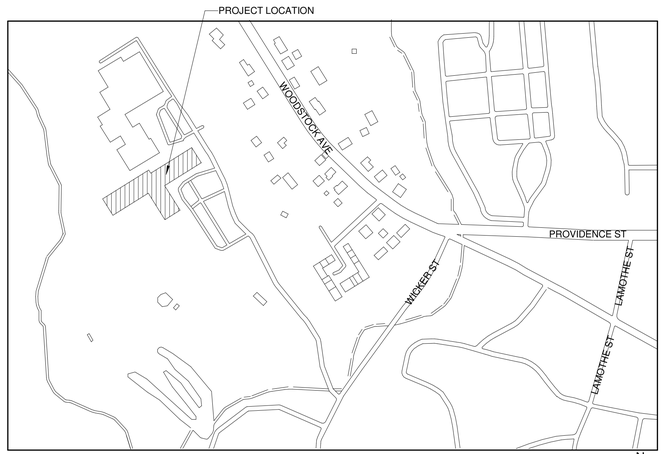
PUTNAM ELEMENTARY SCHOOL

33 WICKER ST, PUTNAM, CT 06260



PROJECT LOCATION MAP
N.T.S.

APPLICABLE CODES
2022 CONNECTICUT STATE BUILDING CODE INTERNATIONAL CODE COUNCIL, INC. • 2021 INTERNATIONAL BUILDING CODE • 2017 A117.1 ACCESSIBLE AND USABLE BUILDINGS AND FACILITIES • 2021 INTERNATIONAL EXISTING BUILDING CODE • 2021 INTERNATIONAL ENERGY CONSERVATION CODE NATIONAL FIRE PROTECTION ASSOCIATION, INC. • 2020 NFPA 70 NATIONAL ELECTRICAL CODE ALL AS AMENDED AND ADOPTED BY THE OCTOBER 1, 2022 CONNECTICUT AMENDMENTS CONSTITUTE THE 2022 CONNECTICUT STATE BUILDING CODE. 2022 CONNECTICUT STATE FIRE SAFETY CODE INTERNATIONAL CODE COUNCIL, INC. • 2021 INTERNATIONAL FIRE CODE NATIONAL FIRE PROTECTION ASSOCIATION, INC. • 2021 NFPA 101 LIFE SAFETY CODE ALL AS AMENDED AND ADOPTED BY THE OCTOBER 1, 2022 CONNECTICUT AMENDMENTS CONSTITUTE THE 2022 CONNECTICUT STATE FIRE SAFETY CODE. 2022 CONNECTICUT STATE FIRE PREVENTION CODE NATIONAL FIRE PROTECTION ASSOCIATION, INC. • 2021 NFPA 1 FIRE CODE (INCLUDING ANNEXES A, C, AND F) AS AMENDED AND ADOPTED BY THE OCTOBER 1, 2022 CONNECTICUT AMENDMENTS CONSTITUTE THE 2022 CONNECTICUT STATE FIRE PREVENTION CODE.

SCOPE OF WORK
SCOPE OF WORK INCLUDES MINI SPLIT AIR CONDITIONER ADDITION IN CLASSROOM AND GYMNASIUM PUTNAM ELEMENTARY SCHOOL (90000 SQ.FT). SCOPE OF WORK INCLUDES HVAC AND ELECTRICAL WORK.

LIST OF SHEETS

SHEET NO.	SHEET NAME	PROJECT ISSUE DATE	CURRENT REVISION
G-000	COVER SHEET	07/10/2024	
M-001	MECHANICAL NOTES, SPECIFICATION, SCHEDULES AND LEGENDS	07/10/2024	
M-002	MECHANICAL SCHEDULES	07/10/2024	
M-101	FIRST FLOOR OVERALL MECHANICAL PLAN	07/10/2024	
M-102	FIRST FLOOR MECHANICAL PLAN-PART B	07/10/2024	
M-103	FIRST FLOOR MECHANICAL PLAN-PART C	07/10/2024	
M-104	FIRST FLOOR MECHANICAL PLAN-PART D	07/10/2024	
M-105	SECOND FLOOR MECHANICAL PLAN-PART B	07/10/2024	
M-106	SECOND FLOOR MECHANICAL PLAN-PART C	07/10/2024	
M-300	MECHANICAL DETAILS	07/10/2024	
E-001	ELECTRICAL NOTES & SPECIFICATIONS	07/10/2024	
E-002	ELECTRICAL LEGENDS AND SYMBOL	07/10/2024	
E-003	ELECTRICAL POWER RISER DIAGRAM, DETAILS AND EQUIPMENT SCHEDULES	07/10/2024	
E-004	ELECTRICAL PANEL SCHEDULE	07/10/2024	
E-101	FIRST FLOOR OVERALL ELECTRICAL PLAN	07/10/2024	
E-102	FIRST FLOOR ELECTRICAL PLAN-PART B	07/10/2024	
E-103	FIRST FLOOR ELECTRICAL PLAN-PART C	07/10/2024	
E-104	FIRST FLOOR ELECTRICAL PLAN-PART D	07/10/2024	
E-105	SECOND FLOOR ELECTRICAL PLAN-PART B	07/10/2024	
E-106	SECOND FLOOR ELECTRICAL PLAN-PART C	07/10/2024	
E-107	BASEMENT BOILER ROOM ELECTRICAL PLAN	07/10/2024	

LIST OF PROFESSIONALS
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FILE NO. 24103.01
DATE: 07/10/2024
REV :

GENERAL MECHANICAL NOTES

GENERAL

1. WHEN A CONFLICT BETWEEN THE DRAWINGS, NOTES AND/OR SPECIFICATIONS OCCUR, THE MORE STRINGENT, AND/OR LARGER QUANTITY AND/OR MORE EXPENSIVE SHALL APPLY. THE REQUIREMENTS LISTED WITHIN NOTES OR SPECIFICATIONS SHALL BE REQUIRED, PROVIDED AND INSTALLED WHETHER SPECIFICALLY INDICATED ON THE DRAWINGS OR NOT.

2. IT IS THE INTENTION OF THE SPECIFICATIONS AND DRAWINGS TO PROVIDE FOR FINISHED WORK, TESTED AND READY FOR ORPERATION.

3. ITEMS AND SERVICES NOT SHOWN ON DRAWINGS OR SPECIFICATION BUT REQUIRED TO RENDER THE WORK COMPLETE AND READY FOR OPERATION, SHALL BE PROVIDED WITHOUT ADDITIONAL COST.

4. WORK OF THIS SECTION SHALL BE GOVERNED BY THE CONTRACT DOCUMENTS. PROVIDE MATERIALS, LABOR, EQUIPMENT AND SERVICES NECESSARY TO FURNISH, DELIVER AND INSTALL WORK AS SPECIFIED AND AS REQUIRED BY JOB CONDITIONS. WHERE A CONFLICT EXISTS BETWEEN THESE NOTES, THE DRAWINGS AND THE SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY.

5. DRAWINGS ARE DIAGRAMMATIC AND INDICATE A GENERAL ARRANGEMENT OF WORK AND ARE NOT TO BE CONSIDERED SUB-CONTRACTOR DOCUMENTS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR AND ALL SUBCONTRACTORS TO INCLUDE THE PROVISIONS AND INSTALLATION OF ALL NECESSARY WORK AND MATERIALS FOR COMPLETE, OPERATIONAL AND CODE COMPLIANT SYSTEMS. GENERAL DESIGN CONCEPTS INDICATED MUST BE FOLLOWED OR BETTERED. THE BID SHALL INCLUDE OFFSETS, ADDITIONAL PIPING, VALVES AND EQUIPMENT AND COMPONENTS AS REQUIRED TO MEET CONSTRUCTION CONDITIONS FOR PROPER OPERATION. CONSULT ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR SPACE CONDITIONS AND ADDITIONAL REQUIREMENTS.

6. PERFORM THE WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT GENERAL CONDITIONS AND WITH THE PROVISIONS OF ALL APPLICABLE LOCAL, STATE AND FEDERAL CODES AND LAWS.

7. WORK SHALL INCLUDE ALL INCIDENTALS, LABOR, MATERIAL, EQUIPMENT, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORTS, TOOLS, CONSUMABLE ITEMS, FEES, LICENSES, AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE WORK SHOWN ON THE DRAWINGS, SPECIFIED HEREIN AND AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM.

8. STORE MATERIALS INSIDE AND PROTECTED FROM DEBRIS, WEATHER AND MOISTURE

9. COORDINATE ALL HVAC WORK AND EQUIPMENT WITH STRUCTURAL STEEL, FIRE PROTECTION PIPING, PLUMBING PIPING, LIGHT FIXTURES, ELECTRICAL EQUIPMENT AND OWNER'S EQUIPMENT.

10. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATION OF ALL CEILING GRILLES, REGISTERS AND DIFFUSERS.

11. PROVIDE VOLUME DAMPERS IN EACH BRANCH DUCTWORK SERVING REGISTERS, GRILLES AND DIFFUSERS WHETHER INDICATED OR NOT.

12. PROVIDE CABLE OPERATED DAMPERS IN BRANCH DUCTWORK SERVING REGISTERS, GRILLES, AND DIFFUSERS IN INACCESSIBLE CEILING LOCATIONS WHETHER INDICATED OR NOT.

13. LOCATE ALL BALANCING DAMPERS AT CLEAN DUCTWORK ABOVE ACCESSIBLE CEILINGS, OR PROVIDE ACCESS DOORS.

14. PROVIDE FIRE DAMPERS, SMOKE DAMPERS AND A COMBINATION OF FIRE/SMOKE DAMPERS AS REQUIRED TO MAINTAIN WALL & FLOOR RATINGS AS DEFINED IN ARCHITECTURAL DRAWINGS.

15. DO NOT RUN ANY MECHANICAL OR CONTROL SERVICES THROUGH RATED STAIR ENCLOSURES UNLESS SYSTEMS ARE DESIGNED AND DESIGNATED TO SERVICE STAIRS.

16. THESE GENERAL NOTES ARE APPLICABLE TO ALL MECHANICAL DRAWINGS.

17. DRAWINGS ARE DIAGRAMMATIC AND SHOW GENERAL INTENT OF WORK. SEE DETAILS, SCHEDULES AND SPECIFICATIONS

18. MECHANICAL CONTRACTOR MUST REVIEW DRAWINGS OF THE OTHER TRADES AS PART OF THIS CONTRACT FOR ADDITIONAL WORK REQUIRED AND OR COORDINATION OF HIS WORK FOR OPERATIONS OR CONNECTIONS TO OTHER SYSTEMS.

SHOP DRAWINGS

1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO BE REVIEWED BY THE ENGINEER PRIOR TO CONSTRUCTION. SHOP DRAWINGS SHALL BE SUBMITTED FOR DUCTWORK LAYOUT, PIPING LAYOUT, SHEET METAL SHOP STANDARDS AND ALL EQUIPMENT FURNISHED.

2. ELECTRONIC DRAWING FILES SHALL BE GENERATED BY THE CONTRACTOR DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC VERSION (AUTOCAD VERSION AS REQUIRED BY THE OWNER) OR AUTOCAD VERSION 2017 IF NOT SPECIFIED.

3. PRIOR TO THE SUBMISSION AND REVIEW OF SHEET METAL SHOP DRAWINGS, THE CONTRACTOR SHALL SUBMIT FOR REVIEW SHEET METAL SHOP STANDARDS. ANY SHEET METAL SHOP DRAWINGS SUBMITTED PRIOR TO THE SUBMISSION OF THE SHOP STANDARDS SHALL BE RETURNED NOT REVIEWED.

AS BUILT DRAWINGS

1. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS. AS-BUILT DRAWINGS SHALL INDICATE ALL INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE. DRAWINGS SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY REFLECT THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEERS COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC VERSION (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) OR LATEST AUTOCAD VERSION IF NOT SPECIFIED. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.

2. PROVIDE "AS-BUILT DRAWINGS" INDICATING IN A NEAT AND ACCURATE MANNER A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN OF THE WORK. INDICATE THE FOLLOWING INSTALLED CONDITIONS:

   - INCLUDE ALL CHANGES AND AN ACCURATE RECORD IN AUTOCAD DRAWING OR APPROPRIATE SHOP DRAWINGS, OF ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED.
   - MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND CONTROL DEVICES LOCATED AND NUMBERED, CONCEALED UNIONS LOCATED, AND WITH ITEMS REQUIRING MAINTENANCE LOCATED (I.E., TRAPS, STRAINERS, EXPANSION COMPENSATORS, TANKS, ETC.). VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVE TAG CHART.
     - EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
     - APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS, AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
     - CONTRACT MODIFICATIONS, ACTUAL EQUIPMENT AND MATERIALS INSTALLED.

3. SUBMIT FOR REVIEW BOUND SETS OF THE REQUIRED DRAWINGS, MANUALS AND OPERATING INSTRUCTIONS.

4. SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT.

5. SUMBIT ALL WARANTY FOR EQUIPMENT.

ABBREVIATIONS

FD	FIRE DAMPER WITH ACCESS DOOR
FIN FL	FINISH FLOOR
FL	FLOOR
FLEX	FLEXIBLE
FT	FEET
FV	FACE VELOCITY
GC	GENERAL CONTRACTOR
H/C	HEATING/COOLING
HC-#	HEATING COIL
HTG	HEATING
HVAC	HEATING, VENTILATING 6 AIR CONDITIONING
ID	INSIDE DIMENSION
IN	INCHES
LAT	LEAVING AIR TEMPERATURE
LD	LINEAR DIFFUSER
LVG	LEAVING
MAN	MANUAL
MAT	MIXED AIR TEMPERATURE
MAX	MAXIMUM
MBH	1000 BTU'S
MER	MECHANICAL EQUIPMENT ROOM
MIN	MINUMIM
NC	NOISE CRITERIA
NFA	NET FREE AREA
NIC	NOT IN THIS CONTRACT
NTS	NOT TO SCALE
OA	OUTSIDE AIR
OAT	OUTDOOR AIR TEMPERATURE
OAI	OUTDOOR AIR INTAKE
OD	OUTSIDE DIMENSION
O.E.T.D.	OPEN END TRANSFER DUCT
OEO	OPEN END DUCT
PD	PRESSURE DROP
RA	RETURN AIR
RAT	RETURN AIR TEMPERATURE
RH	RELATIVE HUMIDITY
RM	ROOM
RPM	REVOLUTIONS PER MINUTE
SA	SUPPLY AIR
SAT	SUPPLY AIR TEMPERATURE
SP	STATIC PRESSURE
SQ FT	SQUARE FOOT (AREA)
T'STAT	THERMOSTAT
TD	TEMPERATURE DIFFERENCE
TEMP	TEMPERATURE
TG	AIR TRANSFER GRILLE
TRD	TRANSFER DUCT
TYP	TYPICAL
UC	UNDERCUT DOOR
VD	VOLUME DAMPER
W/	WITH
WB	WET BULB
WMS	WIRE MESH SCREEN
WT	WEIGHT(LBS)

*ALL ABBREVIATIONS MAY NOT BE USED IN THESE DOCUMENTS.

PERFORMANCE SPECIFICATION-MECHANICAL

PERFORMANCE SPECIFICATION
SECTION 15800-HEATING, VENTILATING, AIR CONDITIONING

PART 1 - GENERAL REQUIREMENTS

1.01 SCOPE OF WORK

INSTALL ALL NEW WORK IN A NEAT WORKMANLIKE MANNER READILY ACCESSIBLE FOR OPERATION,MAINTANANCE AND REPAIR.

WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS, SERVICES, EQUIPMENT, TRANSPORTATION AND OTHER INCIDENTALS NECESSARY TO FURNISH, INSTALL AND TO CONSTRUCT ALL HVAC SYSTEMS INCLUDING:

- COOLING UNITS
- HEATING UNITS
- PIPING

1.02 SUBMITTALS

A. PROVIDE ALL LABOR, MATERIAL,EQUIPMENT,AND CONTRACTOR'S SERVICES NECESSARY FOR COMPLETE,SAFE INSTALLATION OF ALL MECHANICAL WORK. THE SCOPE OF WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

1. INSULATION OF PIPING, EQUIPMENT.
2. TESTING AND BALANCING.
3. CUTTING AND PATCHING.
4. SHOP DRAWINGS.
5. AS-BUILT DRAWINGS.
6. OPERATING AND MAINTENANCE MANUALS.
7. FULL COORDINATION WITH OTHER TRADES.
8. WARRANTY AND GUARANTY.
9. PHASING AS REUIRED BY OWNER, CONSTRUCTION MANAGER, GENERAL CONTRACTOR OR BUILDING MANAGEMENT.
10. PREMIUM TIME FOR WORK TO BE PERFORMED AFTER-HOURS AS REQUIRED BY BUILDING MANAGEMENT AND/OR OWNER.
11. FILING,PERMITS,CONTROLLED INSPECTIONS.
12. FULL TESTING AND STARTUP OF ALL SYSTEMS.

B. SECURE CERTIFICATES, PAY ALL FEES AND CHARGES FOR ALL WORK INSTALLED, CERTIFYING COMPLIENCE WITH ALL AUTHORITIES, DELIVER CERTIFICATES TO OWNER FOR SIGNING BEFORE FILING.

ISSUE 4 COPIES OF MANUFACTURER'S SPECIFICATIONS AND INSTALLATION INSTRUCTIONS AND SHOP DRAWINGS FOR ALL ITEMS OF THE HVAC EQUIPMENT FOR APPROVAL.

1.03 CODES

A. CODES,PERMITS AND INSPECTIONS:

1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF CONNECTICUT BUILDING CODE,FARMINGTON BUILDING DEPARTMENT BUILDING MANAGEMENT, AND ALL AUTHORITIES HAVING JURISDICTION AND APPLICABLE NATIONAL,STATE AND LOCAL CODES, LAWS AND REGULATIONS COVERING OR RELATING TO ANY PORTION OF THIS WORKSHALL BE INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS. CONTRACTOR IS TO INFORM ENGINEER OF ANY EXISTING WORL OR MATERIALS WHICH VIOLET ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE BY THIS CONTRACTOR AND AT NO EXPENSE TO THE OWNER.
2. THIS CONTRACTOR SHALL OBTAIN ALL EQUIPMENT APPROVALS AS REQUIRED BY STATE AND LOCAL AUTHORITIES. PERMITS SHALL BE TURNED OVER AT JOB COMPLETION.

B. SITE VERIFICATION:

1. PRIOR TO SUBMISSION OF THE BID, THIS CONTRACTOR SHALL VISIT THE JOB SITE TO ASCERTAIN THE ACTUAL FIELD CONDITION AS THEY RELATE TO THE WORK INDICATED ON THE DRAWINGS AND DESCRIBED HEREIN. DISCREPANCIES, IF ANY, SHALL BE BRIUGHT TO THE ENGINEER'S ATTENTION PRIOR TO SUBMISSION OF THE BID, AND IF NOT RESOLVED TO SATISFACTION, SHALL BE SUBMITTED AS A WRITTEN QUALIFICATION OF THE BID. SUBMISSION OF A BID SHALL EVIDENCE THAT SITE VERIFICATION HAS BEEN PERFORMED AS DESCRIBED ABOVE.

C. CONTRACT DOCUMENTS:

1. PRIOR TO SUBMISSION OF A FORMAL BID, THIS CONTRACTOR SHALL REVIEW ALL DRAWINGS OF THE ENTIRE PROJECT INCLUDING GENERAL CONSTRUCTION, DEMOLITION, ARCHITECTURAL, MECHANICAL, ELECTRICAL, PLUMBING AND SPRINKLER AND SHALL INCLUDE ANY WORK REQUIRED IN THE BID WHICH IS INDICATED OR IMPLIED TO BE PERFORMED BY THIS TRADE IN OTHER SECTIONS OF THE WORK.
2. DRAWINGS ARE DIAGRAMATIC AND INDICATE GENERAL ARRANGEMENT OF WORK AND APPROXIMATEL LOCATION OF EQUIPMENT. REFER TO ARCHITECTURAL DRAWINGS FOR ALL DIMENSIONS AND COORDINATE FINAL LOCATIONS OF DIFFUSERS, GRILLES, REGISTERS, THERMOSTATS, SENSORS, SWITCHES AND ANY WALL MOUNTED DEVICES. ALL WORK SHALL BE COORDINATED WITH OTHER TRADES TO AVOID CONFLICT.
3. IF A CONFLICT OCCURS IN THE SPECIFICATIONS AND/OR ON THE DRAWING, THE MORE STRINGENT SITUATION SHALL APPLY.

