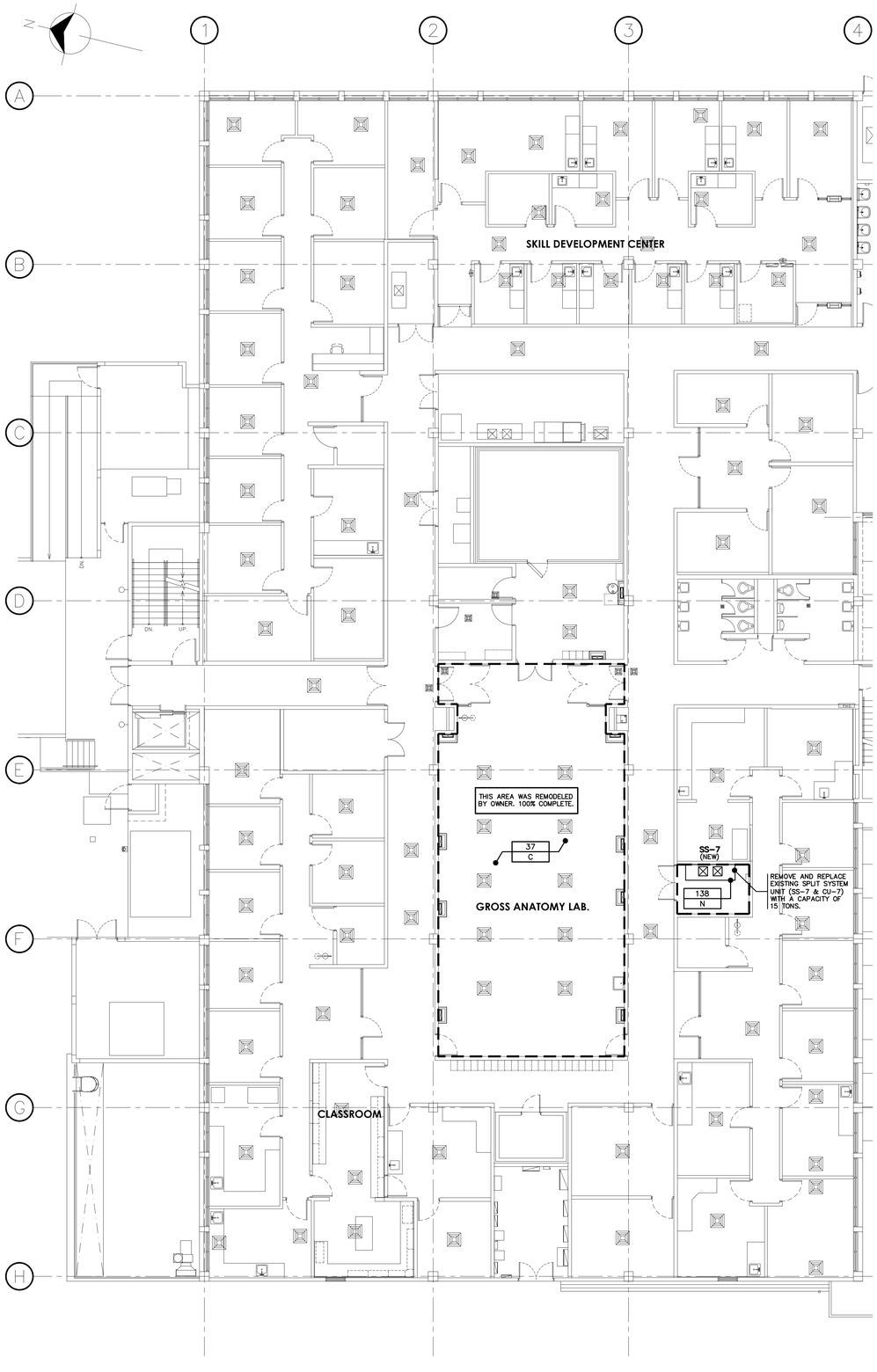
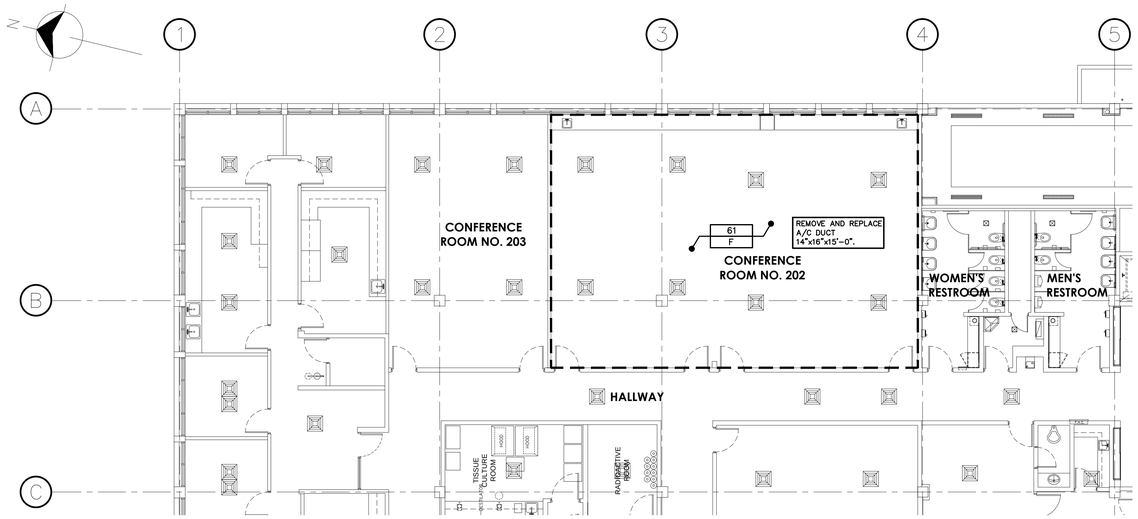


REFORMED FIRST PLAN–VAC LAYOUT

SCALE=1/8"=1'–0"

0 5 10 15 20 25

FEET 1/8"=1'-0"



REFORMED SECOND PLAN–VAC LAYOUT

SCALE=1/8"=1'–0"

0 5 10 15 20 25

FEET 1/8"=1'-0"

Damage #305240 - Main Building
Mechanical Scope of Works

Item ID		Description
		Laboratory R094
37	C	THIS AREA WAS REMODELED BY OWNER. 100% COMPLETE. Remove, replace, 7ea Air Conditioning, HVAC, ceiling diffusers, 4-way, 2FT x 2FT
		Classroom R113
61	F	Remove, replace, 1ea, A/C ductwork, 16IN dia, round, galv. mounting
		Main Bldg., Roof
138	J	Remove, replace, Ext., 1ea Rooftop Air Extractor fan, 2FTdia., w/1/2-HP
	M	Replace covers, 1ea Air Conditioning, 15-Ton package unit
	N	Remove, replace, Building Exterior, 1 each of Air Conditioning, 15-Ton
	O	Remove, replace, 3ea Air Extractor Grille, 24 IN x 36 IN, Stairs Area
	Q	Replace, 1 each of Air Conditioning, 15-Ton package unit, covers
		Load Path Mitigation
		Anchoring Assembly for Roof mounted A/C Units
C.1		Install 6 EA – 5 Ton A/C Anchoring System to prevent displacement by high-driven wind. (central unit)
C.2		Install 6 EA – 5 Ton A/C Anchoring System to prevent displacement by high-driven wind. (air handler units)
C.3		Install 2 EA – 7.5 Ton A/C Anchoring System to prevent displacement by high-driven wind. (air handler units)
C.4		Install 11 EA – 15 Ton A/C Anchoring System to prevent displacement by high-driven wind. (air handler units)
C.5		Install 4 EA – 20 Ton A/C Anchoring System to prevent displacement by high-driven wind. (air handler units)
C.6		Install 2 EA – 24 BTU A/C Anchoring System to prevent displacement by high-driven wind. (central unit, condenser)
C.7		Install 1 EA – 18 BTU A/C Anchoring System to prevent displacement by high-driven wind.
		Anchoring Assembly for Roof mounted Exhaust Units
C.8		Install 18 EA – Exhaust units Anchoring System to prevent displacement by high-driven wind.

NOTES:

1. CONTRACTOR SHALL REPAIR EXISTING DUCTWORK UNIONS, SEALANT, & INSULATION AS REQUIRED TO MATCH EXISTING CONDITION.
2. SEAL ALL DUCT OPENINGS & PROVIDE INSULATION TO MATCH EXISTING CONDITION.
3. PLENUM SUPPLY AND RETURN AREA SHALL COMPLY WITH NFPA–90A. ALL PVC MATERIAL SHALL BE EITHER REMOVED OR WRAP AROUND WITH FIRE PROOFING BLANKET.
4. PERFORM TAB FOR THE NEW A/C UNIT INCLUDING SUPPLY, RETURN, OUTSIDE, REFER TO BALANCING NOTES ON DRAWING VAC–200 FOR SCOPE OF WORK.
5. ALL MECHANICAL EQUIPMENT AT ROOF SHALL BE ANCHORED TO WITHSTAND HURRICANE FORCE WINDS AS PER APPLICABLE CODES.
5. COORDINATE WITH ROOFING CONTRACTOR FOR ROOFING INSULATION/ IMPERMEABILIZATION SYSTEM REPAIRS.
6. IF THE EQUIPMENT POSITION DOES NOT MEET OSHA ROOF EDGE SAFETY REQUIREMENTS, FALL PROTECTION SHALL BE IMPLEMENTED IN ACCORDANCE WITH OSHA STANDARDS TO ENSURE WORKER SAFETY AT ALL ROOF EDGES AND PERIMETERS. THIS MAY INCLUDE GUARDRAILS, PERSONAL FALL ARREST SYSTEMS, OR OTHER APPROPRIATE SAFEGUARDS TO PREVENT FALLS FROM UNPROTECTED EDGES.

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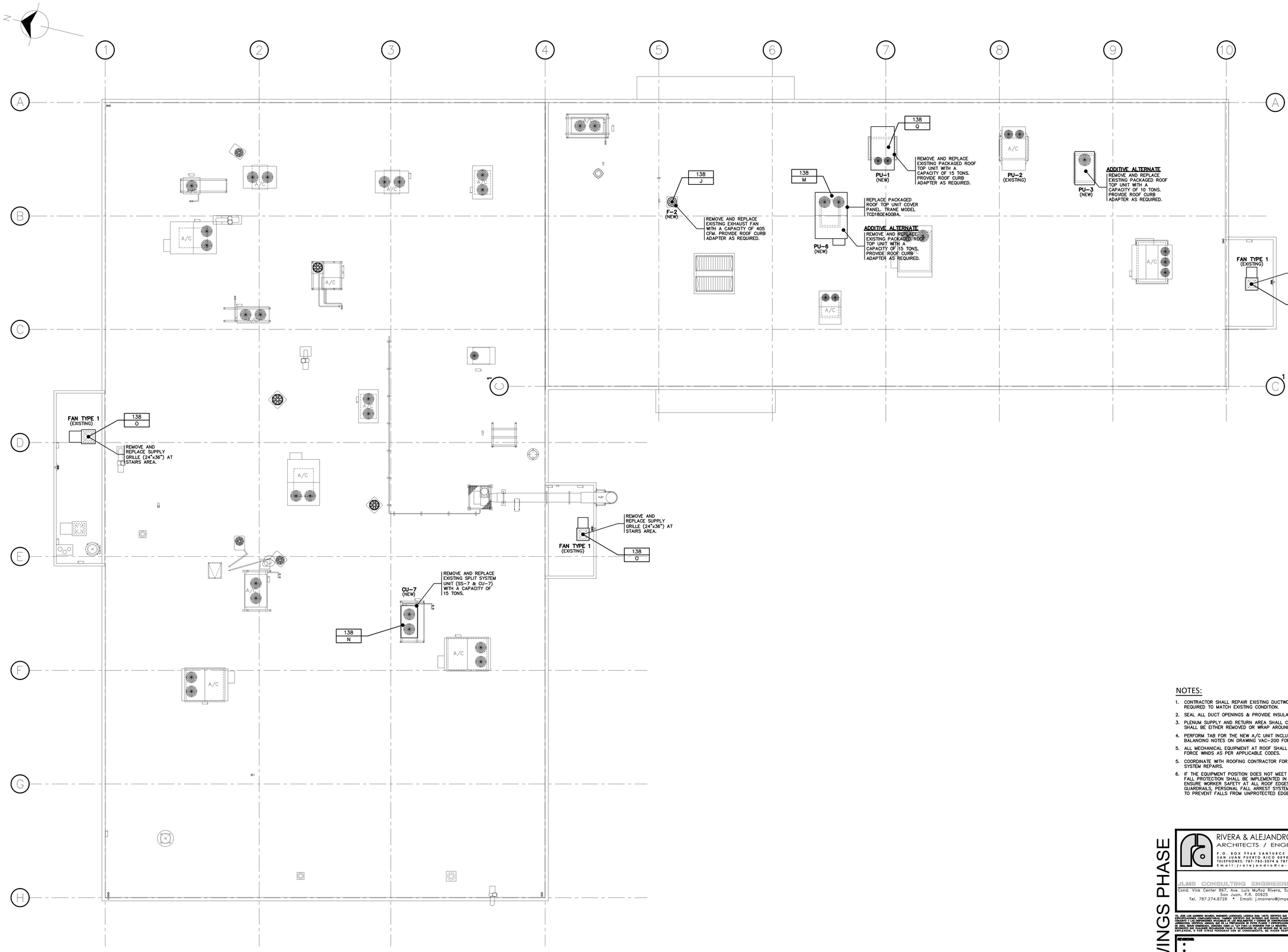
JOSE LUIS MORRERO SICARDO
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PUERTO RICO

YO, JOSE LUIS MORRERO SICARDO, MAYORES LICENCIADO, LICENCIA NUM. 14670, CERTIFICO QUE SOY EL PROFESIONAL QUE SOMETIENDO Y/O DISEÑO ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS, TAMBIEN CERTIFICO QUE DICHOS QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO DE CONSTRUCCIONES VIGENTE EN EL MUNICIPIO DE SAN JUAN, PUERTO RICO. ASIMISMO, CERTIFICO QUE SOY EL PROFESIONAL QUE SOMETIENDO Y/O DISEÑO LOS PLANOS Y ESPECIFICACIONES DE LA INSTALACIÓN ELÉCTRICA DE LA PROPUESTA, LOCALIZADA EN LA CALLE MUÑOZ RIVERA, SAN JUAN, PUERTO RICO. ASIMISMO, CERTIFICO QUE LA INSTALACIÓN ELÉCTRICA DE ESTOS PLANOS Y ESPECIFICACIONES SE HA DISEÑADO CUMPLIENDO CON LO ESTIPULADO EN LA 1ª EDICIÓN DEL REGLAMENTO PARA EL CONTROL DE INSTALACIONES ELÉCTRICAS DE PUERTO RICO, EL CÓDIGO NACIONAL DE ELECTRICIDAD (NEC) 2020 Y LA NFPA 70 EN SU EDICIÓN MÁS RECIENTE. CUALQUIER DESVIACIÓN DE ESTOS PLANOS Y ESPECIFICACIONES DE LA INSTALACIÓN ELÉCTRICA DURANTE LA CONSTRUCCIÓN DEBERÁ SER APROBADA POR ESCRITO POR EL SUSCRITO. CUALQUIER NOTIFICACIÓN PARA LA TERMINACIÓN DE LOS TRABAJOS QUE SE HAYA PROGRADO POR INCUMPLIMIENTO O POR RAZONES YA DADA POR MI, NO MENOS O EMPLEADOS, Y POR OTRAS PERSONAS CON MI CONSENTIMIENTO, NO TAMPOCO RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA CUAL.

REVISIONS	REVISION DATE
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PROJECT	SHEET
PW #107355 – MAIN FACILITIES	VAC-100
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: REFORMED FIRST & SECOND PLAN–VAC LAYOUT	41 of 59
JOB NO. 2312 DATE OCTOBER, 2026 SCALE AS INDICATED	

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REFORMED ROOF PLAN–VAC LAYOUT

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

0 5 10 15 20 25

FEET 1/8"=1'-0"

NOTES:

1. CONTRACTOR SHALL REPAIR EXISTING DUCTWORK UNIONS, SEALANT, & INSULATION AS REQUIRED TO MATCH EXISTING CONDITION.
2. SEAL ALL DUCT OPENINGS & PROVIDE INSULATION TO MATCH EXISTING CONDITION.
3. PLENUM SUPPLY AND RETURN AREA SHALL COMPLY WITH NFPA–90A. ALL PVC MATERIAL SHALL BE EITHER REMOVED OR WRAP AROUND WITH FIRE PROOFING BLANKET.
4. PERFORM TAB FOR THE NEW A/C UNIT INCLUDING SUPPLY, RETURN, OUTSIDE, REFER TO BALANCING NOTES ON DRAWING VAC–200 FOR SCOPE OF WORK.
5. ALL MECHANICAL EQUIPMENT AT ROOF SHALL BE ANCHORED TO WITHSTAND HURRICANE FORCE WINDS AS PER APPLICABLE CODES.
5. COORDINATE WITH ROOFING CONTRACTOR FOR ROOFING INSULATION/ IMPERMEABILIZATION SYSTEM REPAIRS.
6. IF THE EQUIPMENT POSITION DOES NOT MEET OSHA ROOF EDGE SAFETY REQUIREMENTS, FALL PROTECTION SHALL BE IMPLEMENTED IN ACCORDANCE WITH OSHA STANDARDS TO ENSURE WORKER SAFETY AT ALL ROOF EDGES AND PERIMETERS. THIS MAY INCLUDE GUARDRAILS, PERSONAL FALL ARREST SYSTEMS, OR OTHER APPROPRIATE SAFEGUARDS TO PREVENT FALLS FROM UNPROTECTED EDGES.

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YO, JOSE LUIS MARRERO SICARDO, INGENIERO LICENCIADO, LICENCIA NUM. 14670, CERTIFICO QUE SOY EL PROFESIONAL QUE DISEÑO Y EL PREPARO ESTOS PLANOS Y LAS ESPECIFICACIONES CORRESPONDIENTES. TAMBIEN CERTIFICO QUE ESTOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS ENMIENDAS APLICABLES DE LOS REGLAMENTOS Y CODIGOS DE CONSTRUCCION VIGENTES DE LOS MUNICIPIOS AUTOS PEDI MENCIONADOS Y CONFORMANTE A REGLAS CON LA LEY NUM. 173 DE 12 DE AGOSTO DE 1988, SEGUN ENMENDADA, CONOCIDA COMO LA "LEY PARA LA REFORMA POR LA EDUCACION PUERTORRIQUEÑA" Y CON LA LEY NUM. 135 DE 15 DE MAYO DE 1996, SEGUN ENMENDADA, REFERENTE AL REGLAMENTO NACIONAL PARA LA PLANIFICACION DE LOS MEDIOS QUE SE HAYA PREPARADO POR ARQUITECTOS O PARA PREPARADO EL TEXTO POR MI, POR EMPLEADOS O EMPLEADAS, O POR OTRAS PERSONAS BAJO MI SUPERVISION, NO TENGO RESPONSABILIDAD DE CUALQUIER ACCION OMISION Y DISCREPANCIAS POR LA OBRA.

REVISIONS	REVISION DATE
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PROJECT	SHEET
PW #107355 – MAIN FACILITIES	VAC-101
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: REFORMED ROOF PLAN–VAC LAYOUT	42 OF 59
JOB NO. 2312	DATE OCTOBER, 2026 SCALE AS INDICATED

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VAC NOTES

GENERAL:

1. BIDDERS SHALL VISIT THE BUILDING AND ACQUAINT THEMSELVES WITH THE CONDITIONS AS THEY ACTUALLY EXIST AND VERIFY DIMENSIONS, LOCATIONS AND DETAILS REQUIRED TO COMPLETE THE WORK. FAILURE TO VISIT THE PROJECT AREA WILL IN NO WAY RELIEVE THE SUCCESSFUL BIDDER OF FURNISHING ALL MATERIAL AND PERFORMING ALL WORK REQUIRED FOR THE COMPLETION OF THE CONTRACT. VISIT TO THE PROJECT AREA SHALL BE ARRANGED THROUGH THE BUILDING MANAGER.
2. CONTRACTOR SHALL PROVIDE SUITABLE VIBRATION ISOLATION FOR THE SYSTEM AS RECOMMENDED BY MANUFACTURER OF EQUIPMENT SPECIFIED OR PROVIDED.
3. CONTRACTOR SHALL FURNISH AND INSTALL PIPING VALVES, SENSORS, CONTROL SYSTEMS AND ANY OTHER ITEM REQUIRED FOR THE FUNCTIONING AND OPERATION OF THE SYSTEM SHALL FORM PART OF THE WORK TO BE DONE BY THE CONTRACTOR.
4. IT IS THE INTENTION OF THE DRAWINGS TO CALL FOR FINISHED WORK, COMPLETE, TESTED AND READY FOR OPERATION. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER INSTALLATION AND FOR FUNCTIONING AND OPERATION OF THE SYSTEM SHALL FORM PART OF THE WORK TO BE DONE BY THE CONTRACTOR.
5. CONTRACTOR SHALL PAINT ALL PIPING, PIPE INSULATION, FITTINGS, VALVES AND ALL EQUIPMENT TO BE INSTALLED.
6. THE CONTRACTOR SHALL, WITHOUT EXTRA CHARGE, MAKE REASONABLE MODIFICATIONS IN THE DUCT AND PIPING ARRANGEMENTS AS NEEDED TO PREVENT CONFLICT WITH WORK OF OTHER TRADES OR FOR PROPER EXECUTION OF THE WORK.
7. ALL EQUIPMENT AND MATERIAL SHALL BE INSTALLED WITH THE APPROVAL OF THE OWNER IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE MANUFACTURER AND THE SPECIFICATIONS ISSUED FOR THIS PROJECT.
8. CONTRACTOR SHALL LOCATE IN FULLY ACCESSIBLE POSITIONS ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, OR MAINTAINED. CONTRACTOR IS RESPONSIBLE OF COMPLY WITH EACH EQUIPMENT MANUFACTURER RECOMMENDED CLEARANCE.
9. IN CASE OF DISCREPANCY BETWEEN THE EQUIPMENT SPECIFIED AND THE EQUIPMENT SUPPLIED BY THE CONTRACTOR, THE CONTRACTOR SHALL ARRANGE FOR THE PROPER INSTALLATION OF THE EQUIPMENT.
10. CONTRACTOR SHALL FURNISH AND INSTALL AIR CONDITIONING EQUIPMENT, DUCTS, INSULATION, PIPING VALVES, SENSORS, CONTROL SYSTEMS AND ANY OTHER ITEM REQUIRED FOR THE PROPER FUNCTIONING AND OPERATION OF THE SYSTEM.
11. MECHANICAL WORK SHALL BE COORDINATED WITH ALL OTHER TRADES.
12. THE MECHANICAL CONTRACTOR SHALL THOROUGHLY EXAMINE ALL AREAS WHERE EQUIPMENT, DUCTWORK, AND PIPING WILL BE INSTALLED AND WILL REPORT ANY CONDITION THAT, IN HIS OPINION, PREVENTS THE PROPER INSTALLATION OF THE MECHANICAL WORK.
13. COORDINATE WITH ELECTRICAL CONTRACTOR FOR POWER CONNECTION TO ALL MECHANICAL EQUIPMENT.
14. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH ALL APPLICABLE STATE AND LOCAL CODES AND ORDINANCES. IN CASE OF CONFLICT BETWEEN THE DRAWINGS/SPECIFICATIONS AND THE CODES AND ORDINANCES, THE HIGHEST STANDARD SHALL APPLY. THE MECHANICAL CONTRACTOR SHALL SATISFY CODE REQUIREMENTS AS A MINIMUM STANDARD WITHOUT ANY EXTRA COST.
15. THE MECHANICAL CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, FEES AND INSPECTIONS NECESSARY TO COMPLETE THE MECHANICAL WORK.
16. THE MECHANICAL CONTRACTOR SHALL UNCONDITIONALLY WARRANT ALL WORK TO BE FREE OF DEFECTS IN MATERIAL AND WORKMANSHIP FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE BY OWNER AND WILL REPAIR OR REPLACE ANY DEFECTIVE WORK PROMPTLY AND WITHOUT CHARGE AND RESTORE ANY OTHER EXISTING WORK DAMAGED IN THE COURSE OF REPAIRING DEFECTIVE MATERIALS AND WORKMANSHIP.
17. THE MECHANICAL CONTRACTOR SHALL COORDINATE CONCRETE SLABS PENETRATION WORKS WITH OWNER, STRUCTURAL ENGINEER AND ARCHITECTURAL DRAWINGS.
18. ALL MATERIAL AND SPECIALTIES REQUIRED FOR THIS WORK SHALL BE NEW (UNLESS OTHERWISE INDICATED), OF FIRST-CLASS QUALITY AND SHALL BE FURNISHED, DELIVERED, ERECTED, CONNECTED AND FINISHED IN EVERY DETAIL, AND SHALL BE SO SELECTED AND ARRANGED AS TO FIT PROPERLY INTO THE BUILDING SPACES. DURING STORAGE ON THE JOB SITE OF CONSTRUCTION, THE CONTRACTOR SHALL KEEP PIPE ENDS PLUGGED OR CAPPED TO PREVENT DIRT OR MOISTURE ENTERING THE PIPE.
19. ROOF "R" VALUE SHALL BE A MINIMUM OF 15.0 HR-SF-°F/BTU.
20. EQUIPMENT DIMENSIONS SHOWN ARE FOR SPECIFIC MANUFACTURER. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR EQUIPMENT WORKING AND SERVICES CLERENCES RESULTING FROMFIELD MODIFICATIONS.

AIR DISTRIBUTION:

1. DUCTWORK SHELL BE AS FOLLOWS:
   - A– DUCT MATERIAL – SHALL BE GALVANIZED SHEET METAL, AND MANUFACTURED AND INSTALLED IN ACCORDANCE WITH LATEST EDITION OF THE DUCT CONSTRUCTION STANDARDS OF SMACNA FOR THE APPLICABLE PRESSURE CLASS.
   - B– DUCT WORKMANSHIP – ALL DUCTWORK SHALL BE CONSTRUCTED AND ERECTED IN A WORKMANLIKE MANNER. DUCTS SHALL BE STRAIGHT AND SMOOTH ON THE INSIDE WITH NEATLY FINISHED JOINTS, AIRTIGHT, AND SHALL BE FREE FROM VIBRATION UNDER ALL CONDITIONS OF OPERATION. THE INTERNAL ENDS OF SLIP JOINTS SHALL BE MADE IN THE DIRECTION OF AIR FLOW. CHANGES IN DIMENSIONS AND SHAPE OF DUCTS SHALL BE GRADUAL. ALL DUCT SIZES SHALL FALL WITHIN THE LIMITING DIMENSIONS INDICATED ON THE DRAWINGS UNLESS OTHERWISE APPROVED. CURVED ELBOWS, UNLESS OTHERWISE SPECIFIED ON THE DRAWINGS, SHALL HAVE A CENTER LINE RADIUS EQUAL TO 1 1/2 TIMES THE WIDTH OF THE DUCT. AIR TURNS SHALL BE INSTALLED IN ALL ABRUPT ELBOWS AND SHALL CONSIST OF CURVED METAL BLADES OR VANES, ARRANGED TO PERMIT THE AIR TO MAKE THE TURNS WITHOUT APPRECIABLE TURBULENCE. THEY SHALL BE THE MANUFACTURER'S STANDARD PRODUCT AND SHALL BE QUIET WHEN THE SYSTEM IS IN OPERATION. CONFIGURATION OF DUCTS SHALL BE AS INDICATED ON DRAWINGS. DUCT HANGER SHALL BE AS INDICATED ON DRAWINGS.
2. INSTALLATION OF DUCTS SHALL BE BY MEANS OF ANGULAR TRAPEZE AND ROD ACCORDING TO "SMACNA" RECOMMENDATIONS. IF STRAP ARE USED WITH DUCTWORK LESS THAN 24" WIDE, IT SHALL BE ATTACHED TO THE DUCT BY TWO SELF-TAPPING SCREWS. HANGERS AND STRAPS SHALL BE ATTACHED TO THE BEAM BY EXPANSION SHIELDS OR BY GUN NAILS. SCREWS. HANGERS AND STRAPS SHALL BE ATTACHED TO THE BEAM BY EXPANSION SHIELDS OR BY GUN NAILS.
3. ALL CONCEALED DUCTWORK AND PLENUMS ABOVE THE SECOND FLOOR CEILINGS SHALL BE INSULATED.
4. ALL DUCT WORK EQUIPMENT AND PIPING SHALL BE PROVIDED WITH SEISMIC RESTRAINTS IN ACCORDANCE WITH U.B.C.-2018 & N.F.P.A. STANDARDS.
5. ALL SHEETMETAL DUCTWORK SEAMS & JOINTS MUST BE SEALED WITH HIGH PRESSURE DUCT SEALER AS MANUFACTURED BY MINNESOTA MINING & MANUFACTURING CO. MODEL EC-800 OR APPROVED EQUAL. AIR LEAKS MUST BE 5% OR LESS. TEST DUCTWORK BEFORE FINAL CONNECTION TO AHU'S & AIR DISTRIBUTION.
6. FOR EXACT LOCATION OF CEILING DIFFUSERS REFER TO ARCHITECTURAL REFLECTED CEILING PLAN.
7. THE CONTRACTOR MUST FURNISHED & INSTALL U.L. APPROVED FIRE DAMPER WITH 10 GAUGE METAL SLEEVE AND DUCT ACCESS DOOR WHERE SHOWN ON DRAWINGS, AS REQUIRED BY LOCAL BUILDING CODES, OR AS REQUIRED BY N.F.P.A. FIRE DAMPERS SHALL BE CURTAIN TYPE AS MANUFACTURED BY RUSKIN MODEL I002 STYLE C OR APPROVED EQUAL.
8. PROVIDE SMOKE DETECTORS AS PER N.F.P.A. 90A.
9. EXPOSED SUPPLY & RETURN DUCTS SERVING SOUND SENSITIVE AREAS SHALL BE DOUBLE WALL, PAINTED AND INTERNALLY INSULATED.
10. ALL EXPOSED DUCTWORK SHALL BE PAINTED AS PER ARCHITECT'S COLOR CODING.
11. CONTRACTOR SHALL BE RESPONSIBLE OF SUBMIT DUCTWORK SHOP DWG. FOR APPROVAL. NO CHANGE ORDER WILL BE ALLOWED FOR DUCTS MODIFICATIONS RESULTING FROM NON-COORDINATED SHOP DRAWINGS.
12. CONNECTION FROM DUCT TO A/C UNIT SHALL BE MADE WITH A CANVAS CONNECTION. CANVAS CONNECTION SHALL BE NEOPRENE-COATED GLASS FABRIC AS MANUFACTURED BY VENT FABRIC (VEN GLASS), DURO DYNECORP. OF EQUAL. MOUNTED ON ANGLE FRAMES SECURELY FASTENED TO DUCTS AND EQUIPMENT WITH ACCESSORIES TO PREVENT COLLAPSING AT 10 IWG OF NEGATIVE PRESSURE. CANVAS CONNECTION SHALL BE AIR TIGHT (NO LEAKAGE OR INFILTRATION) AT INDICATED PRESSURE GLASS.
13. PLENUM SUPPLY AND RETURN AREA SHALL COMPLY WITH NFPA-90A.
14. CONTRACTOR SHALL BE RESPONSIBLE OF RETURN AIR PLENUM SEGREGATION AND PROVIDE REQUIRED AIR PASSAGES FOR PROPER A/C SYSTEM FUNCTIONING.
15. ALL OUTSIDE AIR INTAKES SHALL BE PROVIDED WITH A 35% EFF. DISPOSABLE FILTERS.
16. PROVIDE 1" THICK INTERNAL ACOUSTICAL LINING TO FIRST 10'-0" OF SUPPLY & RETURN DUCTWORK. SIMILAR TO SCHULLER PERMACOUSTICS.
17. COORDINATE DUCT ROUTE WITH SPRINKLERS AND ALL OTHER TRADES. RE-ROUTE AS REQUIRED AT NO EXTRA COST TO THE OWNER.
18. GRILLES AND DIFFUSERS SHALL BE AS MANUFACTURE BY "METAL*AIRE", "BARBER COLMAN", "TUTTLE & BAILEY", "ANEMOSTAT" OR "TITUS". EACH IS TO BE FITTED BY AN AIR STREIGHTENER AND VOLUME DAMPER.
19. ALL DUCT DIMENSIONS SHOWN ARE NET INTERNAL.

