

ABS

ABSOLUTE

MECH

MECHANICAL

AC

ALTERNATING CURRENT

MCC

MOTOR CONTROL CENTER

AFF

ABOVE FINISHED FLOOR

MCM

THOUSAND CIRCULAR MILLS

AHU

AIR HANDLING UNIT

MFR

MANUFACTURER

AMP, A

AMPERE

MH

MANHOLE, MOUNTING HEIGHT

APP

APPROVED

MIN

MINIMUM

APPROX

APPROXIMATE

MISC

MISCELLANEOUS

ATS

AUTOMATIC TRANSFER SWITCH

MLO

MAIN LUG ONLY

AVG

AVERAGE

MOD

MOTOR OPERATED DAMPER

BLDG

BUILDING

MTD

MOUNTED

C

CONDUIT

MW

MICROWAVE

CB

CIRCUIT BREAKER

(N)

NEW

COL

COLUMN

NA

NOT APPLICABLE

CONN

CONNECTION

N.C.

NORMALLY CLOSED

CONT

CONTINUED

NEUT.

NEUTRAL

CONTR

CONTRACTOR

NIC

NOT IN CONTRACT

DB

DECIBEL

NL

NIGHT LIGHT ON 24/7

DEG

DEGREE

N.O.

NORMALLY OPEN

DIA

DIAMETER

NO.

NUMBER

DN

DOWN

NTS

NOT TO SCALE

DT

DOUBLE THROW

OD

OUTSIDE DIAMETER

DW

DISHWASHER

OH

OVERHEAD

DWG

DRAWING

OHD

OVERHEAD DOOR

(E)

EXISTING DEVICE OR EQUIPMENT TO REMAIN

%

PERCENT

E.C.

ELECTRICAL CONTRACTOR

PB

PUSH BUTTON

EF

EXHAUST FAN

PH

PHASE-ELECTRICAL

EL

ELEVATION

PNL

PANEL

ELEC

ELECTRICAL

PVC

POLYVINYL CHLORIDE PIPE

EQ

EQUAL

(R)

REMOVE EXISTING DEVICE OR EQUIPMENT

EQUIP

EQUIPMENT

(RE)

NEW LOCATION FOR EXISTING DEVICE OR EQUIPMENT

(ER)

EXISTING DEVICE OR EQUIPMENT TO BE RELOCATED

REF

REFRIGERATOR

EWC

ELECTRIC WATER COOLER

R&D

RESEARCH & DEVELOPMENT

EWH

ELECTRIC WATER HEATER

REQ

REQUIRED

EXT

EXTERIOR

RM

ROOM

*F

DEGREE FAHRENHEIT

SCH

SCHEDULE

FACP

FIRE ALARM CONTROL PANEL

SF

SQUARE FEET

FBO

FURNISHED BY OTHERS

SPD

SURGE PROTECTION DEVICE

FD

FLOOR DRAIN

SPEC

SPECIFICATION

FDC

FIRE DEPARTMENT CONNECTION

SQ

SQUARE

FHC

FIRE HOSE CABINET

SS

SAFETY SWITCH

FIN

FINISH

ST

SINGLE THROW

FF

FINISHED FLOOR

STD

STANDARD

FLR

FLOOR

STL

STEEL

FT

FEET

STRUC

STRUCTURAL

FU,F

FUSED

SW

SWITCH

GALV

GALVANIZED

SWBD

SWITCHBOARD

GD

GARBAGE DISPOSER

SWGR

SWITCHGEAR

GFCI

GROUND-FAULT CURRENT- INTERRUPTER

TEMP

TEMPERATURE

GRD, GND

GROUND

TEL

TELEPHONE

GWH

GAS WATER HEATER

THERM

THERMOMETER

HC

HANDICAP

TYP

TYPICAL

HP

HORSEPOWER

UG

UNDERGROUND

HR

HOOR

UH

UNIT HEATER

HT

HEIGHT

UL

UNDERWRITER'S LABORATORY

HTR

HEATER

U.O.N.

UNLESS OTHERWISE NOTED

HV

HIGH VOLTAGE

UTIL

UTILITY

HVAC

HEATING VENTILATION AIR CONDITIONING

V

VOLTS

HZ

FREQUENCY-ELECTRICAL

VB

VACUUM BREAKER

ID

INSIDE DIAMETER

VERT

VERTICAL

ID

INDIRECT DRAIN

VFD

VARIABLE FREQUENCY DRIVE

JB

JUNCTION BOX

VIF

VERIFY IN FIELD

KV

KILOVOLTS

VPC

VIA PHOTOCCELL

KVA

KILOVOLT AMPERE

VTC

VIA TIME CLOCK

KW

KILOWATT

W

WIRE

KWH

KILOWATT HOUR

W/

WITH

LF

LINEAR FEET

WP

WEATHERPROOF

LV

LOW VOLTAGE

W/O

WITHOUT

MAU

MAKE-UP AIR UNIT

XFMR

TRANSFORMER

MAX

MAXIMUM

YR

YEAR

MCB

MAIN CIRCUIT BREAKER

1.

ALL WORK IS TO CONFORM WITH THE 2020 NATIONAL ELECTRICAL CODE AND ALL APPLICABLE CODES, REGULATIONS AND STANDARDS. NOT ALL CODE REQUIREMENTS HAVE BEEN DESCRIBED IN THIS SPECIFICATION OR INDICATED ON THE DRAWINGS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BE FAMILIAR WITH THE CODES AND INSTALL THE WORK IN ACCORDANCE WITH CODES.

2.

OBTAIN AND PAY FOR ALL BUILDING PERMITS, INSPECTIONS, CONNECTION CHARGES, AND FEES.

3.

PROVIDE ALL LABOR, MATERIALS, EQUIPMENT AND SUPERVISION NECESSARY TO INSTALL COMPLETE OPERATING ELECTRICAL SYSTEMS AS INDICATED ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING ALL SITE WORK ON THE SITE AND WITHIN THE PROPOSED CONSTRUCTION AREAS TO ACCOMPLISH THE REQUIRED WORK.

4.

THE CONTRACTOR IS TO BE RESPONSIBLE FOR COORDINATION OF ALL WORK ASSOCIATED WITH THE ELECTRIC UTILITY COMPANY. MAKE ALL ARRANGEMENTS IN A TIMELY FASHION FOR CONNECTION OF THE ELECTRICAL SERVICE.

5.

DRAWINGS AND SPECIFICATIONS ARE INTENDED TO BE TAKEN AS A WHOLE. IF A CONFLICT OR CONTRADICTION EXISTS BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT WILL APPLY. THE ARCHITECT'S AND ENGINEER'S INTERPRETATION OF THE DOCUMENTS ARE TO BE BINDING UPON THE CONTRACTOR.

6.

PROVIDE SHOP DRAWINGS OF ALL EQUIPMENT FOR REVIEW PRIOR TO ORDERING. COORDINATE ALL PHYSICAL DIMENSIONS PRIOR TO SHOP DRAWING SUBMISSION.

7.

IF THE CONTRACTOR ELECTS TO SUBMIT ALTERNATE EQUIPMENT, MANUFACTURERS, SYSTEMS, METHODS, OR MATERIALS NOT SPECIALLY IDENTIFIED IN THE DRAWINGS AND SPECIFICATIONS, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE THE WORK WITH OTHER TRADES AND PAY FOR ANY ADDITIONAL COSTS ASSOCIATED WITH THE SUBSTITUTION OR CHANGE.

8.

THE CONTRACTOR IS TO SURVEY AND VERIFY ALL EXISTING CONDITIONS PRIOR TO BID SUBMISSION AND BECOME AWARE OF ALL CONDITIONS WHICH MAY IMPACT THE REQUIRED WORK. CONTRACTOR IS TO INCLUDE ALL ASSOCIATED COSTS (MATERIALS/ LABOR) DETERMINED TO BE REQUIRED DURING SITE INSPECTIONS. CONTRACTOR'S BID SUBMISSION IS TO BE CONSIDERED PROOF THAT THIS REQUIREMENT HAS BEEN MET.

9.

FINAL LOCATIONS OF ALL DEVICES IN FINISHED SPACES ARE TO BE COORDINATED, AND APPROVED BY THE ARCHITECT/ OWNER PRIOR TO ROUGH-IN AND INSTALLATION.

10.

COORDINATE LOCATIONS AND ROUGH-IN REQUIREMENTS WITH ALL TRADES PRIOR TO INSTALLATION.

11.

PROVIDE A COMPLETE FIRE ALARM SYSTEM EXTENSION IN ACCORDANCE WITH NFPA 72 AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES AND STANDARDS. SUBMIT FLOOR PLANS, EQUIPMENT CUT SHEETS, COMPLETE POINT-TO-POINT WIRING DIAGRAMS, BATTERY CALCULATIONS, AND VOLTAGE DROP CALCULATIONS AS PART OF THE FIRE ALARM SYSTEM SHOP DRAWING SUBMITTAL PER NFPA 72, SEC. 7.2.1. THE CONTRACTOR IS TO VERIFY THAT EXISTING FIRE ALARM CONTROL PANEL EQUIPMENT IS CAPABLE OF SUPPORTING NEW DEVICES AND EQUIPMENT AS REQUIRED BUY THE PLANS AND SPECIFICATIONS.

12.

PROVIDE POWER TO HVAC AND PLUMBING EQUIPMENT AS REQUIRED FOR COMPLETE, OPERATIONAL SYSTEMS.

13.

THE ELECTRICAL CONTRACTOR IS TO COORDINATE WITH THE MECHANICAL CONTRACTOR TO PROVIDE ALL INDOOR HVAC EQUIPMENT POWER WIRING FROM THE EXTERIOR CONDENSING UNIT OR HEAT PUMP AS REQUIRED BY THE SYSTEM MANUFACTURER.

14.

PROVIDE LIGHTING THROUGH-OUT, WITH EXTERIOR LIGHTING AT ALL EGRESS DOORS.

15.

THE CONTRACTOR IS TO BE RESPONSIBLE FOR SELECTING PARTICULAR MOUNTING ARRANGEMENTS OF FIXTURES TO SUIT THE CONSTRUCTION, OR CEILING TYPE. THE CONTRACTOR OR HIS AGENT IS TO REVIEW ALL ARCHITECTURAL PLANS, ELEVATIONS AND DETAILS TO VERIFY ALL CEILING TYPES PRIOR TO PREPARING SHOP DRAWINGS FOR SUBMISSION. IT IS NOT TO BE UNDERSTOOD THAT THE LIGHTING FIXTURE SCHEDULE ACCOUNTS FOR THE MOUNTING TYPES. CEILING TYPES ARE FREQUENTLY CHANGED AFTER THE SCHEDULE HAS BEEN COMPLETED.

