ADDENDUM NO. 02
Issued: **MARCH 5, 2021**

THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY JUAN CANTU, AIA 28594 DATED MARCH 5, 2021

To Plans and Specifications dated FEBRUARY 12, 2021.

SAN CARLOS ELEMENTARY GYMNASIUM ADDITION
EDINBURG CISD
ERO Project No.: 20042

03.05.21

NOTICE TO PROPOSERS

A. Receipt of this Addendum shall be acknowledged on the Proposal Form.
B. This Addendum forms part of the Contract documents for the above referenced project and shall be incorporated integrally therewith.
C. Each proposer shall make necessary adjustments and submit his proposal with full knowledge of all modifications, clarifications, and supplemental data included therein. Where provisions of the following supplemental data differ from those of the original Contract Documents, this Addendum shall govern.
D. This addendum is generally separated into sections for convenience; however, all contractors, subcontractors, material men and other parties shall be responsible for reading the entire addendum. The failure to list an item or items in all affected sections of this addendum does not relieve any party affected from performing as per instructions, providing that the information is set forth one time in this addendum.

PROJECT MANUAL

Item No. S01 Project Manual, Division 11 – Gymnasium Equipment, Section 11 66 23, Parts 2 Products 2.01
Manufacturer: Acceptable Manufacturer
ALLCO Manufacturing

Item No. S02 Project Manual, Division 13 – Metal Building Systems, Section 13 34 19, Parts 2 Products 2.01
Manufacturer: Acceptable Manufacturer
Strong Structural Steel, Ltd.

Item No. S03 Project Manual, Division 26 – Lighting Controls, Section 26 09 23, Parts 2 Products 2.01
Manufacturers: Acceptable Manufacturer
Replace specifications in its entirety. Refer to attachment.

PLANS

Item No. P01 Sheet MP01 – MECHANICAL FLOOR PLAN – Replace this sheet in its entirety.
1. Main return air grilles changed in size to 36”x20”
2. Added keyed notes to:
    a) Office A113 transfer grille into Gymnasium A101.
    b) Supply air devices serving Storage A114.
3. Revised keyed notes for fabric duct, outside duct, and outside duct stands.

Item No. P02 Sheet MP02 – MECHANICAL SECTIONS – Replace this sheet in its entirety.
1. Revised sections in relation to above mentioned grilles and keyed notes

Item No. P03 Sheet EG01 – ELECTRICAL LEGEND – Replace this sheet in its entirety.

1. Lighting electrical information was modified to match model number. Lighting Fixture Schedule Notes: Lighting Manufacturers that can be used as acceptable manufactures was modified. Acceptable lighting manufacturers are as follows: Refer to attached.

Item No. P04 Sheet EL01 – ELECTRICAL FLOOR PLAN – Replace this sheet in its entirety.

1. Data drops were added with mounting heights with revised keyed notes. All locations and mounting heights shall be coordinated with owner/district prior to installation.
2. Speaker infrastructure was added. Refer to attachment.
3. General note added to coordinate all new electrical devices shown in plan with owner/district. Refer to attachment.
4. Disconnect location for stepdown transformer is now shown on plans.
5. Detail #1 Electrical lighting plan, All light switches shall include a 277V circuit for the lighting controls. The circuit shall be H-42. Provide1-20Amp 1- pole breaker, wiring shall be 2#10, 1#10G, ¾"C.

Item No. P05 Sheet ER01 – ELECTRICAL RISER – Replace this sheet in its entirety.

1. Wiring for SPD shall be 4#10, 1#10G, ¾"C and wiring for H-11 shall be 2#10, 1#10G, ¾"C was added. Refer to attachment.

END OF ADDENDUM NO. 2
(25 pages of Attachments Follow)

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3/5/2021

ADDENDUM #2

Architect: ERO Architects
Project Name: San Carlos Gymnasium Addition
Project Number: 20.4.18
Date: 3/5/2021

Note: The work shall be carried out in accordance with the following supplemental instructions issued in accordance with the Contract Documents without change in Contract Sum or Contract Time Proceeding with the Work in accordance with these instructions indicates your acknowledgement that there will be no change in the Contract Sum or Contract Time.

I. Specifications:
   A. Section 260923 – Lighting Control added acceptable manufacturers, refer to attachment.

II. General: N/A

III. Mechanical:
   A. Sheet MP01 – the following revisions were made to this sheet, refer to attached:
      1. Main return air grilles changed in size to 36”x20”.
      2. Added keyed notes to:
         a. OFFICE A113 transfer grille into GYMNASIUM A101.
         b. Supply air devices serving STORAGE A114.
      3. Revised keyed notes for fabric duct, outside duct, and outside duct stands.
   B. Sheet MP02 – revised sections in relation to above mentioned grilles and keyed notes.

IV. Electrical:
   A. Sheet EL01 – Data drops were added with mounting heights with revised keyed notes. All Devices locations and mounting heights shall be coordinated with owner/district prior any installations. Refer to attachment.
   B. Sheet EL01 – Speaker infrastructure was added. Refer to attachment.
   C. Sheet EL01 – General note added to coordinate all new electrical devices shown in plan with owner/district. Refer to attachment.
   D. Sheet EL01- Disconnect location for stepdown transformer is now shown on plans. Refer to attachment.

E. Sheet ER01- Wiring for SPD shall be 4#10, 1#10G, 3/4"C and wiring for H-11 shall be 2#10, 1#10G, 3/4"C was added. Refer to attachment.

F. Sheet EG01- Lighting electrical information was modified to match model number. Lighting Fixture Schedule Notes: Lighting Manufacturers that can be used as acceptable manufacturers was modified. Acceptable lighting manufacturers are as follows: Refer to attached.

G. Sheet EL01 – Detail #1 Electrical lighting plan, All light switches shall include a 277V circuit for the lighting controls. The circuit shall be H-42. Provide 1-20Amp 1-pole breaker, wiring shall be 2#10, 1#10G, ¾"C.

V. Plumbing: N/A

VI. Fire Protection:

SECTION 26 0923
LIGHTING CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Single space wireless lighting control systems and associated components:
   1. Wireless occupancy/vacancy sensors.
   2. Wireless control stations.
B. Wireless hub(s) for centralized control, monitoring, and system integration.

1.02 RELATED REQUIREMENTS

A. Section - *Identification for Electrical Systems*: Identification products and requirements.

1.03 REFERENCE STANDARDS

A. 47 CFR 15 - Radio Frequency Devices; *current edition*.
B. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts - Supplements; *2011*.
C. ANSI/ESD S20.20 - Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices); *2014*.
D. ASTM D4674 - Standard Practice for Accelerated Testing for Color Stability of Plastics Exposed to Indoor Office Environments; *2002a (Reapproved 2010)*.
E. CAL TITLE 24 P6 – California Code of Regulations, Title 24, Part 6 (California Energy Code); *2013*.
F. CSA C22.2 No. 223 – Power Supplies with Extra-low-voltage Class 2 Outputs; *2015*.
G. IEC 60929 - AC and/or DC-Supplied Electronic Control Gear for Tubular Fluorescent Lamps - Performance Requirements; *2015*.
H. IEC 61000-4-2 - Electromagnetic Compatibility (EMC) - Part 4-2: Testing and Measurement Techniques - Electrostatic Discharge Immunity Test; *2008*.
I. IEC 61347-2-3 - Lamp Control Gear - Part 2-3: Particular Requirements for A.C. and/or D.C. Supplied Electronic Control Gear for Fluorescent Lamps; *2011, with Amendments, 2016*.
J. IEEE 1789 - Recommended Practice for Modulating Current in High-Brightness LEDs for Mitigating Health Risks to Viewers*; 2015*.
K. IEEE C62.41.2 - Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits; *2002 (Cor 1, 2012)*.
L. ISO 9001 - Quality Management Systems-Requirements; *2008*.
M. NECA 1 - Standard for Good Workmanship in Electrical Construction; *2015*.
N. NECA 130 - Standard for Installing and Maintaining Wiring Devices; National Electrical Contractors Association; *2010*.
O. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts; National Electrical Manufacturers Association; *2015*.
P. NEMA WD 1 - General Color Requirements for Wiring Devices; National Electrical Manufacturers Association; *1999 (R 2015)*.
Q. NFPA 70 - National Electrical Code; National Fire Protection Association; *Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements*.
R. UL 20 - General-Use Snap Switches; *Current Edition, Including All Revisions*.

S. UL 508 - Industrial Control Equipment; Underwriters Laboratories Inc.; *Current Edition, Including All Revisions.*
T. UL 924 - Emergency Lighting and Power Equipment; *Current Edition, Including All Revisions.*
U. UL 935 - Fluorescent-Lamp Ballasts; *Current Edition, Including All Revisions*.
V. UL 1310 – Class 2 Power Units; *Current Edition, Including All Revisions*.
W. UL 1472 - Solid-State Dimming Controls; *Current Edition, Including All Revisions*.
X. UL 1598C - Light-Emitting Diode (LED) Retrofit Luminaire Conversion Kits; *Current Edition, Including All Revisions.*
Y. UL 2043 - Fire Test for Heat and Visible Smoke Release for Discrete Products and Their Accessories Installed in Air-Handling Spaces; *Current Edition, Including All Revisions*.
Z. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; *Current Edition, Including All Revisions.*

1.04 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
1. Coordinate the placement of sensors and wall controls with millwork, furniture, equipment, etc. installed under other sections or by others.
2. Coordinate the placement of wall controls with actual installed door swings.
3. Coordinate the placement of daylight sensors with windows, skylights, and luminaires to achieve optimum operation. Coordinate placement with ductwork, piping, equipment, or other potential obstructions to light level measurement installed under other sections or by others.
4. Coordinate the work to provide luminaires and lamps compatible with the lighting controls to be installed.
5. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

B. Sequencing:
1. Do not install sensors and wall controls until final surface finishes<< and painting>> are complete.

1.05 SUBMITTALS

A. See Section 01 3000 - *Administrative Requirements* for submittal procedures.
B. Design Documents: Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS", Lighting Control Manufacturer to provide plans indicating occupancy/vacancy and/or daylight sensor locations.
C. Product Data: Include ratings, configurations, standard wiring diagrams, dimensions, colors, service condition requirements, and installed features.
1. Occupancy/Vacancy Sensors: Include detailed basic motion detection coverage range diagrams.
2. Wall Dimmers: Include derating information for ganged multiple devices.
D. Samples:
1. Wall Controls:
a. Show available color and finish selections.
2. Sensors:
E. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.

F. System Performance-Verification Documentation*; Lutron LSC-SPV-DOC*: Include additional costs for manufacturer's enhanced documentation detailing start-up performance-verification procedures and functional tests performed along with test results.
G. Title 24 Acceptance Testing Documentation: Submit Certification of Acceptance and associated documentation for lighting control acceptance testing performed in accordance with CAL TITLE 24 P6, as specified in Part 3 under "COMMISSIONING".
H. Project Record Documents: Record actual installed locations and settings for lighting control system components.
I. Operation and Maintenance Data: Include detailed information on lighting control system operation, equipment programming and setup, replacement parts, and recommended maintenance procedures and intervals.
J. Warranty: Submit sample of manufacturer's Warranty or Enhanced Warranty as specified in Part 1 under "WARRANTY". Submit documentation of final executed warranty completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.
B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
C. Manufacturer Qualifications:
1. Company with not less than five years of experience manufacturing lighting control products using wireless communication between devices.
2. Registered to ISO 9001, including in-house engineering for product design activities.
3. Provides factory direct technical support hotline available 24 hours per day, 7 days per week.
4. Qualified to supply specified products and to honor claims against product presented in accordance with warranty.

1.07 DELIVERY, STORAGE, AND HANDLING

A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

1.08 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.
1. Basis of Design System Requirements - *Lutron*, Unless Otherwise Indicated:
a. Ambient Temperature:
1) Lighting Control System Components,.
b. Relative Humidity: Less than 90 percent, non-condensing.
c. Protect lighting controls from dust.

1.09 WARRANTY

A. Manufacturer's Standard Warranty, Without Manufacturer Full-Scope Start-Up:
1. Manufacturer Lighting Control System Components, Except Wireless Sensors, Ballasts/Drivers and Ballast Modules: One year 100 percent parts coverage, no manufacturer labor coverage.
2. Wireless Sensors: Five years 100 percent parts coverage, no manufacturer labor coverage.
3. Ballasts/Drivers and Ballast Modules: Three years 100 percent parts coverage, no manufacturer labor coverage.

B. Manufacturer's Standard Warranty, With Manufacturer Full-Scope Start-Up*; Lutron Standard 2-Year Warranty; Lutron LSC-B2*:
   1. Manufacturer Lighting Control System Components, Except Lighting Management System Computer, Ballasts/Drivers and Ballast Modules:
      a. First Two Years:
         1) 100 percent replacement parts coverage, 100 percent manufacturer labor coverage to troubleshoot and diagnose a lighting issue.
         2) First-available on-site or remote response time.
         3) Remote diagnostics for applicable systems.
      b. Telephone Technical Support: Available 24 hours per day, 7 days per week, excluding manufacturer holidays.
   2. Lighting Management System Computer: One year 100 percent parts coverage, one year 100 percent manufacturer labor coverage.
   3. Ballasts/Drivers and Ballast Modules:
      a. With Remote Full-Scope Start-Up: Three years 100 percent parts coverage, no manufacturer labor coverage.
      b. With On-Site Full-Scope Start-Up: Five years 100 percent parts coverage, no manufacturer labor coverage.

PART 2 PRODUCTS

2.01 MANUFACTURERS

A. Basis of Design Manufacturer: *Lutron Electronics Company, Inc; Vive; www.lutron.com*.
   1. Products by listed manufacturers are subject to compliance with specified requirements.
   2. Approved Manufacturers for Interior Lighting Controls:
      a) Lutron (Basis of Design)
      b) Creston
      c)Douglas Lighting Control

B. Substitutions:
   1. All proposed substitutions (clearly delineated as such) must be submitted in writing for approval by Engineer a minimum of 10 working days prior to the bid date and must be made available to all bidders. Proposed substitutes must be accompanied by a review of the specification noting compliance on a line-by-line basis.
   2. Any proposed substitutions to be reviewed by Engineer at Contractor's expense
   3. By using pre-approved substitutions, Contractor accepts responsibility and associated costs for all required modifications to related equipment and wiring. Provide complete engineered shop drawings (including power wiring) with deviations from the original design highlighted in an alternate color for review and approval by Architect prior to rough-in.

C. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.

2.02 LIGHTING CONTROLS - GENERAL REQUIREMENTS

A. Sensor Layout and Tuning: Include additional costs for Lighting Control Manufacturer's Sensor Layout and Tuning service***; Lutron LSC-SENS-LT***:
   1. Lighting Control Manufacturer to take full responsibility for wired or wireless occupancy/vacancy and daylight sensor layout and performance for sensors provided by Lighting Control Manufacturer.

2. Lighting Control Manufacturer to analyze the reflected ceiling plans, via supplied electronic AutoCAD format, and design a detailed sensor layout that provides adequate occupancy sensor coverage and ensures occupancy and daylight sensor performance per agreed upon sequence of operations. Contractor to utilize the layouts for sensor placement.
3. During startup, Lighting Control Manufacturer to direct Contractor regarding sensor relocation, as required, should conditions require a deviation from locations specified in the drawings.
4. Lighting Control Manufacturer to provide up to two additional post-startup on-site service visits, within one calendar year from Date of Substantial Completion to fine-tune sensor calibration per the agreed upon sequence of operations.

B. Provide products listed, classified, and labeled by Underwriter's Laboratories Inc. (UL) as suitable for the purpose indicated.
C. Unless specifically indicated to be excluded, provide all required equipment, conduit, boxes, wiring, connectors, hardware, supports, accessories, programming, etc. as necessary for a complete operating system that provides the control intent indicated.
D. Design lighting control equipment for 10 year operational life while operating continually at any temperature in an ambient temperature range of 32 degrees F (0 degrees C) to 104 degrees F (40 degrees C) and 90 percent non-condensing relative humidity.
E. Electrostatic Discharge Tolerance: Design and test equipment to withstand electrostatic discharges without impairment when tested according to IEC 61000-4-2.
F. Power Failure Recovery: When power is interrupted for periods up to 10 years and subsequently restored, lights to automatically return to same levels (dimmed setting, full on, or full off) as prior to power interruption.
G. Wireless Devices:
    1. Wireless device family includes area or fixture level sensors, area or fixture level load controls for dimming or switching, and load controls that can be mounted in a wallbox, on a junction box, or at the fixture.
    2. Wireless devices including sensors, load controls, and wireless remotes or wall stations, can be set up using simple button press programming without needing any other equipment (e.g. central hub, processor, computer, or other smart device).
    3. Wireless hub adds the ability to set up the system using any smart device with a web browser (e.g. smartphone, tablet, PC, or laptop).
    4. System does not require a factory technician to set up or program the system.
    5. Capable of diagnosing system communications.
    6. Capable of having addresses automatically assigned to them.
    7. Receives signals from other wireless devices and provides feedback to user.
    8. Capable of determining which devices have been addressed.
    9. RF Range: 60 feet (18 m) line-of-sight or 30 feet (9 m) through typical construction materials between RF transmitting devices and compatible RF receiving devices.
    10. Electromagnetic Interference/Radio Frequency Interference (EMI/RFI) Limits: Comply with FCC requirements of CFR, Title 47, Part 15, for Class B application.
H. Wireless Network:
    1. RF Frequency: 434 MHz; operate in FCC governed frequency spectrum for periodic operation; continuous transmission spectrum is not permitted.

a. Wireless sensors, wireless wall stations and wireless load control devices do not operate in the noisy 2.4 GHz frequency band where high potential for RF interference exists.
b. Wireless devices operate in an uncongested frequency band providing reliable operation.
c. Fixed network architecture ensures all associated lights and load controls respond in a simultaneous and coordinated fashion from a button press, sensor signal, or command from the wireless hub (i.e. no popcorning).

2. Distributed Architecture: Local room devices communicate directly with each other. If the wireless hub is removed or damaged, local control, sensing, and operation continues to function without interruption.
3. Local room devices communicate directly with each other (and not through a central hub or processor) to ensure:
   a. Reliability of system performance.
   b. Fast response time to events in the space (e.g. button presses or sensor signals).
   c. Independent operation in the event of the wireless hub being removed or damaged.