BALANCING:

1. THE A/C CONTRACTOR SHALL PROVIDE AIR AND HYDRONIC SYSTEM BALANCING.
2. PERFORM AIR & HYDRONIC BALANCING BY A INDEPENDENT NEBB OR AABE CERTIFIED AIR BALANCE CONTRACTOR SHALL ACCURATELY BALANCE THE AIR SYSTEMS TO PROVIDE AIR QUALITIES INDICATED ON THE DRAWINGS AND IN THIS SPECIFICATION. OPERATE AUTOMATIC CONTROLS SYSTEM AND VERIFY SET POINTS DURING BALANCING. THE FINAL READING AND ADJUSTMENT SHALL BE PERFORMED WITH THE PRESENCE OF THE OWNER'S REPRESENTATIVE. SUBMIT FIVE (5) COPIES OF THE BALANCE REPORT TO THE ENGINEER FOR APPROVAL. INCLUDE A COPY OF THE BALANCE REPORT AS APPROVED BY THE ENGINEER WITH APPLICATION FOR FINAL CONTRACT PAYMENT.
3. PRESSURIZATION LEAKAGE AND INFILTRATION TEST SHALL BE PERFORMED PER SMACNA STANDARDS AND TECHNICAL SPECIFICATIONS.
4. THE AIR DISTRIBUTION SYSTEM AND DEVICES SHALL BE BALANCED FOR PROPER AIR FLOW. TEST DATA OF THE BALANCING OF THE SYSTEMS SHALL BE SUBMIT TO THE ARCHITECT FOR REVIEW. ALL AIR QUANTITIES SHALL BE SET TO WITHIN 10% OF THE LISTED QUANTITIES. DEFLECTION VANES SHALL BE SET TO ELIMINATE ANY EXCESSIVE AIR MOVEMENT IN THE AREA.
5. THE AIR SIDE BALANCING SHALL INCLUDE:
   1. RECORD MOTOR FULL LOAD AMPS AND ACTUAL OPERATING AMPERAGE.
   2. RECORD SUPPLY, RETURN AND OUTSIDE AIR TEMPERATURES.
   3. MAKE PITOT TUBE TRAVERSE OF MAIN SUPPLY DUCT AND OBTAIN DESIGN CFM AT FAN AND FAN RPM.
   4. RECORD SYSTEM STATIC PRESSURES, RETURN AND DISCHARGE.
   5. FIVE (5) COPIES OF BALANCING REPORTS CONTAINING THE DATA MENTIONED ABOVE AND SHALL BE GIVEN TO THE OWNER'S REPRESENTATIVE.
6. BALANCING WORK SHALL FULLY COMPLY WITH A.A.B.C. OR N.E.B.B.

REFRIGERANT PIPING:

1. REFRIGERANT PIPING MATERIAL: SHALL BE TYPE "K" COPPER TUBING, HARD DRAWN WITH WROUGHT COPPER SOLDER TYPE FITTINGS SUITABLE FOR CONNECTION WITH SILVER SOLDER.
2. REFRIGERANT PIPING INSULATION MATERIAL: SHALL BE CLOSED CELL ELASROMETRIC 1/2" THICK ALL PIPE SIZES. K=0.25 @ 75°F. PROTECT INSULATION FROM SOLAR UV RADIATION.
3. GLOBE VALVE: SHALL BE CONSTRUCTED OF FORGED BRASS AND SHALL BE OF THE BACKSEATING TYPE SUITABLE FOR 500 PSI.
4. CHECK VALVES: SHALL BE CONSTRUCTED OF FORGED BRASS SUITABLE FOR 500 PSI.
5. SOLENOID VALVES: SHALL BE CONSTRUCTED OF FORGED BRASS SUITABLE FOR 400 PSI.
6. REFRIGERANT STRAINERS: SHALL BE CONSTRUCTED OF FORGED BRASS SUITABLE FOR 350 PSI. PROVIDE 100 MESH STRAINER.
7. MOISTURE INDICATOR: SHALL BE CONSTRUCTED OF FORGED BRASS WITH OPTICAL GLASS SUITABLE FOR 500 PSI.
8. FILTER DRAINS: SHALL BE CONSTRUCTED OF STEEL WITH STEEL COVER REPLACEABLE FILTER DRIER COVER.
9. ALL ELBOWS SHALL BE OF THE LONG RADIUS TYPE.
10. CONTRACTOR SHALL BE RESPONSIBLE OF SUBMIT REFRIGERANT LINE SHOP DWG. FOR APPROVAL. NO CHANGE ORDER WILL BE ALLOWED FOR A/C SYSTEMS MODIFICATIONS RESULTING FROM NON-COORDINATED SHOP DRAWINGS.
11. REFRIGERANT LINE SIZING SHALL BE DONE BY EQUIPMENT MANUFACTURER.

AUTOMATIC CONTROL SYSTEM:

1. ALL CONTROLLERS SHALL BE FLUSH MOUNTED. ELECTRICAL CONDUITS SHALL RUN INSIDE WALLS.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE CONDUITS AND WIRING FOR THE POWER OF THE LCM FROM THE NEAREST POWER SOURCE.
3. ALL VERTICAL CONTROL CONDUITS MUST RUN CONCEALED INSIDE WALLS AND HORIZONTAL CONTROL IN THE PLENUM BETWEEN REFLECTED CEILING AND BOTTOM OF STRUCTURAL SLAB.
4. ROOM CONDITIONS ARE: 74.0±2°Fdb @ 55±5% RH FOR ALL AREAS. COORDINATE LOCATION OF TEMPERATURE CONTROLLERS AT FIELD WITH OWNER.
5. PROVIDE VANDAL PROOF COVER FOR ALL TEMPERATURE CONTROLLERS.
6. PLASTIC PIPING IS NOT ALLOWED IN RETURN PLENUM AREAS.
7. ALL MOTORS SHALL BE PROVIDED WITH ITS REQUIRED STARTERS FOR THE PROPER ELECTRICAL CONNECTION OF THE EQUIPMENT. COORDINATE WITH ELECTRICAL CONSULTANT.

SELECTED DEMOLITION NOTES:

1. IN ORDER TO AVOID DELAYS OR CLAIMS ON HIS BEHALF, THE GENERAL CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF ERRORS, COORDINATION DEVIATIONS OR OMISSIONS FROM THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL VERIFY AND BECOME FAMILIAR TO MAKE PART OF HIS RESPONSIBLY, ALL CONTRACT DOCUMENTS AND GENERAL CONDITIONS, AND NOT LIMIT HIMSELF TO EXISTING CONDITIONS. THIS WRITTEN SUBMISSION SHALL BE PRESENTED PRIOR TO HIS FINAL BID. PRIOR TO THE COMMENCEMENT OF THE PROJECT WORK THE CONTRACT SHALL VERIFY ALL THE DIMENSIONS AND THE EXISTING CONDITIONS AT THE PROJECT SITE AND HE/SHE SHALL NOTIFY TO THE ARCHITECT IMMEDIATELY IN WRITING, OF ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THE CONTRACT DOCUMENTS WHICH MIGHT AFFECT THE SCHEDULE AND/OR PERFORMANCE OF THE PROPER DEMOLITION AND CONSTRUCTION WORKS. THE CONTRACTOR SHALL MAKE THE NECESSARY DEMOLITION TO PERFORM THE WORK PRETENDED IN THIS SET OF DRAWINGS.
2. CONTRACTOR SHALL VERIFY ON SITE UTILITIES LOCATION AND STRUCTURE CONDITIONS BEFORE PROCEEDING WITH DEMOLITION.
3. CONTRACTOR SHALL REMOVE AND DEMOLISH EXISTING FACILITIES IN COORDINATION AND ACCORDING TO OWNER INSTRUCTIONS.
4. CONTRACTOR SHALL TAKE MAXIMUM SAFETY PRECAUTIONS IN ORDER NOT TO DAMAGE EQUIPMENT, ADJACENT PROPERTY, BUILDING OR ITEMS NOT TO BE DEMOLISHED OR REMOVED AND AVOIDING INJURIES TO PERSONNEL AND PRIVATE PROPERTY. ANY DAMAGE DONE TO EXISTING WORK TO REMAIN SHALL BE REPAIRED BY CONTRACTOR NO EXPENSE TO THE OWNER.
5. CONTRACTOR WILL BUILT BARRICADE PRIOR TO START DEMOLITION IN ORDER PROTECT AND AVOID INJURIES TO THE PEDESTRIAN AND AND PRIVATE PROPERTIES.
6. CONTRACTOR SHALL REMOVE ANY EXISTING PAVEMENT, WHEN NECESSARY FOR PROPOSED SITE CONSTRUCTION CONDITIONS, AND PROTECT ANY PAVEMENT WHEN CONDITIONS INDICATE THAT ITS REMOVAL IS NOT NECESSARY.
7. DEMOLITION WORK SHALL BE PROPERLY EXECUTED, IS THE CONTRACTOR RESPONSIBILITY TO REPLACE, REBUILT TO ITS ORIGINAL CONDITIONS, ANY UTILITIES, SIDEWALKS, CURBS, STREETS, SEWER SYSTEMS, PRIVATE OR MUNICIPAL FACILITIES AFFECTED BY DURING THE CONSTRUCTION PHASE.
8. EQUIPMENT, ACCESSORIES AND/OR MATERIALS "TO REMAIN" SHALL BE PROPERLY PROTECTED DURING ALL DEMOLITION AND CONSTRUCTION WORKS IN ORDER TO PREVENT ANY POSSIBLE DAMAGE TO THEM.
9. ALL SCRAP MATERIALS (LEAD-BASED PAINT AND ASBESTOS-CONTAINING MATERIALS) FROM THE DEMOLITION WORK SHALL BE DISPOSED OFF AS PER THE TECHNICAL SPECIFICATIONS FOR THE ABATEMENT OF LEAD-BASED PAINT AND ASBESTOS-CONTAINING MATERIALS.
10. THE CONTRACTOR SHALL RELOCATE ANY EXISTING SOIL WASTE OR DRAIN, OR WATER PIPE THAT INTERFERES WITH A PROPOSED FOOTING OR STRUCTURE AS APPROVED BY THE ARCHITECT AND/OR STRUCTURAL DESIGNER.
11. COLD JOINTS BETWEEN EXISTING CONCRETE AND NEW ONES SHALL BE FILLED WITH CONCESSIVE 1001LPL. THE MAXIMUM PERMISSIBLE TIME BETWEEN PLACING THE EPOXY AND POURING THE CONCRETE IS ONE HOUR.
12. COORDINATE WITH OWNER A LIST OF REMOVED ITEMS TO BE SALVAGED, SCRAPED OR REINSTALLED.
13. ALL DISPOSED MATERIAL MANAGEMENT SHALL BE COMPLY AND ACCORDANCE WITH GOVERNMENT APPROVAL AND REGULATIONS.
14. DEMOLITION WORK SHALL BE COORDINATED WITH THE OWNER TO MINIMIZE INTERFERING WITH THE OPERATIONS.
15. ALL PIPES, VALVES, ETC. OF WATER SUPPLY, SANITARY, DRAINAGE AND STORM SYSTEMS SHALL BE REMOVED, OR REMOVED AND INSTALL NEW; SEE PLUMING DRAWINGS.
16. FOR ELECTRICAL DEMOLITION SEE ELECTRICAL DRAWINGS.
17. IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO CORROBORATE THE PLANS DIMENSIONS WITH EXISTING FIELD DIMENSIONS. CONDITION SHALL BE SUBMITTED TO THE OWNER REPRESENTATIVE PRIOR DATE OF BID.
18. ALL EQUIPMENT AND MATERIALS REMOVED SHALL REMAIN THE SOLE PROPERTY OF THE OWNER.
19. ALL SURPLUS MATERIAL AND DEBRIS SHALL BE DISPOSED ON A GOVERNMENT APPROVED DUMP SITE.
20. CONDITIONS FOR CONSTRUCTION BUILDING REMODELING AS SPECIFIED IN A.I.A. STANDARD GENERAL CONDITIONS OF CONTRACT SHALL BE FULLY REQUIRED.
21. CONTRACTOR SHALL PERFORM DEMOLITION IN STRICT ACCORDANCE WITH LANDLORD'S CRITERIA
22. CONDITIONS SHOWN NOT NECESSARY REPRESENT THE ACTUAL CONDITION – CONTRACTOR SHALL VERIFY EXISTING CONDITION PRIOR TO PROCEED WITH DEMOLITION.
23. CONTRACTOR TO PROVIDE AND INSTALL WATERPROOF ROOF COVERS ON ALL OPENINGS FROM REMOVED EQUIPMENT.
24. CONTRACTOR SHALL FOLLOW ALL CODES AND REGULATIONS FOR THE PROPER DISPOSAL OF THE SELECTED ITEMS.

INSULATION:

1. ALL INSULATION REQUIRED FOR THE WORK SHALL BE NEW, OF THE FIRST – CLASS QUALITY AND SHALL BE FINISHED, DELIVERY, ERECTED AND FINISHED IN EVERY DETAIL. ALL INSULATION SHALL HAVE A COMPOSITE FIRE HAZARD RATING AS TESTED BY ASTM E-84, NFPA 255, OR UL 723, NOT TO EXCEED 25 FLAME SPREAD AN 50 SMOKE DEVELOPED. ACCESSORIES SHALL HAVE THE SAME COMPONENT RATINGS. ALL INSULATING MATERIAL SHALL HAVE A LABEL INDICATING COMPLIANCE WITH THE ABOVE RATING.
2. EXPOSED AIR DUCT INSULATION SHALL BE 2" THICK JOHNS-MANVILLE NO. 817 (6 lbs/ft^3) RIGID FIBERGLASS DUCT INSULATION WITH A FACTORY APPLIED FOIL-SCRIM-KRAFT (FSK) VAPOR BARRIER FACING. COVER ALL INSULATION WITH GLASS FABRIC MESH USING FOSTER SEALFAS MASTIC. INSULATION SHALL HAVE A "K" FACTOR=0.22 Btu-in/hr.-ft^2 -°F @ 75°F.
3. CONCEALED ARI DUCT INSULATION SHALL BE 1 1/2" THICK JOHNS-MANVILLE R-SERIES MICROLITE FIBER GLASS BLANKET WITH A FACTORY APPLIED FOIL-SCRIM-FRAFT (FSK) VAPOR BARRIER FACING. INSULATION SHALL HAVE A "K" FACTOR= 0.31 Btu-in/hr-ft^2 @ 75°F.
4. CHILLED WATER PIPING INSULATION MATERIAL SHALL BE PRE-FORM PHENOLIC FOAM PIPE INSULATION USE AN ALUMINUM JACKET SECURELY ATTACHED IN ALL WEATHER EXPOSED PIPE RUNS AND FITTINGS.
5. AFTER THE INSTALLATION OF PIPING AND BEFORE APPLYING THE INSULATION, THE CONTRACTOR MUST CLEAN ALL PIPING THOROUGHLY AND APPLY TWO COATS OF ANTI CORROSIVE PAINT AS MANUFACTURED BY PORTER #7100.
6. INDOOR DUCTS HANDLING OUTDOOR AIR INSULATION MATERIAL: SAME AS EXPOSED AIR DUCTS INSULATION SHALL NOT BE APPLIED UNTIL ALL SURFACES ARE CLEAN AND DRY.
7. ALL MATERIAL USED FOR DUCTWORK INSULATION SHALL HAVE A FLAME SPREAD INDEX NOT EXCEEDING 25 SMOKE DEVELOPED AND FUEL CONTRIBUTED NOT TO EXCEED 50 WHEN MEASURED AS DETERMINE BY ASTM E-162.
8. INSULATION SHALL BE FURNISHED WITH A FACTORY APPLIED FSK VAPOR BARRIER FACING AND SHALL HAVE AN AVERAGE THERMAL CONDUCTIVITY NOT TO EXCEED 0.25 BTU-IN/SQ.FT.- °F.
9. PROVIDE INTERNAL ACOUSTICAL LINING TO ALL FCU'S FASCIAS.

HVAC EQUIPMENT:

1. ALL AIR CONDITIONING EQUIPMENT SHALL BE INSTALLED IN A WORKMANLIKE MANNER MEETING THE ACCEPTED STANDARDS OF THE AIR CONDITIONING INDUSTRY. THE WORK SHALL BE DONE BY SKILLED A/C CRAFTSMEN.
2. MAINTENANCE AND SERVICE CLEARANCES SHALL BE MAINTAIN TO EACH MECHANICAL EQUIPMENT AS PER MANUFACTURERS RECOMMENDATIONS.
3. MECHANICAL EQUIPMENT AT ROOF SHALL BE ANCHORED TO WITHSTAND HURRICANE FORCE WINDS AS PER APPLICABLE CODES.
4. PROVIDE CORROSION PROTECTION TO ALL WEATHER EXPOSED MECH. EQUIPMENT BY MEANS OF FIELD APPLIED PRODUCT. SUBMITT FOR APPROVAL.
5. EQUIPMENT START-UP SHALL BE PERFORMED BY EQUIPMENT MANUFACTURER.
6. ALL EQUIPMENT OFFERED UNDER THESE SPECIFICATIONS SHALL BE LIMITED TO PRODUCTS REGULARLY PRODUCED AND RECOMMENDED FOR SERVICE, IN ACCORDANCE WITH ENGINEERING DATA, RATINGS, OR OTHER COMPREHENSIVE LITERATURE MADE AVAILABLE TO THE PUBLIC AND IN EFFECT AT THE TIME OF OPENING OF BIDS.
7. EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE OF MANUFACTURE'S INSTRUCTIONS FOR TYPE AND CAPACITY OF EACH PIECE OF EQUIPMENT USE. COORDINATE MECHANICAL EQUIPMENT CONCRETE PADS WITH FINAL EQUIPMENT ARRAGEMENT.
8. CONTRACTOR SHALL BE RESPONSIBLE OF VERIFY ELECTRICAL CONNECTION AT FIELD PRIOR TO EQUIPMENT PURCHASE.

CONDENSATE DRAIN:

1. COOLING COIL CONDENSATE DRIP PIPING MATERIAL: SHALL BE EXTERIOR INSULATED SCH.40PVC.
2. COOLING COIL CONDENSATE DRIP PIPING MATERIAL RUNNING IN RETURN AIR PLENUMS SHALL BE TYPE "M" COPPER.
3. CONDENSATE DRAIN PIPING INSULATION MATERIAL: SHALL BE CLOSED CELL ELASTOMERIC 3/4" THICK ALL PIPE SIZES. K=0.25 @ 75°F.
4. CONTRACTOR SHALL PROVIDE INDIRECTLY CONNECTED CONDENSATE DRAIN TO A/C UNITS. COORDINATE WITH PLUMBING DRAWINGS.
5. PROVIDE CONDENSATE DRAIN PUMP FOR A/C EQUIPMENT IF REQUIRED PIPE SLOPE IS NOT ATTAINED.
6. CONTRACTOR SHALL BE RESPONSIBLE OF CONNECT 1" INSULATED PVC PIPE FOR EQUIPMENT CONDENSATE DRAIN AND CONNECT TO SANITARY SEWER SYSTEM.

ABBREVIATIONS:

AC	AIR CONDITIONING
AHU	AIR HANDLING UNIT
BTU	BRITISH THERMAL UNIT
CFM	CUBIC FEET PER MINUTE
CT	COOLING TOWER
CU	CONDENSING UNIT
CWS	CONDENSATE WATER SUPPLY
CWR	CONDENSATE WATER RETURN
CHWP	CHILLED WATER PUMP
CHWS	CHILLED WATER SUPPLY
CHWR	CHILLED WATER RETURN
CHWPP	CHILLED WATER PRIMARY PUMP
CHWSP	CHILLED WATER SECONDARY PUMP
CONC.	CONCRETE
CONN.	CONNECTION
DPT	DIFFERENTIAL PRESSURE TRANSMITTER
DWG	DRAWING
DFD	DUCT FIRE DAMPER
(E)	EXISTING
E.A.	EXHAUST AIR
EA.	EACH ONE
EF	EXHAUST FAN
FCU	FAN COIL UNIT
FD	FIRE DAMPER
FLEX.	FLEXIBLE
GCM	GENERAL CONTROL MODULE
HVAC	HEATING, VENTILATING, AND AIR CONDITIONING
HT	HUMIDITY TRANSMITTER
LCM	LOCAL CONTROL MODULE
MS	MINI-SPLIT
(N)	NEW
O.A.	OUTSIDE AIR
OAL	OUTSIDE AIR LOUVER
O.B.D.	OPPOSED BLADE DAMPER
PCU	PACKAGE UNIT
PI	PRESSURE INDICATOR
PTAC	PACKAGED TERMINAL AIR CONDITIONERS
(symbol)	POINT OF CONNECTION
R.A.	RETURN AIR
RTU	PACKAGED ROOF TOP UNIT
RM	REFRIGERATION MACHINE (CHILLER)
RR	RETURN REGISTER
SF	SUPPLY FAN
S.A.	SUPPLY AIR
SD	SUPPLY DIFFUSER
[SD]	SMOKE DETECTOR
(T)	TEMPERATURE CONTROLLER
TYP.	TYPICAL
TI	TEMPERATURE INDICATOR
TC	TEMPERATURE CONTROL
VAC	VENTILATION AND AIR CONDITIONING
(symbol)	FIRE/SMOKE DAMPER
# / A, B, C	FEMA SOW DAMAGE IDENTIFICATION

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YO, JOSE LUIS MARRERO SICARDO, INGENIERO LICENCIADO, LICENCIA NUM. 14670, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONO Y/O DISEÑO Y/O PREPARO ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIEN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CODIGOS DE CONSTRUCCION VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS O CORPORACIONES PUBLICAS CON JURISDICCION. CERTIFICO, ADEMAS, QUE EN LA PREPARACION DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NUM. 14 DE 8 DE ENERO DE 2004, SEGUN ENMENDADA, CONOCIDA COMO LA "LEY PARA LA INVERSION POR LA INDUSTRIA PUERTORRIQUEÑA" Y CON LA LEY NUM. 319 DE 15 DE MAYO DE 1938, SEGUN ENMENDADA. RECONOZCO QUE CUALQUIER DECLARACION FALSA O FALSIFICACION DE LOS HECHOS QUE SE HAYA PRODUCIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MI, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCION JUDICIAL Y DISCIPLINARIA POR LA OGPe.

REVISIONS:	REVISION DATE
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PROJECT: PW #107355 – MAIN FACILITIES	SHEET: VAC-200
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: VAC NOTES	43 OF 59
JOB NO. 2312 · DATE OCTOBER, 2026 · SCALE AS INDICATED	

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NEW EXHAUST FAN SCHEDULE

TAG. NO.	FEMA SOW #		LOCATION	TYPE	DRIVE	CFM	S.P. IN W.G.	H.P.	ELECT.	MODEL NO.	MANUFACTURER	ELECTRICALLY INTERLOCKED WITH	ROOF/WALL OPENING	REMARKS
F-2	138	J	ROOF	BI	BELT	405	0.375	0.08	120/1/60	AT SIZE 10	PENN	START/STOP SWTCH	19"x12"	B, C, S.

REMARKS:
(B). GRAVITY BACKDRAFT DAMPER. (C). ROOF CURB. (SP). SPEED CONTROL. (G). GREASE TROUGH. (V). VENTED EXTENSION. (S). STARTER.
(UL). UL FM APPROVED. (PL). PILOT LIGHT SWITCH. (F). ACTIVATED CARBON FILTER HOUSING.

NOTE: 1) CONTRACTOR SHALL BE RESPONSIBLE OF VERIFY ELECTRICAL CONNECTION AT FIELD PRIOR TO EQUIPMENT PURCHASE.
2) PROVIDE START/STOP SWITCH FOR FAN OPERATION. COORDINATE LOCATION AT FIELD.

NEW SPLIT SYSTEM SCHEDULES

UNIT NO.	FEMA SOW #		TOTAL C.F.M.	OUTSIDE AIR (CFM)	FAN PERFORMANCE						COIL PERFORMANCE		AIR FILTER			UNIT TYPE	MANUFACTURER & MODEL NO.	REMARKS
					E.S.P.	M.H.P.	R.P.M.	VOLTS	P H.	H Z.	TOTAL LOAD MBH	SENS LOAD MBH	TAG	TYPE	FILTER (MERV)			
SS-7	138	N	6,000	500	1.0	3	1800	460	3	60	183	144	PF-01	FLAT	8	INDOOR VERTICAL	CARRIER 40RLAA16T2A6-UA0AO	1 TO 4.

REMARKS:
1) 2-SPEED FAN CONTROLLER (VFD). 2) ELECTROMECHANICAL UNIT CONTROL BOARD. 3) RIGID FILTER. 4) REFRIGERANT TYPE R-454B.

NOTES: 1) VERIFY ELECTRICAL CONNECTION AND VOLTAGE AT FIELD PRIOR TO EQUIPMENT PURCHASE.

NEW PACKAGED UNIT SCHEDULE

UNIT. No.	FEMA SOW #		TOTAL (MBH)	SENS. (MBH)	TOTAL AIR (CFM)	OUTSIDE AIR (CFM)	ELECTRICAL DATA			COMPRESSOR (e.a.)			SUPPLY FAN (FLA)	WEIGHT (LBS.)	EFF. (EER)	MANUFACTURER & MODEL NO.	REMARKS	
							V-PH-HZ	MCA	MOCP	QTY.	RLA	LRA						
PU-1	138	Q	154	117	5,000	500	460/3/60	32	45	1	13.4	123	3.5	1,530	14.7	CARRIER 50FE-M16A2A6-0A0N0	1 TO 8	
										1	9.1	75						
PU-3	–	–	120	90	4,000	400	460/3/60	24	30	1	8.3	58	3.0	976	14.7	CARRIER 50FE-M12A2A6-0A0N0	1 TO 8	ADDITIVE ALTERNATE.
										1	8.3	58						
PU-6	138	M	154	117	5,000	500	460/3/60	32	45	1	13.4	123	3.5	1,530	14.7	CARRIER 50FE-M16A2A6-0A0N0	1 TO 8	ADDITIVE ALTERNATE.
										1	9.1	75						

REMARKS:
(1). ROOF CURB. (2). STANDARD/MEDIUM STATIC – ECOBLUE VANE AXIAL FAN. (3). AL/CU – AL/CU. (4). STANDARD ELECTROMECHANICAL CONTROLS.
(5). PHASE MONITOR/ PROTECTION. (6). FRESH AIR HOOD & DAMPER. (7). EFFICIENCY FILTER 65% (MERV 13). (8). REFRIGERANT R-454B.

NOTES: 1) VERIFY ELECTRICAL CONNECTION AND VOLTAGE AT FIELD PRIOR TO EQUIPMENT PURCHASE.

NEW CONDENSING UNIT SCHEDULE

UNIT. No.	FEMA SOW #		TOTAL CAPACITY MBH	ELECTRICAL DATA			COMPRESSOR			WEIGHT (LBS.)	REFR.	MANUFACTURER & MODEL NO.	REMARKS
				V-PH-HZ	MCA	MOCP	QTY.	RLA	LRA				
CU-7	138	N	180	460/3/60	29	40	1	11.7	95	731	R-454B	CARRIER 38AXDT16A0A6	1 TO 4
							1	12.1	103				

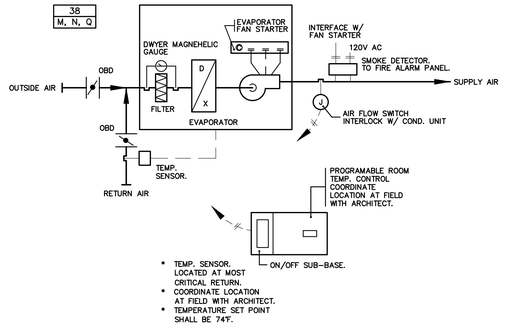
REMARKS: (1). AL/CU CONDENSING COIL. (2). DUAL CIRCUIT THREE COOLING STAGES REFRIGERANT.
(3). STANDARD ELECTRICAL MECHANICAL CONTROLS. (4). REFRIG CIRC/COMPRESSOR STAGING – DUAL CIRCUITS/ THREE STAGE.

NOTE: 1) VERIFY ELECTRICAL CONNECTION AND VOLTAGE AT FIELD PRIOR TO EQUIPMENT PURCHASE.

NOMENCLATURE

MCA: MIN. CIRCUIT AMPS. (A)
MFA: MAX. FUSE AMPS. (A)
MSC: MAX. STARTING CURRENT (A)
RLA: RATED LOAD AMPS. (A)
OFM: OUTDOOR FAN MOTOR
FLA: FULL LOAD AMPS. (A)
KW: RATED MOTOR OUT PUT (KW)
COP: COEFFICIENT OF PERFORMANCE

PU-2 & SS-7



* TEMP. SENSOR. LOCATED AT MOST CRITICAL RETURN.
* COORDINATE LOCATION AT FIELD WITH ARCHITECT.
* TEMPERATURE SET POINT SHALL BE 74°F.

A/C CONTROL DIAGRAM
SCALE : N.T.S.

NOTE:
FANS STARTER SHALL BE INTERLOCKED WITH ITS ASSOCIATED AIR CONDITIONING EQUIPMENT OR BE PROVIDED WITH START STOP SWITCH. SEE SCHEDULE ON DWG. VAC-201.

TYPICAL UTILITY FANS CONTROL DIAGRAM
SCALE : N.T.S.