16.

FIXTURES AND DEVICES RECESSED IN A FIRE-RATED CEILING ARE TO BE PROVIDED WITH A FIRE-RATED ENCLOSURE THAT MAINTAINS THE FIRE-RATING OF THE CEILING SYSTEM. THE INSTALLATION OF THE ENCLOSURE IS TO MEET THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. WHERE APPLICABLE, FIXTURES AND DEVICES ARE TO BE RATED FOR INSULATION CONTACT (IC) FOR HIGH-TEMPERATURE OPERATION.

17.

ALL ROOMS ARE TO BE PROVIDED WITH LIGHTING CONTROLS. PROVIDE MANUAL SWITCH(ES) AND APPROPRIATE, CODE-REQUIRED LIGHTING CONTROL DEVICES, WIRING METHODS, AND COMPONENTS.

18.

PROVIDE EGRESS AND EMERGENCY LIGHTING AS REQUIRED BY CODE IN ALL SPACES TO MEET REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION. ALLOW FOR TEN ADDITIONAL FIXTURES TO BE INSTALLED WHERE DIRECTED BY THE AUTHORITY HAVING JURISDICTION.

19.

PROVIDE GROUNDING IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE.

20.

PROVIDE ROOF PENETRATIONS FOR ALL ASSOCIATED ELECTRICAL WORK.

21.

ALL DEVICES ARE TO BE INSTALLED SQUARE, LEVEL, PLUMB, AND TRUE.

22.

SWITCH PLATES AND OUTLET BACKBOXES ARE NOT TO BE INSTALLED BACK-TO-BACK IN ADJACENT ROOMS. BACKBOX LOCATIONSARE TO BE OFFSET A MINIMUM OF 0'-3" TO REDUCE NOISE TRANSFER. THIS APPLIES TO RECEPTACLES, LIGHTING FIXTURES, TV OUTLETS, TELEPHONE OUTLETS, AND DATA OUTLETS.

23.

ALL DEVICES LOCATED ON OPPOSING SIDES OF A FIRE-RATED WALL ASSEMBLY ARE TO BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 2'-0".

24.

GROUND FAULT CIRCUIT INTERRUPTERS ARE TO BE PROVIDED FOR ALL OUTDOOR RECEPTACLE CIRCUITS, RECEPTACLE CIRCUITS WITHIN TOILET AND BATHROOMS, AREAS IN CLOSE PROXIMITY TO WATER, AND WHEREVER ELSE INDICATED ON THE DRAWINGS OR AS REQUIRED BY CODE. WHILE-IN-USE TYPE COVERS ARE TO BE USED FOR ALL EXTERIOR LOCATIONS.

25.

PROVIDE CODE REQUIRED SIGNAGE (I.E., NEC 110.34, NEC 700.8, AND 695.4 B3).

26.

PROVIDE THIRD-PARTY CERTIFICATION OF ALL PACKAGED SYSTEMS BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) IN ACCORDANCE WITH OSHA FEDERAL REGULATIONS 29CFR1910.303 AND .399 AS WELL AS PAMPHLET #70 AND NATIONAL ELECTRICAL CODE ARTICLE 90-7.

27.

ALL EQUIPMENT PANELS, CONTROLS, SAFETY SWITCHES, AND DEVICES ARE TO BE PROVIDED WITH PERMANENT BLACK LAMINATED MICARTA WHITE CORE LABELS WITH 3/8" LETTERS. THIS ALSO APPLIES TO ALL CONTROLLERS, REMOTE START/ STOP PUSHBUTTONS, EQUIPMENT CABINETS, AND WHERE DIRECTED BY THE ARCHITECT AND ENGINEER. THIS REQUIREMENT DOES NOT APPLY TO INDIVIDUAL ROOM THERMOSTATS, AND LOCAL LIGHTING CONTROL DEVICES.

28.

ALL THREE PHASE STARTER EQUIPMENT IS TO BE PROVIDED BY THE MECHANICAL CONTRACTOR AND IS TO BE MAGNETIC. ACROSS-THE-LINE WITH AUXILIARY CONTACTS. ALL SINGLE PHASE STARTER EQUIPMENT IS TO BE PROVIDED BY ELECTRICAL CONTRACTOR.

29.

ALL WORK IS TO BE CONCEALED, UNLESS OTHERWISE INDICATED.

30.

ALL EXPOSED INTERIOR WIRING, PANEL FEEDERS, HOME RUNS, AND EQUIPMENT FEEDERS ARE TO BE INSTALLED IN EMT (ELECTRICAL METALLIC TUBING). ALL EMT IS TO BE SECURELY FASTENED AT INTERVALS NOT EXCEEDING 10'-0" AND WITHIN 3'-0" OF ALL BOXES. NOTE: "EXPOSED" INDICATES ALL WIRING METHODS NOT INSTALLED WITHIN WALLS, ABOVE SUSPENDED CEILINGS, OR WITHIN A PRE-MANUFACTURED RACEWAY. ANY EXPOSED RACEWAY IN A FINISHED SPACE IS TO BE COORDINATED WITH THE ARCHITECT/ ENGINEER PRIOR TO INSTALLATION.

31.

ALL CONCEALED BRANCH CIRCUIT WIRING METHODS INSTALLED ABOVE SUSPENDED CEILINGS, AND IN STUD PARTITIONS IS TO BE MC (METAL CLAD) CABLE. MC CABLE IS TO BE SECURELY FASTENED AT INTERVALS NOT EXCEEDING 4'-0", AND WITHIN 1'-0" OF ALL BOXES AND/OR FITTINGS.

32.

PROPERLY INSTRUCT OWNER'S PERSONNEL IN THE OPERATION AND MAINTENANCE OF ALL SYSTEMS AND EQUIPMENT. PROVIDE THREE INSTRUCTION AND MAINTENANCE MANUALS. SUBMIT MANUALS FOR REVIEW PRIOR TO OPERATING INSTRUCTION.

33.

PROVIDE ONE SET OF ELECTRONIC AS-BUILT DRAWINGS AT COMPLETION OF WORK. SUBMIT TO OWNER AND ENGINEER FOR REVIEW AND APPROVAL.

NUMBER

NAME

Issue 1

Current Revision

Current Revision Date

Current Revisions

E-001

COVER SHEET- ELECTRICAL

E-101

FIRST FLOOR PLAN -LIGHTING

E-102

FIRST FLOOR PLAN- POWER

E-200

DETAILS AND SCHEDULES- ELECTRICAL

E-300

SPECIFICATIONS- ELECTRICAL

S

SINGLE-POLE WALLBOX SWITCH

S₃

3-WAY WALLBOX SWITCH

S₄

4-WAY WALLBOX SWITCH

S_D

LUMINAIRE CONTROL SYSTEM DIMMER

LV

LUMINAIRE CONTROL SYSTEM WALLBOX CONTROL FOR PROGRAM OVERRIDE.

S_a

INDICATES AREA OR ZONE OF CONTROL

SE

EMERGENCY SHUT-DOWN SWITCH

S_T

SINGLE-POLE WALLBOX SWITCH WITH INTEGRAL TIMER FUNCTION.

S_P

SINGLE-POLE WALLBOX SWITCH WITH PILOT LIGHT

◇

DUAL TECHNOLOGY, WALL BOX OCCUPANCY SENSOR WITH OFF/ AUTO OVERRIDE SWITCH AND 0-10V CAPABILITY TO MAINTAIN PARTIAL "ON".

◇_{XX}

DUAL TECHNOLOGY, CEILING MOUNTED OCCUPANCY SENSOR

◇

TAG (NONE = LOW VOLTAGE WITH 0-10V CAPABILITY TO MAINTAIN PARTIAL "ON");
L = LINE VOLTAGE
a,b = INDICATES AREA OR ZONE OF CONTROL

◇_V

DUAL TECHNOLOGY, WALL BOX VACANCY SENSOR WITH OFF/ AUTO OVERRIDE SWITCH AND 0-10V CAPABILITY TO MAINTAIN PARTIAL "ON".

◇_{VXX}

DUAL TECHNOLOGY, CEILING MOUNTED VACANCY SENSOR

◇

TAG (NONE = LOW VOLTAGE WITH 0-10V CAPABILITY TO MAINTAIN PARTIAL "ON");
L = LINE VOLTAGE
a,b = INDICATES AREA OR ZONE OF CONTROL

◇_{XX}

ROOM CONTROLLER WITH 0-10V DIMMING FOR LUMINAIRES. COORDINATE ALL POWER REQUIREMENTS WITH FINAL EQUIPMENT SELECTIONS.

◇_{XX}

TAG (NONE = SINGLE ZONE):
2 = TWO ZONE
EM = PROVIDED WITH UL924 DEVICE

◇_{PXX}

0-10V DIMMING LUMINAIRE CONTROL POWER PACK

◇_{XX}

TAG (NONE = SINGLE ZONE):
2 = TWO ZONE
3 = THREE ZONE
EM = PROVIDED WITH UL924 DEVICE

◇

RECESSED, OR SURFACE MOUNTED LED LUMINAIRE CONNECTED TO NORMAL POWER. REFER TO THE LUMINAIRE SCHEDULE FOR ADDITIONAL INFORMATION.

◇

RECESSED, OR SURFACE MOUNTED LED LUMINAIRE CONNECTED TO EMERGENCY POWER, OR PROVIDED WITH INTEGRAL BATTERY BACK-UP. REFER TO THE LUMINAIRE SCHEDULE FOR ADDITIONAL INFORMATION.

4'-0"

LENSED LED INDUSTRIAL STRIP LUMINAIRE. LENGTHS AS INDICATED ON PLANS.

A4

INDICATES LUMINAIRE TYPE

2

INDICATES BRANCH CIRCUIT DESIGNATION

a

INDICATES CONTROL ZONE

⎓

BATTERY PACK EMERGENCY LIGHTING UNIT WITH SOLID STATE CHARGER. CONNECT AHEAD OF ANY SWITCHING. REMOTE CAPABLE WHERE REQUIRED.

⎓

REMOTE EMERGENCY LIGHTING UNIT CONNECTED TO EMERGENCY POWER, OR PROVIDED WITH INTEGRAL BATTERY BACK-UP. REFER TO THE LIGHTING FIXTURE SCHEDULE FOR ADDITIONAL INFORMATION.

⦿

EXIT SIGN LUMINAIRE: GENERATOR OR BATTERY POWERED

⦿

WALL MOUNTED EXIT SIGN LUMINAIRE: GENERATOR OR BATTERY POWERED

⦿

TELEVISION OUTLET AND ASSOCIATED DUPLEX RECEPTACLE DEVICE:

⦿

COMMON AREAS: PROVIDE BACK BOX WITH 3/4"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS. MOUNT 60" ABOVE FINISHED FLOOR TO CENTER OF DEVICE OR AS DIRECTED BY THE OWNER.

