MECHANI	CAL SYMBOLS LIST		CHANICAL			
AC-1)(TXF-1)	EQUIPMENT SYMBOL	ABBREVIATIONS				
	EQUITMENT STMDOL	AFF	ABOVE FINISHED FLOOR			
DU	CT ACCESSORIES	AL	ACOUSTIC LINING			
BD		BD	BACKDRAFT DAMPER			
	BACKDRAFT DAMPER	CFM	CUBIC FEET OF AIR PER MINUTE			
	BACKBITALL BAWLEK	CD	CONDENSATE DRAIN PIPE			
		DN	DOWN			
 	FIRE DAMPER W/ ACCESS DOOR	EER	ENERGY EFFICIENCY RATIO			
	,	FC	FLEXIBLE CONNECTION			
M		FD/AD	FIRE DAMPER W/ACCESS DOOR			
+	MOTORIZED DAMPER W/ ACCESS DOOR	FD	FIRE DAMPER W/FUSIBLE LINK			
	,	IEED	INTEGRATED ENERGY			
		IEER	EFFICIENCY RATIO			
F	DUCT HEATER W/ ACCESS DOOR	TEF	TOILET EXHAUST FAN			
	ŕ	KEF	TOILET EXHAUST FAN			
1 1		MAU	MAKEUP AIR UNIT			
	VOLUME DAMPER W/ ACCESS DOOR	EDH	ELECTRIC DUCT HEATER			
	VOLUME BANN EIX NA AGGEGG BOOK	SEER	SEASONAL ENERGY EFFICIENCY RATIO			
CONTE	ROLS AND SENSORS	ACCU	AIR COOLED CONDENSING UNIT			
	TOES TIND SENSONS	CDS	CEILING DIFFUSER SUPPLY			
T	THERMOSTAT	CDR	CEILING DIFFUSER RETURN			
Ū _S	TEMPERATURE SENSOR	AC	AIR CONDITIONER			
	DUCTWORK					
24X12	RECTANGULAR DUCT (WIDTH X DEPTH)					
======	AIR DUCT W/ 1.5" ACOUSTICAL LINING					
FC FC	FLEXIBLE CONNECTION					
ø12	ROUND DUCT (DIAMETER)					
\$	ROUND DUCT CROSS SECTION					
	SUPPLY AIR RECTANGULAR DUCT GOING UP/DOWN					

RETURN AIR RECTANGULAR DUCT

GOING UP/DOWN

NEW JERSEY BUILDING DEPARTMENT NOTES

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF THE NEW JERSEY BUILDING CODE, EFFECTIVE JULY 1, 2020 AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

- 1. THE CONTRACTOR SHALL ENGAGE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS.
- 2. TESTS WILL BE CONDUCTED UNDER DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS. THE TESTS WILL SHOW COMPLIANCE WITH 2020 BUILDING CODE REQUIREMENTS AS OUTLINES IN SECTION [BC 1704].
- 3. THE LICENSED PROFESSIONAL ENGINEER, ARCHITECT OR OTHER PERSON HAVING NOT LESS THAN FIVE (5) YEARS EXPERIENCE SUPERVISING THE INSTALLATION OF SUCH MECHANICAL SYSTEMS AND CONDUCTING SUCH TESTS WILL FILE DOCUMENTATION AND REPORTS OF TESTS THAT THE SYSTEM COMPLIES WITH THE CONSTRUCTION DOCUMENTS AND APPLICABLE LAWS.
- 4. TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE 2018 INTERNATIONAL MECHANICAL CODE WITH AMENDMENTS (MECHANICAL CODE 2018 OF NEW JERSEY):
- A. VENTILATION SYSTEM MC 403
 B. REFRIGERATION SYSTEMS MC 1108
- C. GREASE DUCT TEST MC 506.3.2.5
- 5. REFERENCED CODE OR STANDARD:
 - A. STANDARDS OF HEATING MC 309.1
 B. NOISE CONTROL CODE
 - C. DUCT CONSTRUCTION AND INSTALLATION— MC 603
 D. AIR INTAKES, EXHAUSTS AND RELIEFS MC 401.5
 - E. AIR FILTERS MC 605 F. PIPING AND INSULATION — MC 1201—1203 & 1204
- 6. MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
- 7. VENTILATION FOR ALL AREA SHALL COMPLY WITH MC 401.
- 8. A STATEMENT SHALL BE FILED BY THE OWNER OR TENANT IN POSSESSION THAT THE VENTILATION SYSTEM WILL BE KEPT IN CONTINUOUS OPERATION AT ALL TIMES DURING THE NORMAL OCCUPANCY OF THE STRUCTURE AS REQUIRED BY IMC 2018 (MECHANICAL CODE 2018 OF NEW JERSEY), SECTION 403.3.
- 9. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- 10. SMOKE DETECTOR SHALL MEET UL268A.
- 11. ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
- 12. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET.
 ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING
 APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- 13. REFER TO ARCHITECTURAL DRAWINGS FOR REQUIRED FIRE—RATED WALL AND SMOKE WALL CONSTRUCTION AND LOCATION.
- 14. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- 15. SMOKE DETECTOR SHALL MEET UL268A.
- 16. THESE PLANS ARE APPROVED ONLY FOR THE WORK INDICATED ON THE APPLICATION SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- 17. RECORD DRAWINGS SHALL BE SUBMIT TO THE BUILDING OWNER WITHIN 90 DAYS AFTER THE DATE OF SYSTEM ACCEPTANCE AS PER ASHRAE 90.1 2016 6.7.2.1.

	MECHANICAL DRAWING LIST
M0.1	GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.
M0.2	MECHANICAL SPECIFICATIONS (1 OF 2)
M0.3	MECHANICAL SPECIFICATIONS (2 OF 2)
M1.0	MECHANICAL PLANS
M5.0	MECHANICAL DETAILS (1 of 4)
M5.1	MECHANICAL DETAILS (2 of 4)
M5.2	MECHANICAL DETAILS (3 OF 4)
M5.3	MECHANICAL DETAILS (4 OF 4)
M6.0	MECHANICAL SCHEDULES
M7.0	HOOD DETAILS (1 OF 5)
M7.1	HOOD DETAILS (2 OF 5)
M7.2	HOOD DETAILS (3 OF 5)
M7.3	HOOD DETAILS (4 OF 5)
M7.4	HOOD DETAILS (5 OF 5)