ELECTRICAL REQUIREMENTS FOR AUTOMATIC CONTROL SYSTEM

1. ELECTRICAL CONTRACTOR SHALL PROVIDE DEDICATED 120 VOLT CONNECTION FOR CONTROL SYSTEM IN THE FOLLOWING AREAS:
   INSIDE MECHANICAL ROOMS OR MECHANICAL CLOSETS
   INSIDE PUMP ROOMS
   NEAR CHILLER PLANT
   NEAR COOLING TOWERS
   NEAR CEILING MOUNTED AIR HANDLING UNITS
   NEAR CEILING MOUNTED FAN COIL UNITS
   NEAR TEMPERATURE OR HUMIDYTY TRANSMITTERS
   NEAR LOCAL CONTROL MODULES
   NEAR GENERAL CONTROL MODULE
   NEAR MOTORIZED DAMPERS
   NEAR PRESSURE DIFFERENTIAL SWITCH
   NEAR SMOKE DETECTORS
   NEAR VAV BOXES
   NEAR CONTROL VALVES
   NEAR GATEWAY MODULE.
   NEAR SMOKE DETECTOR.
   NEAR UVC LIGHT.
2. CONTROL SYSTEM CONTRACTOR SHALL BE RESPONSIBLE OF PROVIDE ELECTRICAL CONNECTION FROM THE JUNCTION PROVIDED TO THE CONTROL EQUIPMENT.

NOMENCLATURE

MCA: MIN. CIRCUIT AMPS. (A)
MFA: MAX. FUSE AMPS. (A)
MSC: MAX. STARTING CURRENT (A)
RLA: RATED LOAD AMPS. (A)
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KW: RATED MOTOR OUT PUT (KW)
COP: COEFFICIENT OF PERFORMANCE

LEGEND

CS	CURRENT SENSOR	AO	ANALOG OUTPUT	LCM	LOCAL CONTROL MODULE	ER	EXHAUST REGISTER
DM	DAMPER MANUAL	AI	ANALOG INPUT	PF	PRE FILTER	O.A.	OUTSIDE AIR
FI	FLOW INDICATOR	DO	DIGITAL OUTPUT	SF	SUPPLY FAN	AS	ACID STORAGE
FT	FLOW TRANSMITTER	DI	DIGITAL INPUT	RA	RETURN AIR	CFM	CUBIC FEET PER MINUTE
HS	HAND SWITCH	– – –	ELECTRICAL SIGNAL	OA	OUTSIDE AIR	EF	EXHAUST FAN
HT	HUMIDITY TRANSMITTER	SD	SMOKE DETECTOR	EA	EXHAUST AIR	SR	SUPPLY REGISTER
HI	HUMIDITY INDICATOR	MD	MOTORIZED DAMPER	AHU	AIR HANDLING UNIT	MS	MINI-SPLIT
PDS	PRESSURE DIFFERENTIAL SWITCH	S/R	SENSING RELAY	LLD	LOW LEAKAGE DAMPER	(N)	NEW
PI	PRESSURE INDICATOR	GCM	GENERAL CONTROL MODULE	CU	CONDENSING UNIT	AMD	AIR MONITOR DEVICE
TS	TEMPERATURE SENSOR	FH	FUME HOOD	RR	RETURN REGISTER	CH	CANOPY HOOD
VFD	VARIABLE FREQUENCY DRIVE	O.B.D.	OPPOSED BLADE DAMPER	———	DUCTWORK	CC	COOLING COIL
MD	MOTORIZED DAMPER	VFD	VARIABLE FREQUENCY DRIVE	⋈	GATE VALVE	⫼	UNIVERSAL UNION
PS	PRESSURE SENSOR		LOW LEAKAGE DAMPER		PRES. REGULATOR		CHECK VALVE
LCM	LOCAL CONTROL MODULE		MOTORIZED DAMPER	PST	PRESSURE SENSOR TRANSMITTER		BUTTERFLY VALVE
GCM	GENERAL CONTROL MODULE						

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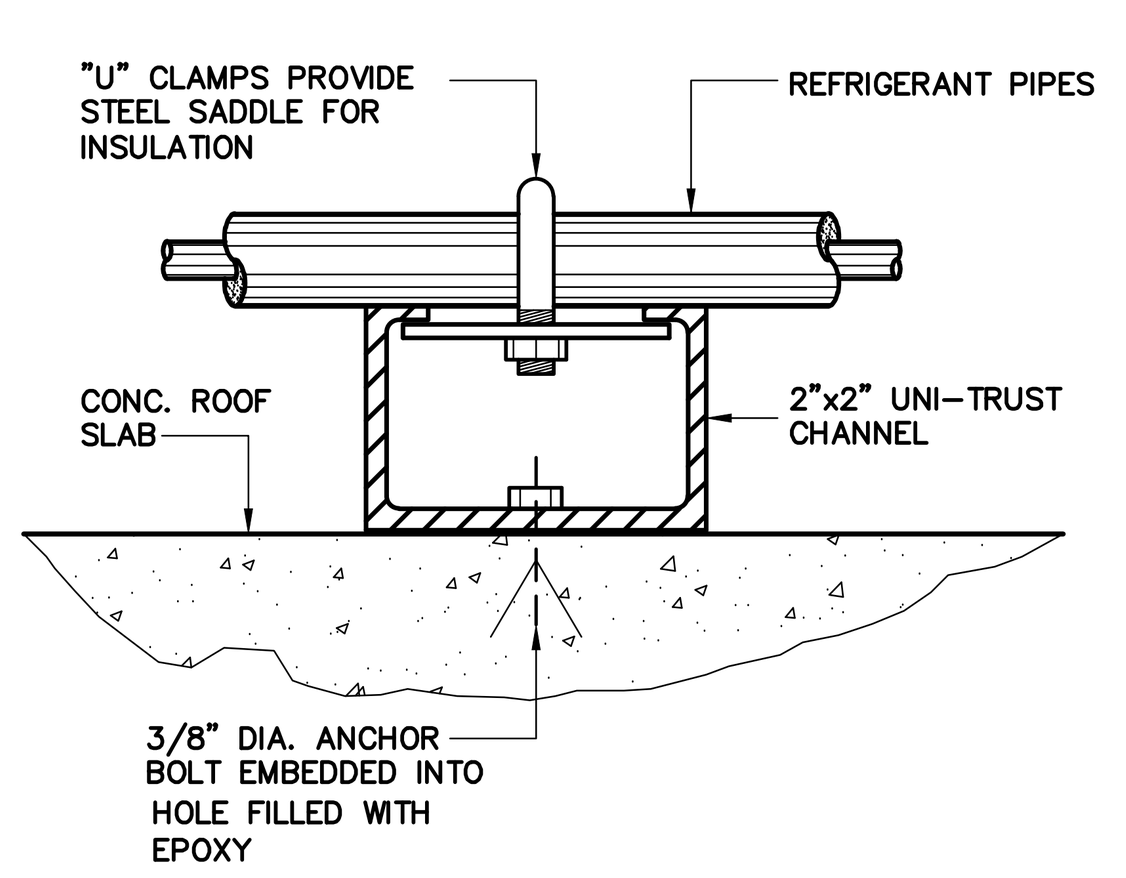
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PUERTO RICO

YO, JOSE LUIS MORRERO SICARDO, INGENIERO LICENCIADO, LICENCIA NUM. 14670, CERTIFICO QUE HOY EL PROFESIONAL QUE CERTIFICAMOS Y/O DISEÑO LOS PREPARO ESTOS PLANOS Y LAS ESPECIFICACIONES, CUMPLEN CRITERIOS APLICABLES, LEYES, REGLAMENTOS, ORDENANZAS Y NORMAS VIGENTES QUE LE APLICAN, EN LA FECHA PLASMADA EN LOS PLANOS Y ESPECIFICACIONES, EXISTEN CON LAS EXCEPCIONES ANOTADAS EN LOS PLANOS Y ESPECIFICACIONES. CUMPLEN CON LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CÓDIGOS DE CONSTRUCCIÓN VIGENTES DE LAS AGENCIAS, JUNTAS Y ASOCIACIONES QUE APLIQUEN EN LA JURISDICCIÓN DONDE SE CONSTRUIRÁ EL PROYECTO. CUMPLEN CON LAS NORMAS DE ACCESIBILIDAD APLICABLES. ESTOS PLANOS Y ESPECIFICACIONES SON SUFICIENTES Y ADECUADOS PARA LA CONSTRUCCIÓN DEL PROYECTO. SE HAN TOMADO PRECAUCIONES RAZONABLES PARA LA PROTECCIÓN DE LA VIDA, SALUD, PROPIEDAD Y EL BIENESTAR PÚBLICO EN LOS PLANOS Y ESPECIFICACIONES. ESTOS PLANOS Y ESPECIFICACIONES NO INCLUYEN MATERIALES PELIGROSOS EXPLOSIVOS, O POR OTRAS PERSONAS QUE NO CONSIGNAMOS, NO NACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA MISMA.

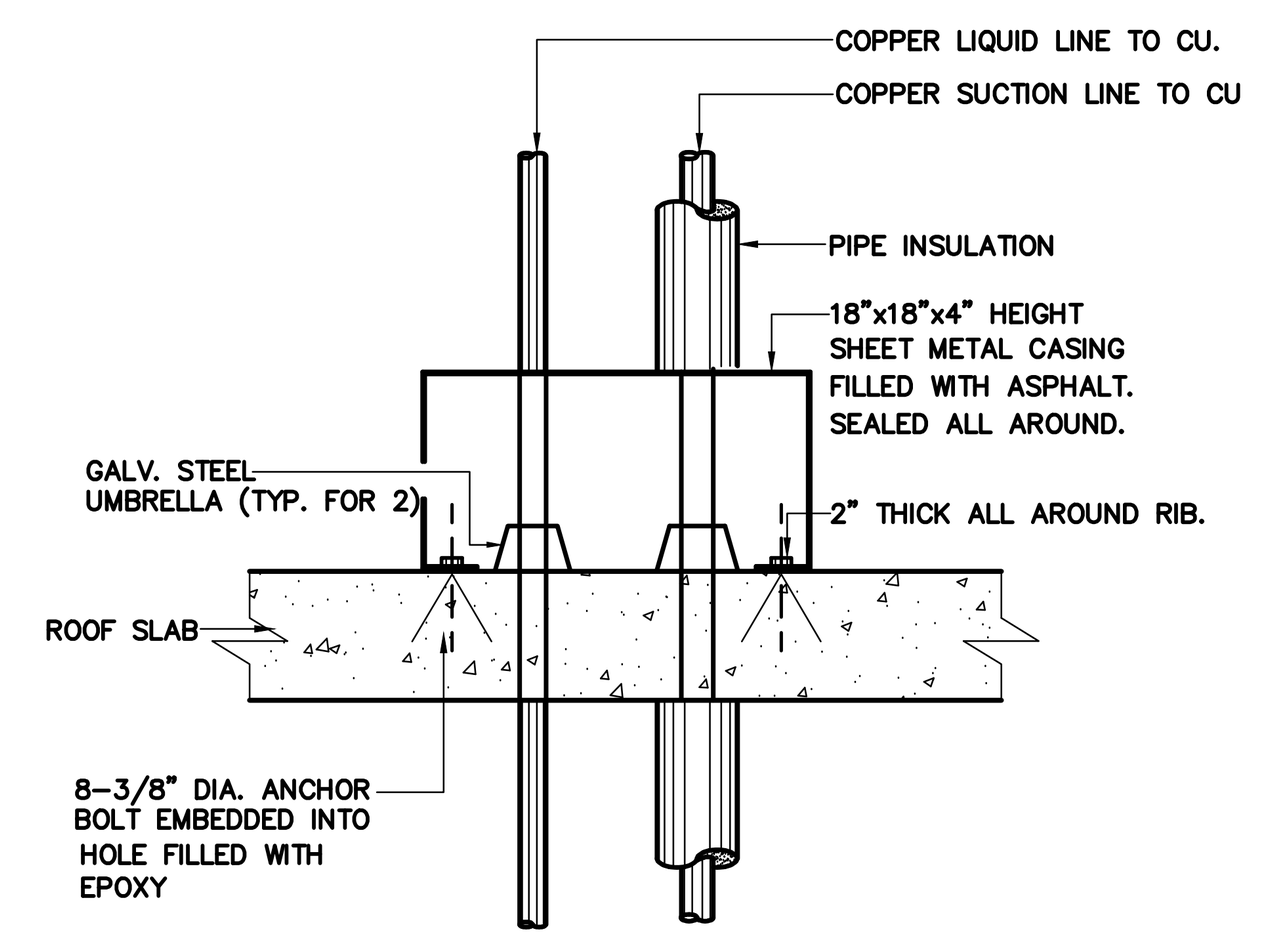
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PROJECT: PW #107355 – MAIN FACILITIES
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.
DRAWING TITLE: VAC SCHEDULES
SHEET: VAC-201
JOB NO. 2312 | DATE OCTOBER, 2026 | SCALE AS INDICATED
44 OF 59

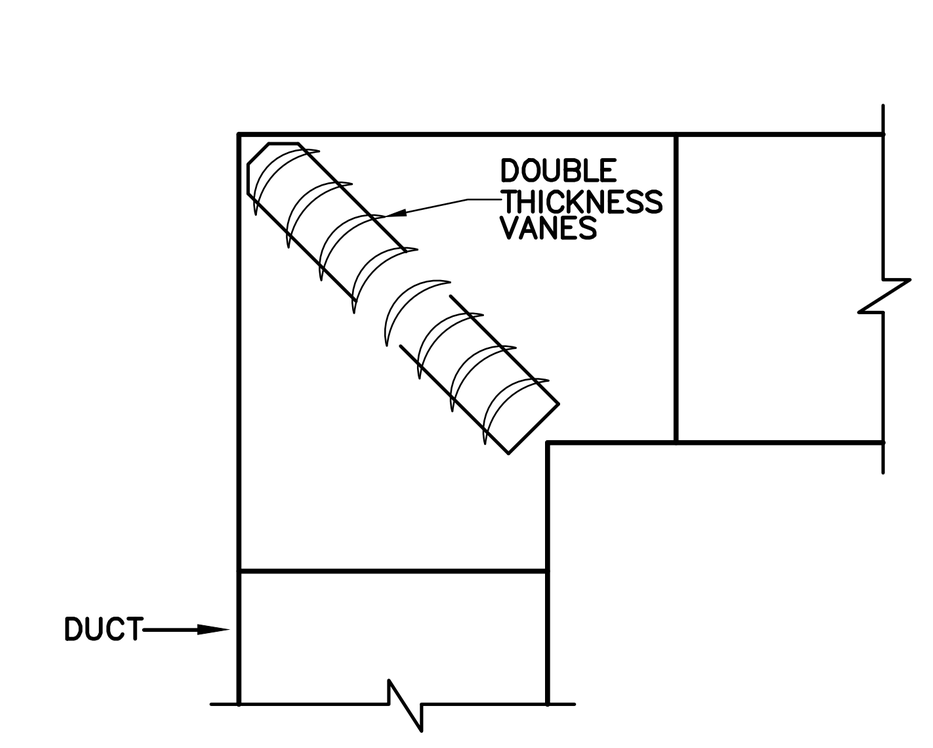
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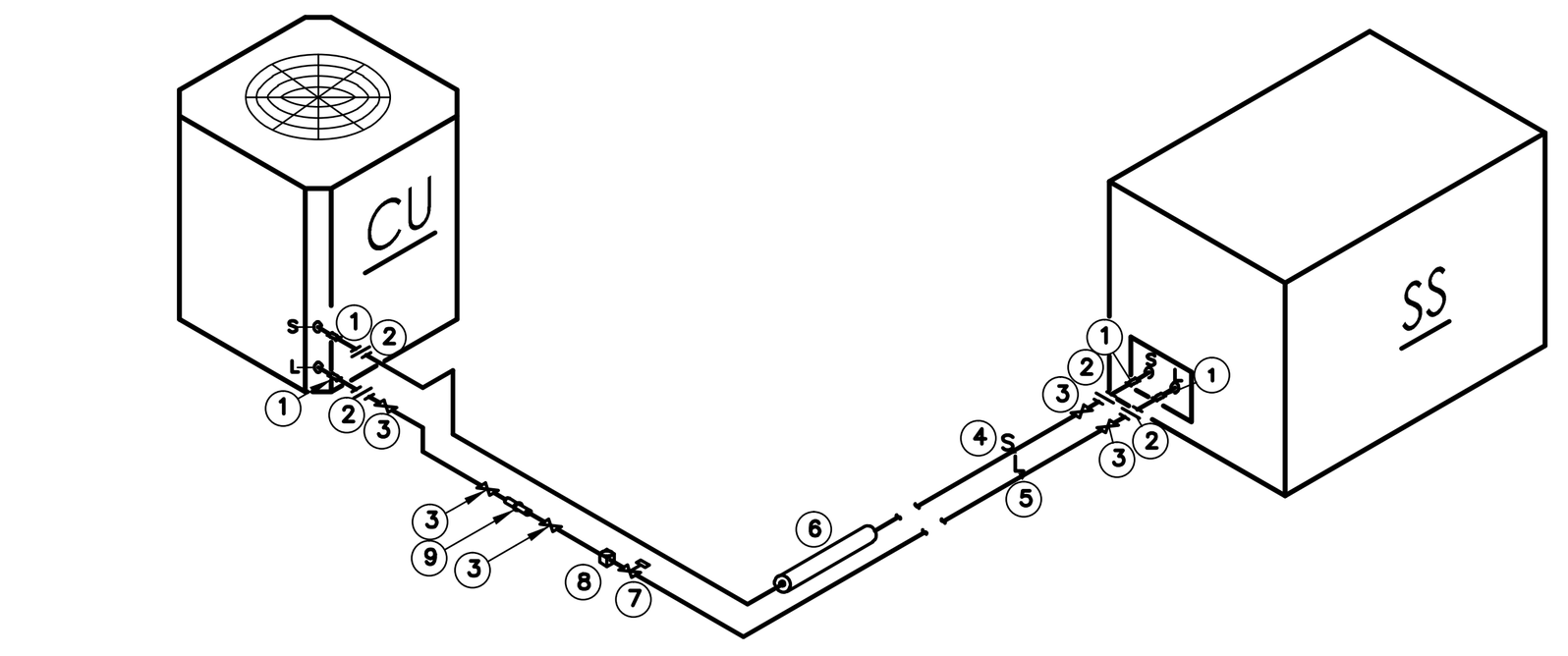
REFRIGERANTS PIPES SUPPORT DETAIL
SCALE : N.T.S.



SUCTION AND LIQUID COPPER LINE THRU ROOF DETAIL
SCALE : N.T.S.



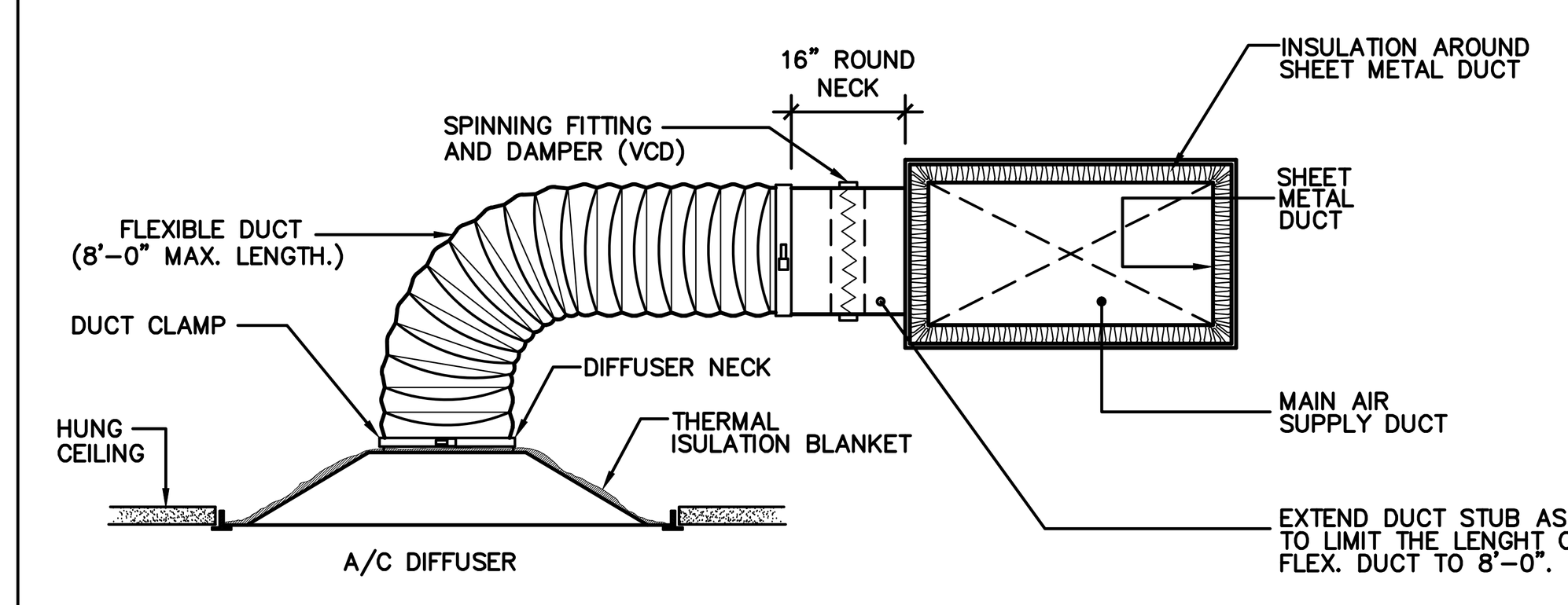
SQUARED VANED ELBOW
SCALE : N.T.S.



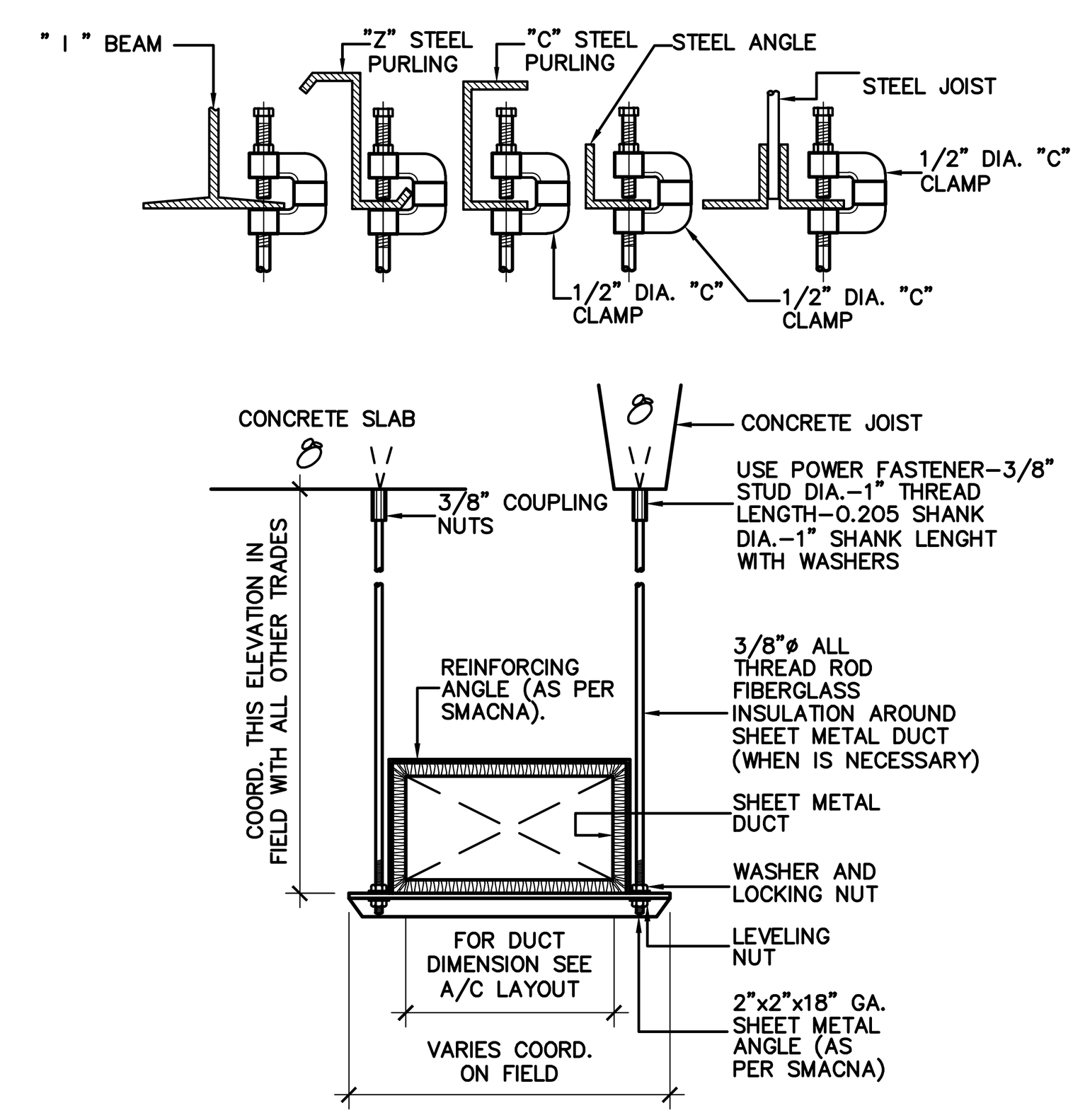
FITTING DESCRIPTION

1. COPPER FLEXIBLE CONNECTION
2. COPPER UNION
3. COPPER GATE VALVE
4. COPPER SUCTION LINE (TYP.)
5. COPPER LIQUID LINE (TYP.)
6. 1/2" TH. NEOPRENE PIPE INSULATION
7. SOLENOID VALVE (TYP.)
8. COPPER SIGHTGLASS (TYP.)
9. LIQUID FILTER (USE PRESSURE FITTINGS)

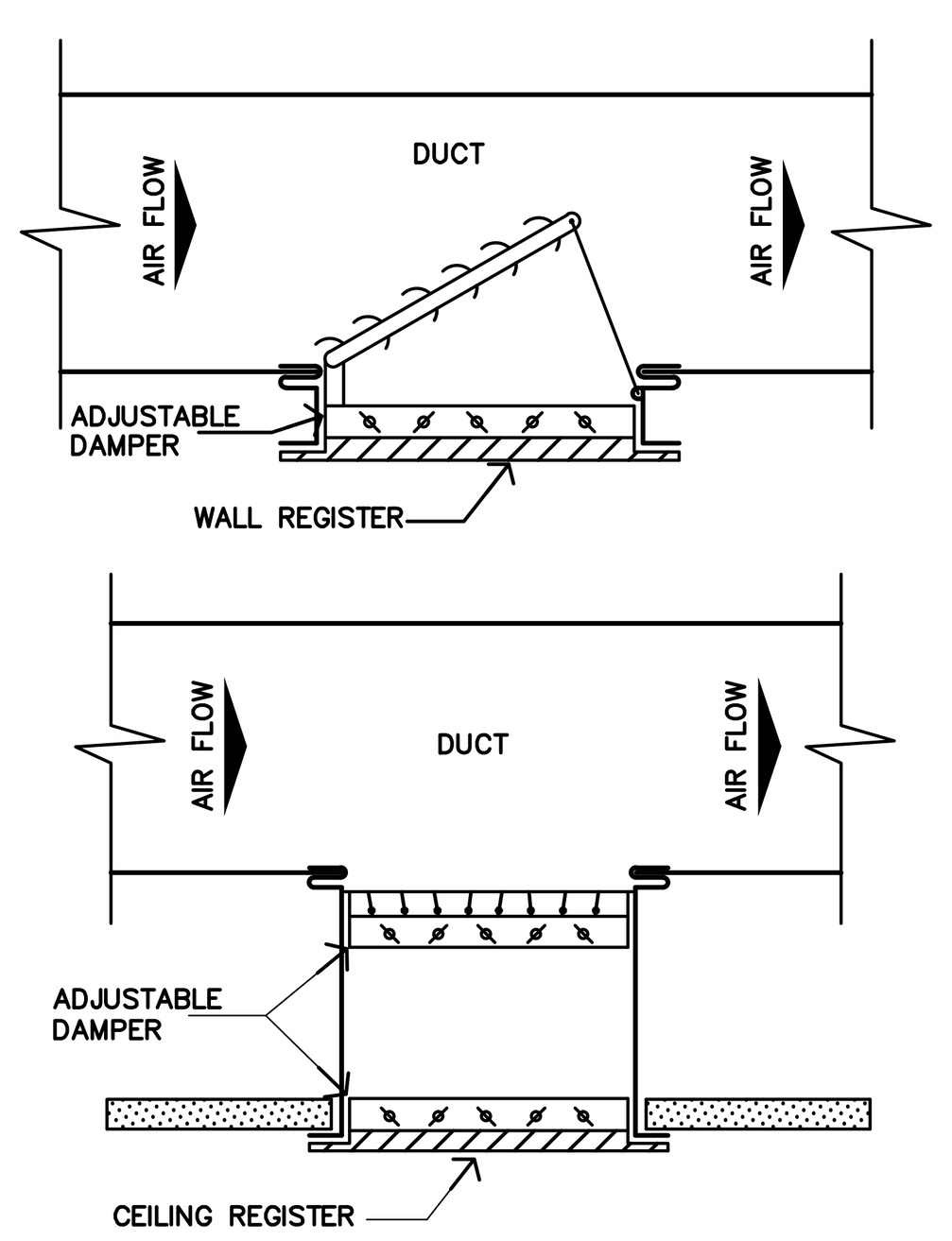
REFRIGERANT PIPING CONNECTION DETAIL
SCALE : N.T.S.



CEILING DIFFUSER & FLEXIBLE DUCT INSTALLATION DETAIL
SCALE : N.T.S.

