and Etch to dissolve passivator and use mechanical methods as necessary,to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

B. Aluminum Substrates: Remove loose surface oxidation.

C. Wood Substrates:

1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
2. Sand surfaces that will be exposed to view, and remove sanding dust.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

3.3 INSTALLATION

A. Apply paints in accordance with manufacturer's written instructions.

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.

3. Paint both sides and edges of exterior doors and entire exposed surface of exterior door frames.
4. Paint entire exposed surface of window frames and sashes.
5. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
6. Primers specified in the Exterior Painting Schedule may be omitted on items that are factory primed or factory finished if compatible with intermediate and topcoat coatings and acceptable to intermediate and topcoat paint manufacturers.
7. For previously painted or factory primed surfaces where bare substrate is exposed, spot prime with manufacturer recommended primer.
8. Previously painted surfaces may require full prime and is subject to field inspection recommendation.

B. Tint undercoats same color as topcoat,but tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed to view:

a. Equipment, including panelboards.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.
g. Tanks that do not have factory-applied final finishes.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written instructions, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written instructions.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

1. Do not clean equipment with free-draining water and prevent solvents, thinners, cleaners, and other contaminants from entering into waterways, sanitary and storm drain systems, and ground.
2. Dispose of contaminants in accordance with requirements of authorities having jurisdiction.
3. Allow empty paint cans to dry before disposal.
4. Collect waste paint by type and deliver to recycling or collection facility.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 EXTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Latex System:

a. Prime Coat: Primer, alkali resistant, water based.

1) KM 247 Acryshield Masonry Primer

2) Or approved equal

b. Prime Coat, Latex: Exterior, matching topcoat.
c. Intermediate Coat: Latex, exterior, matching topcoat.
d. Low-Sheen Topcoat: Latex, exterior, low sheen

1) KM 1210 Premium Professional Exterior 100% Acrylic Low Sheen

2) Or approved equal

B. Steel and Iron Substrates:

1. Alkyd System:

a. Alkyd Prime Coat: Primer, alkyd, anticorrosive, for metal.

1) Rust-Oleum CV740 Alkyd Metal Primer Low VOC

2) Or approved equal

b. Shop Prime Coat: Shop primer specified in Section where substrate is specified.
c. Surface-Tolerant Prime Coat: Primer, metal, surface tolerant.

1) Rust-Oleum CV740 Alkyd Metal Primer Low VOC

2) Or approved equal

d. Intermediate Coat: Exterior, alkyd enamel, matching topcoat.
e. Semigloss Topcoat: Alkyd, exterior, semigloss

1) KM 1998 Epic Water Urethane Modified Alkyd Semi-Gloss Enamel

2) Or approved equal

C. Galvanized-Metal Substrates:

1. Water-Based Light Industrial Coating System:

a. For use at handrails unless otherwise noted
b. Acrylic Prime Coat: Primer, galvanized, water based.

1) KM 5725 DTM Acrylic Metal Primer/Finish

2) Or approved equal

c. Intermediate Coat: Light industrial coating, exterior, water based, matching topcoat.
d. Semigloss Topcoat: Light industrial coating, exterior, water based, semigloss

1) KM 5885 DTM High Performance Acrylic Semi-Gloss Enamel

2) Or approved equal

e. Intermediate Coat: Exterior, alkyd enamel, matching topcoat.
f. Semigloss Topcoat: Alkyd, exterior, semigloss

1) KM 1998 Epic Water Urethane Modified Alkyd Semi-Gloss Enamel

2) Or approved

D. Aluminum Substrates:

1. Latex System:

a. Prime Coat: Primer, quick dry, for aluminum.

1) KM 5725 DTM Acrylic Metal Primer/Finish

2) Or approved equal

b. Intermediate Coat: Latex, exterior, matching topcoat.
c. Semigloss Topcoat: Latex, exterior, semigloss

1) KM 5885 DTM High Performance Semi-Gloss Enamel

2) Or approved

E. Wood Substrates: Wood trim, Doors.

1. Latex over Latex Primer System:

a. Prime Coat: Primer, latex for exterior wood.

1) KM 295 Kel-Bond Universal Primer

2) Or approved equal

b. Intermediate Coat: Latex, exterior, matching topcoat.
c. Semigloss Topcoat: Latex, exterior, semigloss

1) KM 1215 Premium Professional Exterior 100% Acrylic Semi-Gloss

2) Or approved equal

F. Portland Cement Plaster Substrates:

1. Latex System:

a. Latex Prime Coat: Latex, exterior, matching topcoat.
b. Alkali-Resistant Prime Coat: Primer, alkali resistant, water based.

1) KM 247 Acryshield Masonry Primer

2) Or approved equal

c. Intermediate Coat: Latex, exterior, matching topcoat.
d. Low-Sheen Topcoat: Latex, exterior, low sheen

1) KM 1210 Premium Professional Exterior Low Sheen

2) Or approved equal

END OF SECTION 099114

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.

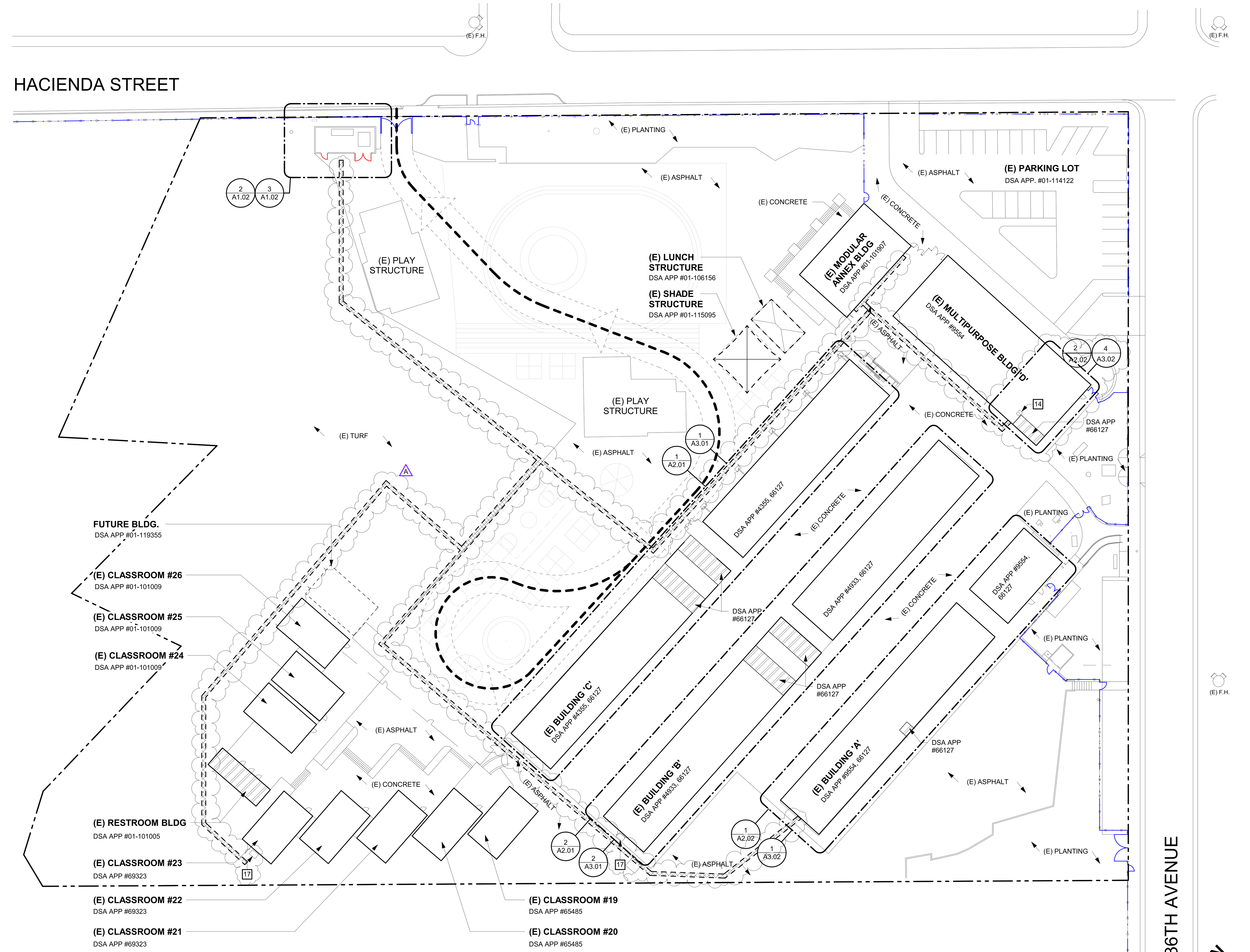
B. If tests indicate Work does not meet specified requirements, remove Work, replace, compact, and retest.

3.9 PROTECTION OF FINISHED WORK

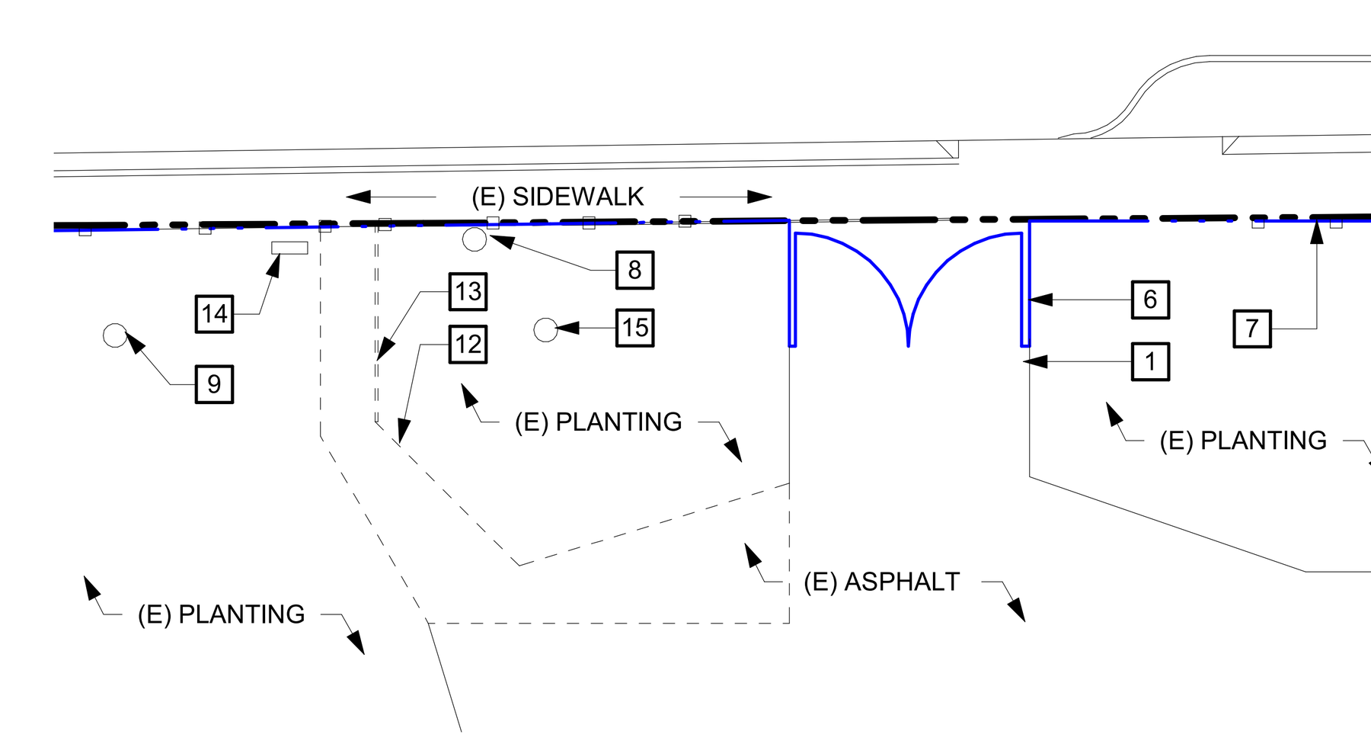
A. Section 01 70 00 - Execution and Closeout Requirements.

B. Reshape and re-compact fills subjected to vehicular traffic during construction.

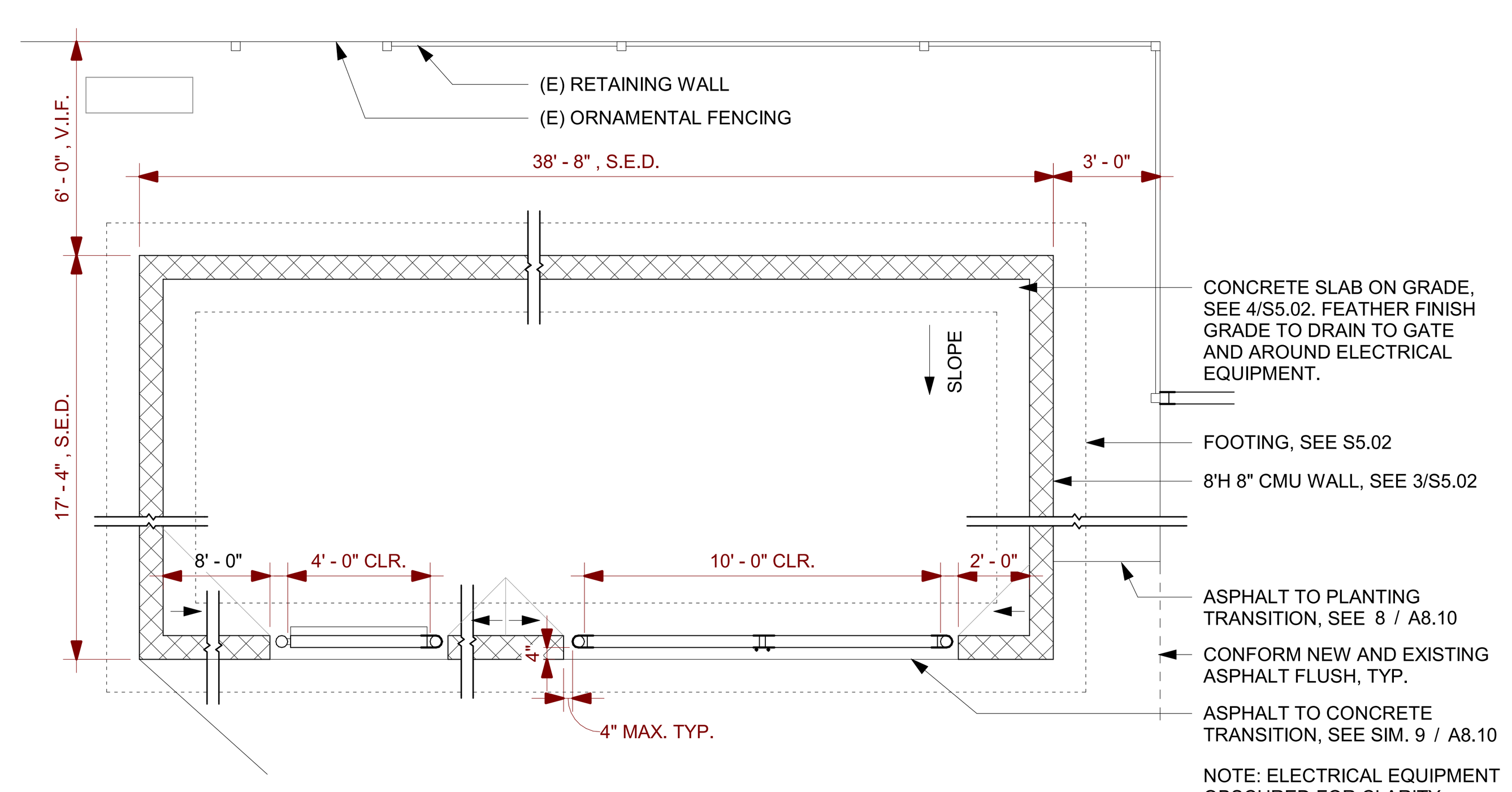
END OF SECTION



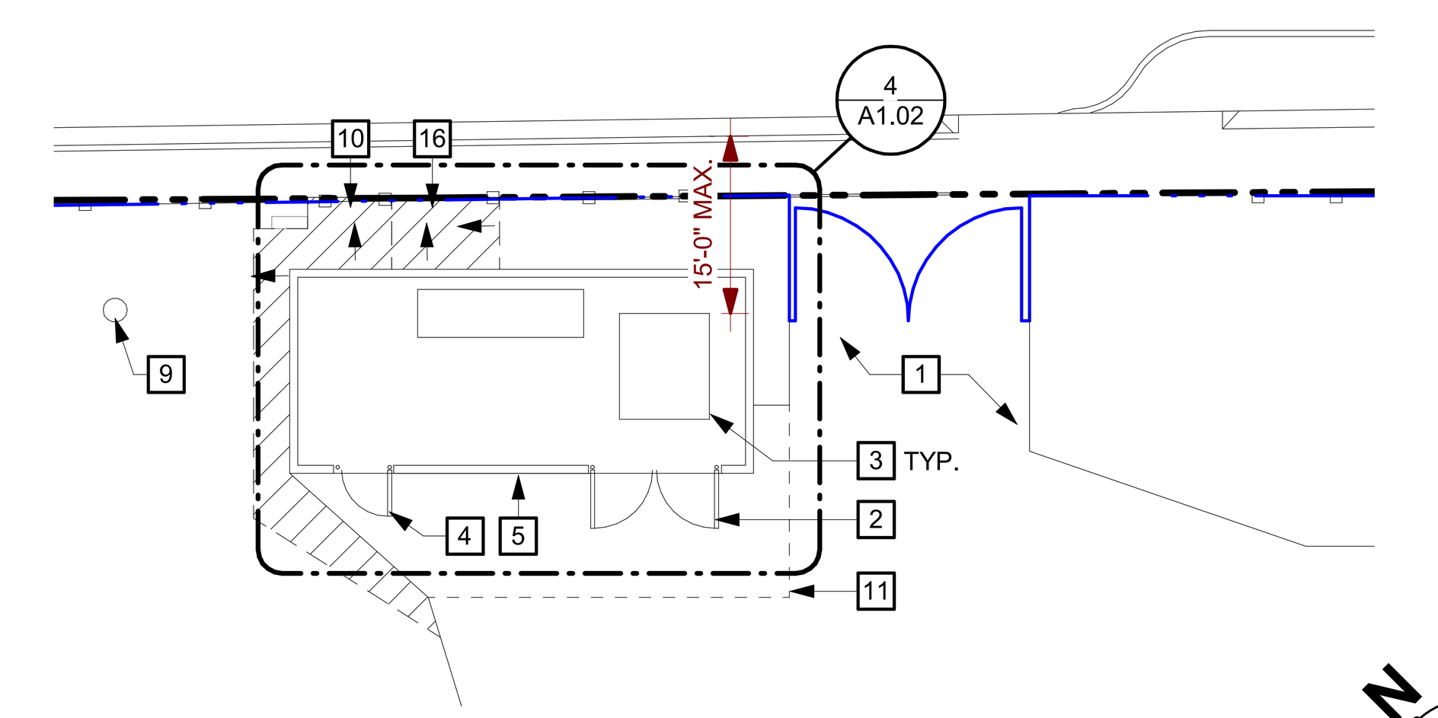
1 NEW SITE PLAN
SCALE: 1/32" = 1'-0"



