

November 28, 2022

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

**Subject:** Foster City Elementary School HVAC Replacement  
San Mateo - Foster City School District  
Aedis Project No. 2021011.05  
DSA Application #01-120182

### **ADDENDUM NO. 1**

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

#### **SPECIFICATIONS**

ITEM NO. 1.1:     SECTION 26 05 11 – ELECTRICAL DEMOLITION

Add:           The specification in its entirety per 26 05 11 Electrical Demolition

ITEM NO. 1.2:     SECTION 26 05 73 – OVERCURRENT PROTECTION DEVICE COORDINATION AND  
ARC FLASH STUDY

Replace:       The specification in its entirety per 26 05 73 Over-Current Protection Device  
Coordination and Arc Flash Study

#### **DRAWINGS**

##### **ARCHITECTURAL**

ITEM NO. 1.3:     DRAWING SHEET A8.10 – DETAILS

Revise:         Detail 19 per AD1-A8.10.

##### **ELECTRICAL**

ITEM NO. 1.4:     DRAWING SHEET E1.1 – ELECTRICAL SITE PLAN

Revise:         Conduit Schedule tag #4 per AD1-E1.1.

ITEM NO. 1.5:     DRAWING SHEET E2.3 – DEMOLITION FLOOR PLANS – BLDG K, L, ANNEX & LIBRARY

Revise:         Background to make demo notes clear per AD1-E2.3.

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Foster City Elementary School HVAC Replacement  
San Mateo – Foster City School District  
Aedis Project No. 2021011.05

ITEM NO. 1.6:      DRAWING SHEET E3.1 – NEW FLOOR PLANS – BLDG A, B, C & D

Revise:      Sheet Note #4 per AD1-E3.1.

Revise:      Unreadable text to make text legible per AD1-E3.1.

ITEM NO. 1.7:      DRAWING SHEET E3.2 – NEW FLOOR PLANS – BLDG E, F, G & H

Revise:      Sheet Note #1 per AD1-E3.2.

ITEM NO. 1.8:      DRAWING SHEET E4.3 – PANEL SCHEDULES

Revise:      Panel names to indicate as new per AD1-E4.3.

ITEM NO. 1.9:      DRAWING SHEET E4.4 – PANEL SCHEDULES

Revise:      Panel names to indicate as new per AD1-E4.4.



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Aedis Architects  
June Yip, Principal



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Electrical, American Consulting Engineers Electrical  
Sammy Fernandez

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Division of the State Architect

**ADDENDUM NO. 1**

11/28/2022

Foster City Elementary School HVAC Replacement  
San Mateo – Foster City School District  
Aedis Project No. 2021011.05

**Attachments:**

Specifications:

26 05 11 – Electrical Demolition (1 pages)

26 05 73 – Over-Current Protection Device Coordination and Arc Flash Study (6 pages)

Drawing:

**ARCHITECTURAL:**

SHEET AD1-A8.10

**ELECTRICAL:**

SHEET AD1-E1.1

SHEET AD1-E2.3

SHEET AD1-E3.1

SHEET AD1-E3.2

SHEET AD1-E4.3

SHEET AD1-E4.4

SECTION 26 05 11

ELECTRICAL DEMOLITION

PART 1 - GENERAL

1.1 Description of Work

- A. General - Remove all material designated to be removed on the drawings and that is surplus to the needs of the system as may be designated by the Owner's Representative. Specific work shall be provided as specified below:
- B. Remove Existing Equipment – Electrical/Fire Alarm Equipment to be removed shall include but not be limited to existing initiating devices, notification devices, conductors, conduit, raceway and other items as shown on the drawings or specified.
- C. Clean Surface Areas - Clean all floors, streets, sidewalks, driveways, parking lots and landscaped areas of all trash and debris deposited as a result of the work. Clean daily and maintain the property free of trash and debris.

1.2 Standards and Codes

- A. Work and material shall be in compliance with and according to the requirements of the latest revision of the following standards and codes.
  - 1. California Electrical Code (CEC).

PART 2 - EXECUTION

2.1 Disposal

- A. Except where specifically noted otherwise on the drawings or elsewhere in these specifications, the contractor assumes ownership of all material removed from the project site and assumes all responsibility for its proper disposal.

2.2 Cleanup

- A. Contractor shall maintain the work site in a neat and orderly state. Contractor shall remove demolition material from the job site daily. No demolition material shall be left on the job site after working hours without written approval from the Owner's Representative.

END OF SECTION

SECTION 26 05 73

OVER-CURRENT PROTECTIVE DEVICE COORDINATION AND ARC FLASH STUDY

PART 1 - GENERAL

1.1 Related Documents

Drawing and general provision of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this section.

1.2 Summary

This Section includes computer-based, arc flash, fault-current and over current protective device coordination studies, and the setting of these devices.

1.3 Submittals

A. Product Data: For computer software program to be used for studies.

B. Other Action Submittals:

1. Coordination-study including computed computer program input data sheets.
2. Submit completed Coordination Study for review and coordination with data provided by PG&E. If required, revisions shall be made to the completed Coordination Study based upon any revised and/or updated data provided by PG&E. Include in the scope of work, (1) round of review and coordination and (1) revised set of Coordination Study Calculations based upon the PG&E data coordination indicated above.

1.4 Quality Assurances

- A. Studies shall use computer programs that are distributed nationally and are in wide use. Software algorithms shall comply with requirements of standards and guides specified in this Section. Manual calculations are not acceptable.
- B. Coordination-Study Specialist Qualifications: An organization experience in application of computer software used for studies, having performed successful studies in similar magnitude on electrical distribution systems using similar devices.
- C. Comply with IEEE 399 for general study procedures.
- D. Comply with IEEE 242 for short-circuit currents and coordination time intervals.

PART 2 - PRODUCTS

# FOSTER CITY ELEMENTARY SCHOOL HVAC REPLACEMENT

San Mateo-Foster City School District

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## Addendum #1

### 2.1 Computer Software Developers

- A. Available Computer Software Developer: Subject to compliance with requirements, companies offering computer software may be used in Work include, but not are limited, to the following:
- B. CYME International, Inc.
- C. EDSA Micro Corporation.
- D. Electrical System Analysis, Inc.
- E. SKM System Analysis, Inc.

### 2.2 Computer Software Program Requirements

- A. Comply with IEEE 399
- B. Analytical features of fault-current-study computer program shall include “mandatory,” “very desirable,” and “desirable” features as listed in IEEE 399, Table 7-4.
- C. Computer software program shall be capable to plotting and diagramming time-current-characteristic curves as part of its output. Computer software program shall report devices setting and ratings of all over current protective devices.

## PART 3 - EXECUTION

### 3.1 Examination

- A. Examine Project over current protective devices submittals for compliance with electrical disruption system coordination requirements and other conditions affecting performance.
- B. Proceed with coordination study only after relevant equipment submittals have been assembled. Over current protection devices not submitted for approval with coordination study may not be used in study.