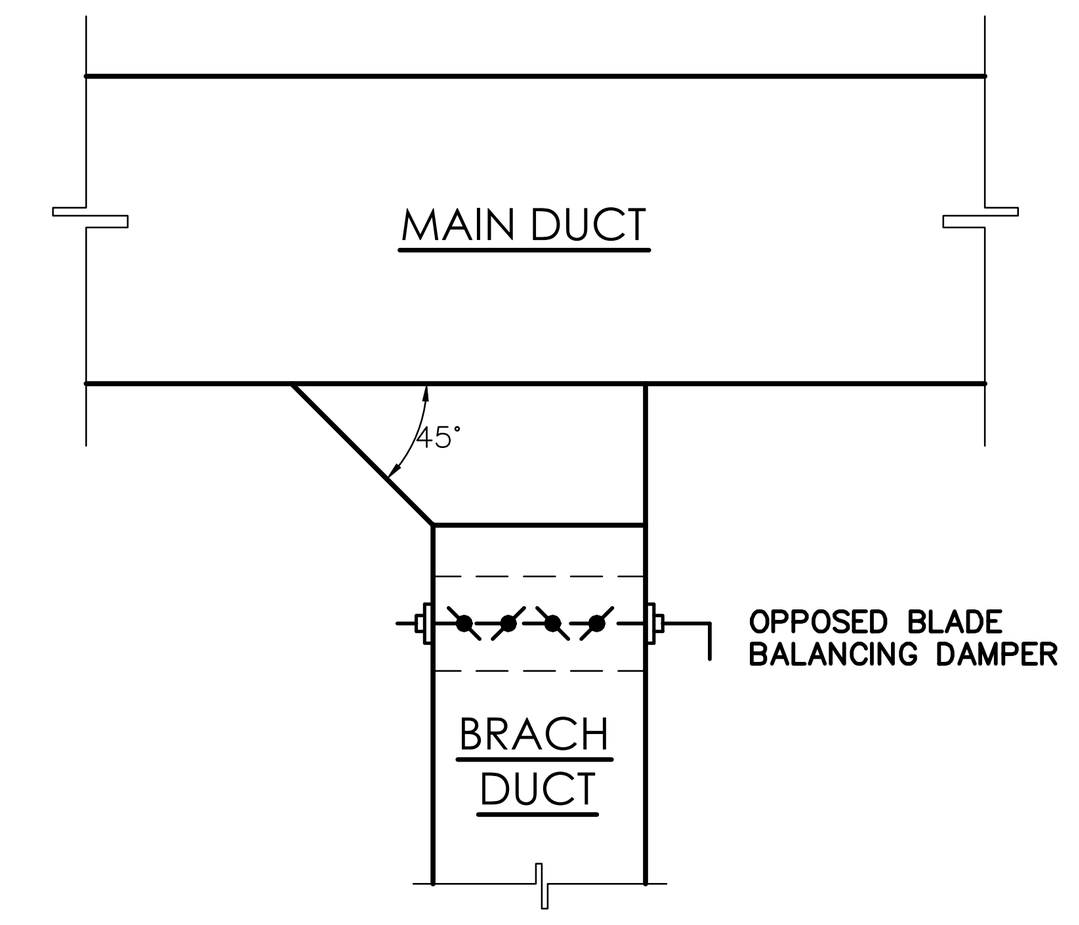


SUPPLY,RETURN OR EXHAUST SHEET METALDUCT HANGER DETAIL
SCALE : N.T.S.



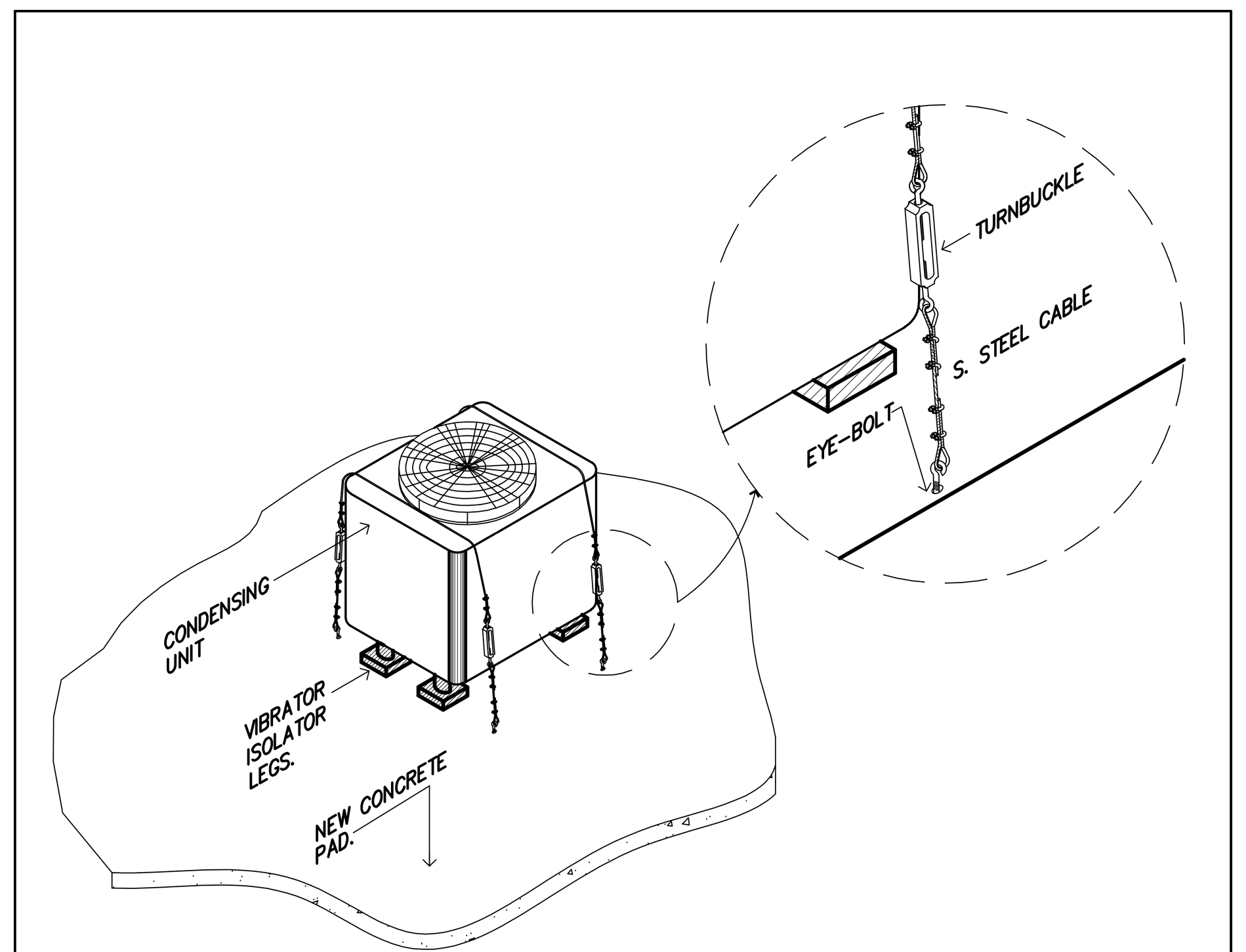
DETAIL APPLIES TO EACH WALL OR CEILING MOUNTED SUPPLY, RETURN OR EXHAUST REGISTER AND DIFFUSER.

SUPPLY DIFFUSER, EXHAUST OR RETURN REGISTER MOUNTING DETAIL
SCALE : N.T.S.

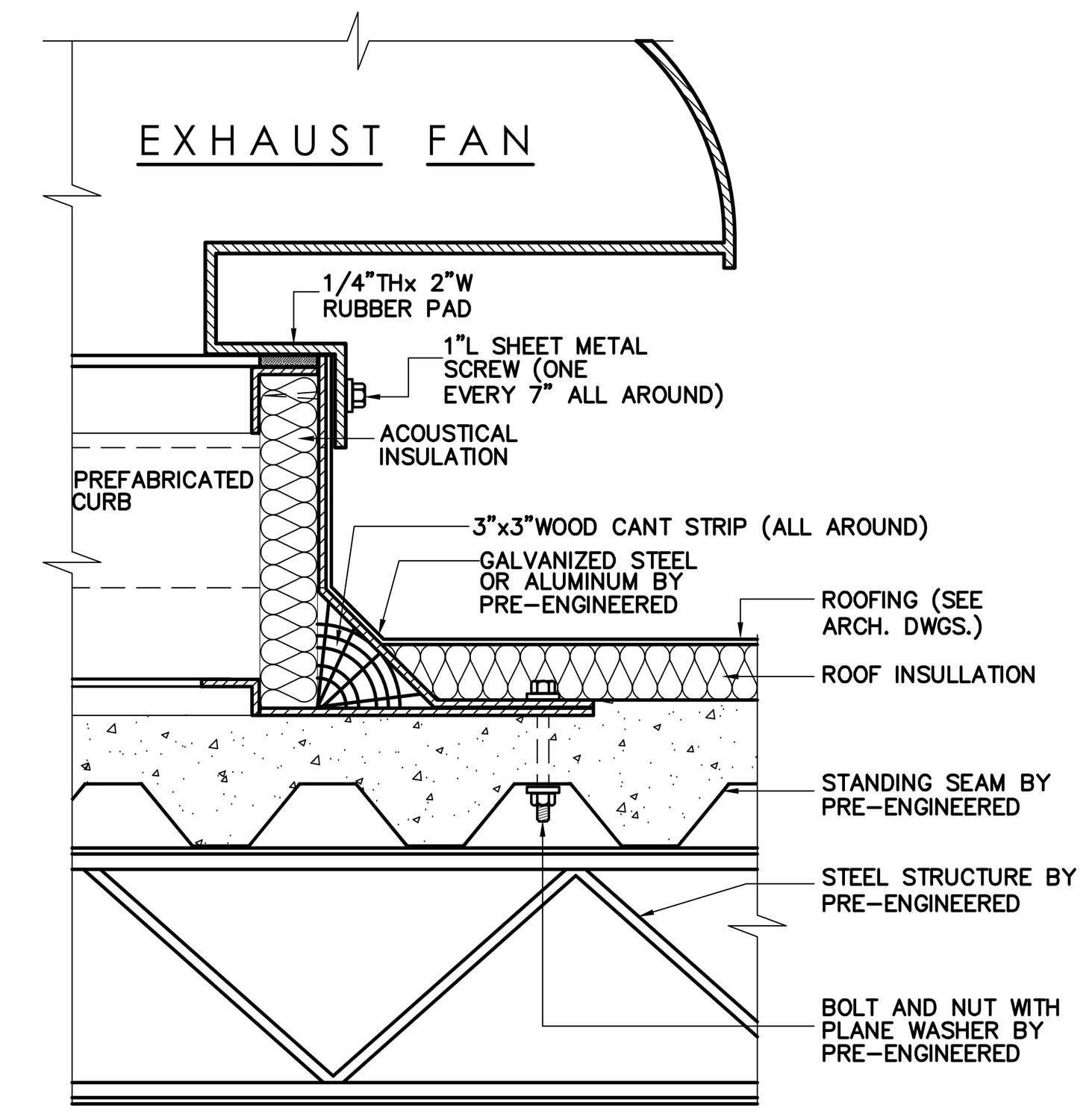


DETAIL APPLIES TO EACH SUPPLY, RETURN OR EXHAUST DUCT BRANCH.

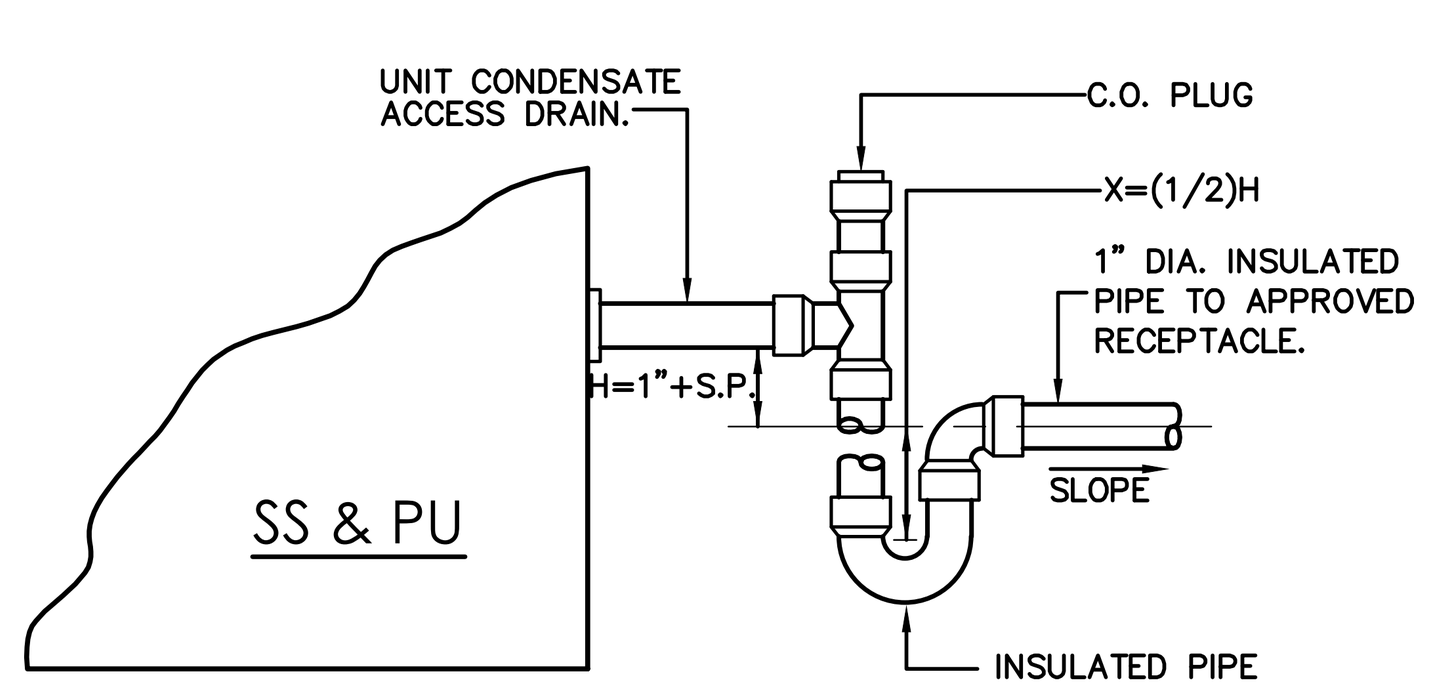
TYPICAL TAKE-OFF DETAIL
SCALE : N.T.S.



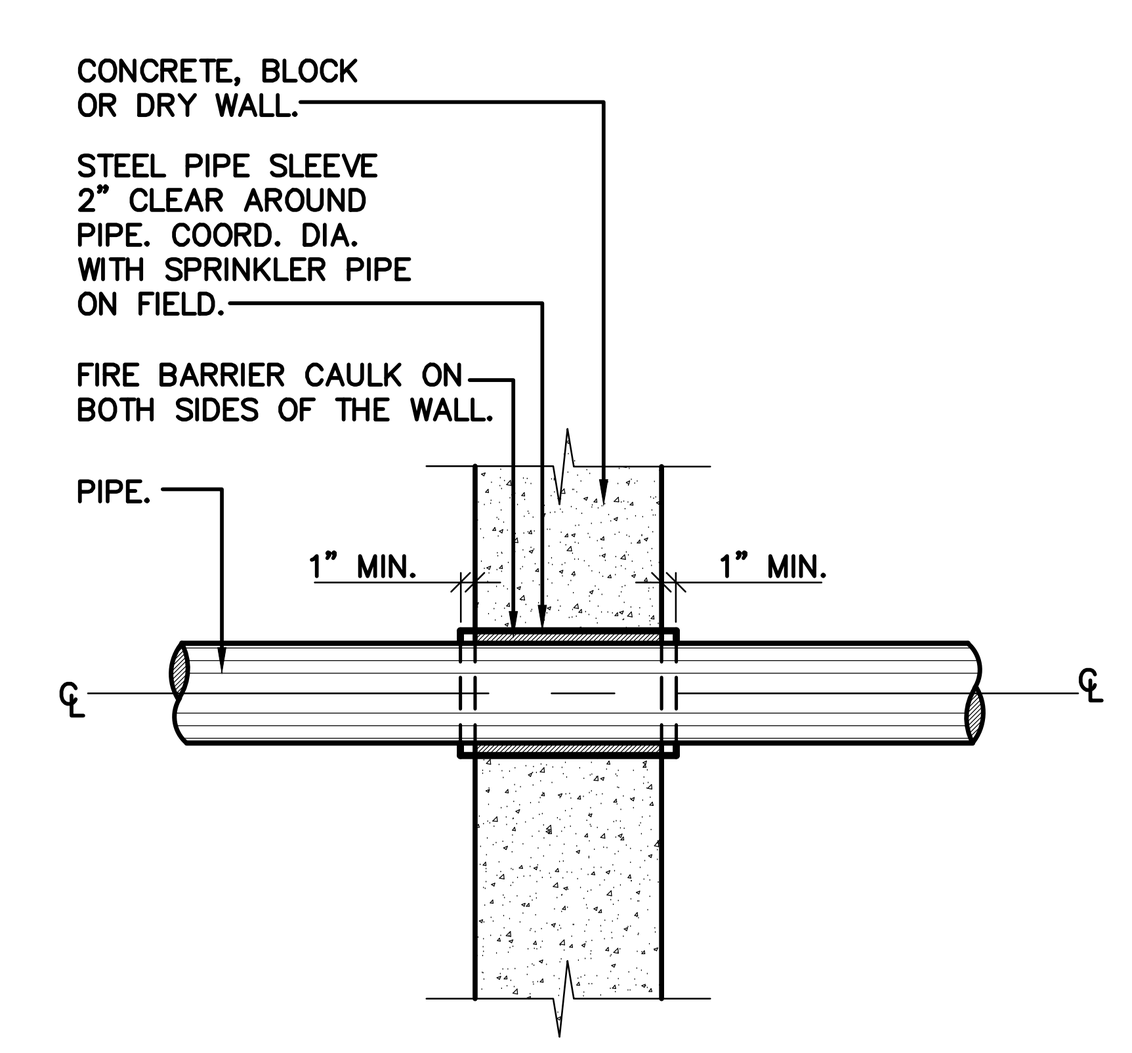
CONDENSING UNIT ANCHORAGE DETAIL
SCALE : N.T.S.



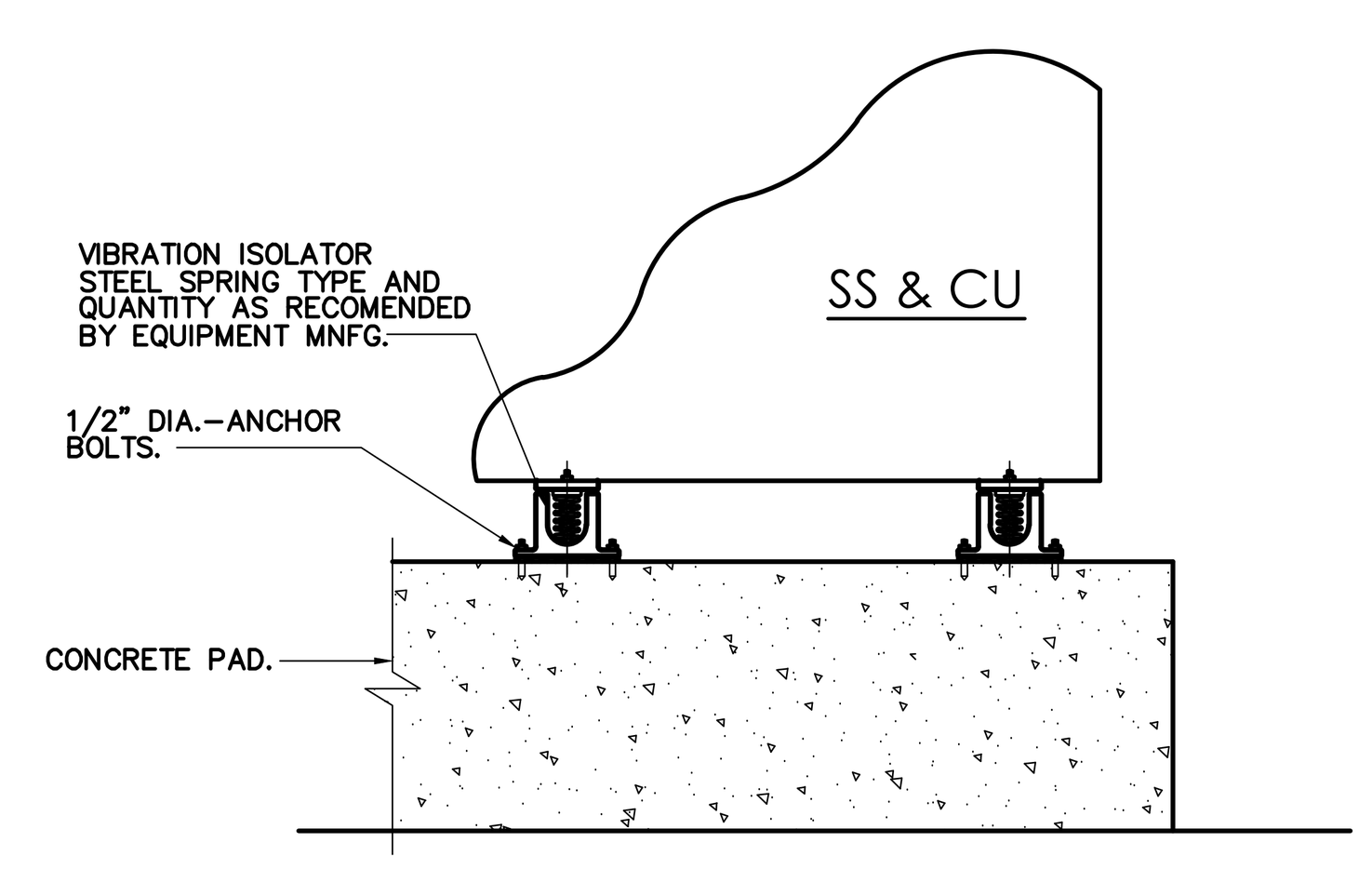
EXHAUST FAN INSTALLATION DETAIL
SCALE : N.T.S.



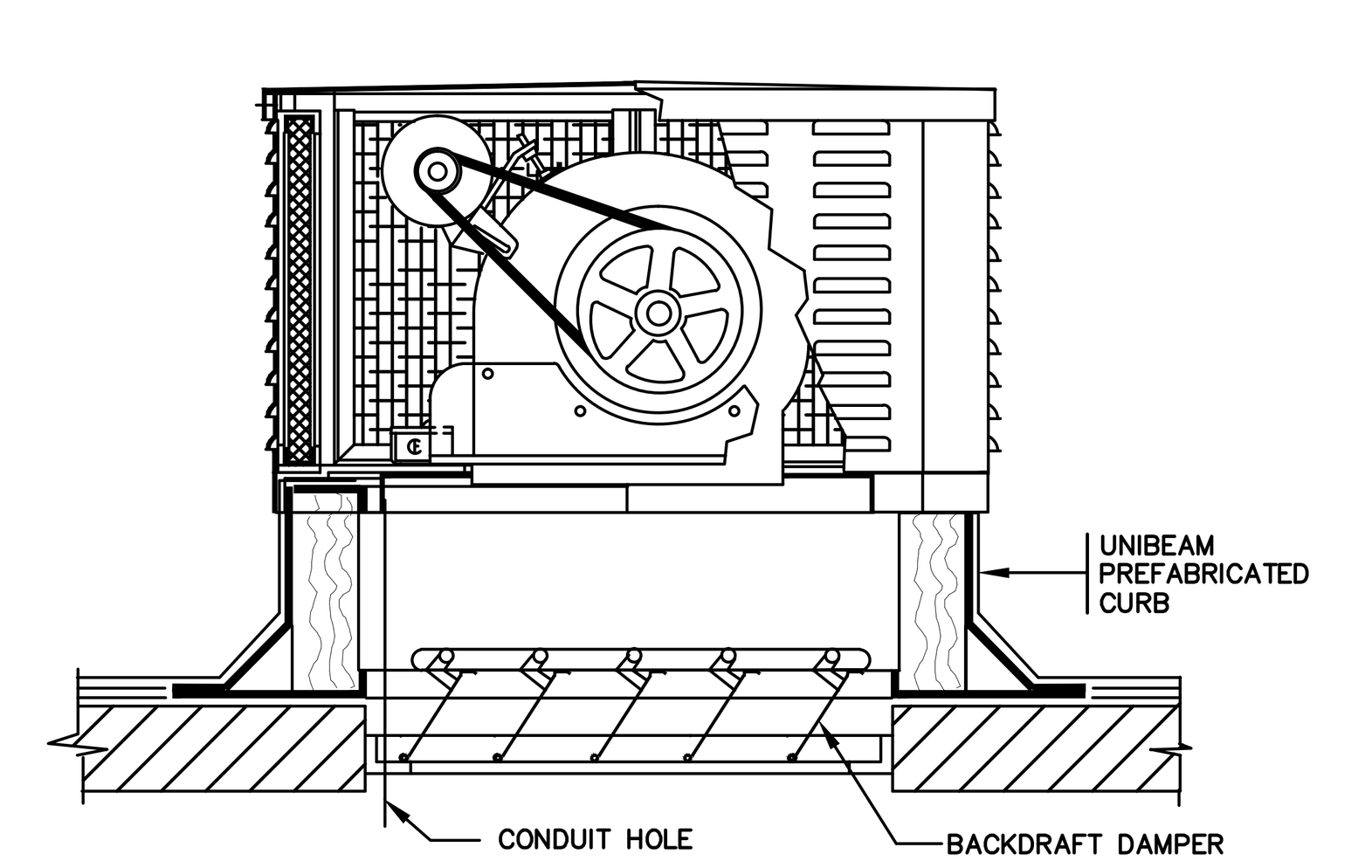
CONDENSATE DRAIN DETAIL
SCALE : N.T.S.



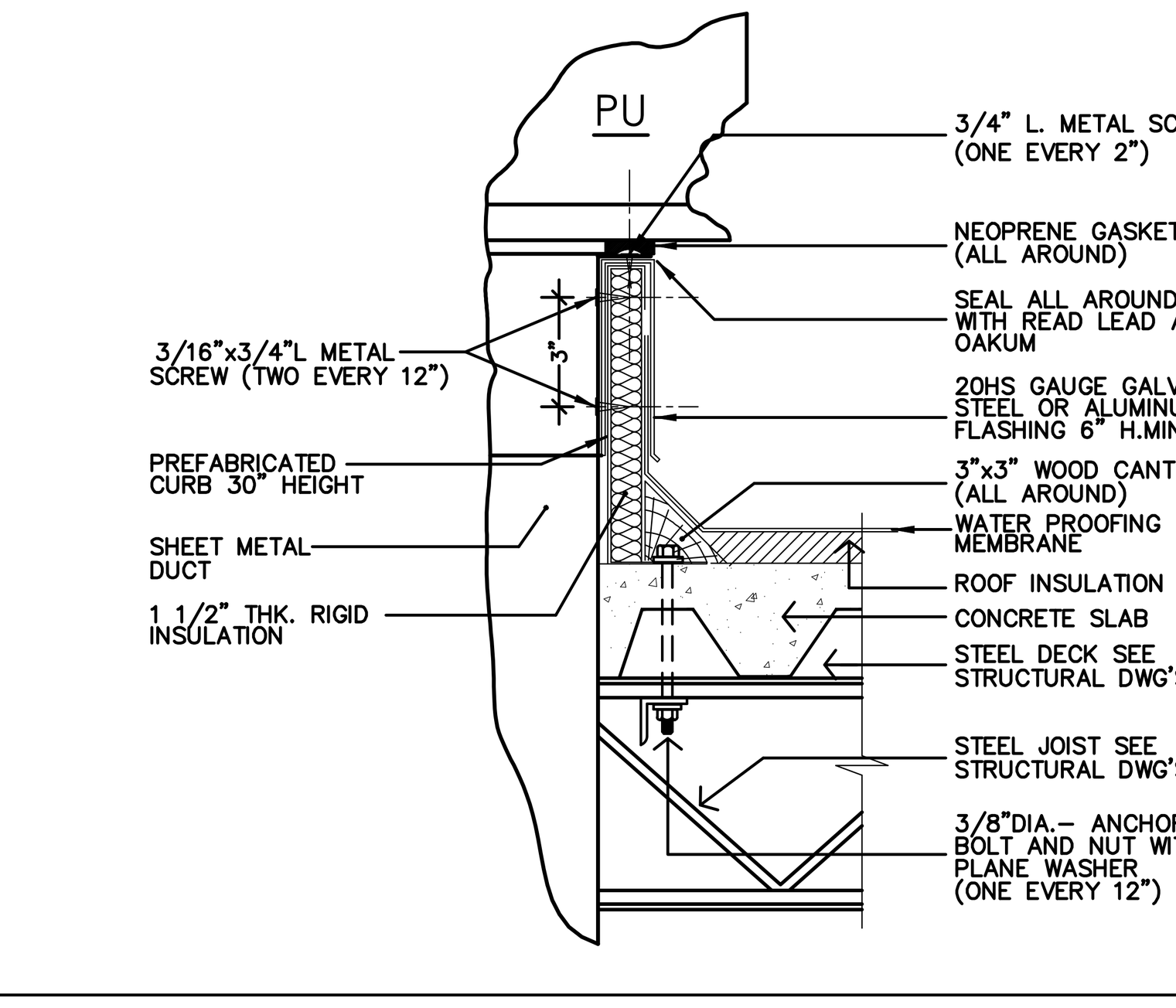
PIPE THROUGH WALL TYPICAL INSTALLATION DETAIL
SCALE : N.T.S.



SS & CU MOUNTING DETAIL
SCALE : N.T.S.



MAKE-UP AIR FAN DETAIL
SCALE : N.T.S.



ROOF-TOP UNIT INSTALLATION DETAIL
SCALE : N.T.S.

BID DRAWINGS PHASE

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YO, JOSE LUIS MARRERO SICARDO, INGENIERO LICENCIADO, LICENCIA NUM. 14670, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONO Y/O DISEÑO Y/O PREPARO ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIEN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CODIGOS DE CONSTRUCCION VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS O CORPORACIONES PUBLICAS CON JURISDICCION. CERTIFICO, ADEMAS, QUE EN LA PREPARACION DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NUM. 14 DE 8 DE ENERO DE 2004, SEGUN ENMENDADA, CONOCIDA COMO LA "LEY PARA LA INVERSION POR LA INDUSTRIA PUERTORRIQUEÑA" Y CON LA LEY NUM. 319 DE 15 DE MAYO DE 1938, SEGUN ENMENDADA. RECONOZCO QUE CUALQUIER DECLARACION FALSA O FALSIFICACION DE LOS HECHOS QUE SE HAYA PRODUCIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MI, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCION JUDICIAL Y DISCIPLINARIA POR LA OGPe.