2 ENLARGED DEMOLITION SITE PLAN
SCALE: 1/16" = 1'-0"



4 ELECTRICAL ENCLOSURE ENLARGED LAYOUT
SCALE: 1/4" = 1'-0"



3 ENLARGED NEW SITE PLAN
SCALE: 1/16" = 1'-0"

GENERAL SHEET NOTES

- A BUILDINGS ARE UNSPRINKLERED, TYPE V-B CONSTRUCTION UNLESS OTHERWISE NOTED.
- B NO DEMOLITION SHALL BEGIN UNTIL PLANS INCLUDING THE DEMOLITION WORK HAVE BEEN APPROVED BY DSA.
- C CONTRACTOR SHALL MAINTAIN FIRE LANE ACCESS THROUGOUT 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 ELECTRICAL AND MECHANICAL DRAWINGS FOR EXTENT OF ELECTRICAL AND MECHANICAL WORK.
- G ALL EXISTING FINISHES OR MATERIALS DAMAGED OR DEMOLISHED DUE TO NEW CONSTRUCTION SHALL BE RESTORED TO THEIR ORIGINAL STATE, INCLUDING BUT NOT LIMITED TO REINSTALLING OR REPLACING EXISTING CHAINLINK FENCING AS REQUIRED AND RESTRIPING PAVING IN KIND. S.E.D. FOR TRENCH ROUTING. SEE ARCHITECTURAL SITE PLAN FOR STRIPING AT EXISTING PAVING (A)

SITE PLAN KEYNOTES

1. (E) ASPHALT TO REMAIN.
2. 10'W DOUBLE GATE, SEE DETAIL 3/A8.10.
3. ELECTRICAL EQUIPMENT, S.E.D.
4. 4'W GATE, SEE DETAIL 2/A8.10.
5. CMU ENCLOSURE, S.E.D. AND S.S.D.
6. (E) GATE TO REMAIN.
7. (E) ORNAMENTAL FENCING TO REMAIN.
8. (E) TREE TO BE REMOVED. REMOVE STUMP TO 6" BELOW GRADE.
9. (E) TREE TO REMAIN.
10. INFILL NATIVE SOIL. PROVIDE COVERAGE AT FOUNDATION PER 3/S5.02. CONFORM FLUSH AT ASPHALT PAVING AND PROPERTY LINE.
11. INFILL ASPHALT, CONFORMING TO ADJACENT. SEE 9/A8.10.
12. REMOVE (E) ASPHALT PAVING.
13. REMOVE (E) RETAINING WALL, CHAINLINK FENCING, AND FOOTINGS.
14. (E) EQUIPMENT TO REMAIN.
15. RELOCATE (E) TREE TO ALTERNATE LOCATION ON CAMPUS. COORDINATE FINAL LOCATION WITH DISTRICT.
16. AT (E) RETAINING WALL TO REMAIN, CONFORM TO ADJACENT GRADING.
17. NEW TRANSFORMER PAD, S.E.D. (A)

GRAPHIC KEY

	EXISTING TOILET ROOMS.
	EXISTING CONSTRUCTION TO REMAIN
	EXISTING COVERED STRUCTURE
	TRENCH FOR ELECTRICAL WORK, S.E.D. , 8/S5.01 & DETAILS ON SHEET A8.10 (A)
	ASSUMED PROPERTY LINE
	(E) CHAINLINK FENCE
	(N) CHAINLINK FENCE
	(E) ORNAMENTAL FENCE
	(E) FIRE DEPARTMENT ACCESS FIRE DEPARTMENT ACCESS IS 20'-0" WIDE AND RATED FOR 96,000 LBS.
(E) F.H.	EXISTING FIRE HYDRANT

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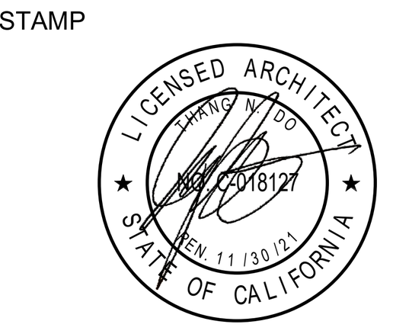
PROJECT
LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

STAMP



STATE
DSA FILE NUMBER 41-26
APPL # 01-119551

REVISIONS

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

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	10/06/2021

SHEET
SITE PLAN

DATE 11/24/2021
JOB # 2021005.03
SHEET # AD1-A1.02

11/24/2021 4:58:59 PM
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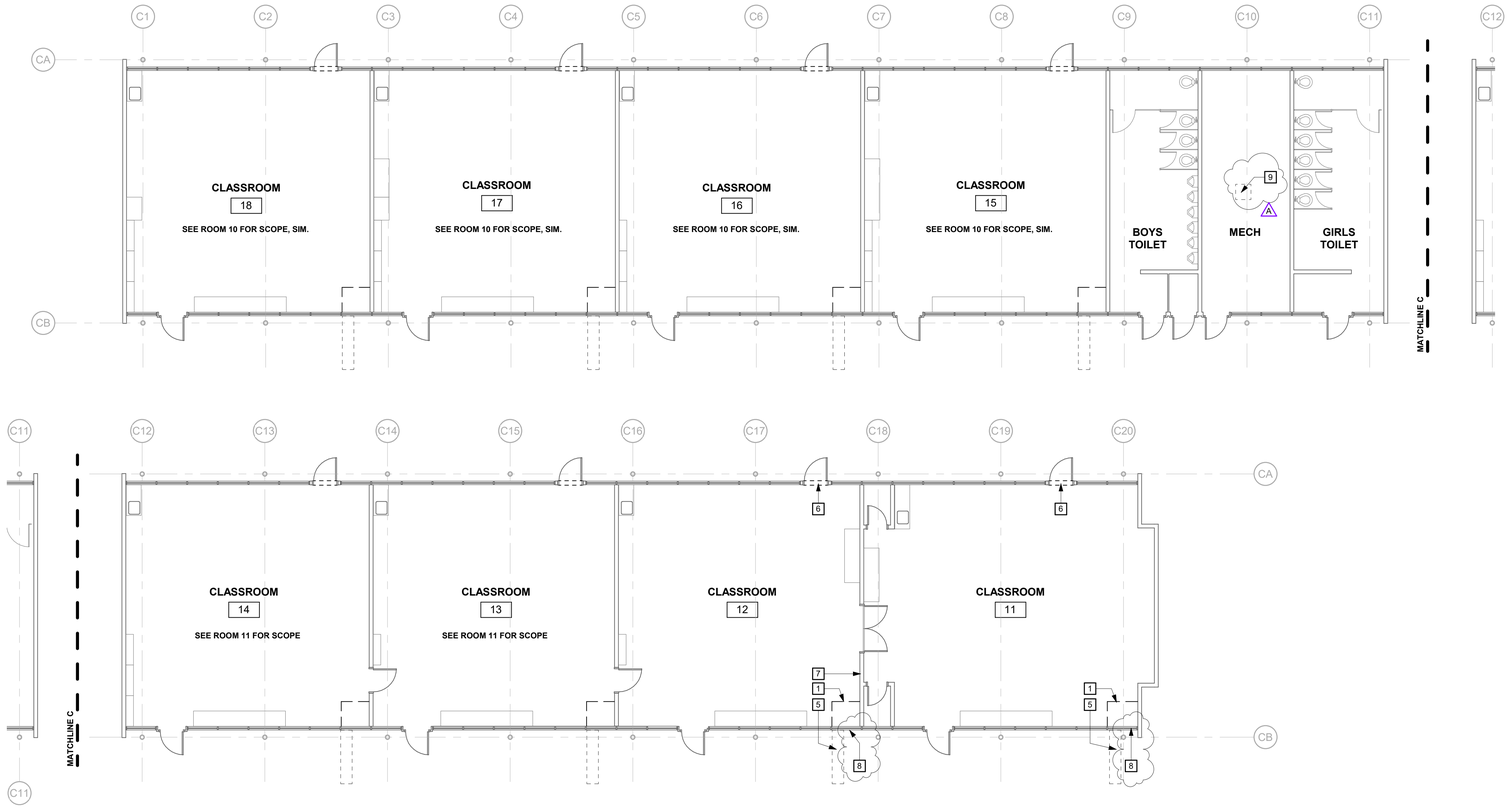
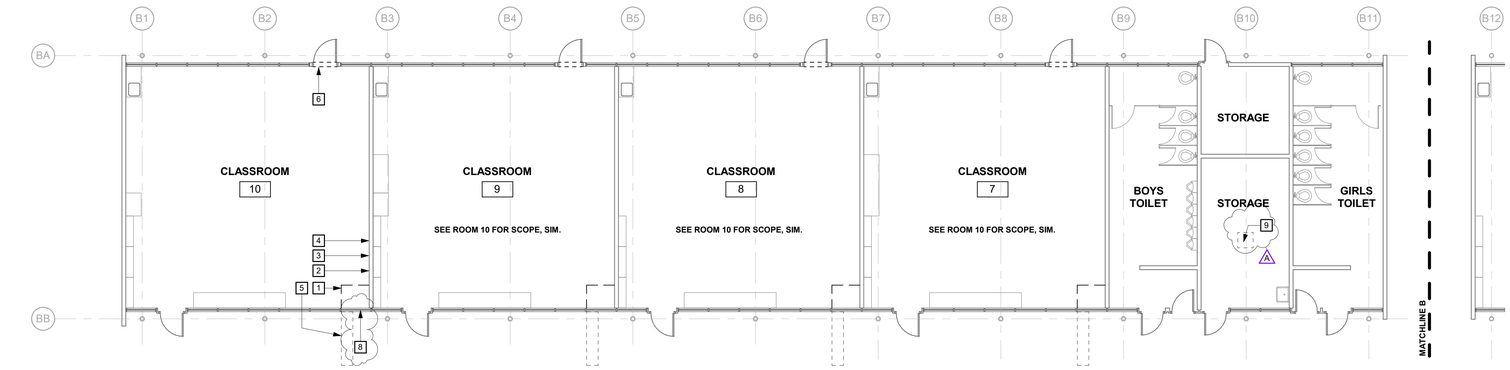


1 DEMOLITION FLOOR PLAN - BLDG C

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



2 DEMOLITION FLOOR PLAN - BLDG B

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

GENERAL SHEET NOTES

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

B REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR EXTENT OF 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

I DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO START OF CONSTRUCTION.

J 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. A

DEMOLITION FLOOR PLAN KEYNOTES

1 REMOVE (E) MECHANICAL UNIT AND METAL ENCLOSURE, T-BAR AND GYP SOFFIT, S.M.D.
2 SHORTEN (E) RACEWAY SURROUNDING THREE SIDES OF (E) WHITEBOARD. COORDINATE LENGTH TIGHT TO NEW ENCLOSURE, SEE NEW FLOOR PLANS.
3 REMOVE (E) 4' X 16' WHITEBOARD AND TURN OVER TO DISTRICT
4 RELOCATE (E) DATA OUTLET, COORDINATED TO RECONFIGURED WIREMOLD. LOCATE A.F.F. 15" MIN. TO 48" MAX.
5 REMOVE PAVING AND PREP FOR NEW WORK, S.M.D.
6 REMOVE (E) WINDOW GLAZING ABOVE AND PREP FOR NEW WORK, S.M.D
7 REMOVE (E) TACK PANEL AND TURN OVER TO DISTRICT A
8 REMOVE (E) FILLER PANEL FOR FUTURE AIR IN-TAKE AT MECHANICAL ENCLOSURE
9 REMOVE PARTIAL GYP. BD CEILING FOR FUTURE EXHAUST FAN, S.M.D.

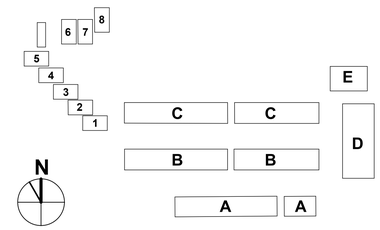
GRAPHIC KEY

EXISTING NONRATED WALL TO REMAIN.

EXISTING STOREFRONT OR WINDOW TO REMAIN.

EXISTING ENCLOSURE TO BE DEMOLISHED

BUILDING KEY



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PROJECT

LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

STAMP

LICENSED ARCHITECT STATE OF CALIFORNIA

STATE

DSA FILE NUMBER 41-26

APPL # 01-119551

REVISIONS

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

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	10/06/2021

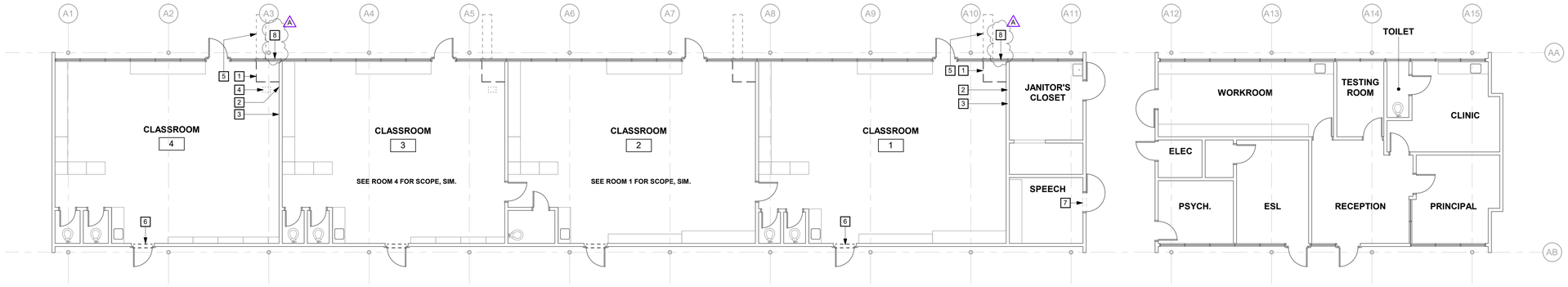
SHEET

DEMOLITION FLOOR PLANS - BLDG B & C

DATE 11/24/2021

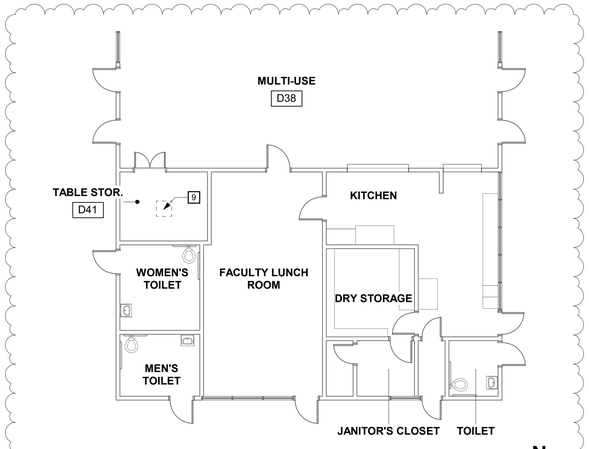
JOB # 2021005.03

SHEET # AD1-A2.01



1 DEMOLITION FLOOR PLAN - BLDG A

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



2 DEMOLITION PARTIAL FLOOR PLAN - BLDG D

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

GENERAL SHEET NOTES

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

B REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR EXTENT OF 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

I DIMENSIONS FOR EXISTING BUILDING ARE APPROXIMATE. CONTRACTOR TO FIELD VERIFY PRIOR TO START OF CONSTRUCTION.