GENERAL NOTES

- 1. CONTRACTOR SHALL SURVEY THE AREA OF THIS WORK BEFORE SUBMITTING A BID AND SHALL BE RESPONSIBLE FOR NOTIFYING THE ARCHITECT OF ANY CONDITIONS WHICH WOULD PREVENT THE INSTALLATION OF THE WORK AS SHOWN ON DRAWINGS.
- 2. ALL APPLICABLE CODES, LAWS AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK ARE HEREBY INCORPORATED INTO AND MADE A PART OF THESE SPECIFICATIONS, AND THEIR PROVISIONS SHALL BE CARRIED OUT BY THE CONTRACTOR WHO SHALL INFORM THE OWNER, PRIOR TO SUBMITTING A PROPOSAL, OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE LAWS AND REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH VIOLATION SHALL BE CORRECTED BY THE CONTRACTOR.
- 3. BEFORE PROCEEDING WITH ANY WORK IN OCCUPIED OR USED AREAS, THE CONTRACTOR SHALL APPLY TO OWNER FOR PERMISSION TO ENTER SUCH AREAS. THE CONTRACTOR IS OBLIGED TO PERFORM HIS WORK ONLY AT THE TIMES DESIGNATED BY OWNER. THERE WILL BE NO ADDITIONAL COMPENSATION FOR THE WORK PERFORMED AFTER HOURS OR ON OFF—DAYS WITHOUT PRIOR WRITTEN APPROVAL.
- 4. THE WORK IN THE BUILDING SHALL BE DONE WHEN AND AS DIRECTED, AND IN A MANNER SATISFACTORY TO THE OWNER. THE WORK SHALL BE PERFORMED SO AS TO CAUSE THE LEAST POSSIBLE INCONVENIENCE AND DISTURBANCE TO THE PRESENT OCCUPANTS.
- 5. THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK IN OVERTIME AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- 6. CONTRACTOR SHALL ASCERTAIN THE APPROPRIATE METHOD FOR BRINGING THE UNITS INTO AND THROUGH THE BUILDING TO POSITION UNIT IN LOCATION SHOWN ON THE PLANS. WHERE NECESSARY, EQUIPMENT SHALL BE SHIPPED FROM MANUFACTURER IN SECTIONS OF SIZE SUITABLE FOR MOVING THROUGH RESTRICTIVE SPACES. COORDINATE WITH BUILDING OWNER APPROPRIATE TIMES OF DAY SUCH EQUIPMENT MAY BE MOVED THROUGH ALL AREAS.
- 7. DUCTWORK AND PIPING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL MAKE ALLOWANCE IN PRICING FOR ROUTING OF DUCTWORK AND PIPING TO AVOID OBSTRUCTIONS. EXACT LOCATIONS ARE SUBJECT TO APPROVAL OF ARCHITECT. COORDINATION WITH THE OTHER TRADES IS REQUIRED.
- 8. SUPPORT ALL DUCTWORK AND PIPING FROM BUILDING STRUCTURE AND/OR FRAMING IN AN APPROVED MANNER. WHERE OVERHEAD CONSTRUCTION DOES NOT PERMIT FASTENING OR SUPPORTS FOR EQUIPMENT, FURNISH ADDITIONAL FRAMING. INSERTS SHALL BE STEEL, SLOTTED TYPE AND FACTORY PAINTED. SINGLE ROD SHALL BE SIMILAR TO GRINNELL FIG. 281. MULTI-ROD SHALL BE SIMILAR TO FEE & MASON SERIES 9000 WITH END CAPS AND CLOSURE STRIPS. MAXIMUM LOADING INCLUDING PIPES, DUCTWORK CONTENTS AND COVERING SHALL NOT EXCEED 75% OF RATED INSERT CAPABILITY. WHEN SUPPORTING FROM BUILDING USE BEAM CLAMPS IN APPROVED MANNER.
- 9. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THIS BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF PIPES, DUCTS, LOUVERS, CONDUIT, AND EQUIPMENT. PROVIDE EQUIPMENT CURBS AND DUNNAGE STEEL AS REQUIRED.
- 10. SEAL OPENINGS AROUND DUCTS AND PIPING THROUGH PARTITIONS, WALLS AND FLOORS (NOT IN SHAFTS) WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL (FIBERGLASS INSULATION IS NOT ACCEPTABLE).
- 11. WHERE PENETRATIONS THROUGH FIRE RATED WALLS ARE NOT FIRE PROOFED THIS CONTRACTOR SHALL BE RESPONSIBLE TO SEAL SAME TO MAINTAIN THE RATED INTEGRITY.
- 12. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOR OPERATION, MAINTENANCE AND REPAIR. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- 13. ACCESS DOORS ARE REQUIRED FOR ALL BUILDING SERVICE VALVES THAT RUN THROUGH THE SPACE, AND ACCESS DOOR SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL. COORDINATE ALL LOCATIONS OF ACCESS DOORS WITH THE ARCHITECT.
- 14. REMOVABLE ACCESS TILE AND/OR ACCESS DOOR ARE REQUIRED IN HUNG CEILINGS, SHAFTS AND WALLS FOR ALL VOLUME AND FIRE DAMPERS, AUTOMATIC DAMPERS AND ALL OTHER MECHANICAL EQUIPMENT AND DEVICES. HVAC CONTRACTOR TO FURNISH ACCESS LOCATION REQUIREMENTS TO GENERAL CONTRACTOR. ACCESS TILE IDENTIFICATION: PROVIDE BUTTONS, TABS, AND MARKERS TO IDENTIFY LOCATION OF CONCEALED VALVES, DAMPERS AND EQUIPMENT.
- 15. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING, EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- 16. MATERIALS AND WORKMANSHIP, UNLESS OTHERWISE NOTED, SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- 17. ALL EQUIPMENT SHALL BE PROVIDED WITH ONE YEAR WARRANTY PARTS AND LABOR AND FIVE YEARS ON COMPRESSORS. WARRANTY PERIOD BEGINS UPON PROJECT ACCEPTANCE
- 18. ALL MATERIAL AND EQUIPMENT TO BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- 19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR HIS WORK WITH ITS COMPLETION AND FINAL ACCEPTANCE AND SHALL REPLACE ANY OF THE SAME WHICH MAY BE DAMAGED, LOST, OR STOLEN WITHOUT ADDITIONAL COST TO THE OWNER.

- 20. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE FAILURE OF ANY DUCTWORK SYSTEM OR EQUIPMENT TO FUNCTION PROPERLY UPON COMPLETION OF HIS WORK UPON SAID SYSTEM OR EQUIPMENT.
- 21. SUBMIT SHOP DRAWING OF ALL WORK WHICH MUST BE APPROVED BY THE ARCHITECT AND ENGINEER BEFORE WORK COMMENCES.
- 22. INSURANCE: IN ACCORDANCE WITH BUILDING REQUIREMENTS THE CONTRACTOR SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- 23. THE FINAL ACCEPTANCE WILL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT, BALANCED THE VARIOUS SYSTEMS, DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATES OF INSPECTION AND APPROVAL.
- 24. SPECIFICATIONS ARE OF SIMPLIFIED FORM AND INCLUDE INCOMPLETE SENTENCES. WORDS OR PHRASES SUCH AS "THE CONTRACTOR SHALL," "SHALL BE," "FURNISH," "PROVIDE," "A," "THE," AND "ALL" HAVE BEEN OMITTED FOR BREVITY.
- 25. WHERE A CONFLICT EXISTS BETWEEN THE DRAWINGS, THE SPECIFICATIONS OR ANY OTHER CONSTRUCTION DOCUMENT, THE ONE WITH THE MOST STRINGENT REQUIREMENT(S) SHALL APPLY.