D. GUARANTEE:

1. ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE OF THIS WORK. FINAL ACCEPTANCE SHALL BE DEFINED AS THE TIME AT WHICH THE MECHANICAL WORK IS TAKEN OVER AND ACCEPTED BY THE OWNER, AND IS UNDER CARE, CUSTODY, AND CONTROL OF THE OWNER. ENGAGE THE SERVICES OF VARIOUS MANUFACTURERS SUPPLYING THE EQUIPMENT FOR THE PROPER STARTUP AND OPERATION OF ALL SYSTEMS INSTALLED. INSTRUCT THE OWNER'S PERSONNEL IN THE PROPER OPERATION AND SERVICING OF THE SYSTEM.
2. THE CONTRACTOR SHALL GUARNTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED DOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN THE GUARNTEE PERIOD. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARNTEE SHALL INCLUDE RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THIS CONTRACTOR.
3. THIS CONTRACTOR IS RESPONSIBLE FOR THE MAINTANANCE AND OPERATION OF ALL SYSTEMS UNIT THE FINAL ACCEPTENCEOF THE WORK.
4. ALL AIR CONDITIONING UNIT COMPRESSORS AND REFRIGERATION COMPONENTS SHALL HAVE 5-YEAR WARRANTY.

E. THE GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION AIA DOCUMENTS, A201, LATEST EDITION, OR AS REQUIRED BY THE ARCHITECT'S DOCUMENTS, AND/OR THE STRUCTURAL ENGINEER'SDOCUMENTS, AS APPLICABLE, ARE PART OF THIS CONTRACT.

F. DEFINITIONS:

1. MECHANICAL CONTRACTOR, "THIS CONTRACTOR"-THE PARTY HAVE BEEN DULY AWARDED THE CONTRACT FOR AND ARE THEREBY MADE RESPONSIBLE FOR THE MECHANICAL WORK AS DESCRIBED HEREIN.
2. "THIS CONTRACT", "THE CONTRACT"- THE AGREEMENT COVERING THE WORK TO BE PERFORMED BY THIS CONTRACTOR.
3. "APPROVED", "EQUAL", "SATISFACTORY", "ACCEPTED", "ACCEPTABLE", "EQUIVALENT"-SUITABLE FOR USE ON THE PROJECT AS DETERMINED BY THE ENGINEER BASED ON DOCUMENTS PRESENTED FOR SUCH DETERMINATION.
4. "THESE SPECIFICATIONS", "THIS SECTION,PART, DIVISIONS" (OF THE SPECIFICATION)-THE DOCUMENT SPECIFYING THE WORK TO BE PERFORMED BY "THIS CONTRACTOR".
5. "THE MECHANICAL WORK", "THIS WORK"-ALL LABOR MATERIALS, EQUIPMENTS, APPARATUS,CONTROLS, ACCESSORIES, AND OTHER ITEMS REQUIRED FOR A PROPER AND COMPLETE INSTALLATIONBY MECHANICAL CONTRACTOR.
6. "ARCHITECT","ENGINEER","OWNER'S REPRESENTATIVE"- THE PARTY OR PARTIES RESPONSIBLE FOR INTERPRETING, ACCEPTING AND OTHERWISE RULING ON THE PERFORMANCE UNDER THIS CONTRACT.
7. "FURNISH"-PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK.
8. "INSTALL"- UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING INSTALLATION AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
9. "PROVIDE"-"FURNISH" AND "INSTALL".
10. "NEW"-MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.
11. "RELOCATE"-MOVE EXISTING EQUIPMENT AND ALL ACCESSORIES AS REQUIRED.
12. "REMOVE"- DISMANTLE AND CART AWAY FROM SITE INCLUDING ALL RELATED ACCESSORIES. ALL ITEMS SHALL BE LEGALLY DISPOSED OF. ALL OTHER EQUIPMENT AND OPERATIONS IN ANY WAY AFFECTED BY THE REMOVAL IS TO REMAIN IN FULL OPERATION. PROVIDE ALL NECESSARYCOMPONENTS TO MAINTAIN SUCH OPERATION.

THE FOLLOWING CODES AND STANDARDS SHALL APPLY TO THIS WORK:

ASTM A120, STEEL PIPE
ASTM B 88, COPPER TUBING
ANSI H23.1 STANDARDS FOR COPPER TUBING
ANSI B31.1 CODE FOR PRESSURE PIPING
NEMA NC1 MOTOR GENERATOR STANDARDS
NEMA DC1 STANDARDS FOR TEMPERATURE CONTROLS
NFPA-90A AIR CONDITIONING AND VENTILATING SYSTEM
NFPA-91 BLOWER AND EXHAUST SYSTEMS
APPLICABLE BOCA MECHANICAL CODE

1.04 ELECTRICAL REQUIREMENTS

THE HVAC CONTRACTOR SHALL BE RESPONSIBLE FOR SUPPLYING ALL MOTORS FOR EQUIPMENT SPECIFIED HEREIN IF NOT SUPPLIED AS PART OF EQUIPMENT. MOTORS UP TO 1/2 HP SHALL BE 115 VOLT, SINGLE PHASE. MOTORS 1/2 HP AND OVER SHALL BE 208 VOLT, 3 PHASE.

MOTORS SHALL BE GENERAL ELECTRIC, WESTINGHOUSE, OR ALLIS CHALMERS. ALL MOTORS SHALL BE 40 DEGREE C RISE, BUILT IN ACCORDANCE WITH A.I.E.E. STANDARDS.

ALL CIRCUIT BREAKERS AND FUSED DISCONNECT SWITCHES SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR CORDINATE WITH ELECT. DWG. STARTERS WITH AUXILIARY CONTACTS SHALL BE FURNISHED FOR ALL 3 PHASE MOTORS SUPPLIED UNDER THIS CONTRACT.

ALL AIR EQUIPMENT OF 2000 CFM AND LARGER SHALL BE SUPPLIED WITH SMOKE DETECTORS INSTALLED IN THE DUCTWORK AS REQUIRED BY NFPA 90A PAR. 4-3. WIRING OF THESE DETECTORS SHALL BE A PART OF THIS MECHANICAL CONTRACT.

1.05 COORDINATION WITH BUILDING MANAGEMENT

A. THIS CONTRACTOR IS TO OBTAIN A COPY OF THE BUILDING RULES AND REGULATIONS PRIOR TO BID SUBMISSION TO DETERMINE THE REQUIREMENTS AND THE EXTENT OF PREMIUM THE WORK REQUIRED BY THE BUILDING.

B. THE CONTRACTOR IS RESPONSIBLE FOR ADHERING TO THE BUILDING OWNER'S RULES AND REGULATIONS ANY DISCREPANCIES BETWEEN THE CONTRACT DOCUMENTS AND THE BUILDING RULES AND REGULATIONS SHALL BE SUBMITTED IN WRITING TO THE ARCHITECT/ENGINEER FOR REVIEW WITH BID SUBMISSION.

C. COORDINATE WITH BUILDING OWNER FOR ANY SERVICE INTERRUPTION OF EXISTING SYSTEMS AND GIVE NOTICE AS REQUIRED BY BUILDING RULES AND REGULATIONS,OR CONTRACTOR TO PROVIDE A MINIMUM OF TWO(2) DAYS NOTICE PRIOR TO ANY WORK BEING PERFORMED, WHICHEVER IS THE MORE STRINGENT. CONTRACTOR IS TO PERFORM WORK ON PREMIUM TIME, IF SO DIRECTED BY BUILDING OWNER, SO AS NOT TO DISTURB EXISTING TENANTS ON OTHER FLOORS.

1.06 SHOP DRAWINGS

A. SUBMIT SHOP DRAWING CERTIFIED BY ALL TRADES THAT COORDSINATES HAS BEEN COMPLETED. SUBMIT ALL CERTIFIED EQUIPMENT CUTS WITH CONSTRUCTION WIRING DIAGRAMS AND AUTOMATIC TEMPERATURE CONTROL REQUIREMENTS. SHOP DRAWINGS SUBMISSION SHALL INCLUDE, BUT NOT BE LIMITED TO,THE FOLLOWING:

1. DUCTWORK-PROVIDE DUCT SHOP STANDARDS AND LEAKAGE TEST CERTIFICATION, AS REQUIRED,AND 1/4 SCALE DUCT LAYOUT.
2. PIPING LAYOUT AND APPURTENANCES-PROVIDE PIPING,VALVING,CHEMICAL TREATMENT, SHOP STANDARDS AND 1/4 SCALE PIPING LAYOUT WITH ALL VALVING.
3. INSULATION FOR PIPING .
4. EQUIPMENT CATALOG CUTS FOR ALL ITEMS TO BE UTILIZED.
5. AUTOMATIC TEMPERATURE CONTROL DIAGRAMS, DEVICES AND SEQUENCE OF OPERATION.
   AS-BUILT DRAWINGS AT PROJECT COMPLETION OF THE INSTALLED CONDITION OF WORK.

B. THE QUANTITY OF SHOP DRAWINGS SHALL AS A MINIMUM BE FOUR (4) COPIES OF 8-1/2" X 11" SUBMISSIONS AND FIVE(5) PRINTS OF ALL DRAWINGS. SPECIFIC JOB REQUIREMENTS MAY BE MORE STRINGENT AND CONTRACTOR IS RESPONSIBLE TO OBTAIN REQUIREMENTS FROM OWNER,CONSTRUCTION MANAGER, GENERAL CONTRACTOR OR ARCHITECT.

1.07 MAINTANANCE MANUALS

A. SUBMIT FOUR(4) LOOSE-LEAF BOUND OPERATING AND MAINTENANCE MANUALS WITH INDEX AND INDEX TABS TO INCLUDE THE FOLLOWING:

1. OPERATING AND MAINTENANCE INSTRUCTIONS ON ALL SYSTEMS.
2. MANUFACTURERS= CATALOG CUTS ON ALL EQUIPMENT.
3. AUTOMATIC TEMPERATURE CONTROL SYSTEMS WITH SEQUENCE OF OPERATIONS, CATALOG CUTS OF ALL DEVICES AND POINT-TO-POINT WIRING DIAGRAMS.
4. CERTIFIED FINAL AIR AND WATER BALANCING REPORT.
5. PIPING AS-BUILT DRAWING WITH VALVE CHART AND KEY PLAN DRAWINGS INSERTED IN BINDER.
6. ALL ITEMS SUBMITTED FOR REVIEW IN SHOP DRAWING SECTION.

1.08 ACCESS DOORS IN GENERAL CONSTRUCTION

A. THIS CONTRACTOR SHALL SUBMIT TO THE ARCHITECT FOR APPROVAL A PLAN INDICATING THE SIZE AND LOCATION OF ALL ACCESS DOORS REQUIRED FOR OPERATION AND MAINTENANCE OF ALL CONCEALED EQUIPMENT,DEVICES,VALVES,DAMPERS AND CONTROLS. CONTRACTOR SHALL ARRANGE FOR FURNISHING AND INSTALLATION OF ALL ACCESS DOORS IN FINISHED CONSTRUCTION AND INCLUDE COSTS IN THE BID. ACCESS DOORS SHALL BE OF ADEQUATE SIZE TO PROVIDE ACCESS TO CONCEALED ITEMS FOR OPERATION AND MAINTENANCE,WITH A MINIMUM SIZE OF 18" x 18".

PART 2 - PRODUCT / APPLICATION

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REVISIONS			
NO.	DESCRIPTION	DATE	BY

STAMP:

PROJECT: PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

FILE NO:	24103.01	DRAWN BY:	MF
SCALE:	AS NOTED	CHECKED BY:	HH
DATE:	07/10/2024		

SHEET TITLE: MECHANICAL NOTES, SPECIFICATION, SCHEDULES AND LEGENDS

SHEET NUMBER: M-001

30-07-2024 20:46:16

AIR CONDITIONING UNIT SCHEDULE

NOTES: 1. PROVIDE DISC. SWITCH AND STARTER BY ELECTRICAL CONTRACTOR. 2.MECHANICAL CONTRACTOR TO PROVIDE PROGRAMMABLE T'STAT AND ELEC. CONTRACTOR TO WIRE .

SYMBOL	MANUFACTURER	MODEL NO.	AREA SERVES	CFM	TONS	PH	VOLTS	HEATING TYPE	HEATING CAPACITY (BTUH)		COOLING CAPACITY (BTUH)		QTY	REMARKS
									MINIMUM	MAXIMUM	MINIMUM	MAXMIMUM		
IDU-1	MITSUBISHI ELECTRIC	MSZ-FS18NA	CLASSROOM (ELEMENTARY SCHOOL)	514	1.5	1	208	ELECTRIC	6,450	21,000	5,150	30,000	44	
IDU-2	MITSUBISHI ELECTRIC	MSZ-GL24NA	GYMNESIUM (ELEMENTARY SCHOOL)	738	2.5	1	208	ELECTRIC	7,500	36,900	8,200	31,400	4	

NOTE-1:
MECHANCIAL CONTRACTOR SHALL PROVIDE AND INSTALL
CONDENSATE PUMP FOR ALL INDOOR UNIT.

CONDENSING UNIT SCHEDULE

NOTE: PROVIDE DISC. SWITCH & STARTER BY ELECTRICAL CONTRACTOR. PROVIDE HEAVY DUTY WALL MOUNT BRACKET FOR ALL CONDENSING UNITS.

SYMBOL	MANUFACTURER	MODEL NO.	TON	REF	PH	VOLTS	MCA	AREA SERVES	QTY	REMARKS
CU-1	MITSUBISHI ELECTRIC	MUZ-FS18NAH	1.5	R410A	1	208	18	CLASSROOM (ELEMENTARY SCHOOL)	44	NEW UNIT
CU-2	MITSUBISHI ELECTRIC	MUZ-GL24NA-U1	2.5	R410A	1	208	18	GYMNESIUM (ELEMENTARY SCHOOL)	4	NEW UNIT

MECHANICAL DRAWING INDEX

SHEET NUMBER	SHEET NAME
M-001	MECHANICAL NOTES, SPECIFICATION, SCHEDULES AND LEGENDS
M-002	MECHANICAL SCHEDULES
M-101	FIRST FLOOR OVERALL MECHANICAL PLAN
M-102	FIRST FLOOR MECHANICAL PLAN-PART B
M-103	FIRST FLOOR MECHANICAL PLAN-PART C
M-104	FIRST FLOOR MECHANICAL PLAN-PART D
M-105	SECOND FLOOR MECHANICAL PLAN-PART B
M-106	SECOND FLOOR MECHANICAL PLAN-PART C
M-300	MECHANICAL DETAILS

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REVISIONS

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PROJECT: PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

FILE NO:	24103.01
SCALE:	AS NOTED
DATE:	07/10/2024
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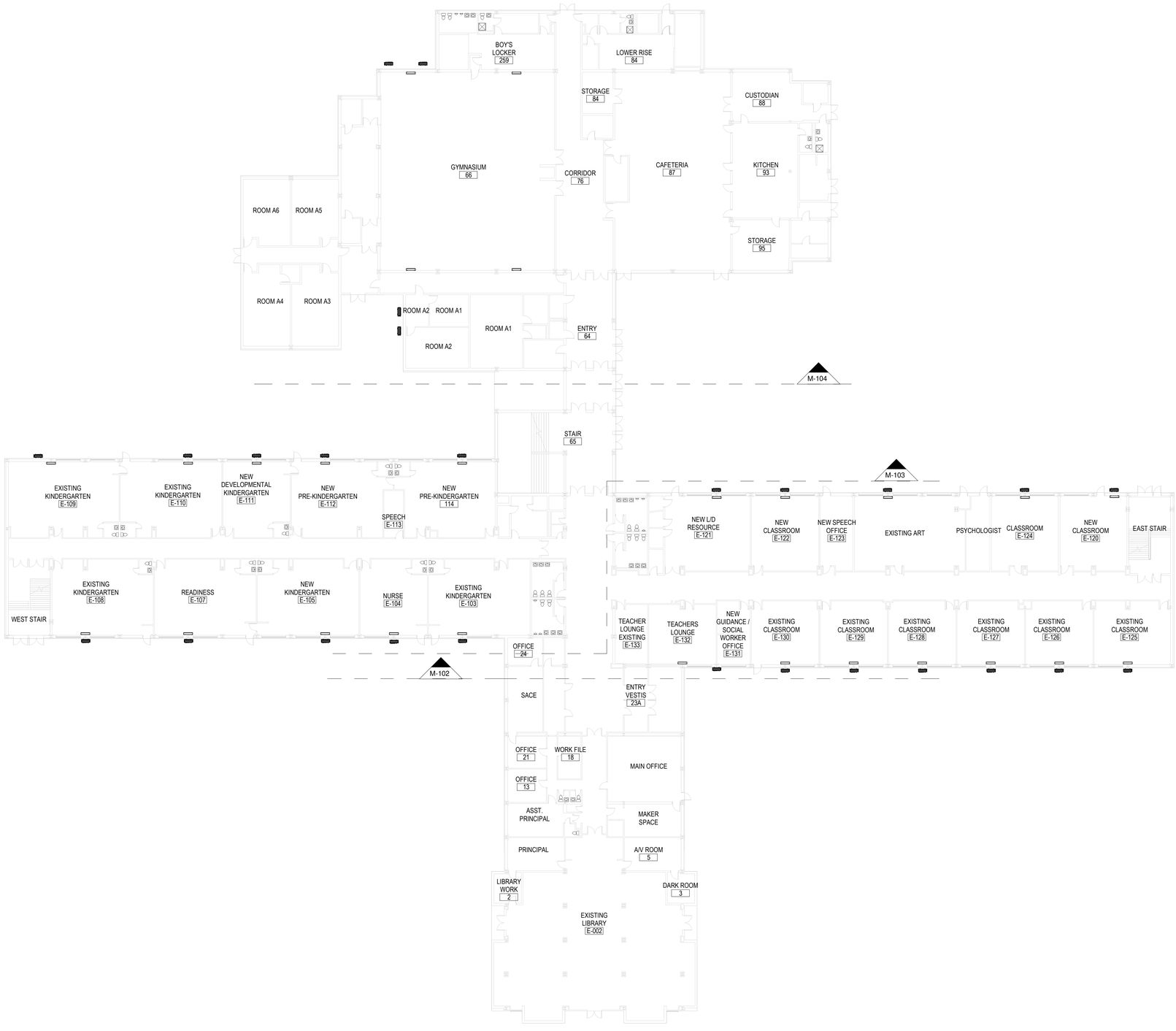
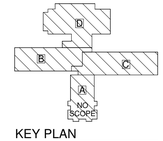
SHEET TITLE: MECHANICAL SCHEDULES

SHEET NUMBER: M-002

30-07-2024 20:46:16



1 M-101 FIRST FLOOR OVERALL MECHANICAL PLAN
3/64" = 1'-0"



KEY PLAN
SCALE = N.T.S

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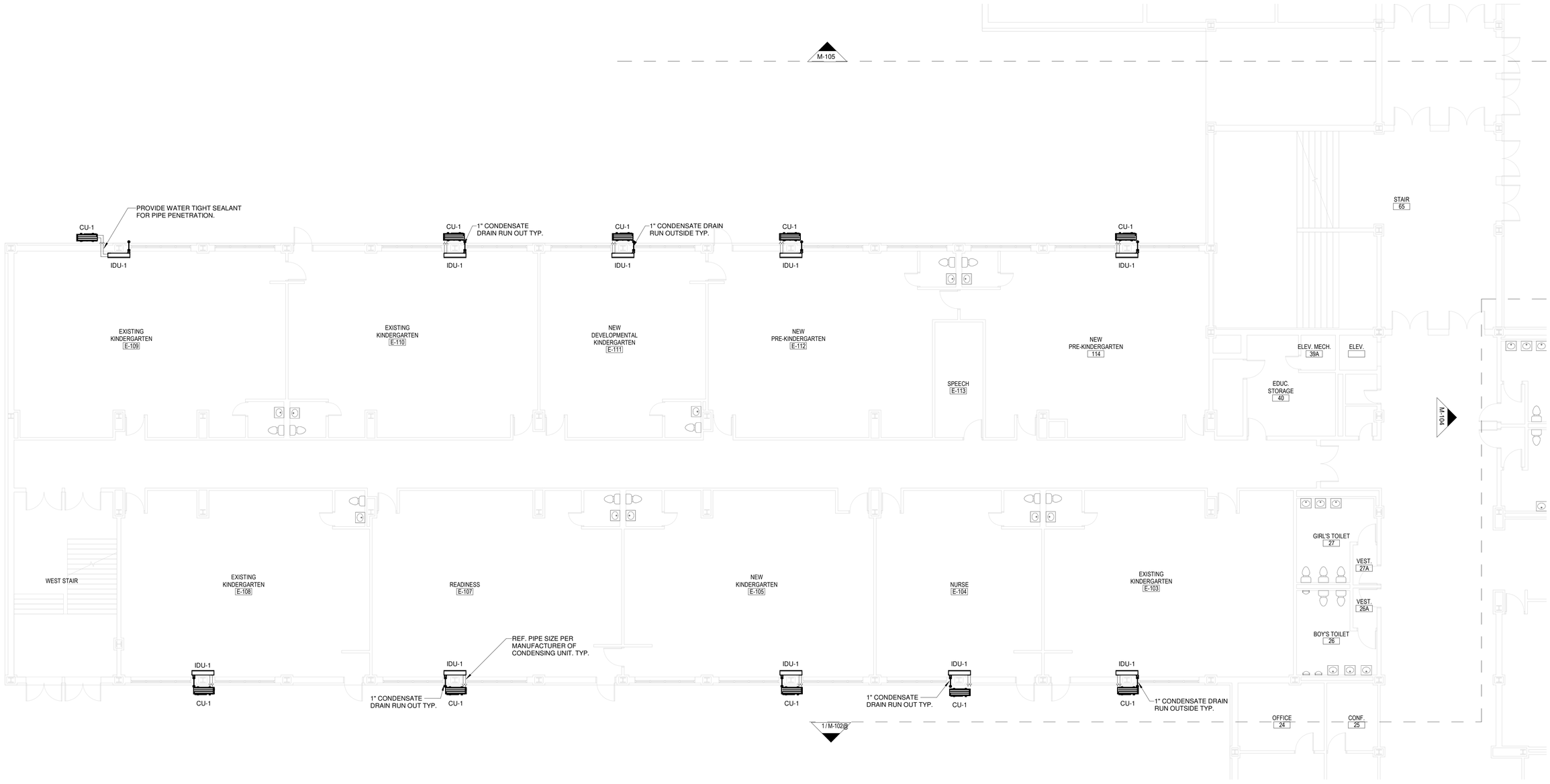
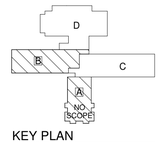
SHEET TITLE: FIRST FLOOR OVERALL MECHANICAL PLAN