J REFER TO "HVAC AND POWER UPGRADE PROJECT HAZARDOUS MATERIALS SURVEY REPORT." CONTRACTOR TO ABATE AREAS AFFECTED BY SCOPE OF WORK. REMOVE AND DISPOSE OF MATERIALS PER REPORT RECOMMENDATIONS.

DEMOLITION FLOOR PLAN KEYNOTES

1 REMOVE (E) MECHANICAL UNIT AND METAL ENCLOSURE, T-BAR AND GYP SOFFIT. S.M.D.
2 RECONFIGURE (E) RACEWAY. COORDINATE LENGTH TIGHT TO NEW ENCLOSURE, SEE NEW FLOOR PLANS.
3 REMOVE (E) TACK PANEL AND TURN OVER TO DISTRICT
4 (E) CEILING MOUNTED MOTION DETECTOR TO BE REMOVED AND REINSTALLED IN PLACE, AS REQUIRED TO FACILITATE CONSTRUCTION. REPLACE CEILING TILE.
5 REMOVE PAVING AND PREP FOR NEW WORK, S.M.D.
6 REMOVE (E) WINDOW GLAZING ABOVE AND PREP FOR NEW WORK, S.M.D
7 PREP FOR NEW WORK, S.M.D.
8 REMOVE (E) FILLER PANEL FOR FUTURE AIR IN-TAKE AT MECHANICAL ENCLOSURE
9 REMOVE PARTIAL GYP. BD CEILING FOR FUTURE EXHAUST FAN, S.M.D.

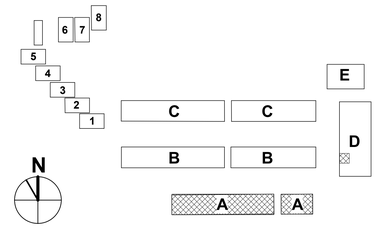
GRAPHIC KEY

EXISTING NONRATED WALL TO REMAIN.

EXISTING STOREFRONT OR WINDOW TO REMAIN.

EXISTING ENCLOSURE TO BE DEMOLISHED

BUILDING KEY



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PROJECT

LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

STAMP

LICENSED ARCHITECT STATE OF CALIFORNIA

STATE

DSA FILE NUMBER 41-26

APPL # 01-119551

REVISIONS

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

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	10/06/2021

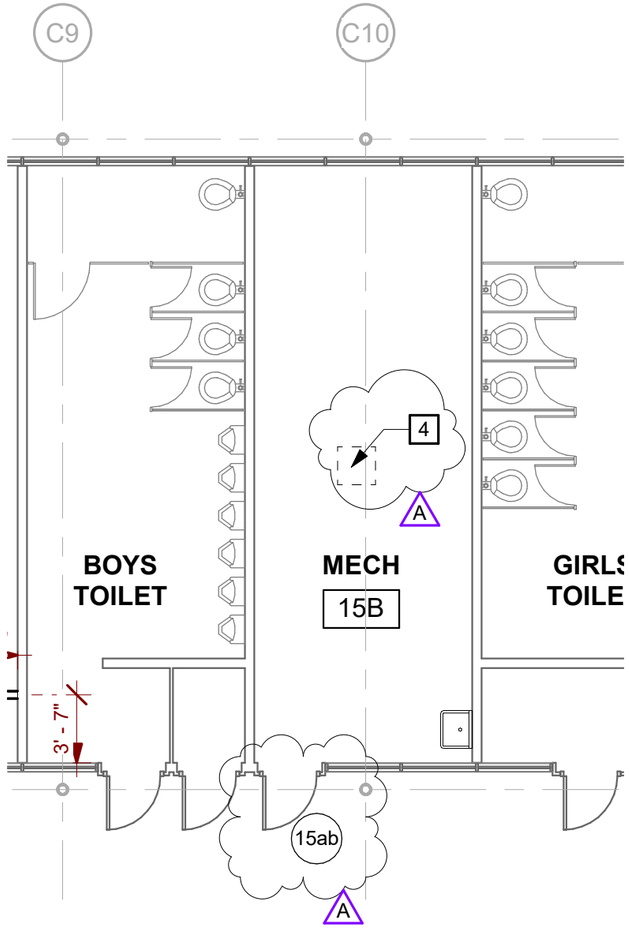
SHEET

DEMOLITION FLOOR PLAN - BLDG A

DATE 11/24/2021

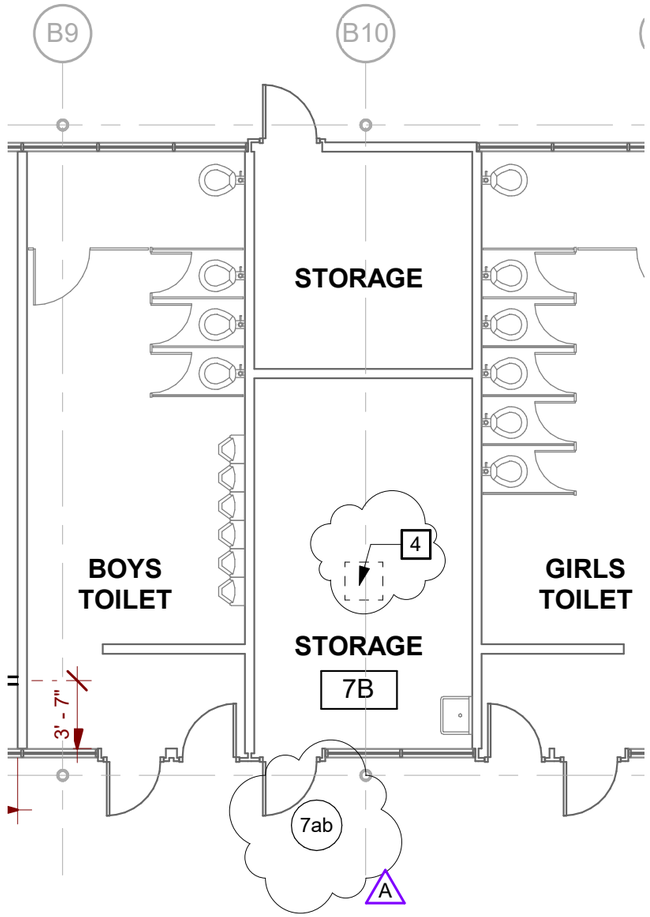
JOB # 2021005.03

SHEET # AD1-A2.02



1 NEW FLOOR PLAN - BLDG C

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



2 NEW FLOOR PLAN - BLDG B

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

NEW FLOOR PLAN KEYNOTES

3 REFER TO 2/A3.02 FOR TYPICAL REFLECTED CEILING PLAN. REMOVE AND REINSTALL (E) ACOUSTICAL CEILING TILES ABOVE AS REQUIRED FOR CONSTRUCTION ACCESS INCLUDING BUT NOT LIMITED TO ELECTRICAL ROUTING, MECHANICAL DUCTWORK ANCHORAGE, BLOCKING FOR ROOFTOP PLATFORMS. DO NOT ALTER SUSPENDED A.C.T. GRID. A

4 PATCH AND PAINT GYP. BD. CEILING ADJACENT EXHAUST FAN. S.M.D.

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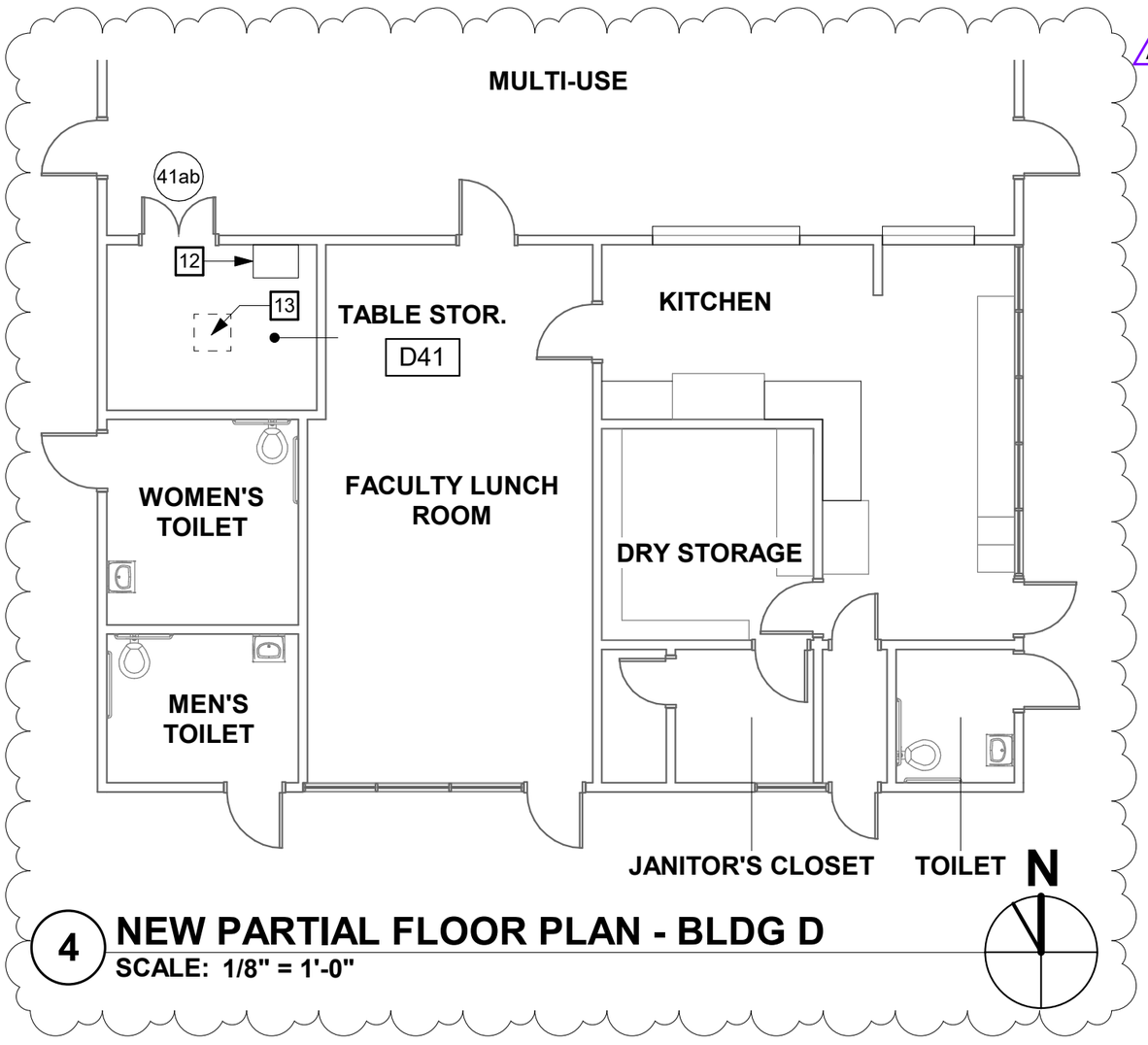
LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET
APPL NO.: 01-119551	AD1-A3.01
JOB NO. 2021005.03	
DATE 11/24/21	



4 NEW PARTIAL FLOOR PLAN - BLDG D

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

NEW FLOOR PLAN KEYNOTES

6 REFER TO 2/A3.02 FOR TYPICAL REFLECTED CEILING PLAN. REMOVE AND REINSTALL (E) ACOUSTICAL CEILING TILES ABOVE AS REQUIRED FOR CONSTRUCTION ACCESS INCLUDING BUT NOT LIMITED TO ELECTRICAL ROUTING, MECHANICAL DUCTWORK ANCHORAGE, BLOCKING FOR ROOFTOP PLATFORMS. DO NOT ALTER SUSPENDED A.C.T. GRID. A

12 ELECTRICAL EQUIPMENT S.E.D. A

13 PATCH AND PAINT GYP. BD. CEILING ADJACENT EXHAUST FAN. S.M.D.

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LIHANG N. DO
C018127
REN. 11/30/21
STATE OF CALIFORNIA

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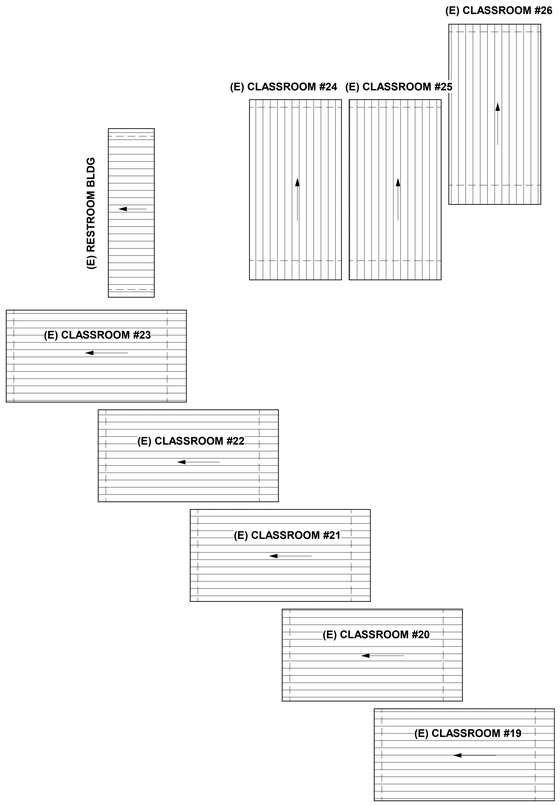
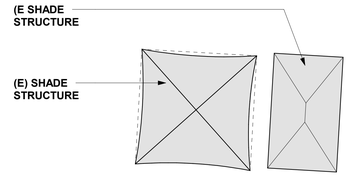
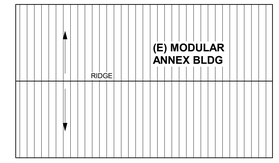
LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

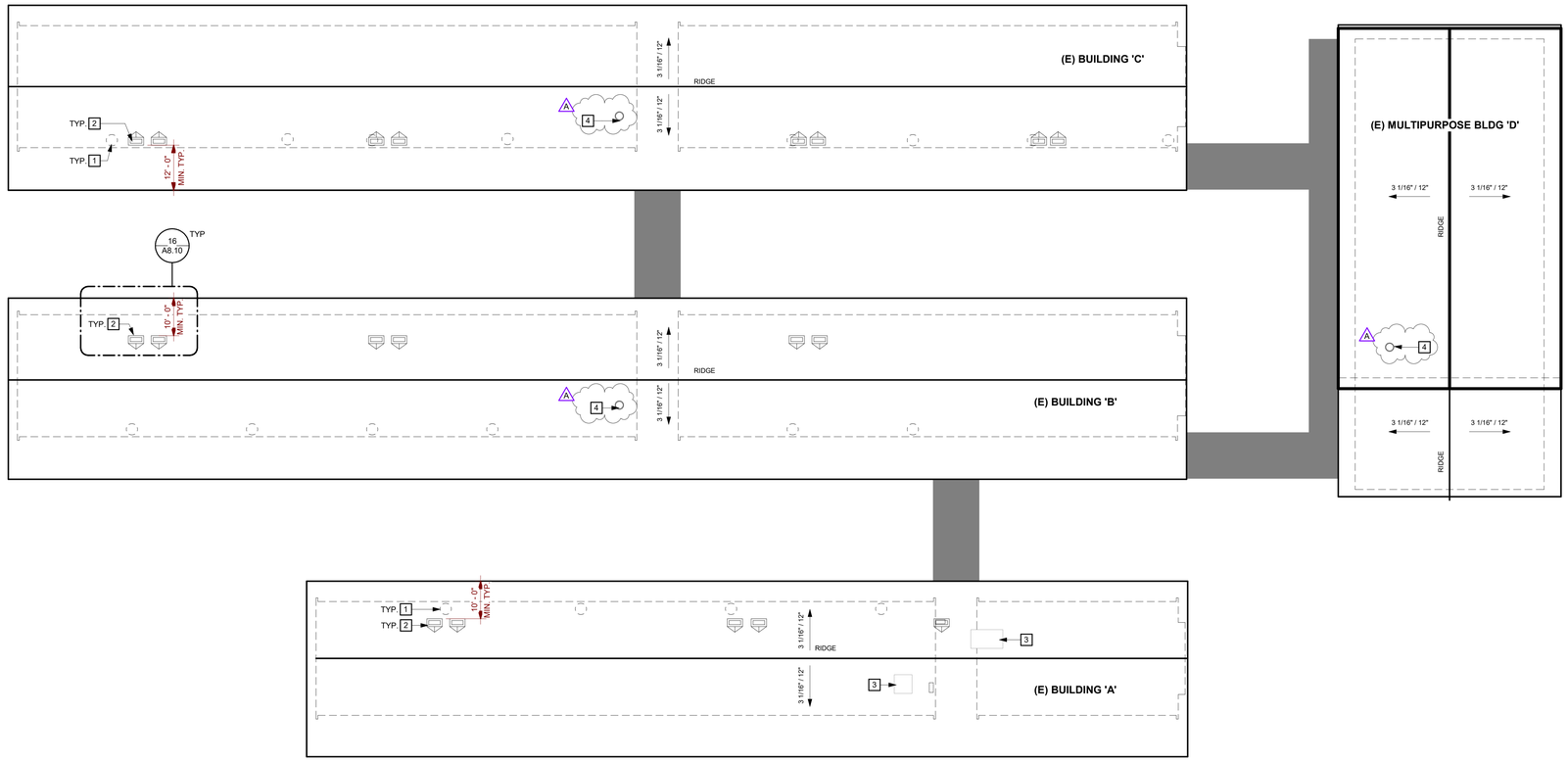
SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET
APPL NO.: 01-119551	AD1-A3.02
JOB NO. 2021005.03	
DATE 11/24/21	