I. Device Finishes:
1. Wall Controls: shall be white, refer to plans for model numbers, unless otherwise indicated.
2. Standard Colors: Comply with NEMA WD1 where applicable.

J. Interface with existing building automation system***; Lutron System and Network Integration Consultation; LSC-INT-VISIT.***

2.03 WIRELESS SENSORS

A. General Requirements:
1. Operational life of 10 years without the need to replace batteries when installed per manufacturer's instructions.
2. Communicates directly to compatible RF receiving devices through use of a radio frequency communications link.
3. Does not require external power packs, power wiring, or communication wiring.
4. Capable of being placed in test mode to verify correct operation from the face of the unit.

B. Wireless Occupancy/Vacancy Sensors:
1. General Requirements:
   a. Provides a clearly visible method of indication to verify that motion is being detected during testing and that the unit is communicating to compatible RF receiving devices.
   b. Utilize multiple segmented lens, with internal grooves to eliminate dust and residue build-up.
   c. Sensing Mechanism: Passive infrared coupled with technology for sensing fine motions***; Lutron XCT Technology***. Signal processing technology detects fine-motion passive infrared (PIR) signals without the need to change the sensor's sensitivity threshold.
   d. Provide optional, readily accessible, user-adjustable controls for timeout, automatic/manual-on, and sensitivity.

e. Turns off lighting after reasonable and adjustable time delay once the last person to occupy the space vacates a room or area. Provide adjustable timeout settings of 1, 5, 15, and 30 minutes.
f. Capable of turning dimmer's lighting load on to an optional locked preset level selectable by the user. Locked preset range to be selectable on the dimmer from 1 percent to 100 percent.
g. Color: White.
h. Provide all necessary mounting hardware and instructions for both temporary and permanent mounting.
i. Provide temporary mounting means for drop ceilings to allow user to check proper performance and relocate as needed before permanently mounting sensor. Temporary mounting method to be design for easy, damage-free removal.
j. Sensor lens to illuminate during test mode when motion is detected to allow installer to place sensor in ideal location and to verify coverage prior to permanent mounting.
k. Ceiling-Mounted Sensors:
    1) Provide surface mounting bracket compatible with drywall, plaster, wood, concrete, and compressed fiber ceilings.
    2) Provide recessed mounting bracket compatible with drywall and compressed fiber ceilings.
l. Wall-Mounted Sensors: Provide wall or corner mounting brackets compatible with drywall and plaster walls.

2. Wireless Combination Occupancy/Vacancy Sensors: Refer to plans and below.
    a. Ceiling-Mounted Sensors: Programmable to operate as an occupancy sensor (automatic-on and automatic-off), an occupancy sensor with low light feature (automatic-on when less than one footcandle of ambient light available and automatic-off), or a vacancy sensor (manual-on and automatic-off).
    b. Wall-Mounted Sensors: Programmable to operate as an occupancy sensor (automatic-on and automatic-off), or a vacancy sensor (manual-on and automatic-off).
    c. Product(s):
        1) <<Type _____ - >>Ceiling-Mounted Occupancy/Vacancy Sensor*;* << Lutron Radio Powr Savr Series, Model LFR2-OCR2B-P-WH; or Lutron Radio Powr Savr Series, Model ULFR2-OCR2B-P-WH (BAA-Buy American Act Compliant)>>: Coverage from 324 square feet (30.2 sq m) to 676 square feet (62.4 sq m) depending on ceiling height from 8 to 12 feet (2.4 to 3.7 m); 360 degree field of view.
        2) <<Type _____ - >>Wall-Mounted Occupancy/Vacancy Sensor*;* << Lutron Radio Powr Savr Series, Model LFR2-OWLB-P-WH; or Lutron Radio Powr Savr Series, Model ULFR2-OWLB-P-WH (BAA-Buy American Act Compliant)>>: Minor motion coverage of 1500 square feet (139.4 sq m) and major motion coverage of 3000 square feet (278.7 sq m) with mounting height of 6 to 8 feet (1.8 to 2.4 m); 180 degree field of view.
        3) <<Type _____ - >>Corner-Mounted Occupancy/Vacancy Sensor*;* << Lutron Radio Powr Savr Series, Model LFR2-OKLB-P-WH; or Lutron

Radio Powr Savr Series, Model ULFR2-OKLB-P-WH (BAA-Buy American Act Compliant)>>: Minor motion coverage of 1225 square feet (113.8 sq m) and major motion coverage of 2500 square feet (232.3 sq m) with mounting height of 6 to 8 feet (1.8 to 2.4 m); 90 degree field of view.

4) <<Type _____ - >>Hallway Occupancy/Vacancy Sensor*;* << Lutron Radio Powr Savr Series, Model LFR2-OHLB-P-WH; or Lutron Radio Powr Savr Series, Model ULFR2-OHLB-P-WH (BAA-Buy American Act Compliant)>>: Major motion coverage of up to 150 feet (45.7 m) with mounting height of 6 to 8 feet (1.8 to 2.4 m); narrow field of view.

3. Wireless Vacancy-Only Sensors:
   a. Operates only as a vacancy sensor (manual-on and automatic-off) Refer to plans and below.
   b. Product(s):
      1) <<Type _____ - >>Ceiling-Mounted Vacancy-Only Sensor*;* << Lutron Radio Powr Savr Series, Model LFR2-VCR2B-P-WH; or Lutron Radio Powr Savr Series, Model ULFR2-VCR2B-P-WH (BAA-Buy American Act Compliant)>>: Coverage from 324 square feet (30.2 sq m) to 676 square feet (62.4 sq m) depending on ceiling height from 8 to 12 feet (2.4 to 3.7 m); 360 degree field of view.
      2) <<Type _____ - >>Wall-Mounted Vacancy-Only Sensor*;* << Lutron Radio Powr Savr Series, Model LFR2-VWLB-P-WH; or Lutron Radio Powr Savr Series, Model ULFR2-VWLB-P-WH (BAA-Buy American Act Compliant)>>: Minor motion coverage of 1500 square feet (139.4 sq m) and major motion coverage of 3000 square feet (278.7 sq m) with mounting height of 6 to 8 feet (1.8 to 2.4 m); 180 degree field of view.
      3) <<Type _____ - >>Corner-Mounted Vacancy-Only Sensor*;* << Lutron Radio Powr Savr Series, Model LFR2-VKLB-P-WH; or Lutron Radio Powr Savr Series, Model ULFR2-VKLB-P-WH (BAA-Buy American Act Compliant)>>: Minor motion coverage of 1225 square feet (113.8 sq m) and major motion coverage of 2500 square feet (232.3 sq m) with mounting height of 6 to 8 feet (1.8 to 2.4 m); 90 degree field of view.
      4) <<Type _____ - >>Hallway Vacancy-Only Sensor*;* << Lutron Radio Powr Savr Series, Model LFR2-VHLB-P-WH; or Lutron Radio Powr Savr Series, Model ULFR2-VHLB-P-WH (BAA-Buy American Act Compliant)>>: Major motion coverage of up to 150 feet (45.7 m) with mounting height of 6 to 8 feet (1.8 to 2.4 m); narrow field of view.

2.04 LOAD CONTROL MODULES

A. Provide wireless load control modules as indicated or as required to control the loads as indicated.

B. Junction Box-Mounted Modules:
   1. Plenum rated.
   2. 0-10 V Dimming Modules:
      a. Product(s):
         1) 8 A dimming module with 0-10V control, without emergency mode*;* << Lutron PowPak Dimming Module Model RMJS-8T-DV-B; or Lutron

PowPak Dimming Module Model URMJS-8T-DV-B (BAA-Buy American Act Compliant)>>.

2) 8 A dimming module with 0-10V control, with emergency mode*;* Lutron PowPak Dimming Module Model RMJS-8T-DV-B-EM.

b. Communicates via radio frequency with up to ten compatible occupancy/vacancy sensors, ten wireless control stations, and one daylight sensor.

c. Single low voltage dimming module with Class 1 or Class 2 isolated 0-10V output signal conforming to IEC 60929 Annex E.2; source or sink automatically configures.

d. Selectable minimum light level.

e. Configurable high- and low-end trim.

f. Relay: Rated for 0-10 V ballasts, LED drivers, or fixtures that conform with NEMA 410.

g. Dimming Modules with Emergency Mode:

1) Operation With ***Lutron Vive*** Wireless Hub: Upon loss of power, dimming module enters and remains in emergency mode as long as wireless hub is de-energized; upon restoration of power to wireless hub, dimming module returns to normal mode and lights automatically return to same levels (dimmed setting, full on, or full off) as prior to power interruption.

2) Operation Without ***Lutron Vive*** Wireless Hub: Upon loss of power, dimming module enters and remains in emergency mode for 90 minutes, during which time local unit buttons and wireless controls are disabled.

3) UL 924 listed.

3. Relay Modules:

a. Product(s):

1) 16 A relay module, without emergency mode, without contact closure output*;* << Lutron PowPak Relay Module Model RMJS-16R-DV-B; or Lutron PowPak Relay Module Model URMJS-16R-DV-B (BAA-Buy American Act Compliant)>>.

2) 16 A relay module, with emergency mode, without contact closure output*;* Lutron PowPak Relay Module Model RMJS-16R-DV-B-EM.

3) 16 A relay module, without emergency mode, with contact closure output*;* << Lutron PowPak Relay Module Model RMJS-16RCCO1-DV-B; or Lutron PowPak Relay Module Model URMJS-16RCCO1-DV-B (BAA-Buy American Act Compliant)>>.

4) 5 A relay module, without emergency mode, without contact closure output*; Lutron PowPak Relay Module Model RMJS-5R-DV-B.*

5) 5 A relay module, without emergency mode, with contact closure output*; Lutron PowPak Relay Module Model RMJS-5RCCO1-DV-B.*

b. Communicates via radio frequency with up to ten compatible occupancy/vacancy sensors, ten wireless control stations, and one daylight sensor.

c. Relay:

1) Rated Life of Relay: Typical of 1,000,000 cycles at fully rated 16 A for all lighting loads.

2) Load switched in manner that prevents arcing at mechanical contacts when power is applied to and removed from load circuits.
3) Fully rated output continuous duty for inductive, capacitive, and resistive loads.

d. Contact Closure Output:
1) Single contact closure output with normally open and normally closed dry maintained contacts suitable for connection to third party equipment (e.g. building management system, HVAC system, etc.).
2) Contact Ratings: Resistive load; 1 A at 0-24 VDC, 0.5 A at 0-24 VAC.
3) Controlled by associated occupancy/vacancy sensors and wall controls.

e. Relay Modules With Emergency Mode:
1) Operation With ***Lutron Vive*** Wireless Hub: Upon loss of power, relay module enters and remains in emergency mode as long as wireless hub is de-energized; upon restoration of power to wireless hub, relay module returns to normal mode and lights automatically return to same levels (dimmed setting, full on, or full off) as prior to power interruption.
2) Operation Without ***Lutron Vive*** Wireless Hub: Upon loss of power, relay module enters and remains in emergency mode for 90 minutes, during which time local unit buttons and wireless controls are disabled.
3) UL 924 listed.

4. Contact Closure Output Modules:
a. Product: **<< Lutron PowPak CCO Module Model RMJS-CCO1-24-B; or Lutron PowPak CCO Module Model URMJS-CCO1-24-B (BAA-Buy American Act Compliant)>>**.
b. Communicates via radio frequency with up to ten compatible occupancy/vacancy sensors, ten wireless control stations, and one daylight sensor.
c. Contact Closure Output:
1) Single contact closure output with normally open and normally closed dry maintained contacts suitable for connection to third party equipment (e.g. building management system, HVAC system, etc.).
2) Contact Ratings: Resistive load; 1 A at 0-24 VDC, 0.5 A at 0-24 VAC.
3) Operation affected by associated occupancy/vacancy sensors and wall controls.

2.05 WIRELESS CONTROL STATIONS

A. Product(s): Refer to plan and below.
1. <<Type _____ - >>2-Button Control; <<Lutron Pico Wireless Control Model PJ2-2B; or Lutron Pico Wireless Control Module UPJ2-2B (BAA-Buy American Act Compliant)>>.
a. Button Marking: <<Light (icons); As indicated on drawings; or _____>>.
2. <<Type _____ - >>2-Button Control with Night Light*; Lutron Pico Wireless Control Model PJN-2B.*
3. <<Type _____ - >>2-Button with Raise/Lower Control; <<Lutron Pico Wireless Control Model PJ2-2BRL; or Lutron Pico Wireless Control Module UPJ2-2BRL (BAA-Buy American Act Compliant)>>.

a. Button Marking: <<Light (icons); As indicated on drawings; or _____>>.

4. <<Type _____ - >>3-Button Control; <<Lutron Pico Wireless Control Model PJ2-3B; or Lutron Pico Wireless Control Module UPJ2-3B (BAA-Buy American Act Compliant)>>.
   a. Button Marking: <<Light (icons); As indicated on drawings; or _____>>.
5. <<Type _____ - >>3-Button with Raise/Lower Control; <<Lutron Pico Wireless Control Model PJ2-3BRL; or Lutron Pico Wireless Control Module UPJ2-3BRL (BAA-Buy American Act Compliant)>>.
   a. Button Marking: <<Light (icons); As indicated on drawings; or _____>>.
6. <<Type _____ - >>3-Button with Raise/Lower Control and Night Light*; Lutron Pico Wireless Control Model PJN-3BRL*.
7. *<<Type* _____ - >>4-Button; <<Lutron Pico Wireless Control Model PJ2-4B; or Lutron Pico Wireless Control Module UPJ2-4B (BAA-Buy American Act Compliant)>>.
   a. Button Marking: <<Zone controls (light); Scene keypads (light); 2-group controllers (lights); 4-group toggle; As indicated on drawings; or _____>>.
8. Single Pedestal*; Lutron Pico Pedestal Model L-PED1*.
9. Double Pedestal*; Lutron Pico Pedestal Model L-PED2*.
10. Triple Pedestal*; Lutron Pico Pedestal Model L-PED3*.
11. Quadruple Pedestal*; Lutron Pico Pedestal Model L-PED4*.
12. Screw Mounting Kit*; Lutron Model PICO-SM-KIT*.
13. Wallbox Adapter*; Lutron Model PICO-WBX-ADAPT*.

B. Communicates directly to compatible RF receiving devices through use of a radio frequency communications link.
C. Does not require external power packs, power or communication wiring.
D. Allows for easy reprogramming without replacing unit.
E. Button Programming:
   1. Single action.
   2. Toggle action.
F. Includes LED to indicate button press or programming mode status.
G. Mounting:
   1. Capable of being mounted with a table stand or directly to a wall under a faceplate.
   2. Faceplates: Provide concealed mounting hardware.
H. Power: Battery-operated with minimum ten-year battery life (3-year battery life for night light models).
I. Finish: White

2.06 WIRELESS HUBS

A. Product(s): Refer to plans for model type .

--CHOOSE ONE OF THE TWO HUB TYPES BELOW--

1. Wireless hub without BACnet***; Lutron Vive Hub***.
2. Wireless hub with BACnet***; Lutron Vive Premium Hub***.

a. Flush-mount wireless hub***; Model HJS-2-FM***; supports up to 700 total paired devices.
b. Surface-mount wireless hub***; Model HJS-2-SM***; supports up to 700 total paired devices.

B. Integrated multicolor LED provides feedback on what mode the hub is in for simple identification and diagnosis.
C. Integrated processor and web server allows hub to set up and operate the system without any external connections to outside processors, servers, or the internet.
D. Utilizes Ethernet connection for:
1. Networking up to 64 hubs together to create a larger system.
2. Integration with Building Management System (BMS) via native BACnet; does not require interface (***Lutron Vive Premium*** wireless hub with BACnet only).
3. Remote connectivity capabilities, including maintaining system date/time and receiving periodic firmware updates (requires internet connection).
E. A single hub or network of hubs can operate on either a dedicated lighting control only network or can be integrated with an existing building network as a VLAN.
F. Communicates directly to compatible ***Lutron Vive*** RF devices through use ***Lutron Clear Connect*** radio frequency communications link; does not require communication wiring; RF range of 71 feet (23 m) through walls to cover an area of 15836 square feet (1471 sq m) (device and hub must be on the same floor).
G. Communicates directly to mobile device (smartphone or tablet) or computer using built-in Wi-Fi, 2.4 GHz 802.11b/g; wireless range of 71 feet (23 m) through walls (device and hub must be on the same floor).
1. Does not require external Wi-Fi router for connecting to the hub.
H. Allows for system setup, control, and monitoring from mobile device or computer using ***Vive*** web-based software:
1. Supports paired devices up to maximum number indicated including compatible wireless sensors, wireless control stations, and wireless load devices.
2. Allows for timeclock scheduling of events, both time of day and astronomic (sunrise and sunset).
a. Timeclock is integrated into the unit and does not require a constant internet connection.
b. Retains time and programming information after a power loss.
c. 365-day schedulable timeclock allows for:
1) Scheduling of events years in advance.
2) Setting of recurring events with exceptions on holidays.
d. Time clock events can be scheduled to:
1) Send lights to a desired level and select the fade rate desired to reach that level.
2) Adjust level lights go to when occupied.
3) Adjust level lights go to when unoccupied.
4) Enable/disable occupancy.
5) Adjust timeout of sensors (requires ***Model FC-SENSOR*** wired fixture sensor or ***Model DFCSJ-OEM-OCC*** wireless fixture control dongle with integral sensing capabilities).

6) Control individual devices, areas, or groups of areas. When connected to ***Vive Vue*** server, only areas or groups of areas can be controlled with timeclock events.