DEFINITIONS:

- 1) "PROVIDE": TO SUPPLY, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- 3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE AND DELIVER COMPLETE WITH RELATED ACCESSORIES.

SCOPE OF WORK

SCOPE OF WORK

- 1. THE WORK UNDER CONTRACT INCLUDES ALL LABOR, MATERIALS AND APPLIANCES NECESSARY FOR THE FURNISHING, INSTALLING AND TESTING, COMPLETE AND READY FOR SAFE OPERATION OF THE SYSTEMS AS DESCRIBED IN THE SPECIFICATIONS, FLOOR PLAN(S) DESIGN, DETAIL DRAWINGS, NOTES, RFI'S, ETC. FOR THIS PROJECT. WORK SHALL BE INSTALLED IN A NEAT, WORKMANLIKE MANNER.
- 2.THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH THE DEPARTMENT HAVING JURISDICTION, OBTAIN PERMITS OR LICENSES NECESSARY TO CARRY OUT THIS WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH TO THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY AS EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
- 3.THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES, BY OWNER, INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER DATE IS EARLIER. THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDE THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED IN REPAIRING AND REPLACING WORK OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR.

GENERAL HVAC NOTES

- 1. PROVIDE ALL MATERIAL AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE MECHANICAL SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND AS REQUIRED BY CODE.
- CONTRACT DOCUMENT DRAWINGS FOR MECHANICAL WORK (HVAC, PLUMBING, AND FIRE PROTECTION) ARE DIAGRAMMATIC AND ARE INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT ONLY.
- 3. THE LOCATIONS OF ALL ITEMS SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS THAT ARE NOT FIXED BY DIMENSIONS ARE APPROXIMATE ONLY. THE EXACT LOCATIONS NECESSARY TO SECURE THE BEST CONDITIONS AND RESULTS MUST BE DETERMINED BY THE PROJECT SITE CONDITIONS AND SHALL HAVE THE APPROVAL OF THE ENGINEER BEFORE BEING INSTALLED. DO NOT SCALE DRAWINGS.
- 4. WHEN MECHANICAL WORK (HVAC, PLUMBING, SHEET METAL, FIRE PROTECTION, ETC.) IS SUBCONTRACTED, IT SHALL BE THE MECHANICAL CONTRACTOR'S RESPONSIBILITY TO COORDINATE SUBCONTRACTORS AND THE ASSOCIATED CONTRACTS. WHEN DISCREPANCIES ARISE PERTAINING TO WHICH CONTRACTOR PROVIDES A PARTICULAR ITEM OF THE MECHANICAL CONTRACT OR WHICH CONTRACTOR PROVIDES FINAL CONNECTIONS FOR A PARTICULAR ITEM OF THE MECHANICAL CONTRACT, IT SHALL BE BROUGHT TO THE ATTENTION OF THE MECHANICAL CONTRACTOR, WHOSE DECISION SHALL BE FINAL.
- 6. COORDINATE CONSTRUCTION OF ALL MECHANICAL WORK WITH ARCHITECTURAL, STRUCTURAL, CIVIL, ELECTRICAL WORK, ETC., SHOWN ON OTHER CONTRACT DOCUMENT DRAWINGS.
- . INSTALL ALL MECHANICAL EQUIPMENT AND APPURTENANCES IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, CONTRACT DOCUMENTS, AND APPLICABLE CODES AND REGULATIONS.
- 7. WHERE TWO OR MORE ITEMS OF THE SAME TYPE OF EQUIPMENT ARE REQUIRED, THE PRODUCT OF ONE MANUFACTURER SHALL BE USED.

DESCRIPTION

DATE

PROJECT INFORMATION: UNCLE WILLIE'S WINGS

DATE:	
PROJECT NO.:	
DRAWN BY: NYE	

DRAWING TITLE:

CHECKED BY: NYE

SCALE: AS NOTED

GENERAL NOTES, SYMBOLS AND ABBREVIATIONS.

DRAWING NO.:

M0.