1 SITE ROOF PLAN
SCALE: 1/16" = 1'-0"

N

GENERAL SHEET NOTES

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

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

C 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. A

SITE 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. A

3 (E) MECHANICAL EQUIPMENT

4 EXHAUST FAN SEE 10/A8.10 SIM. S.M.D. REMOVE (E) ROOFING TO SUBSTRATE AND PREP OPENING AS REQUIRED FOR NEW WORK. A

GRAPHIC KEY

(E) ASPHALT SHINGLE, CLASS C MINIMUM

(E) STANDING SEAM, CLASS C MINIMUM

(E) MINERAL CAP SHEET, CLASS C MINIMUM

(E) METAL ROOFING

OUTLINE OF WALL BELOW

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PROJECT
LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

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LICENSED ARCHITECT — STATE OF CALIFORNIA — 12/31/21

STATE
DSA FILE NUMBER 41-26
APPL # 01-119551

REVISIONS

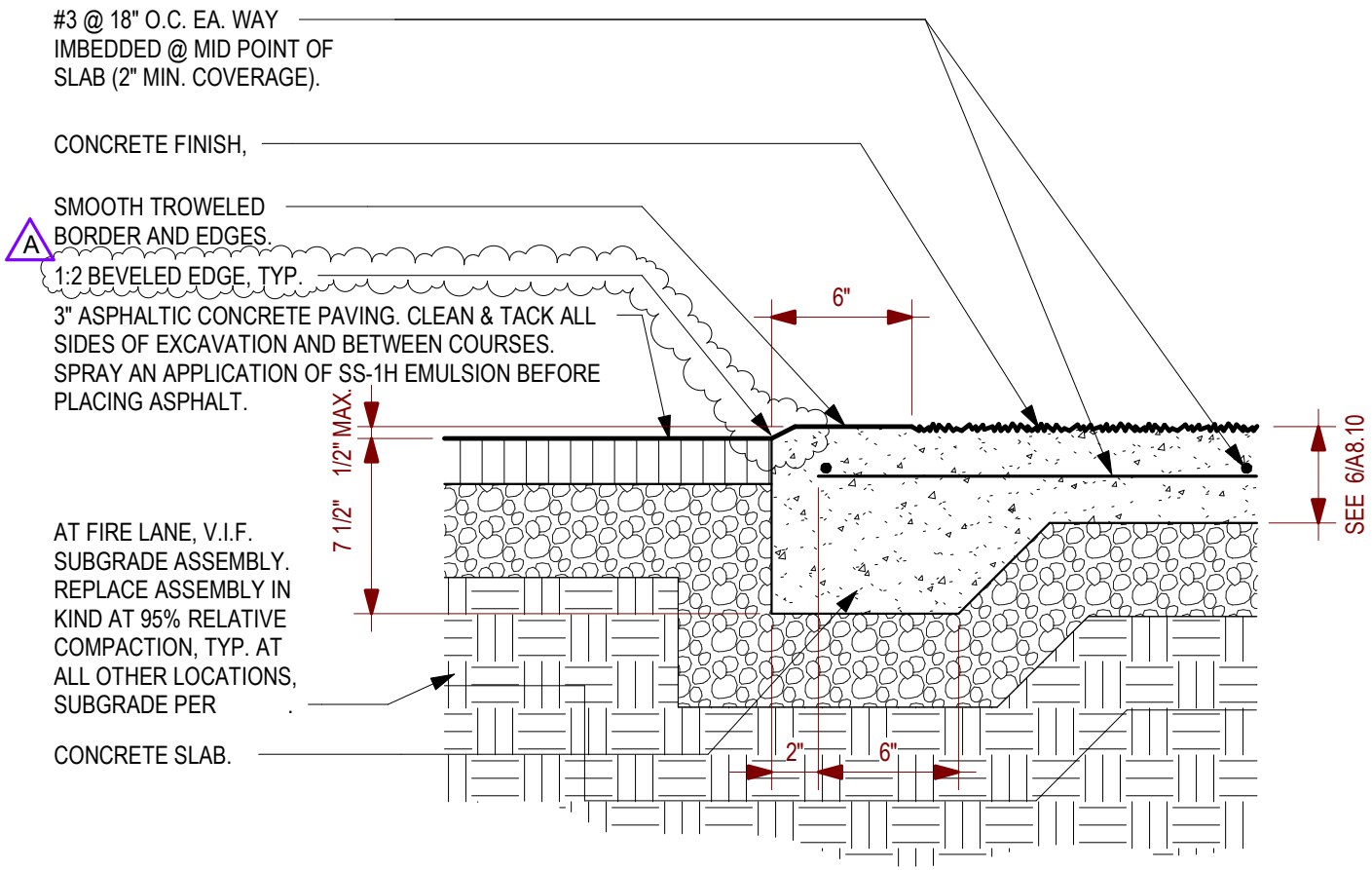
No.	Description	Date
A	Addendum 1	11/24/2021

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	10/06/2021

SHEET
SITE ROOF PLAN

DATE 11/24/2021
JOB # 2021005.03
SHEET # AD1-A5.01



9 ASPHALT/CONCRETE JOINT

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

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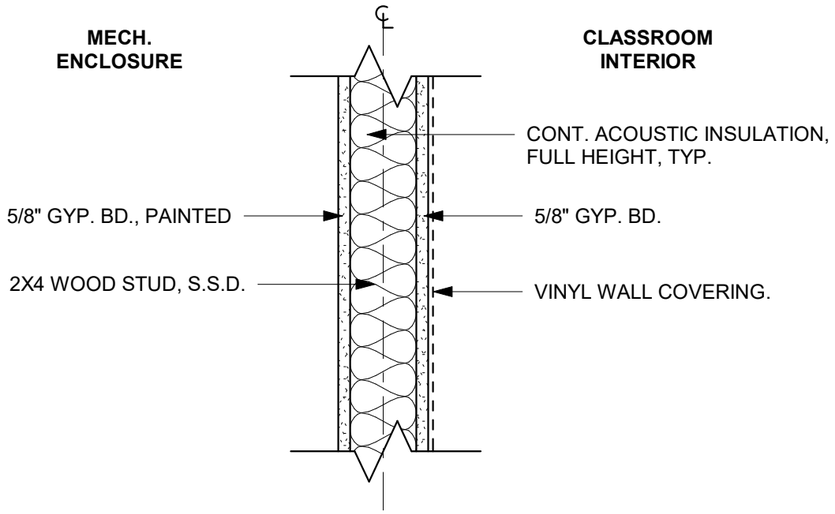
LAUREL ELEMENTARY SCHOOL
- HVAC REPLACEMENT

SAN MATEO FOSTER CITY SCHOOL DISTRICT

FILE NO.:	41-26
APPL NO.:	01-119551
JOB NO.	2021005.03
DATE	11/24/2021

SHEET

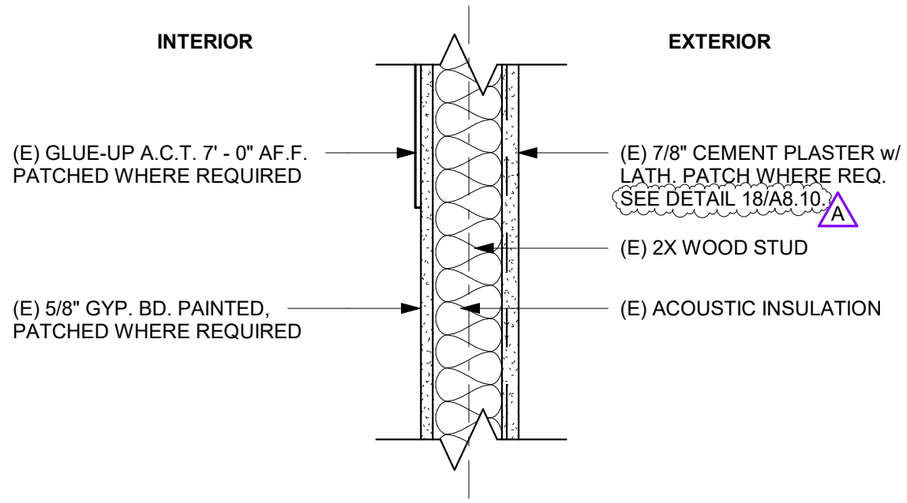
AD1-A8.10



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

1 WALL TYPE - MECHANICAL ENCLOSURE

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



4 (E) WALL TYPE - GLUE-UP A.C.T. / EXT. CEMENT PLASTER

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

LICENSED ARCHITECT
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No. C018127
EXP. 11/30/21
STATE OF CALIFORNIA

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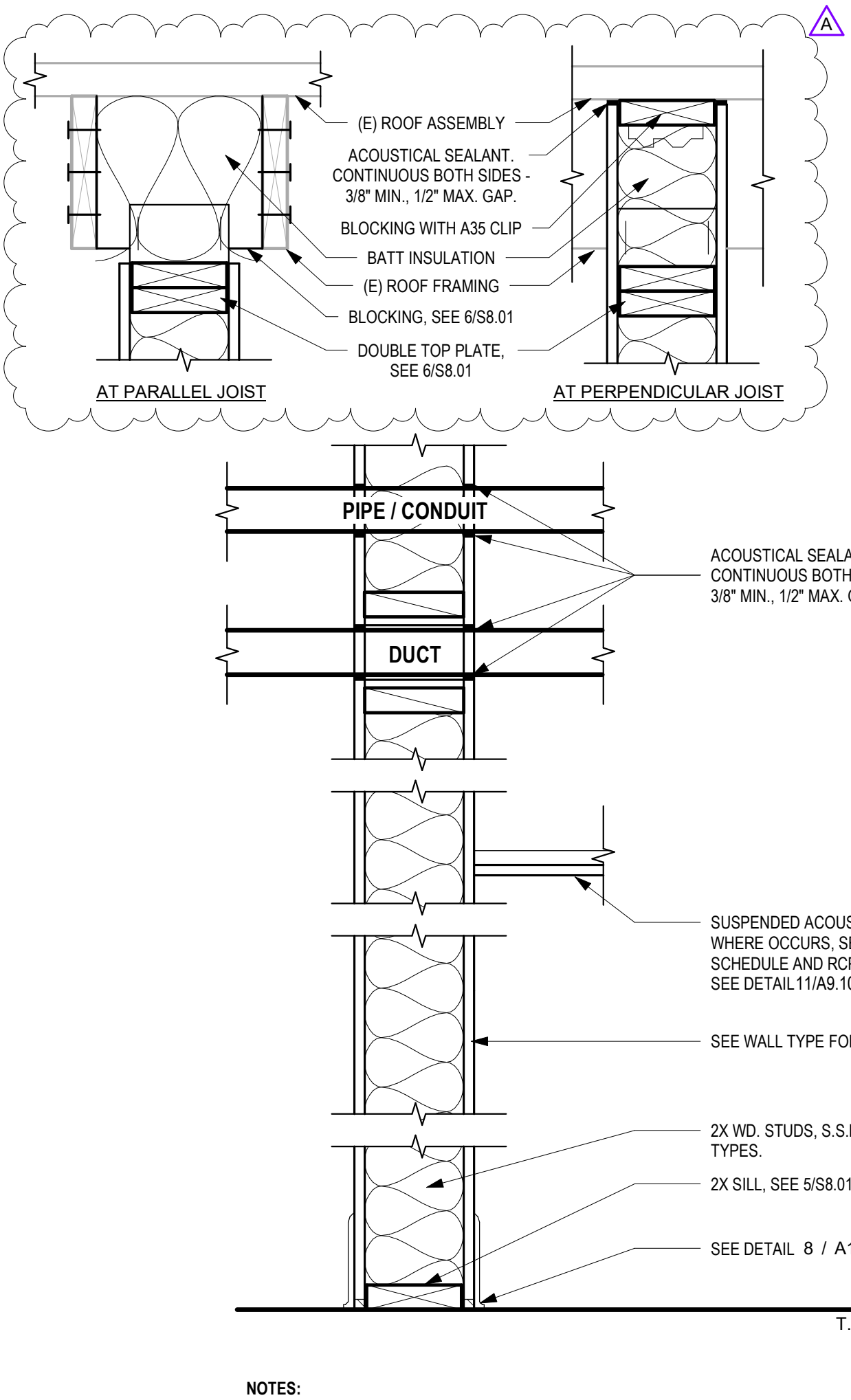
fax: (408) 300 - 5121

LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT
SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET
APPL NO.: 01-119551	**AD1-A9.10A**
JOB NO. 2021005.03	
DATE 11/24/2021	



NOTES:

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

6 TYPICAL SOUND TREATED NONRATED WALL

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

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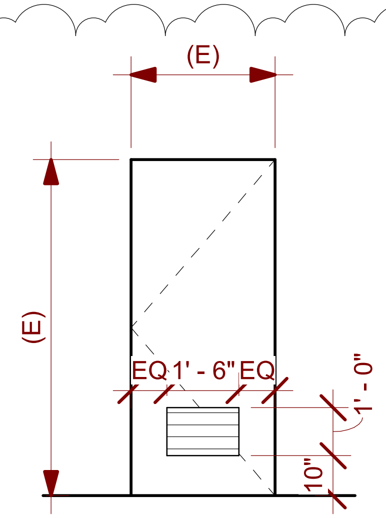
LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET
APPL NO.: 01-119551	AD1-A9.10B
JOB NO. 2021005.03	
DATE 11/24/2021	

DOOR SCHEDULE

DOOR ID	OPENING SIZE		DOOR		FRAME		DETAILS (Sheet A11.01 U.O.N.)				HARDWARE GROUP	COMMENTS
	WIDTH	HEIGHT	TYPE	FINISH	TYPE	FINISH	HEAD	JAMB-1	JAMB-2	SILL		
1a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
2a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
3a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
4a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
5a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
6a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
7a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
7ab	2' - 10"	7' - 0"	B	-	-	-	-	-	-	-	-	1
8a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
9a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
10a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
11a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
12a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
13a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
14a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
15a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
15ab	2' - 10"	7' - 0"	B	-	-	-	-	-	-	-	-	1
16a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
17a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
18a	2' - 6"	7' - 0"	A	P-2	F1	P-3	11/A11.01	11/A11.01	11/A11.01	4/A11.01	01	
41ab	4' - 0"	7' - 0"	B	-	-	-	-	-	-	-	-	1



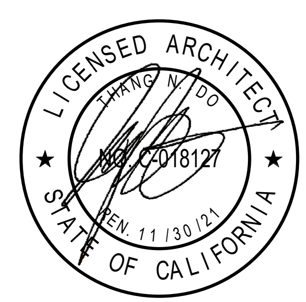
B (E) WOOD

DOOR TYPES

SCALE: 1/4" = 1'-0"

DOOR SCHEDULE COMMENTS

1 PROVIDE NEW LOUVER AT EXISTING DOOR. CUT AND PREP AS REQUIRED. PAINT LOUVER TO DOOR.



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LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26

APPL NO.: 01-119551

JOB NO. 2021005.03

DATE 11/24/2021

SHEET AD1-A11.01

ROOF EXHAUST FANS SCHEDULE

TAG	MANUFACTURER	MODEL NO.	AREA SERVED	AIRFLOW CFM	ESP IN. W.G.	FAN RPM	SOUND POWER SONES	MOTOR HP / WATTS	MOTOR V / PH	WEIGHT LBS	MOUNTING DETAIL	NOTES
REF-B-1	GREENHECK	G-098-VG	STORAGE	450	0.25	1125	6.0	1/4	115 / 1	45	16/MP6.01	1, 2
REF-C-1	GREENHECK	G-098-VG	MECH	450	0.25	1125	6.0	1/4	115 / 1	45	16/MP6.01	1, 2
REF-D-1	GREENHECK	G-070-VG	TABLE STORAGE	250	0.25	1479	4.1	1/15	115 / 1	45	16/MP6.01	1, 2

1. PROVIDE WITH UL LISTING, FAN MOUNTED SPEED CONTROL, BACKDRAFT DAMPER, BIRDSCREEN, AND ROOF CURB.
2. PROVIDE WITH LINE VOLTAGE TSTAT.