SHEET NUMBER: M-101

30-07-2024 20:46:18



1 M-102 FIRST FLOOR MECHANICAL PLAN - PART B (ELEMANTARY SCHOOL)
1/8" = 1'-0"



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SCALE = N.T.S

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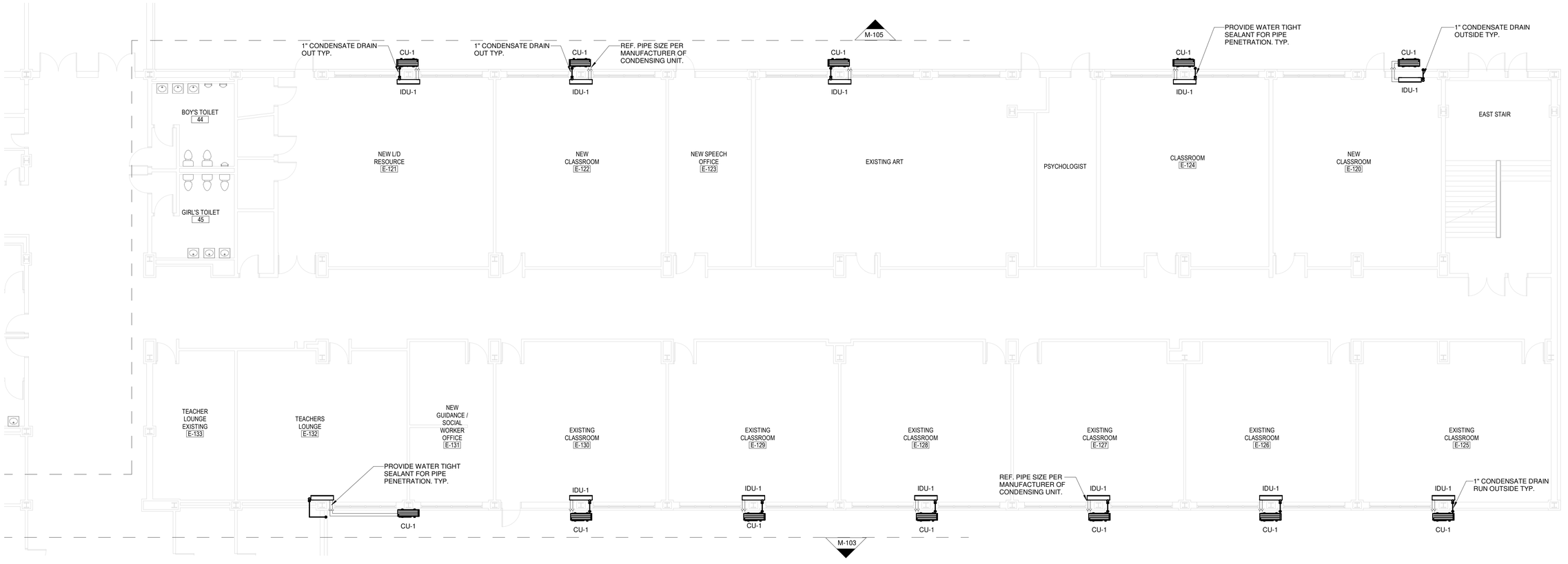
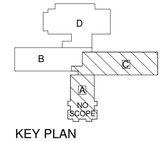
SHEET TITLE: FIRST FLOOR MECHANICAL PLAN-PART B

SHEET NUMBER: M-102

30-07-2024 20:46:19



1 M-103 FIRST FLOOR MECHANICAL PLAN - PART C.(ELEMENTARY SCHOOL)
1/8" = 1'-0"



KEY PLAN
SCALE = N.T.S

30-07-2024 20:46:20

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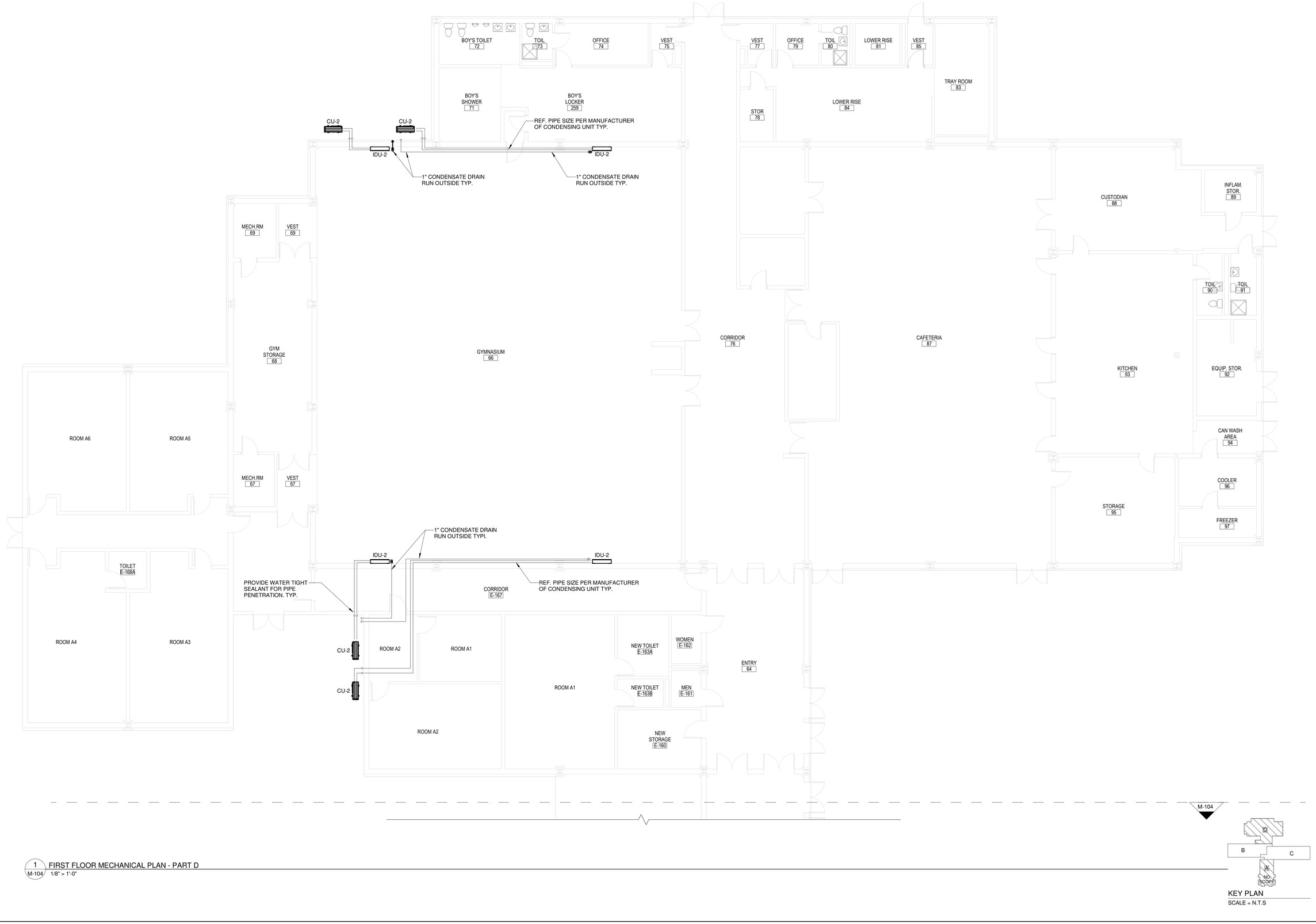
DRAWN BY:		MF	
CHECKED BY:			HH

SHEET TITLE: FIRST FLOOR MECHANICAL PLAN-PART C

SHEET NUMBER: M-103



1 M-104 FIRST FLOOR MECHANICAL PLAN - PART D
1/8" = 1'-0"

KEY PLAN
SCALE = N.T.S

30-07-2024 20:46:21

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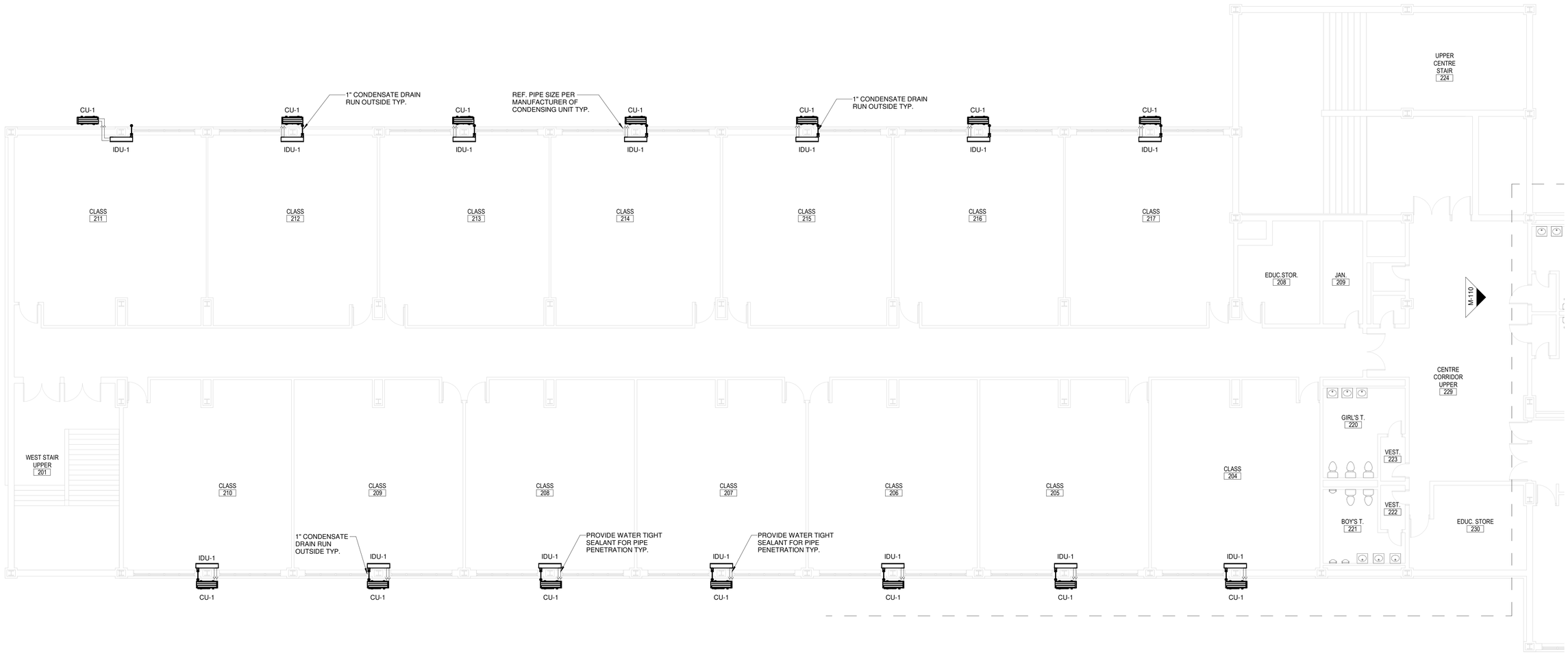
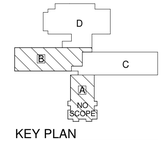
SHEET TITLE: FIRST FLOOR MECHANICAL PLAN-PART D

SHEET NUMBER: M-104



1 M-105 SECOND FLOOR MECHANICAL PLAN - PART B (ELEMENTARY SCHOOL)
1/8" = 1'-0"



KEY PLAN
SCALE = N.T.S

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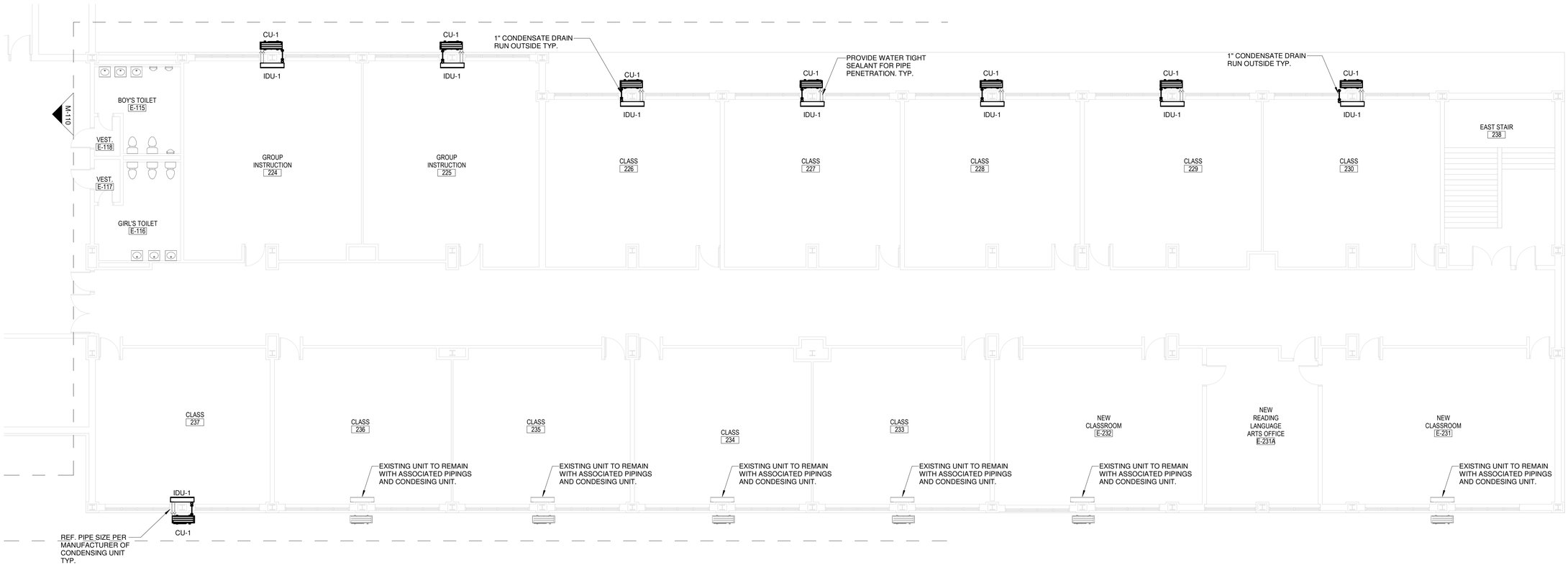
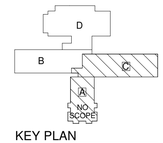
DRAWN BY:		MF	
CHECKED BY:			HH

SHEET TITLE: SECOND FLOOR MECHANICAL PLAN-PART B

SHEET NUMBER: M-105



1 M-106 SECOND FLOOR MECHANICAL PLAN - PART C (ELEMENTARY SCHOOL)
1/8" = 1'-0"



KEY PLAN
SCALE = N.T.S

30-07-2024 20:46:23

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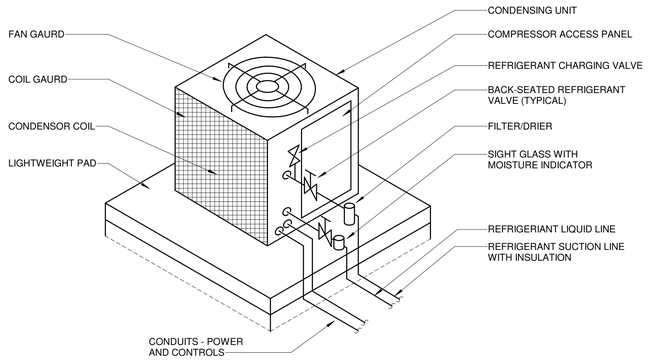
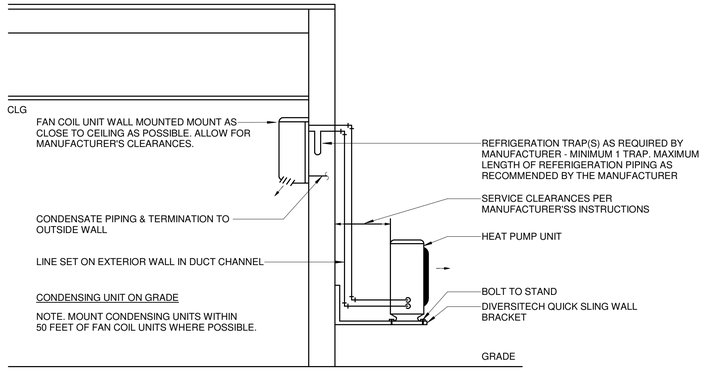
SHEET TITLE: SECOND FLOOR MECHANICAL PLAN-PART C

SHEET NUMBER: M-106



1 M-300 CONDENSING UNIT PIPING DIAGRAM
N.T.S.



2 M-300 TYPICAL WALL MOUNTED SPLIT SYSTEM HEAT PUMP DETAIL
N.T.S.

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SHEET TITLE: MECHANICAL DETAILS

SHEET NUMBER: M-300

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33 WICKER ST, PUTNAM, CT 06260

30-07-2024 20:46:23

PERFORMANCE SPECIFICATION

SECTION 16000 - ELECTRICAL

PART-1 GENERAL REQUIREMENTS

1.01 SCOPE OF THE WORK

WORK UNDER THIS SECTION SHALL INCLUDE ALL LABOR, MATERIALS, SERVICES, EQUIPMENT, TRANSPORTATION AND OTHER INCIDENTALS NECESSARY TO FURNISH AND INSTALL ALL ELECTRICAL WORK.

SPECIFIC INCLUSIONS ARE:

- ON SITE VERIFICATION OF EXISTING CONDITIONS
- EMERGENCY LIGHTING FOR LIFE SAFETY STANDARD
- BRANCH CIRCUIT WIRING FOR LIGHTING, RECEPTACLES, JUNCTION BOXES AND MOTORS.
- HANGERS, ANCHORS, SLEEVES, CHASES, SUPPORTS FOR FIXTURES, AND OTHER ELECTRICAL MATERIALS AND EQUIPMENT IN ASSOCIATION THEREWITH.
- LIGHTING FIXTURES AND LAMPS.
- OTHER ITEMS AND SERVICES REQUIRED OR AS SHOWN ON DRAWINGS TO COMPLETE THE INTENT OF THE PROJECT.

1.02 SUBMITTALS

SUBMIT PRODUCT DATA FOR APPROVAL INCLUDING:

- MATERIALS LIST AND MANUFACTURER'S SPECIFICATIONS.
- MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES.

WHEN SO REQUESTED BY THE ENGINEER, PROMPTLY PROVIDE SAMPLES OF ITEMS SCHEDULED TO BE EXPOSED IN THE FINAL STRUCTURE.