### 3.2 Coordination Study

- A. Gather and tabulate the following input data to support coordination study.
  - 1. Obtain the required information from the utility company (PG&E). If complete information is not provided, contact the utility company to request any additional information required for the study.
  - 2. Product data for over current protective specified in the Division 26 Sections and involved in over current protective device coordination studies. Use equipment designation tags that are consistent with electrical distribution

system diagrams, over current protective device submittals, input and output data, and recommended device setting.

3. Impedance of utility service entrance.
4. Electrical distribution system diagram showing the following:
  - a. Load current that is the basis for sizing continuous ratings of circuits for cable and equipment.
  - b. Circuit breakers and fuse-current ratings and type.
  - c. Relays and associated power and current transformer rating and ratios.
  - d. Transformer kilovolt ampreses, primary and secondary voltages, connection type, impedance, and X/R ratios.
  - e. Generator kilovolt amperes, size, voltage, and source impedance.
  - f. Cables. Indicate conduit material, size of conductors, conductor insulation, and length.
  - g. Busway ampacity and impedance.
  - h. Motor horsepower and code letter designation according to NEMA MG 1.
  - i. Datasheets to supplement electrical distribution system diagram, cross referenced with tag numbers on diagram.
  - j. Special load considerations, including starting inrush current and frequent starting and stopping.
  - k. Magnetic inrush current overload capabilities of transformers
  - l. Motor full-load current, locked rotor current, services factor, starting time, type of start, and thermal-damage curve.
  - m. Ratings, type, and setting of utility company's over current protective devices.
  - n. Special over current protective device settings or type stipulated by utility company.
  - o. Time-current-characteristic curves of devices indicated to be coordinated.
  - p. Manufacturer, frames size, interrupting rating in amperes symmetrical, amperes or current sensor rating, long-time adjustment range, short-time adjustment range and instantaneous adjustment range for circuit breakers.

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## Addendum #1

- q. Manufacturer and type, ampere-tap adjustment range, time-delay adjustment range, instantaneous attachment, and current transformer ratios for over current relays.
      - r. Panel boards, switchboards, motor control center ampacity and interrupting rating in amperes rms symmetrical.
- B. Perform coordination study and prepare a written report using the result of fault-current study and approved computer software program. Comply with IEEE 399.
- C. Comply with NFPA 70 for over current protection of circuit elements and devices.
- D. Transformer Primary Over Current Protective Devices:
  - 1. Devices shall not operate in repose to the following:
    - a. Self-cooled, full-load current or forced-air-cooled, full-load current, whichever is specified for that transformer.
    - b. Permissible transformer overloads according to IEEE C57.96 if required by unusual loading or emergency conditions.
  - 2. Devices shall protect transformers according to IEEE C7.12.00, for fault currents.
- E. Conductor Protection: Protect cables against damage from fault currents according to ICEA P-32-382, ICEA P-45-82, and conductor melting curves in IEEE 242. Verify adequacy of phase conductors at maximum three-phase bolted fault currents, equipment grounding conductors, and grounding electrode conductors at maximum ground-fault currents.
- F. Coordination-Study Reports: Prepare a written report indicating the following results of coordination study:
  - 1. Tabular Formatting of Setting Selected for Over Current Protective Devices
  - 2. Device tag:
    - a. Relay-current transformer ratios; and tap, time-dial and instantaneous setting.
    - b. Fuse-current rating and type.
    - c. Ground-fault relay-pickup and time delay setting.
  - 3. Coordination Curves: Prepared to determine setting of over current protective devices to achieve selective coordination. Graphically illustrate that adequate time separation exists between series devices, including power utility company' upstream devices. Show the following specific information:

- a. Device tags.
- b. Voltage and current ratio for curves.
- c. Three-phase and single-phase damage points for each transformer,
- d. No damage, melting, and clearing curves for fuses,
- e. Cable damage curves
- f. Transformer inrush points
- g. Maximum fault-current cutoff points.
- h. Completed data sheets for setting of over current protective devices.
- i. Arc Flash Recommendations

G. Coordination Study Revisions:

- 1. One revision to the coordination study shall be included in the scope of work.
- 2. Revision shall include the request of additional information from the utility company (PG&E) as needed.

3.3 Over Current Protective Device Setting

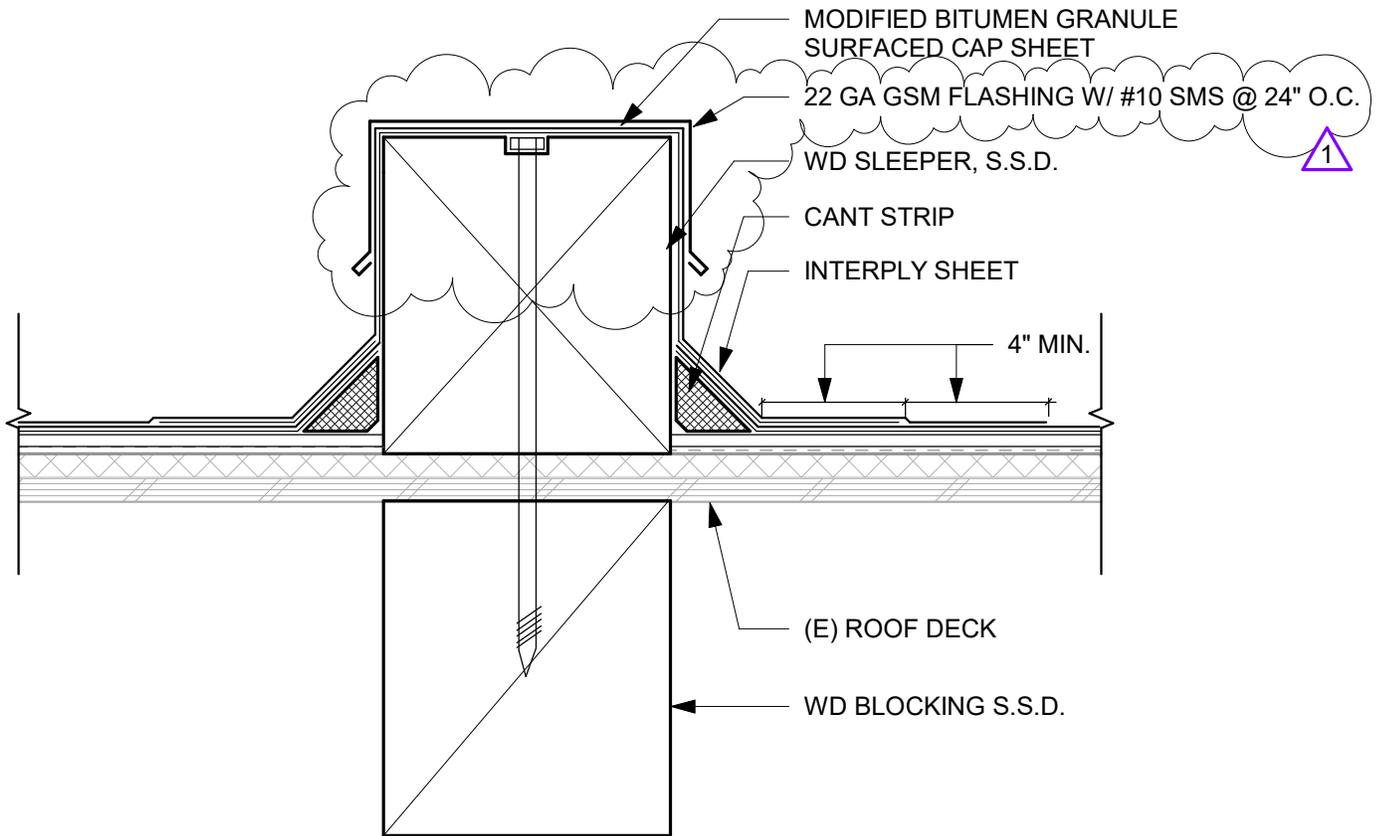
- A. Manufacturer's Field service: Engage a factory-authorized service representative of electrical distribution equipment being set and adjusted, to assist in the setting of over current protective devices within equipment.
- B. Testing: Perform the following device setting and prepare reports:
  - 1. After installing over current protective devices and during energizing process of electrical distribution system, perform the following:
    - a. Verify that over current protective devices meet parameter used in studies.
    - b. Adjust device to values listed in study results.
    - c. Adjust devices according to recommendations in Chapter 7, "Inspection and Testing Procedures, and "Table 10.7 and 10.8 in NETA ATS.