A

CLASSROOM SPLIT SYSTEM HEAT PUMPS SCHEDULE

TAG	MANUFACTURER BASIS OF DESIGN	MODEL	BLDG	LOCATION	COOLING TOTAL MBH	HEATING TOTAL MBH	AIRFLOW CFM	OUTSIDE AIR CFM	REFRIGERANT PIPING LIQUID	REFRIGERANT PIPING GAS	SEER	HSPF	ELECTRICAL V / PH	ELECTRICAL MCA	ELECTRICAL MOCP	WEIGHT LBS	MOUNTING DETAIL	NOTES
FC-1	SAMSUNG	AM054TNZDCH/AA	BLDG A	CLASSROOM 1	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-1	SAMSUNG	AM053TXMDCH/AA	BLDG A	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-2	SAMSUNG	AM054TNZDCH/AA	BLDG A	CLASSROOM 2	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-2	SAMSUNG	AM053TXMDCH/AA	BLDG A	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-3	SAMSUNG	AM054TNZDCH/AA	BLDG A	CLASSROOM 3	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-3	SAMSUNG	AM053TXMDCH/AA	BLDG A	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-4	SAMSUNG	AM054TNZDCH/AA	BLDG A	CLASSROOM 4	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-4	SAMSUNG	AM053TXMDCH/AA	BLDG A	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-5	SAMSUNG	AM054TNZDCH/AA	BLDG B	CLASSROOM 5	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-5	SAMSUNG	AM053TXMDCH/AA	BLDG B	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-6	SAMSUNG	AM054TNZDCH/AA	BLDG B	CLASSROOM 6	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-6	SAMSUNG	AM053TXMDCH/AA	BLDG B	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-7	SAMSUNG	AM054TNZDCH/AA	BLDG B	CLASSROOM 7	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-7	SAMSUNG	AM053TXMDCH/AA	BLDG B	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-8	SAMSUNG	AM054TNZDCH/AA	BLDG B	CLASSROOM 8	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-8	SAMSUNG	AM053TXMDCH/AA	BLDG B	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-9	SAMSUNG	AM054TNZDCH/AA	BLDG B	CLASSROOM 9	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-9	SAMSUNG	AM053TXMDCH/AA	BLDG B	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-10	SAMSUNG	AM054TNZDCH/AA	BLDG B	CLASSROOM 10	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-10	SAMSUNG	AM053TXMDCH/AA	BLDG B	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-11	SAMSUNG	AM054TNZDCH/AA	BLDG C	CLASSROOM 11	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-11	SAMSUNG	AM053TXMDCH/AA	BLDG C	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-12	SAMSUNG	AM054TNZDCH/AA	BLDG C	CLASSROOM 12	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-12	SAMSUNG	AM053TXMDCH/AA	BLDG C	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-13	SAMSUNG	AM054TNZDCH/AA	BLDG C	CLASSROOM 13	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-13	SAMSUNG	AM053TXMDCH/AA	BLDG C	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-14	SAMSUNG	AM054TNZDCH/AA	BLDG C	CLASSROOM 14	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-14	SAMSUNG	AM053TXMDCH/AA	BLDG C	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-15	SAMSUNG	AM054TNZDCH/AA	BLDG C	CLASSROOM 15	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-15	SAMSUNG	AM053TXMDCH/AA	BLDG C	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-16	SAMSUNG	AM054TNZDCH/AA	BLDG C	CLASSROOM 16	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-16	SAMSUNG	AM053TXMDCH/AA	BLDG C	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-17	SAMSUNG	AM054TNZDCH/AA	BLDG C	CLASSROOM 17	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-17	SAMSUNG	AM053TXMDCH/AA	BLDG C	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1
FC-18	SAMSUNG	AM054TNZDCH/AA A	BLDG C	CLASSROOM 18	53	61	1150	450	3/8"	3/4"	-	-	208/1	2.6	15	164	1/MP6.01	2, 3, 4, 5, 6, 7
HP-18	SAMSUNG	AM053TXMDCH/AA	BLDG C	ROOF			-	-	3/8"	3/4"	17.5	10	208 / 1	34	50	212	3/MP6.01	1

1. SPLIT SYSTEM SHALL BE ABLE TO OPERATE AT 94% HEATING CAPACITY DOWN TO 32°F OUTDOOR AMBIENT TEMPERATURE. A
2. CFM BASED ON 0.55 ESP.
3. PROVIDE WITH SAMSUNG MIM-A60UN 24VAC THERMOSTAT ADAPTER AND 24VAC TRANSFORMER.
4. PROVIDE WITH DELTA CONTROL THERMOSTAT WITH CO2 SENSOR. SEE MP5.01 FOR CONTROLS.
5. PROVIDE WITH MERV-13 FILTERS WITH FILTER ACCESS PANEL. A
6. ~~FAN COIL SHALL BE ADJUSTED TO OPERATE AT CONSTANT SPEED AT INDICATED CFM.~~ A
7. NOT USED

SPLIT SYSTEM HEAT PUMPS SCHEDULE

TAG	MANUFACTURER BASIS OF DESIGN	MODEL	LOCATION	COOLING TOTAL MBH	HEATING TOTAL MBH	AIRFLOW CFM	ESP IN. W.G.	REFRIGERANT PIPING LIQUID	REFRIGERANT PIPING GAS	SEER	HSPF	ELECTRICAL V / PH	ELECTRICAL MCA	ELECTRICAL MOCP	WEIGHT LBS	MOUNTING DETAIL	NOTES
SSO-A-1	SAMSUNG	AR09TSFYBWKXCV	ROOF	9	11	—	—	1/4"	3/8"	23.5	12	208 / 1	12	20	70	3/MP6.01	
SSI-A-1	SAMSUNG	AR09TSFYBWKNCV	BUILDING A SPEECH			300	—	1/4"	3/8"	—	—	NOTE 1			20	2/MP6.01	2, 3, 4, 5

1. INDOOR UNIT POWERED BY OUTDOOR UNIT.
2. PROVIDE WITH WALL MOUNTING BRACKET.
3. PROVIDE WITH SAMSUNG WALL MOUNTED THERMOSTAT.
4. PROVIDE WITH BACNET INTERFACE CARD. SEE MP5.01 FOR CONTROLS.
5. PROVIDE WITH CONDENSATE PUMP.

EXHAUST FANS SCHEDULE

TAG	MANUFACTURER	MODEL NO.	AREA SERVED	AIRFLOW CFM	ESP IN. W.G.	FAN RPM	SOUND POWER SONES	MOTOR HP	MOTOR V / PH	WEIGHT LBS	MOUNTING DETAIL	NOTES
EF-A-1	GREENHECK	G-097-VG	BLDG A ELEC ROOM	160	0.25	1061	4.4	1/4	115 / 1	65	6/MP6.01	1, 2

1. PROVIDE WITH UL LISTING, FAN MOUNTED SPEED CONTROL, GRAVITY OPERATED BACKDRAFT DAMPER, BIRDSCREEN, AND PITCHED ROOF CURB.
2. CONTROL WITH THERMOSTAT. ADD TEMPERATURE SENSOR IN BMS.

AIR DISTRIBUTION SCHEDULE

TAG	MANUFACTURER	MODEL NO.	DESCRIPTION	BORDER TYPE	MOUNTING DETAIL	NOTES
HSS-1	TITUS	S300FL	HIGH SIDEWALL SUPPLY	TYPE 1	12/MP6.01	1, 2, 4
HSR-1	TITUS	350RL	HIGH SIDEWALL RETURN	TYPE 1	13/MP6.01	2, 3

1. SET BLADES AT 22.5° DEFLECTION.
2. PRIME AND PAINT PER ARCHITECT'S INSTRUCTIONS. REGISTER COLOR SELECTED BY ARCHITECT.
3. PROVIDE WITH AIRSAN COMPACT DUCT SILENCER.
4. PROVIDE WITH ASD AIR SCOOP DEVICE.

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PROJECT
LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT
CEG JOB NO: 21035
CYPRESS Engineering Group
HVAC, Plumbing, Fire Protection
Building Commissioning
Industrial Refrigeration
Environmental Compliance
Training & Technical Support
831.218.1802
8 Harris Court, Suite A8
Monterey, CA 93940
cypresseg.com

STAMP
REGISTERED PROFESSIONAL ENGINEER
METIN SERTTUNA
No. M31059
EXP. JUNE 30, 2023
MECHANICAL
STATE OF CALIFORNIA

STATE
DSA FILE NUMBER 41-26
APPL # 01-119551

REVISIONS

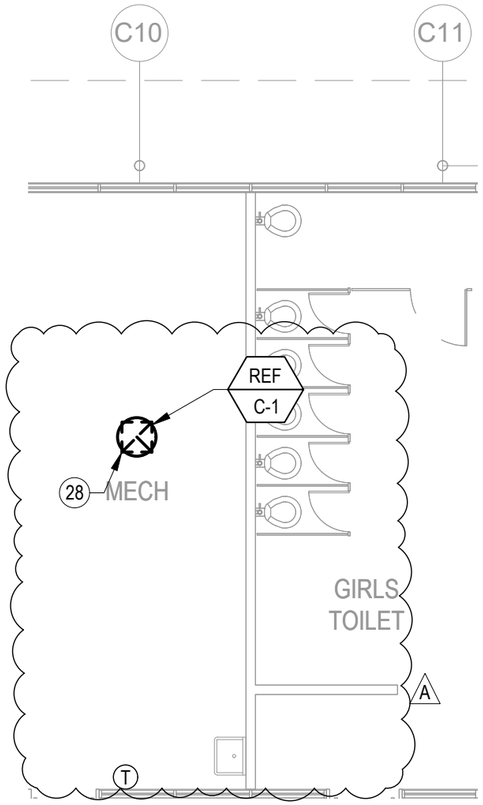
No.	Description	Date
A	Addendum 1	11/24/2021

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	10/06/2021

SHEET
SCHEDULES- MECHANICAL & PLUMBING

DATE 11/24/2021
JOB # 2021005.03
SHEET # AD1- MP0.02



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 CD PIPING AND (E) GAS MAINS NOT SHOWN ON THIS PLAN. SEE MP2.01.
4. PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT. A
5. PAINT CONDENSATE PIPING AT EXTERIOR OF BUILDING TO MATCH ADJACENT.
6. SEE DETAIL 7/MP6.01 FOR PIPE SUPPORT ON ROOF.

(#) NEW SHEET NOTES

28. INSTALL EXHAUST FAN ON ROOF. A

1 / MP2.03 PARTIAL FLOOR PLAN - BLDG C - NEW - MECHANICAL & PLUMBING

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

REGISTERED PROFESSIONAL ENGINEER
METIN SERTTUNC
No. M31059
EXP. JUNE 30, 2023
MECHANICAL
STATE OF CALIFORNIA

CEG JOB NO: 21035

CYPRESS Engineering Group
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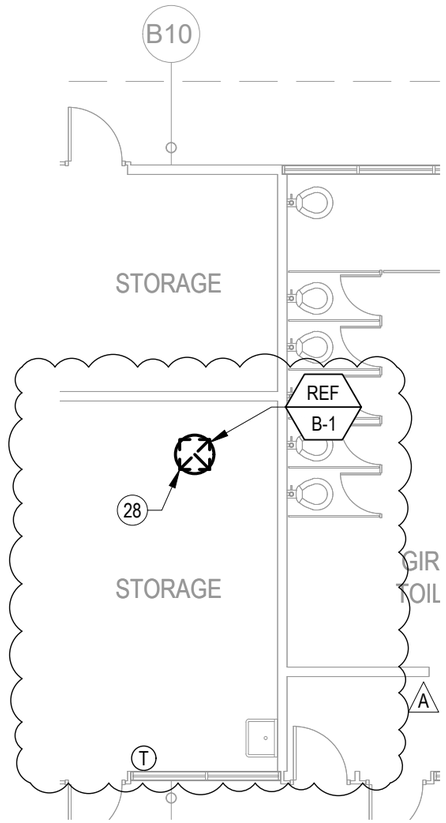
LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET REF. SHEET MP2.03
APPL NO.: 01-119551	
JOB NO. 2021005.03	**AD1-MP2.03a**
DATE 11/24/2021	



2
MP2.03

PARTIAL FLOOR PLAN - BLDG B - NEW - MECHANICAL & PLUMBING

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

REGISTERED PROFESSIONAL ENGINEER
METIN SERTTUNC
No. M31059
EXP. JUNE 30, 2023
MECHANICAL
STATE OF CALIFORNIA

CEG JOB NO: 21035

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LAUREL ELEMENTARY SCHOOL -
HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET REF. SHEET MP2.03
APPL NO.: 01-119551	AD1-MP2.03b
JOB NO. 2021005.03	
DATE 11/24/2021	

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 CD PIPING AND (E) GAS MAINS NOT SHOWN ON THIS PLAN. SEE MP2.02.
4. PAINT ALL EXPOSED DUCTWORK, SUPPORTS, AND REGISTERS TO MATCH ADJACENT.
5. PAINT CONDENSATE PIPING AT EXTERIOR OF BUILDING TO MATCH ADJACENT. A
6. SEE DETAIL 7/MP6.01 FOR PIPE SUPPORT ON ROOF.

(#) NEW SHEET NOTES

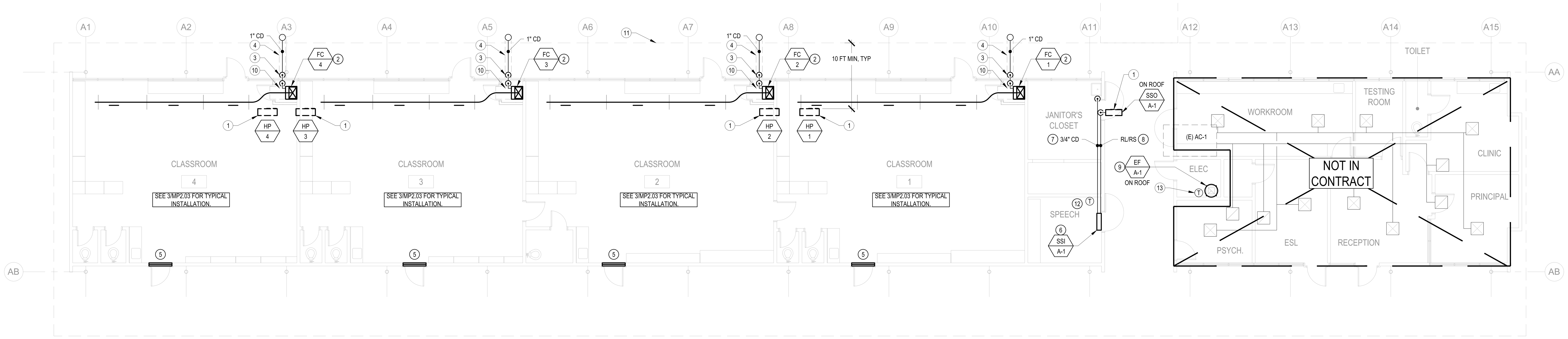
1. INSTALL HEAT PUMP ON ROOF, MIN 10 FT FROM EDGE OF ROOF, TYP.
2. INSTALL FAN COIL, TYP. SEE 5/MP2.03 AND 6/MP2.03 FOR TYPICAL FAN COIL INSTALLATION. SEE 1/MP6.01 FOR TYPICAL FAN COIL MOUNTING.
3. CD FROM FAN COIL. DROP CD PIPE TIGHT TO EXTERIOR WALL TO BELOW GRADE, AND ROUTE TO CD DRYWELL. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. SEE 13/MP6.01 FOR CD DRYWELL.
4. SAWCUT, REPAIR, AND PATCH TO MATCH EXISTING. SEE SHEET A8.10 ON ARCHITECT'S DRAWINGS FOR PATCHING AT GRADE.
5. MOTORIZED RELIEF DAMPER AND RETURN GRILLE (RG-1) MOUNTED TO BOTH SIDES OF RELIEF OPENING. DAMPER AND GRILLE SIZE TO MATCH (E) FRAME, APPROXIMATELY46"x35". RETURN GRILLE TO FILL ENTIRE (E) WINDOW PANEL. VERIFY EXACT DIMENSIONS IN FIELD.
6. INSTALL FAN COIL ABOVE DOOR. COORDINATE EXACT HEIGHT WITH DISTRICT.
7. PUMP CONDENSATE FROM FAN COIL TO (E) SINK IN JANITOR'S CLOSET. CONNECT TO SINK TAILPIECE. RUN PIPE TIGHT TO CEILING.
8. INSTALL REFRIGERANT PIPING FROM HEAT PUMP ON ROOF TO FAN COIL. RUN PIPING ALONG SAME ROUTE AS CONDENSATE PIPING.
9. INSTALL ROOFTOP EXHAUST FAN ON PITCHED ROOF CURB. ENSURE EXHAUST FAN IS A MINIMUM OF 10 FT AWAY FROM ANY OUTSIDE AIR INTAKES.
10. CD FROM FAN COIL. DROP PIPE DOWN TO ENCLOSURE FLOOR AT LEFT SIDE OF UNIT, ENSURING PIPE DOES NOT BLOCK FILTER ACCESS. THEN RUN ALONG FLOOR TO EXTERIOR WALL. PROVIDE CLEANOUT FOR EACH AGGREGATE HORIZONTAL CHANGE IN DIRECTION EXCEEDING 135°. SEE 9/MP6.01 FOR CONNECTION TO UNIT
11. (E) ROOF OUTLINE, TYP.
12. INSTALL THERMOSTAT ON INTERIOR WALL AND WIRE TO FAN COIL SSI-A-1.
13. INSTALL THERMOSTAT ON INTERIOR WALL AND WIRE TO EXHAUST FAN EF-A-1.
14. INSTALL EXHAUST FAN ON ROOF, INSTALL THERMOSTAT ON INTERIOR WALL AND WIRE TO REF-D-1. A