- 8. COORDINATE ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS' CERTIFIED DRAWINGS. COORDINATE AND PROVIDE ALL DUCT AND PIPING TRANSITIONS REQUIRED FOR FINAL EQUIPMENT CONNECTIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DUCT AND PIPING DIMENSIONS BEFORE FABRICATION.
- 9. ALL CONTROL WIRE AND CONDUIT SHALL COMPLY WITH THE NATIONAL ELECTRIC CODE AND ELECTRICAL DIVISION OF THE SPECIFICATION.
- 10. PROVIDE VIBRATION ISOLATION FOR ALL MECHANICAL EQUIPMENT TO PREVENT TRANSMISSION OF VIBRATION TO BUILDING STRUCTURE.
- 11. PROVIDE VIBRATION ISOLATORS FOR ALL PIPING SUPPORTS CONNECTED TO, AND WITHIN 50 FT. OF, ISOLATED EQUIPMENT (EXCEPT AT BASE ELBOW SUPPORTS AND ANCHOR POINTS).
- 12. LOCATE ALL TEMPERATURE, PRESSURE. AND FLOW MEASURING DEVICES IN ACCESSIBLE LOCATIONS WITH THE STRAIGHT SECTION OF PIPE OR DUCT UP— AND DOWNSTREAM AS RECOMMENDED BY THE MANUFACTURER FOR GOOD ACCURACY.
- 13. WHERE BEAMS ARE INDICATED TO BE PENETRATED WITH DUCTWORK OR PIPING, COORDINATE DUCTWORK AND PIPING LAYOUT WITH BEAM OPENING SIZE AND OPENING LOCATIONS. COORDINATION SHALL BE DONE PRIOR TO THE FABRICATION OF DUCTWORK, CUTTING OF PIPING, OR FABRICATION OF BEAMS.
- 14. ALL MISCELLANEOUS STEEL REQUIRED TO ENSURE PROPER INSTALLATION AND AS SHOWN IN THE DETAILS FOR PIPING, DUCTWORK. AND EQUIPMENT (UNLESS OTHERWISE NOTED) SHALL BE FURNISHED AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- 15. PROVIDE ACCESS PANELS FOR INSTALLATION IN WALLS AND CEILINGS, WHERE REQUIRED, TO SERVICE DAMPERS, VALVES, SMOKE DETECTORS, AND OTHER CONCEALED MECHANICAL EQUIPMENT. ACCESS PANELS SHALL BE TURNED OVER TO THE GENERAL CONTRACTOR FOR INSTALLATION. ACCESS PANELS SHALL HAVE THE EQUAL RATED CAPACITY (1HR, 2HR, ETC.) AS WALL.
- 16. MECHANICAL EQUIPMENT, DUCTWORK, AND PIPING SHALL NOT BE SUPPORTED FROM A METAL DECK.
- 17. ALL EQUIPMENT, PIPING, DUCTWORK, ETC., SHALL BE SUPPORTED AS DETAILED, SPECIFIED AND REQUIRED TO PROVIDE A VIBRATION-FREE INSTALLATION.
- 18. ALL DUCTWORK, PIPING, AND EQUIPMENT SUPPORTED FROM STRUCTURAL STEEL SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR. ALL ATTACHMENTS TO STEEL BAR JOISTS, TRUSSES, OR JOIST GIRDERS SHALL BE AT PANEL POINTS. PROVIDE BEAM CLAMPS MEETING MSS STANDARDS. WELDING TO STRUCTURAL MEMBERS SHALL NOT BE PERMITTED. THE USE OF C-CLAMPS SHALL NOT BE PERMITTED.
- 19. ALL ROOF-MOUNTED EQUIPMENT CURBS/STEEL RAILS FOR EQUIPMENT PROVIDED BY THE MECHANICAL CONTRACTOR SHALL BE FURNISHED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE GENERAL CONTRACTOR.
- 20. LOCATIONS AND SIZES OF ALL FLOOR, WALL, AND ROOF OPENINGS SHALL BE COORDINATED WITH ALL OTHER TRADES INVOLVED.
- 21. ALL OPENINGS IN FIRE WALLS DUE TO DUCTWORK, PIPING. CONDUIT, ETC., SHALL BE FIRE STOPPED WITH A PRODUCT SIMILAR TO 3M OR APPROVED EQUAL.
- 22. ALL AIR CONDITIONING CONDENSATE DRAIN LINES FROM EACH AIR HANDLING UNIT SHALL BE PIPED FULL SIZE OF THE UNIT DRAIN OUTLET, WITH "P" TRAP, AND PIPED TO THE NEAREST DRAIN. SEE THE DETAILS SHOWN IN THE DRAWINGS OR THE CONTRACT SPECIFICATIONS FOR THE DEPTH OF THE AIR CONDITIONING CONDENSATE TRAP.
- 23. REFER TO TYPICAL DETAILS FOR DUCTWORK, PIPING, AND EQUIPMENT INSTALLATION.
- 24. REINFORCEMENT, DETAILING, AND PLACEMENT OF CONCRETE SHALL CONFORM TO ASTM 315 AND ACI 318. CONCRETE SHALL CONFORM TO ASTM C94. CONCRETE WORK SHALL CONFORM TO ACI 318 PART ENTITLED "CONSTRUCTION REQUIREMENTS".COMPRESSIVE STRENGTH IN 28 DAYS SHALL BE 3,000 PSI. TOTAL AIR CONTENT OR EXTERIOR CONCRETE SHALL BE BETWEEN 5 AND 7 PERCENT BY VOLUME. SLUMP SHALL BE BETWEEN 3 AND 4 IN. CONCRETE SHALL BE CURED FOR 7 DAY AFTER PLACEMENT.
- 25. CONCRETE HOUSEKEEPING PADS TO SUIT MECHANICAL EQUIPMENT SHALL BE SIZED AND LOCATED BY THE MECHANICAL CONTRACTOR. MINIMUM CONCRETE PAD THICKNESS SHALL BE 6 IN. PAD SHALL EXTEND BEYOND THE EQUIPMENT A MINIMUM OF 6 IN. ON EACH SIDE. CONCRETE HOUSEKEEPING PADS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR. IT SHALL BE THE RESPONSIBILITY OF THE MECHANICAL CONTRACTOR TO COORDINATE THE SIZE AND LOCATION OF CONCRETE HOUSEKEEPING PADS WITH THE GENERAL CONTRACTOR.
- 26. ALL TESTS SHALL BE COMPLETED BEFORE ANY MECHANICAL EQUIPMENT OR PIPING INSULATION IS APPLIED.
- 27. TESTING, ADJUSTING, AND BALANCING AGENCY SHALL BE A MEMBER OF THE ASSOCIATED AIR BALANCE COUNCIL (AABC) OR THE NATIONAL ENVIRONMENTAL BALANCING BUREAU (NEBB). TESTING, ADJUSTING, AND BALANCING SHALL BE PERFORMED IN ACCORDANCE WITH THE AABC STANDARDS.

HVAC DUCTWORK - SHEET METAL

- . CERTAIN ITEMS SUCH AS RISES AND DROPS IN DUCTWORK, ACCESS DOORS, VOLUME DAMPERS, ETC., ARE INDICATED ON THE CONTRACT DOCUMENT DRAWINGS FOR CLARITY FOR A SPECIFIC LOCATION REQUIREMENT AND SHALL NOT BE INTERPRETED AS THE EXTENT OF THE REQUIREMENTS FOR THESE ITEMS.
- 2. ALL NEW DUCTWORK WILL COMPLY WITH THE LATEST SMACNA GUIDELINES AND CONFORM WITH REQUIREMENTS OF THE LATEST HANDBOOKS PUBLISHED BY ASHRAE.