MANUAL: UPON COMPLETION OF THIS PORTION OF THE WORK, AND AS A CONDITION OF ITS ACCEPTANCE, DELIVER TO THE ENGINEER FOUR COPIES OF AN OPERATION AND MAINTENANCE MANUAL. INCLUDE WITHIN EACH MANUAL:

- COPY OF THE APPROVED RECORD DOCUMENTS FOR THIS PORTION OF THE WORK.
- COPIES OF ALL EQUIPMENT, LIGHT FIXTURES, DEVICES BEING INSTALLED, WIRING AND CONDUITS
- COPIES OF ALL WARRANTIES AND GUARANTIES.

1.03 COORDINATION

CONFER WITH ALL OTHER SUBCONTRACTORS AS TO THE LOCATION OF THEIR WORK BEFORE BEGINNING ELECTRICAL WORK AND INSTALL WORK IN SUCH A MANNER AS TO AVOID INTERFERENCE WITH THE OTHER ELECTRICALS. OBTAIN FROM THESE SUBCONTRACTORS THE NECESSARY INFORMATION RELATIVE TO ELECTRICAL WORK REQUIRED FOR EQUIPMENT INSTALLED BY THEM.

1.04 RECORD DRAWINGS

AT THE COMPLETION OF THE CONTRACT THE ELECTRICAL SUBCONTRACTOR SHALL SUBMIT FOR APPROVAL AN ACCURATE CHECK SET OF "AS-BUILT" DRAWINGS.

1.05 GUARANTEE

THE ELECTRICAL SUBCONTRACTOR SHALL GIVE THE OWNER A WRITTEN GUARANTEE TO MAKE GOOD ANY AND ALL FAULTS AND DEFECTS IN THE WORK DUE TO DEFECTIVE OR IMPROPER MATERIALS OF WORKMANSHIP THAT MAY APPEAR WITHIN ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE BUILDING AND SHALL MAKE ALL CHANGES WITHIN THE GUARANTEE PERIOD WHICH ARE REQUIRED TO PUT THE SYSTEM IN PROPER CONDITION AND OPERATION WITHOUT COST TO THE OWNER.

PART-2 PRODUCTS

2.01 GENERAL AREA LIGHTING:

2.01 PANELBOARDS

PANELBOARDS SHALL BE BY SQUARE D, GENERAL ELECTRIC, EATON, SIEMENS OR EQUAL.

LIGHTING AND SMALL POWER PANELBOARDS SHALL BE GE #AQ SERIES OR EQUAL.

2.02

ALL CONDUIT AND FITTINGS TO BE METALLIC OR GALVANIZED STEEL, BOXED, STEPS, SUPPORTS AND GROUND FAULT CIRCUIT INTERRUPTER (GFI) RECEPTACLES SHALL BE NEMA G-20R, CLASS "A", 5 MA SENSITIVITY AND SHALL BE PASS & SEYMOUR HUBBELL #GFr5820 OR EQUAL.

2.03 LAMPS

LED LAMP

LED LAMPS SHALL BE BY PHILIPS, OSRAM, CREE OR EQUAL. ALL LUMINARIES SHALL BE TESTED PER LM-79, LM-80. THE LED LAMPS SHALL HAVE AT LEAST 50000 BURNING HOURS (L70).

LED BOARDS SHALL BE CREE, NICHIA OR SAMSUNG.

2.04 BALLASTS

BALLASTS SHALL BE ETL/CBM APPROVED, LEAKPROOF, RATED FOR ENVIRONMENT TEMPERATURE AND LOW NOISE LEVEL.

FLUORESCENT BALLASTS SHALL BE CLASS P, HIGH-POWER FACTOR, WITH "A" NOISE RATING; FOR 120V OR 277V OPERATION, UNLESS OTHERWISE NOTED. BALLASTS SHALL BE EQUAL TO UNIVERSAL #412-L-SLH-TC-P FOR ONE-LAMP USAGE, AND UNIVERSAL #445-L- SLH-TC-P FOR TWO-LAMP USAGE AND OF THE ENERGY SAVINGS TYPE.

2.05 WIRING DEVICES:

STRAIGHT-BLADE RECEPTACLES DUPLEX CONVENIENCE RECEPTACLES: 125 V, 20 A; COMPLY WITH NEMA WD 1, NEMA WD 6 CONFIGURATION 5-20R, UL 498, AND FS W-C-596. DUPLEX CONVENIENCE RECEPTACLES SHALL BE BY COOPER #CR5352, LEVITON #5362, HUBBELL #5362 AND PASS & SEYMOUR #5362.

GF RECEPTACLES: 125 V, 20 A, STRAIGHT BLADE, SELF-TESTING FEED-THROUGH TYPE. COMPLY WITH NEMA WD 1, NEMA WD 6 CONFIGURATION 5-20R, UL 498, UL 943 CLASS A, AND FS W-C-596. INCLUDE INDICATOR LIGHT THAT SHOWS WHEN THE GFCI HAS MALFUNCTIONED AND NO LONGER PROVIDES PROPER GFCI PROTECTION.

GF CONVENIENCE RECEPTACLES SHALL BE BY COOPER #SGF20, LEVITON #GFTR2, HUBBELL #GFRST20 AND PASS & SEYMOUR #2097.

TAMPER-RESISTANT, DUPLEX GF CONVENIENCE RECEPTACLES SHALL BE COOPER -#TRSGF20, HUBBELL #GFTRST20 AND PASS & SEYMOUR #2097TR.

TAMPER-RESISTANT CONVENIENCE RECEPTACLES: 125 V, 20 A; COMPLY WITH NEMA WD 1, NEMA WD 6 CONFIGURATION 5-20R, UL 498, AND FS W-C-596. TAMPER-RESISTANT CONVENIENCE RECEPTACLES SHALL BE BY LEVITON #TBR20, HUBBELL #BR20TR AND PASS & SEYMOUR #TR20.

TWIST-LOCK, SINGLE CONVENIENCE RECEPTACLES: 125 V, 20 A; COMPLY WITH NEMA WD 1, NEMA WD 6 CONFIGURATION L5-20R, AND UL 498. TWIST-LOCK, SINGLE CONVENIENCE RECEPTACLES SHALL BE BY COOPER #CWL520R, HUBBELL #L520R, LEVITON #2310, PASS & SEYMOUR #L520-R.

SWITCHES:

SWITCHES SHALL COMPLY WITH NEMA WD 1, UL 20, AND FS W-S-896. SWITCHES, 120/277 V, 20 A: SINGLE POLE: LEVITON # 1221-S OR EQUAL. THREE WAY: LEVITON #1223-S OR EQUAL. FOUR WAY: LEVITON # 1224-S OR EQUAL.
KEY-OPERATED SWITCHES: 120/277 V, 20 A, SINGLE POLE, WITH FACTORY-SUPPLIED KEY IN LIEU OF SWITCH HANDLE. KEY-OPERATED SWITCHES SHALL BE BY COOPER #AH1221L, HUBBELL #HBL1221L, LEVITON -#1221-2L, PASS & SEYMOUR #PS20AC1-L.
WALL PLATES: SINGLE AND COMBINATION TYPES SHALL MATCH CORRESPONDING WIRING DEVICES. PLATE-SECURING SCREWS: METAL WITH HEAD COLOR TO MATCH PLATE FINISH. MATERIAL FOR FINISHED SPACES: SMOOTH, HIGH-IMPACT THERMOPLASTIC. MATERIAL FOR UNFINISHED SPACES: SMOOTH, HIGH-IMPACT THERMOPLASTIC. MATERIAL FOR DAMP LOCATIONS: THERMOPLASTIC WITH SPRING-LOADED LIFT COVER, AND LISTED AND LABELED FOR USE IN WET AND DAMP LOCATIONS.

PART-3 EXECUTION

3.01 COORDINATION

THE ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, BUT ARE REQUIRED TO BE FOLLOWED AS CLOSELY AS ACTUAL CONSTRUCTION AND WORK OF OTHER ELECTRICALS WILL PERMIT. WHERE DEVIATIONS ARE REQUIRED TO CONFORM WITH ACTUAL CONSTRUCTION AND THE WORK OF OTHER ELECTRICALS, MAKE SUCH DEVIATIONS WITHOUT ADDITIONAL COST TO THE OWNER.

3.02 INSTALLATION OF RACEWAYS AND FITTINGS

WHERE CONDUIT IS INSTALLED CONCEALED IN WALLS OR ABOVE THE CEILING, OR EXPOSED IN WORK AREAS, PROVIDE ELECTRICAL METALLIC TUBING WITH COMPRESSION TYPE FITTINGS.

PROVIDE GALVANIZED RIGID STEEL CONDUITS FOR ALL CIRCUITINGS IN WET LOCATION AREA.

CONNECTION TO VIBRATING EQUIPMENT (INCLUDING TRANSFORMERS AND HYDRAULIC, PNUEMATIC, ELECTRIC SOLENOID, OR MOTOR-DRIVEN EQUIPMENT): FMC, EXCEPT USE LFMC IN DAMP OR WET LOCATIONS.

PROVIDE NECESSARY SLEEVES AND CHASES WHERE CONDUITS PASS THROUGH FLOORS AND WALLS, AND PROVIDE OTHER NECESSARY OPENINGS AND SPACES, ARRANGING FOR IN PROPER TIME TO PREVENT UNNECESSARY CUTTING IN CONNECTION WITH THE WORK. PERFORM CUTTING AND PATCHING IN ACCORDANCE WITH THE PROVISIONS FOR THE ORIGINAL WORK.

WHERE CONDUIT IS EXPOSED, RUN PARALLEL TO OR AT RIGHT ANGLE WITH LINES OF THE BUILDING; WHERE CONDUITS PIERCE THE ROOF, PROVIDE 24 GAUGE GALVANIZED IRON ROOF JACKS AND FLASHING COLLAR BRAZED ONTO THE CONDUITS AND COVERING THE TOP OF ROOF JACKS.

3.03 INSTALLATION OF LIGHTING FIXTURES

INSTALL LIGHTING FIXTURES COMPLETE AND READY FOR SERVICE IN ACCORDANCE WITH THE LIGHTING SCHEDULE SHOWN ON THE DRAWINGS.

WIRE FIXTURES WITH FIXTURE WIRING OF AT LEAST 50 DEGREES CELSIUS RATING. WHERE FIXTURES ARE MOUNTED IN CONTINUOUS ROWS, PROVIDE CONDUCTORS IN WIRING CHANNELS OR THE SAME SIZE AS THE CIRCUIT WIRES SUPPLYING THE ROW OF FIXTURES.

USE ONLY BONDERIZED, GALVANIZED, OR SHERARDIZED STEEL FOR FIXTURE INSTALLATION FOR PROTECTION AGAINST RUST AND CORROSION, AND INSTALL FLUORESCENT FIXTURES STRAIGHT AND TRUE WITH REFERENCE TO WALLS.

INSTALL ALL LIGHTING FIXTURES, INCLUDING THOSE MOUNTED IN CONTINUOUS ROWS, SO THAT THE WEIGHT OF THE FIXTURE IS SUPPORTED, EITHER DIRECTLY OR INDIRECTLY, BY A SOUND AND SAFE STRUCTURAL MEMBER OF THE BUILDING, USING ADEQUATE NUMBER AND TYPE OF FASTENINGS TO ASSURE SAFE INSTALLATION.

3.04 INSTALLATION OF CONDUCTORS

MINIMUM BRANCH CIRCUIT CONDUCTOR SIZE: NO. 12 AWG. FOR ALL 20-A-1P, 120-VOLT CIRCUITS IN EXCESS OF 50 FT. FROM POWER SOURCE TO LAST DEVICE, PROVIDE NO. 10 AWG ENTIRE LENGTH OF CIRCUIT. FOR ALL 20-A-1P, 120-VOLT CIRCUITS IN EXCESS OF 80 FT. FROM POWER SOURCE TO LAST DEVICE, PROVIDE NO. 8 AWG ENTIRE LENGTH OF CIRCUIT. FOR ALL 20A-1P, 120-VOLT CIRCUITS IN EXCESS OF 120 FT. FROM POWER SOURCE TO LAST DEVICE, PROVIDE NO. 6 AWG ENTIRE LENGTH OF CIRCUIT.

PROVIDE CODE-SIZED CONDUIT FOR NUMBER AND SIZE WIRES SHOWN OR REQUIRED, UNLESS A LARGER SIZE CONDUIT IS SHOWN ON THE DRAWINGS.

USE IDENTIFIED (WHITE) NEUTRALS AND COLOR-CODED PHASE WIRES FOR ALL BRANCH CIRCUIT WIRING.
- MAKE SPLICES ELECTRICALLY AND MECHANICALLY SECURE WITH PRESSURE-TYPE CONNECTORS, OR BY SOLDERING. FOR WIRES SIZE 6 AWG AND LARGER, PROVIDE BURNDY VINYL-PLASTIC ELECTRICAL TAPE WHERE INSULATION IS REQUIRED.

- INSULATE SPLICES WITH A MINIMUM OF TWO HALF-LAPPED LAYERS OF SCOTCH BRAND NO. 33 VINYL-PLASTIC ELECTRICAL TAPE WHERE INSULATION IS REQUIRED.

3.05 FINAL TESTING AND INSPECTION

PROVIDE PERSONNEL AND EQUIPMENT, MAKE REQUIRED TESTS, AND SECURE REQUIRED APPROVALS FROM THE ARCHITECT AND GOVERNMENTAL AGENCIES HAVING JURISDICTION.

WHEN MATERIAL AND/OR WORKMANSHIP IS FOUND NOT TO COMPLY WITH THE SPECIFIED REQUIREMENTS, WITHIN THREE DAYS AFTER RECEIPT OF NOTICE OF SUCH NON-COMPLIANCE REMOVE THE NON-COMPLYING ITEMS FROM THE JOB SITE AND REPLACE THEM WITH ITEMS COMPLYING WITH THE SPECIFIED REQUIREMENTS, ALL AT NO ADDITIONAL COST TO THE OWNER.

3.06 PROJECT COMPLETION

UPON COMPLETION OF THE WORK OF THIS SECTION, THOROUGHLY CLEAN ALL EXPOSED PORTIONS OF THE ELECTRICAL INSTALLATION, REMOVING ALL TRACES OF SOIL, LABELS, GREASE,OIL, AND OTHER FOREIGN MATERIAL, AND USING ONLY THE TYPE CLEANER RECOMMENDED BY THE MANUFACTURER OF THE ITEM BEING CLEANED.

THOROUGHLY INDOCTRINATE THE OWNER'S OPERATION AND MAINTENANCE PERSONNEL IN THE CONTENTS OF THE OPERATIONS AND MAINTENANCE MANUAL.

3.07 RECORD DRAWINGS

THIS CONTRACTOR SHALL MAINTAIN AND SUBMIT RECORD DRAWINGS, ON WHICH SHALL AT ALL TIMES, CLEARLY AND COMPLETELY SHOW THE ACTUAL INSTALLATION IN ACCORDANCE WITH THE REQUIREMENTS OF THIS SECTION.

WHEREVER THE WORK WAS INSTALLED OTHER THAN AS SHOWN ON THE CONTRACT DRAWINGS, SAID CHANGES SHALL BE INDICATED ON THE "AS-BUILT" PRINTS. ANY ADDENDA SKETCHES AND SUPPLEMENTARY DRAWINGS ISSUED DURING THE COURSE OF CONSTRUCTION SHALL ALSO BE INCORPORATED ON THE "AS-BUILT" PRINTS.

THE "AS-BUILT" DRAWINGS SHALL BE KEPT UP TO DATE AND BE AVAILABLE TO THE ENGINEER FOR INSPECTION AT ALL TIMES.

UPON RECEIPT OF APPROVAL OF THE "AS-BUILT" DRAWINGS, PHOTO REPRODUCTIONS OF THE ORIGINAL TRACINGS ON MYLAR TRANSPARENCIES SHALL BE REVISED TO INCORPORATE ALL THE CHANGES ON THE "AS-BUILT" DRAWINGS. THESE REPRODUCIBLE TRANSPARENCIES SHALL BE CERTIFIED AS CORRECT AND DELIVERED TO THE ENGINEER ALONG WITH (2) SETS OF BLACK LINE PRINTS AS "RECORD DRAWINGS"

ALL COSTS RELATIVE TO THESE RECORD DRAWINGS SHALL BE PAID BY THIS CONTRACTOR.

3.08 RUBBISH REMOVAL

AT THE COMPLETION OF EACH DAYS WORK, THIS CONTRACTOR SHALL REMOVE FROM THE PREMISES, ALL RUBBISH OR WASTE MATERIAL BELONGING TO HIM.

GENERAL ELECTRICAL NOTES

1. THE ENTIRE INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, LATEST EDITION (NEC) AND THE LATEST EDITIONS OF ALL LOCAL CODES, RULES AND ORDINANCES HAVING JURISDICTION.
2. AS A MINIMUM, ALL EQUIPMENT SHALL MEET APPLICABLE STANDARDS, FOR THE TYPE OF EQUIPMENT AND INTENDED USE, OF THE FOLLOWING:
   A. AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)
   B. ILLUMINATING ENGINEERS SOCIETY (IES)
   C. AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
   D. NATIONAL ELECTRICAL MANUFACTURER'S ASSOCIATES.(NEMA)
   E. NOTE: THESE STANDARDS ARE SUBORDINATE TO CODES AND STANDARDS SET BY U.L.
3. ALL ELECTRICAL EQUIPMENT, DEVICES, WIRE, ETC., SHALL BE LISTED, FOR INTENDED USE, WITH UNDERWRITER'S LABORATORIES INC. (U.L.), WHERE STANDARDS HAVE BEEN ESTABLISHED BY U.L.
4. CONTRACTOR TO PROVIDE ALL LABOR, MATERIALS AND SUPERVISION NECESSARY TO ACCOMPLISH THE WORK AS SHOWN AND/OR NOTED ON THE DRAWINGS.
5. THE CONTRACTOR SHALL VISIT THE JOB SITE AND VERIFY ALL CONDITIONS, LOCATIONS, DIMENSIONS AND COUNTS AS SHOWN OR NOTED ON THE DRAWINGS, PRIOR TO SUBMITTING BID.
6. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO PROVIDE ALL LABOR, MATERIALS AND SUPERVISION NECESSARY TO ACCOMPLISH THE WORK AS SHOWN AND/OR NOTED ON THE PLANS.
7. ELECTRICAL CONTRACTOR SHALL NOT SCALE DRAWINGS. CONTRACTOR SHALL REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR EXACT LOCATIONS OF ALL EQUIPMENT UNLESS NOTED OTHERWISE.
8. IT SHALL BE UNDERSTOOD THAT ALL WORK PERFORMED SHALL BE DONE BY A LICENSED CONTRACTOR AND IN A FIRST-CLASS WORKMANLIKE MANNER. SAID CONTRACTOR SHALL MEET ALL REQUIREMENTS SET FORTH BY ANY LOCAL ORDINANCE AND GOVERNING AUTHORITIES.
9. THE CONTRACTOR SHALL PROVIDE ALL REQUIRED INSURANCE FOR PROTECTION AGAINST PUBLIC LIABILITY AND PROPERTY DAMAGE FOR THE DURATION OF THE WORK.
10. CONTRACTOR SHALL GUARANTEE ALL MATERIALS AND WORKMANSHIP FREE FROM DEFECTS FOR A PERIOD OF NOT LESS THAN ONE YEAR FROM DATE OF ACCEPTANCE, UNLESS INDICATED OR SPECIFIED OTHERWISE.
11. IT SHALL NOT BE THE INTENT OF THESE PLANS AND/OR SPECIFICATIONS TO SHOW EVERY MINOR DETAIL OF CONSTRUCTION. THE CONTRACTOR SHALL BE EXPECTED TO FURNISH AND INSTALL ALL ITEMS FOR A COMPLETE ELECTRICAL SYSTEM AND PROVIDE FOR ALL REQUIREMENTS NECESSARY FOR EQUIPMENT TO BE PLACED IN PROPER WORKING ORDER.
12. CONTRACTOR SHALL PROVIDE A TYPE WRITTEN DIRECTORY OF EACH PANELBOARD. HAND WRITTEN DIRECTORY IS NOT ACCEPTABLE, EXCEPT SPARE AND SPACES SHALL BE HANDWRITTEN IN PENCIL.
13. THE ELECTRICAL CONTRACTOR SHALL FURNISH A COMPLETE SET OF AS-BUILT DRAWINGS, SHOWING ALL CHANGES AND DEVIATIONS TO THE ARCHITECT/ENGINEER PRIOR TO COMPLETION OF THE PROJECT.
14. COORDINATE TEMPORARY ELECTRICAL POWER REQUIREMENT WITH OWNER.
15. G.C. TO COORDINATE WITH ALL OTHER DISCIPLINES AND PREPARE CEILING COORDINATION DRAWINGS TO ACCOMMODATE CEILING HEIGHTS, SPRINKLERS, LIGHTING, DUCTWORK & PLUMBING AND SUBMIT FOR APPROVAL TO THE ARCHITECT PRIOR TO ORDERING MATERIALS.