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PROJECT:	SHEET
PW #107355 – MAIN FACILITIES	VAC-300
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: VAC DETAILS	45 OF 59
JOB NO. 2312 · DATE OCTOBER, 2026 · SCALE AS INDICATED	

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LEGEND: (ALL MAY NOT APPLY)

- CONDUIT INSTALLED ABOVE HUNG CEILING LEVEL, OR EXPOSED. NUMBER OF WIRES INDICATED BY NUMBER OF DASHES. "⎸" MEANS GROUNDING CONDUCTOR, "I" HOT WIRE AND "|" NEUTRAL.
- SAME AS ABOVE BUT CONDUIT INSTALLED INSIDE FLOOR SLAB, WALL OR UNDERGROUND.
- SAME AS ABOVE BUT CONDUIT INSTALLED EXPOSED.
- HOMERUN TO PANELBOARD OR MCC. CONDUIT INSTALLED ABOVE HUNG CEILING LEVEL, INSIDE OR EXPOSED. NUMBER OF CIRCUITS INDICATED BY NUMBER OF ARROWS.
- SAME AS ABOVE BUT CONDUIT INSTALLED INSIDE FLOOR SLAB, WALL OR UNDERGROUND.
- E — EXISTING CONDUIT RUN & WIRING TO REMAIN.
- ER — EXISTING CONDUIT RUN & WIRING TO BE REMOVED.
- ERW — EXISTING CONDUIT RUN TO BE REWIRED.
- NEW LUMINARY AS PER LIGHTING FIXTURE SCHEDULE. INSTALL @ 7'-6" AFF OR AS INDICATED.
- NEW CEILING OUTLET WITH LIGHTING FIXTURE. TYPE AND HEIGHT AS INDICATED ON LIGHTING FIXTURE SCHEDULE. SMALL LETTER INDICATES SWITCH CONTROL.
- SAME AS ABOVE BUT WITH EMERGENCY POWER PACK.
- EXIT SIGN. SEE LIGHTING FIXTURE SCHEDULE. INSTALL ABOVE DOOR FRAME.
- EMERGENCY LIGHT INSTALLED @ 7'-6" AFF OR AS INDICATED.
- SURFACE MOUNTED OR EXPOSED ABOVE HUNG CEILING LEVEL JUNCTION BOX 4" SQUARE x 2 1/8" DEEP WITH BLANK COVER.
- NEW PANELBOARD AS PER SCHEDULE OR NOTES.
- E — EXISTING PANELBOARD TO BE MODIFIED AS DESCRIBED ON DRAWINGS.
- ELECTRIC MOTOR, NUMBER INDICATES HORSEPOWER.
- FLEXIBLE METALLIC LIQUIDTIGHT CONDUIT. CONDUIT DIAMETER AND CONDUCTORS AS PER INCOMING FEEDER.
- DRY TYPE TRANSFORMER. SEE ONELINE DIAGRAM.
- MCC — MOTOR CONTROL CENTER. SEE SCHEDULES AND DETAILS.
- PS-1 — CONDUIT SUPPORT AS PER DETAILS IN DRAWING. NAME DESCRIBES DETAILS WHERE SHOWN.
- VFD — VARIABLE FREQUENCY DRIVE, 480 VOLTS, 3PH, WITH CHARACTERISTICS SHOWN.
- COMBINATION MAGNETIC STARTER, SIZE AND TYPE AS SPECIFIED.
- HEAVY DUTY SAFETY SWITCH. SEE SAFETY SWITCHES SCHEDULE.
- 1 — MOTOR STARTER. NUMBER INDICATES STARTER SIZE. SEE MCC SCHEDULE.
- J — JUNCTION BOX AS DESCRIBED ON DRAWINGS.
- M — 1 POLE 120V FRACTIONAL HORSEPOWER MANUAL STARTER WITH OVERLOAD PROTECTOR AND COVER WITH PILOT LIGHT. "WP" MEANS, INSTALL IN A CAST ALUMINUM BOX WITH WEATHERPROOF GASKETED COVER.
- OS — SINGLE POLE 2700W @277V OCCUPANCY SENSOR WITH DUAL TECHNOLOGY, PASSIVE INFRARED (PIR) AND ULTRASONIC DETECTION. FLUSH MOUNTED AT 48" AFF, LETTER INDICATES OUTLET CONTROLLED. LEVITON MODEL OSSMT OR APPROVED EQUAL, WITH #302 STAINLESS STEEL PLATE.
- SINGLE POLE SWITCH-20 AMPS, 120/277 VOLTS, INDUSTRIAL SPECIFICATION GRADE. FLUSH MOUNTED AT 48" AFF, LETTER INDICATES OUTLET CONTROLLED. HUBBELL MODEL 1221-I OR EQUAL WITH #302 STAINLESS STEEL PLATE.
- 3W — THREE WAY SWITCH-20 AMPS, 120/277 VOLTS, INDUSTRIAL SPECIFICATION GRADE. FLUSH MOUNTED AT 48" AFF, LETTER INDICATES OUTLET CONTROLLED. HUBBELL MODEL 1223-I OR APPROVED EQUAL WITH #302 STAINLESS STEEL PLATE.
- PL — SINGLE POLE SWITCH WITH LIGHTED HANDLE-20 AMPS, 120/277 VOLTS, INDUSTRIAL SPECIFICATION GRADE. FLUSH MOUNTED AT 48" AFF, LETTER INDICATES OUTLET CONTROLLED. HUBBELL MODEL 1221ILR OR APPROVED EQUAL WITH #302 STAINLESS STEEL PLATE.
- DUPLEX CONVENIENCE OUTLET, 20AMPS-125 VOLTS, 2POLE, 3 WIRE INDUSTRIAL SPECIFICATION GRADE, SELF-GROUNDING TYPE. FLUSH MOUNTED AT 18" AFF. HUBBELL CAT. 5362-1 OR APPROVED EQUAL WITH A #302 STAINLESS STEEL PLATE.
- GF — SAME AS ABOVE BUT WITH INTEGRAL GROUND FAULT PROTECTION, 20 AMP., 120 VOLTS, DUPLEX TYPE WITH WEATHERPROOF COVER. HUBBELL MODEL GFTWRST831 OR APPROVED EQUAL WITH #302 STAINLESS STEEL PLATE
- DUPLEX RECEPTACLE 20A, 125V, 3 WIRES, NEMA TYPE 5-20R WITH INTEGRAL TRANSIENT VOLTAGE SURGE SUPPRESSOR (TVSS), HOSPITAL GRADE, HEAVY DUTY, SELF-GROUNDING. INSTALL @ 18" AFF. HUBBELL MODEL HBL8362ISA OR APPROVED EQUAL.
- 3/4"x10'-0" COPPERWELD GROUNDING ELECTRODE ROD. SHALL BE BURIED AT LEAST 12" BFG.
- G — GROUND BARE COPPER CABLE WELDED TO GROUND MAT OR COLUMN; #2 AWG BARE Cu, MINIMUM.
- CR — ACCESS CONTROL CARD READER. USE THE SAME USED IN THE BUILDING. COORDINATE WITH OWNER.
- B — ACCESS CONTROL EXIT BUTTON. TO BE INSTALLED BY MODULE MANUFACTURER.
- E — ACCESS CONTROL EMERGENCY BLUE MANUAL STATION. TO BE INSTALLED BY MODULE MANUFACTURER.
- FAP — FIRE ALARM INTELLIGENT CONTROL PANEL. GE MODEL EST3 OR APPROVED EQUAL. INCLUDE BATTERIES.
- ADDRESSABLE IONIZATION SMOKE DETECTOR. SHALL BE EQUAL TO THE EXISTING ONES.
- D — DUCT MOUNTED IONIZATION SMOKE DETECTOR. SHALL BE PROVIDED AND INSTALLED BY MECHANICAL CONTRACTOR. COORDINATE FINAL LOCATION. SEE MECHANICAL DRAWINGS.
- ADDRESSABLE MANUAL PULL STATION, GE MODEL SIGA-278 OR APPROVED EQUAL. INCLUDE VANDAL RESISTANT COVER WITH INTEGRAL HORN AND BATTERIES; STI MODEL 1100. INSTALL @ 4'-0" AFF.
- WALL MOUNTED HORN/STROBE WITH RED FINISH. GE MODEL EG1RF-HDVM OR APPROVED EQUAL. INSTALL @ 7'-0" AFF, UNLESS OTHERWISE INDICATED.
- WALL MOUNTED STROBE WITH RED FINISH. GE MODEL EG1RF-VM OR APPROVED EQUAL. INSTALL @ 7'-0" AFF, UNLESS OTHERWISE INDICATED.
- FT/RR ST — ADDRESSABLE FIXED TEMPERATURE AND RATE-OF-RISE HEAT DETECTOR, GE MODEL SIGA2-HRS OR APPROVED EQUAL.
- F — CONDUIT INSTALLED ABOVE HUNG CEILING LEVEL, OR INSIDE WALL FOR FIRE ALARM SYSTEM. WIRING AS REQUIRED.
- M — CEILING MTD MOTION SENSOR WITH DUAL TECHNOLOGY (PDT); PASSIVE INFRARED (PIR) AND MICROPHONICS DETECTION. RATED FOR 800W @ 120V. SENSOR SWITCH MODEL CMR-PDT10 OR APPROVED EQUAL.
- MH — SAME AS ABOVE EXCEPT SENSOR SWITCH MODEL CMR-PDT 11 (HALLWAY)
- M2P — SAME AS ABOVE EXCEPT 2 POLES, SENSOR SWITCH MODEL CMR-PDT10-2P.
- L — 30A 1 PHASE 125V AC 2 POLE 3 WIRE GROUNDING TWIST-LOCK RECEPTACLE; NEMA L5-30R, HUBBELL MODEL HBL2610 OR APPROVED EQUAL. INCLUDE MATING PLUG L5-30P HUBBELL MODEL HBL2611 OR APPROVED EQUAL.
- PB — ROLL-UP DOOR CONTROL. REFER TO ARCHITECTURAL DRAWINGS. INSTALL @ 48" AFF, UNLESS OTHERWISE INDICATED.
- TELECOMMUNICATIONS OUTLET. COORDINATE REQUIREMENTS WITH OWNER. INSTALL @ 18" AFF, UNLESS OTHERWISE INDICATED.
- TELEPHONE OUTLET. COORDINATE REQUIREMENTS WITH OWNER. INSTALL @ 18" AFF, UNLESS OTHERWISE INDICATED.
- CABLE TRAY. SEE TELECOMMUNICATIONS ONELINE DIAGRAM.
- S — CEILING MOUNTED SOUND SPEAKER.
- C — CEILING MOUNTED SECURITY CAMERA.

GENERAL NOTES

1. UNLESS OTHERWISE INDICATED ALL CONDUCTORS SHALL BE #12 THHN/THWN, 600V INSULATION, CU.
2. PROVIDE A GREEN GROUNDING CONDUCTOR IN ALL CONDUIT WITH WIRING 120V AND ABOVE. #12 THHN MINIMUM SIZE, OR AS INDICATED AND AS PER NATIONAL ELECTRICAL CODE ARTICLE 250.
3. PROVIDE A #12 AWG (MINIMUM) GREEN BONDING JUMPER IN ALL BOXES WITH WIRING 120V AND ABOVE.
4. THE CONTRACTOR SHALL MAKE SURE THAT THE ENTIRE SYSTEM HAS GROUND CONTINUITY.
5. ALL ELECTRICAL INSTALLATION SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER, ACCORDING TO THE LAST EDITION OF THE NATIONAL ELECTRICAL CODE, THE PUERTO RICO ELECTRIC POWER AUTHORITY LATEST STANDARDS AND THE PUERTO RICO TELEPHONE COMPANY LATEST PRACTICES.
6. THE CONTRACTOR SHALL VISIT THE JOB SITE AND BECOME ACQUAINTED WITH THE EXISTING FIELD CONDITIONS. IT SHALL BE DIRECT RESPONSIBILITY OF THE CONTRACTOR TO BRING PROMPTLY TO THE ATTENTION OF THE ENGINEER ANY DISCREPANCIES BETWEEN THE EXISTING FIELD CONDITIONS AND THOSE THAT WERE USED FOR DESIGN PURPOSES. THIS SHALL BE DONE BEFORE THE CONTRACTOR SUBMITS HIS BID, SO THAT THE ENGINEER CAN RENDER A DECISION ON THE MATTER BEFORE THE BID IS RECEIVED. THE SUBMITTAL OF THE BID BY THE CONTRACTOR WILL BE HELD AS A PROOF THAT THE CONTRACTOR UNDERSTAND THOROUGHLY AND COMPLETELY THE SCOPE OF THE JOB TO BE PERFORMED, HAS FAMILIARIZED HIMSELF WITH THE EXISTING FIELD CONDITIONS, AND HAS INCLUDED IN HIS BID ALL THE ITEMS NECESSARY IN THIS MATTER. NO ALLOWANCES WILL BE PERMITTED IN THIS MATTER AFTER THE BID IS RECEIVED.
7. ALL INDICATED HEIGHTS ARE FROM CENTER OF BOX TO FINISHED FLOOR.
8. CONTRACTOR SHALL BALANCE ALL LOADS.
9. ROUTE OF CONDUITS SHOWN IN THE LAYOUT IS SCHEMATIC AND INTENDED ONLY TO INDICATE INTERCONNECTIONS BETWEEN OUTLETS. EXACT CONDUIT ROUTING AND ELECTRICAL OUTLET FINAL LOCATION SHALL BE DETERMINED AT THE JOB SITE TO CONFORM WITH ALL TRADES. SHALL BE SUBJECT TO FINAL APPROVAL OF THE ENGINEER.
10. THE CONTRACTOR SHALL CONNECT AND LEAVE IN PERFECT WORKING ORDER ALL ELECTRICAL AND COMMUNICATION SYSTEMS FOR THIS PROJECT.
11. THE PANELBOARDS SHALL BE MARKED TO IDENTIFY THEIR USE AND VOLTAGE.
12. UNLESS OTHERWISE INDICATED, ALL CONDUITS SHALL BE 3/4" DIA. EMT. ALL EXPOSED CONDUITS INSTALLED BELOW 10' SHALL BE HEAVY WALL RIGID GALVANIZED STEEL; ABOVE 10' MAY BE USED EMT CONDUITS. USE 1/2" DIA. GREENFIELD FLEXIBLE CONDUIT FOR RECESSED MOUNTED LUMINARIES AND FIRE ALARM DEVICES CONNECTION. USE PVC SCHEDULE 40 CONDUITS WHEN INSTALLED INSIDE FLOOR SLAB, INSIDE WALLS OR UNDERGROUND.
13. CONDUITS OF 1-1/2" DIA. OR LARGER SHALL BE HEAVY WALL RIGID GALVANIZED STEEL CONDUIT, UNLESS OTHERWISE INDICATED.
14. ALL WIRING DEVICES SHALL BE HEAVY DUTY INDUSTRIAL SPECIFICATION GRADE. SHALL BE WHITE COLORED, UNLESS OTHERWISE INDICATED. CONTRACTOR MUST VERIFY WITH OWNER THE SPECIFIC COLOR TO BE REQUIRED FOR WIRING DEVICES; FINAL COLOR TO BE DETERMINED BY OWNER.
15. ALL PLATES FOR WIRING DEVICES, JUNCTION BOXES, ETC., SHALL BE NON-BREAKABLE NYLON TYPE COVER PLATES. THE COLOR OF THE PLATE MUST BE THE SAME AS THAT OF THE DEVICE.
16. UNLESS OTHERWISE INDICATED, ALL OUTLETS SHALL BE FLUSH MOUNTED AND SHALL HAVE THEIR OWN INDEPENDENT OUTLET BOXES. MINIMUM SIZE OF OUT LET BOX TO BE 4" SQUARE BY 2 1/8" DEEP. EXACT SIZE OF OUTLET BOX SHALL BE DETERMINED ACCORDING TO THE MAXIMUM NUMBER OF CONDUCTORS IN THE BOX AS PER NATIONAL ELECTRICAL CODE REGULATIONS.
17. LEAVE A #12 THHN FISHWIRE IN ALL EMPTY CONDUITS, UNLESS OTHERWISE INDICATED.
18. WHEN TWO OR MORE WIRING DEVICES ARE SHOWN TOGETHER IN ADJACENT LOCATIONS AND AT THE SAME HEIGHT, THEY SHALL BE INSTALLED IN A MULTIPLE GANG BOX OF THE PROPER SIZE, SO THAT ONLY ONE RAISED COVER AND ONE MULTIPLE GANG OUTLET COVER PLATE OF THE REQUIRED TYPE AND SIZE IS USED, UNLESS OTHERWISE INDICATED.
19. ANY EXISTING ELECTRICAL EQUIPMENT TO BE REMOVED, SHALL BE RETURNED TO THE OWNER.
20. ALL PANELBOARDS AND LOADCENTERS SHALL BE PROVIDED WITH A FACTORY INSTALLED GROUND BUS FOR CONNECTING TO GROUND ALL THE GROUNDING CONDUCTORS ENTERING OR LEAVING THE PANELBOARD OR LOADCENTER. THE GROUND BUS SHALL BE SIMILAR IN SIZE AND CHARACTERISTICS TO THE NEUTRAL BUS. ALL PANELBOARDS AND LOADCENTERS SHALL HAVE A MONOFLAT FRONT AND DOOR KEY LOCK.
21. WHEN TWO OR MORE PANELBOARDS OR CABINETS ARE SHOWN TOGETHER IN ADJACENT LOCATION, THE TOP OF ALL THE PANELBOARDS OR CABINETS SHALL BE ALIGNED WITH THE TOP OF THE BIGGEST ONE SO THAT ALL THE TOPS ARE AT EXACTLY THE SAME HEIGHT FROM THE FINISHED FLOOR.
22. THE RECEPTACLES MUST BE INSTALLED VERTICALLY. FURTHERMORE, THE GROUND TERMINAL MUST BE ORIENTED DOWNWARD.
23. IN LOCATIONS WHERE LUMINARIES WITH BATTERY POWER PACKS ARE INSTALLED, THE CONTRACTOR MUST PROVIDE AN UNSWITCHED LIVE CONDUCTOR FOR THE BATTERY CONNECTION, AS APPLIES.

ABBREVIATIONS

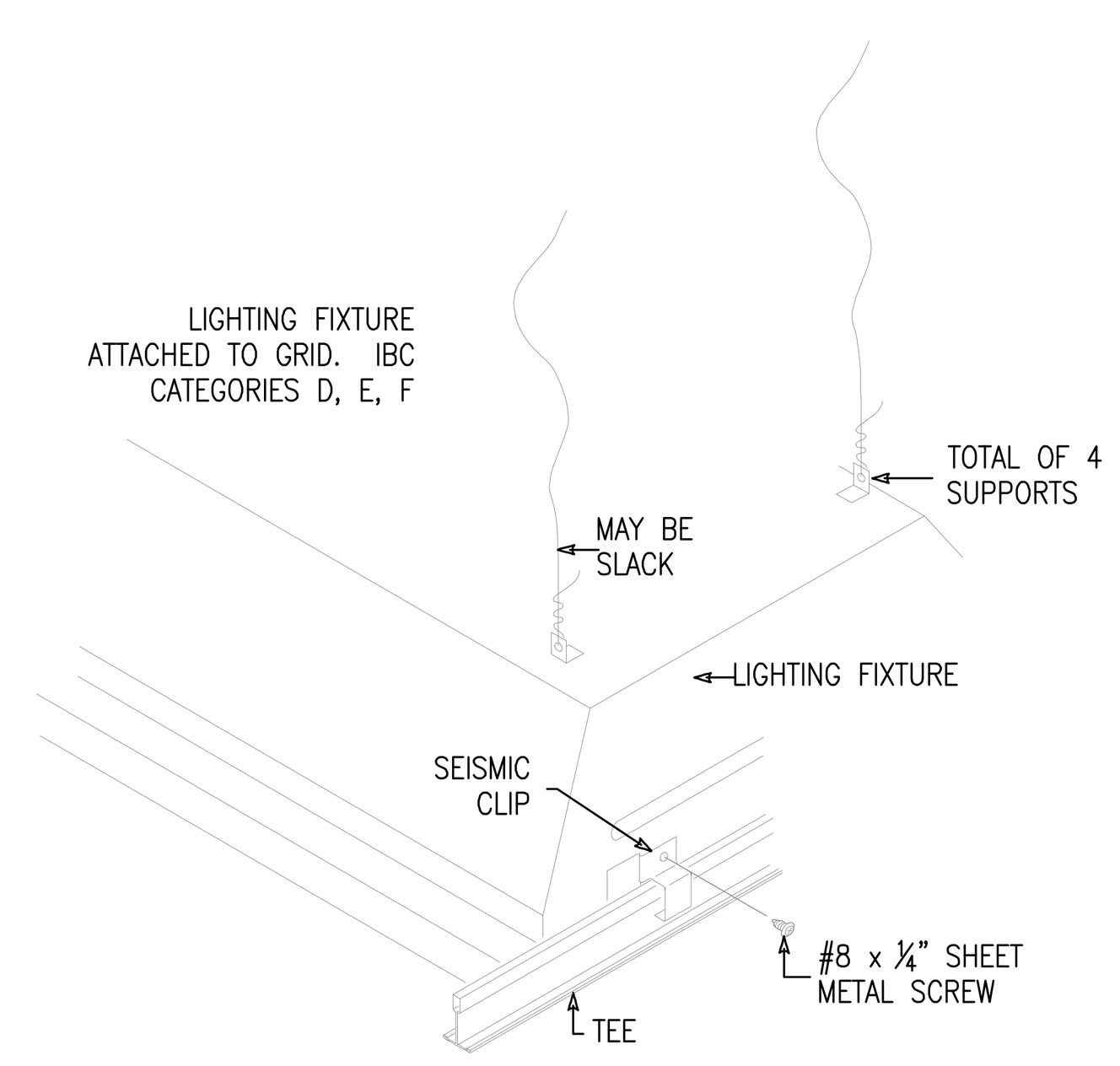
A	AMPERES	GF	GROUND FAULT INTERRUPTER
AC	ALTERNATE CURRENT	HP	HORSEPOWER
AFF	ABOVE FINISHED FLOOR	Hz	HERTZ
AFG	ABOVE FINISHED GRADING	kAIC	KILO-AMPS INTERRUPTIVE CAPACITY
AMP	AMPERES	kVA	KILOVOLTS-AMPS
C	DEGREES CELSIUS	kW	KILOWATT
Cu	COPPER	N	NEW
DISCSW	DISCONNECT SWITCH	NL	NIGHT LIGHT
E	EXISTING TO REMAIN	PH	PHASE
ER	EXISTING TO BE REMOVED, REPLACED OR RELOCATED.	RMC	RIGID GALVANIZED STEEL CONDUIT
		SMS	SIEMENS
ERW	EXISTING TO BE REWIRED	V	VOLTS
F	DEGREES FAHRENHEIT	VA	DEPARTMENT OF VETERANS AFFAIRS
FC	FOOT-CANDLE	W	WATTS
FIXT	FIXTURE	WP	WEATHERPROOF COVER WITH GASKET
FL	FULL LOAD	ø	DIAMETER
FLUOR	FLUORESCENT	1ø	SINGLE PHASE
FM	FACILITIES MANAGEMENT OFFICE	3ø	THREE PHASES
FMC	FLEXIBLE METALLIC CONDUIT	SDT	STEP DOWN TRANSFORMER
LFMC	LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT		

ADDITIONAL NOTES

1. THE ELECTRICAL INSTALLATIONS FOR THE NEW MOTORS SHALL BE COMPLETED BEFORE PROCEEDING WITH THE REMOVAL OF EXISTING FEEDERS AND EQUIPMENT TO BE ELIMINATED.
2. COORDINATE FINAL LOCATION OF NEW SAFETY SWITCHES, VFDs, STARTERS AND PANELBOARDS IN THE FIELD.
3. ANY EXISTING EQUIPMENT TO BE REMOVED SHALL BE RETURNED TO THE OWNER. IF THE EQUIPMENT IS NOT REUSABLE OR THE OWNER DOES NOT WANT IT, THE CONTRACTOR SHALL PROPERLY DISPOSE OF IT.
4. PROVIDE CONDUIT SUPPORTS AS PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
5. SUPPORTS INSTALLED ON ROOF SHALL CONSIST OF COOPER INDUSTRIES B-LINE DURA-BLOK ROOFTOP SUPPORTS WITH STAINLESS STEEL UNISTRUT CHANNELS.
6. MINIMUM UNISTRUT SIZE SHALL BE 1⅝"W x 1⅝"H HEAVY DUTY GAUGE 12 HOT DIPPED GALVANIZED STEEL; LENGTH AS REQUIRED. FOR OUTDOOR INSTALLATIONS USE STAINLESS STEEL UNISTRUT, SCREWS, WASHERS, NUTS, STRAPS, HANGERS, AND ACCESSORIES.
7. COORDINATE POWER INTERRUPTIONS WITH OWNER AT LEAST 72 HOURS IN ADVANCE.
8. PATCH AND REPAIR DAMAGES AND OR DISTURBED AREAS TO MATCH ADJOINING SURFACES.
9. EXPOSED CONDUITS SHALL BE RIGID GALVANIZED STEEL, UNLESS OTHERWISE INDICATED.
10. EXPOSED CONDUITS, FITTINGS, JUNCTION BOXES, SUPPORTING ELEMENTS, ETC. SHALL BE PAINTED. COORDINATE PAINT COLOR AND SPECIFICATIONS WITH OWNER.
11. USE SEALING HUB ON ALL CONDUIT CONNECTION TO PANELBOARDS, SAFETY SWITCHES, STARTERS, JUNCTION BOXES AND EQUIPMENT.
12. VFD'S INCOMING AND OUTGOING FEEDERS SHALL BE CONNECTED THROUGH ENCLOSURE BOTTOM SIDE. SAME APPLIES TO CONTROL CONDUITS.
13. CONTRACTOR SHALL INCLUDE COORDINATION STUDIES AND PERFORM ADJUSTMENTS TO NEW EQUIPMENT CIRCUIT BREAKERS.
14. CONTRACTOR SHALL PERFORM ARC FLASH ANALYSIS AND PROVIDE CORRESPONDING LABELING TO EQUIPMENT. SHALL INCLUDE LABELING, BUT NOT LIMITED TO, MCCs, SWITCHGEARS, SWITCHBOARDS, PANELBOARDS, SAFETY SWITCHES, STARTERS, VFDs AND CONTROL PANELS, AS APPLIES.

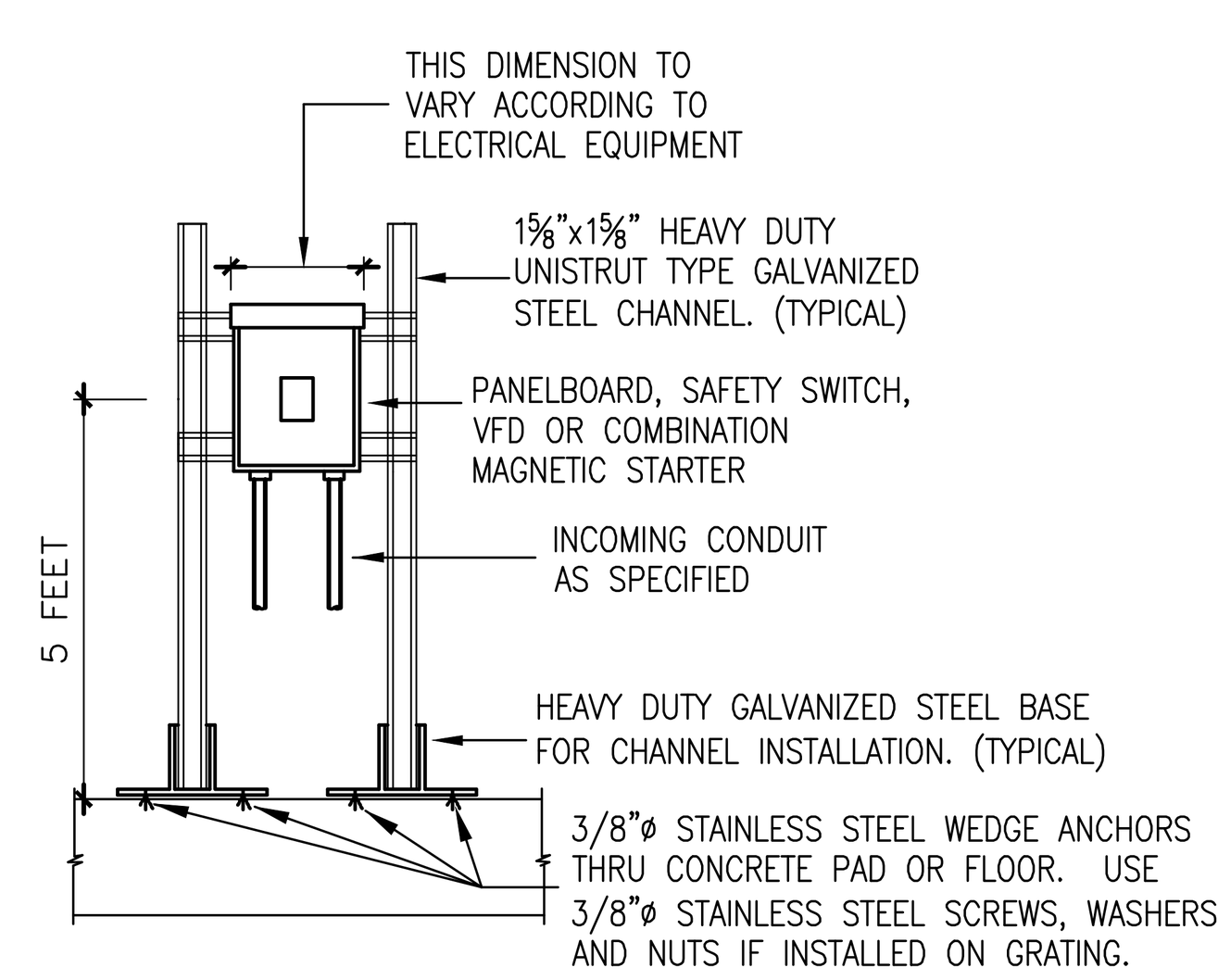
FIRE ALARM SYSTEM NOTES

1. FINAL LOCATION OF ALL SMOKE DETECTORS SHALL BE COORDINATED AT FIELD, AND MUST BE LOCATED NEAR TO THE RETURN GRILLES AND AS FAR AS POSSIBLE (MINIMUM 3'-0") FROM A/C DIFFUSERS.
2. THE FIRE ALARM SYSTEM SHALL COMPLY WITH A.D.A. (AMERICANS WITH DISABILITIES ACT) REQUIREMENTS, NFPA STANDARDS AND APPLICABLE CODES.
3. CONTRACTOR MUST PROVIDE A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM.
4. CONTRACTOR SHALL PROVIDE ALL REQUIRED COMPONENTS, ACCESSORIES, CONDUITS AND WIRING. INSTALL FOLLOWING MANUFACTURER'S RECOMMENDATIONS.
5. INCLUDE CONTROL PANEL PROGRAMMING FOR DEVICES OPERATION AND DESCRIPTION.
6. USE 1/2"ø FLEXIBLE METALLIC CONDUIT (FMC) CONDUIT FOR FINAL CONNECTION TO DEVICES INSTALLED ON HUNG CEILING. ATTACH AN OUTLET BOX TO THE HUNG CEILING. EXPOSED WIRING WILL NOT BE ALLOWED.
7. WHERE NO HUNG CEILING OCCURS, USE EXPOSED RMC CONDUITS FOR CONNECTION OF ALL FIRE ALARM DEVICES AT EXISTING BUILDINGS. CONDUIT MUST BE ATTACHED TO CONCRETE SLAB.
8. ALL EXPOSED CONDUIT, BOXES AND FITTINGS SHALL BE PAINTED. COLOR TO BE SELECTED BY ARCHITECT.
9. INCLUDE CONNECTION AND CONTROL OF ELEVATORS FOR RECALL OPERATION.
10. INCLUDE CONNECTION AND SUPERVISION OF FIRE PROTECTION SYSTEM.
11. INCLUDE CONNECTION AND SUPERVISION OF DUCT MOUNTED SMOKE DETECTORS.
12. THE FIRE ALARM SYSTEM INSTALLATION SHALL BE SUPERVISED AND CERTIFIED BY A NFPA CERTIFIED PROFESSIONAL.