3.4 Arc Flash Labeling

- A. Provide all required arc flash labeling for the switchgear.

FOSTER CITY ELEMENTARY SCHOOL HVAC REPLACEMENT  
San Mateo-Foster City School District  
Project No. 2021011.05  
**Addendum #1**

END OF SECTION

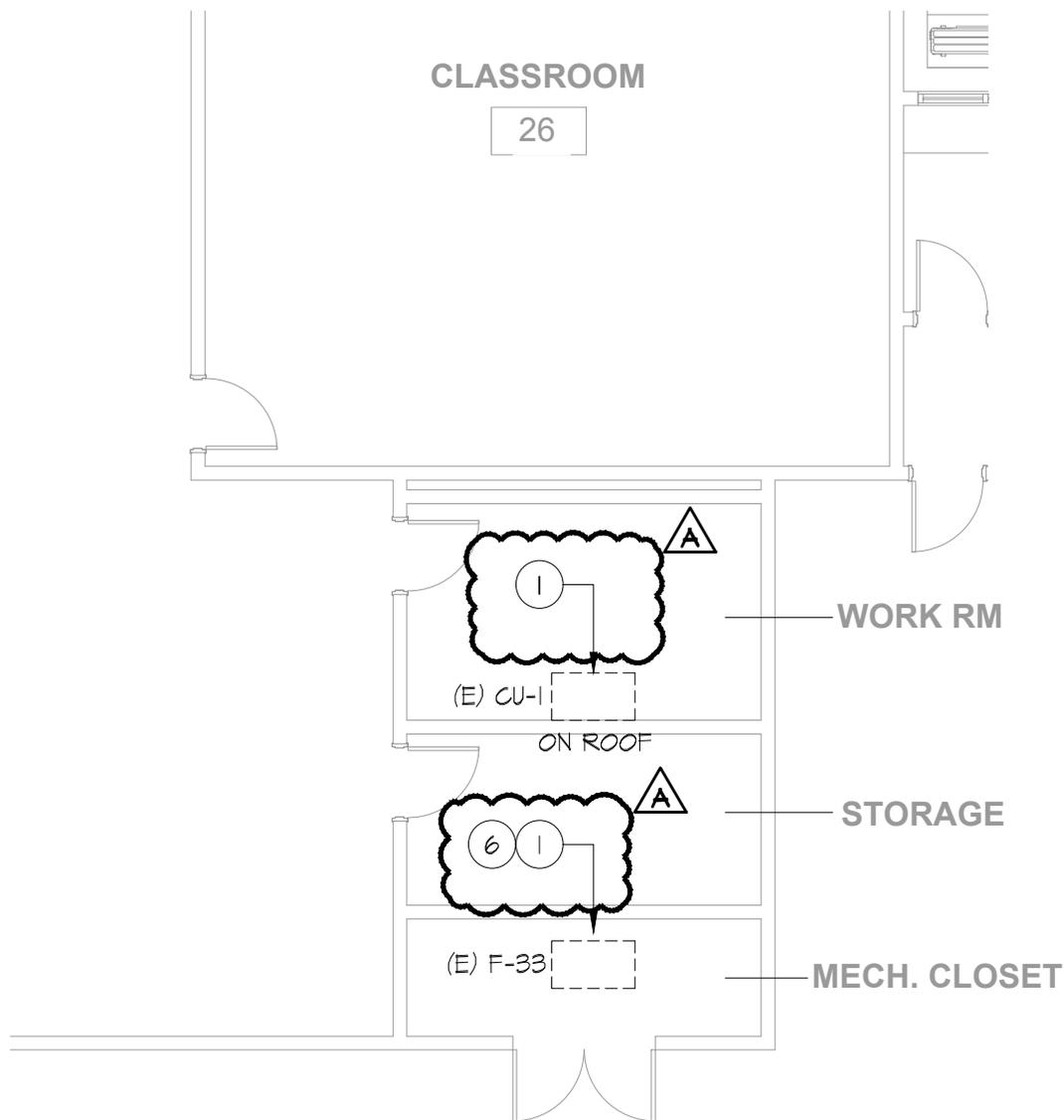


**19 BUILT-UP ROOFING CURB FLASHING**  
 SCALE: 3" = 1'-0"



|  |  |  |                  |
|--|--|--|------------------|
|  |  | FOSTER CITY ELEMENTARY SCHOOL<br>HVAC REPLACEMENT<br>SAN MATEO-FOSTER CITY SCHOOL DISTRICT |                  |
|  |  | FILE NO.: 41-26  | SHEET            |
| 387 S. 1st Street, Suite 300<br>San Jose, CA., 95113<br>tel: (408) 300 - 5160<br>fax: (408) 300 - 5121 |  | APPL NO.: 01-120182  | <b>AD1-A8.10</b> |
|  |  | JOB NO. 2021011.05   |                  |
|  |  | DATE 11/28/22  |                  |