METER CENTERS 2-6 POSITION FIXED

PART 1 GENERAL

1.01 SECTION INCLUDES
A. MULTI-METERING SHALL BE FURNISHED AND WALL MOUNTED AT LOCATIONS AS SHOWN ON THE DRAWINGS.
B. METERING SHALL BE UL LISTED.
C. METERING SHALL BE LABELED FOR SERVICE EQUIPMENT ONLY.

1.02 REFERENCES
A. NEMA AB 1 - CIRCUIT BREAKERS
B. NEMA PB 1 - PANELBOARDS

PART 2 PRODUCTS

2.01 MANUFACTURERS
A. METER UNIT(S) SHALL BE MANUFACTURED BY SQUARE D COMPANY OR APPROVED EQUAL.

2.02 ENCLOSURES
A. NEMA TYPE 3R AS SHOWN ON THE DRAWINGS.
B. ENCLOSURES SHALL BE CONSTRUCTED OF FORMED AND WELDED, CODE GAUGE STEEL, NEMA 3R WITH A GRAY BAKED ENAMEL FINISH ELECTRODEPOSITED OVER CLEANED GALVANIZED STEEL.
C. NO DEVICE DISASSEMBLY IS TO BE REQUIRED BEFORE MOUNTING.
D. ALL COMPARTMENTS CONTAINING UNMETERED CIRCUITS SHALL BE PROVIDED W/SEALING MEANS.

2.03 INTERIOR CONSTRUCTION
A. ALL COMPONENTS SHALL BE FACTORY ASSEMBLED AND ALL CURRENT CARRYING PARTS SHALL BE PLATED BUS BARS.
B. ALL BUSSING MUST BE COMPLETE FROM THE MAIN LUGS TO THE METER SOCKET AND TO THE CIRCUIT BREAKER USING BELLEVILLE WASHERS AT ALL JOINTS.

2.04 METER SOCKETS
A. METER SOCKETS SHALL BE 4-JAW [NON-CIRCUIT CLOSING] [AUTOMATIC CIRCUIT CLOSING] [MANUAL CIRCUIT CLOSING] TYPE WITH 5TH JAW PROVISIONS WHEN USED ON 208Y/120 VAC SYSTEMS.
B. SOCKETS SHALL BE RATED 200 AMPERE CONTINUOUS DUTY.
C. METER SOCKET JAWS MUST BE SPRING REINFORCED AND FRONT REMOVABLE.

2.05 BRANCH CIRCUIT BREAKERS
A. BRANCH CIRCUIT BREAKERS FOR 125 AMPERE DEVICES SHALL BE SQUARE D, TWO-POLE, PLUG-ON TYPE Q0 (FOR 15 THROUGH 125 AMPERE BREAKERS).
B. BRANCH CIRCUIT BREAKERS FOR 150 OR 200 AMPERE DEVICES SHALL BE SQUARE D TYPE Q2 BREAKERS.
C. INTERRUPTING RATINGS SHALL BE SELECTED TO PROVIDE THE REQUIRED CURRENT AND SHORT CIRCUIT CURRENT RATING.

GENERAL LIGHTING NOTES

1. ANY PORTION OF WALL SCONCE OR OTHER OBJECT THAT PROTRUDES INTO THE CIRCULATION PATH ABOVE 27" OR BELOW 80" IS LIMITED TO A 4" MAXIMUM PROJECTION.
2. ALL SWITCHES LOCATED AT 48" AFF, UNO.
3. ALL DUPLEX RECEPTACLES SHALL BE 20AMP-120VOLT INSTALLED 18" FROM FINISHED FLOOR TO CENTER OF RECEPTACLE.
4. ALL LIGHTING FIXTURE SHALL INCLUDE LAMPS AND MOUNTING COMPONENTS.
5. COORDINATE WITH OWNER FOR PENDANT MOUNTING HEIGHT OF ALL PENDANT/SUSPENDED MOUNTED LIGHT FIXTURE.
6. FLUORESCENT LAMPS SHALL BE EQUAL TO GENERAL ELECTRIC T8 ECOLUX HIGH LUMEN WITH COLOR TEMPERATURE K RATING OF 3500.
7. REFER TO ARCHITECTURAL REFLECTED CEILING PLAN FOR EXACT LOCATION OF LIGHT FIXTURES.
8. COORDINATE TYPE OF CEILING FOR EACH FIXTURE WITH ARCHITECTURAL REFLECTED CEILING PLANS AND PROVIDE FIXTURE TRIM AS REQUIRED.
9. ALL COMPACT FLUORESCENT DOWNLIGHTS SHALL USE LAMPS WITH 3500K TEMPERATURE, MINIMUM 10,000 HOUR LIFE ELECTRONIC BALLAST, UNLESS OTHERWISE NOTED.
10. PROVIDE APPROVED FIRE RATED ENCLOSURES FOR ALL LIGHT FIXTURES LOCATED IN FIRE RATED CEILINGS.
11. FIXTURES IN AREAS WITHOUT CEILINGS, OR IN MECHANICAL AND ELECTRICAL ROOMS SHALL BE MOUNTED WITH 1 1/2"x1 1/2" "KINDORF CHANNEL SUPPORT SUSPENDED FROM ROOF STRUCTURE WITH THREAD RODS. FIXTURES SHALL BE MOUNTED 10'-0" A.F.F.
12. ALL ACRYLIC LENSED FIXTURES SHALL HAVE A LENS THICKNESS OF .125 INCHES MINIMUM.
13. HALF SHADED FIXTURES DENOTE EMERGENCY FIXTURES EITHER WITH 1100 LUMEN EMERGENCY BATTERY PACK OR ON LIFE SAFETY CIRCUIT.
14. LIGHTING FIXTURE SCHEDULE IS PREDICTED ON PERFORMANCE AND IS DESIGNED TO MEET CERTAIN AESTHETIC CRITERIA. ALL ALTERNATIVE SELECTIONS MUST BE SUBMITTED FOR PRIOR APPROVAL TEN (10) DAYS PRIOR TO BID DATE.
15. ALL BALLASTS SHALL HAVE MINIMUM POWER FACTOR OF 0.90. ALL BALLASTS FOR METAL HALIDE AND HIGH PRESSURE SODIUM FIXTURES SHALL BE CONSTANT WATTAGE TYPE WITH +/-5%%% LAMP WATTS FOR +/-10%%% NOMINAL LINE VOLTAGE VARIATION.
16. PROVIDE LAMPS WITH FIXTURES, VERIFY LAMP TYPE WITH MANUFACTURER. FLUORESCENT LUMINAIRES THAT UTILIZE DOUBLE-ENDED LAMPS AND CONTAIN BALLAST(S) OR MULTIWIRE BALASTED LUMINAIRES SHALL CONTAIN AN INTEGRATED INTERNAL DISCONNECT AND TO BE COMPLIED WITH NEC 410.73(G).
17. ALL OPENINGS FOR LIGHT FIXTURES IN CEILINGS SHALL BE PROTECTED IN A MANNER (PER ALL GOVERNING CODES) THAT WILL PROVIDE THE SAME RATING AS THE CEILING. (THIS APPLIES TO ALL FIRE RATED CEILINGS).
18. FOR EMERGENCY EXIT SIGNS AND EMERGENCY BATTERY PACKS MAKE CONNECTIONS AHEAD OF ALL SWITCHES AND CONTROLS.
19. PROVIDE A FUSE HOLDER AND FUSE (BUSSMAN HEB AND FNQ OR EQUAL), IN THE PRIMARY SIDE OF EACH UNGROUNDED CONDUCTOR FOR ALL BALLASTS AT THE HAND HOLE OF EACH EXTERIOR POLE MOUNTED LIGHTING FIXTURE OR J-BOX FOR WALL OR GROUND MOUNTED FIXTURE.
20. PROVIDE WIND LOAD RATED LIGHT POLES WITH 145 MPH MINIMUM WIND SPEED (ASCE 7), EXPOSURE C WITH IMPORTANCE FACTOR OF 1.0, AND PROVIDE PHOTOMETRICS WITH ALL FIXTURE SUBMITTALS. CONTRACTOR TO VERIFY VOLTAGES OF ALL LIGHT FIXTURES PRIOR TO BIDDING. COORDINATE WITH SITE ENGINEER.
21. PHOTOMETRICS ARE BASED ON MANUFACTURER'S INFORMATION AND CATALOG NUMBERS. ALTERNATIVE MANUFACTURERS MUST PROVIDE THE IESNA FORMAT ELECTRONIC FILES OF THE INDEPENDENT TEST LAB REPORTS FOR THE PROPOSED FIXTURES ON CD OR FLOPPY DISKETTE 10 WORKING DAYS PRIOR TO BID. (SPECIFIER) WILL CONFIRM THAT THE PHOTOMETRIC CRITERIA HAS BEEN MET, AND IF ALTERNATE IS APPROVED WILL ISSUE AN ADDENDUM. MANUFACTURERS NOT LISTED ON THE PLANS OR IN AN ADDENDUM WILL NOT BE ACCEPTED.
22. TO CONFIRM THAT THE SPECIFIED PHOTOMETRIC CRITERIA HAS BEEN MET, A COMPUTER DISK CONTAINING AN IES FILE FOR THE PROPOSED ALTERNATE MUST BE SUBMITTED TO (SPECIFIER) FOR EVALUATION NO LESS THAN 10 DAYS PRIOR TO BID. ANY ACCEPTABLE ALTERNATE MUST BE APPROVED IN WRITING PRIOR TO BID DATE.
23. CONTRACTOR MUST BID PROJECT USING SPECIFIED LIGHTING FIXTURES AS BASE BID (NO EXCEPTIONS). IF ALTERNATE FIXTURES ARE PROPOSED, THEY MUST BE BID AS AN ALTERNATE BID WHICH MUST INCLUDE: A) TOTAL DOLLAR CREDIT TO OWNER IF ALTERNATE IS ACCEPTED. B) LINE ITEM CREDIT FOR EACH ALTERNATE FIXTURE PROPOSED. C) CATALOG SUBMITTAL DATA FOR EACH ALTERNATE FIXTURE PROPOSED.
24. IF THERE IS A DISCREPANCY BETWEEN A FIXTURE DESCRIPTION AND GENERAL NOTES, AND THE CATALOG NUMBER LISTED, THE FIXTURE DESCRIPTION AND GENERAL NOTES SHALL GOVERN.
25. COORDINATE FIXTURE TYPES WITH ARCHITECTURAL DRAWINGS.

ELECTRICAL DRAWING INDEX

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NO.	DESCRIPTION	DATE	BY

STAMP:

PROJECT: PUTNAM ELEMENTARY SCHOOL
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FILE NO:	24103.01
SCALE:	AS NOTED
DATE:	07/10/2024
DRAWN BY:	YP
CHECKED BY:	MA

SHEET TITLE: ELECTRICAL NOTES & SPECIFICATIONS

SHEET NUMBER: E-001

30-07-2024 20:46:23

ELECTRICAL FIXTURE LEGEND

SYMBOL	DESCRIPTION
	MOTOR, SEE SCHEDULE
D	MOTORIZED SCREEN / DOOR
T	LOW VOLTAGE TRANSFORMER
J	JUNCTION BOX
J_W	WALL MOUNTED JUNCTION BOX
J_C	CEILING MOUNTED JUNCTION BOX
	SIMPLEX RECEPTACLE
	DUPLEX RECEPTACLE
	SWITCHED DUPLEX RECEPTACLE
	DUPLEX GFI RECEPTACLE
	QUAD GFI RECEPTACLE
USB	DUPLEX RECEPTACLE USB
	QUAD RECEPTACLE
USB	QUAD RECEPTACLE USB
	SPECIAL NEMA RATED RECEPTACLE
	SPECIAL HARDWIRED CONNECTION
	SIMPLEX RECEPTACLE IN FLUSH MOUNTED FLOOR BOX
	DUPLEX RECEPTACLE IN FLUSH MOUNTED FLOOR BOX
	HALF SWITCHED DUPLEX RECEPTACLE IN FLUSH MOUNTED FLOOR BOX
	QUAD RECEPTACLE IN FLUSH MOUNTED FLOOR BOX
	SPECIAL NEMA RATED RECEPTACLE IN FLUSH MOUNTED FLOOR BOX
	SPECIAL HARDWIRED CONNECTION IN FLUSH MOUNTED FLOOR BOX
	FLUSH MOUNTED PANELBOARD \ LOAD CENTER
	SURFACE MOUNTED PANELBOARD \ LOAD CENTER
	FLUSH MOUNTED SPECIAL PURPOSE METAL ENCLOSURE
	SURFACE MOUNTED SPECIAL PURPOSE METAL ENCLOSURE
	BRANCH CIRCUIT WIRING IN CONDUIT
	SWITCHED BRANCH CIRCUIT IN CONDUIT
	BRANCH CIRCUIT HOMERUN INDICATOR IN CONDUIT
	CONTROL WIRE
	THERMOSTAT
FB	FLOOR BOX
	DISCONNECT SWITCH

MISCELLANEOUS DEVICE LEGEND

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER, RATING AS SHOWN
	ELECTRICAL GROUND, SIZE AS SHOWN
	SLEEVES THROUGH RATED WALLS \ FLOORS, FIRESTOP AS REQUIRED
#	EQUIPMENT TAG, SEE INDIVIDUAL NOTE BOX
#	WIRE TAG, SEE INDIVIDUAL NOTE BOX
	ONE LINE, MAIN CIRCUIT BREAKER PANEL
	ONE LINE, MAIN LUG ONLY PANEL
	MOTORIZED DAMPER
	FIRE AND SMOKE DAMPER

LIGHT FIXTURE LEGEND

SYMBOL	DESCRIPTION
	RECESSED MOUNTED LIGHT FIXTURE
	RECESSED MOUNTED LIGHT FIXTURE WITH BATTERY BACK-UP POWER SUPPLY
	SURFACE MOUNTED LIGHT FIXTURE
	SURFACE MOUNTED LIGHT FIXTURE WITH BATTERY BACK-UP POWER SUPPLY
	RECESSED MOUNTED 2' x 2' FTL. FIXTURE
	CEILING MOUNTED EXIT SIGN WITH BATTERY BACK-UP POWER SUPPLY, SEE PLANS FOR FACE AND DIRECTION OF TRAVEL CONFIGURATIONS
	WALL MOUNTED EXIT SIGN WITH BATTERY BACK-UP POWER SUPPLY, SEE PLANS FOR FACE AND DIRECTION OF TRAVEL CONFIGURATIONS
	SIDE WALL EXIT SIGN WITH BATTERY BACK-UP POWER SUPPLY, SEE PLANS FOR FACE AND DIRECTION OF TRAVEL CONFIGURATIONS
	EMERGENCY DUAL HEAD FIXTURE WITH BATTERY BACK-UP POWER SUPPLY
	EMERGENCY DUAL HEAD FIXTURE WITH BATTERY BACK-UP POWER SUPPLY AND REMOTE CAPABILITIES
EB	BATTERY BACK-UP POWER SUPPLY FOR REMOTE HEADS
	EMERGENCY REMOTE DUAL HEAD FIXTURE
	EMERGENCY REMOTE HEAD FIXTURE
	RECESSED MOUNTED DOWN LIGHT FIXTURE
	RECESSED MOUNTED DOWN LIGHT FIXTURE WITH BATTERY BACK-UP POWER SUPPLY
	SURFACE MOUNTED DOWN LIGHT FIXTURE
	SURFACE MOUNTED DOWN LIGHT FIXTURE WITH BATTERY BACK-UP POWER SUPPLY
	WALL MOUNTED LINEAR LIGHT FIXTURE
	WALL MOUNTED LINEAR LIGHT FIXTURE WITH BATTERY BACK-UP POWER SUPPLY
	INTERIOR WALL MOUNTED SCONCE LIGHT FIXTURE
	INTERIOR WALL MOUNTED SCONCE LIGHT FIXTURE WITH BATTERY BACK-UP POWER SUPPLY
	EXTERIOR WALL MOUNTED LIGHT FIXTURE
	EXTERIOR WALL MOUNTED LIGHT FIXTURE WITH BATTERY BACK-UP POWER SUPPLY
S	SINGLE POLE LIGHT SWITCH
3 S	THREE-WAY TOGGLE SWITCH
D S	SINGLE POLE DIMMER SWITCH
K S	KEYED SWITCH
P S	PILOT SWITCH
DR S	CONTROL SWITCH FOR MOTORISED SHADES
T S	TIMER SWITCH
EM S	EMERGENCY SWITCH

LOW VOLTAGE DEVICE LEGEND

FIRE ALARM

SYMBOL	DESCRIPTION
FACP	FIRE ALARM CONTROL PANEL
ANN	FIRE ALARM ANNUNCIATOR PANEL
EOL	FIRE ALARM END OF LINE RESISTOR
FI	FIRE ALARM PULL STATION, WALL MOUNTED AT 48"AFF., 'S' INDICATES STOPPER COVER DEVICE WHERE SHOWN
S	ADDRESSABLE PHOTO ELECTRIC SMOKE DETECTOR
DS	FIRE ALARM DUCT MOUNTED SMOKE DETECTOR WITH HOUSING
RI	REMOTE INDICATOR AND TEST STATION FOR DUCT MOUNTED DETECTORS
H	FIRE ALARM HEAT DETECTOR
E_S	ELEVATOR RECALL SYSTEM FIRE ALARM SMOKE DETECTOR
E_H	ELEVATOR RECALL SYSTEM FIRE ALARM HEAT DETECTOR
PS	FIRE ALARM MODULE FOR FIRE PROTECTION PRESSURE SWITCH
FS	FIRE ALARM MODULE FOR FIRE PROTECTION FLOW SWITCH
TS	FIRE ALARM MODULE FOR FIRE PROTECTION TAMPER SWITCH
CM	FIRE ALARM CONTROL MODULE
MM	FIRE ALARM MONITOR MODULE
	FIRE ALARM HORN/STROBE DEVICE, WALL MOUNTED AT 6'8"AFF. OR 6" BELOW CEILING, WHICHEVER IS LOWER. WITH ADA 15/75 CANDELA STROBE
L	FIRE ALARM HORN/STROBE (LOW FREQUENCIES) DEVICE, WALL MOUNTED AT 6'8"AFF. OR 6" BELOW CEILING, WHICHEVER IS LOWER. WITH ADA 15/75 CANDELA STROBE
F	FIRE ALARM STROBE DEVICE, WALL MOUNTED AT 6'8"AFF. OR 6" BELOW CEILING, WHICHEVER IS LOWER. WITH ADA 15/75 CANDELA STROBE
F 177cd	FIRE ALARM STROBE DEVICE, WALL MOUNTED AT 6'8"AFF. OR 6" BELOW CEILING, WHICHEVER IS LOWER. WITH 177 CANDELA STROBE
CO	CARBON MONOXIDE DETECTOR
SB COS	520 HZ, LOW FREQUENCY TYPE COMBINATION OF PHOTOELECTRIC ADDRESSABLE SMOKE DETECTOR WITH SOUNDER BASE AND CARBON MONOXIDE DETECTOR.
AID	ADDRESSABLE INTERFACE DEVICE
M	MAGNETIC HOLD OPEN DEVICE

COMMUNICATION DEVICE LEGEND

SYMBOL	DESCRIPTION
E	EMERGENCY CALL-FOR-AID WALL MOUNTED LIGHT AND BUZZER UNIT
E	EMERGENCY CALL-FOR-AID SWITCH WITH PULL CORD
	WALL MOUNTED SYSTEM CLOCK
S	FLUSH TO CEILING MOUNTED SYSTEM SPEAKER
S	SURFACE, CEILING MOUNTED SYSTEM SPEAKER
S	WALL MOUNTED SYSTEM SPEAKER
S	WALL MOUNTED HORN TYPE\LOUD SYSTEM SPEAKER
S	COMBINATION WALL MOUNTED SYSTEM SPEAKER AND CLOCK
M	MICROPHONE OUTLET
	DATA OUTLET & RACEWAY, TWO GANG BACKBOX WITH 1" CONDUIT STUBBED INTO AN ACCESSIBLE CEILING, PROVIDE WITH NYLON PULL STRING
	COMBINATION DATA \ TELEPHONE OUTLET & RACEWAY, TWO GANG BACKBOX WITH (2)1" CONDUIT STUBBED INTO AN ACCESSIBLE CEILING, PROVIDE WITH NYLON PULL STRING
	TELEPHONE OUTLET & RACEWAY, TWO GANG BACKBOX WITH 1" CONDUIT STUBBED INTO AN ACCESSIBLE CEILING, PROVIDE WITH NYLON PULL STRING
W	WALL TELEPHONE OUTLET & RACEWAY, TWO GANG BACKBOX MOUNTED AT 48"AFF WITH 1" CONDUIT STUBBED INTO AN ACCESSIBLE CEILING, PROVIDE WITH NYLON PULL STRING
	DATA OUTLET IN FLUSH MOUNTED FLOOR BOX, CABLING BY OTHERS
	COMBINATION DATA \ TELEPHONE OUTLET IN FLUSH MOUNTED FLOOR BOX, CABLING BY OTHERS
	TELEPHONE OUTLET IN FLUSH MOUNTED FLOOR BOX, CABLING BY OTHERS
	CATV OUTLET & RACEWAY, TWO GANG BACKBOX WITH 1" CONDUIT STUBBED INTO AN ACCESSIBLE CEILING, PROVIDE WITH NYLON PULL STRING
HP	HOUSE PHONE
	TELEPHONE STROBE
	INTERCOM
CR	CARD READER
	WIRELESS DATA ACCESS POINT
	TV CABLE OUTLET
DC	DOOR RELEASE STATION
DU	DURESS ALARM BUTTON
	DOORBELL PUSH BUTTON
	DOOR ANNUNCIATOR AUDIBLE/ VISUAL SIGNALING DEVICE WITH HORN/ STROBE, ASSOCIATED TRANSFORMER LOCATED ABOVE ACCESSIBLE CEILING AND DOORBELL DISABLE SWITCH. EDWARDS CFA- SERIES 7005-G5.