LUMINARIES SEISMIC SUPPORT DETAIL
NOT TO SCALE

NOTE
USE STAINLESS STEEL CHANNELS, BASES, SCREWS, WASHERS AND ACCESSORIES IF INSTALLED OUTDOORS.



TYPICAL INSTALLATION DETAIL
NOT TO SCALE

LIGHTING FIXTURES SCHEDULE

TYPE	MANUFACTURER	MODEL	DESCRIPTION	NOTES
L1A	VISIONEERING	LRTA-2x4-LED840K040LUNV-P13	2'x4' LED STATIC TROFFER 4,240 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L1AE	VISIONEERING	LRTA-2x4-LED840K040LUNV-B39-P13	2'x4' LED STATIC TROFFER 4,240 LM, UNIV INPUT VOLT, BATTERY POWER PACK	1,2,5,6,7
L1AB	VISIONEERING	LRTA-2x4-LED840K040LUNV-P13-KIT00138	2'x4' LED STATIC TROFFER 4,240 LM, UNIVERSAL INPUT VOLTAGE, FLANGE	1,2,5,12
L1B	VISIONEERING	LRTA-2x4-LED840K049LUNV-P13	2'x4' LED STATIC TROFFER 4,926 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L1BE	VISIONEERING	LRTA-2x4-LED840K049LUNV-B39-P13	2'x4' LED STATIC TROFFER 4,926 LM, UNIV INPUT VOLT, BATTERY POWER PACK	1,2,5,6,7
L1C	VISIONEERING	LRTA-2x4-LED840K063LUNV-P13	2'x4' LED STATIC TROFFER 6,338 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L1CE	VISIONEERING	LRTA-2x4-LED840K063LUNV-B39-P13	2'x4' LED STATIC TROFFER 6,338 LM, UNIV INPUT VOLT, BATTERY POWER PACK	1,2,5,6,7
L1D	VISIONEERING	LRTA-2x4-LED840K077LUNV-P13	2'x4' LED STATIC TROFFER 7,583 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L1DE	VISIONEERING	LRTA-2x4-LED840K077LUNV-B39-P13	2'x4' LED STATIC TROFFER 7,583 LM, UNIV INPUT VOLT, BATTERY POWER PACK	1,2,5,6,7
L2A	VISIONEERING	LRTA-2x2-LED840K035LUNV-P13	2'x2' LED STATIC TROFFER 3,791 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L2AE	VISIONEERING	LRTA-2x2-LED840K035LUNV-B39-P13	2'x2' LED STATIC TROFFER 3,791 LM, UNIV INPUT VOLT, BATTERY POWER PACK	1,2,5,6,7
L2B	VISIONEERING	LRTA-2x2-LED840K040LUNV-P13	2'x2' LED STATIC TROFFER 4,112 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L2BE	VISIONEERING	LRTA-2x2-LED840K040LUNV-B39-P13	2'x2' LED STATIC TROFFER 4,112 LM, UNIV INPUT VOLT, BATTERY POWER PACK	1,2,5,6,7
L3A	LUM-TECH	LEDH-AFK6-G2-10-8-40-UZTD-LEDT-R64-HC-WH	6" RECESSED DOWNLIGHT 1,000 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L3B	LUM-TECH	LEDH-AFK6-G2-14-8-40-UZTD-LEDT-R64-HC-WH	6" RECESSED DOWNLIGHT 1,400 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L3D	LUM-TECH	LEDH-AFK6-G2-32-8-40-UZTD-LEDT-R64-HC-WH	6" RECESSED DOWNLIGHT 3,200 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L3DE	LUM-TECH	LEDH-AFK6-G2-32-8-40-UZTD-EM-LEDT-R64-HC-WH	6" RECESSED DOWNLIGHT 3,200 LM, UNIV INPUT VOLT, BATTERY POWER PACK	1,2,5,6,7
L4	MULE LIGHTING	MXBRU-SD-USA	EXIT SIGN UNIVERSAL MOUNTING LED LAMPS W/BATTERIES, 120/277V	3,5,6,7
L5	NULITE	RG4-D-ST-F-09-L-40-UNV-D-1-WH-4	6"x4' LED RECESSED 3,600 LM, UNIVERSAL INPUT VOLTAGE	1,2,5
L6	VISIONEERING	ALRB96-LED840K120LUNV-C91-KIT00188-KIT00189	6"x96" LED PENDANT 12,048 LM, UNIVERSAL INPUT VOLTAGE	1,5,10
L6E	VISIONEERING	ALRB96-LED840K120LUNV-C91-B39-KIT00188-KIT00189	6"x96" LED PENDANT 12,048 LM, UNIV INPUT VOLT, BATTERY POWER PACK	1,5,6,7,10
L7	LITELUME	LL-BSOFECO-2L-UNV-40-BK-PC	SURFACE CEILING MOUNTED 1,700 LM, UNIVERSAL INPUT VOLTAGE	1,3,8,11
L8	UTOPIA LIGHTING	DWP2-4G-3SH-3T-UNV-BZ-PC3-TAA	SURFACE MTD WALLPACK 6400/9400/12300/15000 LM, UNIV. VOLTAGE	1,3,8,11
L9	MULE LIGHTING	ARLED-25-B-UNV-W-AT	LED EMERGENCY LIGHT 120/277V	3,5,6,7
L10	DURAGUARD	AL35Q-C-1X174-U-5K-C-Z-LFLY-R3/P18156	LED FLOOD LIGHT 21,524 LM, IES TYPE III NEMA 7Hx7V 115°Hx70°V, UNIV VOLTAGE	3,4,8
L11	UTOPIA LIGHTING	VR9-4-108LED-40K-UNV-GR-BAA	9"x48" SURFACE MTD 11955 LUMENS, 4000K UNIVERSAL INPUT VOLTAGE	1,3,5,11
L11E	UTOPIA LIGHTING	VR9-4-108LED-40K-UNV-GR EMG20-BAA	9"x48" SURFACE MTD 11955 LUMENS, 4000K UNIV. INPUT VOLTAGE, BATTERY POWER PACK	1,3,5,6,7,11

NOTE: ALL LIGHTING FIXTURES SHALL BE WHITE FINISH, UNLESS OTHERWISE INDICATED.

LIGHTING FIXTURES SCHEDULE NOTES

NOTE #	DESCRIPTION
1	4000° K COLOR, COLOR RENDERING INDEX (CRI) ≥ 80
2	RECESSED MOUNTED
3	SURFACE MOUNTED
4	WET LOCATION
5	WHITE FINISH
6	INCLUDE BATTERIES
7	1.5 HOUR EMERGENCY RUN TIME
8	INCLUDE PHOTOCELL
9	CHAIN MOUNTED @ 10'-0" AFF UNLESS OTHERWISE INDICATED.
10	PENDANT MOUNTED. COORDINATE MOUNTING HEIGHT WITH ARCHITECT.
11	VANDAL RESISTANT
12	FLANGE KIT

SAFETY SWITCH SCHEDULE (SS)

DESIG-NATION	POLES	VOLTAGE	SIZE AMPS.	FUSES	NEMA ENCL	REMARKS
SS#1	3	600	30	NONE	4X	1,2
SS#2	3	600	60	NONE	4X	1,2
SS#3	3	600	100	NONE	4X	1,2
SS#4	3	600	60	40	4X	1,2,3
SS#5	3	600	60	30	4X	1,2,3,4
SS#6	3	600	60	45	4X	1,2,3

REMARKS
1. HEAVY DUTY TYPE.
2. STAINLESS STEEL ENCLOSURE.
3. FUSES MUST BE DUAL ELEMENT, TIME DELAY CURRENT LIMITING. FUSES AMPS MAY VARY ACCORDING TO EQUIPMENT MANUFACTURER REQUIREMENTS
4. INCLUDE FUSE REDUCER KIT.

COMBINATION MAGNETIC STARTER SCHEDULE

DESIG. NATION	POLES	BREAKER SIZE (AMPS)	VOLTAGE	TYPE	NEMA SIZE	NEMA ENCL	REMARKS
ST-1	3	NONE	480	FULL VOLTAGE NON-REVERSING	SIZE 1	4X	1,2,3,4,6
ST-2	3	NONE	480	FULL VOLTAGE NON-REVERSING	SIZE 1	1	1,2,3,4

REMARKS
1. INCLUDE 2 AUXILIARY CONTACTS.
2. INCLUDE CONTROL TRANSFORMER. COORDINATE CONTROL VOLTAGE.
3. INCLUDE HAND-OFF-AUTO SELECTOR SWITCH.
4. INCLUDE RED-ON PILOT LIGHT.
5. BREAKER AMPS MAY VARY, AS REQUIRED BY EQUIPMENT MANUFACTURER.
6. STAINLESS STEEL ENCLOSURE.

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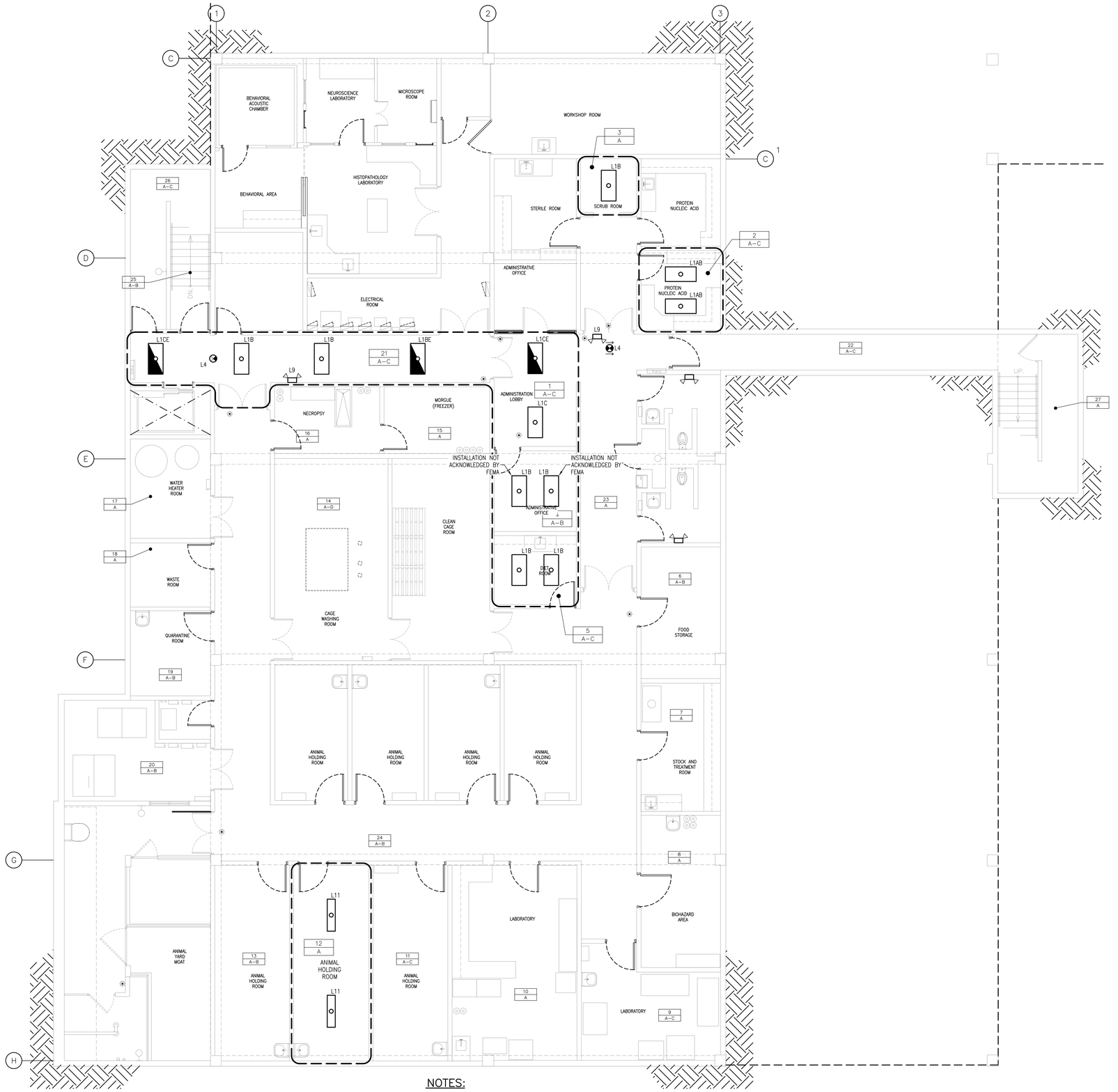
ELWOOD M. CASELLAS BOND — INGENIERO LICENCIADO — LIC. 10697 — PUERTO RICO

YO, ELWOOD M. CASELLAS BOND, INGENIERO LICENCIADO, LICENCIA NUM. 10697, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONO Y/O DISEÑO Y/O PREPARO ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIEN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS DISPOSICIONES APLICABLES DE LOS REGLAMENTOS Y CODIGOS DE CONSTRUCCION VIGENTES DE LAS AGENCIAS, JUNTAS REGLAMENTADORAS O CORPORACIONES PUBLICAS CON JURISDICCION. CERTIFICO, ADEMAS, QUE EN LA PREPARACION DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NUM. 14 DE 8 DE ENERO DE 2004, SEGUN ENMENDADA, CONOCIDA COMO LA "LEY PARA LA INVERSION POR LA INDUSTRIA PUERTORRIQUEÑA" Y CON LA LEY NUM. 319 DE 15 DE MAYO DE 1938, SEGUN ENMENDADA. RECONOZCO QUE CUALQUIER DECLARACION FALSA O FALSIFICACION DE LOS HECHOS QUE SE HAYA PRODUCIDO POR DESCONOCIMIENTO O POR NEGLIGENCIA YA SEA POR MI, MIS AGENTES O EMPLEADOS, O POR OTRAS PERSONAS CON MI CONOCIMIENTO, ME HACEN RESPONSABLE DE CUALQUIER ACCION JUDICIAL Y DISCIPLINARIA POR LA OGPe.

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PROJECT: PW #107355 – MAIN FACILITIES
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.
DRAWING TITLE: ELECTRICAL LEGEND, NOTES & SCHEDULES
JOB NO. 2312 | DATE OCTOBER, 2026 | SCALE AS SHOWN
SHEET E-1.0
46 OF 59

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BASEMENT ELECTRICAL PLAN

SCALE: 3/16" =1'–0"

0 5' 10' 20' 30'

GRAPHIC SCALE 3/16"=1'–0"

NOTES:

1. ALL LUMINARIES SHOWN ARE NEW TO REPLACE THE EXISTING ONES AT THE SAME LOCATION, UNLESS OTHERWISE INDICATED.
2. REPLACE FLEXIBLE CONNECTION TO LUMINARIES INSTALLED ON HUNG CEILING. USE #12 AWG THWN Cu CONDUCTOR IN ½"ø FLEXIBLE METALLIC CONDUIT (FMC). INCLUDE A #12 AWG THWN-2 Cu GREEN COLORED EQUIPMENT GROUNDING CONDUCTOR. CONNECT TO THE EXISTING CIRCUIT.
3. PROVIDE SEISMIC SUPPORT TO LUMINARIES INSTALLED ON HUNG CEILING. REFER TO DETAIL ON DRAWING **E–1.0.**
4. IN LOCATIONS WHERE LUMINARIES WITH BATTERY POWER PACKS ARE INSTALLED, THE CONTRACTOR MUST PROVIDE AN UNSWITCHED LIVE CONDUCTOR FOR THE BATTERY CONNECTION, AS APPLIES.

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

BID DRAWINGS PHASE

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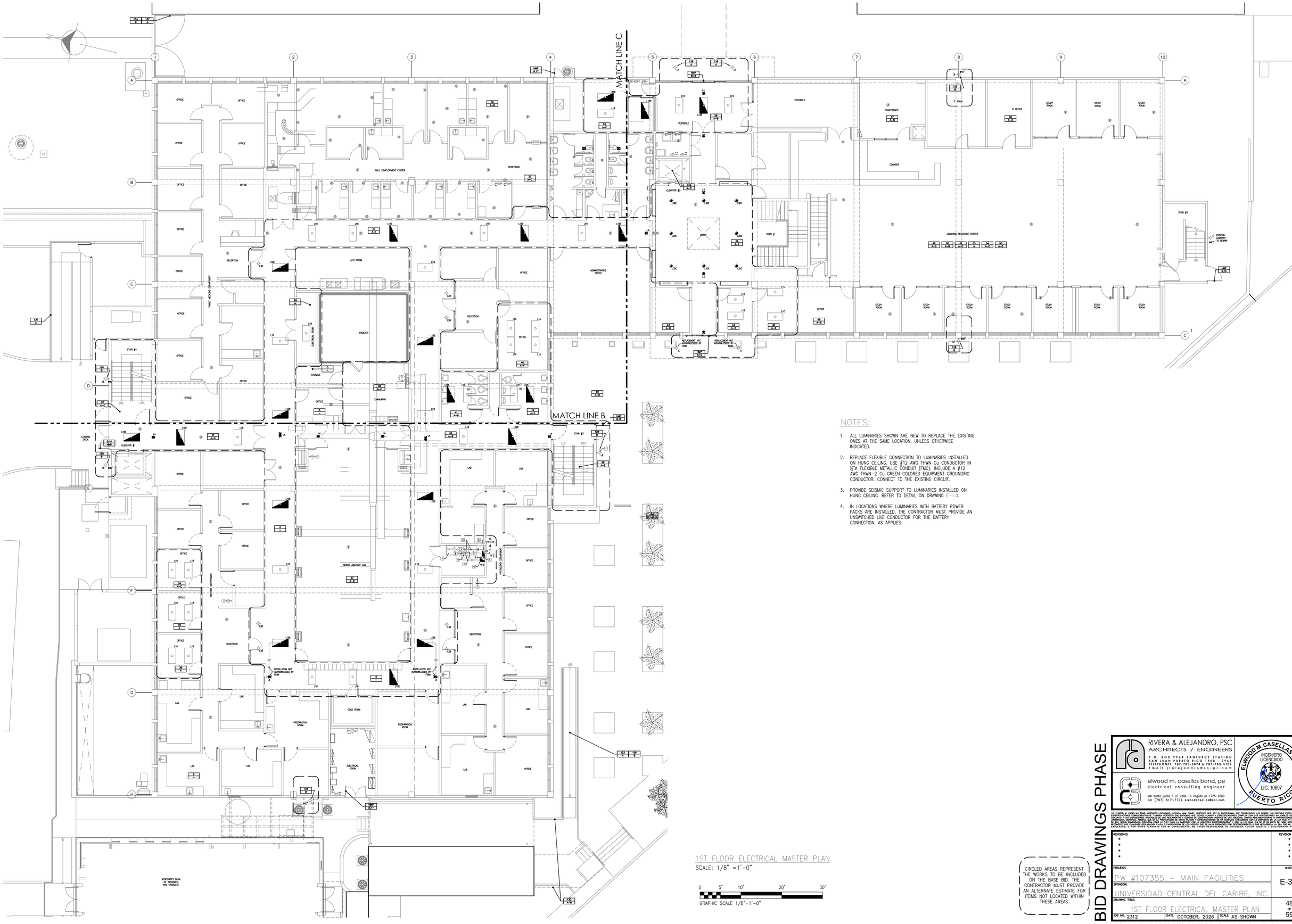
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PROJECT: PW #107355 – MAIN FACILITIES	SHEET E-2.0
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: BASEMENT ELECTRICAL PLAN	47 OF 59
JOB NO. 2312 · DATE OCTOBER, 2026 · SCALE AS SHOWN	

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NOTES:

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3. PROVIDE SEISMIC SUPPORT TO LUMINARIES INSTALLED ON HUNG CEILING. REFER TO DETAIL ON DRAWING E-1.0.
4. IN LOCATIONS WHERE LUMINARIES WITH BATTERY POWER PACKS ARE INSTALLED, THE CONTRACTOR MUST PROVIDE AN UNSWITCHED LIVE CONDUCTOR FOR THE BATTERY CONNECTION, AS APPLIES.

1ST FLOOR ELECTRICAL MASTER PLAN

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

0 5' 10' 20' 30'

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

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

BID DRAWINGS PHASE

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PROJECT: PW #107355 – MAIN FACILITIES

SHEET: E-3.0

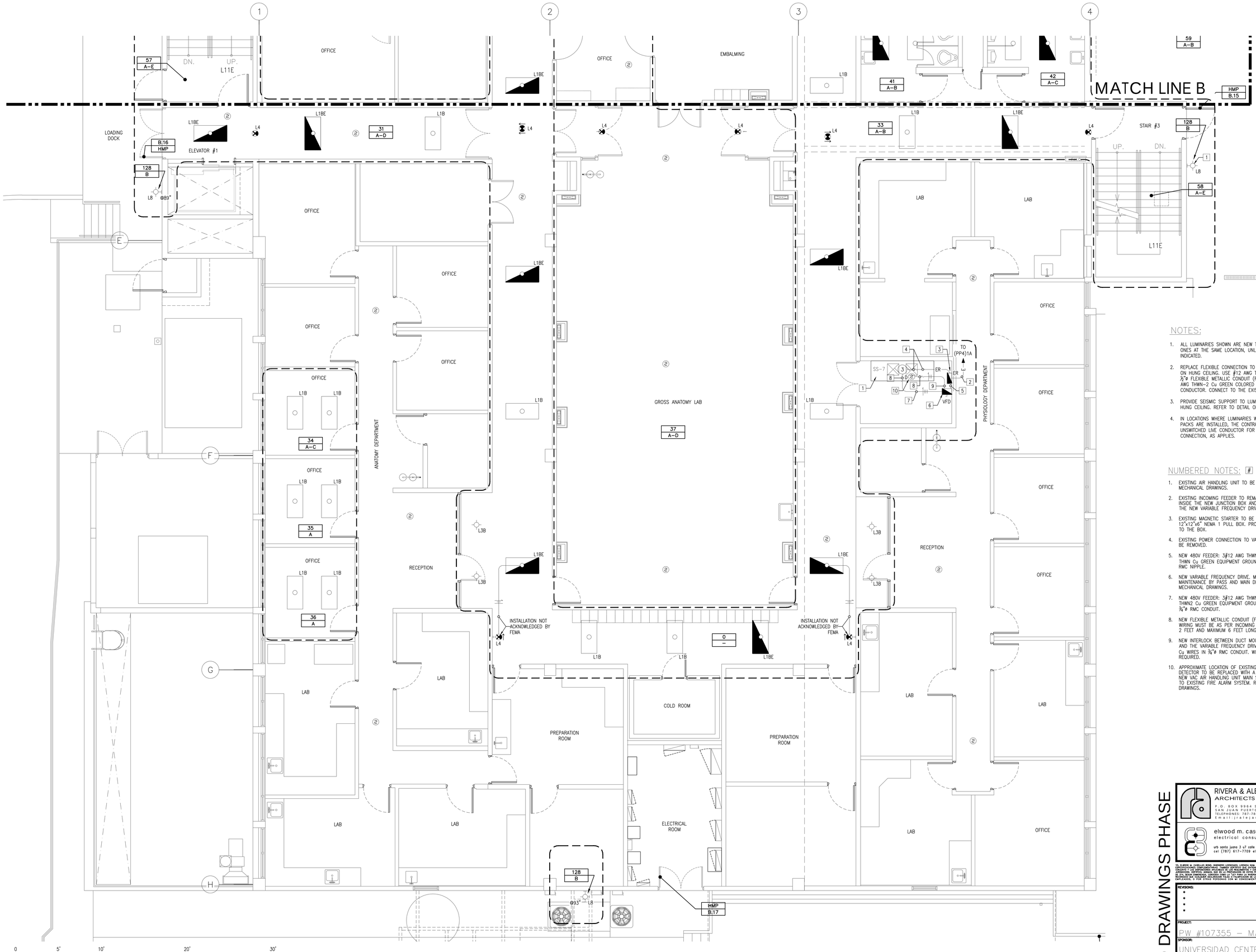
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.

DRAWING TITLE: 1ST FLOOR ELECTRICAL MASTER PLAN

48 OF 59

JOB NO: 2312 | DATE: OCTOBER, 2026 | SCALE: AS SHOWN

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NOTES:

1. ALL LUMINARIES SHOWN ARE NEW TO REPLACE THE EXISTING ONES AT THE SAME LOCATION, UNLESS OTHERWISE INDICATED.
2. REPLACE FLEXIBLE CONNECTION TO LUMINARIES INSTALLED ON HUNG CEILING. USE #12 AWG THWN Cu CONDUCTOR IN ½"ø FLEXIBLE METALLIC CONDUIT (FMC). INCLUDE A #12 AWG THWN-2 Cu GREEN COLORED EQUIPMENT GROUNDING CONDUCTOR. CONNECT TO THE EXISTING CIRCUIT.
3. PROVIDE SEISMIC SUPPORT TO LUMINARIES INSTALLED ON HUNG CEILING. REFER TO DETAIL ON DRAWING E-1.0.
4. IN LOCATIONS WHERE LUMINARIES WITH BATTERY POWER PACKS ARE INSTALLED, THE CONTRACTOR MUST PROVIDE AN UNSWITCHED LIVE CONDUCTOR FOR THE BATTERY CONNECTION, AS APPLIES.

NUMBERED NOTES:

1. EXISTING AIR HANDLING UNIT TO BE REPLACED. REFER TO MECHANICAL DRAWINGS.
2. EXISTING INCOMING FEEDER TO REMAIN. SPLICE THIS FEEDER INSIDE THE NEW JUNCTION BOX AND EXTENDED IT UP TO THE NEW VARIABLE FREQUENCY DRIVE.
3. EXISTING MAGNETIC STARTER TO BE REPLACED WITH A 12"x12"x6" NEMA 1 PULL BOX. PROVIDE GROUND BONDING TO THE BOX.
4. EXISTING POWER CONNECTION TO VAC AIR HANDLING UNIT TO BE REMOVED.
5. NEW 480V FEEDER: 3#12 AWG THWN2 Cu & 1#12 AWG THWN Cu GREEN EQUIPMENT GROUNDING CONDUCTOR IN ¾"ø RMC NIPPLE.
6. NEW VARIABLE FREQUENCY DRIVE, MUST INCLUDE MAINTENANCE BY PASS AND MAIN DISCONNECT. REFER TO MECHANICAL DRAWINGS.
7. NEW 480V FEEDER: 3#12 AWG THWN2 Cu & 1#12 AWG THWN2 Cu GREEN EQUIPMENT GROUNDING CONDUCTOR IN ¾"ø RMC CONDUIT.
8. NEW FLEXIBLE METALLIC CONDUIT (FMC). CONDUIT SIZE AND WIRING MUST BE AS PER INCOMING FEEDER. MUST MINIMUM 2 FEET AND MAXIMUM 6 FEET LONG.
9. NEW INTERLOCK BETWEEN DUCT MOUNTED SMOKE DETECTOR AND THE VARIABLE FREQUENCY DRIVE. USE #12 AWG THWN2 Cu WIRES IN ¾"ø RMC CONDUIT. WIRES QUANTITY AS REQUIRED.
10. APPROXIMATE LOCATION OF EXISTING DUCT MOUNTED SMOKE DETECTOR TO BE REPLACED WITH A NEW ONE. ATTACH TO NEW VAC AIR HANDLING UNIT MAIN SUPPLY DUCT. CONNECT TO EXISTING FIRE ALARM SYSTEM. REFER TO MECHANICAL DRAWINGS.