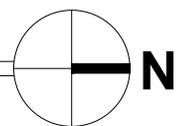


# PARTIAL DEMOLITION FLOOR PLAN - LIBRARY BUILDING

4

E2.3

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



**American Consulting Engineers  
Electrical, Inc.**

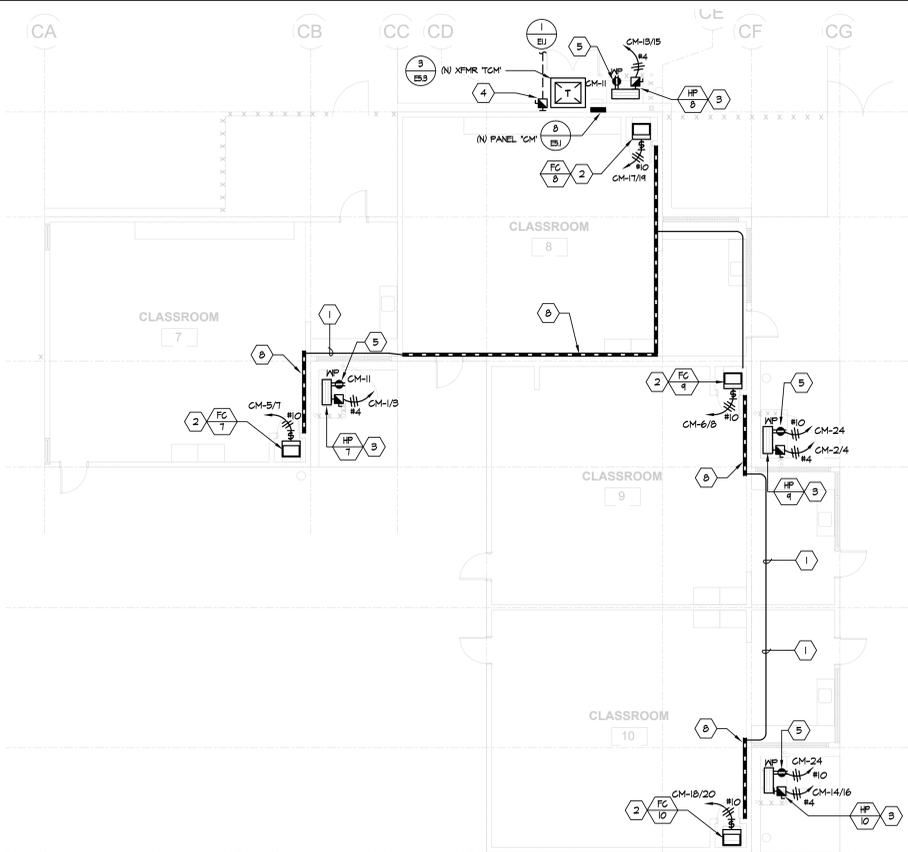
1590 The Alameda, Suite 200  
San Jose, CA 95126  
JOB # EK21087.00

408/236-2312  
Fax: 408/236-2316

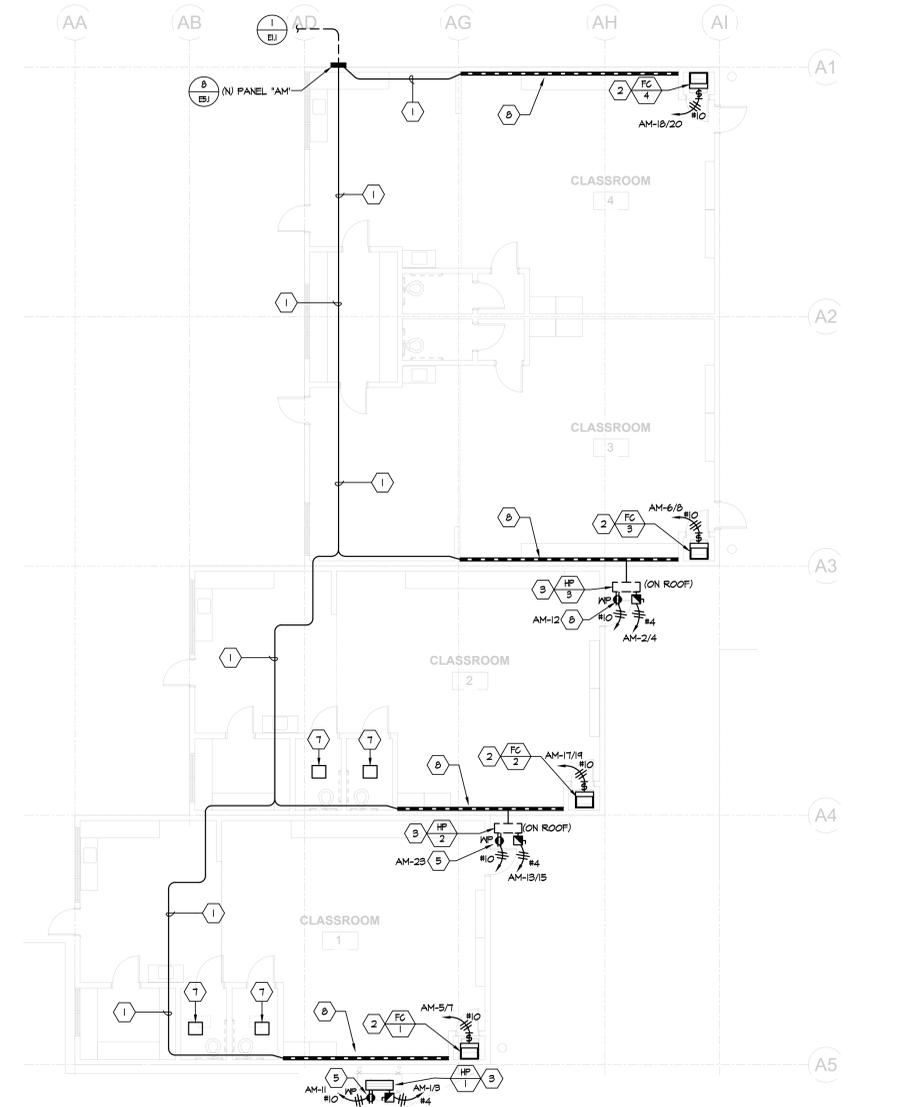
\*REFERENCE SHEET E2.3



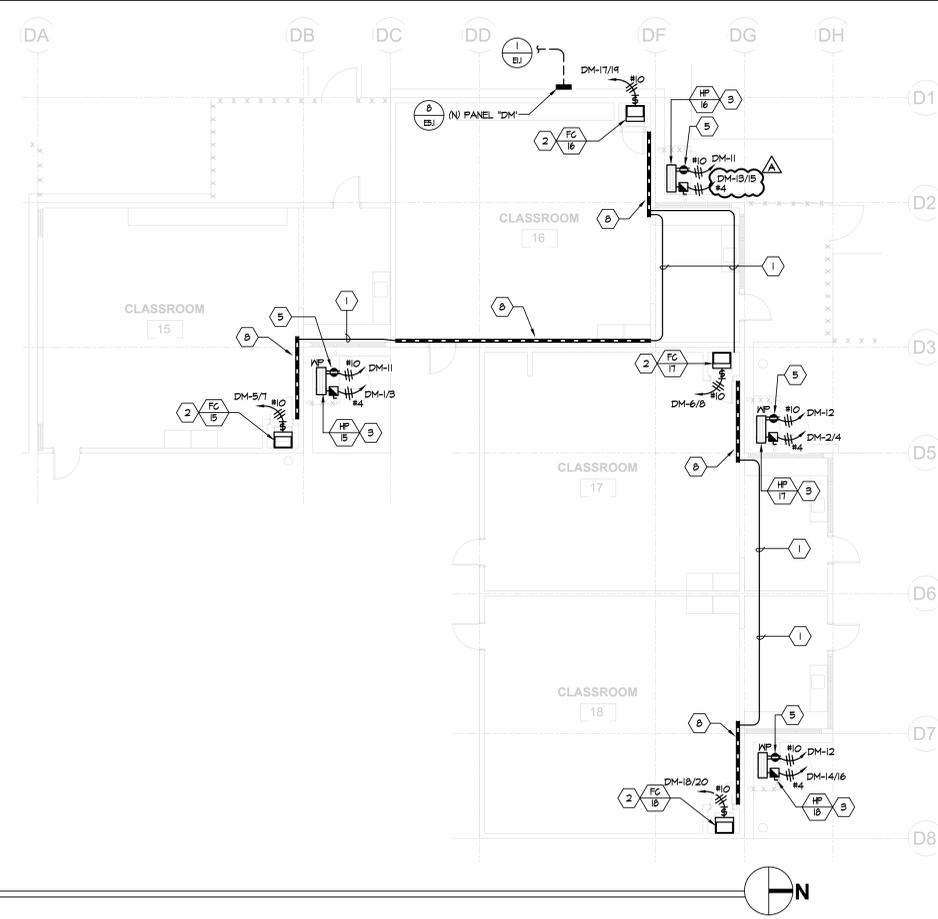
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|--|--|--|-----------------|
|  |  | FOSTER CITY ELEMENTARY SCHOOL<br>HVAC REPLACEMENT<br>SAN MATEO-FOSTER CITY SCHOOL DISTRICT |                 |
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|  |  | DATE 11/28/22  |                 |