ELECTRICAL ABBREVIATIONS

TAG	DEFINITION	TAG	DEFINITION
A/AMP	AMPERAGE	MCB	MAIN CIRCUIT BREAKER
AC	ALTERNATING CURRENT	MCC	MOTOR CONTROL CENTER
AFF	ABOVE FINISHED FLOOR	MCCB	MOLDED CASE CIRCUIT BREAKER
AFG	ABOVE FINISHED GRADE	MH	METAL HALIDE
AFCI	ARC FAULT CIRCUIT INTERRUPTER	MIN	MINIMUM
AIC	AMPS INTERRUPTING CURRENT	MLO	MAIN LUGS ONLY
AL	ALUMINUM	NA	NOT APPLICABLE
ATS	AUTOMATIC TRANSFER SWITCH	NEC	NATIONAL ELECTRIC CODE
AWG	AMERICAN WIRE GAUGE	NIC	NOT IN CONTRACT
C	CONDUIT	NL	NEW LOCATION OF EXISTING RELOCATED
CATV	CABLE TELEVISION	NR	NEW TO REPLACE EXISTING
C/B	CIRCUIT BREAKER	NTS	NOT TO SCALE
CM	CEILING MOUNT	P	POLE
CT	CURRENT TRANSFORMER	PE	PRIMARY ELECTRICAL SERVICE
CU	COPPER	PH	PHASE
DN	DOWN	PNL	PANEL
DWG	DRAWING	PVC	POLYVINYL CHLORIDE CONDUIT
EXTG	EXISTING	RE	REMOVE EXISTING
E	EXISTING TO REMAIN	RGS	RIGID GALVANIZED STEEL CONDUIT
ELEC	ELECTRICAL	RL	RELOCATE EXISTING
ELEV	ELEVATOR	RM	ROOM
EMT	ELECTRICAL METALLIC TUBING	RR	REMOVE AND REPLACE ON NEW SURFACE
FA	FIRE ALARM	SE	SECONDARY ELECTRICAL SERVICE
FACP	FIRE ALARM CONTROL PANEL	SPEC	SPECIFICATION
G/GND	GROUND	SWBD	SWITCHBOARD
GFI	GROUND FAULT INTERRUPTER	TV	TELEVISION
GFCI	GROUND FAULT CIRCUIT INTERRUPTER	TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
HP	HORSE POWER	T/TX	TRANSFORMER
HPS	HIGH PRESSURE SODIUM	TYP	TYPICAL
HZ	HERTZ	V	VOLTS
IG	ISOLATED GROUND	VA	VOLT AMPERE
KCMIL	THOUSAND CIRCULAR MILS	W	WIRE
KVA	KILOVOLT AMPERE	WG	WIRE GUARD
KW	KILOWATT	WP	WEATHER PROOF
MAX	MAXIMUM		

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REVISIONS			
NO.	DESCRIPTION	DATE	BY

STAMP:

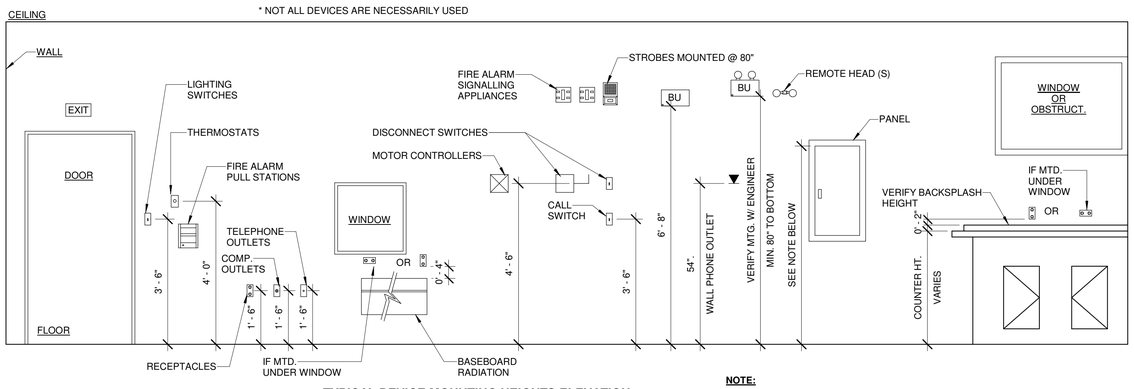
PROJECT: PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

FILE NO:	24103.01	DRAWN BY:	YP
SCALE:	AS NOTED	CHECKED BY:	MA
DATE:	07/10/2024		

SHEET TITLE: ELECTRICAL LEGENDS AND SYMBOL

SHEET NUMBER: E-002

30-07-2024 20:46:24



TYPICAL DEVICE MOUNTING HEIGHTS ELEVATION
NOT TO SCALE

NOTE:
PANELBOARDS - NOT HIGHER THAN 6' 7" TO HIGHEST CIRCUIT BREAKER

NOTES:

A. THE ABOVE MOUNTING HEIGHTS SHALL APPLY TO ALL DEVICES UNLESS NOTED OTHERWISE ON THE PLANS. ALL NOTED DIMENSIONS ARE TO THE CENTERLINE OF THE DEVICE FROM THE FINISHED FLOOR.

B WHERE EXISTING OR SPECIAL CONDITIONS PREVENT THE INSTALLATION OF DEVICES AT THE ABOVE HEIGHTS, THE E.C. SHALL VERIFY HEIGHTS ON SITE WITH ARCHITECT.

C ALL DEVICES IN FINISHED AREAS SHALL BE INSTALLED IN FLUSH DEVICE BOXES NO SURFACE BOXES SHALL BE ALLOWED WITHOUT PRIOR APPROVAL OF THE ARCHITECT.

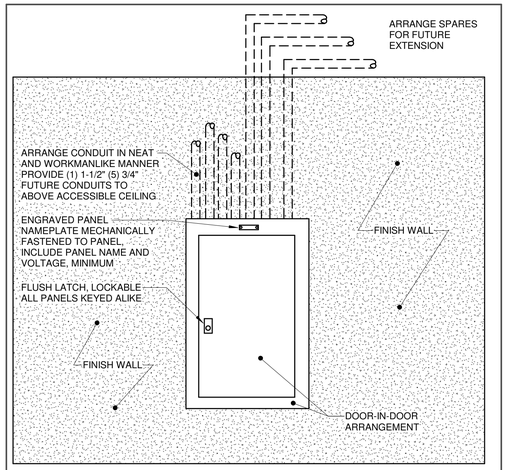
D E.C. SHALL VERIFY FINAL WORKBENCH, COUNTER, CABINET OR VENITY HEIGHTS INCLUDING BACKSPLASH, ON SITE WITH G.C. PRIOR TO INSTALLATION OF BOXES, ABOVE COUNTER DEVICES NOTED BY (*)

E INSTALL RECEPTACLES HORIZONTALLY, 4" ABOVE BASEBOARD RADIATION. REFER TO M- SERIES (DIV. 15) SHEETS FOR RADIATION LAYOUT

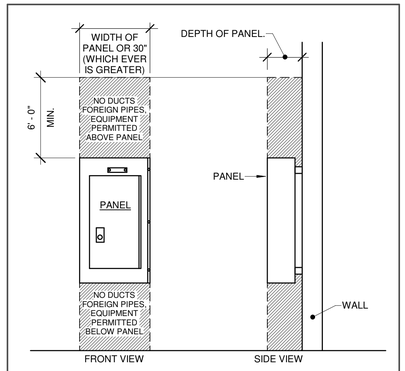
F WHERE SHOWN BACK TO BACK, OFFSET BOXES IN STUDBAYS.

WHERE (2) DUPLEX RECEPTACLES ARE SHOWN NEAR EACH OTHER

QUAD NOT ALLOWED



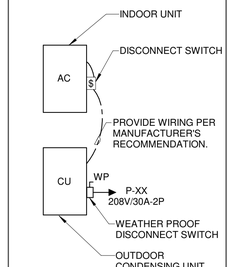
FLUSH MOUNTED PANELBOARD DETAIL
NOT TO SCALE



DEDICATED EQUIPMENT SPACE DETAIL
NOT TO SCALE

NOTES:

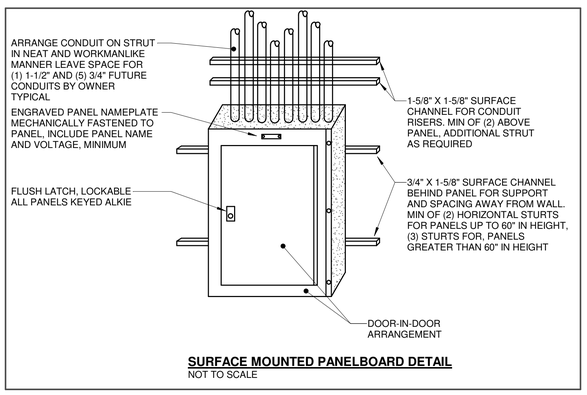
1. TYPICAL FOR SWITCHBOARDS, PANELBOARDS AND MOTOR CONTROL CENTERS.
2. SEE N.E.C. ART. 110.26.C.F



AC/CU WIRING DETAIL
N.T.S

NOTES:-

1. CONTRACTOR TO ADD NEW 600A, 3P BREAKER IN EXISTING SPACE PROVISION (OUTGOING #11) OF MSB PANEL LOCATED IN THE BASEMENT BOILER ROOM



SURFACE MOUNTED PANELBOARD DETAIL
NOT TO SCALE

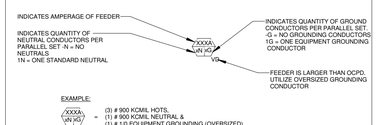
FEEDER CHART

100A 1N1G	(4) # 2 & (1) # 4 GND IN 1-1/2"C.
150A 1N1G	(4) # 1/0 & (1) # 2 GND IN 2"C.
200A 1N1G	(4) # 3/0 & (1) # 1 GND IN 2-1/2"C.
600A 1N1G	(2) SETS OF (4) # 350 KCMIL & (1) # 4/0 GND IN 4"C. EACH.

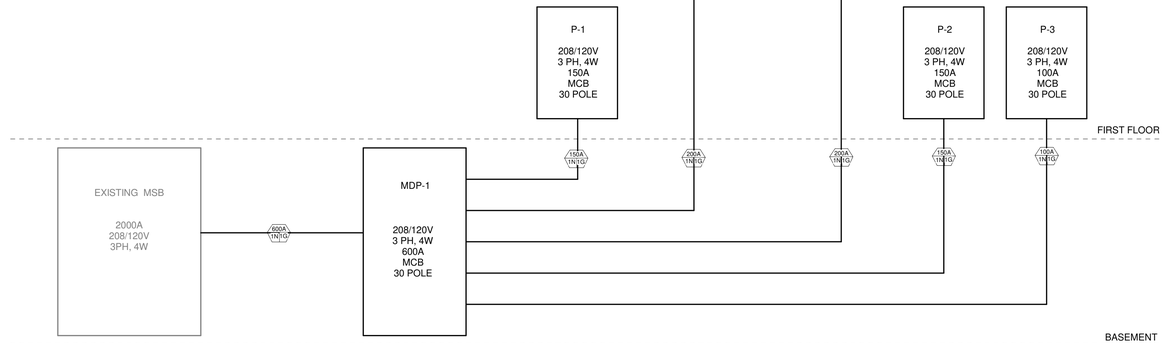
NOTES:
1. ALL CONDUCTORS LISTED ABOVE ARE THHN/THWN COPPER CONDUCTORS RATED AT 75 DEGREE CELSIUS.
2. ALL THE FEEDERS ARE SIZED ALLOWING A MAXIMUM OF 3% VOLTAGE DROP AT BRANCH PANEL LOCATIONS.
3. PROVIDE AUXILIARY LARGER SIZE LUGS AND OVERSIZED GUTTERS IN DISTRIBUTION EQUIPMENT TO ACCOMMODATE OVERSIZED CONDUCTORS DUE TO VOLTAGE DROP.

FEEDER LEGEND

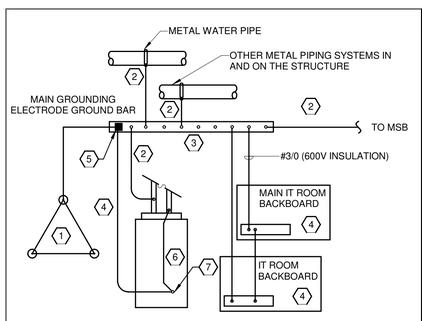
NOTE:
SEE POWER RISER DIAGRAM FEEDER SIZING CHART FOR SIZE OF CONDUCTORS BASED ON AMPERAGE OF FEEDER.



EXAMPLE:
XXXA (#N #G) VD = (3) # 900 KCMIL HOTS, (1) # 900 KCMIL NEUTRAL & (1) # 1/0 EQUIPMENT GROUNDING (OVERSIZED) CONDUCTOR, ALL INSTALLED IN A 4" RACEWAY.



2 RISER DIAGRAM
E-003 N.T.S.



GROUNDING DETAIL
NOT TO SCALE

GROUNDING NOTES

1. PROVIDE #4/0 COPPER GROUND CONDUCTOR IN 1 1/4" PVC CONDUIT AND CONNECT (UNDERGROUND) TO THE DELTA GROUND GRID (THREE GROUND RODS, 10 FEET APART). CONNECT GROUND TO ALL OTHER BUILDING STEEL, METAL PIPING, ETC., AS REQUIRED BY ARTICLE 250 OF THE NEC.
2. INSTALL GROUNDING ELECTRODE CONDUCTOR, SIZED BASED ON NEC TABLE 250-66 USING THE SERVICE PHASE CONDUCTOR SIZE, BUT NOT SMALLER THAN NO 4.
3. INSTALL A "MAIN GROUND ELECTRODE GROUND BAR" FOR SINGLE POINT GROUNDING. LOCATE AT AN ACCESSIBLE POINT NEAR THE SERVICE ENTRANCE EQUIPMENT. MAKE CONNECTIONS TO THE GROUND ELECTRODE CONDUCTOR USING IRREVERSIBLE CONNECTORS OR EXOTHERMIC WELDS. MAKE OTHER CONNECTIONS TO THE GROUND BAR USING TWO-HOLE COMPRESSION SPADE LUGS THAT MEET IEEE 837 REQUIREMENTS. LABEL EACH CONNECTION TO THE GROUND BAR.
4. INSTALL A COPPER GROUNDING BAR IN EACH TELECOMMUNICATIONS ROOM. CONNECT TO THE "MAIN GROUNDING ELECTRODE GROUND BAR" USING 600V INSULATED #6 COPPER CABLE AND COMPRESSION SPADE LUGS. MOUNT AT 7' AFF.
5. INSTALL IRREVERSIBLE COMPRESSION CONNECTOR WITH TAMPERPROOF HARDWARE OR INSTALL EXOTHERMIC WELD.
6. BOND STEEL COLUMN TO CONCRETE ENCASED ELECTRODE.
7. PROVIDE CONCRETE ENCASED GROUNDING ELECTRODE(S) IN THE NEW CONCRETE FOUNDATION(S) USING:
   a. AT LEAST 1/2" DIAMETER STEEL BAR (NO. 4 REBAR OR LARGER).
   b. AT LEAST 20 FT. IN LENGTH OR MULTIPLE PIECES TIED TOGETHER TO MAKE ELECTRICALLY CONTINUOUS.
   c. PLACED NEAR THE BOTTOM OF THE ADDITION FOOTING WITH A MINIMUM 3" OF CONCRETE COVER.
   d. NOT ENCAPSULATED IN NONCONDUCTIVE COATINGS.

AIR CONDITIONING UNIT ELECTRICAL SCHEDULE

NOTES: 1. REFER TO SHEET E-003 FOR CONNECTION DETAILS

SYMBOL	MANUFACTURER	MODEL NO.	LOAD(VA)	VOLT/PHASE	LOAD(A)	BREAKER RATING	SWITCH/FUSE	WIRE SIZE	REMARKS
IDU-1	MITSUBISHI ELECTRIC	MSZ-FS18NA	208	208/1	1	-	20A	3-#12 & 1-#12 GND IN 3/4"C	
IDU-2	MITSUBISHI ELECTRIC	MSZ-GL24NA	208	208/1	1	-	20A	3-#12 & 1-#12 GND IN 3/4"C	

CONDENSING UNIT ELECTRICAL SCHEDULE

NOTE 1 : PROVIDE FUSED DISCONNECT SWITCH WITH FUSES PER MANUFACTURER RECOMMENDATION. FUSED DISCONNECT SWITCH MAY NOT NECESSARILY BE SHOWN ON ELECTRICAL PLANS. COORDINATE EXACT LOCATION OF FUSED DISCONNECT SWITCH IN FIELD. MAINTAIN MINIMUM OF 3'-0" CODE CLEARANCE REQUIREMENT IN FRONT OF ALL FUSED DISCONNECT SWITCHES

SYMBOL	MANUFACTURER	MODEL NO.	LOAD(VA)	VOLT/PHASE	LOAD(A)	BREAKER RATING	SWITCH/FUSE	WIRE SIZE	REMARKS
CU-1	MITSUBISHI ELECTRIC	MUZ-FS18NAH	3744	208/1	18	25A - 2P	30A/25A - 2P	3) # 10 & (1) # 10 GND IN 1"C	NEW UNIT
CU-2	MITSUBISHI ELECTRIC	MUZ-GL24NA-U1	4160	208/1	20	25A - 2P	30A/25A - 2P	3) # 10 & (1) # 10 GND IN 1"C	NEW UNIT

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REVISIONS

NO.	DESCRIPTION	DATE	BY

STAMP:

PROJECT: PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

SHEET TITLE: ELECTRICAL POWER RISER DIAGRAM, DETAILS AND EQUIPMENT SCHEDULES

SHEET NUMBER: E-003

FILE NO:	24103.01		
SCALE:	AS NOTED		
DATE:	07/10/2024	DRAWN BY:	YP
		CHECKED BY:	MA

30-07-2024 20:46:24

Branch Panel: MDP-1

Location: MAIN OFFICE
Supply From:
Mounting: SURFACE
Enclosure: TYPE 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Bus Rating: 600 A
MCB Rating: 600 A
Feed Thru Lugs:

Notes:

CKT	Circuit Description	Note	Trip	Pole	A	B	C	Pole	Trip	Note	Circuit Description	CKT
1					14976	14976						2
3	P-1		150 A	3		11232	14976	3	150 A		P-2	4
5							11232	14976				6
7					8320	18720						8
9	P-3		100 A	3	4160	18720		3	200 A		P-4	10
11							4160	14976				12
13					11232	0		1	20 A		Spare	14
15	P-5		200 A	3		11232	0	1	20 A		Spare	16
17							7488	0	1	20 A		Spare	18
19	Spare		20 A	1	0	0			1	20 A		Spare	20
21	Spare		20 A	1		0	0		1	20 A		Spare	22
23	Spare		20 A	1			0	0	1	20 A		Spare	24
25	Spare		20 A	1	0	0			1	20 A		Spare	26
27	Spare		20 A	1		0	0		1	20 A		Spare	28
29	Spare		20 A	1			0	0	1	20 A		Spare	30
			Total Load:		68224 VA	60320 VA	52832 VA					
			Total Amps:		578 A	512 A	440 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	181376 VA	100.00%	181376 VA		
				Total Conn. Load:	181376 VA
				Total Est. Demand:	181376 VA
				Total Conn.:	503 A
				Total Est. Demand:	503 A