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

0 5' 10' 20' 30'

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

PARTIAL 1ST FLOOR ELECTRICAL PLAN
SCALE: 1/4" =1'-0"

BID DRAWINGS PHASE

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PROJECT: PW #107355 – MAIN FACILITIES

SHEET: E-3.1

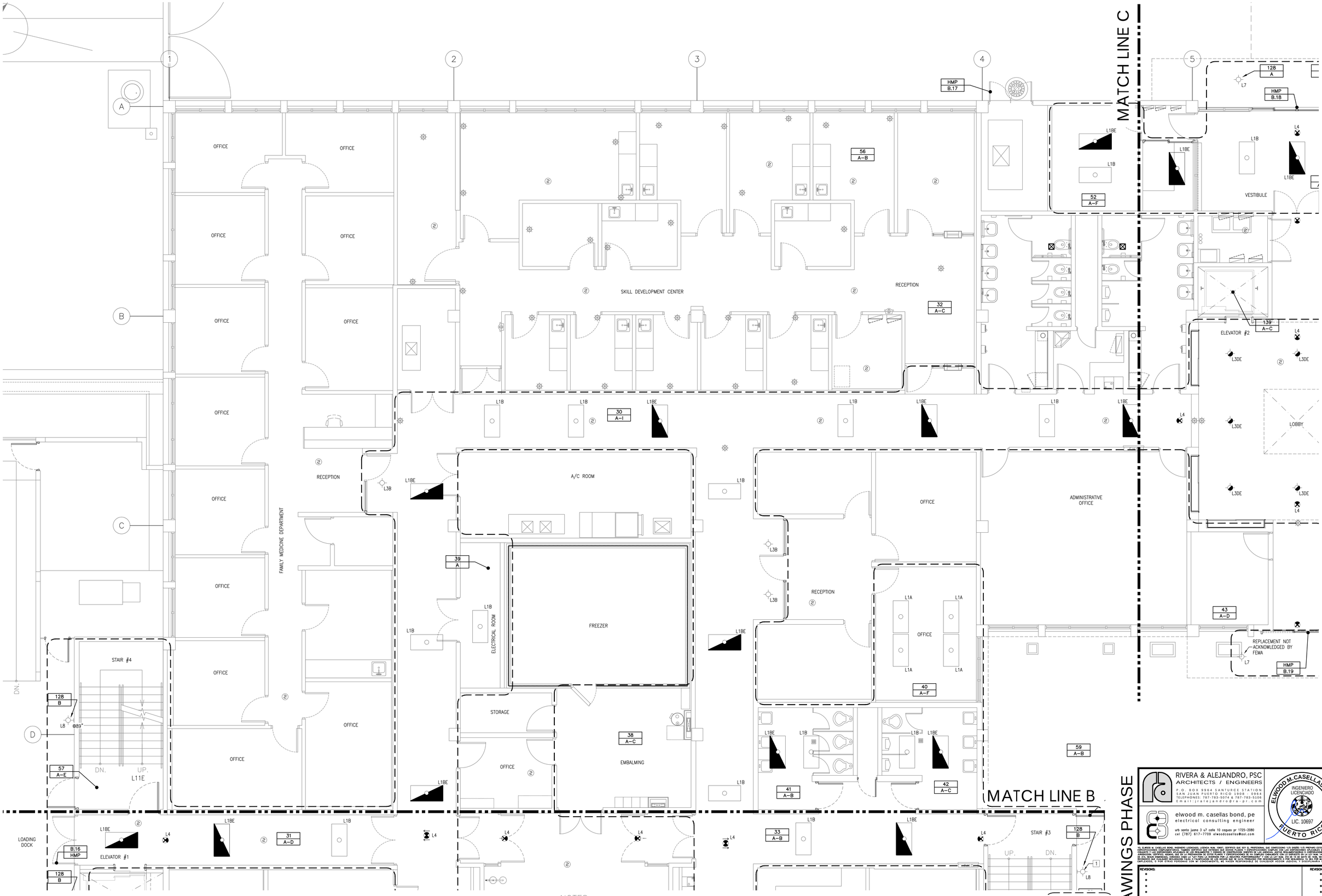
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DRAWING TITLE: PARTIAL 1ST FLOOR ELECTRICAL PLAN

49 OF 59

JOB NO. 2312 | DATE OCTOBER, 2026 | SCALE AS SHOWN

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GRAPHIC SCALE 1/4"=1'–0"

PARTIAL 1ST FLOOR ELECTRICAL PLAN
SCALE: 1/4" =1'–0"

NOTES:

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CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

BID DRAWINGS PHASE

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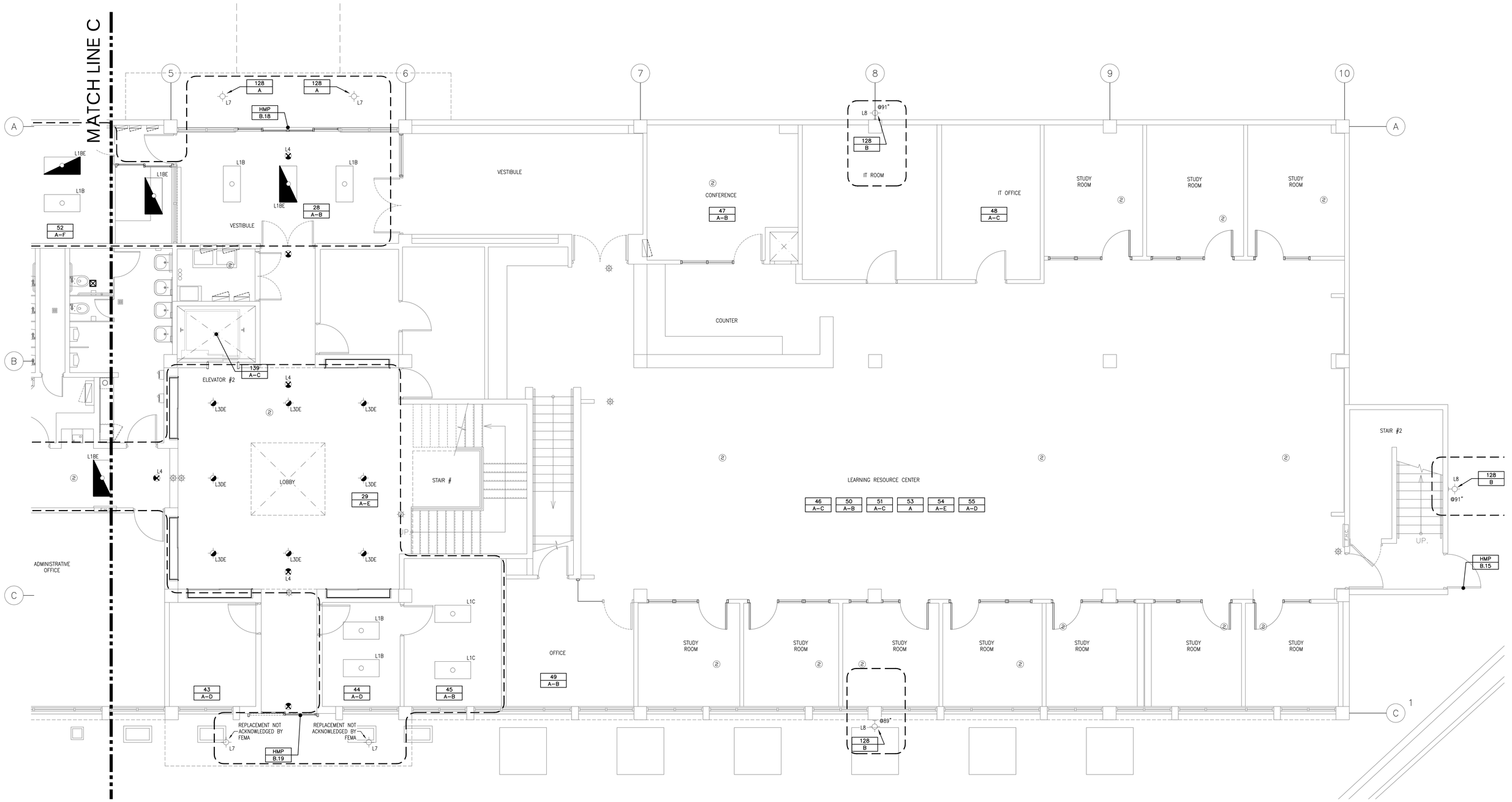
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"YO, ELWOOD M. CASELLAS BOND, INGENIERO LICENCIADO, LICENCIA NUM. 10697, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONO Y/O DISEÑO Y/O PREPARO ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS. TAMBIEN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONSTRUCCION Y USO DE LA JURISDICCION DONDE SE PROPONE CONSTRUIR LA OBRA. ASIMISMO CERTIFICO QUE HE CUMPLIDO CABALMENTE CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO JURISDICCIONAL CERTIFICO, ADEMAS, QUE EN LA PREPARACION DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NUM. 74 DE 8 DE ENERO DE 2014, SEGUN ENMENDADA, CONOCIDA COMO LA "LEY PARA LA REFORMA POR LA INDUSTRIA FOTOVOLTAICA" Y CON LA LEY NUM. 114 DE 16 DE MAYO DE 2020, SEGUN ENMENDADA, CONOCIDA COMO LA "LEY PARA LA REFORMA DEL SISTEMA ELECTRICO DE PUERTO RICO". ESTOS PLANOS Y ESPECIFICACIONES SON CONSISTENTES CON LA PRACTICA ACEPTADA DE INGENIERIA Y SON SUFICIENTES, A MI LEAL SABER Y ENTENDER, EXPRESADO, Y POR OTRAS PERSONAS CON MI CONOCIMIENTO, NO TAZEN RESPONSABLE DE CUALQUIER ACCION JUDICIAL Y DISCIPLINARIA POR LA MISMA."

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PROJECT: PW #107355 – MAIN FACILITIES
SHEET: E-3.2
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.
DRAWING TITLE: PARTIAL 1ST FLOOR ELECTRICAL PLAN
50 or 59
JOB NO. 2312 | DATE OCTOBER, 2026 | SCALE AS SHOWN

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PARTIAL 1ST FLOOR ELECTRICAL PLAN

SCALE: 1/4" =1'–0"

0 5' 10' 20' 30'

GRAPHIC SCALE 1/4"=1'–0"

NOTES:

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BID DRAWINGS PHASE

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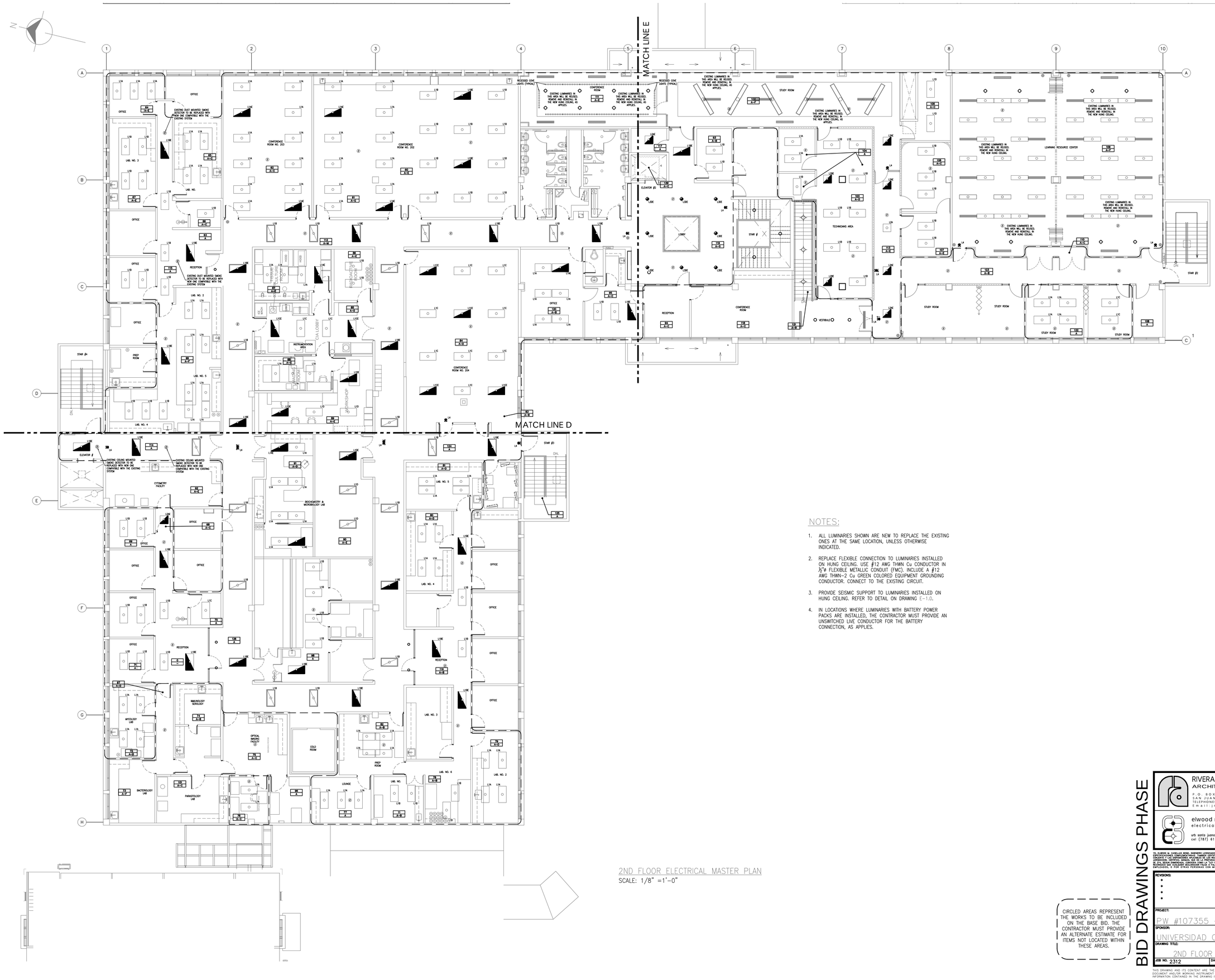
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PROJECT: PW #107355 – MAIN FACILITIES	SHEET: E-3.3
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: PARTIAL 1ST FLOOR ELECTRICAL PLAN	51 OF 59
JOB NO. 2312	DATE OCTOBER, 2026	SCALE AS SHOWN

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2ND FLOOR ELECTRICAL MASTER PLAN
SCALE: 1/8" =1'-0"

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

BID DRAWINGS PHASE

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PROJECT: PW #107355 – MAIN FACILITIES	SHEET: E-4.0
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: 2ND FLOOR ELECTRICAL MASTER PLAN	52 OF 59
JOB NO. 2312 · DATE OCTOBER, 2026 · SCALE AS SHOWN	

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PARTIAL 2ND FLOOR ELECTRICAL PLAN
SCALE: 1/4" =1'–0"

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PROJECT: PW #107355 – MAIN FACILITIES	SHEET E-4.1
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: PARTIAL 2ND FLOOR ELECTRICAL PLAN	53 OF 59
JOB NO. 2312 · DATE OCTOBER, 2026 · SCALE AS SHOWN	

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

PARTIAL 2ND FLOOR ELECTRICAL PLAN

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

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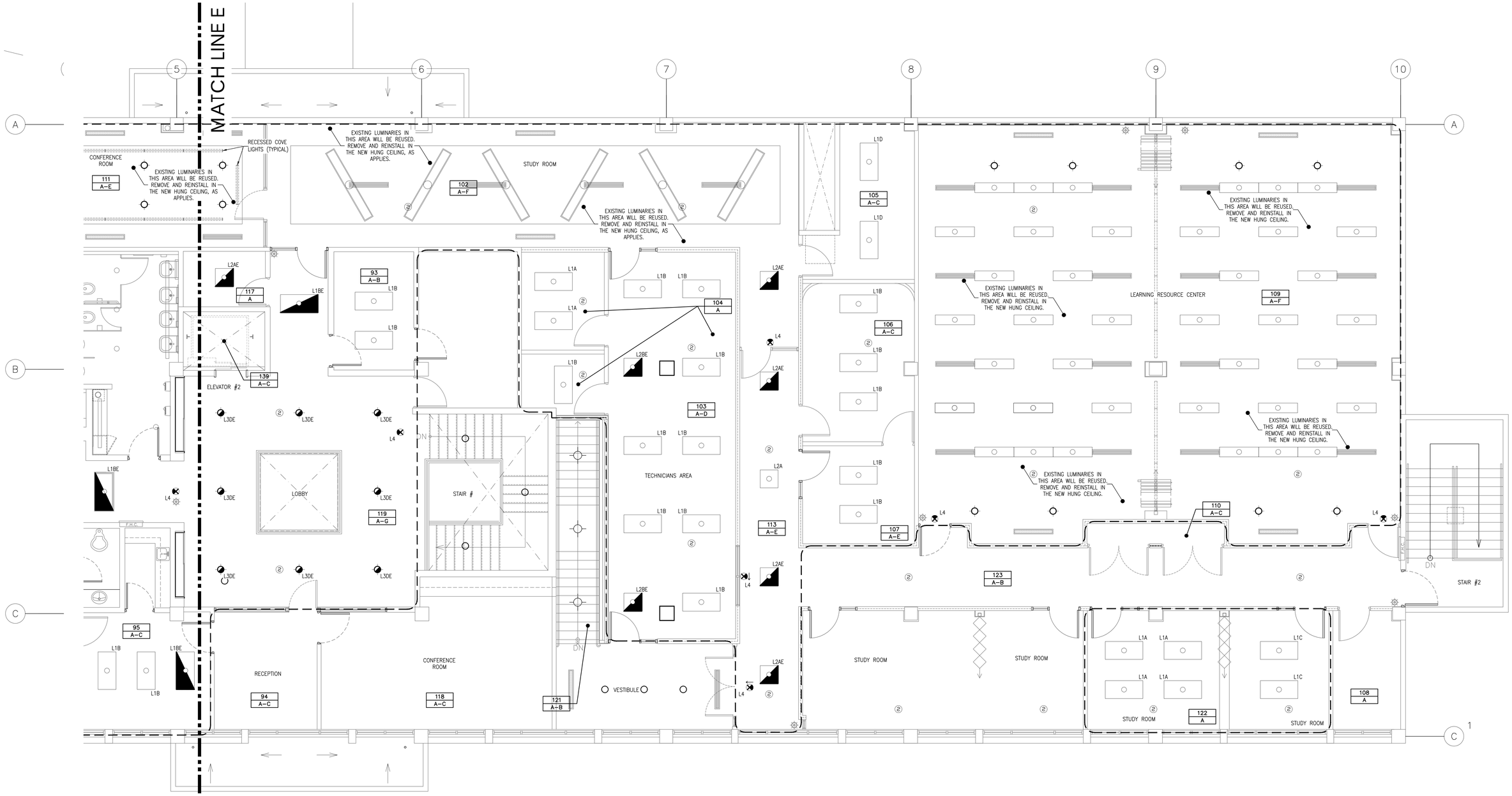
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LIC. 10697
PUERTO RICO

YO, ELWOOD M. CASELLAS BOND, INGENIERO LICENCIADO, LICENCIA NÚM. 10697, CERTIFICO QUE SOY EL PROFESIONAL QUE COMPUSO(ARON) Y/O DISEÑO Y/O PREPARO ESTOS PLANOS Y LAS ESPECIFICACIONES QUE LOS ACOMPAÑAN Y QUE, A MI LEAL SABER Y ENTENDER, LOS MISMOS CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO DE CONSTRUCCIÓN VIGENTE Y LOS REGLAMENTOS Y LAS ORDENANZAS APLICABLES DE LOS MUNICIPIOS AUTÓNOMOS. ESTOS PLANOS Y ESPECIFICACIONES SE PREPARARON DE CONFORMIDAD CON LOS CÓDIGOS DE CONSTRUCCIÓN VIGENTES EN LOS MUNICIPIOS AUTÓNOMOS. LOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LOS REQUISITOS MÍNIMOS DE DISEÑO ESTRUCTURAL Y DE ZONA SÍSMICA APLICABLES, INCLUIDOS LOS DE LA "ACT PARA LA INVERSIÓN POR LA INDUSTRIA PUERTORRIQUEÑA" Y CON LA LEY NÚM. 313 DE 15 DE MAYO DE 1968, SEGÚN ENMENDADA, CONOCIDA COMO LA "LEY PARA ASEGURAR EL TRATAMIENTO IGUAL EN EL EMPLEO A PERSONAS IMPEDIDAS FÍSICAS O MENTALES". ESTOS PLANOS Y ESPECIFICACIONES NO PUEDEN SER UTILIZADOS POR NINGUNA OTRA PERSONA PARA PROPÓSITOS DISTINTOS A LOS EXPLICADOS, Y POR OTRAS PERSONAS QUE NO CONSOCIADETE, NO HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA POR LA LEY.

REVISIONS:	REVISION DATE
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PROJECT:	SHEET
PW #107355 – MAIN FACILITIES	E-4.2
SPONSOR:	
UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE:	54 OF 59
PARTIAL 2ND FLOOR ELECTRICAL PLAN	
JOB NO. 2312 / DATE OCTOBER, 2026 / SCALE AS SHOWN	

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PARTIAL 2ND FLOOR ELECTRICAL PLAN

SCALE: 1/4" =1'–0"

0 5' 10' 20' 30'

GRAPHIC SCALE 1/4"=1'–0"

NOTES:

1. ALL LUMINARIES SHOWN ARE NEW TO REPLACE THE EXISTING ONES AT THE SAME LOCATION, UNLESS OTHERWISE INDICATED.
2. REPLACE FLEXIBLE CONNECTION TO LUMINARIES INSTALLED ON HUNG CEILING. USE #12 AWG THWN Cu CONDUCTOR IN ⅜"ø FLEXIBLE METALLIC CONDUIT (FMC). INCLUDE A #12 AWG THWN–2 Cu GREEN COLORED EQUIPMENT GROUNDING CONDUCTOR. CONNECT TO THE EXISTING CIRCUIT.
3. PROVIDE SEISMIC SUPPORT TO LUMINARIES INSTALLED ON HUNG CEILING. REFER TO DETAIL ON DRAWING E–1.0.
4. IN LOCATIONS WHERE LUMINARIES WITH BATTERY POWER PACKS ARE INSTALLED, THE CONTRACTOR MUST PROVIDE AN UNSWITCHED LIVE CONDUCTOR FOR THE BATTERY CONNECTION, AS APPLIES.

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

BID DRAWINGS PHASE

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REVISIONS:	REVISION DATE
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PROJECT: PW #107355 – MAIN FACILITIES

SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.

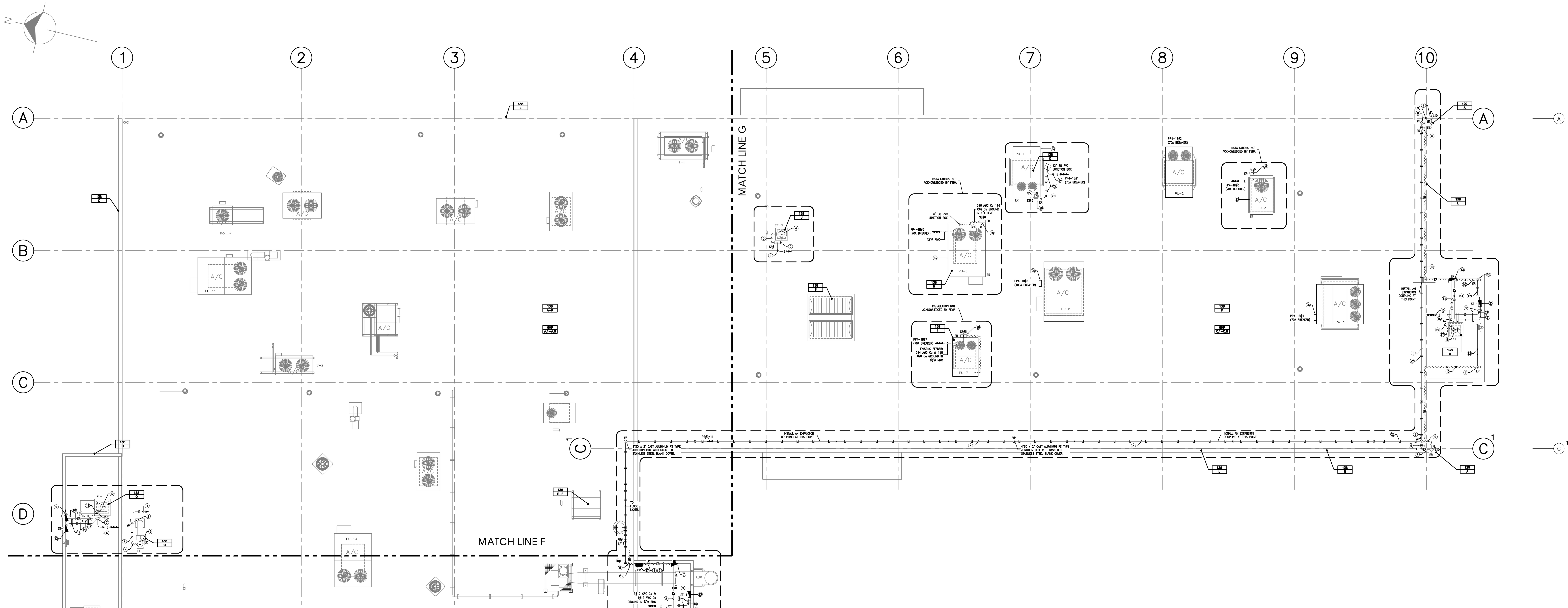
DRAWING TITLE: PARTIAL 2ND FLOOR ELECTRICAL PLAN

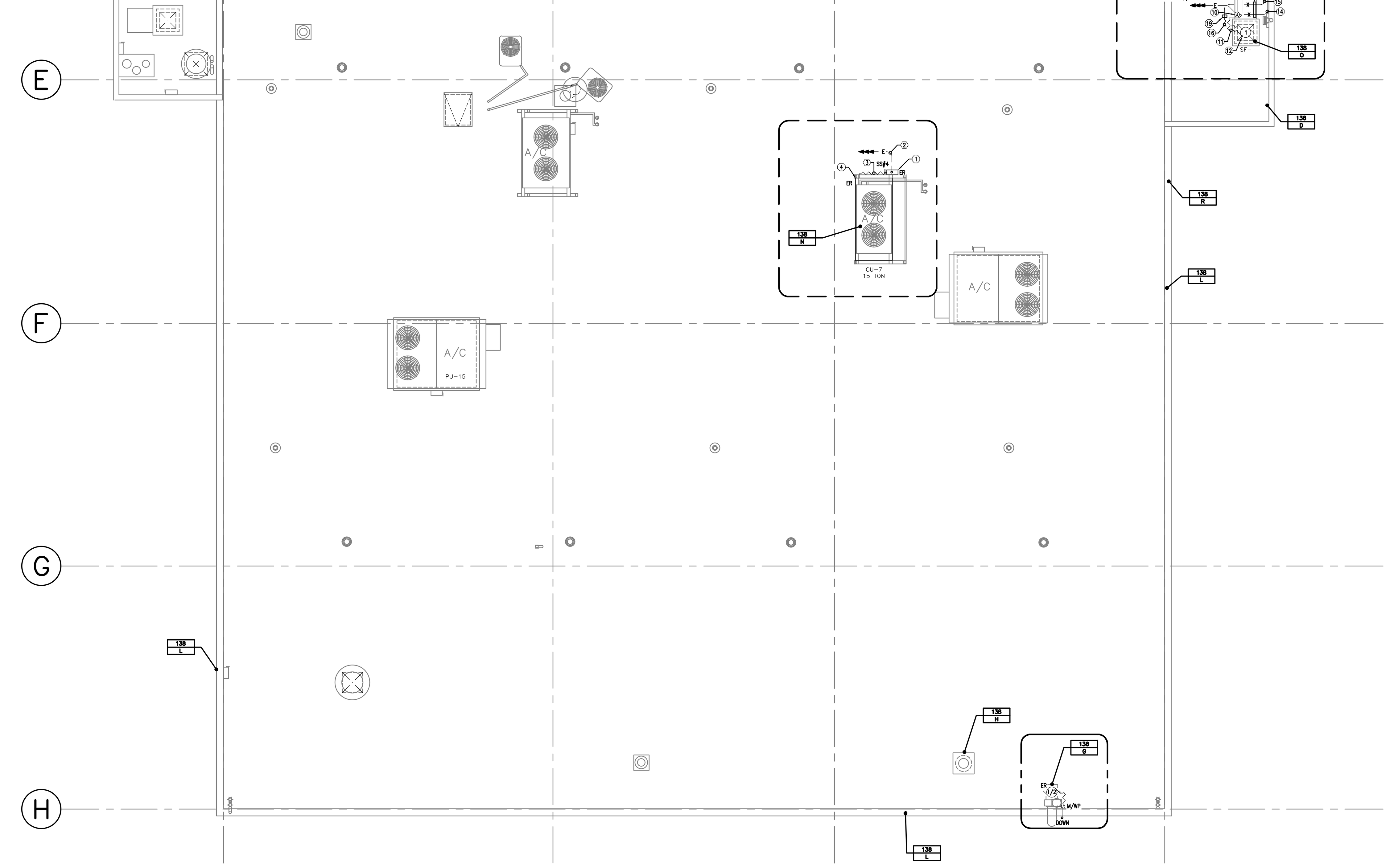
SHEET: E-4.3

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JOB NO. 2312 | DATE OCTOBER, 2026 | SCALE AS SHOWN

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ROOF ELECTRICAL MASTER PLAN

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

0 5' 10' 20' 30'

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

ADDITIONAL NOTES:

1. EXPOSED NON-METALLIC ELECTRICAL CONDUITS MUST BE REPLACED WITH NEW HEAVY WALL RIGID GALVANIZED STEEL CONDUITS (RMC). PVC SCHEDULE 80 CONDUITS MAY BE USED INSTEAD OF RMC CONDUITS. INCLUDE REWIRING OF CONDUITS, AS APPLIES.
2. PROVIDE CONDUIT SUPPORTS TO EXISTING AND NEW EXPOSED CONDUITS AS PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
3. IF RIGID PVC CONDUITS ARE INSTALLED, THE CONDUIT STRAPS MUST BE MOUNTED LOOSELY SO AS TO ALLOW FOR CONDUIT ELONGATION OR CONTRACTION DUE TO TEMPERATURE CHANGES.
4. IF RIGID PVC CONDUITS ARE USED, THE INSTALLATION OF EXPANSION FITTINGS IS REQUIRED. THE SPACING BETWEEN EXPANSION FITTINGS MUST BE NOT EXCEED 50 FEET. EXPANSION COUPLINGS MUST BE TWO PIECE TYPE. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR EXPOSED INSTALLATIONS.
5. SUPPORTS INSTALLED ON ROOF MUST CONSIST OF COOPER INDUSTRIES B-LINE DURA-BLOK ROOFTOP SUPPORTS WITH STAINLESS STEEL UNISTRUT CHANNELS.
6. ROOFTOP SUPPORTS MUST BE ATTACHED TO SURFACE WITH A STRUCTURAL ADHESIVE & SEALANT. USE ADHESIVE CHEM LINK MODEL M-1 OR APPROVED EQUAL. CONTRACTOR MUST VERIFY COMPATIBILITY OF THE ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.
7. PERFORATIONS TO ROOF SURFACE ARE NOT ALLOWED.
8. MINIMUM UNISTRUT SIZE MUST BE 1⅝"W x 1⅝"H; LENGTH AS REQUIRED. CHANNELS MUST BE HEAVY DUTY 12-GAGE HOT DIPPED GALVANIZED STEEL. FOR OUTDOOR INSTALLATIONS USE STAINLESS STEEL UNISTRUT, SCREWS, WASHERS, NUTS, STRAPS, HANGERS, AND ACCESSORIES.