⦿

DATA OUTLET: PROVIDE BACK BOX WITH 3/4"Ø BUSHED CONDUIT WITH PULL-STRING TO ACCESSIBLE CEILING SPACE. DEVICES, WIRING METHODS, AND TERMINATIONS BY OTHERS.

⦿

WIRELESS ACCESS POINT (CEILING MOUNTED): POWER-OVER-ETHERNET (NO AC POWER REQUIRED), PROVIDE (2) CAT-6 HOME-RUN TO THE MAIN DATA FRAME. PROVIDE 10'-0" PIGTAIL AT EACH LOCATION.

⦿

SECURITY/ ACCESS CONTROL. DEVICE DERIVES POWER FROM THE SECURITY/ ACCESS CONTROL HEAD-END EQUIPMENT. COORDINATE ALL POWER REQUIREMENTS WITH THE SECURITY/ ACCESS CONTROL VENDOR.

⦿

CCTV CAMERA (POE)

⦿

INDICATES WEATHERPROOF, EXTERIOR CAMERA

⦿

SURFACE MOUNTED DISTRIBUTION PANEL SERVED VIA NORMAL POWER FEEDER

⦿

SURFACE MOUNTED LIGHTING, OR POWER BRANCH CIRCUIT PANEL SERVED VIA NORMAL POWER FEEDER

⦿

RECESSED MOUNTED LIGHTING, OR POWER BRANCH CIRCUIT PANEL SERVED VIA NORMAL POWER FEEDER

⦿

MOTOR

⦿_M

MOTOR RATED SWITCH (PROVIDE MANUAL MOTOR STARTER FOR OVERLOAD PROTECTION, AS REQUIRED)

⦿

UN-FUSED DISCONNECTING MEANS

⦿

FUSIBLE DISCONNECTING MEANS
XXAF = FRAME CAPACITY
XXAT = TRIP RATING

⦿

ENCLOSED CIRCUIT BREAKER
XXAF = FRAME CAPACITY
XXAT = TRIP RATING

⦿

MOTOR STARTER

⦿

COMBINATION MOTOR STARTER/ DISCONNECTING MEANS

⦿

INDICATES HEIGHT ABOVE FINISHED FLOOR TO CENTER OF DEVICE(S)

⦿

WIRING METHOD DESIGNATION (CONDUCTOR QUANTITY AND SIZE)

⦿

PANEL, AND POLE SPACE DESIGNATION (CONCEALED WIRING METHOD)

⦿

CONCEALED BRANCH CIRCUIT WIRING METHOD

⦿

JUNCTION BOX

⦿_{XX}

DUPLEX RECEPTACLE DEVICE
TAG:
C = DEVICE MOUNTED HORIZONTALLY, 0'-8" ABOVE COUNTER TO TOP OF DEVICE COVERPLATE
D = DEDICATED OVERCURRENT PROTECTION DEVICE
T = TAMPER RESISTANT DEVICE
U = INTEGRAL USB OUTLETS

⦿

GFCI (GROUND-FAULT CIRCUIT-INTERRUPTER) DUPLEX RECEPTACLE DEVICE FOR PERSONAL PROTECTION

⦿_a

SWITCHED (BOTTOM OUTLET) DUPLEX RECEPTACLE DEVICE
INDICATES CORRESPONDING CONTROL DEVICE

⦿

SINGLE RECEPTACLE DEVICE FOR EQUIPMENT

⦿

DOUBLE DUPLEX RECEPTACLE DEVICE

⦿

SPECIAL RECEPTACLE DEVICE (COORDINATE NEMA CONFIGURATION WITH FINAL EQUIPMENT SELECTIONS)

⦿

6"Ø, FLUSH-MOUNTED, ADJUSTABLE FLOOR CORE DEVICE WITH QUADPLEX RECEPTACLE, AND DATA OUTLET(S)

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THE DELIVERY OF THIS DRAWING SHOULD NOT BE CONSTRUED TO PROVIDE AN EXPRESS WARRANTY OR GUARANTEE TO ANYONE THAT ALL THE DIMENSIONS AND DETAILS ARE EXACT OR TO INDICATE THAT THE USE OF THIS DRAWING IMPLIES THE REVIEW AND APPROVAL BY THE DESIGN PROFESSIONAL OF ANY FUTURE USE. ANY USE OF THIS INFORMATION WITHOUT THE WRITTEN APPROVAL BY THE DESIGN PROFESSIONAL IS AT THE SOLE RISK AND LIABILITY OF THE USER. THE DESIGN PROFESSIONAL RESERVES THE RIGHT TO REMOVE OUR PROFESSIONAL SEAL AND/OR TITLE BLOCK.

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Project:

CHESTER UPLAND HIGH SCHOOL

GAME ROOM

Client/Owner:

MG ENGINEERING ASSOCIATES

Date:

07/23/26

Drawn By:

KAG

Checked By:

BFM

Project Number:

2025-343

Issued/Revisions

Rev. No.

Date

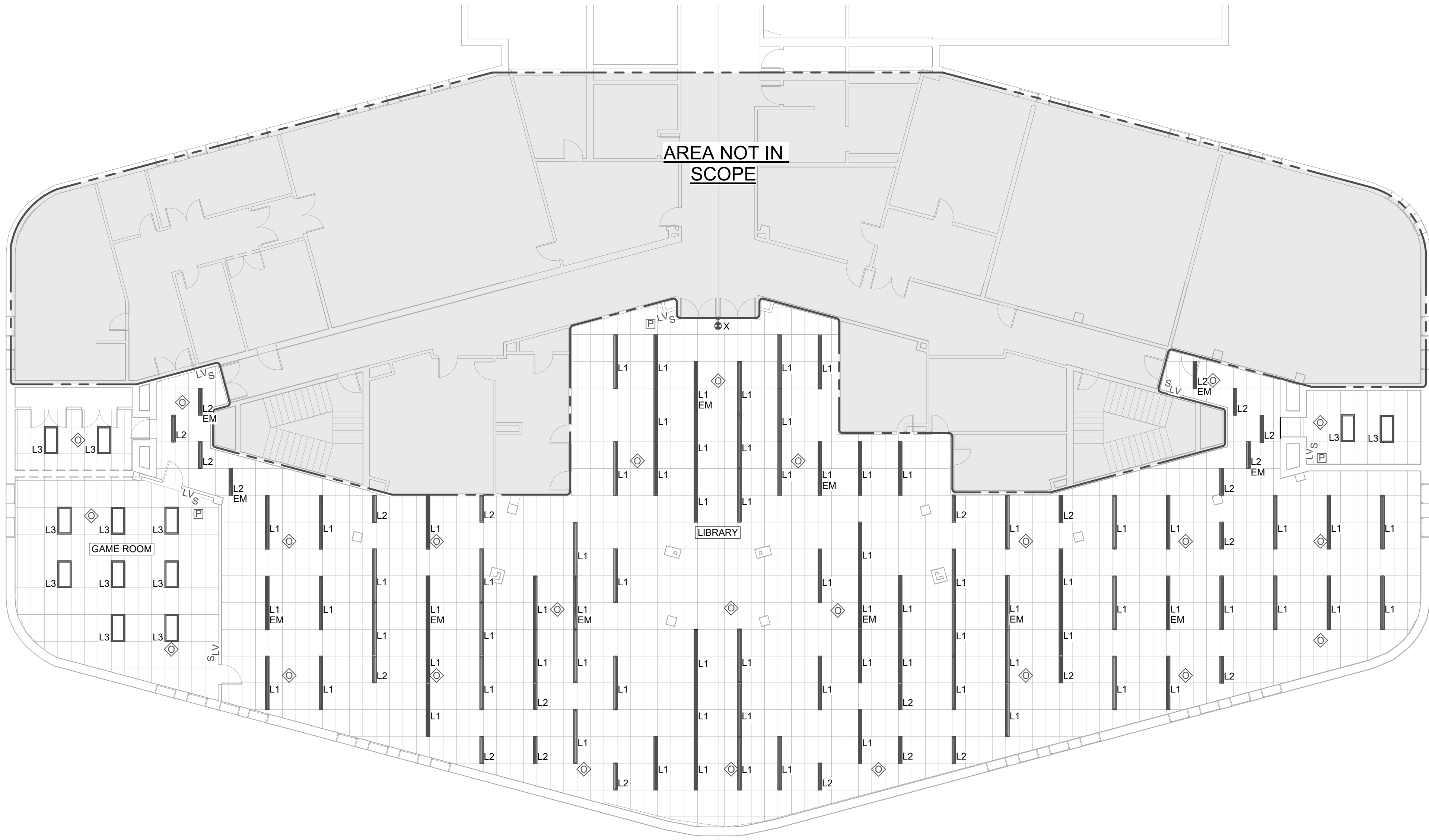
Description

Drawing Name:

COVER SHEET- ELECTRICAL

Drawing Number:

E-001



1 OVERALL FLOOR PLAN- LIGHTING
3/32" = 1'-0"

GENERAL LUMINAIRE NOTES:

1. ALL BATTERY EQUIPPED EMERGENCY AND EXIT SIGNAGE LUMINAIRES ARE TO BE CIRCUITED VIA THE UN-SWITCHED LEG OF THE LOCAL AREA LUMINAIRE CIRCUIT.
2. ALL LUMINAIRE LOCATIONS AND MOUNTING HEIGHTS ARE TO BE COORDINATED WITH THE ARCHITECTURAL AND INTERIOR DESIGN DRAWINGS.
3. UNLESS OTHERWISE NOTED, ALL NORMAL POWER LUMINAIRE BRANCH CIRCUIT NUMBERS ARE EXISTING TO BE EXTENDED TO SERVE NEW LUMINAIRES.
4. UNLESS OTHERWISE NOTED, ALL EMERGENCY POWER LUMINAIRE BRANCH CIRCUIT NUMBERS ARE EXISTING TO BE EXTENDED TO SERVE NEW LUMINAIRES.
5. ALL LUMINAIRE CONTROL DEVICES ARE TO BE GANGED TOGETHER, HAVE A COMMON FACE PLATE, AND BE LABELED WITH THEIR AREA(S) OF CONTROL.
6. UNLESS OTHERWISE NOTED, ALL OCCUPANCY SENSOR DEVICES IN A SPACE ARE TO BE INTERCONNECTED SO THAT ALL LUMINAIRES WITHIN THE SPACE ARE ENERGIZED WHEN ANY OCCUPANCY SENSOR DEVICE IS ACTIVATED.
7. CONTRACTOR IS TO PROVIDE A MANUALLY CONTROLLED, OVERRIDE WALL BOX DEVICE FOR ROOM OCCUPANCY SENSORS.