11/24/2021

2 MP2.04 FLOOR PLAN - MULTIPURPOSE BLDG - NEW - MECHANICAL & PLUMBING

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

NORTH

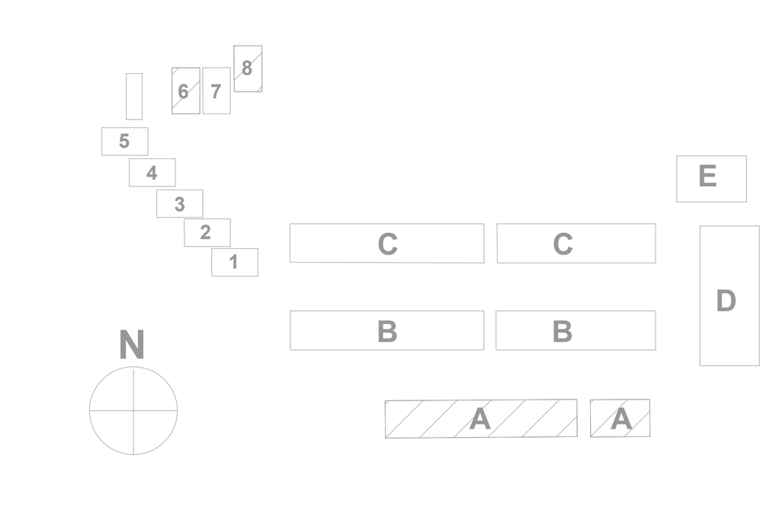


1 MP2.04 FLOOR PLAN - BLDG A - NEW - MECHANICAL & PLUMBING

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

NORTH

BUILDING KEY



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PROJECT

LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

CYPRESS Engineering Group

HVAC, Plumbing, Fire Protection
Building Commissioning
Industrial Refrigeration
Environmental Compliance
Training & Technical Support

CEG JOB NO. 21035

STAMP

REGISTERED PROFESSIONAL ENGINEER
No. M31059
EXP. JUNE 30, 2023
MECHANICAL
STATE OF CALIFORNIA

STATE

DSA FILE NUMBER 41-26

APPL # 01-119551

REVISIONS

No.	Description	Date

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	10/06/2021

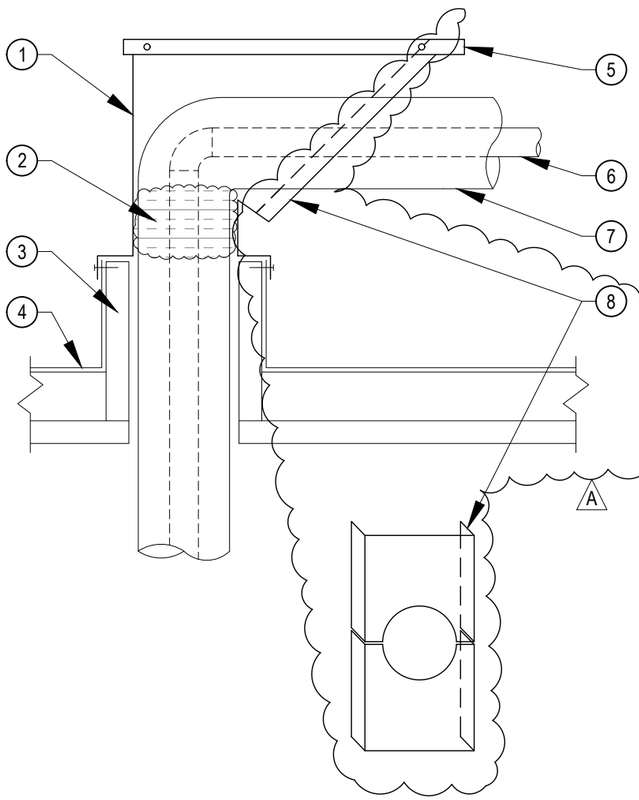
SHEET

FLOOR PLAN - NEW - BLDG A - MECHANICAL & PLUMBING

DATE 11/24/2021

JOB # 2021005.03

SHEET # MP2.04



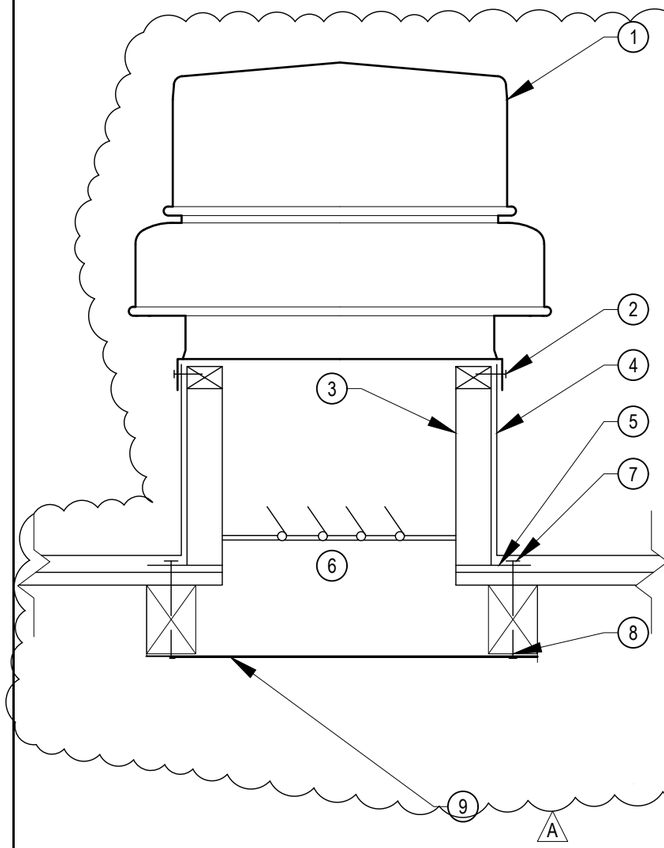
DETAIL NOTES:

1. GALVANIZED SHEET METAL ROOF JACK WITH CAP.
2. FILL OPENING WITH FOAM.
3. ROOF OPENING. SEE STRUCTURAL DRAWING FOR CURB, SEE ARCHITECT'S DRAWINGS FOR FLASHING.
4. ROOFING.
5. REMOVABLE SHEET METAL COVER ATTACHED WITH TWO (2) #8 SELF TAPPING SCREWS EACH SIDE, PAINTED.
6. PIPE.
7. PIPE INSULATION.
8. 2 PIECE 20 GA. GALVANIZED SHEET METAL COVER W/ 1-1/2" FLANGES ATTACHED W/ #12 SMS @4" O.C.

NOTES:

1. EXPOSED PIPING SHALL HAVE ALUMINUM JACKET.

4 PIPING ROOF JACK N.T.S.



DETAIL NOTES:

1. EXHAUST FAN.
2. SECURE TO ROOF CURB WITH #12 SELF TAPPING SCREWS AT 12" ON CENTER. MINIMUM 2 PER SIDE.
3. FACTORY CURB WITH NAILER.
4. FOR ROOFING AND FLASHING, SEE ARCHITECT'S DRAWINGS.
5. ROOF DECK.
6. BACKDRAFT DAMPER.
7. 3/8"Ø LAG SCREW THRU CURB AND ROOF WITH 3" MINIMUM EMBEDMENT INTO BLOCKING.
8. 4x BLOCKING. SECURE TO STRUCTURE WITH SIMPSON HU44 HANGERS EACH END.
9. 1/4" METAL MESH SCREEN, ATTACHED TO FRAMED BLOCKING W/ #8 WOOD SCREWS @ 6" O.C. ALL AROUND.

6 EXHAUST FAN MOUNTING N.T.S.

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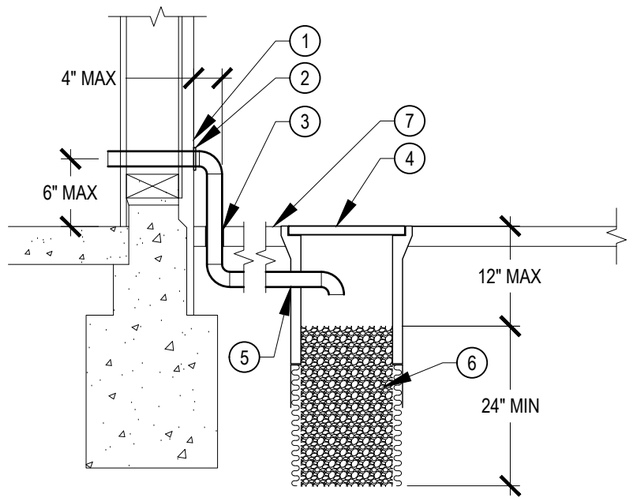
SAN MATEO-FOSTER CITY SCHOOL DISTRICT

FILE NO.: 41-26	SHEET REF. SHEET MP6.01
APPL NO.: 01-119551	
JOB NO. 2021005.03	**AD1-MP6.01a**
DATE 11/24/2021	



DETAIL NOTES:

1. (E) EXTERIOR WALL.
2. SEAL PENETRATION WATERTIGHT. PROVIDE ESCUTCHEON AT EXTERIOR.
3. DROP PIPE BELOW GRADE.
4. CHRISTY F22 CURB VALVE BOX WITH ADS SNAP ADAPTER AND 18" ADS EXTENSION. WITH F08R REINFORCED CONCRETE LID. FLUSH WITH GRADE.
5. CORE DRILL BOX FOR PIPE TO PASS THROUGH.
6. FILL WITH WASHED PEA GRAVEL.
7. SEE A8.10 FOR PATCHING. A

14	CONDENSATE DRYWELL	N.T.S.

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APPL NO.: 01-119551	AD1-MP6.01b
JOB NO. 2021005.03	
DATE 11/24/2021	

DA STREET

(E) PLANTING

(E) ASPHALT

(E) CONCRETE

(E) LUNCH STRUCTURE
DSA APP #01-106156

(E) MODULAR ANNEX BLDG
DSA APP #01-101907

(E) PANEL "P2"

(E) PANEL "P1"

(E) ASPHALT

(E) MULTIPURPOSE BLDG 'D'
DSA APP #9554

(E) PARKING LOT
DSA APP. #01-114122

(E) SHADE STRUCTURE
DSA APP #01-115095

(E) CONCRETE

(E) PANEL "DPD"

(N) PANEL "DM"

(N) XFMR "TD"

DSA APP #66127

(E) TURF

(E) ASPHALT

(E) PLANTING

DSA APP #4355, 66127

DSA APP #4933, 66127

DSA APP #9554, 66127

(E) CONCRETE

DSA APP #66127

(E) BUILDING 'C'
DSA APP #4355, 66127

(E) BUILDING 'B'
DSA APP #4933, 66127

(E) BUILDING 'A'
DSA APP #9554, 66127

FUTURE BLDG.
DSA APP #01-119355

(E) CLASSROOM #26
DSA APP #01-101009

(E) CLASSROOM #25
DSA APP #01-101009

(E) CLASSROOM #24
DSA APP #01-101009

3' - 6"

24' - 0"

40' - 0"

(E) ASPHALT

(E) CONCRETE

(E) RESTROOM BLDG
DSA APP #01-101005

(E) PANEL "DPP"

(N) XFMR "TP"

(E) CLASSROOM #23
DSA APP #69323

(E) CLASSROOM #22
DSA APP #69323

(E) CLASSROOM #21
DSA APP #69323

(E) CLASSROOM #19
DSA APP #65485

(E) CLASSROOM #20
DSA APP #65485

PULLBOX SCHEDULE:

- E1 - NEW 4'-6"x8'-6" ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- E2 - NEW B2436 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- E3 - NEW 3'x5' ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- E4 - NEW B3048 ELECTRIC / POWER PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'POWER'.
- G - NEW B2436 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'.
- G2 - NEW B3048 COMMUNICATIONS PULLBOX WITH TRAFFIC RATED LID. LABEL LID 'COMM.'.

GENERAL NOTES:

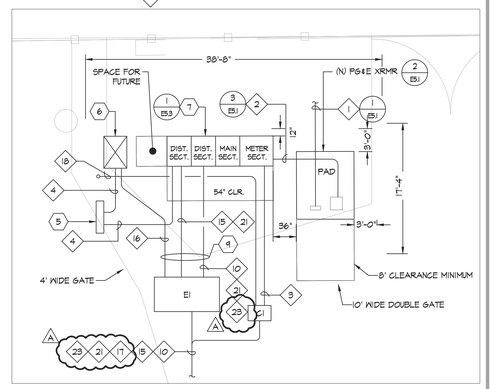
1. CONTRACTOR SHALL COORDINATE UNDERGROUND REQUIREMENTS WITH ALL OTHER TRADES TO AVOID CONFLICTS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY SAW CUTTING AND REMOVAL OF EXISTING SURFACES TO FACILITATE UNDERGROUND SYSTEMS. THE CONTRACTOR SHALL PATCH AND REPAIR ALL DAMAGED AND CUT SURFACES TO MATCH ADJACENT.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

SHEET NOTES:

1. EXISTING PG&E UTILITY POLE WITH NEW PG&E PRIMARY RISER.
2. EXISTING 1600A MAIN SWITCHBOARD TO BE DEMOLISHED. DEMOLISH EXISTING SWITCHBOARD PAD AND PATCH SURFACE TO MATCH EXISTING.
3. EXISTING PG&E TRANSFORMER TO BE REMOVED BY PG&E. DEMOLISH EXISTING TRANSFORMER PAD AND PATCH SURFACE TO MATCH EXISTING.
4. NEW STREET CROSSING FOR PRIMARY CONDUIT. CONTRACTOR TO OBTAIN ALL CITY PERMITS FOR PROVIDING THE STREET CROSSING.
5. FUTURE PV DISCONNECT SWITCH.
6. FUTURE PV DISTRIBUTION PANEL.
7. NEW 2000A MAIN SWITCHBOARD.
8. NEW IN-GRADE ELECTRICAL PULL BOX. LABEL LID "ELECTRICAL".
9. REFER TO DETAIL 5/E5.4 FOR CONDUIT TRENCH BELOW FOUNDATION.
10. PROVIDE NEMA-3R, 120V MOTOR RATED SWITCH FOR ROOFTOP EXHAUST FAN.
11. ROUTE 120V CIRCUIT TO THE PANEL AND CIRCUIT INDICATED. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
12. NOT USED.
13. NEW SIGNAL PULL BOX LABEL LID "SIGNAL".
14. EXISTING SIGNAL PULL BOX STUB NEW CONDUIT INTO EXISTING BOX AS REQUIRED.
15. NEW 400A-3P, 480V UNFUSED DISCONNECT SWITCH.
16. NEW DISCONNECT SWITCH, XFMR "TD" AND PANEL "DM" TO BE INSTALLED IN EXISTING STORAGE ROOM IN BUILDING "D".
17. NEW PANEL "DPA". PANEL TO BE SURFACE MOUNTED ON THE EXTERIOR OF THE MODULAR ANNEX BUILDING.
18. CONDUIT ROUTED EXPOSED ON THE EXTERIOR OF THE MODULAR ANNEX BUILDING.
19. NEW 200A-3P, 480V UNFUSED DISCONNECT SWITCH.