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

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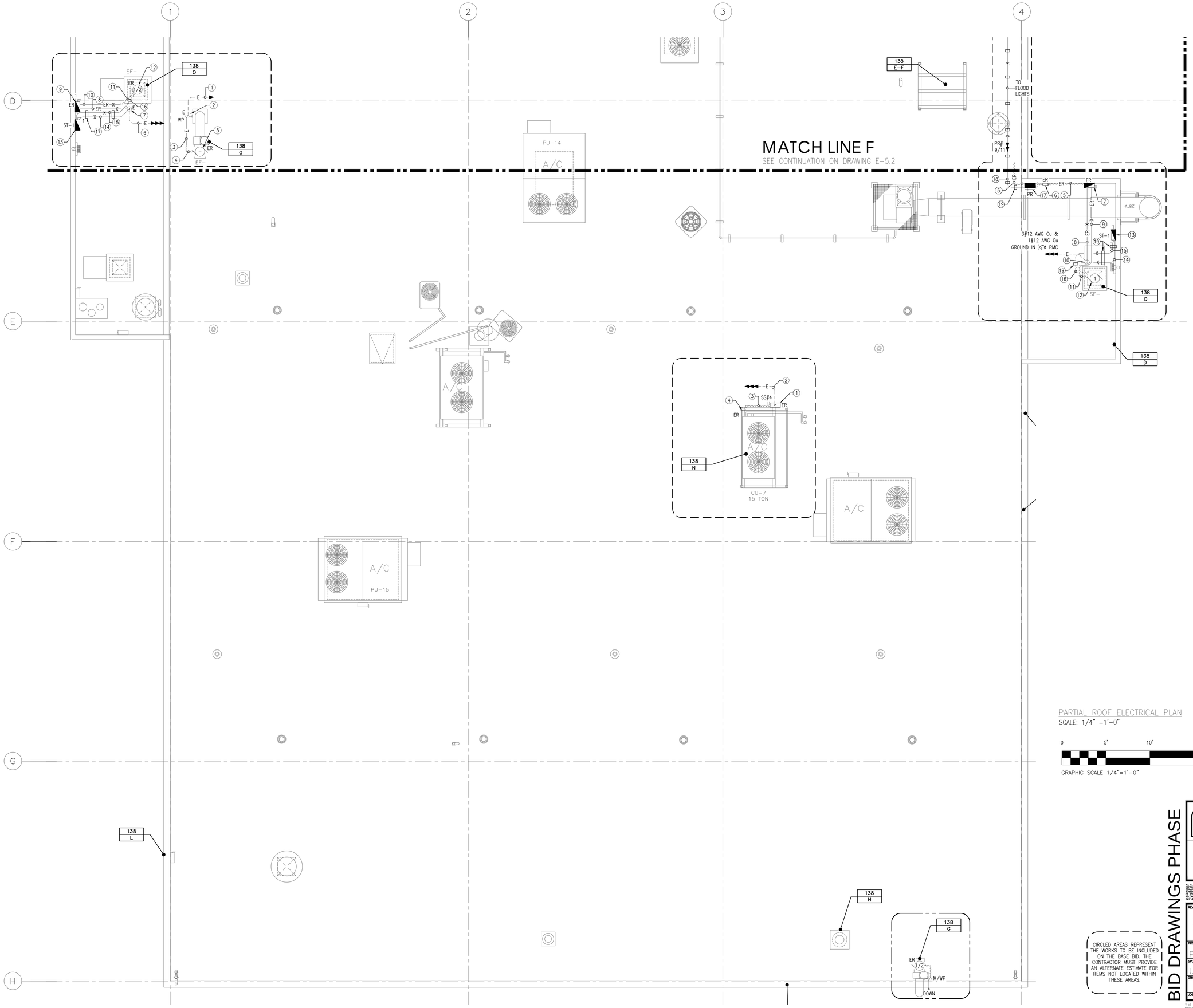
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PROJECT: PW #107355 – MAIN FACILITIES	SHEET E-5.0
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.	
DRAWING TITLE: ROOF ELECTRICAL MASTER PLAN	56 OF 59
JOB NO. 2312 / DATE OCTOBER, 2026 / SCALE AS SHOWN	

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NUMBERED NOTES:

1. EXISTING CU-7 SAFETY SWITCH TO BE REPLACED. REFER TO SAFETY SWITCHES SCHEDULE ON DWG E-1.
2. EXISTING CU-7 INCOMING FEEDER TO REMAIN.
3. EXISTING CU-7 MOTOR CONNECTION TO REMAIN. REMOVE FROM EXISTING EQUIPMENT AND RECONNECT TO THE NEW ONE, REPLACE IF REQUIRED.
4. EXISTING A/C CONDENSING UNIT CU-7 TO BE REPLACED. REFER TO MECHANICAL DRAWINGS.
5. EXISTING LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT WITH WIRES TO BE REMOVED.
6. EXISTING UNUSED SAFETY SWITCH TO BE REMOVED.
7. EXISTING SUPPLY FAN SF-_ COMBINATION MAGNETIC STARTER TO BE REMOVED.
8. EXISTING SUPPLY FAN SF-_ EXPOSED FEEDER TO BE REMOVED: 3#12 AWG Cu & 1#12 AWG Cu GROUND IN ¾"ø PVC SCHEDULE 40 CONDUIT.
9. EXISTING SUPPLY FAN SF-_ EXPOSED FEEDER TO BE REMOVED: 3#12 AWG Cu & 1#12 AWG Cu GROUND IN ¾"ø PVC SCHEDULE 40 CONDUIT.
10. EXISTING JUNCTION BOX TO REMAIN.
11. EXISTING SUPPLY FAN SF-_ FLEXIBLE CONNECTION TO BE REMOVED.
12. EXISTING SUPPLY FAN SF-_ TO BE REPLACED. REFER TO MECHANICAL DRAWINGS.
13. NEW COMBINATION MAGNETIC STARTER. REFER TO COMBINATION MAGNETIC STARTER SCHEDULE ON DWG E-1.0.
14. NEW EXPOSED FEEDER FOR SUPPLY FAN SF-_: 3#12 AWG THWN Cu & 1#12 AWG THWN Cu EQUIPMENT GROUNDING CONDUCTOR IN ¾"ø PVC SCHEDULE 80 CONDUIT. REFER TO ADDITIONAL NOTES ON THIS DRAWING.
15. NEW EXPOSED FEEDER FOR SUPPLY FAN SF-_: 3#12 AWG THWN Cu & 1#12 AWG THWN Cu EQUIPMENT GROUNDING CONDUCTOR IN ¾"ø PVC SCHEDULE 80 CONDUIT. REFER TO ADDITIONAL NOTES ON THIS DRAWING.
16. NEW LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC). CONDUIT SIZE AND WIRES MUST BE AS PER INCOMING FEEDER. MUST BE MINIMUM 2 FEET AND MAXIMUM 6 FEET LONG.
17. EXISTING DISTRIBUTION PANELBOARD PR TO REMAIN: 120/208V 3ø 4W MLO, GE PLUG-ON. USE SPACES #9 & 11 TO INSTALL A NEW 20A 2 POLE CIRCUIT BREAKER, TO BE DEDICATED TO ENERGIZE THE NEW FLOOD LIGHTS. USE SAME BREAKER TYPE AND SHORT CIRCUIT CAPACITY AS THE EXISTING ONES. PROVIDE A NEW CIRCUITS DIRECTORY; IDENTIFY EXISTING AND NEW LOADS. CLEAN INTERIOR AND BUS BARS WITH A SOLVENT CLEANER; UL LISTED FOR THIS PURPOSE. INSTALL A NEW BOX BONDED GROUNDING BUS BAR AND RELOCATE ALL GROUNDING CONDUCTORS TO THIS BUS BAR.
18. NEW FEEDER: 2#8 AWG THWN-2 Cu & 1#10 AWG THWN-2 Cu GREEN EQUIPMENT GROUNDING CONDUCTOR IN ¾"ø PVC SCHEDULE 80 CONDUIT. REFER TO ADDITIONAL NOTES ON THIS DRAWING.
19. NEW SUPPORTS (TYPICAL). REFER TO ADDITIONAL NOTES ON THIS DRAWING.

ADDITIONAL NOTES:

1. EXPOSED NON-METALLIC ELECTRICAL CONDUITS MUST BE REPLACED WITH NEW HEAVY WALL RIGID GALVANIZED STEEL CONDUITS (RMC). PVC SCHEDULE 80 CONDUITS MAY BE USED INSTEAD OF RMC CONDUITS. INCLUDE REWIRING OF CONDUITS, AS APPLIES.
2. PROVIDE CONDUIT SUPPORTS TO EXISTING AND NEW EXPOSED CONDUITS AS PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
3. IF RIGID PVC CONDUITS ARE INSTALLED, THE CONDUIT STRAPS MUST BE MOUNTED LOOSELY SO AS TO ALLOW FOR CONDUIT ELONGATION OR CONTRACTION DUE TO TEMPERATURE CHANGES.
4. IF RIGID PVC CONDUITS ARE USED, THE INSTALLATION OF EXPANSION FITTINGS IS REQUIRED. THE SPACING BETWEEN EXPANSION FITTINGS MUST BE NOT EXCEED 50 FEET. EXPANSION COUPLINGS MUST BE TWO PIECE TYPE. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR EXPOSED INSTALLATIONS.
5. SUPPORTS INSTALLED ON ROOF MUST CONSIST OF COOPER INDUSTRIES B-LINE DURA-BLOK ROOFTOP SUPPORTS WITH STAINLESS STEEL UNISTRUT CHANNELS.
6. ROOFTOP SUPPORTS MUST BE ATTACHED TO SURFACE WITH A STRUCTURAL ADHESIVE & SEALANT. USE ADHESIVE CHEM LINK MODEL M-1 OR APPROVED EQUAL. CONTRACTOR MUST VERIFY COMPATIBILITY OF THE ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.
7. PERFORATIONS TO ROOF SURFACE ARE NOT ALLOWED.
8. MINIMUM UNISTRUT SIZE MUST BE 1⅝"W x 1⅝"H; LENGTH AS REQUIRED. CHANNELS MUST BE HEAVY DUTY 12-GAGE HOT DIPPED GALVANIZED STEEL. FOR OUTDOOR INSTALLATIONS USE STAINLESS STEEL UNISTRUT, SCREWS, WASHERS, NUTS, STRAPS, HANGERS, AND ACCESSORIES.

PARTIAL ROOF ELECTRICAL PLAN

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

0 5' 10' 20' 30'

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

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

BID DRAWINGS PHASE

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PROJECT: PW #107355 – MAIN FACILITIES

SHEET: E-5.1

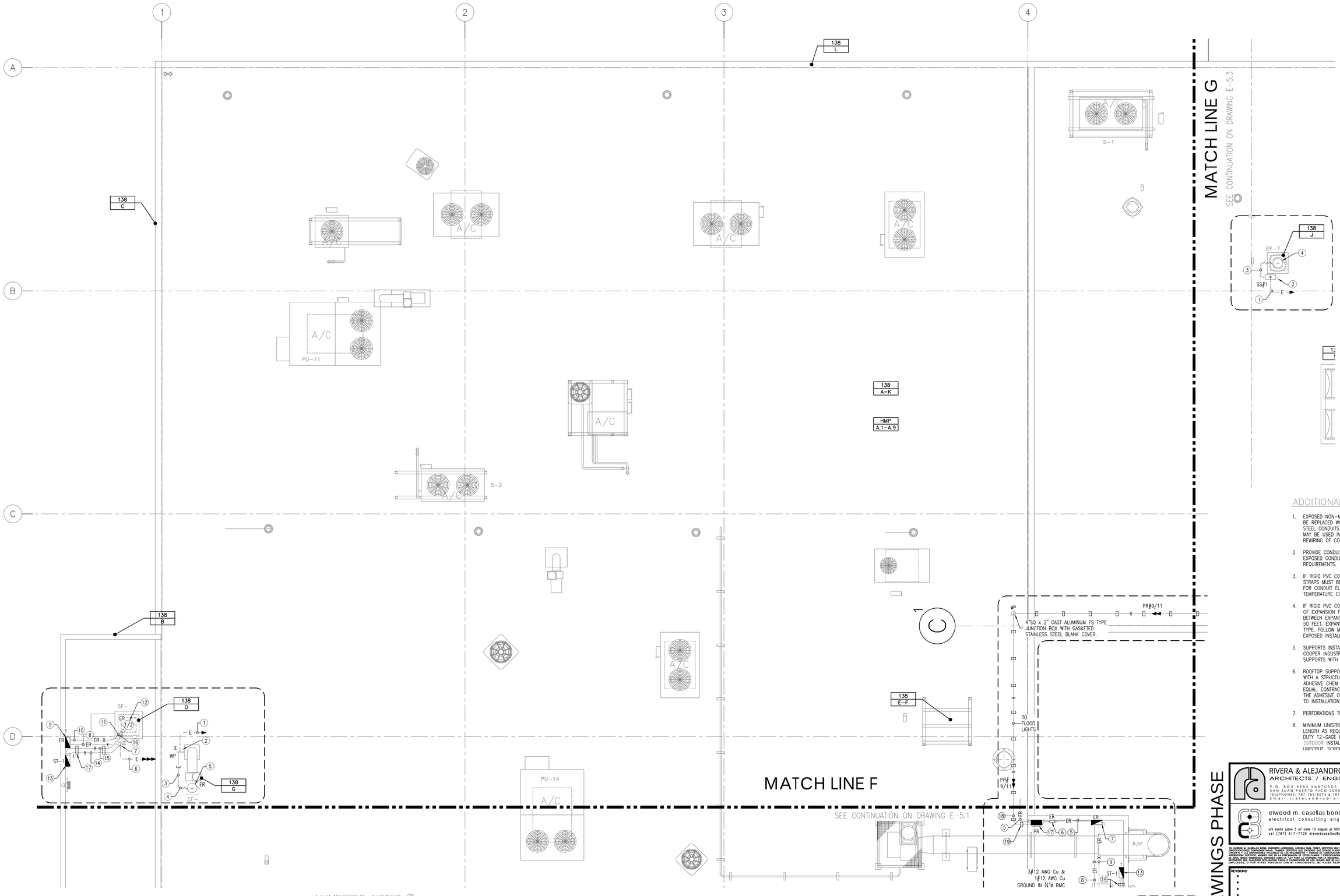
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.

DRAWING TITLE: PARTIAL ROOF ELECTRICAL PLAN

57 of 59

JOB NO. 2312 | DATE OCTOBER, 2026 | SCALE AS SHOWN

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0 5' 10' 20' 30'

GRAPHIC SCALE 1/4"=1'–0"

PARTIAL ROOF ELECTRICAL PLAN
SCALE: 1/4" =1'–0"

NUMBERED NOTES:

1. EXISTING EXHAUST FAN EF–_ INCOMING FEEDER REMAIN.
2. EXISTING EXHAUST FAN EF–_ SWITCH TO REMAIN.
3. EXISTING EXHAUST FAN EF–_ MOTOR FLEXIBLE CONNECTION WITH LFMC TO REMAIN. REPLACE IF REQUIRED.
4. EXISTING EXHAUST FAN EF–_ MOTOR FLEXIBLE CONNECTION WITH LFMC TO REMAIN. REMOVE FROM EXISTING EQUIPMENT AND RECONNECT TO THE NEW ONE. REPLACE IF REQUIRED.
5. EXISTING EXHAUST FAN EF–_ TO BE REPLACED. REFER TO MECHANICAL DRAWINGS.
6. EXISTING SUPPLY FAN SF–_ INCOMING FEEDER REMAIN.
7. EXISTING JUNCTION BOX TO REMAIN.
8. EXISTING SUPPLY FAN SF–_ EXPOSED FEEDER TO BE REMOVED: 3#12 AWG Cu & 1#12 AWG Cu GROUND IN ¾"ø PVC SCHEDULE 40 CONDUIT.
9. EXISTING SUPPLY FAN SF–_ COMBINATION MAGNETIC STARTER TO BE REMOVED.
10. EXISTING SUPPLY FAN SF–_ EXPOSED FEEDER TO BE REMOVED: 3#12 AWG Cu & 1#12 AWG Cu GROUND IN ¾"ø PVC SCHEDULE 40 CONDUIT.
11. EXISTING SUPPLY FAN SF–_ FLEXIBLE CONNECTION TO BE REMOVED.
12. EXISTING SUPPLY FAN SF–_ TO BE REPLACED, AS APPLIES. REFER TO MECHANICAL DRAWINGS.
13. NEW COMBINATION MAGNETIC STARTER. REFER TO COMBINATION MAGNETIC STARTER SCHEDULE ON DWG E–1.0.
14. NEW EXPOSED FEEDER FOR SUPPLY FAN SF–_: 3#12 AWG THWN Cu & 1#12 AWG THWN Cu GROUND IN ¾"ø PVC SCHEDULE 80 CONDUIT.
15. NEW EXPOSED FEEDER FOR SUPPLY FAN SF–_: 3#12 AWG THWN Cu & 1#12 AWG THWN Cu GROUND IN ¾"ø PVC SCHEDULE 80 CONDUIT.
16. NEW LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC). CONDUIT SIZE AND WIRES MUST BE AS PER INCOMING FEEDER. MUST BE MINIMUM 2 FEET AND MAXIMUM 6 FEET LONG.
17. NEW SUPPORTS (TYPICAL). REFER TO ADDITIONAL NOTES ON THIS DRAWING.

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

ADDITIONAL NOTES:

1. EXPOSED NON–METALLIC ELECTRICAL CONDUITS MUST BE REPLACED WITH NEW HEAVY WALL RIGID GALVANIZED STEEL CONDUITS (RMC). PVC SCHEDULE 80 CONDUITS MAY BE USED INSTEAD OF RMC CONDUITS. INCLUDE REWIRING OF CONDUITS, AS APPLIES.
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6. ROOFTOP SUPPORTS MUST BE ATTACHED TO SURFACE WITH A STRUCTURAL ADHESIVE & SEALANT. USE ADHESIVE CHEM LINK MODEL M–1 OR APPROVED EQUAL. CONTRACTOR MUST VERIFY COMPATIBILITY OF THE ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.
7. PERFORATIONS TO ROOF SURFACE ARE NOT ALLOWED.
8. MINIMUM UNISTRUT SIZE MUST BE 1⅝"W x 1⅝"H; LENGTH AS REQUIRED. CHANNELS MUST BE HEAVY DUTY 12–GAGE HOT DIPPED GALVANIZED STEEL. FOR OUTDOOR INSTALLATIONS USE STAINLESS STEEL UNISTRUT, SCREWS, WASHERS, NUTS, STRAPS, HANGERS

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INGENIERO LICENCIADO
LIC. 10697
PUERTO RICO

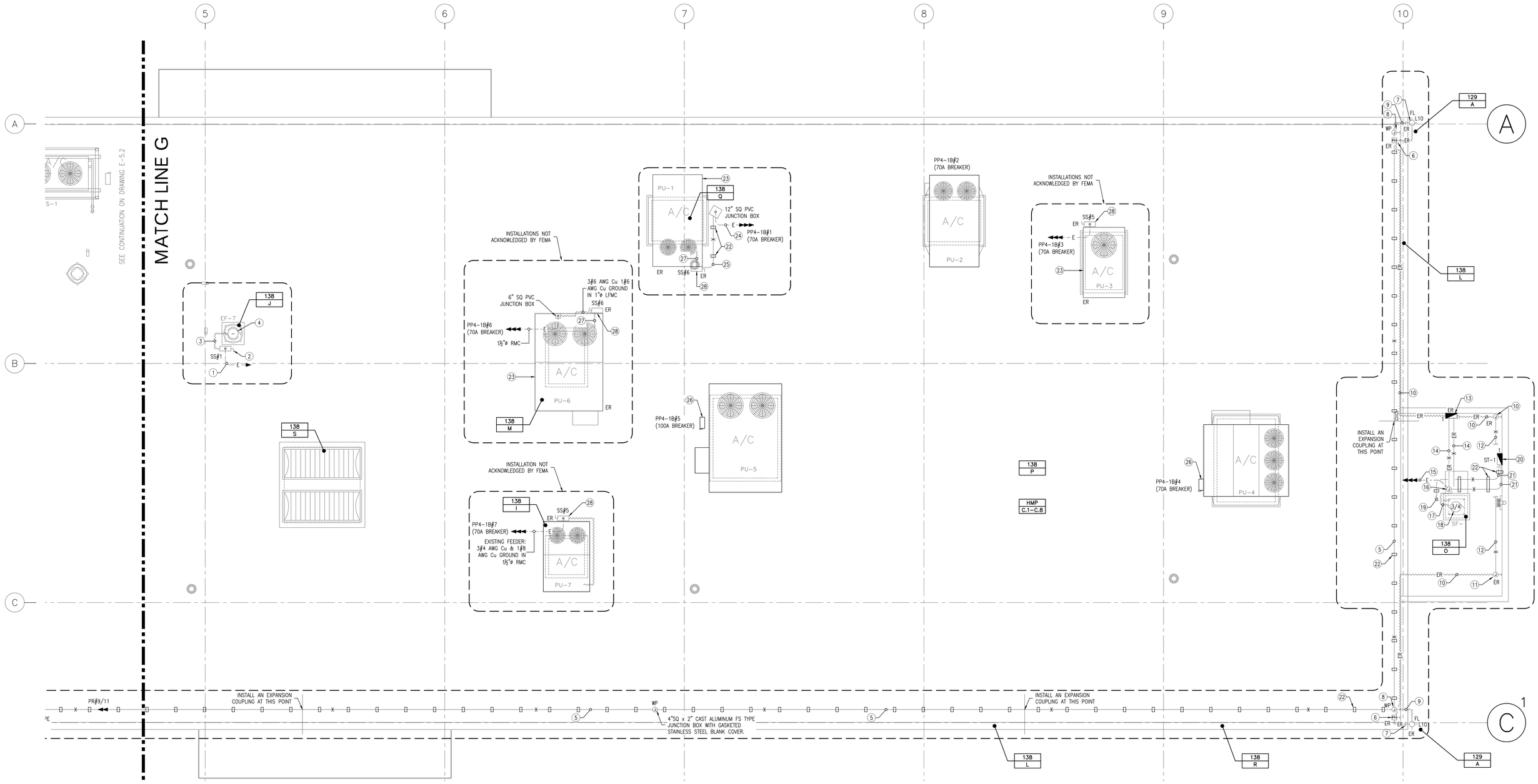
YO, ELWOOD M. CASELLAS BOND, INGENIERO LICENCIADO, LICENCIA NÚM. 10697, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONÓ Y/O DISEÑÓ Y/O PREPARÓ ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS, SIENDO OBTENIDO QUE INTENDO QUE TODOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONJUNTO Y LAS ORDENANZAS MUNICIPALES Y QUE REQUIEREN PERMISO DE CONSTRUCCIÓN. ASIMISMO, CERTIFICO QUE LOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO PARA REGULAR LA PRÁCTICA DE LA INGENIERÍA Y LA ARQUITECTURA EN EL ESTADO LIBRE ASOCIADO DE PUERTO RICO. ESTOS PLANOS Y ESPECIFICACIONES FUERON PREPARADOS POR MÍ O BAJO MI SUPERVISIÓN DIRECTA Y CONTROL. SOY EL ÚNICO QUE ESTÁ AUTORIZADO POR LA LEY PARA LA REVISIÓN, PUESTA EN VIGOR Y USO DE ESTOS PLANOS Y ESPECIFICACIONES. CUALQUIER ALTERACIÓN, REVISIÓN O USO DE ESTOS PLANOS Y ESPECIFICACIONES POR PERSONAS NO AUTORIZADAS POR MÍ, O POR ESTAS PERSONAS QUE NO CONOCIMIENTO, NO HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA QUE LA SUPA EMPLEADOS, O POR OTRAS PERSONAS QUE NO CONOCIMIENTO, NO HACEN RESPONSABLE DE CUALQUIER ACCIÓN JUDICIAL Y DISCIPLINARIA QUE LA SUPA

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PROJECT: PW #107355 – MAIN FACILITIES
SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.
DRAWING TITLE: PARTIAL ROOF ELECTRICAL PLAN
JOB NO. 2312 | DATE OCTOBER, 2026 | SCALE AS SHOWN

SHEET E-5.2
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0 5' 10' 20' 30'

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

PARTIAL ROOF ELECTRICAL PLAN

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

NUMBERED NOTES:

1. EXISTING EXHAUST FAN EF-7 INCOMING FEEDER REMAIN: 3#10 AWG Cu & 1#12 AWG Cu GROUND IN ¾"ø RMC CONDUIT.
2. NEW HEAVY DUTY SAFETY SWITCH. REFER TO SAFETY SWITCHES SCHEDULE ON DWG E-1.0.
3. NEW LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC), CONDUIT SIZE AND WIRES MUST BE AS PER INCOMING FEEDER. MUST BE MINIMUM 2 FEET AND MAXIMUM 6 FEET LONG.
4. NEW EXHAUST FAN EF-7. REFER TO MECHANICAL DRAWINGS.
5. NEW FEEDER: 2#8 AWG THWN-2 Cu & 1#10 AWG THWN-2 Cu GREEN EQUIPMENT GROUNDING CONDUCTOR IN ¾"ø PVC SCHEDULE 80 CONDUIT. REFER TO ADDITIONAL NOTES ON THIS DRAWING.
6. EXISTING PHOTOCELL TO BE REMOVED. REMOVE OUTLET BOX, WIRES AND CONDUITS.
7. EXISTING FLOOD LIGHT TO BE REPLACED. REFER TO LIGHTING FIXTURE SCHEDULE ON DRAWING E-1.0.
8. NEW 4"SQ x 2" CAST ALUMINUM FS TYPE JUNCTION BOX WITH GASKETED STAINLESS STEEL BLANK COVER.
9. NEW FLEXIBLE CONNECTION: 2#12 AWG THWN-2 Cu & 1#12 AWG THWN2 Cu GREEN EQUIPMENT GROUNDING CONDUCTOR IN ½"ø LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT.
10. EXISTING FLEXIBLE CONDUIT WITH WIRES TO BE REMOVED.
11. EXISTING JUNCTION BOX TO BE REMOVED.
12. EXISTING CONDUIT WITH WIRES TO BE REMOVED.
13. EXISTING COMBINATION MAGNETIC STARTER TO BE REMOVED.
14. EXISTING 480V EXPOSED FEEDER TO BE REMOVED.
15. EXISTING 480V FEEDER TO REMAIN: 3#12 AWG Cu & 1#12 AWG Cu GROUND IN ¾"ø RMC CONDUIT.
16. EXISTING JUNCTION BOX TO REMAIN.
17. EXISTING MOTOR CONNECTION TO BE REMOVED.
18. EXISTING SUPPLY FAN TO BE REPLACED, AS APPLIES. REFER TO MECHANICAL DRAWINGS.
19. NEW LIQUIDTIGHT FLEXIBLE METALLIC CONDUIT (LFMC), CONDUIT SIZE AND WIRES MUST BE AS PER INCOMING FEEDER. MUST BE MINIMUM 2 FEET AND MAXIMUM 6 FEET LONG.
20. NEW COMBINATION MAGNETIC STARTER. SEE SCHEDULE ON DWG E-1.0.
21. NEW EXPOSED FEEDER FOR SUPPLY FAN: 3#12 AWG THWN Cu & 1#12 AWG THWN Cu GROUND IN ¾"ø PVC SCHEDULE 80 CONDUIT.
22. NEW SUPPORTS (TYPICAL). REFER TO ADDITIONAL NOTES.
23. EXISTING VAC PACKAGE UNIT TO BE REPLACED. REFER TO MECHANICAL DRAWINGS.
24. EXISTING 480V FEEDER TO REMAIN: 3#6 AWG Cu 1#6 AWG Cu EQUIPMENT GROUNDING CONDUCTOR GROUND IN ½"ø CONDUIT.
25. EXISTING 1"ø LFMC CONDUIT WITH WIRES TO BE REPLACED WITH A NEW 480V FEEDER: 3#6 AWG THWN-2 Cu 1#6 AWG THWN-2 Cu EQUIPMENT GROUNDING CONDUCTOR IN 1"ø PVC SCH 80 CONDUIT.
26. EXISTING SAFETY SWITCH TO REMAIN.
27. EXISTING MOTOR CONNECTION TO BE REPLACED WITH A NEW FEEDER: 3#6 AWG THWN-2 Cu 1#8 AWG THWN-2 Cu EQUIPMENT GROUNDING CONDUCTOR IN 1"ø LFMC CONDUIT.
28. EXISTING SAFETY SWITCH TO BE REPLACED WITH A NEW ONE. REFER TO SAFETY SWITCHES SCHEDULE ON DWG. E-1.0.

ADDITIONAL NOTES:

1. EXPOSED NON-METALLIC ELECTRICAL CONDUITS MUST BE REPLACED WITH NEW HEAVY WALL RIGID GALVANIZED STEEL CONDUITS (RMC). PVC SCHEDULE 80 CONDUITS MAY BE USED INSTEAD OF RMC CONDUITS. INCLUDE REWIRING OF CONDUITS, AS APPLIES.
2. PROVIDE CONDUIT SUPPORTS TO EXISTING AND NEW EXPOSED CONDUITS AS PER NATIONAL ELECTRICAL CODE REQUIREMENTS.
3. IF RIGID PVC CONDUITS ARE INSTALLED, THE CONDUIT STRAPS MUST BE MOUNTED LOOSELY SO AS TO ALLOW FOR CONDUIT ELONGATION OR CONTRACTION DUE TO TEMPERATURE CHANGES.
4. IF RIGID PVC CONDUITS ARE USED, THE INSTALLATION OF EXPANSION FITTINGS IS REQUIRED. THE SPACING BETWEEN EXPANSION FITTINGS MUST BE NOT EXCEED 50 FEET. EXPANSION COUPLINGS MUST BE TWO PIECE TYPE. FOLLOW MANUFACTURER'S INSTRUCTIONS FOR EXPOSED INSTALLATIONS.
5. SUPPORTS INSTALLED ON ROOF MUST CONSIST OF COOPER INDUSTRIES B-LINE DURA-BLOK ROOFTOP SUPPORTS WITH STAINLESS STEEL UNISTRUT CHANNELS.
6. ROOFTOP SUPPORTS MUST BE ATTACHED TO SURFACE WITH A STRUCTURAL ADHESIVE & SEALANT. USE ADHESIVE CHEM LINK MODEL M-1 OR APPROVED EQUAL. CONTRACTOR MUST VERIFY COMPATIBILITY OF THE ADHESIVE ON MEMBRANE ROOF APPLICATIONS PRIOR TO INSTALLATION.
7. PERFORATIONS TO ROOF SURFACE ARE NOT ALLOWED.
8. MINIMUM UNISTRUT SIZE MUST BE 1⅝"W x 1⅝"H; LENGTH AS REQUIRED. CHANNELS MUST BE HEAVY DUTY 12-GAGE HOT DIPPED GALVANIZED STEEL. FOR OUTDOOR INSTALLATIONS USE STAINLESS STEEL UNISTRUT, SCREWS, WASHERS, NUTS, STRAPS, HANGERS, AND ACCESSORIES.

CIRCLED AREAS REPRESENT THE WORKS TO BE INCLUDED ON THE BASE BID. THE CONTRACTOR MUST PROVIDE AN ALTERNATE ESTIMATE FOR ITEMS NOT LOCATED WITHIN THESE AREAS.

BID DRAWINGS PHASE

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YO, ELWOOD M. CASELLAS BOND, INGENIERO LICENCIADO, LICENCIA NUM. 10697, CERTIFICO QUE SOY EL PROFESIONAL QUE CONFECCIONO LOS DISEÑOS Y/O PREPARO ESTOS PLANOS Y LAS ESPECIFICACIONES COMPLEMENTARIAS, TAMBIEN CERTIFICO QUE ENTIENDO QUE DICHOS PLANOS Y ESPECIFICACIONES CUMPLEN CON LAS DISPOSICIONES APLICABLES DEL REGLAMENTO CONSTRUCCIONES ADOPTADO POR LA JUNTA DE PLANIFICACION, LA ADMINISTRACION DE REGLAMENTOS Y PERMISOS Y LOS REGLAMENTOS VIGENTES EN LA JURISDICCION. CERTIFICO, ADEMAS, QUE EN LA PREPARACION DE ESTOS PLANOS Y ESPECIFICACIONES SE HA CUMPLIDO CABALMENTE CON LO DISPUESTO EN LA LEY NUM. 74 DE 8 DE JUNIO DE 2004, SEGUN ENMENDADA, CONOCIDA COMO LA "LEY PARA LA REFORMA POR LA INDUSTRIA PUERTORRIQUEÑA" Y CON LA LEY NUM. 208 DE 15 DE AGOSTO DE 1995, SEGUN ENMENDADA CONOCIDA COMO LA "LEY PARA LA REFORMA DEL PROCESO DE PERMISOS DE PUERTO RICO". DE IGUAL MANERA, ACEPTO QUE ESTOS PLANOS SON PROPIEDAD INTELECTUAL DE LA FIRMA A LA CUAL PERTENEZCO Y QUE LOS MISMOS NO PUEDEN SER UTILIZADOS EN OTRAS OBRAS SIN MI CONSENTIMIENTO EXPRESADO, Y POR OTRAS PERSONAS QUE NO SEAN LAS AUTORIZADAS POR MI CONSENTIMIENTO, NO HACEN RESPONSABLE DE CUALQUIER ACCION JUDICIAL Y DISCIPLINARIA POR LA MISMA.

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PROJECT: PW #107355 – MAIN FACILITIES — SHEET: E-5.3

SPONSOR: UNIVERSIDAD CENTRAL DEL CARIBE, INC.

DRAWING TITLE: PARTIAL ROOF ELECTRICAL PLAN — 59 of 59

JOB NO. 2312 | DATE OCTOBER, 2026 | SCALE AS SHOWN

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