3. Allows for control, monitoring, and adjustment from anywhere in the world (***Lutron Vive*** wireless hub internet connection required).
4. Uses RF signal strength detection to find nearby devices for quick association and programming without having to climb ladders.
   a. Association and setup does not require a factory technician to perform.
5. System using ***Lutron Vive*** wireless hub(s) can operate with or without connection to the internet.
6. Supports energy reporting.
   a. Reports measured energy data for ***PowPak*** fixture control modules at accuracy of plus/minus 2 percent or 0.5 W (whichever is higher).
   b. Reports calculated energy data for ***PowPak*** junction box mounted modules at accuracy of 10 percent.
   c. Reports measured energy for ***DFCSJ Series*** wireless fixture control dongle when paired with driver that supports measured power (measurement accuracy defined by driver specification) or reports calculated power if driver does not have measurement capabilities.
7. Supports automatic demand response for load shedding via:
   a. Local contact closure without need for separate interface.
   b. OpenADR® 2.0b compliant utility command.
   c. BACnet (***Lutron Vive Premium*** wireless hub with BACnet only).
8. Support automatic generation of alerts in ***Lutron Vive*** web-based application for designated events/triggers, including:
   a. Low-battery condition in battery-operated sensors and controls; alert cleared when battery is replaced.
   b. Missing device (e.g., control or sensor); alert cleared when device is detected by system.
9. Wireless hub can be firmware upgraded to provide new software features and system updates.
   a. Firmware update can be done either locally using a wired Ethernet connection or Wi-Fi connection, or remotely if the wireless hub is connected to the internet.

I. ***Lutron Vive*** Web-Based Application:
1. Accessibility and Platform Support:
   a. Web-based; runs on most HTML5 compatible browsers (including Safari and Chrome).
   b. Supports multiple platforms and devices; runs from a tablet, desktop, laptop, or smartphone.
   c. User interface supports multi-touch gestures such as pinch to zoom, drag to pan, etc.
   d. Utilizes HTTPS (industry-standard certificate-based encryption and authentication for security).
   e. Multi-level Password Protected Access: Individual password protection on both the integrated Wi-Fi network and web-based software.
   f. WPA2 security for Wi-Fi communication with wireless hub.

2. System Navigation and Status Reporting:
    a. Area Tree View: Easy navigation by area name to view status and make programing adjustments through the software.
    b. Area and device names can be changed in real time.
3. Setup app available for iOS and Android that allows for:
    a. Job registration to extend product warranty.
    b. Management of setup for multiple projects in different locations.
    c. Creation of handoff documents that are sent directly to a facility manager via email once setup is complete.
    d. Backup of ***Vive*** wireless hub database to ***Lutron*** cloud for hub replacement.
    e. Access to native help and instructions to assist user with ***Vive*** system setup.

J. BACnet Integration (***Lutron Vive Premium*** wireless hub with BACnet only):
1. Provide ability to communicate by means of native BACnet IP communication (does not require interface) to lighting control system from a user-supplied 10BASE-T or 100BASE-T Ethernet network.
2. Requires only one network connection per hub.
3. BACnet Integrator Capabilities:
    a. The BACnet integrator can command:
        1) Area light output.
        2) Area load shed level.
        3) Area load shed enable/disable.
        4) Enable/Disable:
            (a) Area occupancy sensors.
            (b) Area daylighting.
        5) Daylighting level.
        6) Area occupied and unoccupied level
        7) Occupancy sensor timeouts (for fixture sensors).
    b. The BACnet integrator can monitor:
        1) Area on/off status.
        2) Area occupancy status.
        3) Area load shed status.
        4) Area instantaneous energy usage and maximum potential power usage.
        5) Enable/Disable:
            (a) Area occupancy sensors.
            (b) Daylighting.
            (c) Timeclocks.
        6) Daylighting level.
        7) Light levels from photo sensors.
        8) Area occupied and unoccupied level.
        9) Occupancy sensor timeouts.

K. API Integration:
1. Support communication, without requiring interface, between lighting control system and third-party systems via RESTful API.
2. Requires one network connection per wireless hub.
3. API Integration Capabilities:
    a. Control all zones or subset of zones.
        1) Set zones in designated area to specific level.

2) Raise/lower dimmable lights in designated area.
b. Control individual zones.
c. Subscribe to and Monitor:
1) Area status changes (e.g., occupancy, light level, and instantaneous power).
2) Individual zone changes in light level.
3) Alerts (e.g., missing device and low battery).

L. Scenes:
1. Support programmable scenes to control individual devices, areas, or groups of areas on demand.
2. Scenes may be activated via:
a. Contact closure input.
b. API integration.
c. Manual activation in app.

M. Emergency Mode:
a. Support emergency mode to, when triggered, send lights to defined levels and lock out controls for ***PowPak*** load control modules equipped with emergency mode.
2. Emergency mode may be activated via:
a. Contact closure input.
b. API integration.
c. Manual activation in app.

N. Contact Closure Interface: Provide two contact closure inputs; accepts both momentary and maintained contact closures that can be used for automatic demand response.

O. Rated for use in air-handling spaces as defined in UL 2043.

P. Meets CAL TITLE 24 P6 requirements.

2.07 ACCESSORIES

A. Emergency Lighting Interface:
1. Product: ***Lutron Model LUT-ELI***.
2. Provides total system listing to UL 924 when used with lighting control system.
3. Senses all three phases of building power.
4. If power on any phase fails provides output to send lights controlled to defined levels. Lights to return to their previous intensities when normal power is restored.
5. Accepts contact closure input from fire alarm control panel.

2.08 SOURCE QUALITY CONTROL

A. Factory Testing***; Lutron Standard Factory Testing***:
1. Perform full-function factory testing on all completed assemblies. Statistical sampling is not acceptable.
2. Perform full-function factory testing on 100 percent of all ballasts and LED drivers.
3. Perform factory burn-in of 100 percent of all ballasts at 104 degrees F (40 degrees C).

PART 3 EXECUTION

3.01 EXAMINATION

A. Verify that field measurements are as shown on the drawings.

B. Verify that ratings and configurations of system components are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive system components.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.02 PREPARATION

A. System and Network Integration Consultation***; Lutron LSC-INT-VISIT***: Include additional costs for Lighting Control Manufacturer to conduct meeting with facility representative and other related equipment manufacturers to discuss equipment and integration procedures.
   1. Coordinate scheduling of visit with Lighting Control Manufacturer. Manufacturer recommends that this visit be scheduled early in construction phase, after system purchase but prior to system installation.

3.03 INSTALLATION

A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130.
B. Install products in accordance with manufacturer's instructions.
C. Sensor Locations:
   1. Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS", locate sensors in accordance with layout provided by Lighting Control Manufacturer. Lighting Control Manufacturer may direct Contractor regarding sensor relocation should conditions require a deviation from locations indicated. Where Lighting Control Manufacturer Sensor Layout and Tuning service is not specified, locate sensors in accordance with Drawings.
   2. Sensor locations indicated are diagrammatic. Within the design intent, reasonably minor adjustments to locations may be made in order to optimize coverage and avoid conflicts or problems affecting coverage, in accordance with manufacturer's recommendations.
D. Ensure that daylight sensor placement minimizes sensor view of electric light sources. Locate ceiling-mounted and luminaire-mounted daylight sensors to avoid direct view of luminaires.
E. Lamp Burn-In: Operate lamps at full output for prescribed period per manufacturer's recommendations prior to use with any dimming controls. Replace lamps that fail prematurely due to improper lamp burn-in.
F. Lamp Lead Lengths: Do not exceed 3 feet (0.9 m) for T4 4-pin compact and T5 BIAX lamps and 7 feet (2.1 m) for T5, T5-HO, T8 U-bend, and T8 linear fluorescent lamps.
G. LED Light Engine/Array Lead Length: Do not exceed 100 feet (31 m).
H. Identify system components in accordance with Section **26 0553**.

3.04 FIELD QUALITY CONTROL

A. See Section **- *Quality Requirements***, for additional requirements.
B. Manufacturer's Full-Scope Start-Up Service is required.
C. Manufacturer’s Programming Service:
   1. Product(s):
      a. On-site programming, 8-hour block***; Lutron LSC-OS-PROG8-SP***.
   2. Include additional costs for manufacturer to perform o**n-site** programming tasks for **8 hours**.
   3. Furnish unit prices for each available programming time interval.
D. Manufacturer's Full-Scope Start-Up Service: **Provide manufacturer's On-Site Full-Scope Start-Up Service**.
   1. On-Site Full-Scope Start-Up Service***; Lutron LSC-OS-SU-VIVE***: Manufacturer's authorized Service Representative to conduct site visit upon completion of lighting control system installation to perform system startup and verify proper operation:

a. Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS", authorized Service Representative to verify sensor locations, in accordance with layout provided by Lighting Control Manufacturer; Lighting Control Manufacturer may direct Contractor regarding sensor relocation should conditions require a deviation from locations indicated.
b. Verify connection of power wiring and load circuits.
c. Verify connection and location of controls.
d. Energize wireless hubs.
e. Associate occupancy/vacancy sensors, daylight sensors, wireless remotes, and wall stations to load control devices.
f. Provide initial rough calibration of sensors; fine-tuning of sensors is responsibility of Contractor unless provided by Lighting Control Manufacturer as part of Sensor Layout and Tuning service where specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS".
g. Program timeclock schedules per approved sequence of operations.
h. Configure load shed parameters per approved sequence of operations.
i. Verify system operation control by control.
j. Obtain sign-off on system functions.
k. Train Owner's representative on system capabilities, operation, and maintenance, as specified in Part 3 under "Closeout Activities".

E. Correct defective work, adjust for proper operation, and retest until entire system complies with contract documents.

3.05 ADJUSTING

A. On-Site Scene and Level Tuning***; Lutron LSC-AF-VISIT***: Include additional costs for Lighting Control Manufacturer to visit site to conduct meeting with **Owner's representative;** to make required lighting adjustments to the system for conformance with original design intent.
B. Sensor Fine-Tuning: Where Lighting Control Manufacturer Sensor Layout and Tuning service is specified in Part 2 under "LIGHTING CONTROLS - GENERAL REQUIREMENTS", Lighting Control Manufacturer to provide up to two additional post-startup on-site service visits for fine-tuning of sensor calibration. Where Lighting Control Manufacturer Sensor Layout and Tuning service is not specified, Contractor to provide fine-tuning of sensor calibration.

3.06 CLEANING

A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

3.07 COMMISSIONING

A. Title 24 Acceptance Testing Service***; Lutron LSC-SPV-DOC-T24***: Include additional costs for Lighting Control Manufacturer to perform lighting control acceptance testing in accordance with CAL TITLE 24 P6. Submit required documentation.

3.08 CLOSEOUT ACTIVITIES

A. See Section ***- Closeout Submittals***, for closeout submittals.
B. See Section ***- Demonstration and Training***, for additional requirements.
C. Demonstration:

1. Demonstrate proper operation of lighting control devices to **Engineer / Owner**, and correct deficiencies or make adjustments as directed.
2. On-Site Performance-Verification Walkthrough***; Lutron LSC-WALK***: Include additional costs for lighting control manufacturer to provide on-site demonstration of system functionality to **facility representative**.

D. Training:
1. Include services of manufacturer's certified service representative to perform on-site training of Owner's personnel on operation, adjustment, and maintenance of lighting control system as part of on-site system start-up services.
2. Customer-Site Solution Training Visit***; Lutron LSC-TRAINING-SP***: Include additional costs for Lighting Control Manufacturer to provide **one** day(s) of additional on-site system training.

E. On-Site Warranty Audit Visit***; Lutron LSC-WNTY-AUD***: Where Manufacturer On-Site Full-Scope Start-Up Service is not provided, include services of manufacturer to perform on-site verification that system meets manufacturer's requirements as necessary for validation of specified enhanced warranty.

3.09 MAINTENANCE

A. See Section – ***Execution and Closeout Requirements***, for additional requirements relating to maintenance service.

B. System Optimization Visit***; Lutron LSC-SYSOPT-SP***: Include additional costs for Lighting Control System Manufacturer to visit site **six months** after system start-up to evaluate system usage and discuss opportunities to make efficiency improvements that will fit with the current use of the facility.

3.10 PROTECTION

A. Protect installed products from subsequent construction operations.

END OF SECTION

GENERAL DEMOLITION NOTES

A. THE EXTENT OF DEMOLITION WORK IS INDICATED ON THE ARCHITECTURAL DRAWINGS AND BY THE REQUIREMENTS OF THIS SECTION. A VISIT TO THE SITE WILL BE REQUIRED TO PROPERLY BID THE DEMOLITION WORK.

B. PROVIDE ALL DEMOLITION WORK REQUIRED FOR THE REMOVAL AND/OR RELOCATION OF HVAC FIXTURES AND EQUIPMENTS AND ASSOCIATED SERVICES TO PROVIDE A COMPLETE AND OPERABLE SYSTEM UPON COMPLETION OF THE PROJECT.

C. MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE TO REVIEW THE ARCHITECTURAL DOCUMENTS IN ADDITION TO THE DIVISION 15 AND 16 DOCUMENTS TO DETERMINE THE COMPLETE SCOPE OF WORK.

D. WHERE EQUIPMENT IS INDICATED OR REQUIRED TO BE REMOVED, THE ASSOCIATED SERVICES SHALL BE CAPPED AT A CONCEALED LOCATION.

E. WHERE SERVICES RUN ABOVE INACCESSIBLE CEILINGS OR IN WALLS WHICH ARE TO REMAIN UNDISTURBED, SERVICES SHALL BE CAPPED AT CONCEALED LOCATION AND ABANDONED

F. WHERE THE REMOVAL OF EQUIPMENT RENDERS EQUIPMENT DOWNSTREAM INOPERABLE, SERVICES SHALL BE EXTENDED TO THE DOWNSTREAM EQUIPMENT SO THAT THE FIXTURES ARE LEFT IN OPERATING CONDITION.

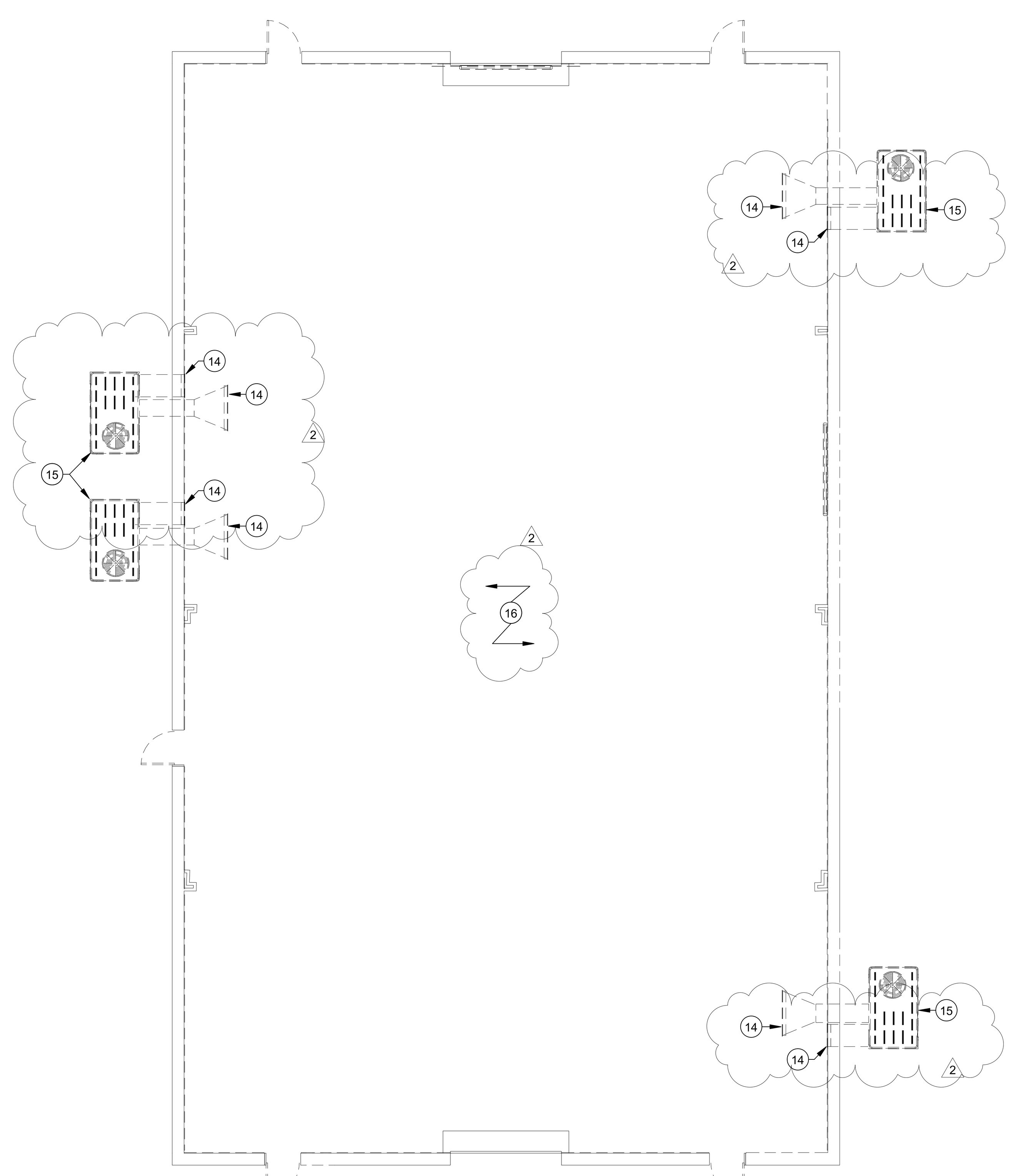
G. COORDINATE DEMOLITION OF DIVISION 15 SYSTEMS AS REQUIRED WITH ALL OTHER TRADES.

H. ALL EXISTING H.V.A.C. AND EQUIPMENT REMOVED DURING CONSTRUCTION THAT ARE NOT TO BE REUSED SHALL BE REMOVED FROM THE JOB SITE AND PROPERLY RETURNED TO THE OWNER, IF DESIRED BY OWNER.

I. WHERE EXISTING EQUIPMENT IS TO BE RELOCATED, BE CAUTIOUS TO PREVENT DAMAGE DURING THE REMOVAL AND REINSTALLATION. WHERE DAMAGE OCCURS, THE EQUIPMENT SHALL BE REPLACED OR REPAIRED TO THE SATISFACTION AND APPROVAL OF THE ARCHITECT AT NO ADDITIONAL COST TO THE OWNER.