**3 NEW FIRST FLOOR PLAN - BLDG C & D**  
E3.1 SCALE: 1/8" = 1'-0"



**2 NEW FIRST FLOOR PLAN - BLDG A**  
E3.1 SCALE: 1/8" = 1'-0"



**1 NEW FIRST FLOOR PLAN - BLDG B**  
E3.1 SCALE: 1/8" = 1'-0"

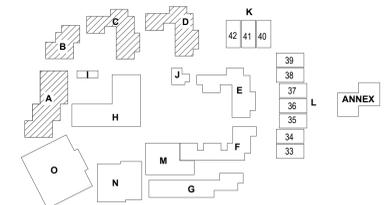
**GENERAL NOTES:**

- ALL CONDUITS SHALL BE ROUTED CONCEALED IN CEILING BELOW WHERE POSSIBLE. ALL EXPOSED CONDUITS SHALL BE PAINTED.
- CONTRACTOR SHALL COORDINATE EXACT LOCATIONS AND POINTS OF CONNECTION FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR. ADJUST LOCATION AND CONNECTION POINTS AS NEEDED.
- SEE PANEL SCHEDULES AND SINGLE LINE DIAGRAM FOR POWER CONNECTION REQUIREMENTS.
- COORDINATE WITH ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL REQUIREMENTS.
- FUSED AND UNFUSED DISCONNECT SWITCHES SHALL BE 600V RATED, HEAVY DUTY CYCLE. FUSES FOR MECHANICAL UNITS SHALL BE SIZED PER THE MANUFACTURER'S RECOMMENDATION.
- PROVIDE CONDUIT ROOF PENETRATIONS REQUIRED. COORDINATE ROOF PENETRATION LOCATIONS WITH MECHANICAL'S PIPING ROOF PENETRATIONS. ROOF PENETRATION SHALL BE PER DETAIL 4MP6/01.
- WHERE DUAL CHANNEL SURFACE MOUNTED RACEWAY IS REQUIRED, PROVIDE WIRE-OLD #5400 RACEWAY.
- MULTIPLE CONDUCTORS ROUTED IN SHARED CONDUITS OR SHARED RACEWAY CHANNELS SHALL BE DERATED PER THE NEC TABLE 310.15 (B) (3) (a).
- IN BUILDINGS A, B, C AND D, EACH BUILDING HAS EXISTING CIRCUITS THAT ARE FED FROM PANELS THAT ARE LOCATED AT THEIR BUILDING AND PANELS THAT ORIGINATE FROM OTHER BUILDINGS. CONTRACTORS SHALL PROVIDE ENGRAVED LABELS FOR ALL EXISTING AND NEW PANELS IN EACH BUILDING INDICATING THE ABOVE.
- A MAXIMUM OF (4) CURRENT CARRYING CONDUCTORS SHALL BE ROUTED IN EACH CHANNEL OF THE DUAL CHANNEL RACEWAY.

**SHEET NOTES:**

- ROUTE CONDUITS IN THE ABOVE ACCESSIBLE T-BAR CEILING SPACE.
- NEW 30A-2P, NEMA-1, MOTOR-RATED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- NEW 60A-2P, NEMA-3R, FUSED DISCONNECT SWITCH FOR MECHANICAL UNIT.
- NEW 200A-3P, NEMA-3R, FUSED DISCONNECT SWITCH.
- PROVIDE NEW WEATHERPROOF GFCI RECEPTACLE. RECEPTACLE SHALL BE MOUNTED ON A WEATHERPROOF BOX WITH IN-USE COVER. COVER SHALL BE INTERMATIC INFINITY "BOSS".
- NOT USED.
- ROUTE CONDUITS CONCEALED ABOVE THE RESTROOMS HARD LID CEILING. PROVIDE ACCESS HATCH REQUIRED TO ACCESS THE SPACE ABOVE AND INSTALL THE CONDUITS.
- PROVIDE NEW DUAL CHANNEL SURFACE MOUNTED RACEWAY TO ROUTE POWER EXPOSED IN THE CLASSROOMS.

**BUILDING KEY**



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PROJECT  
**FOSTER CITY  
ELEMENTARY  
SCHOOL - HVAC  
REPLACEMENT**

SAN MATEO-FOSTER CITY  
SCHOOL DISTRICT  
CONSULTANT



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STAMP

STATE  
DSA FILE NUMBER **41-26**  
APPL # **01-120182**

| REVISIONS | No.        | Description | Date       |
|-----------|------------|-------------|------------|
| ▲         | APPENDUM 1 |             | 11/28/2022 |

| MILESTONES | Date       |
|------------|------------|
| SD         | 03/07/2022 |
| 90% CD     | 04/01/2022 |
| DSA SUB    | 04/12/2022 |
| BACKCHECK  | 10/24/2022 |

SHEET  
**NEW FLOOR  
PLANS -  
BLDG A, B, C & D**

DATE **11/28/2022**  
JOB # **2021011.05**  
SHEET # **AD1-  
E3.1**

# PARTIAL SHEET NOTES:

▲



NEW 200A-3P, NEMA-3R, FUSED DISCONNECT SWITCH.



American Consulting Engineers  
Electrical, Inc.