- 3. PROVIDE VOLUME DAMPER AT EACH TAP TO MAIN DUCT AND WHERE NECESSARY TO PROPERLY BALANCE SYSTEM.
- 4. SUPPLY AND RETURN DUCTWORK OF ALL AC UNITS SHALL BE LINED WITH 1.5" INSULATION HAVING ACOUSTIC AND THERMAL PROPERTIES.
- CONTRACTOR SHALL SUPPLY AND INSTALL ALL NECESSARY SUPPLY DIFFUSERS AND RETURN AIR REGISTERS WHERE INDICATED ON THE DRAWING. COORDINATE LOCATION OF DIFFUSERS AND REGISTERS WITH REFLECTED CEILING PLAN.
- 6. IN CORRIDORS WHERE CEILING SPEAKERS AND AIR DIFFUSERS ARE INDICATED BETWEEN THE SAME LIGHT FIXTURES, INSTALL BOTH DEVICES AT THE QUARTER POINTS BETWEEN THE
- 7. UNLESS OTHERWISE SHOWN, LOCATE ALL ROOM THERMOSTATS (CENTER LINE) ABOVE THE FINISHED FLOOR. NOTIFY THE ENGINEER OF ANY ROOMS WHERE THE PRECEDING LOCATION CANNOT BE MAINTAINED OR WHERE THERE IS A QUESTION ON
- 8. ALL DUCTWORK SHALL CLEAR DOORS AND WINDOWS.
- 9. ALL DUCTWORK DIMENSIONS, AS SHOWN ON THE DRAWINGS, ARE INTERNAL CLEAR DIMENSIONS AND DUCT SIZE SHALL BE INCREASED TO COMPENSATE FOR DUCT LINING THICKNESS.
- 10. PROVIDE ALL 90-DEGREE SQUARE ELBOWS WITH DOUBLE RADIUS TURNING VANES UNLESS OTHERWISE INDICATED. ELBOWS IN KITCHEN, AND LAUNDRY EXHAUSTS SHALL BE OF UN-VANED SMOOTH RADIUS CONSTRUCTION WITH A RADIUS EQUAL TO 1-1/2 TIMES THE WIDTH OF THE DUCT. PROVIDE ACCESS DOORS UPSTREAM OF ALL ELBOWS WITH TURNING
- 11. COORDINATE DIFFUSER AND GRILLE LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING, AND OTHER CEILING ITEMS AND MAKE MINOR DUCT MODIFICATIONS TO SUIT.
- 12. FIELD-ERECTED AND FACTORY-ASSEMBLED AIR HANDLING UNIT COILS SHALL BE ARRANGED FOR REMOVAL FROM THE UPSTREAM SIDE WITHOUT DISMANTLING SUPPORTS. PROVIDE GALVANIZED STRUCTURAL STEEL SUPPORTS FOR ALL COILS (EXCEPT THE LOWEST COIL) IN BANKS OVER TWO COILS HIGH TO PERMIT THE INDEPENDENT REMOVAL OF ANY COIL.
- 13. ALL AIR HANDLING UNITS SHALL OPERATE WITHOUT MOISTURE
- 14. LOCATE ALL MECHANICAL EQUIPMENT (SINGLE DUCT, CONSTANT VOLUME, ETC.) FOR UNOBSTRUCTED ACCESS TO UNIT ACCESS PANELS, CONTROLS, AND VALVING.
- 15. PROVIDE FLEXIBLE CONNECTIONS IN ALL DUCTWORK SYSTEMS (SUPPLY, RETURN, AND EXHAUST) CONNECTED TO AIR HANDLING UNITS, FANS, AND OTHER EQUIPMENT THAT REQUIRE VIBRATION ISOLATION. FLEXIBLE CONNECTIONS SHALL BE PROVIDED AT THE POINT OF CONNECTION TO THE EQUIPMENT UNLESS OTHERWISE INDICATED.
- 16. UNLESS OTHERWISE NOTED, ALL DUCTWORK IS OVERHEAD, TIGHT TO THE UNDERSIDE OF THE STRUCTURE, WITH SPACE FOR INSULATION IF NEEDED.
- 17. ALL DUCTWORK SHALL BE COORDINATED WITH ALL TRADES INVOLVED. OFFSETS IN DUCTS, INCLUDING DIVIDED DUCTS AND TRANSITIONS AROUND OBSTRUCTIONS, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
- 18. PROVIDE ACCESS DOORS IN DUCTWORK TO PROVIDE ACCESS FOR ALL SMOKE DETECTORS, FIRE DAMPERS, SMOKE DAMPERS, VOLUME DAMPERS, AND OTHER ITEMS LOCATED IN THE DUCTWORK THAT REQUIRE SERVICE AND/OR INSPECTION.
- 19. PROVIDE ACCESS DOORS IN DUCTWORK FOR THE OPERATION. ADJUSTMENT, AND MAINTENANCE OF ALL FANS, VALVES, AND MECHANICAL EQUIPMENT.
- 20. ALL DUCTS SHALL BE GROUNDED ACROSS FLEXIBLE CONNECTIONS WITH FLEXIBLE COPPER GROUNDING STRAPS. GROUNDING STRAPS SHALL BE BOLTED OR SOLDERED TO BOTH THE EQUIPMENT AND THE DUCT.
- 21. SMOKE DETECTORS SHALL BE FURNISHED AND WIRED BY THE ELECTRICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR MOUNTING THE SMOKE DETECTOR IN DUCTWORK AS SHOWN ON THE DRAWINGS AND IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTRUCTIONS.
- 22. SEE SPECIFICATIONS FOR DUCTWORK GAUGES, BRACING, HANGERS, AND OTHER REQUIREMENTS.
- 23. EXCEPT AS OTHERWISE SHOWN OR NOTED, ALL DUCTWORK AND OTHER SHEET METAL WORK SHALL BE GALVANIZED SHEET STEEL AND SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION, INC. DUCT CONSTRUCTION STANDARDS, PRESSURE CLASSIFICATION 2 IN. D. AUTOMATIC SHUTDOWN
 - DUCTWORK STATIC PRESSURE CLASSIFICATION:
 - a.2 IN OF W.G. UP TO 2 IN OF W.G. b.6 IN OF W.G. ABOVE 2 IN & UP TO 6 IN WG
- 24. SEALING OF DUCTWORK SHALL COMPLY WITH SECTION 603.9 OF THE MECHANICAL CODE OF NEW JERSEY STATES CONSTRUCTION CODES.
- 25. VOLUME DAMPERS: GALVANIZED STEEL, PER SMACNA "LOW VELOCITY MANUAL," EXCEPT PROVIDE BEARING AT ONE END OF E. SETPOINT OVERLAP RESTRICTION: DAMPER ROD AND QUADRANT, WITH LEVER AND LOCKSCREW AT OTHER END. FOR INSULATED DUCTS, QUADRANTS MOUNTED ON COLLAR TO CLEAR INSULATION. INSTALL WITH LEVERS ACCESSIBLE.
- 26. ACCESS DOORS: INSULATED OR UNINSULATED, SAME AS DUCT.
- 1) PROVIDE MINIMUM 20 IN. X 20 IN. (OR EQUIVALENT) ON ALL DUCTS, UNLESS OTHERWISE APPROVED, AT FIRE DAMPERS, AND AT ALL DUCT ACCESSORIES SUCH AS

VIBRATION ISOLATION

A. GENERAL:

- 1) PROVIDE ISOLATION FOR EQUIPMENT, PIPING AND
- 2) INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- 3) PROVIDE LEVELING DEVICES AND APPROVED RESILIENT RESTRAINING DEVICES AS REQUIRED TO LIMIT EQUIPMENT AND PIPING MOTION IN EXCESS OF 1/4".
- 4) ACCEPTABLE MANUFACTURERS:
- a.MASON INDUSTRIES, INC.

b. VIBRATION ELIMINATOR CO.

c.KORFUND DYNAMICS CORP.