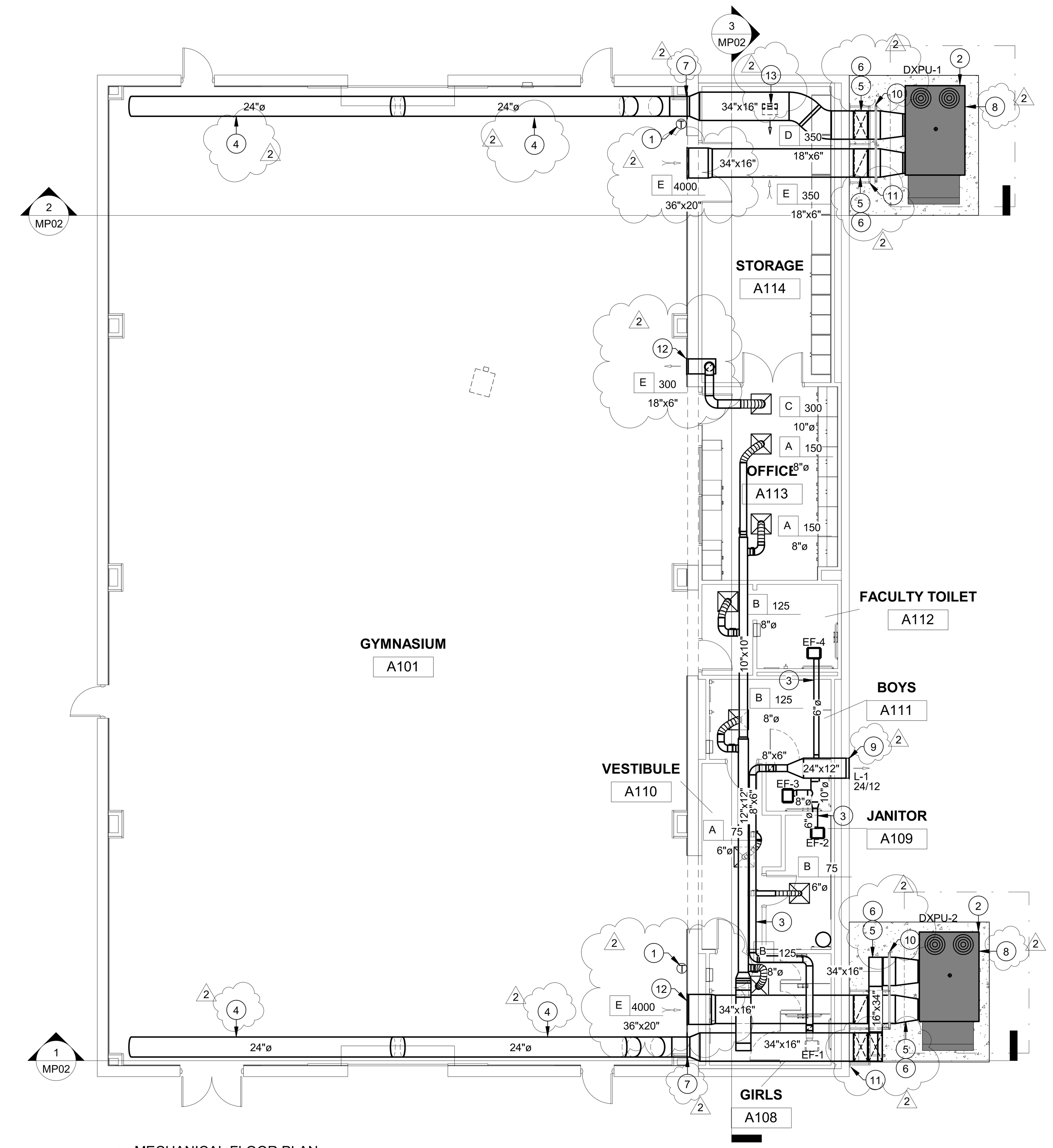
J. EXISTING EQUIPMENT TO BE REUSED SHALL BE CLEANED AND REPAIRED AT THE DISCRETION OF THE ARCHITECT WHERE APPLICABLE.

K. ALL DEVICES ATTACHED TO WALLS OR CEILINGS SHALL BE REMOVED PER DEMOLITION NOTE A - L WHETHER SHOWN ON DRAWINGS OR NOT.



2 MECHANICAL DEMO PLAN
1/8" = 1'-0"

MECHANICAL DEMOLITION NOTES	
14	DEMOLISH AND REMOVE EXISTING SUPPLY AIR AND RETURN AIR DUCTWORK.
15	RETURN INDICATED EQUIPMENT TO OWNER.
16	REMOVE ALL DUCTWORK, AIR DEVICES, AND ASSOCIATED ACCESSORIES AND HARDWARE AND RETURN TO OWNER IF OWNER SO DESIRES.



1 MECHANICAL FLOOR PLAN
1/8" = 1'-0"

MECHANICAL KEYED NOTES	
1	CONTROLS FOR A/C UNIT WILL BE BY MEANS OF A 24 VOLT 7-DAY PROGRAMMABLE THERMOSTAT WITH HEAT-OFF-COOL AND FAN ON-AUTO CAPABILITIES SHOWN ON A DIGITAL DISPLAY. MOUNT THERMOSTAT AT 48" ABOVE FINISHED FLOOR. PROVIDE WITH KEYED CLEAR PLASTIC COVER. TO BE WEB ENABLED. TO HAVE OCCUPANCY SENSOR/ TEMPERATURE SETBACK. TO BE "HONEYWELL VISION PRO 8000 SERIES WITH REDLINK, MODEL NUMBER:TH8320R1003" OR EQUAL.
2	UNIT TO BE MOUNTED ON A METAL FRAME PLATFORM, 36" HIGH. REFER TO DETAILS.
3	ROUND EXHAUST DUCT OUT TO LOUVER.
4	FABRIC DUCT TO BE EQUAL TO "DUCTSOX TUFTEX". PROVIDE W/ HIGH FLOW ORIFICES TO DISPERSE 3500 CFM THROUGH ENTIRE LENGTH OF DUCT. DUCT TO BE SUSPENDED W/ SUSPENDED H-TRACK CONNECTING TO A 3X1 SUSPENSION SYSTEM TO HANG FROM ABOVE, OR EQUAL. INDICATED SECTION OF FABRIC DUCT TO HAVE THROW @ 45 DEGREES BELOW HORIZON.
5	OUTDOOR DUCT INSULATION (CLOSED CELL FLEXIBLE ELASTOMERIC INSULATION); 1 INCH THICK MATERIAL THAT HAS A SERVICE TEMPERATURE RANGE FROM -60 DEGREES F TO 180 DEGREES F.
6	THE INSULATION AND OUTSIDE SURFACE MUST BE PROTECTED WITH A WHITE THERMO PLASTIC RUBBER MEMBRANE FORMULATED TO: 1. BE RESISTANT TO UV, AND OZONE, ACID RAIN, AND PHYSICAL ELEMENTS PRODUCED FROM OUTDOOR WEATHER PER ASTM E 96 PROCEDURE A. 2. HAVE AFLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS WHEN TESTED IN ACCORDANCE WITH THE TEST METHOD FOR SURFACE BURNING IN ASTM E 84. 3. SHOW NO EVIDENCE OF CONTINUED EROSION, DELAMINATING, CRACKING, FLAKING, OR PEELING WHEN TESTED IN ACCORDANCE WITH THE TEST METHOD FOR EROSION RESISTANCE IN UL181. BE RESISTANT TO MOLD GROWTH RESISTANCE, ASTM G 21/C 1338 RESISTANT TO FUNGI, AND RESISTANT TO BACTERIA GROWTH PER ASTM G 22. 4. SHALL BE EQUAL TO "THERMADUCT, R-8 IN BOTH CONSTRUCTION INTEGRITY AND INSULATIVE VALUES OR BETTER.
7	PROVIDE W/ ROUND ESCUTCHEON PLATE WHERE ROUND DUCT PENETRATES WALL.
8	MOUNT UNIT OVER A 6" CONCRETE PAD.
9	COORDINATE LOCATION OF LOUVERS TO NOT CONFLICT WITH CONTROL JOINTS AND DOWNSPOUTS.
10	PROVICE W/ DUCT SUPPORT STANDS. EQUAL TO 'MICRO IND. 6DS-P' PROVIDE W/ TAP FRAME TO ENCLOSE DUCT. COORDINATE W/ STRUCTURAL ENGINEER FOR ANCHORING.
11	PROVIDE W/ DUCT SUPPORTS ON WALL. EQUAL TO 'MICRO IND. 6DS-HDG' PROVIDE W/ ACCESSORY SUPPORT PAD UNDER POLYBASE SPACE AS PER DUCT SUPPORT MANUFACTURER RECOMMENDATIONS. (4' SPACING RECOMMENDED)
12	CONTRACTOR TO COORDINATE POSSIBLE CONFLICTS WITH ACOUSTIC PANELS.

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Project number:

03.05.21

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SAN CARLOS GYMNASIUM ADDITION

EDINBURG CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
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No.	Date	Description
2	03/05/2021	ADDENDUM #2

PROJECT NO.: 20042
ISSUE DATE: 03.05.21
DRAWN BY: Author
CHECKED BY: Checker

SHEET NAME

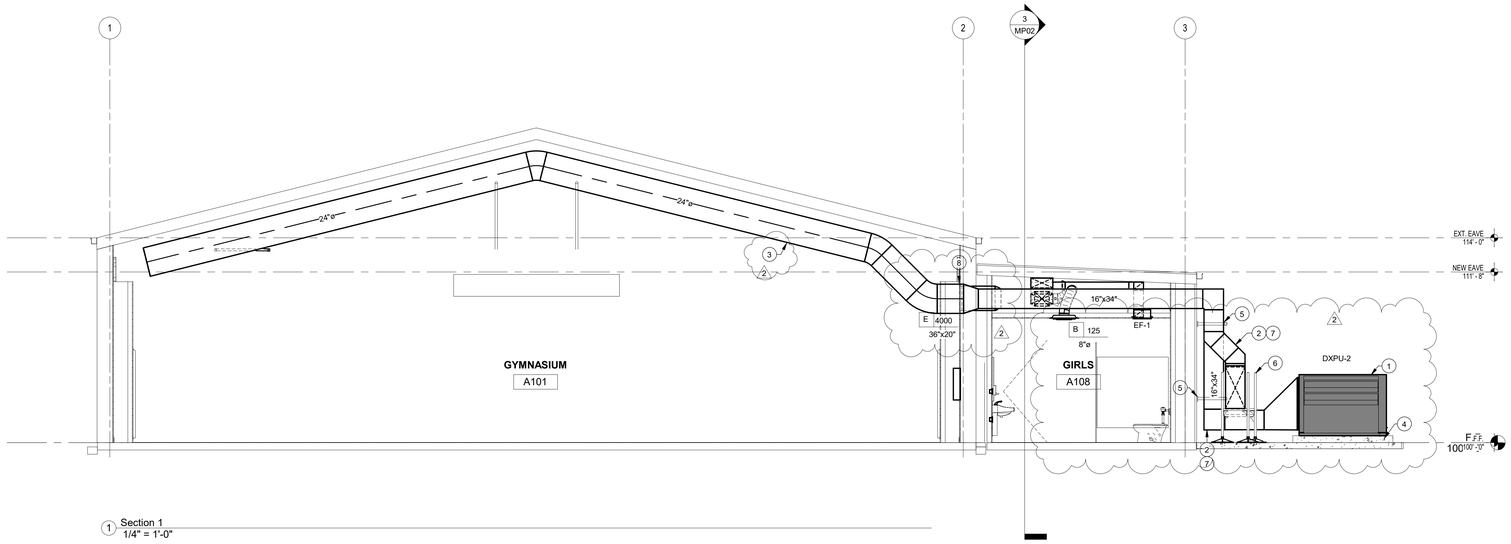
MECHANICAL FLOOR PLAN

Sheet Number

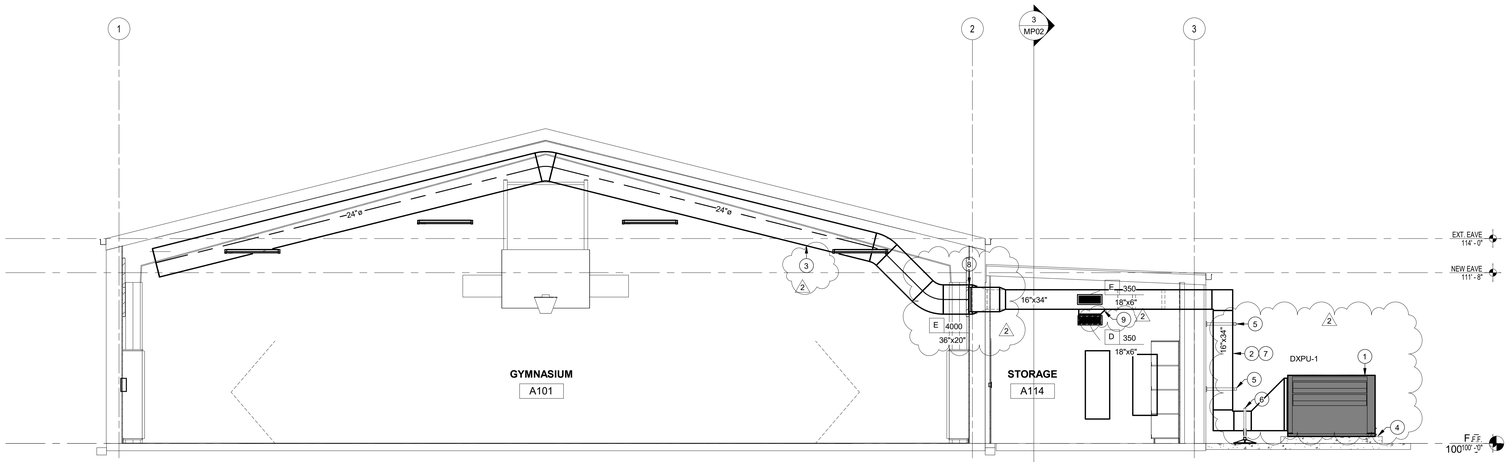
MP01

Project Status:

100% CONSTRUCTION DOCUMENTS



1 Section 1
1/4" = 1'-0"



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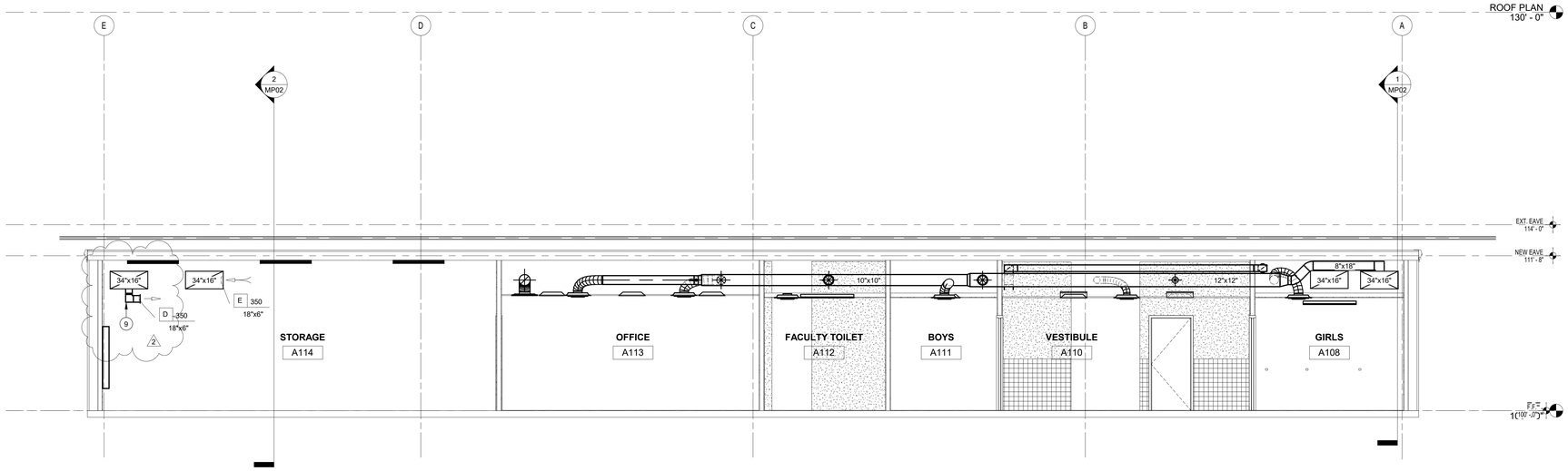

3 Section 3
1/4" = 1'-0"

MECHANICAL KEYED NOTES

1	UNIT TO BE MOUNTED ON A METAL FRAME PLATFORM, 36" HIGH. REFER TO DETAILS.
2	OUTDOOR DUCT INSULATION (CLOSED CELL FLEXIBLE ELASTOMERIC INSULATION); 1 INCH THICK MATERIAL THAT HAS A SERVICE TEMPERATURE RANGE FROM -60 DEGREES F TO 180 DEGREES F.
3	FABRIC DUCT TO BE EQUAL TO "DUCTSOX TUFTEX". PROVIDE W/ HIGH FLOW ORIFICES TO DISPERSE 3500 CFM THROUGH ENTIRE LENGTH OF DUCT. DUCT TO BE SUSPENDED W/ SUSPENDED H-TRACK CONNECTING TO A 3X1 SUSPENSION SYSTEM TO HANG FROM ABOVE, OR EQUAL. INDICATED SECTION OF FABRIC DUCT TO HAVE THROW @ 45 DEGREES BELOW HORIZON.
4	MOUNT UNIT OVER A 6" CONCRETE PAD.
5	PROVIDE W/ DUCT SUPPORTS ON WALL. EQUAL TO 'MICRO IND. 6DS-HDG' PROVIDE W/ ACCESSORY SUPPORT PAD UNDER POLYBASE SPACE AS PER DUCT SUPPORT MANUFACTURER RECOMMENDATIONS. (4' SPACING RECOMMENDED)
6	PROVICE W/ DUCT SUPPORT STANDS. EQUAL TO 'MICRO IND. 6DS-P' PROVIDE W/ TAP FRAME TO ENCLOSE DUCT. COORDINATE W/ STRUCTURAL ENGINEER FOR ANCHORING.
7	THE INSULATION AND OUTSIDE SURFACE MUST BE PROTECTED WITH A WHITE THERMO PLASTIC RUBBER MEMBRANE FORMULATED TO: 1. BE RESISTANT TO UV, AND OZONE, ACID RAIN, AND PHYSICAL ELEMENTS PRODUCED FROM OUTDOOR WEATHER PER ASTM E 96 PROCEDURE A. 2. HAVE AFLAME SPREAD RATING OF 25 OR LESS AND A SMOKE DEVELOPED RATING OF 50 OR LESS WHEN TESTED IN ACCORDANCE WITH THE TEST METHOD FOR SURFACE BURNING IN ASTM E 84. 3. SHOW NO EVIDENCE OF CONTINUED EROSION, DELAMINATING, CRACKING, FLAKING, OR PEELING WHEN TESTED IN ACCORDANCE WITH THE TEST METHOD FOR EROSION RESISTANCE IN UL181, BE RESISTANT TO MOLD GROWTH RESISTANCE, ASTM G 21/C 1338 RESISTANT TO FUNGI, AND RESISTANT TO BACTERIA GROWTH PER ASTM G 22. 4. SHALL BE EQUAL TO "THERMADUCT, R-8 IN BOTH CONSTRUCTION INTEGRITY AND INSULATIVE VALUES OR BETTER.
8	PROVIDE W/ ROUND ESCUTCHEON PLATE WHERE ROUND DUCT PENETRATES WALL.
9	MOUNT/TAP SA DEVICE OFF BOTTOM OF SA DUCT.