1590 The Alameda, Suite 200  
San Jose, CA 95126  
JOB # EK21087.00

408/236-2312  
Fax: 408/236-2316

\*REFERENCE SHEET E3.2



|   |  |                          |
|---|--|--------------------------|
| <br>387 S. 1st Street, Suite 300<br>San Jose, CA., 95113<br>tel: (408) 300 - 5160<br>fax: (408) 300 - 5121 | FOSTER CITY ELEMENTARY SCHOOL<br>HVAC REPLACEMENT<br>SAN MATEO-FOSTER CITY SCHOOL DISTRICT |                          |
|   | FILE NO.: 41-26<br>APPL NO.: 01-120182<br>JOB NO. 2021011.05<br>DATE 11/28/22              | SHEET<br><b>AD1-E3.2</b> |

| PANEL NAME                             |                 | FED FROM             |            |        |                         |      |    |      |      |                         |                 |     |        |      |                         |  |  |  |      |
|--|-----------------|----------------------|------------|--------|-------------------------|------|----|------|------|-------------------------|-----------------|-----|--------|------|-------------------------|--|--|--|------|
| VOLTAGE                                |                 | MSG                  |            |        |                         |      |    |      |      |                         |                 |     |        |      |                         |  |  |  |      |
| PHASE                                  |                 | MAIN CB: 225 AMP     |            |        |                         |      |    |      |      |                         |                 |     |        |      |                         |  |  |  |      |
| WIRE                                   |                 | BUSSING: 225 AMP     |            |        |                         |      |    |      |      |                         |                 |     |        |      |                         |  |  |  |      |
| TYPE                                   |                 | MIN. AIC: 22,000     |            |        |                         |      |    |      |      |                         |                 |     |        |      |                         |  |  |  |      |
| MOUNTING                               |                 | SUB-FEED CB: T10A-3P |            |        |                         |      |    |      |      |                         |                 |     |        |      |                         |  |  |  |      |
|  |                 | FEED THRU LUGS: NO   |            |        |                         |      |    |      |      |                         |                 |     |        |      |                         |  |  |  |      |
| CIRCUIT DESCRIPTION                    | LOAD TYPE (KVA) |                      |            |        | CB                      | OVRT | PH | OVRT | PH   | CB                      | LOAD TYPE (KVA) |     |        |      | CIRCUIT DESCRIPTION     |  |  |  |      |
|  | LTG             | REC                  | MTR        | NCL    |                         |      |    |      |      |                         | LTG             | REC | MTR    | NCL  |                         |  |  |  |      |
| (E) LTG - E100, E101, E104             | 1.00            |                      |            |        | 20A/1P                  |      |    |      |      | 1                       | A               | 2   | 20A/1P | 1.00 | (E) LTG - E100, E103    |  |  |  |      |
| (E) LTG - E107, E110                   | 1.00            |                      |            |        | 20A/1P                  |      |    |      |      | 3                       | B               | 4   | 20A/1P | 1.00 | (E) LTG - E106, E109    |  |  |  |      |
| SPARE                                  |                 |                      |            |        | 20A/1P                  |      |    |      |      | 5                       | C               | 6   | 20A/1P | 1.00 | (E) LTG - BUILDING J    |  |  |  |      |
| SPARE                                  |                 |                      |            |        | 20A/1P                  |      |    |      |      | 7                       | A               | 8   | 20A/1P |      | SPARE                   |  |  |  |      |
| SPARE                                  |                 |                      |            |        | 20A/1P                  |      |    |      |      | 9                       | B               | 10  | 20A/1P |      | SPARE                   |  |  |  |      |
| SPARE                                  |                 |                      |            |        | 20A/1P                  |      |    |      |      | 11                      | C               | 12  | 20A/1P |      | SPARE                   |  |  |  |      |
| SPARE                                  |                 |                      |            |        | 20A/1P                  |      |    |      |      | 13                      | A               | 14  | 20A/1P |      | SPARE                   |  |  |  |      |
| SPARE                                  |                 |                      |            |        | 20A/1P                  |      |    |      |      | 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                   |  |  |  |      |
| (N) PANEL DM (SUBFEED CIRCUIT BREAKER) | 4.32            | 13.89                |            |        | 20A/1P                  |      |    |      |      | 37                      | A               | 38  | 20A/1P |      | SPARE                   |  |  |  |      |
| SPARE                                  | 3.24            | 15.18                |            |        | 20A/1P                  |      |    |      |      | 39                      | B               | 40  | 20A/1P |      | SPARE                   |  |  |  |      |
| SPARE                                  | 3.60            | 12.23                |            |        | 20A/1P                  |      |    |      |      | 41                      | C               | 42  | 20A/1P |      | SPARE                   |  |  |  |      |
| LOAD SUMMARY                           | CONNECTED KVA   | DEMAND FACTOR        | DEMAND KVA | Yes/No | KVA PHASE A (CONNECTED) |      |    |      | 20.2 | KVA PHASE B (CONNECTED) |                 |     |        | 20.4 | KVA PHASE C (CONNECTED) |  |  |  | 16.8 |
| (LTG) LIGHTING X 125%                  | 5.0             | 1.25                 | 6.3        | Y      | SERIES RATED A/C        |      |    |      | Y    | SUB FEED CONNECTED LOAD |                 |     |        |      | TOTAL DEMAND KVA        |  |  |  | 58.1 |
| (REC) RECEIPTS PER 220.44              | 10.0            | 1.00                 | 10.0       | N      | SERIES RATED A/C        |      |    |      | N    | TOTAL LOAD AMPERES      |                 |     |        | 70.0 |                         |  |  |  |      |
| 10KVA x 100% + REMAINDER x 50%         | 1.2             | 0.50                 | 0.6        | N      | SPD                     |      |    |      | N    |                         |                 |     |        |      |                         |  |  |  |      |
| (MTR) LARGEST MOTOR X 125%             | 0               | 1.25                 | 0.0        | Y      | COPPER BUSSING          |      |    |      | Y    |                         |                 |     |        |      |                         |  |  |  |      |
| + REMAINING MOTORS X 100%              | 0               | 1.00                 | 0.0        | N      | ALUMINUM BUSSING        |      |    |      | N    |                         |                 |     |        |      |                         |  |  |  |      |
| (NCL) NON CONTINUOUS LOAD X 100%       | 41.3            | 1.00                 | 41.3       |        |                         |      |    |      |      |                         |                 |     |        |      |                         |  |  |  |      |