ME

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Client/Owner:

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Date:	07/23/26
Drawn By:	KAG
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Drawing Name:
**FIRST FLOOR PLAN
-LIGHTING**

Drawing Number:
E-101

NOTICE
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EXISTING LIBRARY PANEL NOTES:

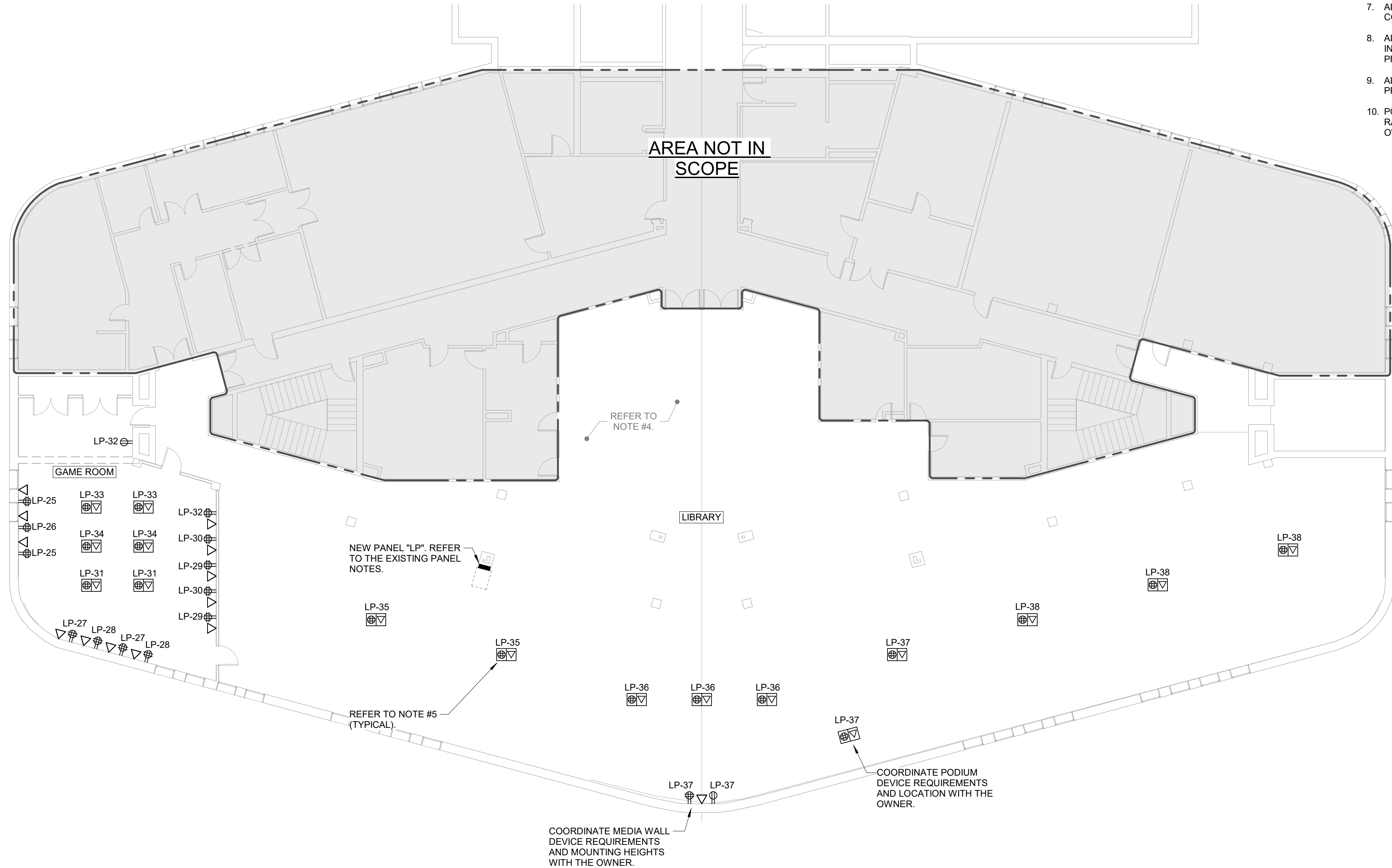
1. THE EXISTING 30-POLE LIBRARY PANEL IS TO BE REMOVED AND REPLACED WITH NEW, 42-POLE EQUIPMENT IN THE EXISTING LOCATION.
2. THE ELECTRICAL CONTRACTOR IS TO RE-FEED ALL EXISTNG LOADS VIA THE NEW EQUIPMENT.
3. ALL NEW OVERCURRENT PROTECTION DEVICES ARE TO MATCH THE EXISTING.
4. PROVIDE NEW OVERCURRENT PROTECTION DEVICES AS INDICATED.

GAME ROOM HVAC ADD ALTERNATE NOTE:

1. THE ELECTRICAL CONTRACTOR IS TO PROVIDE ELECTRICAL SERVICE TO NEW CONDENSING UNIT VIA THE EXISTING LIBRARY PANEL. PROVIDE 40 AMP, 2-POLE OVERCURRENT PROTECTION DEVICE AND NEW 60 AMP, 2-POLE DISCONNECTING MEANS VIA 3/8"X186"2ND IN 3/4" C. COORDINATE ALL REQUIREMENTS WITH THE FINAL EQUIPMENT SELECTIONS.

GENERAL POWER AND LOW VOLTAGE NOTES:

1. THE ELECTRICAL CONTRACTOR IS TO PROVIDE TRACING OF ALL BRANCH CIRCUIT WIRING ASSOCIATED WITH ALL EXISTING BRANCH CIRCUIT PANELS AND DEVICES WITHIN THE SCOPE OF WORK. THE CONTRACTOR IS TO REMOVE AND REFURBISH (CLEAN AND REPAINT) EXISTING PANEL COVERS AND PROVIDE NEW, TYPED PANEL DIRECTORY AND NEW PANELBOARD EQUIPMENT IDENTIFICATION LABEL. ALL WORK ASSOCIATED WITH THE ABOVE IS TO BE COMPLETED PRIOR TO DEMOLITION.
2. ALL EXISTING OUTLET DEVICES (RECEPTACLES, DATA, LOW VOLTAGE, ETC.) ARE TO BE NEW IN THE EXISTING LOCATIONS. THE ELECTRICAL CONTRACTOR IS TO RE-USE EXISTING WIRING METHODS. ALL FINISHES ARE TO BE REVIEWED AND APPROVED BY THE OWNER.
3. ALL FIRE ALARM DEVICES ARE TO BE NEW IN THE EXISTING LOCATIONS AND ARE TO BE COMPATIBLE WITH THE EXISTING FIRE ALARM CONTROL PANEL.
4. ALL ELECTRICAL DEVICES AND EQUIPMENT ASSOCIATED WITH THE EXISTING RECEPTION DESK ARE TO BE REMOVED AND ALL CONDUCTORS REMOVED TO POINT OF ORIGIN. THE ELECTRICAL CONTRACTOR IS TO CUT EXISTING PATHWAYS TO BE FLUSH WITH THE EXISTING SLAB AND CAP/ PLUG AS REQUIRED.
5. COORDINATE LOCATIONS AND MOUNTING HEIGHTS OF ALL WIRING DEVICES WITH THE OWNER PRIOR TO ROUGH-IN. REFER TO DETAILS AND SPECIFICATIONS FOR TYPICAL MOUNTING HEIGHTS.
6. CONTRACTOR IS TO CONCEAL WIRING WHENEVER POSSIBLE. ALL EXPOSED WIRING IS TO BE INSTALLED IN EMT. CONTRACTOR IS TO PAINT AS DIRECTED BY THE ARCHITECT. CONDUIT PATH IS TO BE AS INCONSPICUOUS AS POSSIBLE. COORDINATE CONDUIT ROUTE WITH ARCHITECT/ OWNER PRIOR TO ROUGH-IN AND INSTALLATION.
7. ALL NETWORK, POE, AND IT INFRASTRUCTURE IS TO BE PROVIDED BY THE GENERAL CONTRACTOR AND/ OR OWNER'S VENDOR(S).
8. ALL POWER REQUIREMENTS FOR DOORS AND ASSOCIATED LOCKING MECHANISMS INDICATED IN DIVISION 8 "HARDWARE SCHEDULE FIRE ALARM INTERFACE" ARE TO BE PROVIDED BY THE GENERAL CONTRACTOR AND/ OR OWNER'S VENDOR(S).
9. ALL CABLE TERMINATIONS, AND CERTIFICATIONS FOR PATCH PANELS ARE TO BE PROVIDED BY THE GENERAL CONTRACTOR AND/ OR OWNER'S VENDOR(S).
10. POWER, AND DATA/ COAX FOR SECURITY TV, NVR, AND IT EQUIPMENT CLOSET WITH RACKS, AND TERMINATIONS ARE TO BE BY THE GENERAL CONTRACTOR AND/ OR OWNER'S VENDOR(S).



1 OVERALL FLOOR PLAN- POWER
3/32" = 1'-0"

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Project:
**CHESTER UPLAND
HIGH SCHOOL**
GAME ROOM

Client/Owner:

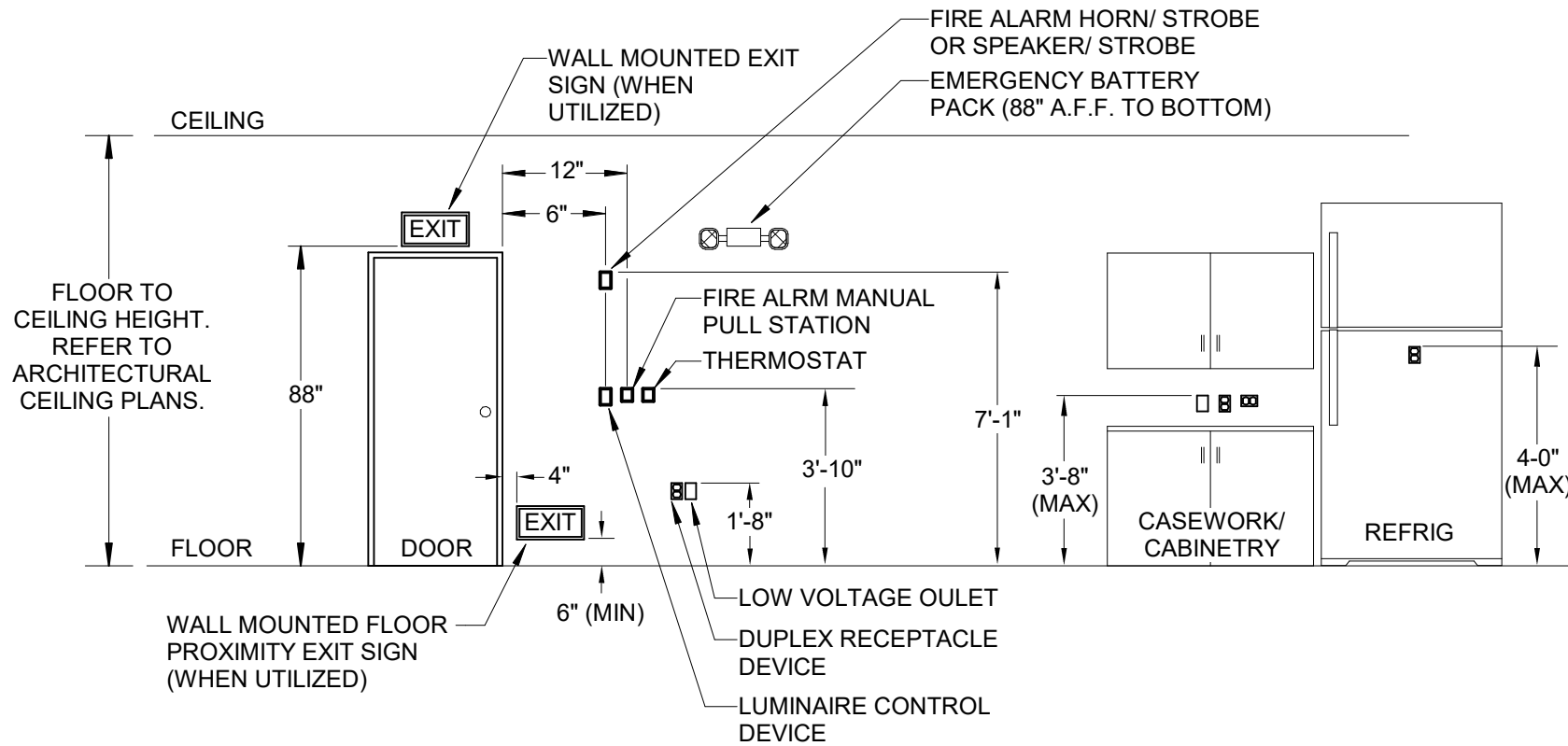
MG ENGINEERING ASSOCIATES

Date:	07/23/26
Drawn By:	KAG
Checked By:	BFM
Project Number:	2025-343

Issued/Revisions		
Rev. No.	Date	Description

Drawing Name:
**FIRST FLOOR PLAN-
POWER**

Drawing Number:
E-102



LAYOUT IS DIAGRAMMATIC. THE CONTRACTOR IS TO REFER TO FLOOR PLANS FOR DEVICE QUANTITIES AND LOCATIONS. IT IS THE INTENT FOR THE CONTRACTOR TO INSTALL ALL DEVICES IN A NEAT AND ORDERLY FASHION. ALL DEVICES ARE TO COMPLY WITH ADA AND/ OR ANSI A117.1 REQUIREMENTS UNLESS NOTED OTHERWISE.

NOTES:

- ALL GENERAL PURPOSE RECEPTACLES TELE/DATA/COAX OUTLETS ARE TO BE MOUNTED AT A MINIMUM OF 15" ABOVE FINISH FLOOR PER ADA TO THE BOTTOM OF THE DEVICE. 20" ABOVE FINISHED FLOOR IS TO BE STANDARD INSTALLATION HEIGHT TO THE TOP OF THE DEVICE BOX.
- ALL GENERAL PURPOSE RECEPTACLES, LIGHTING SWITCHES AND LOW VOLTAGE OUTLETS ABOVE COUNTERTOPS ARE TO BE MOUNTED A MAXIMUM OF 44" ABOVE FINISHED FLOOR TO THE TOP OF THE DEVICE BOX. 8" ABOVE COUNTERTOP IS STANDARD.
- LIGHTING CONTROLS AND FIRE ALARM PULL STATIONS ARE TO BE MOUNTED AT MAXIMUM OF 46" ABOVE FINISHED FLOOR. DEVIATIONS FROM THE STANDARD MOUNTING HEIGHTS ABOVE MAY BE INCORPORATED FOR EASE OF INSTALLATION DUE TO ARCHITECTURAL ITEMS SUCH AS TILES, HAND RAILS, ETC. DEVICES TO BE A MAXIMUM OF 48" ABOVE FINISHED FLOOR TO THE OPERATING HANDLE.
- THERMOSTATS ARE INDICATED FOR SIDE REACH APPLICATIONS. WHEN LOCKABLE COVERS ARE PROVIDED, THERMOSTATS ARE TO BE MOUNTED AT 4'-6".

1 TYPICAL DEVICE ELEVATION DETAIL
SCALE: NONE

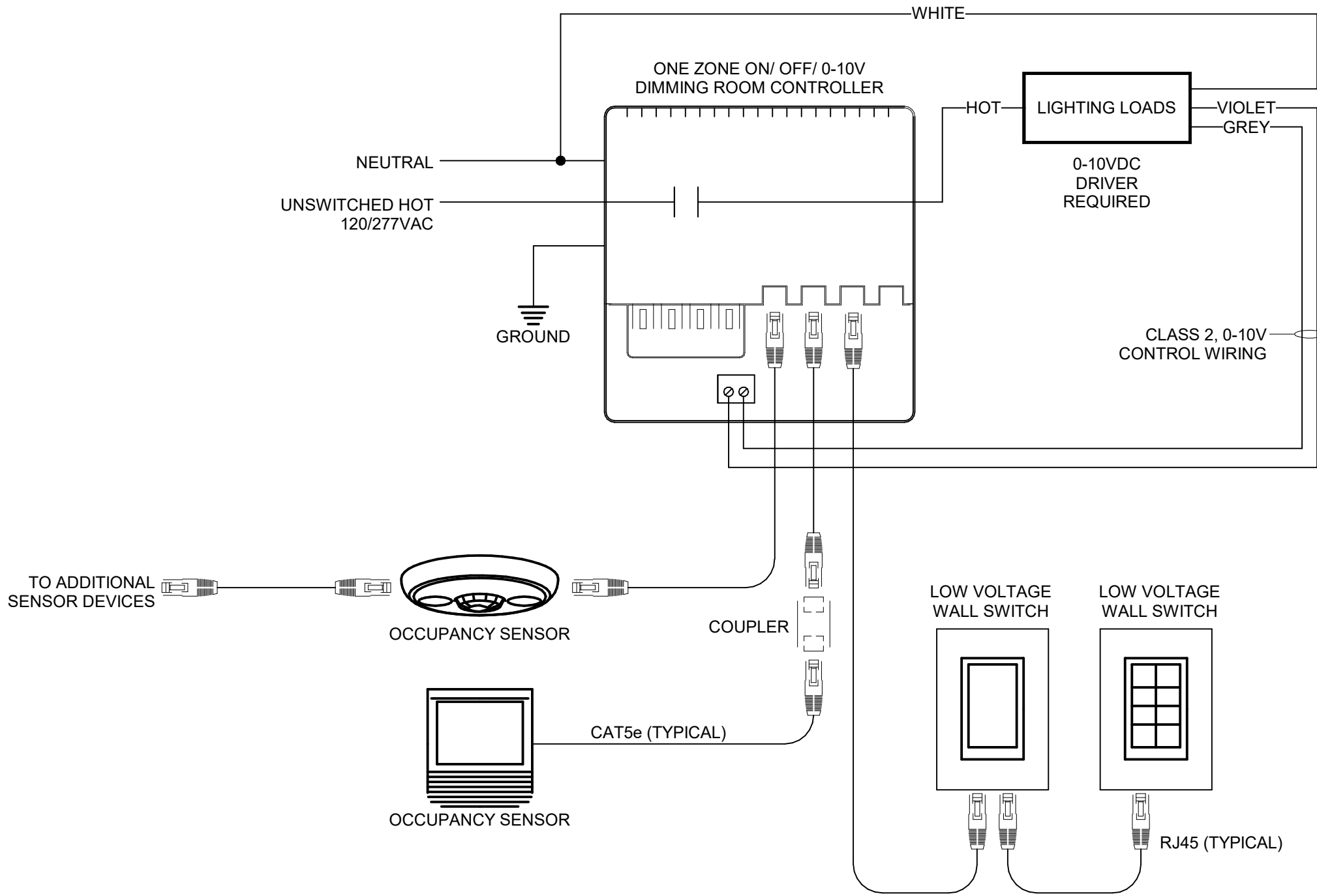


DIAGRAM IS SCHEMATIC ONLY AND DOES NOT REPRESENT ACTUAL DEVICE QUANTITIES. EVERY DEVICE INDICATED MAY NOT BE UTILIZED FOR THIS PROJECT. REFER TO FLOOR PLANS FOR DEVICE QUANTITIES. REFER TO SPECIFICATION SECTION 26 72 00 FOR ADDITIONAL INFORMATION.

SEQUENCE OF OPERATION:

- DEFAULTS TO MANUAL "ON"/AUTOMATIC "OFF" OPERATION.
- AT SYSTEM STARTUP, DEFAULT DIMMING PARAMETERS ARE ESTABLISHED INCLUDING:
 - LEVELS FOR PRESET(S).
 - FADE TIMES, AND FADE AND RAMP RATES.
 - DIMMING AND SYSTEM PARAMETERS MAY BE CUSTOMIZED.
- ROOM CONTROLLER DEVICE IS TO BE MOUNTED IN A CONCEALED, ACCESSIBLE LOCATION.

2 ONE ZONE, 0-10V LIGHTING CONTROL WIRING DIAGRAM
SCALE: NONE

LUMINAIRE SCHEDULE

LISTED, APPROVED EQUALS: IT IS NOT UNDERSTOOD THAT THIS IMPLIES THAT A STANDARD LUMINAIRE IS ACCEPTABLE. THE LUMINAIRE MUST MEET ALL TECHNICAL REQUIREMENTS AS WELL AS BEING NAMED. ALTERNATE MANUFACTURERS ARE NOT ACCEPTABLE UNLESS APPROVED BY OWNER PRIOR TO THE G.M.P. ISSUE. REFER TO SPECIFICATION SECTION 26 50 00 FOR ADDITIONAL INFORMATION. THE CONTRACTOR IS RESPONSIBLE FOR SELECTING MOUNTING TYPE (SURFACE, RECESSED, LAY-IN, FLANGED, WALL, PENDANT, ETC), UNLESS OTHERWISE NOTED, ALL CCT AND CRI RATINGS ARE TO BE CONSISTENT THROUGH OUT THE LUMINAIRE PACKAGE. ALL DRIVERS ARE TO BE ELECTRONIC WITH 0-10V DIMMING CAPABILITY. ALL LENSES ARE TO BE SHIPPED WITHIN A PROTECTIVE COVERING. EMERGENCY FIXTURES ARE INDICATED AS PARTIALLY SHADED AND/ OR WITH AN "E" SUFFIX, FOR EXAMPLE, "A4E".