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Project number:

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STATE OF TEXAS
Wilford L. McGee III
103539
LICENSED PROFESSIONAL ENGINEER

SAN CARLOS GYMNASIUM ADDITION

EDINBURG CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
505 S. 83RD ST, EDINBURG TX 78539

No.	Date	Description
2	03/05/2021	ADDENDUM #2

PROJECT NO.: 2004
ISSUE DATE: 03.05.21
DRAWN BY: Author
CHECKED BY: Checker

SHEET NAME

MECHANICAL SECTIONS

Sheet Number

MP02

Project Status:

100% CONSTRUCTION DOCUMENTS

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ELECTRICAL LEGEND-LIGHTING

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
SYMBOLS ARE SHOWN SCHEMATIC AND MAY NOT BE TO SCALE.

SYMBOL	DESCRIPTION
	2'x4' LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE
	2'X4' LIGHT FIXTURE W/EMERGENCY BATTERY PACK, REFER TO LUMINAIRE SCHEDULE
	2'x2' LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE
	2'X2' LIGHT FIXTURE W/EMERGENCY BATTERY PACK, REFER TO LUMINAIRE SCHEDULE
	1'X4' LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE
	TRACK LIGHT WITH HEADS AS INDICATED
	INCANDESCENT, LED, FLUORESCENT, OR HID WALL WASHER LIGHT FIXTURE CEILING MTD, REFER TO LUMINAIRE SCHEDULE
	INCANDESCENT, LED, FLUORESCENT, OR HID FIXTURE CLG. OR WALL MTD, REFER TO LUMINAIRE SCHEDULE
	LED, FLUORESCENT, OR HID FIXTURE WITH EMERGENCY BATTERY PACK. CLG. OR WALL MTD, REFER TO LUMINAIRE SCHEDULE
	EXIT LIGHT, CEILING OR WALL MOUNTED - SHADING INDICATING SINGLE OR DOUBLE FACE; DIRECTIONAL ARROWS AS INDICATED REFER TO LUMINAIRE SCHEDULE
	EXIT LIGHT SAME AS ABOVE, EXCEPT WITH AN EMERGENCY UNIT AS A COMBO, REFER TO LUMINAIRE SCHEDULE
	CEILING FAN
	STRIP UTILITY LIGHT FIXTURE, REFER TO LUMINAIRE SCHEDULE
	STRIP UTILITY STRIP LIGHT WITH EMERGENCY BATTERY PACK, REFER TO LUMINAIRE SCHEDULE
$	WALL SWITCH SPST, 20A,120/277V
$2	DOUBLE POLE TOGGLE SWITCH, 20A/120/277V
$3	3-WAY WALL SWITCH, 20A,120/277V
$4	4-WAY WALL SWITCH, 20A,120/277V
$D	WALL DIMMER SWITCH
$P	WALL SWITCH SPST, 20A,120/277V - PILOT LIGHT SWITCH
$K	WALL SWITCH SPST, 20A,120/277V - KEYED SWITCH, X = 3 OR 4 WAY

ELECTRICAL LEGEND-SPECIAL SYSTEMS

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
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SYMBOL	DESCRIPTION	
	WALL MOUNTED TELEPHONE/DATA OUTLET. FURNISH AND INSTALL 1.25"C., WITH PULLSTRING AND INSULATED BUSHING, STUBBED ABOVE CEILING. +24" UNLESS OTHERWISE NOTE. BOX TO BE MINIMUM 2 1/8" DEEP.	
	WALL MOUNTED TELEPHONE OUTLET. FURNISH AND INSTALL 1"C , WITH PULLSTRING AND INSULATED BUSHING, STUBBED ABOVE CEILING. +24" UNLESS OTHERWISE NOTE. BOX TO BE MINIMUM 2 1/8" DEEP.	
	WALL MOUNTED DATA OUTLET. FURNISH AND INSTALL 1.25"C , WITH PULLSTRING AND INSULATED BUSHING, STUBBED ABOVE CEILING. +24" UNLESS OTHERWISE NOTE. BOX TO BE MINIMUM 2 1/8" DEEP.	
S	CEILING MOUNTED WIFI ACCESS POINT	
P	PUBLIC TELEPHONE OUTLET.: J-BOX & 1"C	
TV	TELEVISION OUTLET. CLG. OR WALL MOUNTED - STUB 1" C. ABOVE CEILING FROM OUTLET BOX	
	PUSHBUTTON WALL MOUNTED.	
av	AUDIO VIDEO DROP, REFER TO DETAIL	
IC	INTERCOM - CALL SWITCH- JBOX WITH 3/4"C	
S	INTERCOM/PAGING LAY-IN SPEAKER	
I	PA EXTERIOR SPEAKER	10'-6" AFF
DC	SECURITY DOOR CONTACT SENSOR - STUB 1/2"C ABOVE CEILING FROM OUTLET BOX	
MD	SECURITY MOTION DETECTOR SENSOR - STUB 1/2"C ABOVE CEILING FROM OUTLET BOX	
G	SECURITY GLASS BREAK SENSOR - STUB 1/2"C ABOVE CEILING FROM OUTLET BOX	
KP	SECURITY KEY PAD - STUB 3/4"C ABOVE CEILING FROM OUTLET BOX	
SEC	SECURITY PANEL JUNCTION BOX	54"
ACC	ACCESS CONTROL PANEL JUNCTION BOX - BY OTHERS	54"
CR	CARD READER BOX - STUB 3/4"C ABOVE CEILING LEVEL FROM OUTLET BOX SYSTEM BY OTHERS	----
ML	MAGNETIC LOCK BOX - STUB 3/4"C ABOVE CEILING LEVEL FROM OUTLET BOX SYSTEM BY OTHERS	----
S	INTRUSION EXTERIOR SPEAKER	10'-6" AFF
C	SINGLE SIDED CLOCK, J-BOX W/3/4"C	96" AFF MIN.
C	DOUBLE SIDED CLOCK,J-BOX W/3/4"C	96" AFF MIN.
	CAMERA J-BOX W/ 3/4" CONDUIT	----
	TELEPHONE BOARD- 3/4"x8' FIRE RATED	

ELECTRICAL LEGEND-FIRE ALARM

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SYMBOL	DESCRIPTION
F	FIRE ALARM PULL STATION: STUB 3/4"C ABOVE CEILING FROM J-BOX
AV	FIRE ALARM AUDIBLE/VISUAL SIGNAL: STUB 3/4"C ABOVE CEILING FROM J-BOX
V	FIRE ALARM VISUAL SIGNAL: STUB 3/4"C ABOVE CEILING FROM J-BOX
VS	FIRE ALARM CEILING MOUNT SPEAKER STROBE, UL LISTED, : J-BOX WITH 3/4"C
VS	FIRE ALARM CEILING WALL MOUNT OUTDOOR SPEAKER STROBE, UL LISTED, : J-BOX WITH 3/4"C
SD	FIRE ALARM SMOKE DETECTOR CEILING OR WALL MOUNTED: STUB 3/4"C ABOVE CEILING FROM J-BOX
H	HEAT DETECTOR CEILING OR WALL MOUNTED: STUB 3/4"C ABOVE CEILING FROM J-BOX
SD D	DUCT SMOKE DETECTOR: STUB 3/4"C ABOVE CEILING FROM J-BOX
SD A	SMOKE DETECTOR WITH AN AUDIBLE BASE: STUB 3/4"C ABOVE CEILING FROM J-BOX
FACP	FIRE ALARM CONTROL PANEL, ADDRESSABLE, SURFACE MTD UNO, INCLUDE A FIRE DOCUMENT BOX EQUAL TO MFR. SPACE AGE ELECTRONICS #FDB-ACE-11.
FACP-EVS	FIRE ALARM CONTROL PANEL WITH EMERGENCY VOICE SYSTEM, ADDRESSABLE, FLUSH MTD UNO, INCLUDE A FIRE DOCUMENT BOX EQUAL TO MFR. SPACE AGE ELECTRONICS #FDB-ACE-11.
EVES	FIRE ALARM EMERGENCY VOICE EVACUATION SYSTEM, FLUSH OR SURFACE.
FAAP	FIRE ALARM REMOTE ANNUNCIATOR PANEL, FLUSH MOUNTED UNO
PAD-X	POWER SUPPLY, DEDICATED 110V
DH	DOOR HOLDER DEVICE: STUB 3/4"C ABOVE CEILING FROM J-BOX
TS	TAMPER SWITCH: STUB 3/4"C ABOVE CEILING FROM J-BOX
FS	FLOW SWITCH: STUB 3/4"C ABOVE CEILING FROM J-BOX
F	FIRE ALARM OUTDOOR SPEAKER, WEATHER PROOF: STUB 3/4"C ABOVE CEILING FROM J-BOX

ELECTRICAL LEGEND-GENERAL

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
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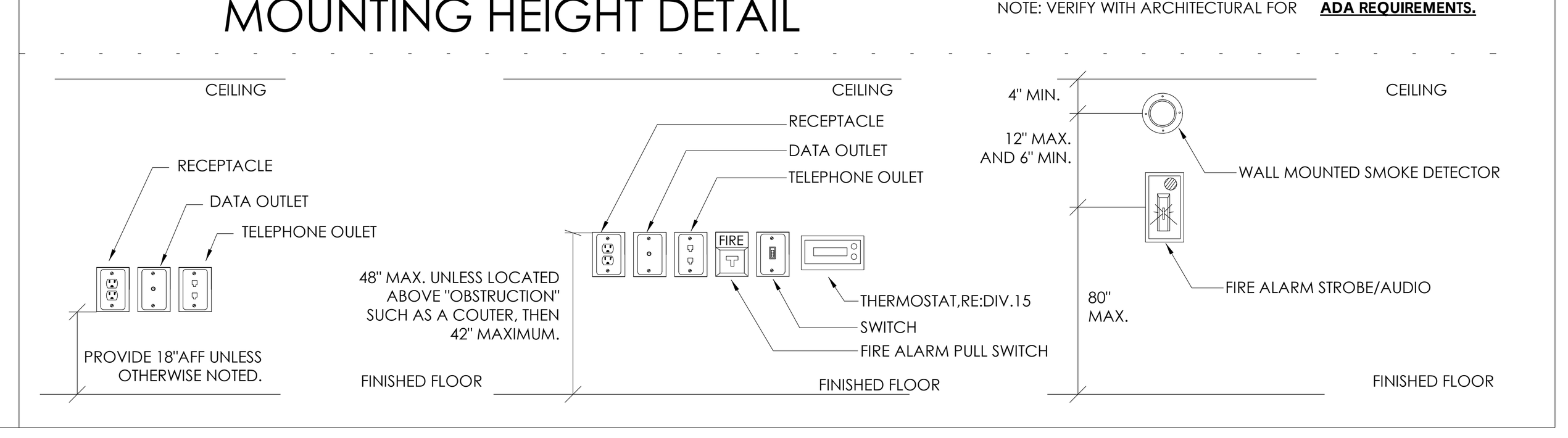
SYMBOL	DESCRIPTION
	HEAVY DUTY DISCONNECT SWITCH FUSED
	HEAVY DUTY DISCONNECT SWITCH NONFUSED
	HEAVY DUTY COMBINATION DISCONNECT/MOTOR STARTER
	HEAVY DUTY MOTOR STARTER
	ENCLOSED BREAKER, RE: TO SCH. FOR MORE INFO.
R	ROTARY TYPE DISCONNECT SWITCH
$M	120/277-208/480V,20AMP, MOTOR RATED SWITCH, NEMA-1(INTERIOR) ENCLOSURE, NEMA-3R(EXTERIOR) ENCLOSURE. VOLTAGE TO BE SELECTED PER EQUIPMENT CIRCUIT REQUIREMENTS.
	MOTOR
	PANELBOARD, CLEARANCE AS PER LATEST NEC
	SWITCH LEG
	ELECTRICAL CONDUIT
	UNDERGROUND ELECTRICAL CONDUIT
C	COMMUNICATION CONDUIT AND WIRING
X, X, X	MULTI-POLE DEVICE CIRCUIT NUMBERS
X/X/X	THREE SINGLE POLE DEVICE CIRCUIT NUMBERS
A-1	CONDUIT AND WIRE HOMERUN TO PANEL. SHORT HATCH INDICATES NEUTRAL CONDUCTOR, LONG HATCHES INDICATE PHASE CONDUCTORS, AND LONG HATCH WITH CIRCLE INDICATES ISOLATES OR INSULATED GROUND. ALPHANUMERIC DESCRIPTION INDICATES PANEL AND BREAKER.
A-1	UNDERGROUND CONDUIT AND WIRE HOMERUN TO PANEL. SHORT HATCH INDICATES NEUTRAL CONDUCTOR, LONG HATCHES INDICATE PHASE CONDUCTORS, AND LONG HATCH WITH CIRCLE INDICATES ISOLATED OR INSULATED GROUND. ALPHANUMERIC DESCRIPTION INDICATES PANEL AND BREAKER.
#	DETAIL NUMBER
#	SHEET NUMBER
T	THERMOSTAT WALL MOUNTED - STUB 1/2"C ABOVE CEILING FROM OUTLET BOX. COORDINATE EXACT LOCATION AND HEIGHT WITH MECHANCIAL DIVISION.
J	JUNCTION BOX - SIZE & MOUNTING AS REQUIRED MINIMUM OF 4" SQUARE
PC	PHOTO CELL(MFR.INTERMATIC #K4136M)
LC	LIGHTING CONTACTOR, NEMA-1, W/H.O.A. SWITCH
TC	TIME CLOCK (MFR.TORK#7202Z)
CP-1	CIRCULATING PUMP
$	ELECTRICAL DEVICE AS SHOWN ON PLANS SURFACE MOUNT RACEWAY. SURFACE MOUNT RACEWAY SHALL BE WIREMOLD #V700 SERIES. PROVIDE ALL RELATED #V700 SERIES ACCESSORIES FOR AN OPERABLE SYSTEM.

MOUNTING HEIGHT DETAIL

NOTE: VERIFY WITH ARCHITECTURAL FOR **ADA REQUIREMENTS.**



ELECTRICAL ABBREVIATIONS:

ABBV:	DESCRIPTION	ABBV:	DESCRIPTION
AFF	ABOVE FINISHED FLOOR	MFR.	MANUFACTURER
BFC	BELOW FINISHED CEILING	(S.C.)	SHARE CIRCUIT
C	CONDUIT	QRCPT(S)	QUAD RECEPTACLE(S)
		RCPT(S)	DUPLEX RECEPTACLE(S)
CB	CIRCUIT BREAKER	CRCPT(S)	I.G. RECEPTACLE(S)
EC	EMPTY CONDUIT	QCRCPT(S)	QUAD I.G. RECEPTACLE(S)
EX	EXISTING	PNL	PANEL
F	FUSE	SO (S.O.)	SPACE ONLY
G	GROUND (EQUIPMENT)	SP	SPARE
GFI	GROUND FAULT INTERRUPTER	ST (S.T.)	SHUNT TRIP
MTD	MOUNT OR MOUNTED	SW	SWITCH
NF	NONFUSED	UF	UNDERFLOOR
NIC	NOT IN CONTRACT		
H.D	HEAVY DUTY	UG	UNDERGROUND
NL	NIGHT LIGHT	UNO(U.N.O.)	UNLESS NOTED OTHERWISE
AC	ABOVE COUNTER	WG	WIRE GUARD
HT.	HEIGHT		
MTD.	MOUNTING	WP	WEATHERPROOF
FDR.	FEEDER	XFMR	TRANSFORMER
CKT.	CIRCUIT	MB	MAIN BREAKER
LTG.	LIGHTING	MLO	MAIN LUGS ONLY
LC	LIGHTING CONTACTOR	RMC	RIGID METAL CONDUIT
IG	ISOLATED GROUND	RNC	RIGID NONMETALLIC CONDUIT
EA.	EACH	EMT	ELECTRICAL METALLIC TUBING CONDUIT
N1	NEMA-1		
N3R	NEMA-3R	S/N	SOLID NEUTRAL
N4X	NEMA-4X		
SS	STAINLESS STEEL	AC	ABOVE COUNTER
		AHJ	AHUTHORITY HAVING JURISDICTION
		T	TAMPER PROOF

NOTES:

1.) 48" AFF INDICATES TO TOP OF DEVICE;
15" AFF INDICATES TO BOTTOM OF DEVICE;
ALL OTHER MOUNTING HEIGHTS REFER TO CENTERLINE OF DEVICE.
AC INDICATES 6" ABOVE COUNTER TO BOTTOM OF DEVICE.