B. CEILING-HUNG FANS AND EQUIPMENT

- 1) PROVIDE SPRING HANGER ROD ISOLATORS. STEEL COMPRESSION SPRING AND NEOPRENE SOUND PAD WITHIN A STEEL RETAINER BOX. SIMILAR TO MASON TYPE PCHS.
- 2) 1 IN. MINIMUM STATIC DEFLECTION. 1/2 IN. MINIMUM RESERVE DEFLECTION. FACTORY-PRELOADED TO 75% OF RATED LOAD.
- 3) PROVIDE SUPPLEMENTAL STEEL AS REQUIRED WHERE EQUIPMENT OR STRUCTURE CANNOT SUPPORT POINT

C. FLOOR MOUNTED EQUIPMENT HAVING INTERNAL ISOLATION: 1) PROVIDE 5/16 IN.-THICK NEOPRENE ACOUSTICAL BASE PADS OF RIB.

A. ALL ROOM NC LEVELS SHALL BE 35 OR LESS.

- B. PROVIDE SOUND LINING FOR THE FOLLOWING DUCTWORK: 1) ALL DUCTWORK WITHIN NOT LESS THAN 20 FT ON EACH SIDE OF ALL FANS AND AC UNITS.
- 2) AIR TRANSFER DUCTS. 3) DOWNSTREAM OF ALL CONSTANT VOLUME BOXES FOR A MINIMUM OF 15 FT.
- 4) ALL MIXED AIR PLENUMS. 5) FULL EXTENT OF SUPPLY DUCTS SERVING CONFERENCE
- 6) ALL EXPOSED INTERIOR SUPPLY DUCTWORK.
- 7) ALSO WHERE NOTED ON A DRAWING.
- C. SOUND LINING IN DUCTWORK: FIBROUS GLASS, MINIMUM 3 LB DENSITY, 1 IN. THICKNESS, MAXIMUM 0.25 K FACTOR AT 75 DEG F MEAN TEMPERATURE WITH ACRYLIC COATED FINISH FACTORY APPLIED EDGE COATING AND STENCILED IN ACCORDANCE WITH NFPA 90. FLAMESPREAD SHALL BE A MAXIMUM OF 25. LINING SHALL NOT SUPPORT MICROBIAL GROWTH AND SHALL BE TESTED IN ACCORDANCE WITH ASTM C 1071 AND ASTM G21/G22. SIMILAR TO MANVILLE
- D. ALL SOUND LINING, ADHESIVES, FACES AND ACCESSORIES TO BE APPLIED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, EXCEPT AS OTHERWISE NOTED.

THERMOSTATIC CONTROLS:

A. GENERAL:

PERMACOTE LINA COUSTIC.

THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE INDIVIDUALLY CONTROLLED BY THERMOSTATIC CONTROLS RESPONDING TO TEMPERATURE WITHIN THE ZONE. FOR THE PURPOSES OF SECTION 6.4.3.1, A DWELLING UNIT SHALL BE PERMITTED TO BE CONSIDERED A SINGLE ZONE.

B. DEAD BAND:

WHERE USED TO CONTROL BOTH HEATING AN COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CAPABLE OF PROVIDING A TEMPERATURE RANGE OR DEAD BAND OF AT LEAST 5°F WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

C. SETBACK CONTROLS:

HEATING SYSTEMS LOCATED IN CLIMATE ZONES 2-8 SHALL BE EQUIPPED WITH CONTROLS THAT HAVE THE CAPABILITY TO AUTOMATICALLY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN ZONE TEMPERATURES ABOVE A HEATING SETPOINT ADJUSTABLE DOWN TO 55°F OR LOWER. COOLING SYSTEMS LOCATED IN CLIMATE ZONES 1B, 2B, AND 3B SHALL BE EQUIPPED WITH CONTROLS THAT HAVE THE CAPABILITY TO AUTOMATICALLY RESTART AND TEMPORARILY OPERATE THE SYSTEM AS REQUIRED TO MAINTAIN ZONE TEMPERATURES BELOW A COOLING SETPOINT ADJUSTABLE UP TO 90°F OR HIGHER OR TO PREVENT HIGH SPACE HUMIDITY LEVELS.

HVAC SYSTEMS SHALL BE EQUIPPED WITH AT LEAST NE OF THE FOLLOWING:CONTROLS THAT CAN START AND STOP THE SYSTEM UNDER DIFFERENT TIME SCHEDULES FOR SEVEN DIFFERENT DAY-TYPES PER EEK, ARE CAPABLE OF RETAINING PROGRAMMING AND TIME SETTING DURING LOSS OF POWER FOR A PERIOD OF AT LEAST TEN HOURS, AND INCLUDE AN CCESSIBLE MANUAL OVERRIDE, OR EQUIVALENT FUNCTION, THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO TWO HOURS.

WHERE HEATING AND COOLING TO A ZONE ARE CONTROLLED BY SEPARATE ZONE THERMOSTATIC CONTROLS LOCATED WITHIN THE ZONE, MEANS (SUCH AS LIMIT SWITCHES, MECHANICAL STOPS, OR, FOR DDC SYSTEMS, SOFTWARE PROGRAMMING) SHALL BE PROVIDED TO PREVENT THE HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT MINUS ANY APPLICABLE PROPORTIONAL BAND.

F. HEAT PUMP SUPPLEMENTARY HEAT

HEAT PUMPS HAVING SUPPLEMENTARY ELECTRIC RESISTANCE HEAT SHALL HAVE CONTROLS THAT, EXCEPT DURING DEFROST, PREVENT SUPPLEMENTARY HEAT OPERATION WHERE THE HEAT PUMP CAN PROVIDE THE HEATING LOAD.

SPECIFICATIONS

SECTION 0001 - NOTICE TO BIDDERS

PRESENTLY UNDER CONSTRUCTION.

1.1 BIDDERS REPRESENTATIONS

A. THE BIDDER BY MAKING A BID REPRESENTS THAT:

- THE BIDDER HAS READ AND UNDERSTANDS THE BIDDING DOCUMENTS, TO THE EXTENT THAT SUCH DOCUMENTATION RELATES TO THE WORK FOR WHICH THE BID IS SUBMITTED, AND FOR OTHER PORTIONS OF THE PROJECT, IF ANY, BEING BID CONCURRENTLY OR
- B. THE BID IS MADE IN COMPLIANCE WITH THE BIDDING DOCUMENTS.
- C. THE SPECIFICATIONS AND DRAWINGS ARE INTENDED TO SERVE JOINTLY AS A BASIS FOR THE BIDDER TO SUBMIT A CONTRACT PRICE FOR THE MATERIAL AND
- D. SHOULD CONFLICTS OR DISCREPANCIES OCCUR WITHIN THE BIDDING DOCUMENTS, THE ITEM OR ITEMS IN DISPUTE THAT REPRESENT THE GREATER COST SHALL PREVAIL IN THE FINAL BID.
- E. THE BID IS BASED UPON THE MATERIALS, EQUIPMENT AND SYSTEMS REQUIRED BY THE BIDDING DOCUMENTS WITHOUT EXCEPTION.