TAG	DESCRIPTION MANUFACTURER: MODEL NUMBER	LAMP WATTAGE	CCT/ CRI	VOLTAGE	EQUIVALENT MANUFACTURERS
COMMON AREA LUMINAIRES					
L1	8'-0"L x 6"W LINEAR LED RECESSED FOCAL POINT: FSM6L FL 875 930K 1C UNV LD1 XX EM* WH 8'-0" (COORDINATE CEILINGS WITH ARCHITECT) * PROVIDE WHERE INDICATED ON PLAN.	88W	3000/ 90	UNV	ELITE
L2	4'-0"L x 6"W LINEAR LED RECESSED FOCAL POINT: FSM6L FL 875 930K 1C UNV LD1 XX EM* WH 4'-0" (COORDINATE CEILINGS WITH ARCHITECT) * PROVIDE WHERE INDICATED ON PLAN.	44W	3000/ 90	UNV	ELITE
L3	2x4' LED RECESSED FOCAL POINT: FEQ2 24 AC 4000L 930K1C UNV LD1 XX EM* WH (COORDINATE CEILINGS WITH ARCHITECT) * PROVIDE WHERE INDICATED ON PLAN.	33W	3000/ 90	UNV	ELITE
X	EXIT SIGN MATCH BUILDING STANDARD	1W	---	UNV	---

NEW PANEL SCHEDULE

PANEL LABEL: LP					MAINS: 100 A					ENCLOSURE				
A.I.C. EXISTING					MCB: 100 A					NEMA: Type 1				
SERVED VIA EXISTING					LUGS: SF					MOUNTING: SURFACE				
208/120 Wye					TOP X					WIDTH: 20"				
3 Ø 4 WIRE					BOTTOM:									
CKT	TRIP	POLE	LOAD CLASSIFICATION	DESCRIPTION/ LOCATION	WATT	A	B	C	WATT	DESCRIPTION/ LOCATION	LOAD CLASSIFICATION	POLE	TRIP	CKT
1	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	2
3	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	4
5	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	6
7	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	8
9	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	10
11	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	12
13	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	14
15	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	16
17	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	18
19	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	20
21	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	22
23	20 A	1	--	RE-FEED EXISTING	--				--	RE-FEED EXISTING	--	1	20 A	24
25	20 A	1	RECEPTACLE	GAME ROOM QUADS	720				360	GAME ROOM QUAD	RECEPTACLE	1	20 A	26
27	20 A	1	RECEPTACLE	GAME ROOM QUADS	720				720	GAME ROOM QUADS	RECEPTACLE	1	20 A	28
29	20 A	1	RECEPTACLE	GAME ROOM QUADS	720				720	GAME ROOM QUADS	RECEPTACLE	1	20 A	30
31	20 A	1	RECEPTACLE	GAME ROOM FLOOR CORES	720				540	GAME ROOM	RECEPTACLE	1	20 A	32
33	20 A	1	RECEPTACLE	GAME ROOM FLOOR CORES	720				720	GAME ROOM FLOOR CORES	RECEPTACLE	1	20 A	34
35	20 A	1	RECEPTACLE	LIBRARY FLOOR CORES	720				1080	LIBRARY FLOOR CORES	RECEPTACLE	1	20 A	36
37	20 A	1	RECEPTACLE	LIBRARY MEDIA/ FLOOR CORES	1260				1080	LIBRARY FLOOR CORES	RECEPTACLE	1	20 A	38
39	40 A	2	--	GAME ROOM HVAC ADD	--				--	--	--	1	20 A	40
41			--	ALTERNATE	--				--	--	--	1	20 A	42
					TOTAL WATTS					10800 VA				
										TOTAL AMPS 30 A				

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Project:

CHESTER UPLAND
HIGH SCHOOL

GAME ROOM

Client/Owner:

MG ENGINEERING ASSOCIATES

Date: 07/23/26

Drawn By: KAG

Checked By: BFM

Project Number: 2025-343

Issued/Revisions

Rev. No. Date Description

Drawing Name:

DETAILS AND
SCHEDULES-
ELECTRICAL

Drawing Number:

E-200

DEMOLITION NOTES:

- ELECTRICAL CONTRACTOR IS TO VERIFY ALL EXISTING CONDITIONS IN FIELD PRIOR ANY WORK.
- THE ELECTRICAL CONTRACTOR IS TO PROVIDE TRACING OF ALL BRANCH CIRCUIT WIRING ASSOCIATED WITH ALL EXISTING DISTRIBUTION AND BRANCH CIRCUIT PANELS WITHIN THE SCOPE OF WORK. THE CONTRACTOR IS TO REMOVE AND REFURBISH (CLEAN AND REPAINT) EXISTING PANEL COVERS AND PROVIDE NEW, TYPED PANEL DIRECTORY AND NEW PANELBOARD EQUIPMENT IDENTIFICATION LABEL. ALL WORK ASSOCIATED WITH THE ABOVE IS TO BE COMPLETED PRIOR TO DEMOLITION.
- REMOVE ALL OUTLET DEVICES, LUMINAIRES, CONTROL DEVICES, AND ALL ASSOCIATED WIRING METHODS IN AREAS OF RENOVATION UNLESS NOTED OTHERWISE.
- REMOVE BRANCH CIRCUIT WIRING METHODS BACK TO POWER SOURCE OR TO ITS NEAREST ACTIVE DEVICE. RE-ENERGIZE ALL CIRCUITS INTERRUPTED BY DEMOLITION WORK TO MAINTAIN BRANCH CIRCUIT CONTINUITY.
- TAG ALL OVERCURRENT PROTECTION DEVICES THAT BECOME "SPARE" AS A RESULT OF DEMOLITION WORK. PROVIDE NEW, TYPED PANELBOARD DIRECTORIES FOR ALL DISTRIBUTION AND BRANCH CIRCUIT EQUIPMENT AFFECTED BY RENOVATION WORK.
- REMOVE CONDUCTORS, PROVIDE PULL-STRINGS, AND CAP OPENINGS AND CONDUITS THAT ARE NOT TO BE RE-USED.
- FIRE ALARM DEVICES ARE TO REMAIN IN OPERATION AND BE PROPERLY PROTECTED DURING CONSTRUCTION. REINSTALL DEVICES IN NEW CEILINGS.
- ALL POWER SHUTDOWNS ARE TO BE SCHEDULED AND COORDINATED WITH OWNER.
- IT IS THE INTENT FOR POWER TO REMAIN ACTIVE IN THE ADJACENT AREAS DURING CONSTRUCTION. CONTRACTOR IS TO MODIFY EXISTING WIRING ARRANGEMENT TO COMPLY.
- IT IS THE INTENT TO REMOVE ALL ELECTRICAL DEVICES WHICH INTERFERE WITH THE NEW CONSTRUCTION WORK OR DEMOLITION WORK WHETHER SPECIFICALLY IDENTIFIED OR NOT.

ELECTRICAL SPECIFICATIONS:

- ALL WORK IS TO CONFORM WITH THE 2020 NATIONAL ELECTRICAL CODE AND ALL APPLICABLE CODES, REGULATIONS AND STANDARDS. COORDINATE WORK WITH ALL OTHER TRADES AND THE DESIGN PROFESSIONAL. ANY DISCREPANCIES BETWEEN THE FIELD CONDITIONS AND/ OR BETWEEN DRAWINGS AND SPECIFICATIONS IS TO BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE BEFORE PROCEEDING WITH THE WORK.
- PROVIDE ALL WORK INCLUDED IN THIS SPECIFICATION AND SHOWN ON THE CONTRACT DOCUMENTS. PROVIDE COMPLETE AND WORKING ELECTRICAL EQUIPMENT, SYSTEMS, AND COMPONENTS. INCLUDE SUPPORTING SERVICES OF GENERAL, MECHANICAL, AND SPECIALTY TRADES.
- SURVEY AND VERIFY EXISTING CONDITIONS PRIOR TO SUBMITTING BID AND STARTING WORK. CONTRACTOR'S BID SUBMISSION IS TO BE CONSIDERED PROOF THAT THIS REQUIREMENT HAS BEEN MET.
- UNLESS SPECIFICALLY DIMENSIONED, THE WORK SHOWN ON THE DRAWINGS IS DIAGRAMMATIC TO SHOW GENERAL ARRANGEMENT.
- PROVIDE ALL ACCESSORIES AND APPURTENANCES REQUIRED TO MAKE COMPLETE OPERATING SYSTEMS.
- PROVIDE REMOVAL, RELOCATION, REROUTING, AND RECONNECTION OF EXISTING ELECTRICAL SYSTEMS, AS REQUIRED, TO ACCOMPLISH ALTERATION, RESTORATION, AND NEW WORK. PROVIDE ALL TEMPORARY EQUIPMENT AND WORK TO KEEP ALL EXISTING SYSTEMS IN OPERATION. COORDINATE WORK WITH OWNER. MINIMIZE INTERRUPTIONS OF SERVICES AND COORDINATE INTERRUPTIONS WITH THE OWNER.
- VERIFY BY INTERNATIONAL ELECTRICAL TESTING ASSOCIATION (NETA) STANDARDS THAT ALL EQUIPMENT INDICATED OR PROPOSED FOR REUSE IS IN WORKING ORDER. THE OWNER'S REPRESENTATIVE WILL REVIEW TEST RESULTS AND ACCEPT OR REJECT REUSE OF EQUIPMENT.
- DURING DEMOLITION, MARK ALL POWER AND LIGHTING CIRCUITS FOR REUSE. REMOVE EXTRANEOUS OUTLET DEVICES TO PROVIDE ADDITIONAL USABLE CIRCUITS. EXISTING CIRCUITS ARE TO BE REUSED WHEREVER POSSIBLE, PROVIDED THEY ARE NOT OVERLOADED.
- CIRCUITS MARKED ON DRAWINGS ARE FOR REFERENCE ONLY. ACTUAL AVAILABILITY FOR REUSE IS TO BE FIELD VERIFIED BY THE CONTRACTOR.
- PROVIDE ALL WIRING METHODS, AND MAKE ALL FINAL CONNECTIONS TO EQUIPMENT FURNISHED BY OTHER TRADES, OR PROVIDED BY THE OWNER.
- PROVIDE MAXIMUM 3'-0"L LIQUID-TIGHT FLEXIBLE METAL CONDUIT CONNECTION FROM JUNCTION BOX TO MOTOR-MOUNTED TERMINAL BOX. PROVIDE GROUNDING CONDUCTOR, ALL LUGS, AND CONNECTORS.
- COORDINATE FINAL OUTLET LOCATIONS AND ELEVATION WITH ARCHITECTURAL PLANS. DO NOT SCALE ELECTRICAL DRAWINGS. HEIGHTS OF OUTLETS IS TO BE APPROVED BY DESIGN PROFESSIONAL AND IS TO MEET ADA REQUIREMENTS.
- ALL ELECTRICAL MATERIALS AND EQUIPMENT ARE TO BEAR THE LABEL OF UNDERWRITERS LABORATORIES, INC. (UL), OR OTHER NATIONALLY RECOGNIZED TESTING LABORATORY. ALL ELECTRICAL EQUIPMENT AND APPARATUS FOR ANY ONE SYSTEM IS TO BE THE PRODUCT OF ONE MANUFACTURER.
- PROVIDE CONDUIT RACEWAY SYSTEM INCLUDING CONDUITS, FITTINGS, COUPLINGS, CONNECTORS, SUPPORTS, BUSHINGS AND APPURTENANCES. MINIMUM CONDUIT SIZE IS TO BE 3/4".
- TYPE EMT (ELECTRICAL METALLIC TUBING) WIRING METHODS MAY BE USED FOR FIRE ALARM WIRING METHODS IN MECHANICAL AREAS. MECHANICAL AREAS ARE DEFINED AS MECHANICAL ROOMS, MAINTENANCE SHOPS, SERVICE CHASES, EXTERIOR AREAS, SERVICE CORRIDORS AND ANY OTHER AREAS WHERE CONDUITS MAY BE SUBJECT TO DAMAGE.
- TYPE EMT (ELECTRICAL METALLIC TUBING) WIRING METHODS MAY BE USED FOR BRANCH CIRCUIT, FIRE ALARM, SECURITY AND COMMUNICATIONS WIRING METHODS ABOVE SUSPENDED CEILINGS AND IN NON-MASONRY PARTITIONS WHICH ARE NOT CLASSIFIED AS DAMP OR WET. PROVIDE COMPRESSION-TYPE FITTINGS AND INSULATED COPPER GROUND WIRE (IN BRANCH CIRCUITS).
- TYPE FMC (FLEXIBLE METAL CONDUIT, HEAVY ZINC-COATED) IS TO BE USED FOR FINAL CONNECTIONS TO MOTORS, VIBRATING EQUIPMENT, AND LIGHTING FIXTURES.
- TYPE MC (METAL-CLAD) CABLE WITH GREEN INSULATED GROUNDING CONDUCTOR WILL BE PERMITTED FOR BRANCH CIRCUIT WIRING METHODS. TYPE MC CABLE IS TO HAVE GALVANIZED STEEL ARMOR WITH CONDUCTOR INSULATION OF THHN/ THWN. MC CABLE IS TO BE AS MANUFACTURED BY TYCO (AFC), ALFLEX OR KAF-TECH. WIRING METHODS INSTALLED ABOVE SUSPENDED CEILING SPACE ARE TO BE EMT.
- TYPE MC (METAL-CLAD) CABLE WITH RED-STRIPED GALVANIZED STEEL ARMOR WILL BE PERMITTED FOR FIRE ALARM WIRING METHODS IN EXISTING WALLS ONLY. ALL OTHER FIRE ALARM WIRING METHODS ARE TO BE EMT. TYPE MC CABLE IS TO BE AS MANUFACTURED BY TYCO (AFC), ALFLEX OR KAF-TECH.
- PROVIDE EXPANSION COUPLINGS ACROSS ALL BUILDING EXPANSION JOINTS. A MAXIMUM OF THREE, 90° BENDS ARE PERMITTED BETWEEN PULL BOXES.
- ALL TYPE EMT (ELECTRICAL METALLIC TUBING), AND MC (METAL-CLAD) WIRING METHODS ARE TO BE CONCEALED AND INSTALLED PARALLEL, OR PERPENDICULAR TO WALLS. DIAGONAL RUNS ARE NOT ACCEPTABLE. PROVIDE A MINIMUM OF 0'-6" CLEARANCE FROM HEAT SOURCES, AND TELECOMMUNICATIONS CONDUITS. PROVIDE 1'-0" CLEARANCE BETWEEN FEEDER CONDUITS, AND UNSHIELDED TWISTED-PAIR TELECOMMUNICATION CABLES. SUPPORT CONDUITS FROM STRUCTURE, NOT FROM CEILING SUPPORT WIRES. PROVIDE UL LISTED FIRE-RATED SMOKE AND WATER SEALANTS AT PENETRATIONS, OPENINGS, AND SLEEVES IN FIRE-RATED AND ELECTRICAL/ COMMUNICATION ROOM WALLS, AND FLOORS.
- WIRES AND CABLES ARE TO BE A MINIMUM #12 AWG COPPER WITH 600-VOLT THHN/ THWN INSULATION. WIRES #10 AWG AND SMALLER ARE TO BE SOLID AND WIRES LARGER THAN # 10 AWG ARE TO BE STRANDED. COLOR CODE EACH PHASE OF EACH SYSTEM. ALUMINUM WIRE IS NOT ACCEPTABLE. APPROVED MANUFACTURERS ARE ESSEX, AMERICAN INSULATED WIRE CORPORATION, CERRO OR SOUTHWIRE.
- ALL BRANCH CIRCUITS ARE TO BE PROVIDED WITH AN INSULATED GROUND WIRE. SHARED NEUTRALS ARE NOT PERMITTED. PROVIDE A NEUTRAL WIRE FOR EACH PHASE CONDUCTOR.
- TYPE MC (METAL-CLAD) CABLE IS NOT ACCEPTABLE FOR USE IN:
A. MASONRY PARTITIONS
B. AREAS CLASSIFIED BY NFPA 70 AS "DAMP" OR "WET"
C. PANEL FEEDERS EXPOSED INSTALLATIONS WITHIN 10'-0" A.F.F.
- PROVIDE JUNCTION, AND PULL BOXES, SIZED AS REQUIRED. INCLUDE COVERS, TRIM, SUPPORTS, IDENTIFICATION TAGS, AND APPURTENANCES. PULL BOXES ARE TO CONSTRUCTED OF CODE-GAUGE GALVANIZED STEEL. PULL-BOXES MOUNTED IN CONCRETE FLOORS ARE TO BE CONCRETE-TIGHT, ADJUSTABLE, AND UL LISTED FOR SCRUB WATER EXCLUSION. ALL TRIM IS TO MATCH FLOOR OR CONCRETE FINISH.
- PROVIDE OUTLET BOXES. CONCEALED OUTLET BOXES ARE TO BE ONE-PIECE, PRESSED STEEL WITH KNOCKOUTS. EXPOSED OUTLET BOXES ARE TO BE CAST IRON WITH GASKETED COVER AND FITTINGS. OUTLETS ON OPPOSING WALLS OR PARTITIONS ARE BE STAGGERED. PROVIDE ALL COVERS TO SUIT INSTALLED DEVICE TYPES.
- PROVIDE WIRING DEVICES, OUTLETS, AND PLATES (INCLUDING, BUT NOT LIMITED TO; RECEPTACLES, SWITCHES, PILOT LIGHTS, WIRING METHODS BUSHED OPENINGS, AND APPURTENANCES).
- ALL DEVICES ARE TO BE HEAVY-DUTY, SPECIFICATION GRADE MOLDED NYLON, 20 AMP RATED WITH SCREW-TYPE TERMINALS AS MANUFACTURED BY ARROW-HART, BRYANT, HUBBELL, PASS & SEYMOUR (P&S), OR LEVITON.
- ALL COVER PLATE FINISHES ARE TO BE REVIEWED AND APPROVED BY THE OWNER AND ARE TO BE AS MANUFACTURED BY ARROW-HART OR EQUAL BY BRYANT, HUBBELL, PASS & SEYMOUR (P&S), OR LEVITON.
- ALL NEW, PANELBOARD OVERCURRENT PROTECTION DEVICES ARE TO BE FULLY RATED FOR AVAILABLE SHORT-CIRCUIT CURRENT.
- PROVIDE PERMANENT NAMEPLATES AND DIRECTORIES FOR ALL NEW PANELBOARDS AND EQUIPMENT.
- NEW OVERCURRENT PROTECTION DEVICES INSTALLED IN EXISTING PANELBOARDS ARE TO MATCH THE EXISTING MANUFACTURER, TYPE AND A.I.C. RATING.
- 120V-1Ø DOUBLE-DUPLEX/ QUAD RECEPTACLES ARE TO BE LIMITED TO A QUANTITY OF FOUR DEVICES PER 20 AMP, 1-POLE OVERCURRENT PROTECTION DEVICE. 120V-1Ø DUPLEX RECEPTACLES ARE TO A QUANTITY OF FOUR DEVICES PER 20 AMP, 1-POLE OVERCURRENT PROTECTION DEVICE. DO NOT EXCEED RECEPTACLE LOADING OF 16 AMPS PER 120V-1Ø, 20 AMP, 1-POLE OVERCURRENT PROTECTION DEVICE.
- PROVIDE SAFETY SWITCHES, FUSES (INCLUDE SPARE FUSES), ENCLOSURES, WIRING, NAMEPLATE, AND APPURTENANCES. DO NOT MOUNT SWITCHES ON MECHANICAL EQUIPMENT, UNLESS OTHERWISE NOTED.
- SAFETY SWITCHES ARE TO BE OF THE EXTERNALLY-OPERATED HEAVY-DUTY, FUSED, OR UN-FUSED (AS INDICATED ON PLANS) TYPE AS MANUFACTURED BY SQUARE D, GENERAL ELECTRIC, CUTLER-HAMMER OR SIEMENS. SWITCHES ARE TO HAVE "LOCK-OUT" CAPABILITY AND HAVE SUITABLE ENCLOSURE.
- PROVIDE GROUNDING FOR ALL NONCURRENT-CARRYING PORTIONS OF THE ELECTRICAL SYSTEM. CONDUCTORS ARE TO BE COPPER.