ELECTRICAL LEGEND -WIRING DEVICES

---ALL SYMBOLS SHOWN MAY NOT APPEAR IN ALL DRAWINGS.
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SYMBOL	DESCRIPTION
	SINGLE RECEPTACLE - 20A/125V/2P/3W/G NEMA 5-20R
	DUPLEX RECEPTACLE - 20A/125V/2P/3W/G NEMA 5-20R
T	DUPLEX RECEPTACLE TAMPER RESISTANT - 20A/125V/2P/3W/G NEMA 5-20R
H / H	HOSPITAL GRADE DUPLEX RECEPTACLE/GFI - 20A/125V/2P/3W/G NEMA 5-20R
	DUPLEX RCPT. GFI - 20A/125V/2P/3W/G NEMA 5-20R
WP/ "IN-USE"	DUPLEX RCPT.,WEATHER RESISTANT "WR", GFI INSTALLED IN A "IN-USE" WEATHER PROOF STEEL ENCLOSURE- 20A/125V/2P/3W/G NEMA 5-20R WP/"IN-USE" SHALL BE EQUAL TO MFR. CARLON, METALLIC SERIES SINGLE GANG, VERTICAL MOUNT #ME9UVMG DOUBLE GANG, VERTICAL MOUNT #ME9U2VMG
	QUADRAPLEX RECEPTACLE
	ISOLATED GROUND QUADPLEX RECEPTACLE
	ISOLATED GROUND DUPLEX RECEPTACLE - 20A/125V NEMA 5-20R
	208V RECEPTACLE, VERIFY NEMA NO. WITH EQUIPMENT SUPPLIER
	SPECIAL PURPOSE RECEPTACLE (NEMA NO. AS INDICATED)
HD	J-BOX - AIR HAND DRYER: (RECESSED HAND DRYERS TO BE PROVIDED BY DIVISION 16, ELECTRICAL)#B-750 AUTOMATIC HANDCRAFT AS MANUFACTURER BY BOBRICK. (COLOR WHITE) QUANTITY: REFER TO DRAWINGS (MIN. ONE PER LAV. COMPLETE W/ ELE. CONNECTIONS TYP.)
	4-GANG FLOOR MOUNTED BOX, 2-DUPLEX RECEPTACLE(INCLUDE RECEPTACLE WITH COVER PLATE)/2-GANG FOR DATA - FLUSH MOUNTED UNO FLOOR BOX = MFR.-HUBBELL MODEL#CFB4G30RCR-CFBS1R8CVRNKL(COVER)-(2)FBMPDUP-FBMP6KS -CFBHUB2(MULTISERVICE STEEL RECESSED FLOOR BOX -VERIFY FLOOR FINISH PRIOR TO ORDER SAME BOX FOR DATA OUTLETS.
6G	6-GANG FLOOR MOUNTED BOX, 2-DUPLEX RECEPTACLE(INCLUDE RECEPTACLE WITH COVER PLATE)/2-GANG FOR DATA - FLUSH MOUNTED UNO FLOOR BOX = MFR.-HUBBELL MODEL#CFB6G30RCR-CFBS1R8CVRNKL(COVER)-(3)FBMPDUP-FBMP6KS -CFBHB2(MULTISERVICE STEEL RECESSED FLOOR BOX-VERIFY FLOOR FINISH PRIOR TO ORDER SAME BOX FOR DATA OUTLETS.
6P	6" FIRE RATED POKE-TRHOUGHS BOX, 2-DUPLEX RECEPTACLE(INCLUDE RECEPTACLE WITH COVER PLATE)- MFR.-HUBBELL MODEL#S1R6PTFIT-S1R6SPE-S1R6SPL-S1R6SPH(50/50 DEVICE PLATE COMBINATION)-S1R6CVRALU(COVER) -VERIFY FLOOR FINISH PRIOR TO ORDER SAME BOX FOR DATA OUTLETS.
6JP	6" FIRE RATED POKE-TRHOUGHS BOX, FURNITURE FEED,- MFR.-HUBBELL MODEL#S1R6PTFFALU(ALUMINUM COVER) -VERIFY FLOOR FINISH PRIOR TO ORDER.
8P	8" FIRE RATED POKE-TRHOUGHS BOX, 2-DUPLEX RECEPTACLE(INCLUDE RECEPTACLE WITH COVER PLATE)- MFR.-HUBBELL MODEL#S1R8PTFIT3-S1R8CSPK-S1R8CSPK-S1R8PSPZ(50/50 DEVICE PLATE COMBINATION)-S1R8CVRALU(COVER) -VERIFY FLOOR FINISH PRIOR TO ORDER SAME BOX FOR DATA OUTLETS.

GENERAL ELECTRICAL NOTES

1. ALL SYMBOLS AND ABBREVIATIONS SHOWN ON THIS LEGEND MAY NOT APPEAR ON THIS SET OF DRAWINGS.
2. USE DIRECTIONAL ARROW ON EXIT SIGNS AS REQUIRED.
3. IEEE STANDARD C37.2-1991, ELECTRICAL POWER SYSTEM DEVICE FUNCTION NUMBERS.
4. CONTRACTOR SHALL NOT INSTALL MORE THAN THREE CURRENT CARRYING CONDUCTORS IN A COMMON RACEWAY. IF CONTRACTOR IS PLANNING ON GROUPING MULTIPLE CIRCUITS IN A SINGLE RACEWAY, THE CONTRCATOR MUST SUBMIT ALL DERATING CALCULATIONS FOR THE PROPOSED INSTALLATION IN ACCORDANCE WITH NEC ARTICLE 310.15 (B) (2) FOR APPROVAL PRIOR TO INSTALLATION. NON APPROVED INSTALLATIONS WILL BE REMOVED AND REINSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE NEC AT NO ADDITIONAL COST TO THE OWNER.
5. THERE SHALL NOT BE MORE THAN THE EQUIVALENT OF THREE 90° BENDS (270 DEGREES TOTAL) BETWEEN PULL POINTS. WHERE THERE ARE MORE THAN THREE QUARTER BENDS, CONTRACTOR SHALL PROVIDE PULL BOXES AS SPECIFIED AND SIZED IN ACCORDANCE WITH NEC.
6. COMPLY WITH NEC REQUIREMENTS FOR ELECTRICAL INSTALLATIONS. ALL ELECTRICAL EQUIPMENT AND MATERIAL TO BE APPROVED, LISTED, LABELED, IDENTIFIED AND INSTALLED PER RECOGNIZED ELECTRICAL TESTING LABORATORY.
7. ALL RECEPTACLES, SWITCHES AND JUNCTION BOXES SERVED BY EMERGENCY BRANCH CIRCUITS SHALL BE "RED" IN COLOR. COVERPLATES SHALL BE LABELED IN ACCORDANCE WITH SPECIFICATIONS TO INDICATE PANELBOARD AND CIRCUIT NO. (IE: ET*LA-3).

ELECTRICAL: LIGHTING FUNCTIONAL TESTING / COMMISSIONING PLAN:

CONTRACTOR SHALL PERFORM THE TASK BELOW TO COMMISSION THE LIGHTING CONTROL SYSTEM. CONTRACTOR SHALL SUBMIT A DOCUMENTATION DETAILING THE LIGHTING CONTROL SYSTEM, SETTING/CONDITION, ACTIONS PERFORMED AND FINAL SETTING CONDITION. SUBMIT DOCUMENTATION AT OR BEFORE SUBSTANTIAL COMPLETION TO FACILITATE OBTAINING THE CERTIFICATE OF OCCUPANCY.

A. ENSURE ALL LIGHTING FIXTURES FIXTURES HAVE LAMPS INSTALLED AND ARE FUNCTIONAL.
B. TEST ALL EXIT SIGNS, EMERGENCY LIGHTING FIXTURES, AND EMERGENCY BALLASTS FURNISHED INTEGRAL TO FIXTURES.
C. ENSURE ALL OCCUPANCY SENSORS HAVE BEEN INSTALLED AND ARE OPERATIONAL.
D. VERIFY ALL WALLBOX AND SCENE CONTROLLERS ARE INSTALLED AND OPERATIONAL.
E. TEST EACH INDIVIDUAL DEVICE FOR OCCUPANCY SENSOR TYPES OS1, OS2 AND TEST THE LIGHTING CONTROL RELAY PANEL SYSTEM.
F. TEST 10% OF ALL THE DEVICES FOR OCCUPANCY SENSOR TYPE: WSX-PDT-SA.
G. VERIFY THE FOLLOWING:
1. ALL SENSORS ARE LOCATED AND AIMED PER THE MANUFACTURER'S RECOMMENDATIONS.
2. STATUS INDICATORS ON DEVICES ARE OPERATIONAL AND CORRECT.
3. DEVICES CONTROL LIGHTING FIXTURES AS INDICATED ON DRAWINGS.
4. TIME DELAYS HAVE BEEN SET AS PER CODE AND PER OWNERS DIRECTIONS.
5. MOVEMENT IN ADJACENT AREAS AND/ CYCLING OF HVAC SYSTEMS DOES NOT FALSE TRIGGER SENSORS.
6. PHOTOCELL LOCATION AND AIMED PER MANUFACTURERS RECOMMENDATIONS.
7. PROGRAM INTERIOR RELAYS WITH A TIME FUNCTION ACCEPTABLE TO OWNER.
8. PROGRAM INTERIOR OVERRIDE SWITCH WITH A TIME FUNCTIONAL ACCEPTABLE BY OWNER.

Light Fixture Schedule

Tag	Lamp	Voltage	Mounting	Description	Manufacturer	Model
A	LED (4800LM) (37W)	277V	RECESSED	2X4 LAY-IN LED FLUXPANEL WITH LENS AND LED DRIVER INCLUDE ALL NECESSARY MOUNTING ACCESSORIES.	DAY-BRITE	2FPZ48L840-4-DS-UNV-DIM
AE	LED (4800LM) (37W)	277V	RECESSED	2X4 LAY-IN LED FLUXPANEL WITH LENS AND LED DRIVER INCLUDE ALL NECESSARY MOUNTING ACCESSORIES.	DAY-BRITE	2FPZ48L840-4-DS-UNV-DIM-BSL10LST
B	LED (3800LM) (29W)	277V	RECESSED	2X4 LAY-IN LED FLUXPANEL WITH LENS AND LED DRIVER INCLUDE ALL NECESSARY MOUNTING ACCESSORIES.	DAY-BRITE	2FPZ38L840-4-DS-UNV-DIM
BE	LED (3800LM) (29W)	277V	RECESSED	2X4 LAY-IN LED FLUXPANEL WITH LENS AND LED DRIVER AND EMERGENCY BATTERY BACKUP INCLUDE ALL NECESSARY MOUNTING ACCESSORIES.	DAY-BRITE	2FPZ38L840-4-DS-UNV-DIM-BSL10LST
C	LED (18000 LM) (133W)	277V	SURFACE	LED HIGHBAY SMART LUMINAIRE WITH MOTION/DAYLIGHT SENSOR	DAY-BRITE	FBY-18L-840-UNV-XX
CE	LED (18000 LM) (133W)	277V	SURFACE	LED HIGHBAY SMART LUMINAIRE WITH MOTION/DAYLIGHT SENSOR	DAY-BRITE	FBY-18L-840-UNV-XX-BSL10LST
E2	LED 2	277V	SURFACE @ 8'-0"	ARCHITECTURAL DIE-CAST EMERGENCY LIGHTING	CHLORIDE	PLEMBZ-BAC
F	LED (5500LM) (45W)	277V	SURFACE	4' LED STRIP LIGHT	DAY-BRITE	FSS455L840-UNV-DIM
FE	LED (5500LM) (45W)	277V	SURFACE	4' LED STRIP LIGHT WITH EMERGENCY BATTERY BACKUP	DAY-BRITE	FSS455L840-UNV-DIM-EMLED
X1	INCLUDED	277V	SURFACE	THERMOPLASTIC EXIT/EMERGENCY UNIT WITH SELF-DIAGNOSTICS	CHLORIDE	VLTCR3R
AA	LED (3800LM) 37W 2	277V	SURFACE @10'-0"	WALL MOUNTED FIXTURE RATED FOR WET LOCATION. FIXTURE SHALL BE MOUNTED 10'-0" A.F.F. COORDINATE WITH ALL DISCIPLINES AND ARCHITECTURAL DOCUMENTS PRIOR TO ROUGH-INS.	GARDCO	107L-16L-700-NWG1-3-UNV

GENERAL NOTES:
1.) EQUAL MANUFACTURER SHALL BE ACCEPTABLE WITH EQUAL PERFORMANCE OF SPECIFIED EQUIPMENT AND APPROVED BY ENGINEER.
2.) SUBMIT EQUAL MANUFACTURERS TO ENGINEER 10 DAYS PRIOR TO BID DATE.
3.) SUBMIT LIGHT FIXTURES CUTSHEETS TO OWNER FOR APPROVAL PRIOR TO ORDER.
4.) CONTRACTOR SHALL VERIFY THAT ANY IRRIGATION SPRINKLER HEAD IS AWAY FROM ANY LIGHT POLE A MINIMUM OF 75' TO AVOID CONSISTENT WATER TO LIGHT POLE. COORDINATE WITH IRRIGATION CONTRACTOR PRIOR TO ANY WORK.
5.) ANCHOR BOLTS SHALL BE OF NON-CORROSIVE MATERIAL (STAINLESS STEEL).
6.) ACCEPTABLE MANUFACTURES; PHILIPS, LITHONIA, GOTHAM.
2

INDEX OF SHEETS ELEC

Sheet Number	Sheet Name
EG01	ELECTRICAL LEGEND
ES1.1	ELECTRICAL SITE PLAN
ELPD01	ELECTRICAL DEMO PLAN
EL01	ELECTRICAL FLOOR PLAN
ER01	ELECTRICAL RISER
ED01	ELECTRICAL DETAILS

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Project number:

03.05.21
STATE OF TEXAS
LEONARDO MUNOZ
97137
LICENSED PROFESSIONAL ENGINEER

SAN CARLOS GYMNASIUM ADDITION

EDINBURG CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
505 S. 83RD ST, EDINBURG TX 78539

No.	Date	Description
2	03/05/2021	ADDENDUM #2

PROJECT NO.: 20042
ISSUE DATE: 03.05.21
DRAWN BY: Author
CHECKED BY: Checker

SHEET NAME
ELECTRICAL LEGEND

Sheet Number
EG01

Project Status:
100% CONSTRUCTION DOCUMENTS

3/5/2021 2:38:24 PM
BIM 360://20042 San Carlos Gym Addition/20.4.18_San Carlos Gym Addition_CENTRAL_2020.rvt

GENERAL NOTES

A. SWITCH LEGS ARE NOT SHOWN ALL EXIT FIXTURES TYPE-"X1 & X2", EMERGENCY LIGHT FIXTURE TYPE-"E" AND ALL EMERGENCY BALLAST SHALL BE ON CIRCUIT "H-11". FIXTURE TYPE LABEL WITH AN "_E" ARE LIGHT FIXTURES WITH EMERGENCY BALLAST. REFER TO LIGHT FIXTURE SCHEDULE.WHERE SWITCHING SCHEME IS OBVIOUS.
B. VERIFY CEILING TYPES AND COORDINATE WITH FIXTURE TYPE LIGHT FIXTURE SHALL BE COMPATIBLE WITH CEILING TYPE AS INDICATED ON THE ARCHITECTURAL DOCUMENTS. NOTIFY ENGINEER IF DISCREPANCIES EXIST PRIOR TO ORDERING FIXTURES.
C. COORDINATE EXACT ROUTING OF ALL CONDUIT ABOVE CEILING IN BUILDING. TYPICAL FOR ALL BUILDING EXTERIOR LIGHTING.
D. COORDINATE LOCATION OF LIGHTS WITH DIFFUSERS AND GRILLES.
E. SWITCH LEGS ARE NOT SHOWN WHERE SWITCHING SCHEME IS OBVIOUS.
F. NEMA RATED OUTLETS, REFER TO BREAKER SIZE AND COORDINATE WITH EQUIPMENT REQUIREMENTS PRIOR TO BID.
G. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT OF ALL POWER SOURCE WIRING IN ACCORDANCE WITH ARCHITECTURAL MILLWORK PRIOR TO ANY ROUGH-INS.
H. ELECTRICAL CONTRACTOR SHALL MAKE FINAL CONNECTION TO H.V.A.C EQUIPMENT, PLUMBING EQUIPMENT, REFER TO PANEL SCHEDULE FOR WIRE SIZE.
I. ELECTRICAL CONTRACTOR SHALL PROVIDE STARTERS, RELAYS, CONTACTORS AND THE REQUIRED ELECTRICAL ACCESSORIES FOR MECHANICAL SYSTEM AS REQUIRED.
J. COORDINATE EXACT LOCATION OF ALL MECHANICAL EQUIPMENT IN ACCORDANCE W/MECHANICAL DRAWINGS TO MEET ELECTRICAL AND MECHANICAL REQUIRED CLEARANCE BY THE LATEST CODE.
K. ALL EXISTING EXPOSED CONDUIT THAT IS NOTED TO REMAIN SHALL REINSTALLED TO BE CONCEAL BEHING WALL PANEL. PROVIDE NEW CONDUIT AS NEEDED. REFER TO ARCHITECTURAL DRAWINGS FOR MORE INFORMATION.
L. ELECTRICAL CONTRACTOR SHALL PROVIDE J-BOX AND CONDUIT FOR H.V.A.C. CONTROLS AND THERMOSTATS. COORDINATE EXACT LOCATION WITH MECHANICAL CONTRACTOR.
M. CONTACTOR TO REMOVE AND SALVAGE INTERIOR WOOD SIDING PANELS AS REQUIRED TO INSTALL NEW CONDUIT TO BE CONCEALED BEHIND WALL PANELS.
O. ALL NEW CONDUITS SHALL RUN ALONG OR IN THE PARLING STRUCTURAL.
P. COORDINATE ALL LOCATIONS AND MOUNTING HEIGHT OF ALL ELECTRICAL DEVICES WITH OWNER PRIOR TO INSTALLATION.

2

LIGHTING CONTROLS SYMBOLS LEGEND

SW4	PICO WIRELESS CONTROL-LUTRON PJ2-2B-GWH-L01 (CW-1-WH)	48" AFF
4P	POWER PACK MODULE - LUTRON RMJ-16R-DV-B	ABOVE CEILING
2P	POWER PACK MODULE - LUTRON RMJ-8T-DV-B	ABOVE CEILING
OS4	CORNER OCCUPANCY SENSOR - LUTRON LRF2-OKLB-P-WH	CLG.
SW2	PICO WIRELESS CONTROL-LUTRON PJ2-23BRL-GWH-L01 (CW-1-WH)	48" AFF
OS	WIRELESS OCCUPANCY SENSOR - LUTRON MODEL #LRF2-OCR2B-P-WH	CLG.