1.2 EXISTING CONDITIONS AND COORDINATION

- A. THE BIDDER HAS VISITED THE SITE, BECOME FAMILIAR WITH LOCAL CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED AND HAS CORRELATED THE BIDDER'S PERSONAL OBSERVATIONS WITH THE REQUIREMENTS OF THE PROPOSED BIDDING DOCUMENTS.
- B. THE BIDDER SHALL PROPOSE COORDINATION OF WORK SUCH THAT CONFLICTS WITH OTHER TRADES AND SPACE ALLOCATIONS ARE AVOIDED.

1.3 RESPONSIBILITIES

- A. THE BIDDER UNDERSTANDS THAT ANY CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR THE TIMELY COMPLETION AND ACCEPTANCE OF THEIR WORK AND THAT ANY ITEMS DAMAGED, LOST OR STOLEN DURING TIME OF CONSTRUCTION SHALL BE REPAIRED OR REPLACED WITHOUT ANY ADDITIONAL COST TO THE OWNER.
- B. THE BIDDER UNDERSTANDS THAT ANY PROPOSED WORK IN OCCUPIED TENANT SPACES SHALL BE PERFORMED DURING TIMES OF NON-TENANT OCCUPANCY OR AS SCHEDULED OR DIRECTED BY THE BUILDING MANAGER.
- C. THE BIDDER UNDERSTANDS THAT ANY PROPOSED SHUT-DOWN OF EXISTING SYSTEMS DURING CONSTRUCTION SHALL BE PRE-ARRANGED WITH THE BUILDING MANAGER AND THAT SUCH SHUT-DOWNS ARE TO BE KEPT TO A MINIMUM.

END OF SECTION 0001

SECTION 0101 - QUALITY OF WORK

WORKMANSHIP

- ALL WORK SHALL BE FREE FROM DEFECTS IN MATERIALS AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE.
- B. ALL DEFECTS WHICH DEVELOP OR ARE DISCOVERED WITHIN THIS PERIOD SHALL BE REPAIRED BY THE CONTRACTOR TO THE SATISFACTION OF THE ARCHITECT OR BUILDING MANAGER AT NO ADDITIONAL COST TO THE OWNER.
- C. UPON COMPLETION OF THE WORK THE CONTRACTOR SHALL REMOVE FROM THE SITE, ALL TOOLS, DEMOLISHED APPLIANCES AND ANY SURPLUS MATERIAL. 1.2 CODE COMPLIANCE
- A. ALL WORK SHALL MEET ALL STATE AND LOCAL CODES HAVING JURISDICTION.

END OF SECTION 0101

SECTION 0102 -REQUIRED DOCUMENTS

1.1 SHOP DRAWINGS

A. A SET OF PRINTS FOR ANY MECHANICAL WORK INCLUDING BUT NOT LIMITED TO, DUCTWORK AND PIPING LAYOUT SHALL BE SUBMITTED FOR APPROVAL TO THE ENGINEER PRIOR TO CONSTRUCTION OR PURCHASE OF MATERIALS.

1.2 SUBMITTALS

A. EQUIPMENT SUBMITTALS OF ALL PROPOSED MECHANICAL AND ANCILLARY EQUIPMENT INCLUDING ALL ACCESSORIES SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW. ALL PERTINENT MODELS, SIZES, ACCESSORIES AND CHOICES SHALL BE CLEARLY CHECKED, PRINTED OR OTHERWISE INDICATED ON THE SUBMITTALS.

1.3 RECORD DRAWINGS

- A. UPON COMPLETION OF THE WORK, A RECORD DRAWING SHALL BE SUBMITTED TO THE OWNER DEPICTING ALL SUBSEQUENT CHANGES, ADDITIONS AND OR CORRECTIONS TO THE CONTRACT DRAWINGS AND OR CONTRACT SCOPE MADE DURING CONSTRUCTION. THIS DRAWING SHALL REPRESENT A COMPLETE RECORD OF THE WORK INSTALLED.
- 1.4 EQUIPMENT OPERATING INSTRUCTIONS
 - A. ON COMPLETION AND ACCEPTANCE OF WORK, THIS CONTRACTOR SHALL FURNISH INSTRUCTIONS, EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.

- B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE-RING BINDERS WITH CLEAR ACETATE COVERS. THE CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE ELECTRONIC COPY TO THE ENGINEER.
- C. THE INSTRUCTION BOOKLET SHALL BE ORGANIZED IN SECTIONS, WITH ONE SECTION PER SYSTEM. THE COVER OF THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND PHONE NUMBER OF THE PROJECT, ARCHITECT, ENGINEER, MECHANICAL CONTRACTOR AND SUBCONTRACTORS.

END OF SECTION 0102

SECTION 078413-PENETRATION FIRE-STOPPING

1.1 QUALITY ASSURANCE

- A. INSTALLER QUALIFICATIONS: AN FM GLOBAL-APPROVED FIRE-STOP CONTRACTOR OR A UL-QUALIFIED FIRE-STOP CONTRACTOR.
- B. FIRE-TEST-RESPONSE CHARACTERISTICS: UL, ETL SEMKO OR FM GLOBAL

1.2 PENETRATION FIRESTOPPING A. PENETRATIONS IN FIRE-RESISTANCE-RATED WALLS:

F-RATINGS PER ASTM E 814 OR UL 1479.

- B. PENETRATIONS IN HORIZONTAL ASSEMBLIES: F- AND T-RATINGS PER ASTM E 814 OR UL 1479:
- C. PENETRATIONS IN SMOKE BARRIERS: L-RATINGS PER UL 1479.
- D. W-RATINGS: PER UL 1479.

1.3 INSTALLATION

A. IDENTIFICATION: PREPRINTED METAL OR PLASTIC LABELS.

1.4 FIELD QUALITY CONTROL

- A. INSPECTION OF INSTALLED FIRE—STOPPING: OWNER-ENGAGED AGENCY ACCORDING ASTM E 2174.
- 1.5 THROUGH-PENETRATION FIRESTOP SYSTEM SCHEDULE WHERE UL-CLASSIFIED SYSTEMS ARE INDICATED, THEY REFER TO SYSTEM NUMBERS IN UL'S "FIRE RESISTANCE DIRECTORY" UNDER PRODUCT CATEGORY XHEZ.