Notes:

Branch Panel: P-1

Location:
Supply From: MDP-1
Mounting: SURFACE
Enclosure: TYPE 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Bus Rating: 150 A
MCB Rating: 150 A
Feed Thru Lugs:

Notes:

CKT	Circuit Description	Note	Trip	Pole	A	B	C	Pole	Trip	Note	Circuit Description	CKT
1	CU-1 (EXT. KINDERGARTEN)		25 A	2	1872	1872		2	25 A		CU-1 (EXT. KINDERGARTEN - E110)	2
3						1872	1872					4
5	CU-1 (NEW KINDERGARTEN - E111)		25 A	2	1872	1872		2	25 A		CU-1 (NEW KINDERGARTEN - E112)	6
7							1872	1872				8
9	CU-1 (NEW PRE-KINDERGARTEN -...		25 A	2		1872	1872	2	25 A		CU-1 (EXT. KINDERGARTEN - E-103))	10
11							1872	1872				12
13	CU-1 (DEVELOPMENTAL...		25 A	2	1872	1872		2	25 A		CU-1 (NEW KINDERGARTEN - E105)	14
15						1872	1872					16
17	CU-1 (NEW KINDERGARTEN - E107)		25 A	2			1872	1872	2	25 A	CU-1 (EXT. KINDERGARTEN)	18
19					1872	1872						20
21	Spare		20 A	1			0	0	1	20 A	Spare	22
23	Spare		20 A	1				0	0	1	20 A	Spare	24
25	Spare		20 A	1	0	0			1	20 A	Spare	26
27	Spare		20 A	1			0	0	1	20 A	Spare	28
29	Spare		20 A	1					0	0	1	20 A	Spare	30
			Total Load:		14976 VA	11232 VA	11232 VA					
			Total Amps:		125 A	94 A	94 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	37440 VA	100.00%	37440 VA		
				Total Conn. Load:	37440 VA
				Total Est. Demand:	37440 VA
				Total Conn.:	104 A
				Total Est. Demand:	104 A

Notes:

Branch Panel: P-2

Location: EXISTING CLASSROOM E-130
Supply From: MDP-1
Mounting: SURFACE
Enclosure: TYPE 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Bus Rating: 150 A
MCB Rating: 150 A
Feed Thru Lugs:

Notes:

CKT	Circuit Description	Note	Trip	Pole	A	B	C	Pole	Trip	Note	Circuit Description	CKT
1	CU-1 (NEW L/D RESOURCE - E-121)		25 A	2	1872	1872		2	25 A		CU-1 (NEW CLASSROOM - E-122)	2
3							1872	1872				4
5	CU-1 (EXT. ART - E-123)		25 A	2		1872	1872	2	25 A		CU-1 (NEW MUSIC - E-124)	6
7					1872	1872						8
9	CU-1 (NEW CLASSROOM - E-124A)		25 A	2			1872	1872	2	25 A	CU-1 (EXT. CLASSROOM - E-125)	10
11								1872	1872			12
13	CU-1 (EXT. CLASSROOM - E-126)		25 A	2	1872	1872		2	25 A		CU-1 (EXT. CLASSROOM - E-127)	14
15						1872	1872					16
17	CU-1 (EXT. CLASSROOM - E-127)		25 A	2				1872	1872	2	25 A	CU-1 (EXT. CLASSROOM - E-129)	18
19					1872	1872						20
21	CU-1 (EXT. CLASSROOM - E-130)		25 A	2			1872	1872	2	25 A	CU-1 (NEW GUIDANCE/SOCIAL...	22
23								1872	1872			24
25	Spare		20 A	1	0	0			1	20 A	Spare	26
27	Spare		20 A	1			0	0	1	20 A	Spare	28
29	Spare		20 A	1				0	0	1	20 A	Spare	30
			Total Load:		14976 VA	14976 VA	14976 VA					
			Total Amps:		125 A	125 A	125 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	44928 VA	100.00%	44928 VA		
				Total Conn. Load:	44928 VA
				Total Est. Demand:	44928 VA
				Total Conn.:	125 A
				Total Est. Demand:	125 A

Notes:

Branch Panel: P-3

Location: CORRIDOR E-167
Supply From: MDP-1
Mounting: SURFACE
Enclosure: TYPE 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Bus Rating: 100 A
MCB Rating: 100 A
Feed Thru Lugs:

Notes:

CKT	Circuit Description	Note	Trip	Pole	A	B	C	Pole	Trip	Note	Circuit Description	CKT
1	CU-2 (GYMNASIUM 66)		25 A	2	2080	2080		2	25 A		CU-2 (GYMNASIUM 66)	2
3						2080	2080					4
5	CU-2 (GYMNASIUM 66)		25 A	2			2080	2080	2	25 A	CU-2 (GYMNASIUM 66)	6
7					2080	2080						8
9	Spare		20 A	1		0	0		1	20 A	Spare	10
11	Spare		20 A	1				0	0	1	20 A	Spare	12
13	Spare		20 A	1	0	0			1	20 A	Spare	14
15	Spare		20 A	1			0	0	1	20 A	Spare	16
17	Space		--	1					--	--	Space	18
19	Space		--	1	--	--			1	--	Space	20
21	Space		--	1			--	--	1	--	Space	22
23	Space		--	1				--	--	1	--	Space	24
25	Space		--	1	--	--			1	--	Space	26
27	Space		--	1			--	--	1	--	Space	28
29	Space		--	1				--	--	1	--	Space	30
			Total Load:		8320 VA	4160 VA	4160 VA					
			Total Amps:		69 A	35 A	35 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	16640 VA	100.00%	16640 VA		
				Total Conn. Load:	16640 VA
				Total Est. Demand:	16640 VA
				Total Conn.:	46 A
				Total Est. Demand:	46 A

Notes:

Branch Panel: P-4

Location: WEST CORRIDOR 213
Supply From: MDP-1
Mounting: SURFACE
Enclosure: TYPE 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Bus Rating: 200 A
MCB Rating: 200 A
Feed Thru Lugs:

Notes:

CKT	Circuit Description	Note	Trip	Pole	A	B	C	Pole	Trip	Note	Circuit Description	CKT
1	CU-1 (CLASS - 202)		25 A	2	1872	1872		2	25 A		CU-1 (CLASS - 203)	2
3						1872	1872					4
5	CU-1 (CLASS - 204)		25 A	2			1872	1872	2	25 A	CU-1 (CLASS - 205)	6
7					1872	1872						8
9	CU-1 (CLASS - 205A)		25 A	2		1872	1872					10
11							1872	1872	2	25 A	CU-1 (CLASS - 206)	12
13	CU-1 (CLASS - 207)		25 A	2	1872	1872						14
15						1872	1872		2	25 A	CU-1 (CLASS - 219)	16
17	CU-1 (CLASS - 218)		25 A	2				1872	1872			18
19					1872	1872						20
21	CU-1 (CLASS - 217)		25 A	2		1872	1872		2	25 A	CU-1 (CLASS - 216)	22
23								1872	1872			24
25	CU-1 (CLASS - 215)		25 A	2	1872	1872						26
27							1872	1872	2	25 A	CU-1 (CLASS - 214)	28
29	Spare		20 A	1				0	0	1	20 A	Spare	30
31	Spare		20 A	1	0	0			1	20 A	Spare	32
33	Spare		20 A	1			0	0	1	20 A	Spare	34
35	Spare		20 A	1				0	0	1	20 A	Spare	36
37	Spare		20 A	1	0	0			1	20 A	Spare	38
39	Spare		20 A	1			0	0	1	20 A	Spare	40
41	Spare		20 A	1				0	0	1	20 A	Spare	42
			Total Load:		18720 VA	18720 VA	14976 VA					
			Total Amps:		161 A	161 A	125 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	52416 VA	100.00%	52416 VA		
				Total Conn. Load:	52416 VA
				Total Est. Demand:	52416 VA
				Total Conn.:	145 A
				Total Est. Demand:	145 A

Notes:

Branch Panel: P-5

Location:
Supply From: MDP-1
Mounting: SURFACE
Enclosure: TYPE 1

Volts: 120/208 Wye
Phases: 3
Wires: 4

A.I.C. Rating:
Mains Type: MCB
Bus Rating: 200 A
MCB Rating: 200 A
Feed Thru Lugs:

Notes:

CKT	Circuit Description	Note	Trip	Pole	A	B	C	Pole	Trip	Note	Circuit Description	CKT
1	CU-1 (GROUP INSTRUCTION - 231B)		25 A	2	1872	1872		2	25 A		CU-1 (GROUP INSTRUCTION - 231A)	2
3							1872	1872				4
5	CU-1 (CLASS - 232)		25 A	2		1872	1872	2	25 A		CU-1 (CLASS - 233)	6
7					1872	1872						8
9	CU-1 (CLASS - 234)		25 A	2			1872	1872	2	25 A	CU-1 (CLASS - 235)	10
11								1872	1872			12
13	CU-1 (CLASS - 236)		25 A	2	1872	1872						14
15						1872	1872		2	25 A	CU-1 (CLASS 238)	16
17	Spare		20 A	1				0	0	1	20 A	Spare	18
19	Spare		20 A	1	0	0			1	20 A	Spare	20
21	Spare		20 A	1			0	0	1	20 A	Spare	22
23	Spare		20 A	1				0	0	1	20 A	Spare	24
25	Spare		20 A	1	0	0			1	20 A	Spare	26
27	Spare		20 A	1			0	0	1	20 A	Spare	28
29	Spare		20 A	1				0	0	1	20 A	Spare	30
31	Spare		20 A	1	0	0			1	20 A	Spare	32
33	Spare		20 A	1			0	0	1	20 A	Spare	34
35	Spare		20 A	1				0	0	1	20 A	Spare	36
37	Spare		20 A	1	0	0			1	20 A	Spare	38
39	Spare		20 A	1			0	0	1	20 A	Spare	40
41	Spare		20 A	1				0	0	1	20 A	Spare	42
			Total Load:		11232 VA	11232 VA	7488 VA					
			Total Amps:		98 A	98 A	62 A					

Load Classification	Connected Load	Demand Factor	Estimated Demand	Panel Totals	
Power	29952 VA	100.00%	29952 VA		
				Total Conn. Load:	29952 VA
				Total Est. Demand:	29952 VA
				Total Conn.:	83 A
				Total Est. Demand:	83 A

Notes:

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REVISIONS

NO.	DESCRIPTION	DATE	BY

STAMP:

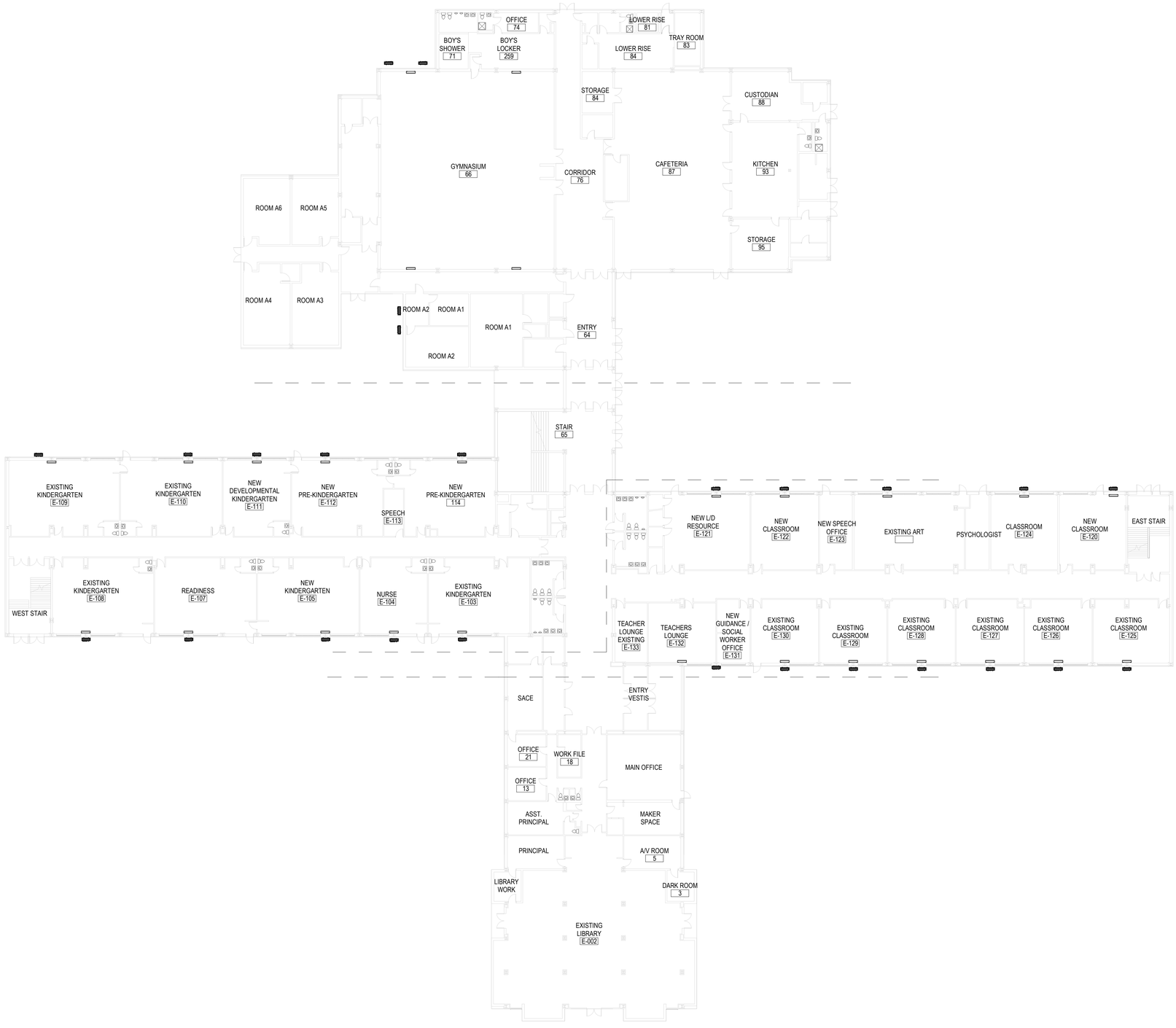
PROJECT:
PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

FILE NO: 24103.01
SCALE: AS NOTED
DATE: 07/10/2024
DRAWN BY: YP
CHECKED BY: MA

SHEET TITLE:
ELECTRICAL PANEL SCHEDULE

SHEET NUMBER:
E-004

30-07-2024 20:46:24



1 E-101 FIRST FLOOR OVERALL ELECTRICAL PLAN
3/64" = 1'-0"

30-07-2024 20:46:27

RUSSELL AND DAWSON INC.
ARCHITECTURE & ENGINEERING
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REVISIONS

NO.	DESCRIPTION	DATE	BY

STAMP:

PROJECT: PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

FILE NO: 24103.01
SCALE: AS NOTED
DATE: 07/10/2024
DRAWN BY: YP
CHECKED BY: MA

SHEET TITLE: FIRST FLOOR OVERALL ELECTRICAL PLAN

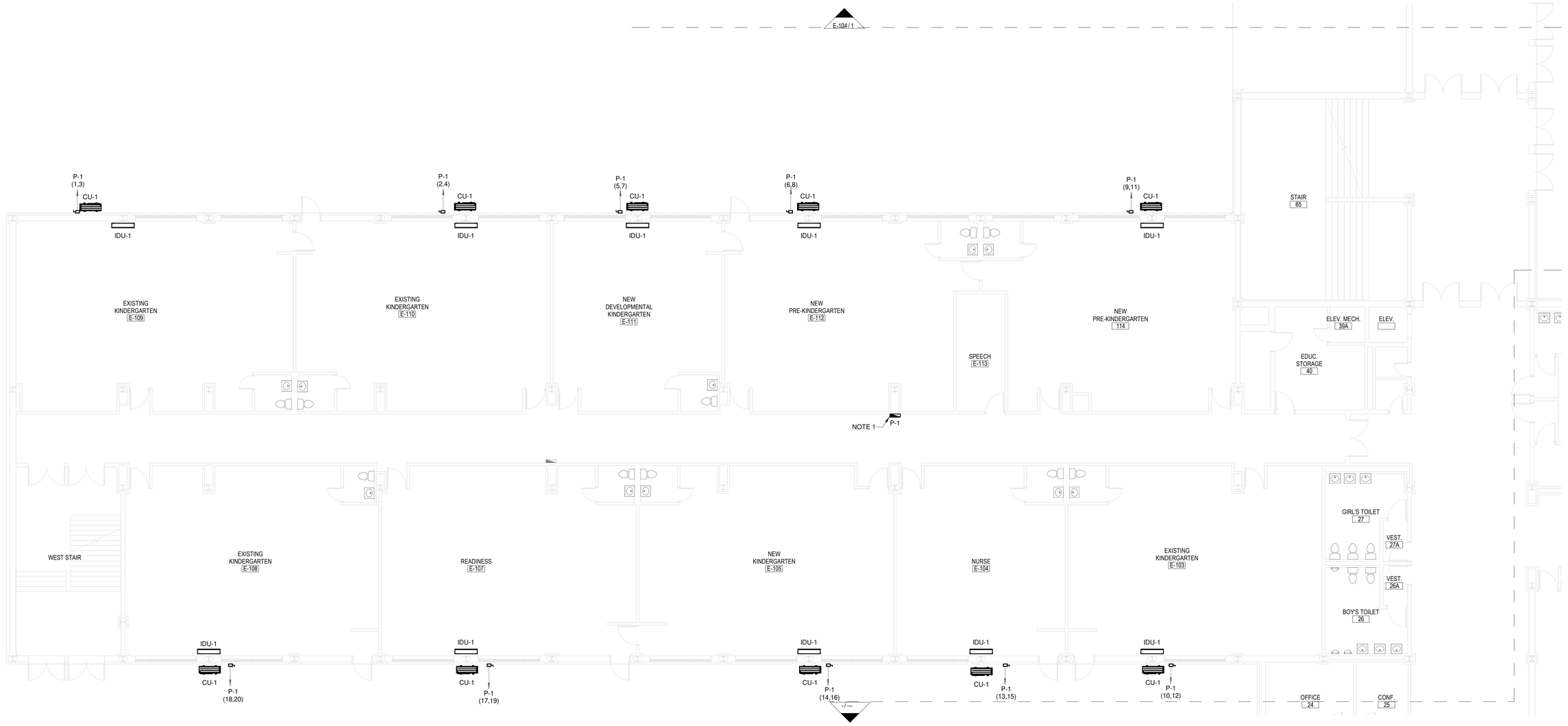
SHEET NUMBER: E-101

NOTES

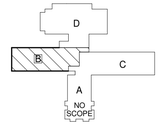
1. CONTRACTOR TO SUPPLY AND INSTALL NEW PANELS P-1, P-2, P-3, P-4, P-5 AS INDICATED IN THE ELECTRICAL PLANS AND CONNECT THE PANELS TO NEWLY ADDED MDP-1 PANEL IN THE BASEMENT BOILER ROOM RESPECTIVELY. EXACT LOCATION OF PANELS SHALL BE CO-ORDINATED AT SITE.

2. CONTRACTOR TO PROVIDE POWER CONNECTIONS FOR ALL NEWLY ADDED MINI-SPLIT AIR CONDITIONING UNITS AS PER PANEL SCHEDULE.

3. CO-ORDINATE WITH MANUFACTURE FOR THE ACTUAL POWER CONNECTION REQUIREMENTS FOR THE MINI-SPLIT UNITS AND PROVIDE NECESSARY DISCONNECT SWITCHES AND CONTROL WIRING.