| PANEL NAME                       |                 | FED FROM             |            |        |                         |      |    |      |      |                         |                 |     |        |       |                               |  |  |  |      |
|----------------------------------|-----------------|----------------------|------------|--------|-------------------------|------|----|------|------|-------------------------|-----------------|-----|--------|-------|-------------------------------|--|--|--|------|
| VOLTAGE                          |                 | EM                   |            |        |                         |      |    |      |      |                         |                 |     |        |       |                               |  |  |  |      |
| PHASE                            |                 | MAIN CB: 225 AMP     |            |        |                         |      |    |      |      |                         |                 |     |        |       |                               |  |  |  |      |
| WIRE                             |                 | BUSSING: 225 AMP     |            |        |                         |      |    |      |      |                         |                 |     |        |       |                               |  |  |  |      |
| TYPE                             |                 | MIN. AIC: 22,000     |            |        |                         |      |    |      |      |                         |                 |     |        |       |                               |  |  |  |      |
| MOUNTING                         |                 | SUB-FEED CB: T10A-3P |            |        |                         |      |    |      |      |                         |                 |     |        |       |                               |  |  |  |      |
|                                  |                 | FEED THRU LUGS: YES  |            |        |                         |      |    |      |      |                         |                 |     |        |       |                               |  |  |  |      |
| CIRCUIT DESCRIPTION              | LOAD TYPE (KVA) |                      |            |        | CB                      | OVRT | PH | OVRT | PH   | CB                      | LOAD TYPE (KVA) |     |        |       | CIRCUIT DESCRIPTION           |  |  |  |      |
|                                  | LTG             | REC                  | MTR        | NCL    |                         |      |    |      |      |                         | LTG             | REC | MTR    | NCL   |                               |  |  |  |      |
| (N) HEAT PUMP 1 - CLASSROOM 1    |                 |                      |            |        | 20A/1P                  |      |    |      |      | 1                       | A               | 2   | 50A    | 3.74  | (N) HEAT PUMP 3 - CLASSROOM 3 |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 20A/1P                  |      |    |      |      | 2                       | B               | 4   | 50A    | 3.74  | " " " " " "                   |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 20A/1P                  |      |    |      |      | 3                       | B               | 4   | 2P     | 3.74  | " " " " " "                   |  |  |  |      |
| (N) FAN COIL 1 - CLASSROOM 1     |                 |                      |            |        | 15A                     |      |    |      |      | 5                       | C               | 6   | 15A    | 0.89  | (N) FAN COIL 3 - CLASSROOM 3  |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 2P                      |      |    |      |      | 7                       | A               | 8   | 2P     | 0.89  | " " " " " "                   |  |  |  |      |
| SPARE                            |                 |                      |            |        | 20A/1P                  |      |    |      |      | 9                       | B               | 10  | 20A/1P |       | SPARE                         |  |  |  |      |
| (N) REC. CLASSROOM 1             |                 |                      |            | 0.18   | 20A/1P                  |      |    |      |      | 11                      | C               | 12  | 20A/1P | 0.18  | (N) REC. CLASSROOM 3          |  |  |  |      |
| (N) HEAT PUMP 2 - CLASSROOM 2    |                 |                      |            |        | 50A                     |      |    |      |      | 13                      | A               | 14  | 50A    | 3.74  | (N) HEAT PUMP 4 - CLASSROOM 4 |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 2P                      |      |    |      |      | 15                      | B               | 16  | 2P     | 3.74  | " " " " " "                   |  |  |  |      |
| (N) FAN COIL 2 - CLASSROOM 2     |                 |                      |            |        | 15A                     |      |    |      |      | 17                      | C               | 18  | 15A    | 0.89  | (N) FAN COIL 4 - CLASSROOM 4  |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 2P                      |      |    |      |      | 19                      | A               | 20  | 2P     | 0.89  | " " " " " "                   |  |  |  |      |
| SPARE                            |                 |                      |            |        | 20A/1P                  |      |    |      |      | 21                      | B               | 22  | 20A/1P |       | SPARE                         |  |  |  |      |
| (N) REC. CLASSROOM 2             |                 |                      |            | 0.18   | 20A/1P                  |      |    |      |      | 23                      | C               | 24  | 20A/1P | 0.18  | (N) REC. CLASSROOM 4          |  |  |  |      |
| 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                         |  |  |  |      |
| SPARE                            |                 |                      |            |        | 20A/1P                  |      |    |      |      | 41                      | C               | 42  | 20A/1P |       | SPARE                         |  |  |  |      |
| LOAD SUMMARY                     | CONNECTED KVA   | DEMAND FACTOR        | DEMAND KVA | Yes/No | KVA PHASE A (CONNECTED) |      |    |      | 18.5 | KVA PHASE B (CONNECTED) |                 |     |        | 15.0  | KVA PHASE C (CONNECTED)       |  |  |  | 4.3  |
| (LTG) LIGHTING X 125%            | 0               | 1.25                 | 0.0        | Y      | SERIES RATED A/C        |      |    |      | Y    | SUB FEED CONNECTED LOAD |                 |     |        |       | TOTAL DEMAND KVA              |  |  |  | 37.8 |
| (REC) RECEIPTS PER 220.44        | 0.7             | 1.00                 | 0.7        | N      | SERIES RATED A/C        |      |    |      | N    | TOTAL LOAD AMPERES      |                 |     |        | 104.9 |                               |  |  |  |      |
| 10KVA x 100% + REMAINDER x 50%   | 0               | 0.50                 | 0.0        | N      | SPD                     |      |    |      | N    |                         |                 |     |        |       |                               |  |  |  |      |
| (MTR) LARGEST MOTOR X 125%       | 0               | 1.25                 | 0.0        | Y      | COPPER BUSSING          |      |    |      | Y    |                         |                 |     |        |       |                               |  |  |  |      |
| + REMAINING MOTORS X 100%        | 0               | 1.00                 | 0.0        | N      | ALUMINUM BUSSING        |      |    |      | N    |                         |                 |     |        |       |                               |  |  |  |      |
| (NCL) NON CONTINUOUS LOAD X 100% | 37.0            | 1.00                 | 37.0       |        |                         |      |    |      |      |                         |                 |     |        |       |                               |  |  |  |      |