ELECTRICAL KEYNOTES

1	FURNISH AND INSTALL 4-INCH SQUARED DEEP JUNCTION BOX FOR MULTIMEDIA OUTLET WITH MUDRINGS. INSTALL AT 15" TO BOTTOM OF DEVICE.
2	FURNISH AND INSTALL 1.5" EMT CONDUIT WITH PULLSTRING FOR MULTIMEDIA CABLING.
3	FURNISH AND INSTALL 4-INCH SQUARE DDEP JUNCTION WITH 3/4" CONDUIT WITH PULL FROM WINCH TO CONTROL SWITCH FOR KEY SWITCH CONTROL FOR ELECTRIC WINCH.
4	3/4"X8'HX4'W PLYWOOD TELEPHONE BOARD FINISHED ONE SIDE. PROVIDE GROUND BAR AND TIE INTO ELECTRICAL GROUNDING SYSTEM VIA WIRE #4.
5	POWER FOR FIRE ALARM EXPANDER PANEL. FIELD VERIFY EXACT LOCATION PRIOR TO ANY ROUGH-INS.
6	POWER FOR INTRUSION/INTERCOM CIRCUITS. FIELD VERIFY EXACT LOCATION PRIOR TO ANY ROUGH-INS.
7	REPLACE EXISTING DUPLEX RECEPTACLES WITH NEW 120V, 20AMP, TAMPER PROOF RECEPTACLES.
8	PROVIDE J-BOX AND 3/4"C WITH PULLSTRING FOR FIRE ALARM. ROUTE CONDUIT TO FIRE ALARM CONTROLLER.
9	PROVIDE J-BOX AND 3/4"C WITH PULLSTRING FOR HVAC CONTROLS. ROUTE CONDUIT TO UNIT CONTROLLER.
10	CONTROL SWITCH SHALL CONTROL ON/OFF AND DIMMING OF ZONE 3.
11	CONTROL SWITCH SHALL CONTROL ON/OFF AND DIMMING OF ZONE 2.
12	CONTROL SWITCH SHALL CONTROL ON/OFF AND DIMMING OF ZONE 1.
13	PROVIDE J-BOX AND 1"C ABOVE CEILING FOR FIBER OPTIC CABLE. ROUTE TO EXISTING 1" CONDUIT OUTSIDE ABOVE CANOPY. REFER TO KEYED NOTE #15.
14	PROVIDE J-BOX 12" AFF WITH 1"C STUBBED OUT ABOVE CEILING FOR DATA CABLING. ALL DATA CABLING TO BE PROVIDED BY OWNER.
15	EXISTING 1" CONDUIT LOCATED ABOVE COVERED WALKWAY TO BE USED FOR NEW FIBER OPTIC CABLE. FIELD VERIFY EXISITNG CONDITIONS PRIOR TO ANY WORK.
16	REPLACE EXISTING QUAD RECEPTACLES WITH NEW 120V, 20AMP, TAMPER PROOF RECEPTACLES.
17	TIE INTO ROOMS LIGHTING CIRCUIT AND INTERLOCK FAN WITH ROOMS LIGHTS. WIRING SHALL BE 2#12, 1#12G, 1/2"C.
18	PROVIDE J-BOX FOR LAVATORY OR FLUSH SENSOR. COORDINATE EXACT LOCATION AND ELECTRICAL REQUIREMENTS WITH EQUIPMENT SUPPLIER PRIOR TO ANY WORK.
19	FURNISH AND INSTALL POWER FOR ELECTRIC WINCH CONSISTING OF 2#10, 1#10G, 3/4"C. FURNISH AND INSTALL NEMA L14-20 TWIST LOCK RECEPTACLE. MOUNT ADJACENT TO WINCH.
20	PROVIDE J-BOX POWER FOR MOTORIZED SCREEN. COORDINATE EXACT LOCATION WITH OWNER PRIOR ANY WORK.
21	PROVIDE POWER AND DATA FOR PROJECTOR. CORDINATE EXACT LOCATION WITH OWNER PRIOR TO ANY WORK.
22	COORDINATE EXACT LOCATION FOR CLOCK NEW LOCATION WITH OWNER PRIOR TO ANY WORK.
23	EXTERIOR LIGHTING TO BE CONTROLLED VIA LIGHTING CONTACTOR.
24	COORDINATE EXACT LOCATION WITH PLUMBER TO CONCEAL CORD BEHIND ELECTRIC DRINKING FOUNTAIN PRIOR TO ANY ROUGH-IN.
25	PROVIDE NEW FIRE ALARM DEVICES, ALL NEW FIRE ALARM DEVICES TO BE TIE INTO EXISTING FIRE ALARM SYSTEM. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY WORK.
26	MOUNT LIGHT FIXTURE TO EXISTING STRUCTURAL. PROVIDE ADDITIONAL STRUCTURAL FOR SUPPORT.
27	PROVIDE SURFACE MOUNT INTERCOM/PA SPEAKERS WITH WIREGUARD.
28	ALL NEW INTERCOM DEVICES TO BE TIE INTO EXISTING INTERCOM SYSTEM. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY WORK.
29	ALL NEW INTRUSION DEVICES TO BE TIE INTO EXISTING INTRUSION SYSTEM. FIELD VERIFY EXISTING CONDITIONS PRIOR TO ANY WORK.
30	PROVIDE SINGLE GANG J-BOX WITH 1"C TO ABOVE CEILING OR WHERE ACCESS IS AVAILABLE. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO ANY WORK. NUMBER NEXT TO DATA BOX REPRESENTS THE NUMBER OF DATA DROPS. ALL DATA CABLING TO BE PROVIDED BY OWNER.
31	PROVIDE SINGLE GANG J-BOX WITH 1"C TO ABOVE CEILING OR WHERE ACCESS IS AVAILABLE. COORDINATE EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO ANY WORK. NUMBER NEXT TO DATA BOX REPRESENTS THE NUMBER OF DATA DROPS. ALL DATA CABLING TO BE PROVIDED BY OWNER.
32	PROVIDE DUPLEX RECEPTACLE ABOVE IT CABINET 7'-6" AFF. FIELD VERIFY EXACT LOCATION AND MOUNTING HEIGHT WITH OWNER PRIOR TO ANY WORK.
33	APPROXIMATE LOCATION OF IT CABINET TO BE MOUNTED 6'-0" AFF. IT CABINET TO BE PROVIDED BY OWNER.
34	100A, 480V, 3-PHASE, 4W, S/N. N3R HEAVY DUTY FUSED DISONNECT, FUSED AT 70A. LOCATE DISCONNECT WITHIN 5'-0" OF TX-R. REFER TO RISER DIAGRAM IN SHEET ER01.
35	PROVIDE BRACKETS FOR SPEAKERS. SPEAKERS TO BE PROVIDED BY OWNER. COORDINATE SPEAKER MAKE/MODEL AND EXACT LCOATION AND MOUNTING HEIGHT WITH OWNER/DISTRICT.
36	ELECTRICAL CIRCUIT FOR SOUND SYSTEM. MOUNT @ 48" A.F.F.

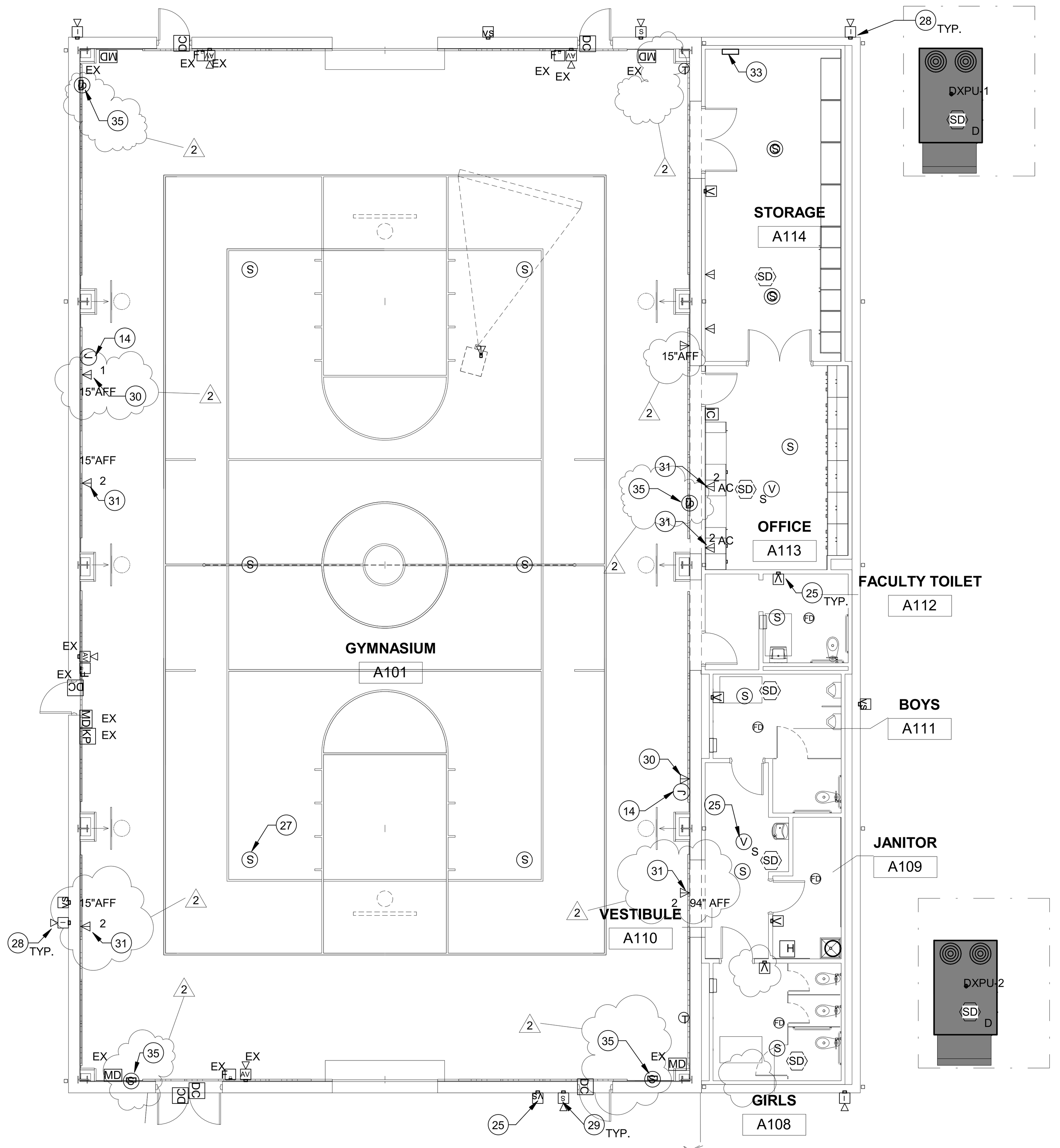
2

EXISTING SPECIAL SYSTEMS

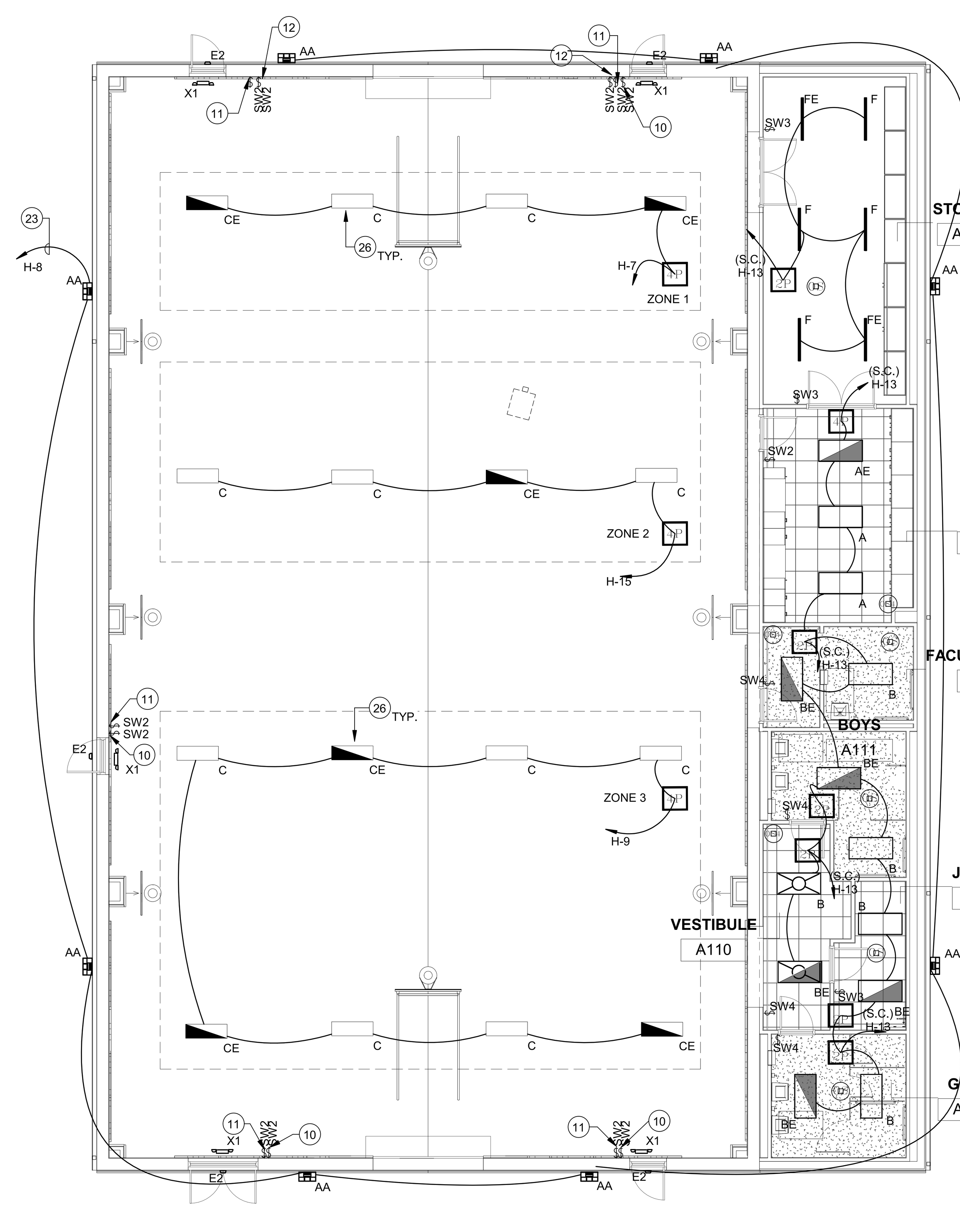
FIRE ALARM SYSTEM - HOCKIKI FireNet
INTERCOM/PA SYSTEM - VALCOM DUALPATH INTERCOM SYSTEM
HVAC CONTROLS - REFER TO DIVISION -15
SECURITY INTRUSION SYSTEMS - HONEYWELL VISTA 128BPT

NOTES:
1. ALL SPECIAL SYSTEMS CONDUIT SHALL INCLUDE MULTIPLE PULLSTRINGS.
2. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING SPECIAL SYSTEMS CONDITIONS PRIOR TO BID DATE. INCLUDE ALL COST IN BID FOR A COMPLETE OPERABLE CODE COMPLIANT SYSTEMS.
3. SPECIAL SYSTEM CONTRACTORS SHALL BE CERTIFIED VENDOR/INSTALLER OF THE EXISTING MANUFACTURER. CONTRACTOR SHALL PROVIDE PROOF IN SUBMITTAL PHASE.

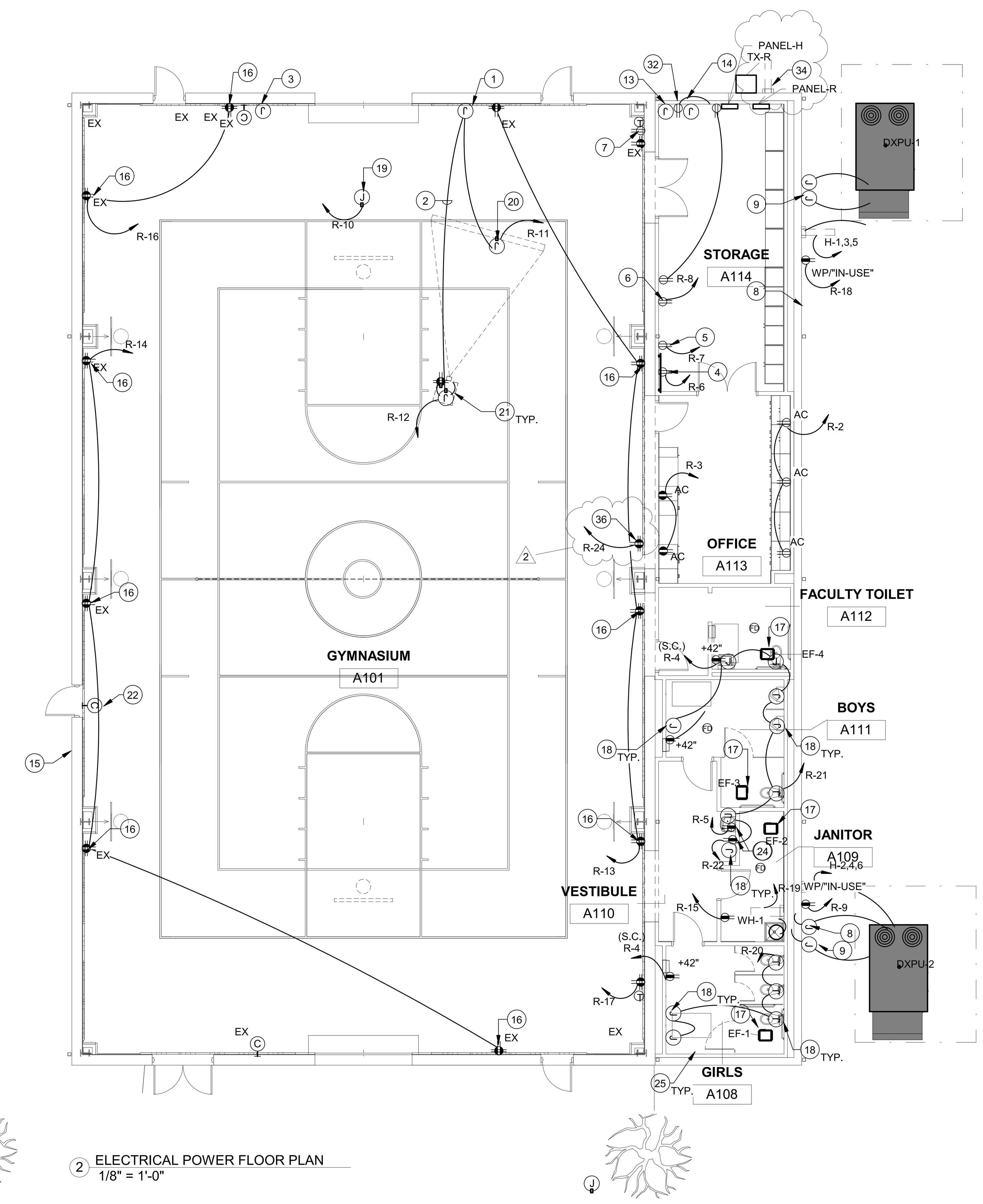
2



3 ELECTRICAL SPECIAL SYSTEMS PLAN
1/8" = 1'-0"



1 ELECTRICAL LIGHTING PLAN
1/8" = 1'-0"



2 ELECTRICAL POWER FLOOR PLAN
1/8" = 1'-0"

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ELECTRICAL FLOOR PLAN

Sheet Number

EL01

Project Status:

100% CONSTRUCTION DOCUMENTS

Branch Panel: PANEL-H

Location:	STORAGE A114	Volts:	480/277 Wye	A.I.C. Rating:	25
Supply From:		Phases:	3	Mains Type:	
Mounting:	Surface	Wires:	4	Mains Rating:	200 A
Enclosure:	Type 1			MCB Rating:	200 A

CKT	Circuit Description	Trip	Poles	Comments	A		B		C		Comments	Poles	Trip	Circuit Description	CKT
H-1	DXPU-1	70 A	3	4#4, 1#8G,1.5"C	17174 VA	17174 VA					4#4, 1#8G,1.5"C	3	70 A	DXPU-2	H-2
H-3	--	--	--	--			17174 VA	17174 VA			--	--	--	--	H-4
H-5	--	--	--	--					17174 VA	17174 VA	--	--	--	--	H-6
H-7	Lighting	20 A	1	2#12, 1#12G,1/2"C	240 VA	800 VA					2#10, 1#10G,3/4"C	1	20 A	Lighting	H-8
H-9	Lighting	20 A	1	2#12, 1#12G,1/2"C			480 VA	0 VA				1	20 A	Spare	H-10
H-11	EMERGENCY LIGHTING	20 A	1	2#10, 1#10G,3/4"C					25 VA	0 VA		1	20 A	Spare	H-12
H-13	Lighting	20 A	1	2#12, 1#12G,1/2"C	890 VA	0 VA						1	20 A	Spare	H-14
H-15	Lighting	20 A	1	2#12, 1#12G,1/2"C			240 VA	0 VA				1	20 A	Spare	H-16
H-17	45 kVA, 277 V/480 V, Three Phase, 4...	70 A	3	4#4, 1#8G,1.5"C					6550 VA	0 VA		1	20 A	Spare	H-18
H-19	--	--	--	--	6220 VA	0 VA						1	20 A	Spare	H-20
H-21	--	--	--	--			5300 VA	0 VA				1	20 A	Spare	H-22
H-23	Spare	20 A	1						0 VA	0 VA		1	20 A	Spare	H-24
H-25	Spare	20 A	1		0 VA	0 VA						1	20 A	Spare	H-26
H-27	Spare	20 A	1				0 VA	0 VA				1	20 A	Spare	H-28
H-29	Spare	20 A	1						0 VA	0 VA		1	20 A	Spare	H-30
H-31	Spare	20 A	1		0 VA	0 VA						1	20 A	Spare	H-32
H-33	Spare	20 A	1				0 VA	0 VA				1	20 A	Spare	H-34
H-35	Spare	20 A	1						0 VA	0 VA		1	20 A	Spare	H-36
H-37	1) SPD	30 A	3		0 VA	0 VA						1	20 A	Spare	H-38
H-39	--	--	--	--			0 VA	0 VA				1	20 A	Spare	H-40
H-41	--	--	--	--					0 VA	0 VA		1	20 A	Spare	H-42
				Total Load:	42498 VA		40368 VA		40922 VA						
				Total Amps:	154 A		146 A		148 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
HVAC	103044 VA	100.00%	103044 VA		
Other	2650 VA	100.00%	2650 VA	Total Conn. Load:	123788 VA
Receptacle	13920 VA	85.92%	11960 VA	Total Est. Demand:	122490 VA
Power	1500 VA	100.00%	1500 VA	Total Conn.:	149 A
Lighting	2650 VA	125.00%	3313 VA	Total Est. Demand:	147 A
EMERGENCY LIGHTING	25 VA	100.00%	25 VA		

Notes:

1) PROVIDE INTEGRAL SURGE PROTECTION DEVICE, 100KA

Branch Panel: PANEL-R

Location:	STORAGE A114	Volts:	120/208 Wye	A.I.C. Rating:	14
Supply From:	TX-R	Phases:	3	Mains Type:	
Mounting:	Surface	Wires:	4	Mains Rating:	100 A
Enclosure:	Type 1			MCB Rating:	100 A

CKT	Circuit Description	Trip	Poles	Comments	A		B		C		Comments	Poles	Trip	Circuit Description	CKT
R-1	Receptacle	20 A	1	2#12, 1#12G,1/2"C	600 VA	600 VA					2#12, 1#12G,1/2"C	1	20 A	Receptacle	R-2
R-3	Receptacle	20 A	1	2#12, 1#12G,1/2"C			400 VA	540 VA			2#12, 1#12G,1/2"C	1	20 A	Receptacle	R-4
R-5	E.D.F.	20 A	1	2#12, 1#12G,1/2"C					1200 VA	200 VA	2#12, 1#12G,1/2"C	1	20 A	TELEPHONE	R-6
R-7	FIRE ALARM	20 A	1	2#12, 1#12G,1/2"C	200 VA	200 VA					2#12, 1#12G,1/2"C	1	20 A	INTRUSION/INTERCOM	R-8
R-9	Receptacle	20 A	1	2#4, 1#8G,1.5"C			1500 VA	1200 VA			2#10, 1#10G,3/4"C	1	20 A	ELECTRIC WINCH	R-10
R-11	MOTORIZED SCREEN	20 A	1	2#12, 1#12G,1/2"C					400 VA	400 VA	2#12, 1#12G,1/2"C	1	20 A	PROJECTOR	R-12
R-13	Receptacle	20 A	1	2#8, 1#10G,3/4"C	1600 VA	1600 VA					2#6, 1#10G,1"C	1	20 A	Receptacle	R-14
R-15	Receptacle	20 A	1	2#12, 1#12G,1/2"C			180 VA	800 VA			2#12, 1#12G,1/2"C	1	20 A	Receptacle	R-16
R-17	Receptacle	20 A	1	2#12, 1#12G,1/2"C					400 VA	1500 VA	2#12, 1#12G,1/2"C	1	20 A	Receptacle	R-18
R-19	WH-1	20 A	1	2#10, 1#10G,3/4"C	1500 VA	250 VA					2#12, 1#12G,1/2"C	1	20 A	Other	R-20
R-21	Other	20 A	1	2#12, 1#12G,1/2"C			400 VA	1200 VA			2#10, 1#10G,3/4"C	1	20 A	Receptacle	R-22
R-23	Spare	20 A	1						0 VA	1200 VA	2#10, 1#10G,3/4"C	1	20 A	Receptacle	R-24
R-25	Spare	20 A	1		0 VA	0 VA						1	20 A	Spare	R-26
R-27	Spare	20 A	1				0 VA	0 VA				1	20 A	Spare	R-28
R-29	Spare	20 A	1						0 VA	0 VA		1	20 A	Spare	R-30
R-31	Spare	20 A	1		0 VA	0 VA						1	20 A	Spare	R-32
R-33	Spare	20 A	1				0 VA	0 VA				1	20 A	Spare	R-34
R-35	Spare	20 A	1						0 VA	0 VA		1	20 A	Spare	R-36
R-37	Spare	20 A	1		0 VA	0 VA						1	20 A	Spare	R-38
R-39	Spare	20 A	1				0 VA	0 VA				1	20 A	Spare	R-40
R-41	Spare	20 A	1						0 VA	0 VA		1	20 A	Spare	R-42
				Total Load:	6550 VA		6220 VA		5300 VA						
				Total Amps:	56 A		53 A		44 A						

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Other	2650 VA	100.00%	2650 VA		
Receptacle	13920 VA	85.92%	11960 VA	Total Conn. Load:	18070 VA
Power	1500 VA	100.00%	1500 VA	Total Est. Demand:	16110 VA
				Total Conn.:	50 A
				Total Est. Demand:	45 A

Notes:

GENERAL NOTES:

A. PROVIDE GROUND /BONDING AS INDICATED ON THE NATIONAL ELECTRICAL CODE.

B. NAME PLATES SHALL BE PROVIDED FOR ALL ELECTRICAL SWITCH GEAR, PANEL BOARDS, LIGHTING CONTACTORS, LIGHTING CONTROL PANELS, ETC.. BY ELECTRICAL CONTRACTOR.

C. NEW ELECTRICAL METERING AND SERVICE EQUIPMENT SHALL BE PROVIDED AND INSTALLED ACCORDING TO THE LOCAL POWER UTILITY CO. AND CITY REQUIREMENTS. VERIFY AND COORDINATE WITH POWER UTILITY CO. AND AHJ BEFORE BID AND INSTALLATION.

D. COMPLY WITH NFPA 70E SAFETY REQUIREMENTS.

E. PANELBOARDS WITH MORE THAN 42 CIRCUITS SHALL BE IN ONE CABINET ENCLOSURE, UNLESS OTHERWISE NOTED.

F. PROVIDE 4"CONCRETE PAD FOR ALL DRY-TYPE TRANSFORMERS.

G. ALL TWO SECTION PANELBOARDS SHALL BE FEED THRU LUGS.

H. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY OF ELECTRICAL SERVICE TO THE NEW BUILDING WITHIN PROJECT SCHEDULE. COORDINATE ALL COST FOR LABOR AND MATERIALS WITH LOCAL ELECTRICAL UTILITY COMPANY PRIOR TO BID. ALL COST ASSOCIATED WITH THE DELIVERY OF ELECTRICAL SERVICE INCLUDING ALL MATERIALS SHALL BE INCLUDED IN BID. TRANSITION OF NEW ELECTRICAL SERVICE SHALL PROCEED IN WEEKENDS OR HOLIDAYS, INCLUDE ALL COST IN BID FOR OVERTIME FROM ELECTRIC UTILITY COMPANY. NO ADDITIONAL PAYMENT WILL BE MADE FOR SERVICE DELIVERY COSTS AFTER CONTRACT HAS BEEN AWARDED.

I. THE CONTRACTOR SHALL FURNISH SHORT-CIRCUIT AND PROTECTION DEVICE COORDINATE STUDIES WHICH SHALL BE PREPARED BY THE EQUIPMENT GEAR MANUFACTURER AND SUBMITTED AS PART OF THE ELECTRICAL GEAR SUBMITTALS.

J. THE CONTRACTOR SHALL FURNISH AN ARC FLASH HAZARD ANALYSIS STUDY PER NFPA 70E-STANDARD FOR ELECTRICAL SAFETY IN THE WORKPLACE, REFERENCE ARTICLE 130.3 AND ANEEX D.

ELECTRICAL RISER DIAGRAM KEYED NOTES:

1. ROUTE TO EXISTING SWITCHBOARD (MDP). REUSE EXISTING CONDUIT FOR NEW 4#3/0, 1#6G. FIELD VERIFY EXISTING CONDITIONS.
2. PROVIDE NEW 200A 3-PHASE, 4W FUSE SWITCH BUCKET IN EXISTING SQUARE-D, QED, 2000 AMP SWITCHBOARD. INCLUDE NEW MOUNT HARDWARE.
3. 100AMPS, 480V, 3-PHASE, 4W, S/N, N3R, HEAVY DUTY FUSED DISCONNECT, FUSED AT 70A. LOCATE DISCONNECT WITHIN 5'-0" OF ASSOCIATED TRANSFORMER.
4. 1#6G, GROUND ELECTRODE CONDUCTOR, CALDWELD CONNECTION TO BUILDING REBAR AND STRUCTURE STEEL.

DISCONNECT SCHEDULE

DXPU-1,2	100AMP, 3-PHASE, 4W, N3R,480V, S/N, H.D. FUSED DISCONNECT
WH-1	30AMP, 3-PHASE, 4W, N1,480V, S/N, N.F., H.D. ROTARY TYPE DISCONNECT

NOTE: 1. REFER TO BREAKER SIZE FOR FUSE SIZE.

DRY-TYPE TRANSFORMER SCHEDULE

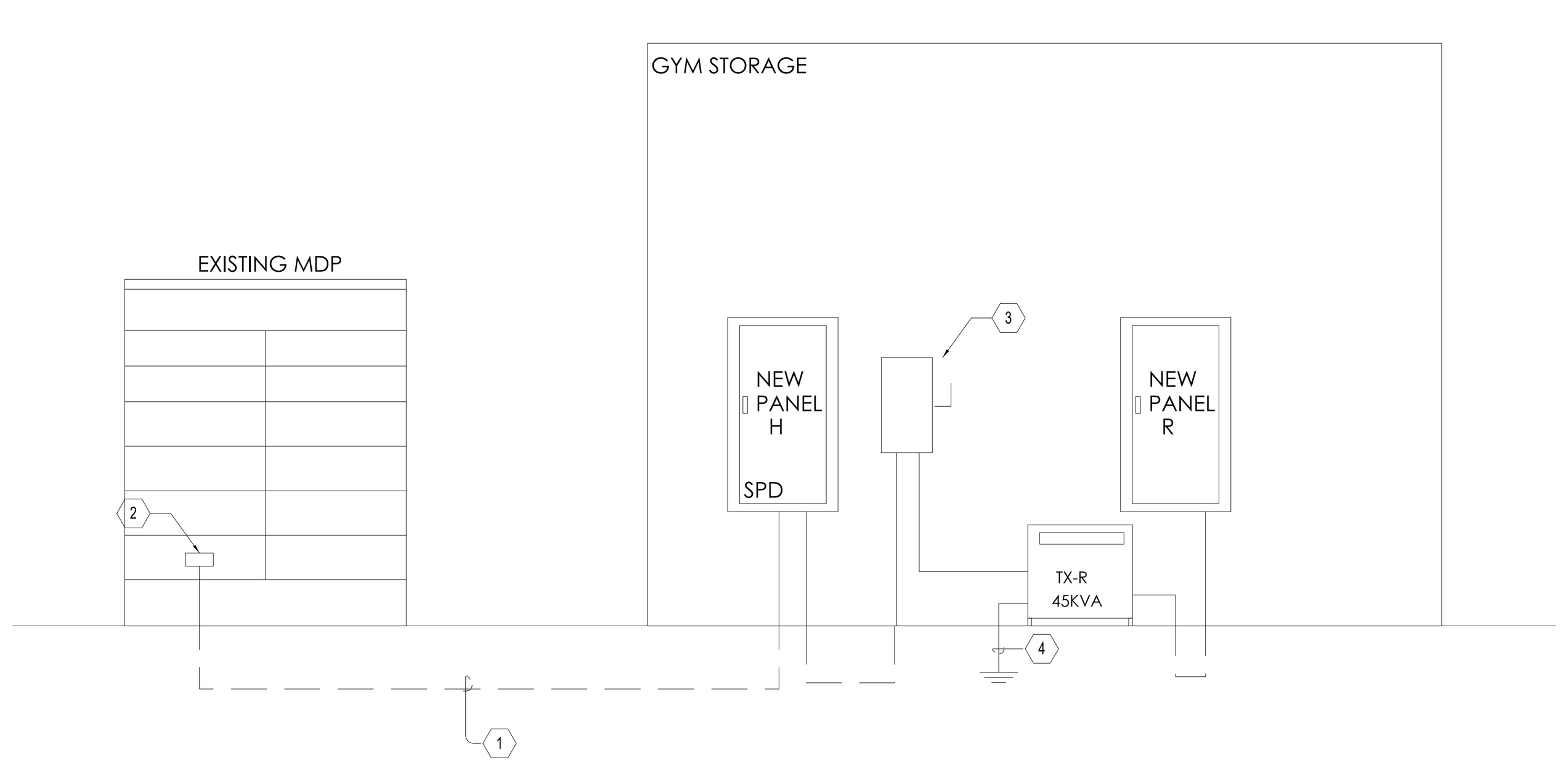
LABEL	TRANSFORMER DESCRIPTION	PRIMARY VOLTAGE FEEDER - 480V, 3	SECONDARY VOLTAGE FEEDER - 120/208V, 3, 4W
TX-R	TYPE-DT-3: GENERAL, 45KVA, COPPER WINDINGS,3-PHASE, (P)480V-(S)208/120V,115°RISE,NEMA-3R	4#4, 1#8G,1 1/2	4#2, 1#8G,2"C

NOTE: ALL DRY-TYP TRANSFORMER SHALL BE ENERGY EFFICIENT MODELS AND MEET 2016 ENERGY EFFICIENT REQUIREMENTS.

277/480V, 3 PHASE, 4W ELECTRICAL LOAD ANALYSIS - GYM

DESCRIPTION	TOTAL KVA
LIGHTING	3
GENERAL POWER	14
A/C	104
WATER HEATER	1.5

TOTAL WATTS:	123	KVA
TOTAL AMPS:	147	AMPS
+25% AMPS:	185	AMPS
WIRE SIZE AMPS:	200	AMPS



1 ELECTRICAL SCHEMATIC DIAGRAM
SCALE: NTS

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STATE OF TEXAS
LEONARDO MUNOZ
97537
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PROFESSIONAL ENGINEER

SAN CARLOS GYMNASIUM ADDITION

EDINBURG CONSOLIDATED INDEPENDENT SCHOOL DISTRICT
505 S. 83RD ST, EDINBURG TX 78539

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SHEET NAME

ELECTRICAL RISER

Sheet Number

ER01

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