1 / E-102 FIRST FLOOR ELECTRICAL PLAN-PART B (ELEMENTARY SCHOOL)
1/8" = 1'-0"



KEY PLAN
SCALE = N.T.S

RUSSELL AND DAWSON INC.
ARCHITECTURE & ENGINEERING
1111 Main Street, East Hartford CT 06108
TEL: (860) 289-1100 FAX: (860) 289-3272 E-MAIL: info@rdaep.com

REVISIONS

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STAMP:

PROJECT: PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

FILE NO:	24103.01		
SCALE:	AS NOTED	**DRAWN BY:**	YP
DATE:	07/10/2024	**CHECKED BY:**	MA

SHEET TITLE: FIRST FLOOR ELECTRICAL PLAN-PART B

SHEET NUMBER: E-102

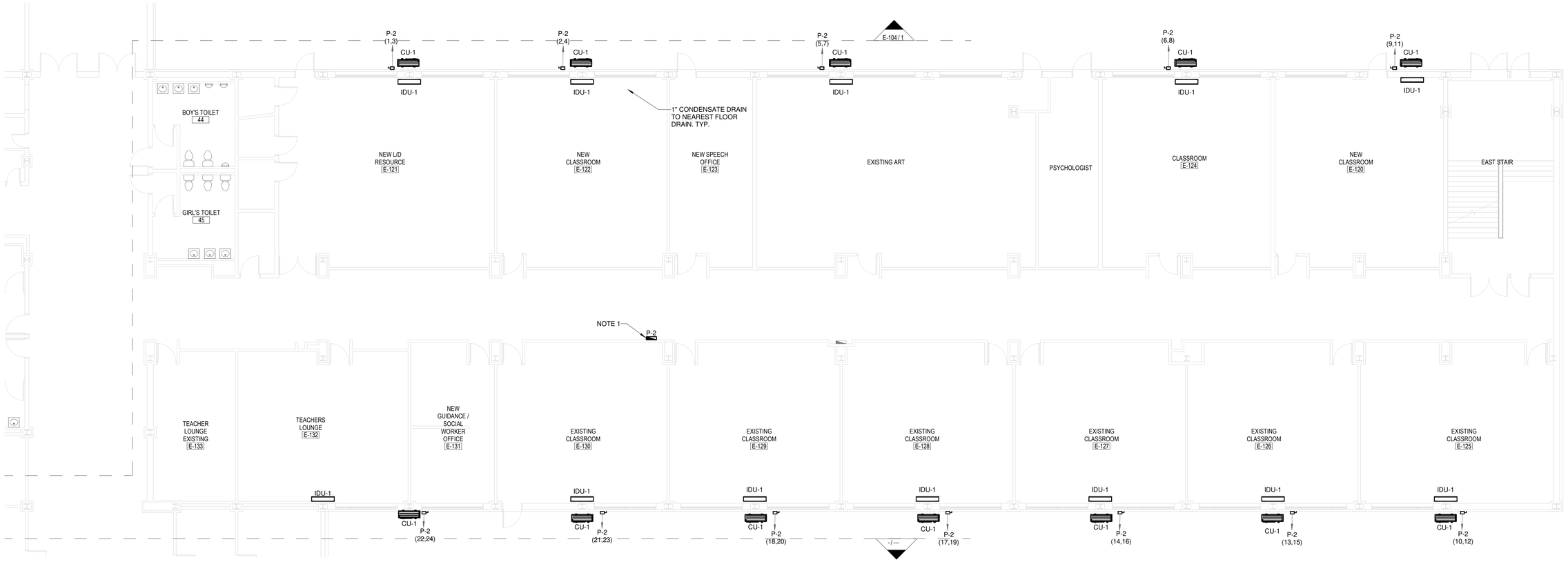
30-07-2024 20:46:28

NOTES

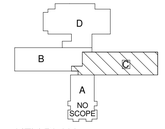
1. CONTRACTOR TO SUPPLY AND INSTALL NEW PANELS P-1, P-2, P-3, P-4, P-5 AS INDICATED IN THE ELECTRICAL PLANS AND CONNECT THE PANELS TO NEWLY ADDED MDP-1 PANEL IN THE BASEMENT BOILER ROOM RESPECTIVELY. EXACT LOCATION OF PANELS SHALL BE CO-ORDINATED AT SITE.

2. CONTRACTOR TO PROVIDE POWER CONNECTIONS FOR ALL NEWLY ADDED MINI-SPLIT AIR CONDITIONING UNITS AS PER PANEL SCHEDULE.

3. CO-ORDINATE WITH MANUFACTURE FOR THE ACTUAL POWER CONNECTION REQUIREMENTS FOR THE MINI-SPLIT UNITS AND PROVIDE NECESSARY DISCONNECT SWITCHES AND CONTROL WIRING.



1 E-103 FIRST FLOOR ELECTRICAL PLAN - PART C (ELEMENTARY SCHOOL)
1/8" = 1'-0"



KEY PLAN
SCALE = N.T.S

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PROJECT: PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

FILE NO:	24103.01		
SCALE:	AS NOTED	**DRAWN BY:**	YP
DATE:	07/10/2024	**CHECKED BY:**	MA

SHEET TITLE: FIRST FLOOR ELECTRICAL PLAN-PART C

SHEET NUMBER: E-103

NOTES

1. CONTRACTOR TO SUPPLY AND INSTALL NEW PANELS P-1, P-2, P-3, P-4, P-5 AS INDICATED IN THE ELECTRICAL PLANS AND CONNECT THE PANELS TO NEWLY ADDED MDP-1 PANEL IN THE BASEMENT BOILER ROOM RESPECTIVELY. EXACT LOCATION OF PANELS SHALL BE CO-ORDINATED AT SITE.

2. CONTRACTOR TO PROVIDE POWER CONNECTIONS FOR ALL NEWLY ADDED MINI-SPLIT AIR CONDITIONING UNITS AS PER PANEL SCHEDULE.

3. CO-ORDINATE WITH MANUFACTURE FOR THE ACTUAL POWER CONNECTION REQUIREMENTS FOR THE MINI-SPLIT UNITS AND PROVIDE NECESSARY DISCONNECT SWITCHES AND CONTROL WIRING.

OFFICE 74
BOY'S SHOWER 71
BOY'S LOCKER 259
OFFICE 79
LOWER RISE 81
TRAY ROOM 83
LOWER RISE 84
P-3 (1,3) CU-2
P-3 (2,4) CU-2
IDU-2
IDU-2
MECH.RM 69
VEST 69
SCHOOL STORE 85
CUSTODIAN 88
INFLAM. STOR. 89
TOIL 90
TOIL 91
GYM STORAGE 68
GYMNASIUM 66
CORRIDOR 76
CAFETERIA 87
KITCHEN 93
EQUIP. STOR. 92
CAN WASH AREA 94
ROOM A6
ROOM A5
MECH.RM 67
VEST 67
COOLER 96
STORAGE 95
FREEZER 97
IDU-2
IDU-2
NOTE 1
P-3
CORRIDOR E-167
TOILET E-168A
ROOM A4
ROOM A3
CU-2
P-3 (5,7)
CU-2
P-3 (6,8)
ROOM A2
ROOM A1
NEW TOILET E-163A
WOMEN E-162
NEW TOILET E-163B
MEN E-161
ROOM A1
ENTRY 64
ROOM A2
NEW STORAGE E-160

1 FIRST FLOOR ELECTRICAL PLAN - PART D (ELEMENTARY SCHOOL)
E-104 1/8" = 1'-0"

KEY PLAN
SCALE = N.T.S

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33 WICKER ST, PUTNAM, CT 06260

FILE NO:	24103.01		
SCALE:	AS NOTED		
DATE:	07/10/2024		
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CHECKED BY:		MA	

SHEET TITLE: FIRST FLOOR ELECTRICAL PLAN-PART D

SHEET NUMBER: E-104

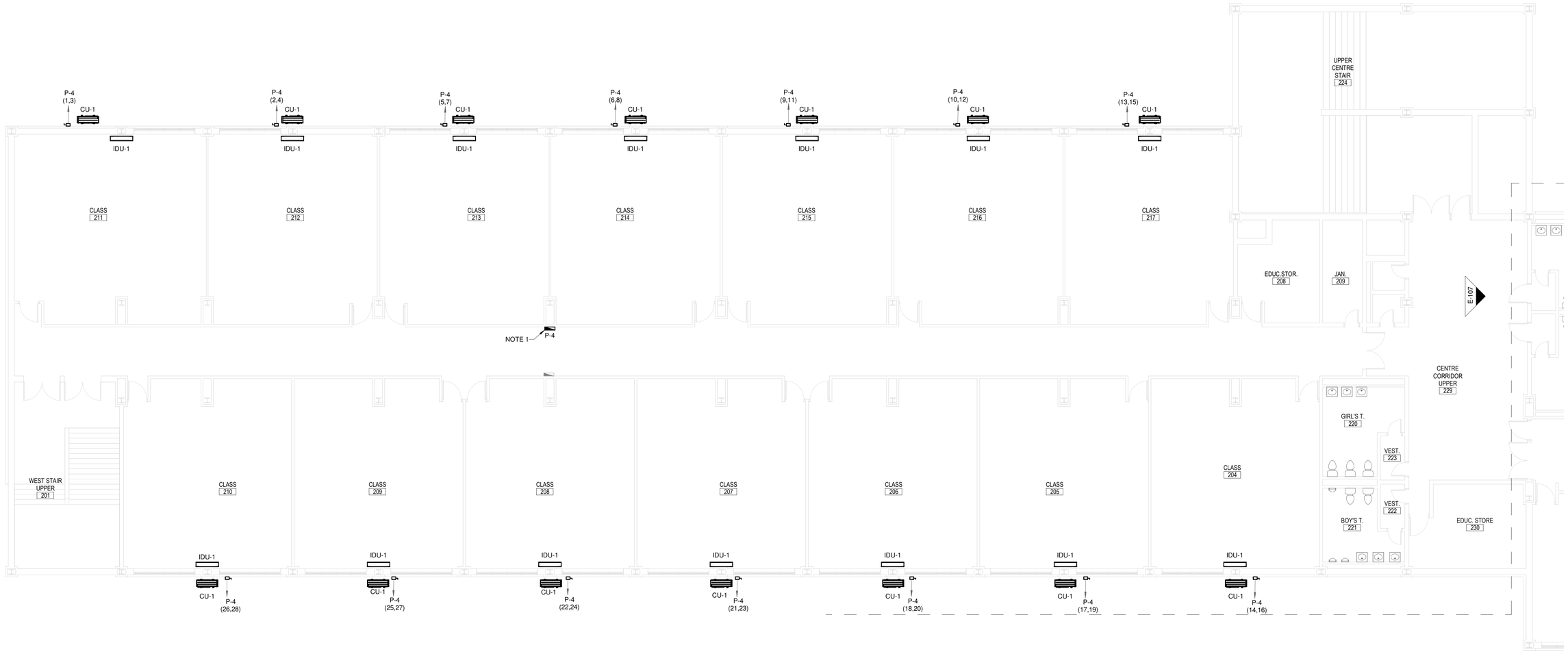
30-07-2024 20:46:29

NOTES

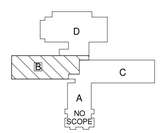
1. CONTRACTOR TO SUPPLY AND INSTALL NEW PANELS P-1, P-2, P-3, P-4, P-5 AS INDICATED IN THE ELECTRICAL PLANS AND CONNECT THE PANELS TO NEWLY ADDED MDP-1 PANEL IN THE BASEMENT BOILER ROOM RESPECTIVELY. EXACT LOCATION OF PANELS SHALL BE CO-ORDINATED AT SITE.

2. CONTRACTOR TO PROVIDE POWER CONNECTIONS FOR ALL NEWLY ADDED MINI-SPLIT AIR CONDITIONING UNITS AS PER PANEL SCHEDULE.

3. CO-ORDINATE WITH MANUFACTURE FOR THE ACTUAL POWER CONNECTION REQUIREMENTS FOR THE MINI-SPLIT UNITS AND PROVIDE NECESSARY DISCONNECT SWITCHES AND CONTROL WIRING.



1 / E-105 SECOND FLOOR ELECTRICAL PLAN - PART B (ELEMENTARY SCHOOL)
1/8" = 1'-0"



KEY PLAN
SCALE = N.T.S

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33 WICKER ST, PUTNAM, CT 06260

FILE NO:	24103.01		
SCALE:	AS NOTED		
DATE:	07/10/2024		
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CHECKED BY:			MA

SHEET TITLE: SECOND FLOOR ELECTRICAL PLAN-PART B

SHEET NUMBER: E-105

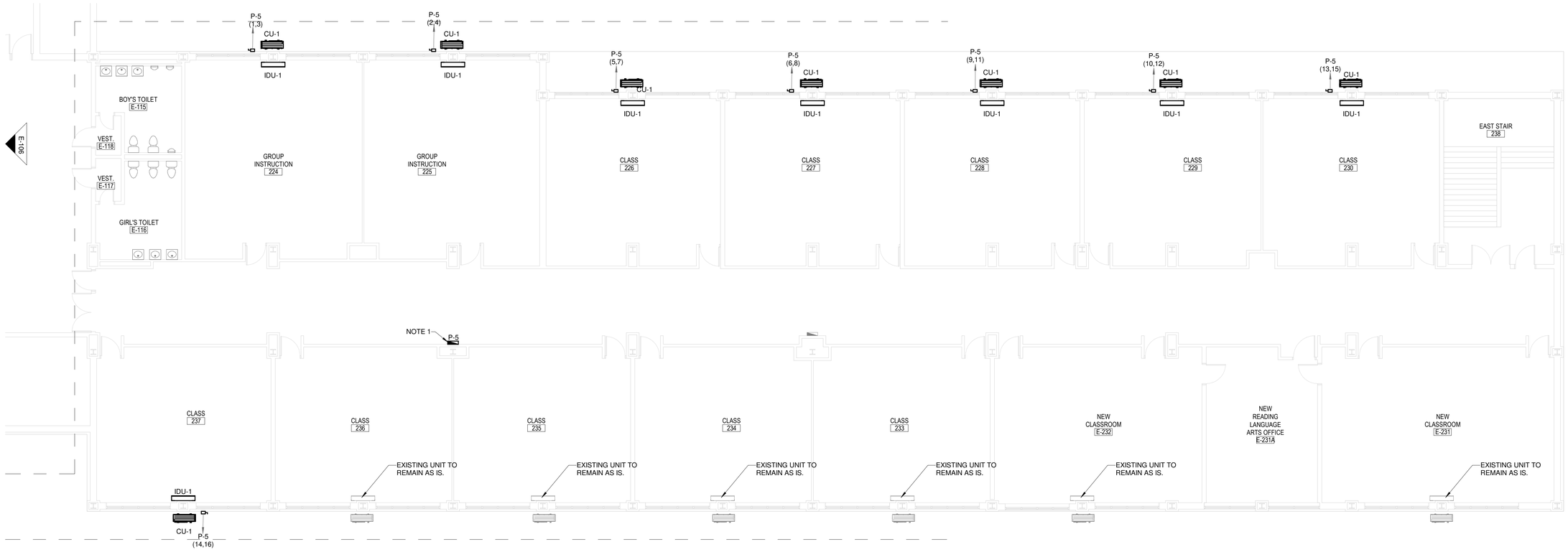
30-07-2024 20:46:30

NOTES

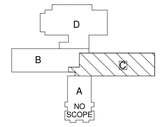
1. CONTRACTOR TO SUPPLY AND INSTALL NEW PANELS P-1, P-2, P-3, P-4, P-5 AS INDICATED IN THE ELECTRICAL PLANS AND CONNECT THE PANELS TO NEWLY ADDED MDP-1 PANEL IN THE BASEMENT BOILER ROOM RESPECTIVELY. EXACT LOCATION OF PANELS SHALL BE CO-ORDINATED AT SITE.

2. CONTRACTOR TO PROVIDE POWER CONNECTIONS FOR ALL NEWLY ADDED MINI-SPLIT AIR CONDITIONING UNITS AS PER PANEL SCHEDULE.

3. CO-ORDINATE WITH MANUFACTURER FOR THE ACTUAL POWER CONNECTION REQUIREMENTS FOR THE MINI-SPLIT UNITS AND PROVIDE NECESSARY DISCONNECT SWITCHES AND CONTROL WIRING.



1 / E-106 SECOND FLOOR ELECTRICAL PLAN - PART C (ELEMENTARY SCHOOL)
1/8" = 1'-0"



KEY PLAN
SCALE = N.T.S

30-07-2024 20:46:31

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REVISIONS

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PROJECT: PUTNAM ELEMENTARY SCHOOL
33 WICKER ST, PUTNAM, CT 06260

FILE NO:	24103.01		
SCALE:	AS NOTED		
DATE:	07/10/2024	**DRAWN BY:**	YP
		CHECKED BY:	MA

SHEET TITLE: SECOND FLOOR ELECTRICAL PLAN-PART C

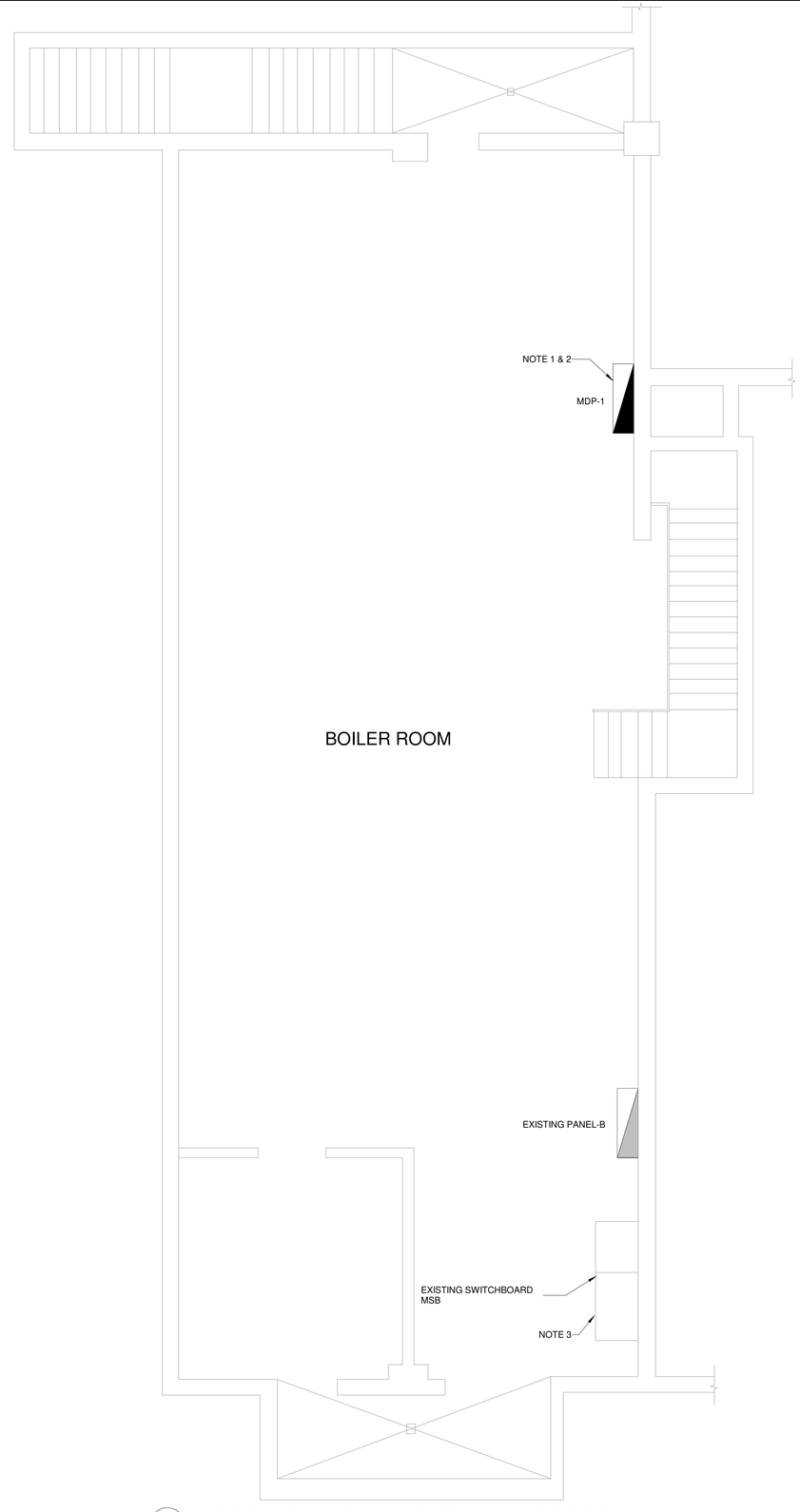
SHEET NUMBER: E-106

NOTES

1. PROVIDE NEW PANEL - MDP-1 (600A, 208/120V, 3PH, 4W) IN THE BASEMENT BOILER ROOM AS INDICATED IN THE LAYOUT.

2. THE LOCATION OF MDP-1 PANEL IS INDICATIVE. CONTRACTOR TO CO-ORDINATE AT SITE AND LOCATE THE PANEL ACCORDINGLY.

3. CONTRACTOR TO ADD NEW 600A, 3P BREAKER IN EXISTING SPACE PROVISION (OUTGOING #11) OF MSB PANEL AND CONNECT NEW PANEL MDP-1 TO THE NEWLY ADDED BREAKER.



1 / E-107 BASEMENT BOILER ROOM ENLARGED ELECTRICAL PLAN - (ELEMENTARY SCHOOL)
1/4" = 1'-0"

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FILE NO:	24103.01		
SCALE:	AS NOTED		
DATE:	07/10/2024		
DRAWN BY:		YP	
CHECKED BY:		MA	

SHEET TITLE: BASEMENT BOILER ROOM ELECTRICAL PLAN

SHEET NUMBER: E-107

30-07-2024 20:46:31