- PROVIDE COMPLETE OPERATIONAL ILLUMINATION SYSTEMS, WITH LUMINAIRES AS SPECIFIED IN LUMINAIRE SCHEDULE. RELOCATE AND REUSE EXISTING LUMINAIRES TO FULLEST EXTENT POSSIBLE. RECONNECT RELOCATED LUMINAIRES TO EXISTING LIGHTING CIRCUITS, UNLESS OTHERWISE NOTED.
- COORDINATE FINAL APPROVED CEILING SYSTEM WITH LUMINAIRE'S MOUNTING/ TRIM OPTIONS FOR CEILING COMPATIBILITY. PROVIDE INDIVIDUAL SUPPORT FOR EACH LAY-IN FIXTURE WEIGHING UP TO 20 POUNDS, RECESSED IN SUSPENDED CEILINGS INDEPENDENT OF THE CEILING GRID, OR PROVIDE UL LISTED RETAINER CLIPS TO FASTEN FIXTURE TO GRID PROVIDE A MINIMUM OF TWO SUPPORT WIRES FROM GRID TO BUILDING STRUCTURE. GRID SUPPORT WIRES IS TO BE WITHIN 0'-6" OF DIAGONALLY OPPOSING FIXTURE CORNERS. FIXTURES WEIGHING 20-50 POUNDS ARE TO BE, PROVIDED WITH AN ADDITIONAL, TWO #12 GAUGE HANGERS DIRECTLY FROM FIXTURE HOUSING TO BUILDING STRUCTURE. REFER TO MANUFACTURER'S REQUIREMENTS FOR FIXTURES WEIGHING IN EXCESS OF 50 POUNDS.
- INSTALL LUMINAIRES AT MOUNTING HEIGHTS INDICATED, OR AS APPROVED IN WRITING BY DESIGN PROFESSIONAL. INSTALL LUMINAIRES PLUMB AND TRUE, AND AT UNIFORM HEIGHT AS INDICATED. VERIFY MOUNTING HEIGHT OF PENDANT-MOUNTED LUMINAIRES WITH OWNER'S REPRESENTATIVE PRIOR TO INSTALLATION. INSTALL ROWS OF RECESSED SURFACE, OR PENDANT-MOUNTED LUMINAIRES IN STRAIGHT LINES, UNLESS OTHERWISE INDICATED.
- PRIOR TO OCCUPANCY, CLEAN REFLECTORS, CONES, APERTURE PLATES, LENSES, DIFFUSERS, LOUVERS, LAMPS, AND DECORATIVE ELEMENTS IN ACCORDANCE WITH MANUFACTURER'S WRITTEN RECOMMENDATIONS. AT COMPLETION OF INSTALLATION AND AT DATE OF FINAL INSPECTION, VERIFY THAT LUMINAIRES ARE CLEAN, AND FREE FROM DEFECTS IN OPERATION, AND APPEARANCE.
- INSTALL A COMPLETE FIRE ALARM SYSTEM EXTENSION IN ACCORDANCE WITH NFPA 72 AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL CODES AND STANDARDS. SUBMIT FLOOR PLANS, EQUIPMENT CUT SHEETS, COMPLETE POINT-TO-POINT WIRING DIAGRAMS, AND BATTERY & VOLTAGE DROP CALCULATIONS AS PART OF THE FIRE ALARM SYSTEM SHOP DRAWING SUBMITTAL PER NFPA 72, SEC. 7.2.1.
- PROVIDE NEW NOTIFICATION APPLIANCES TO MATCH THE EXISTING (HORN/ STROBES, AND STROBE DEVICES) IN THE EXISTING LOCATIONS.
- PROVIDE FINAL TESTING OF FIRE ALARM SYSTEM IN THE PRESENCE OF OWNER'S REPRESENTATIVE. GUARANTEE COMPLETE FIRE ALARM SYSTEM EXTENSION FOR A PERIOD OF ONE YEAR FOLLOWING FINAL ACCEPTANCE BY OWNER.
- TO AID IN THE PREPARATION OF SUBMITTALS, SHOP DRAWINGS, OR AS-BUILT DRAWINGS, THE ENGINEER CAN PROVIDE THE ELECTRONIC FILES FOR USE BY THE CONTRACTOR. THE ELECTRONIC FILES WILL BE PROVIDED UPON EXECUTION OF THE ENGINEER'S ELECTRONIC FILE RELEASE CONTRACT PREPARED SPECIFICALLY FOR THIS PROJECT. THE ELECTRONIC FILES WILL BE RELEASED IN THE FORMAT USED BY THE ARCHITECT AND ENGINEER TO DESIGN THE PROJECT. IF THIS FILE FORMAT IS NOT COMPATIBLE WITH THE CONTRACTOR'S NEEDS, ADDITIONAL CHARGES FOR PROVIDING THE CHANGES TO THE REQUESTED FILE FORMAT MAY BE NECESSARY AT \$150/HR BILLABLE TO THE CONTRACTOR.



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Project:

CHESTER UPLAND
HIGH SCHOOL

GAME ROOM

Client/Owner:

MG ENGINEERING ASSOCIATES

Date:	07/23/26
Drawn By:	KAG
Checked By:	BFM
Project Number:	2025-343

Issued/Revisions		
Rev. No.	Date	Description

Drawing Name:
SPECIFICATIONS-
ELECTRICAL

Drawing Number:

E-300

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**FIRST FLOOR PLAN -
MECHANICAL**

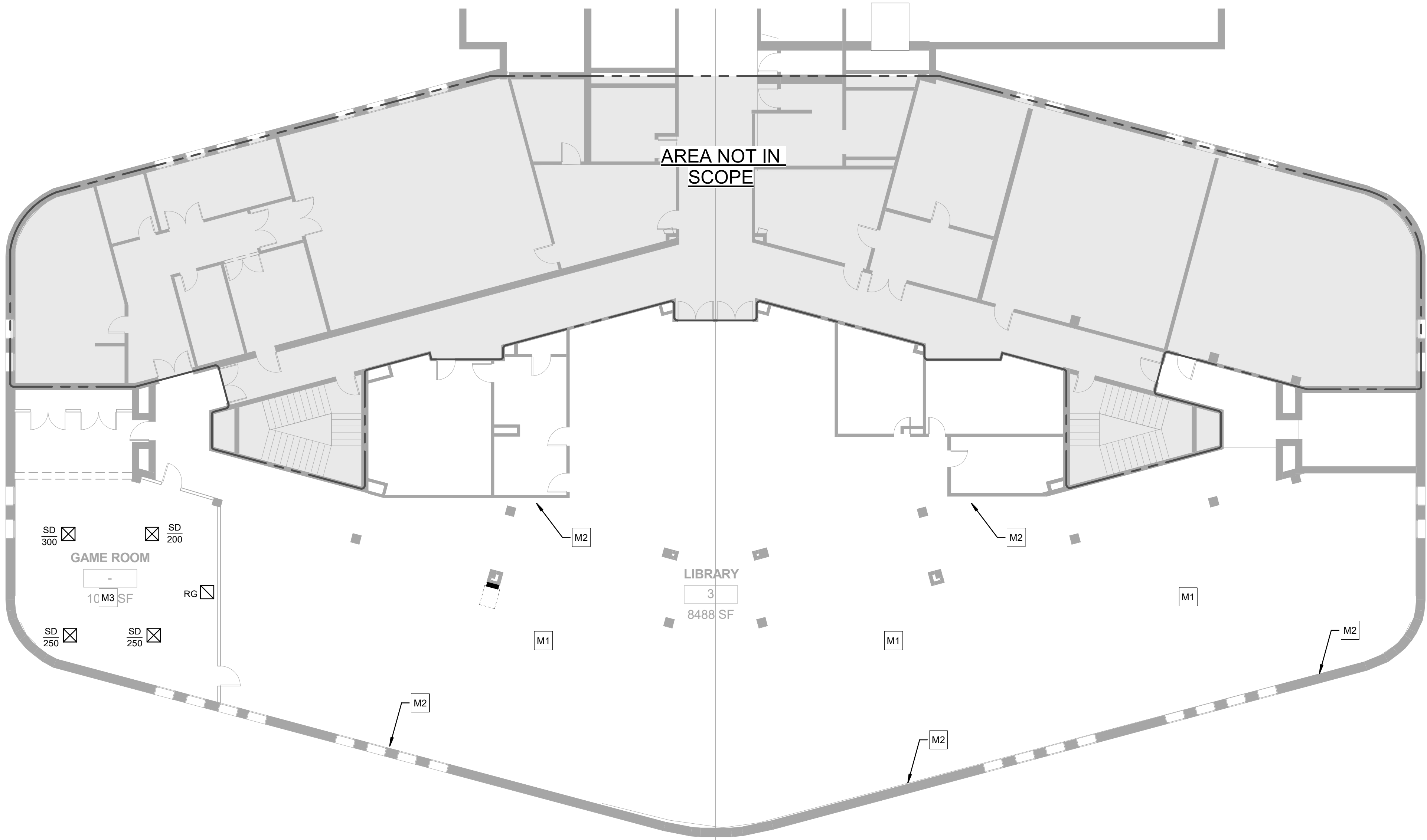
Drawing Number:

M-101

MECHANICAL KEY NOTES

NOTED THUS

- M1 EXISTING DUCTWORK ABOVE THE CEILING IN THE LIBRARY TO REMAIN IN PLACE. MECHANICAL CONTRACTOR TO INCLUDE RE-INSULATION AND BALANCING ON ITS BID. ENGINEER TO INSPECT DUCTWORK ONCE CEILING GRID IS DEMO AND DUCTWORK EXPOSED. ALTERNATE #1: DEMO EXISTING DUCT BRANCHES AND INSTALL NEW DUCTWORK AS REQUIRED, TO PROVIDE NEW SUPPLY CEILING DIFFUSERS.
- M2 EXISTING LINEAR SUPPLY DIFFUSERS IN THE PERIMETER OF THE EXISTING LIBRARY TO REMAIN IN PLACE. MECHANICAL CONTRACTOR TO REPLACE DAMAGED DIFFUSERS IN KIND. ALTERNATE #1: DEMO ALL EXISTING PERIMETER LINEAR DIFFUSERS AND INSTALL NEW ONES. NEW AIR DEVICE LAYOUT TO BE PROVIDED BY THE ENGINEER.
- M3 PROVIDE NEW 2'X2' SUPPLY DIFFUSERS IN THE NEW GAME ROOM AREA AS INDICATED ON THE PLANS. MECHANICAL CONTRACTOR TO MODIFY AND EXTEND THE EXISTING DUCTWORK AND RE-BALANCE TO AIRFLOWS INDICATED. ADD ALTERNATE #2: PROVIDE NEW 2.5 TONS CEILING CASSETTE SPLIT SYSTEM HEAT PUMP.



1 FIRST FLOOR PLAN - MECHANICAL
SCALE: 3/32" = 1'-0"

MECHANICAL DUCTWORK NOTE:

DUCTWORK DRAWINGS/LAYOUT IS DIAGRAMMATIC. ALL DUCTWORK INSTALLATIONS AND SHEETMETAL SHOP DRAWINGS SHALL BE IN ACCORDANCE WITH MCHUGH ENGINEERING ASSOCIATES DUCTWORK DETAILS AND PER SMACNA STANDARDS.

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