| PANEL NAME                       |                 | FED FROM             |            |        |                         |      |    |      |      |                         |                 |     |        |       |                                 |  |  |  |      |
|----------------------------------|-----------------|----------------------|------------|--------|-------------------------|------|----|------|------|-------------------------|-----------------|-----|--------|-------|---------------------------------|--|--|--|------|
| VOLTAGE                          |                 | P.N.A.1              |            |        |                         |      |    |      |      |                         |                 |     |        |       |                                 |  |  |  |      |
| PHASE                            |                 | MAIN CB: 18.0        |            |        |                         |      |    |      |      |                         |                 |     |        |       |                                 |  |  |  |      |
| WIRE                             |                 | BUSSING: 225 AMP     |            |        |                         |      |    |      |      |                         |                 |     |        |       |                                 |  |  |  |      |
| TYPE                             |                 | MIN. AIC: 22,000     |            |        |                         |      |    |      |      |                         |                 |     |        |       |                                 |  |  |  |      |
| MOUNTING                         |                 | SUB-FEED CB: T10A-3P |            |        |                         |      |    |      |      |                         |                 |     |        |       |                                 |  |  |  |      |
|                                  |                 | FEED THRU LUGS: YES  |            |        |                         |      |    |      |      |                         |                 |     |        |       |                                 |  |  |  |      |
| CIRCUIT DESCRIPTION              | LOAD TYPE (KVA) |                      |            |        | CB                      | OVRT | PH | OVRT | PH   | CB                      | LOAD TYPE (KVA) |     |        |       | CIRCUIT DESCRIPTION             |  |  |  |      |
|                                  | LTG             | REC                  | MTR        | NCL    |                         |      |    |      |      |                         | LTG             | REC | MTR    | NCL   |                                 |  |  |  |      |
| (N) VHP-G-1 - CLASSROOM 20A      |                 |                      |            |        | 50A                     |      |    |      |      | 1                       | A               | 2   | 50A    | 3.32  | (N) HEAT PUMP 31 - CLASSROOM 31 |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 2P                      |      |    |      |      | 3                       | B               | 4   | 2P     | 3.32  | " " " " " "                     |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 2P                      |      |    |      |      | 5                       | C               | 6   | 2P     | 3.32  | " " " " " "                     |  |  |  |      |
| (N) FAN COIL G-1G-2G-3           |                 |                      |            |        | 15A                     |      |    |      |      | 7                       | A               | 8   | 15A    | 0.89  | (N) FAN COIL 31 - CLASSROOM 31  |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 2P                      |      |    |      |      | 9                       | B               | 10  | 2P     | 0.89  | " " " " " "                     |  |  |  |      |
| (N) CONDENSATE PUMP - G-1G-3     |                 |                      |            |        | 20A/1P                  |      |    |      |      | 11                      | C               | 12  | 20A/1P | 0.18  | SPARE                           |  |  |  |      |
| (N) REC. CLASSROOM 28            |                 |                      |            | 0.18   | 20A/1P                  |      |    |      |      | 13                      | A               | 14  | 50A    | 3.74  | (N) REC. CLASSROOM 31           |  |  |  |      |
| (N) HEAT PUMP 30 - CLASSROOM 30  |                 |                      |            |        | 50A                     |      |    |      |      | 15                      | B               | 16  | 50A    | 3.74  | (N) HEAT PUMP 32 - CLASSROOM 32 |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 2P                      |      |    |      |      | 17                      | C               | 18  | 2P     | 3.74  | " " " " " "                     |  |  |  |      |
| (N) FAN COIL 30 - CLASSROOM 30   |                 |                      |            |        | 15A                     |      |    |      |      | 19                      | A               | 20  | 15A    | 0.89  | (N) FAN COIL 32 - CLASSROOM 32  |  |  |  |      |
| " " " " " "                      |                 |                      |            |        | 2P                      |      |    |      |      | 21                      | B               | 22  | 2P     | 0.89  | " " " " " "                     |  |  |  |      |
| SPARE                            |                 |                      |            |        | 20A/1P                  |      |    |      |      | 23                      | C               | 24  | 20A/1P |       | SPARE                           |  |  |  |      |
| (N) REC. CLASSROOM 30            |                 |                      |            | 0.18   | 20A/1P                  |      |    |      |      | 25                      | A               | 26  | 20A/1P | 0.18  | (N) REC. CLASSROOM 32           |  |  |  |      |
| SPARE                            |                 |                      |            |        | 20A/1P                  |      |    |      |      | 27                      | B               | 28  | 2P     | 1.66  | (N) SSO-G-1                     |  |  |  |      |
| SPARE                            |                 |                      |            |        | 20A/1P                  |      |    |      |      | 29                      | C               | 30  | 2P     | 1.66  | " " " " " "                     |  |  |  |      |
| SPARE                            |                 |                      |            |        | 20A/1P                  |      |    |      |      | 31                      | A               | 32  | 20A/1P |       | (N) CONDENSATE PUMP - SSI-G-1   |  |  |  |      |
| 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                           |  |  |  |      |
| SPARE                            |                 |                      |            |        | 20A/1P                  |      |    |      |      | 41                      | C               | 42  | 20A/1P |       | SPARE                           |  |  |  |      |
| LOAD SUMMARY                     | CONNECTED KVA   | DEMAND FACTOR        | DEMAND KVA | Yes/No | KVA PHASE A (CONNECTED) |      |    |      | 19.8 | KVA PHASE B (CONNECTED) |                 |     |        | 18.4  | KVA PHASE C (CONNECTED)         |  |  |  | 4.4  |
| (LTG) LIGHTING X 125%            | 0               | 1.25                 | 0.0        | Y      | SERIES RATED A/C        |      |    |      | Y    | SUB FEED CONNECTED LOAD |                 |     |        |       | TOTAL DEMAND KVA                |  |  |  | 40.5 |
| (REC) RECEIPTS PER 220.44        | 0.7             | 1.00                 | 0.7        | N      | SERIES RATED A/C        |      |    |      | N    | TOTAL LOAD AMPERES      |                 |     |        | 112.6 |                                 |  |  |  |      |
| 10KVA x 100% + REMAINDER x 50%   | 0               | 0.50                 | 0.0        | N      | SPD                     |      |    |      | N    |                         |                 |     |        |       |                                 |  |  |  |      |
| (MTR) LARGEST MOTOR X 125%       | 0               | 1.25                 | 0.0        | Y      | COPPER BUSSING          |      |    |      | Y    |                         |                 |     |        |       |                                 |  |  |  |      |
| + REMAINING MOTORS X 100%        | 0               | 1.00                 | 0.0        | N      | ALUMINUM BUSSING        |      |    |      | N    |                         |                 |     |        |       |                                 |  |  |  |      |
| (NCL) NON CONTINUOUS LOAD X 100% | 39.8            | 1.00                 | 39.8       |        |                         |      |    |      |      |                         |                 |     |        |       |                                 |  |  |  |      |

| PANEL NAME          |                 | FED FROM             |     |     |        |      |    |      |    |    |                 |     |        |      |                                 |
|---------------------|-----------------|----------------------|-----|-----|--------|------|----|------|----|----|-----------------|-----|--------|------|---------------------------------|
| VOLTAGE             |                 | FEED THRU LUG        |     |     |        |      |    |      |    |    |                 |     |        |      |                                 |
| PHASE               |                 | BUSSING: 400 AMP     |     |     |        |      |    |      |    |    |                 |     |        |      |                                 |
| WIRE                |                 | MIN. AIC: 10,000     |     |     |        |      |    |      |    |    |                 |     |        |      |                                 |
| TYPE                |                 | SUB-FEED CB: T10A-3P |     |     |        |      |    |      |    |    |                 |     |        |      |                                 |
| MOUNTING            |                 | FEED THRU LUGS: NO   |     |     |        |      |    |      |    |    |                 |     |        |      |                                 |
| CIRCUIT DESCRIPTION | LOAD TYPE (KVA) |                      |     |     | CB     | OVRT | PH | OVRT | PH | CB | LOAD TYPE (KVA) |     |        |      | CIRCUIT DESCRIPTION             |
|                     | LTG             | REC                  | MTR | NCL |        |      |    |      |    |    | LTG             | REC | MTR    | NCL  |                                 |
| (E) REC - H115      |                 |                      |     |     | 20A/1P |      |    |      |    | 43 | A               | 44  | (N)50A | 3.74 | (N) HEAT PUMP 14 - CLASSROOM 14 |
| (E) REC - H115      |                 |                      |     |     | 20A/1P |      |    |      |    | 45 | B               | 46  | 2P     | 3.74 | (N) HEAT PUMP 13 - CLASSROOM 13 |
| (E) REC - H115      |                 |                      |     |     | 20A/1P |      |    |      |    | 47 | C               | 48  | (N)50A | 3.74 | (N) HEAT PUMP 11 - CLASSROOM 11 |
| (E) REC - H115      |                 |                      |     |     |        |      |    |      |    |    |                 |     |        |      |                                 |