CONDUIT SCHEDULE:

1. (N) (1) 4"G - PG&E PRIMARY.
2. (N) (7) 5"G - PG&E SECONDARY.
3. (N) (1) 1"G - PG&E COMMUNICATIONS.
4. (N) (2) 3"G - FUTURE PV DISTRIBUTION PANEL.
5. (N) 2.5"G - XFMR "TA". (N) (1) 2.5"G - FUTURE PV.
6. (N) (2) 2.5"G - XFMR "TB".
7. (N) (2) 2.5"G - XFMR "TB". (N) 2.5"G - XFMR "TA". (N) (2) 2.5"G - FUTURE PV.
8. (N) (2) 2.5"G - XFMR "TP".
9. (N) (1) 4"G - PANEL "DPP".
10. (N) 2.5"G - XFMR "TA". (N) (2) 2.5"G - XFMR "TB". (N) (2) 2.5"G - XFMR "TP". (N) (2) 2.5"G - FUTURE PV.
11. (N) (2) 2.5"G - XFMR "TD". (N) (1) 2"G - PANEL "DPA".
12. (N) (1) 2"G - PANEL "DPA".
13. (N) (2) 2.5"G - XFMR "TC".
14. (N) (2) 2.5"G - XFMR "TD". (N) (2) 2.5"G - FUTURE PV.
15. (N) (2) 2.5"G - XFMR "TD". (N) (2) 2.5"G - XFMR "TC". (N) (3) 2.5"G - FUTURE PV.
16. (N) (7) 2.5"G - FUTURE PV.
17. (N) (1) 1"G - PG&E COMMUNICATIONS. (N) 2"G - FUTURE PV COMMUNICATIONS.
18. (N) 2"G - FUTURE PV COMMUNICATIONS.
19. (N) (1) 1½"G - PANEL "P1"
20. (N) (1) 1½"G - PANEL "P2"
21. (N) (3) 4"CO - SPARE
22. (N) (1) 2.5"G - FUTURE PV
23. (N) (1) 2"G - FUTURE EM



1 E1.1 **ELECTRICAL SITE PLAN**
SCALE: 1" = 20'-0"

2 E1.1 **ELECTRICAL SWITCHGEAR DIMENSIONS**
SCALE: 1/8"=1'-0"

N

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CONSULTANT

REGISTERED PROFESSIONAL ENGINEER JOHN S. FERNANDEZ E16890 Exp. 06/30/22 ELECTRICAL STATE OF CALIFORNIA

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JOB # EX21.030.00

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STATE
DSA FILE NUMBER 41-26
APPL # 01-119551

REVISIONS

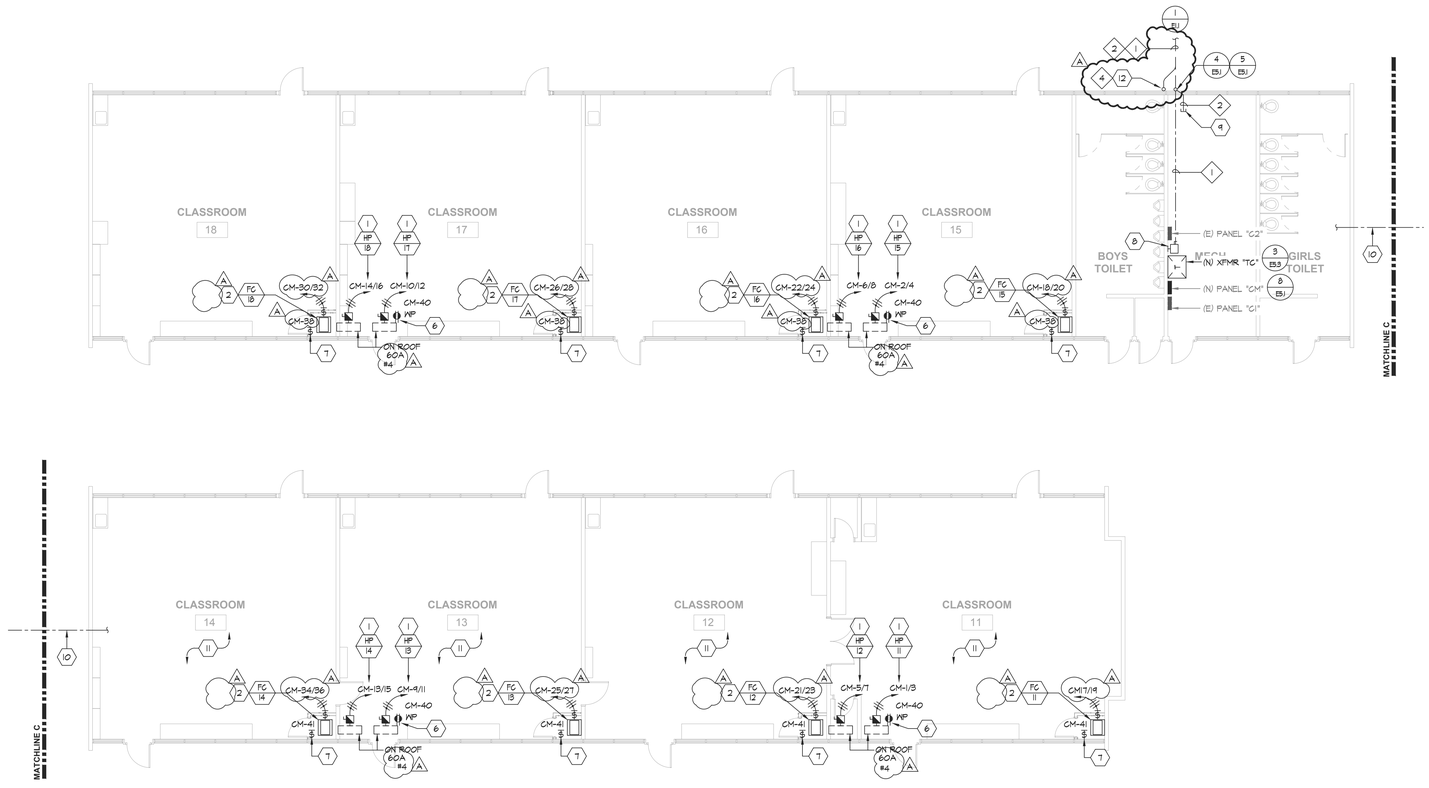
No.	Description	Date
A	ADDENDUM 1	11/24/2021

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	

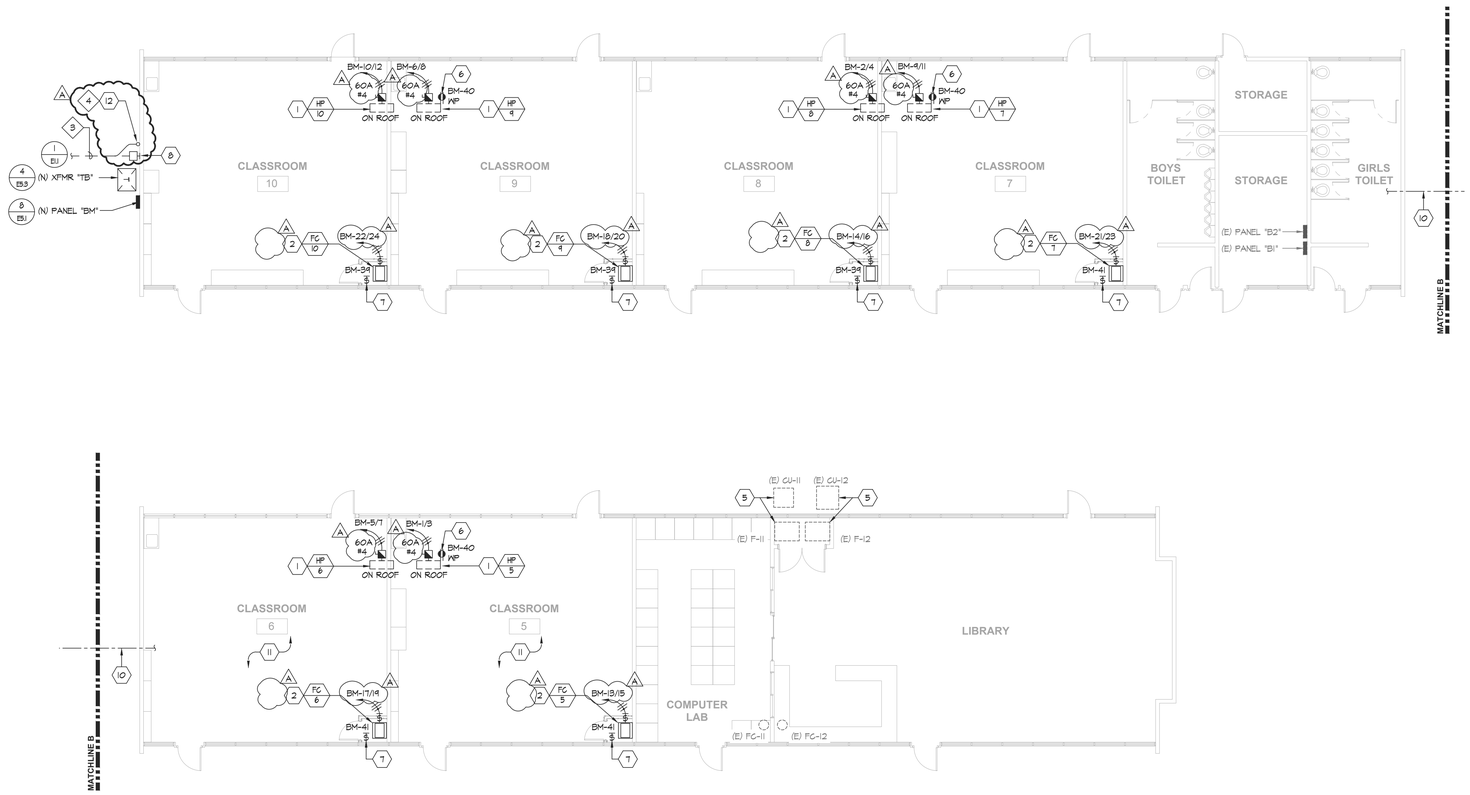
SHEET
ELECTRICAL SITE PLAN

DATE 11/24/2021
JOB # 2021005.03
SHEET # AD-1
E1.1



1 E3.1 **ELECTRICAL NEW FLOOR PLAN - BLDG C**

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



2 E3.1 **ELECTRICAL NEW FLOOR PLAN - BLDG B**

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

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.
6. DISCONNECT SWITCHES ON THE ROOF SHALL BE MOUNTED TO THE HEAT PUMP UNIT. COORDINATE INSTALLATION LOCATION WITH THE UNIT INSTALLER AND MANUFACTRER.

A 7. PROVIDE CONDUIT ROOF PENETRATIONS REQUIRED. COORDINATE ROOF PENETRATION LOCATIONS WITH MECHANICAL'S PIPING ROOF PENETRATIONS. ROOF PENETRATION SHALL BE PER DETAIL 4/MP6.01.

SHEET NOTES:

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. EXISTING MECHANICAL UNIT AND CONNECTIONS TO REMAIN.
6. PROVIDE NEW WEATHERPROOF GFCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC WP1031MXD "BOSS".
7. PROVIDE MOTOR RATED SWITCH AND 120V POWER FOR CONDENSATION PUMP.
8. NEW 400A-3P, 480V UNFUSED DISCONNECT SWITCH.
9. STUB 1.0IN VOLTAGE CONDUIT INTO THE ROOM AND CAP FOR FUTURE USE.
10. MOUNT CONDUIT ADJACENT TO CHASE AND ROUTE ACROSS THE HALLWAY.
11. ROUTE MECHANICAL UNIT'S CIRCUIT HOMERUN UNDER CANOPY AS INDICATED BY SHEET NOTE #10. CONNECT TO NEW ELECTRICAL PANEL.

A 12. STUB FUTURE SOLAR CONDUIT 18" ABOVE GRADE AT THIS APPROXIMATE LOCATION AND CAP.

13. PROVIDE 120V MOTOR RATED SWITCH FOR EXHAUST FAN. PROVIDE #10'S HOMERUN AND CONNECT TO CIRCUIT INDICATED. COORDINATE EXACT LOCATION WITH MECHANICAL DRAWINGS AND MECHANICAL CONTRACTOR.

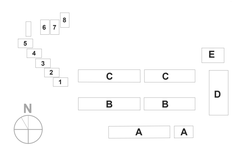
CONDUIT SCHEDULE:

1. (N) (2) 2.5"C - XFMR "TC".
2. (N) (1) 1"C - PG&E COMMUNICATIONS. (N) (1) 2"C - FUTURE PV COMMUNICATIONS.

A 3. (N) (2) 2.5"C - XFMR "TB".

A 4. (N) (1) 2.5"C - FUTURE PV.

BUILDING KEY



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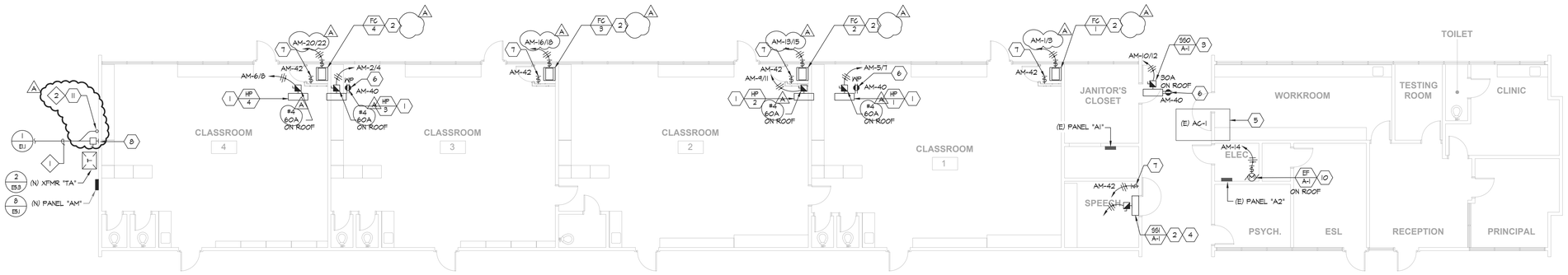
MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	

SHEET

ELECTRICAL NEW FLOOR PLANS - BLDGS B & C

DATE 11/24/2021
JOB # 2021005.03
SHEET # AD-1
E3.1



1 ELECTRICAL NEW FLOOR PLAN - BLDG A

E3.2

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

N

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.
6. DISCONNECT SWITCHES ON THE ROOF SHALL BE MOUNTED TO THE HEAT PUMP UNIT. COORDINATE INSTALLATION LOCATION WITH THE UNIT INSTALLER AND MANUFACTURER.

A 7. PROVIDE CONDUIT ROOF PENETRATIONS REQUIRED. COORDINATE ROOF PENETRATION LOCATIONS WITH MECHANICAL'S PIPING ROOF PENETRATIONS. ROOF PENETRATION SHALL BE PER DETAIL 4/MP8.01.

SHEET NOTES:

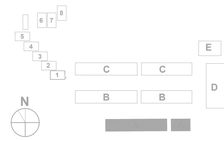
1. NEW 60A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
2. NEW 30A-2P, NEMA-1, MOTOR-RATED DISCONNECT SWITCH FOR MECHANICAL UNIT.
3. NEW 30A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
4. INDOOR UNIT IS POWER BY THE OUTDOOR UNIT. ROUTE HOMERUN CIRCUIT TO ASSOCIATED OUTDOOR UNIT. REFER TO MECHANICAL SCHEDULE MP0.02 FOR ADDITIONAL REQUIREMENTS.
5. EXISTING MECHANICAL UNIT AND CONNECTIONS TO REMAIN.
6. PROVIDE NEW WEATHERPROOF GFCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH WHILE-IN-USE COVER. COVER SHALL BE INTERMATIC WP1010MXD "BOSS".
7. PROVIDE MOTOR RATED SWITCH AND 120V POWER FOR CONDENSATION PUMP.
8. NEW 200A/3P, 480V UNFUSED DISCONNECT SWITCH.
9. NOT USED.
10. PROVIDE NEMA-3R MOTOR RATED SWITCH AND 120V POWER.

A 11. STUB FUTURE SOLAR CONDUIT 18" ABOVE GRADE AT THIS APPROXIMATE LOCATION AND CAP.

CONDUIT SCHEDULE:

1. (N) (1) 2½"C - XFMR "TA".
2. (N) (1) 2.5"C - FUTURE PV.

BUILDING KEY



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SHEET

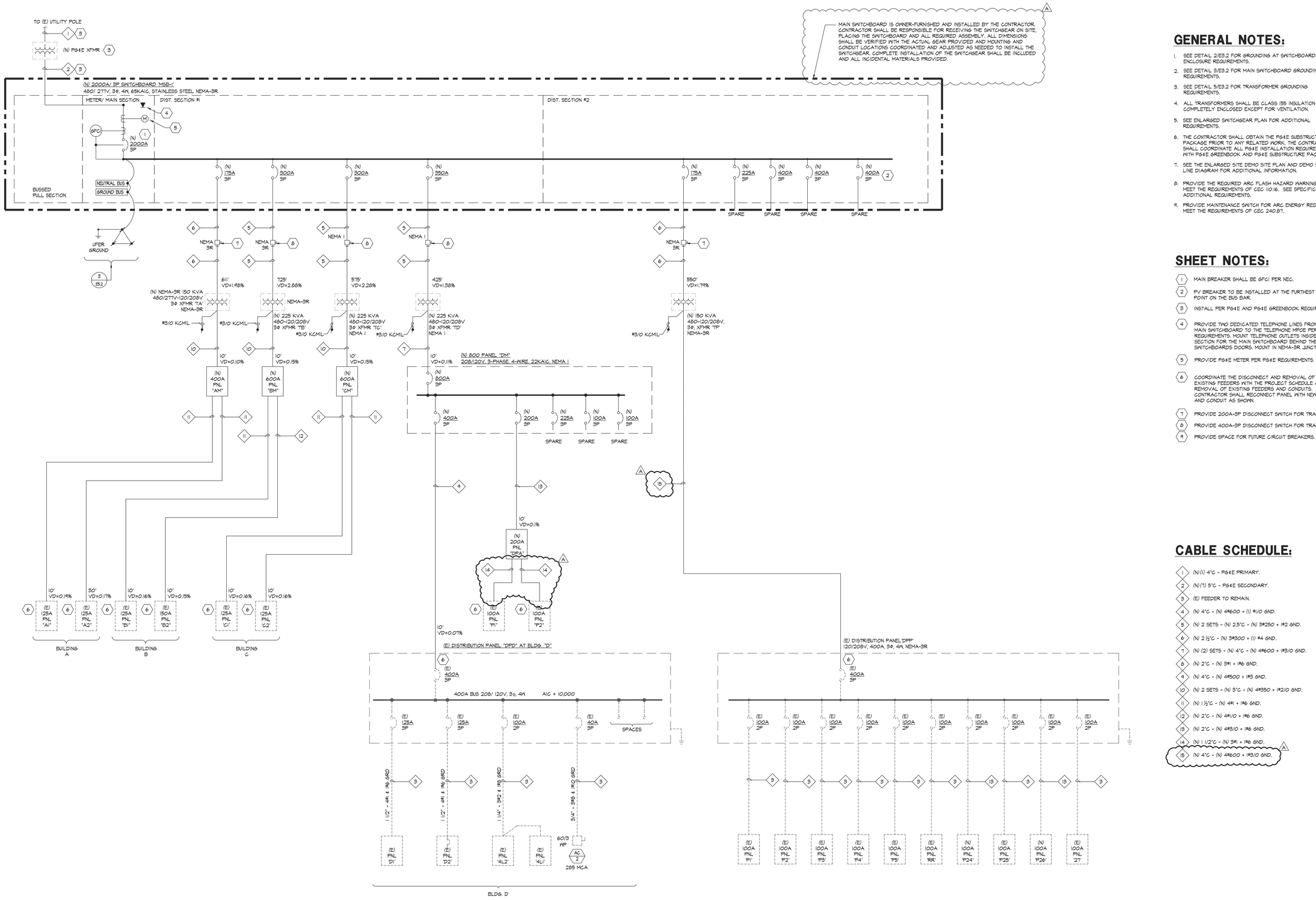
ELECTRICAL NEW FLOOR PLANS - BLDGS A

DATE 11/24/2021

JOB # 2021005.03

SHEET # AD-1

E3.2



GENERAL NOTES:

1. SEE DETAIL 2/E3.2 FOR GROUNDING AT SWITCHBOARD ENCLOSURE REQUIREMENTS.
2. SEE DETAIL 3/E3.2 FOR MAIN SWITCHBOARD GROUNDING REQUIREMENTS.
3. SEE DETAIL 5/E3.2 FOR TRANSFORMER GROUNDING REQUIREMENTS.
4. ALL TRANSFORMERS SHALL BE CLASS 155 INSULATION - COMPLETELY ENCLOSED EXCEPT FOR VENTILATION.
5. SEE ENLARGED SWITCHGEAR PLAN FOR ADDITIONAL REQUIREMENTS.
6. THE CONTRACTOR SHALL OBTAIN THE PG&E SUBSTRUCTURE PACKAGE PRIOR TO ANY RELATED WORK. THE CONTRACTOR SHALL COORDINATE ALL PG&E INSTALLATION REQUIREMENTS WITH PG&E GREENBOOK AND PG&E SUBSTRUCTURE PACKAGE.
7. SEE THE ENLARGED SITE DEMO SITE PLAN AND DEMO SINGLE LINE DIAGRAM FOR ADDITIONAL INFORMATION.
8. PROVIDE THE REQUIRED ARC FLASH HAZARD WARNING LABEL TO MEET THE REQUIREMENTS OF CEC 110.16. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
9. PROVIDE MAINTENANCE SWITCH FOR ARC ENERGY REDUCTION TO MEET THE REQUIREMENTS OF CEC 240.87.

SHEET NOTES:

1. MAIN BREAKER SHALL BE GFCI PER NEC.
2. PV BREAKER TO BE INSTALLED AT THE FURTHEST POINT ON THE BUS BAR.
3. INSTALL PER PG&E AND PG&E GREENBOOK REQUIREMENTS.
4. PROVIDE TWO DEDICATED TELEPHONE LINES FROM THE MAIN SWITCHBOARD TO THE TELEPHONE MPOE PER PG&E REQUIREMENTS. MOUNT TELEPHONE OUTLETS INSIDE METER SECTION FOR THE MAIN SWITCHBOARD BEHIND THE SWITCHBOARD'S DOORS. MOUNT IN NEMA-3R JUNCTION BOX.
5. PROVIDE PG&E METER PER PG&E REQUIREMENTS.
6. COORDINATE THE DISCONNECT AND REMOVAL OF THE EXISTING FEEDERS WITH THE PROJECT SCHEDULE AFTER REMOVAL OF EXISTING FEEDERS AND CONDUITS. CONTRACTOR SHALL RECONNECT PANEL WITH NEW FEEDERS AND CONDUIT AS SHOWN.
7. PROVIDE 200A-3P DISCONNECT SWITCH FOR TRANSFORMER.
8. PROVIDE 400A-3P DISCONNECT SWITCH FOR TRANSFORMER.
9. PROVIDE SPACE FOR FUTURE CIRCUIT BREAKERS.

CABLE SCHEDULE:

1. (N) (1) 4"C - PG&E PRIMARY.
2. (N) (7) 5"C - PG&E SECONDARY.
3. (E) FEEDER TO REMAIN.
4. (N) 4"C - (N) 4#600 + (1) #1/0 GND.
5. (N) 2 SETS - (N) 2.5"C - (N) 3#250 + 1#2 GND.
6. (N) 2 1/2"C - (N) 3#300 + (1) #4 GND.
7. (N) (2) SETS - (N) 4"C - (N) 4#600 + 1#3/0 GND.
8. (N) 2"C - (N) 3#1 + 1#6 GND.
9. (N) 4"C - (N) 4#500 + 1#3 GND.
10. (N) 2 SETS - (N) 3"C - (N) 4#350 + 1#2/0 GND.
11. (N) 1 1/2"C - (N) 4#1 + 1#6 GND.
12. (N) 2"C - (N) 4#1/0 + 1#6 GND.
13. (N) 2"C - (N) 4#3/0 + 1#6 GND.
14. (N) 1 1/2"C - (N) 3#1 + 1#6 GND.
15. (N) 4"C - (N) 4#600 + 1#3/0 GND.

1 NEW SINGLE LINE DIAGRAM

E4.2 NOT TO SCALE

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PROJECT

LAUREL ELEMENTARY SCHOOL - HVAC REPLACEMENT

SAN MATEO-FOSTER CITY SCHOOL DISTRICT

CONSULTANT

REGISTERED PROFESSIONAL ENGINEER JAMES S. FERNANDEZ E16890 Exp. 06/30/23 ELECTRICAL STATE OF CALIFORNIA

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JOB # DC21030.00

STAMP

STATE

DSA FILE NUMBER 41-26

APPL # 01-119551

REVISIONS

No.	Description	Date
A	ADDENDUM 1	11/24/2021

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	

SHEET

NEW SINGLE LINE DIAGRAM

DATE 11/24/2021

JOB # 2021005.03

SHEET # AD-1

E4.2

PANEL NAME:	A/M
VOLTAGE:	208/120V
PHASE:	3
WIRE:	4
TYPE:	NEMA 3R
MOUNTING:	SURFACE

FED FROM: XFMR 'TA'
MAIN C/B: 400A-3P
BUSSING: 400 AMP
MIN. A.I.C.: 10,000
SUB-FEED C/B:
FEED THRU LUGS: YES

LOAD TYPE (KVA) LTG	REC	MTR	NCL	CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA) LTG	REC	MTR	NCL	CIRCUIT DESCRIPTION
			0.89	15A	1	A	2	50A				4.37	(N) HP-3 - CLASSROOM 3
			0.89	2P	3	B	4	2P				4.37	" " " " "
			3.74	50A	5	C	6	50A				4.37	(N) HP-4 - CLASSROOM 4
			3.74	2P	7	A	8	2P				4.37	" " " " "
			3.74	50A	9	B	10	20A				1.24	(N) SS0-A1 / SS1-A-1
			3.74	2P	11	C	12	2P				1.24	" " " " "
			0.89	15A	13	A	14	20A/1P				1.00	(N) EXHAUST FAN EF-A
			0.89	2P	15	B	16	15A				0.89	(N) FC-3 - CLASSROOM 3
				20A/1P	17	C	18	2P				0.89	" " " " "
				20A/1P	19	A	20	15A				0.89	(N) FC-4 - CLASSROOM 4
				20A/1P	21	B	22	2P				0.89	" " " " "
				20A/1P	23	C	24	20A/1P					SPARE
				20A/1P	25	A	26	20A/1P					SPARE
				20A/1P	27	B	28	20A/1P					SPARE
				20A/1P	29	C	30	20A/1P					SPARE
				125A	31	A	32	20A/1P					SPARE
				3P	33	B	34	20A/1P					SPARE
					35	C	36	20A/1P					SPARE
				125A	37	A	38	20A/1P					SPARE
					39	B	40	20A/1P		0.72			(N) GFCI MOUNT ON ROOF - BLDG A
				3P	41	C	42	20A/1P		0.48			(N) MOTOR RATED SWITCH FOR COND. PUMP - BLDG A
0	0	0	18.6						0	1.2	0	24.5	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	1.2	1.00	1.2
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125%	0	1.25	0.0
+ REMAINING MOTORS x 100%	0	1.00	0.0
(NCL) NON CONTINOUS LOAD x 100%	43.1	1.00	43.1

	Yes/No
FULL RATED A/C	Y
SERIES RATED A/C	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	16.2
KVA PHASE B (CONNECTED)	13.6
KVA PHASE C (CONNECTED)	14.5
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	44.3
TOTAL LOAD AMPERES	123.0

PANEL NAME:	B/M
VOLTAGE:	208/120V
PHASE:	3
WIRE:	4
TYPE:	NEMA 3R
MOUNTING:	SURFACE

FED FROM: XFMR 'TB'
MAIN C/B: 600A-3P
BUSSING: 600 AMP
MIN. A.I.C.: 10,000
SUB-FEED C/B: 150A-3P
FEED THRU LUGS: YES

LOAD TYPE (KVA) LTG	REC	MTR	NCL	CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA) LTG	REC	MTR	NCL	CIRCUIT DESCRIPTION
			3.74	50A	1	A	2	50A				3.74	(N) HP-8 - CLASSROOM 8
			3.74	2P	3	B	4	2P				3.74	" " " " "
			3.74	50A	5	C	6	50A				3.74	(N) HP-9 - CLASSROOM 9
			3.74	2P	7	A	8	2P				3.74	" " " " "
			3.74	50A	9	B	10	50A				3.74	(N) HP-10 - CLASSROOM 10
			3.74	2P	11	C	12	2P				3.74	" " " " "
			0.89	15A	13	A	14	15A				0.89	(N) FC-8 - CLASSROOM 8
			0.89	2P	15	B	16	2P				0.89	" " " " "
			0.89	15A	17	C	18	15A				0.89	(N) FC-9 - CLASSROOM 9
			0.89	2P	19	A	20	2P				0.89	" " " " "
			0.89	15A	21	B	22	15A				0.89	(N) FC-10 - CLASSROOM 10
			0.89	2P	23	C	24	2P				0.89	" " " " "
				20A/1P	25	A	26	20A/1P					SPARE
				20A/1P	27	B	28	20A/1P					SPARE
				20A/1P	29	C	30	20A/1P					SPARE
				20A/1P	31	A	32	20A/1P					SPARE
				125A	33	B	34	20A/1P					SPARE
				3P	35	C	36	20A/1P					SPARE
					37	A	38	20A/1P					SPARE
			0.36		39	B	40	20A/1P		0.54			(N) GFCI REC MOUNT ON ROOF - BLDG B
			0.36		41	C	42	20A/1P		0.54			" " " " "
0	0	0.7	27.8						0	1.1	0	27.6	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	1.1	1.00	1.1
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125%	0.4	1.25	0.5
+ REMAINING MOTORS x 100%	0.4	1.00	0.4
(NCL) NON CONTINOUS LOAD x 100%	55.7	1.00	55.7

	Yes/No
FULL RATED A/C	Y
SERIES RATED A/C	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	18.6
KVA PHASE B (CONNECTED)	19.5
KVA PHASE C (CONNECTED)	19.5
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	57.6
TOTAL LOAD AMPERES	159.9

PANEL NAME:	C/M
VOLTAGE:	208/120V
PHASE:	3
WIRE:	4
TYPE:	NEMA 1
MOUNTING:	SURFACE

FED FROM: XFMR 'TC'
MAIN C/B: 600A-3P
BUSSING: 600 AMP
MIN. A.I.C.: 10,000
SUB-FEED C/B:
FEED THRU LUGS: YES

LOAD TYPE (KVA) LTG	REC	MTR	NCL	CB AMP/P	CKT #	PH	CKT #	CB AMP/P	LOAD TYPE (KVA) LTG	REC	MTR	NCL	CIRCUIT DESCRIPTION
			3.74	50A	1	A	2	50A				3.74	(N) HP-11 - CLASSROOM 11
			3.74	2P	3	B	4	2P				3.74	" " " " "
			3.74	50A	5	C	6	50A				3.74	(N) HP-12 - CLASSROOM 12
			3.74	2P	7	A	8	2P				3.74	" " " " "
			3.74	50A	9	B	10	50A				3.74	(N) HP-13 - CLASSROOM 13
			3.74	2P	11	C	12	2P				3.74	" " " " "
			3.74	50A	13	A	14	50A				3.74	(N) HP-14 - CLASSROOM 14
			3.74	2P	15	B	16	2P				3.74	" " " " "
				15A	17	C	18	15A				0.89	(N) FC-11 - CLASSROOM 11
				2P	19	A	20	2P				0.89	" " " " "
				15A	21	B	22	15A				0.89	(N) FC-12 - CLASSROOM 12
				2P	23	C	24	2P				0.89	" " " " "
				15A	25	A	26	15A				0.89	(N) FC-13 - CLASSROOM 13
				2P	27	B	28	2P				0.89	" " " " "
				125A	29	C	30	15A				0.89	(E) PANEL C1
					31	A	32	2P				0.89	" " " " "
				3P	33	B	34	15A				0.89	" " " " "
				125A	35	C	36	2P				0.89	(E) PANEL C2
					37	A	38	20A/1P			0.48		(N) MOTOR RATED SWITCH FOR COND. PUMP - BLDG C
				3P	39	B	40	20A/1P		0.72			(N) GFCI REC MOUNT ON ROOF - BLDG C
		0.48		20A/1P	41	C	42	20A/1P		0.72			" " " " "
0	0	0.5	30.9						0	1.4	0.5	38.9	

LOAD SUMMARY	CONNECTED KVA	DEMAND FACTOR	DEMAND KVA
(LTG) LIGHTING X 125%	0	1.25	0.0
(REC) RECEPTS PER 220.44;	1.4	1.00	1.4
10KVA x 100% + REMAINDER x 50%	0	0.50	0.0
(MTR) LARGEST MOTOR X 125%	0.5	1.25	0.6
+ REMAINING MOTORS x 100%	0.5	1.00	0.5
(NCL) NON CONTINOUS LOAD x 100%	68.8	1.00	68.8

	Yes/No
FULL RATED A/C	Y
SERIES RATED A/C	N
SPD	N
COPPER BUSSING	Y
ALUMINUM BUSSING	N

KVA PHASE A (CONNECTED)	25.6
KVA PHASE B (CONNECTED)	25.9
KVA PHASE C (CONNECTED)	19.8
SUB FEED CONNECTED LOAD	
TOTAL DEMAND KVA	71.4
TOTAL LOAD AMPERES	198.2

SHEET NOTES:

1. PROVIDE SUBFEED CIRCUIT BREAKERS TO RE-FEED EXISTING PANELS. SEE SINGLE LINE DIAGRAM FOR ADDITIONAL REQUIREMENTS.

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STAMP

STATE

DSA FILE NUMBER 41-26

APPL # 01-119551

REVISIONS

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

MILESTONES

DD	
90% CD	
DSA SUB	05/28/2021
BACKCHECK	

SHEET

PANEL SCHEDULES

DATE 11/24/2021

JOB # 2021005.03

SHEET # AD-1

E4.3