FOR THE FOLLOWING SYSTEMS:

METALLIC AND NON-METALLIC PIPES, CONDUIT, OR TUBING, ELECTRICAL CABLES, CABLE TRAYS WITH ELECTRIC CABLES, MISCELLANEOUS ELECTRICAL PENETRANTS, INSULATED PIPES, GROUPINGS OF PENETRANTS, USE ON OR MORE THE FOLLOWING MATERIALS:

- a. LATEX SEALANT
- b. SILICONE SEALANT
- c. INTUMESCENT PUTTY d. MORTAR
- h. SILICONE FOAM
- i. PILLOWS/BAGS INTUMESCENT WRAP STRIPS

k. INTUMESCENT COMPOSITE SHEET

1.6 MANUFACTURERS

- 1. HILTI CONSTRUCTION CHEMICAL, INC
- 2. TREMCO INC.
- 3. 3M FIRE PROTECTION PRODUCTS

SECTION 230517 - SLEEVES AND SLEEVE SEALS FOR HVAC

END OF SECTION 078413

- 1.1 SLEEVE-SEAL SYSTEMS A. FIELD-ASSEMBLED, MODULAR SEALING-ELEMENT UNIT FOR FILLING ANNULAR SPACE BETWEEN PIPING AND
 - SLEEVE.
 - 1. SEALING ELEMENTS: EPDM RUBBER OR NBR. 2. PRESSURE PLATES: CARBON STEEL, PLASTIC, STAINLESS STEEL.
- WITH CORROSION-RESISTANT COATING, STAINLESS B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS. AVAILABLE MANUFACTURERS OFFERING

PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK

3. CONNECTING BOLTS AND NUTS: CARBON STEEL

- INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- 1. ADVANCE PRODUCTS & SYSTEMS, INC.
- 2. CALPICO, INC. METRAFLEX COMPANY (THE).
- 4. PIPELINE SEAL AND INSULATOR, INC.
- 5. PROCO PRODUCTS, INC.

A. NON-SHRINK, FACTORY PACKAGED.

1.4 SLEEVE AND SLEEVE—SEAL SCHEDULE

1.2 SLEEVE-SEAL FITTINGS A. MANUFACTURED PLASTIC, SLEEVE-TYPE, PLASTIC OR

1.3 GROUT

RUBBER WATER-STOP ASSEMBLY MADE FOR IMBEDDING IN CONCRETE SLAB OR WALL.

A. USE SLEEVES AND SLEEVE SEALS FOR THE FOLLOWING PIPING-PENETRATION APPLICATIONS:

- 1. INTERIOR PARTITIONS: a. PIPING SMALLER THAN NPS 6 (DN 150): GALVANIZED-STEEL-PIPE SLEEVES, PVC-PIPE
- b. PIPING NPS 6 (DN 150) AND LARGER: GALVANIZED-STEEL-SHEET SLEEVES.

END OF SECTION 230517

DESCRIPTION **PROJECT INFORMATION:**

UNCLE WILLIE'S WINGS

DATE: **PROJECT NO.:** DRAWN BY: NYE **CHECKED BY: NYE SCALE:** AS NOTED

MECHANICAL SPECIFICATIONS

(1 OF 2)

DRAWING TITLE:

DRAWING NO.:

M0.2

SECTION 230529 - HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT

1.1 PERFORMANCE REQUIREMENTS

- A. DELEGATED DESIGN: DESIGN TRAPEZE PIPE HANGERS EQUIPMENT SUPPORTS. INCLUDING COMPREHENSIVE ENGINEERING ANALYSIS BY A QUALIFIED PROFESSIONAL ENGINEER, USING PERFORMANCE REQUIREMENTS AND DESIGN CRITERIA INDICATED.
- B. STRUCTURAL PERFORMANCE: HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT SHALL WITHSTAND THE EFFECTS OF GRAVITY LOADS AND STRESSES WITHIN LIMITS AND UNDER CONDITIONS INDICATED ACCORDING TO ASCE/SEI 7.
 - 1. DESIGN SUPPORTS FOR MULTIPLE PIPES CAPABLE OF SUPPORTING COMBINED WEIGHT OF SUPPORTED SYSTEMS, SYSTEM CONTENTS, AND TEST WATER.
 - 2. DESIGN EQUIPMENT SUPPORTS CAPABLE OF SUPPORTING COMBINED OPERATING WEIGHT OF SUPPORTED EQUIPMENT AND CONNECTED SYSTEMS AND COMPONENTS.

1.2 SUBMITTALS

A. SHOP DRAWINGS: SIGNED AND SEALED BY A PROFESSIONAL ENGINEER

1.3 QUALITY ASSURANCE

A. AWS D1.1/D1.1M, "STRUCTURAL WELDING CODE -STEEL."

1.4 COMPONENTS

- A. METAL PIPE HANGERS AND SUPPORTS: CARBON OR STAINLESS STEEL
- B. TRAPEZE PIPE HANGERS: CARBON OR STAINLESS STEEL
- C. FIBERGLASS PIPE HANGERS: -CLEVIS, CENTURY COMPOSITES, COOPER B-LINE
- D. METAL FRAMING SYSTEMS: MFMA MANUFACTURER
- E. FIBERGLASS STRUT SYSTEMS: COOPER B-LINE
- F. THERMAL-HANGER SHIELD INSERTS:
- G. FASTENER SYSTEMS: POWDER-ACTUATED FASTENERS OR MECHANICAL-EXPANSION ANCHORS
- H. PIPE STANDS: COMPACT, LOW TYPE, SINGLE PIPE, HIGH TYPE, SINGLE PIPE, HIGH TYPE, MULTIPLE PIPES, CURB-MOUNTED TYPE
- I. EQUIPMENT SUPPORTS.

END OF SECTION 230529

SECTION 230548 - VIBRATION CONTROLS FOR HVAC EQUIPMENT

PART 1 — GENERAL

1.1 PERFORMANCE REQUIREMENTS

- A. SEISMIC-RESTRAINT LOADING:
 - 1. SITE CLASS AS DEFINED IN THE IBC: A. B 2. ASSIGNED SEISMIC USE GROUP OR BUILDING
 - CATEGORY AS DEFINED IN THE IBC: I II III a. COMPONENT IMPORTANCE FACTOR: 1.0
 - b. COMPONENT RESPONSE MODIFICATION FACTOR:
 - c. COMPONENT AMPLIFICATION FACTOR: 2.5.
 - 3. DESIGN SPECTRAL RESPONSE ACCELERATION AT SHORT PERIODS (0.2 SECOND) 18%
 - 4. DESIGN SPECTRAL RESPONSE ACCELERATION AT 1-SECOND PERIOD: 8%

1.2 COMPONENTS

- A. VIBRATION ISOLATORS:
 - 1. ISOLATOR PADS: NEOPRENE, RUBBER, HERMETICALLY AND/OR SEALED COMPRESSED FIBERGLASS
 - 2. MOUNTS: DOUBLE-DEFLECTION TYPE.
 - 3. RESTRAINED MOUNTS: ALL DIRECTIONAL MOUNTINGS WITH SEISMIC RESTRAINT: CAST-DUCTILE-IRON HOUSING. 4. SPRING ISOLATORS: FREESTANDING, LATERALLY
 - STABLE, OPEN-SPRING TYPE. 5. RESTRAINED SPRING ISOLATORS: FREESTANDING. STEEL, OPEN-SPRING TYPE WITH SEISMIC
 - RESTRAINT. 6. HOUSED SPRING MOUNTS: DUCTILE-IRON OR
 - STEEL HOUSING, WITH INTEGRAL, VERTICALLY ADJUSTABLE SEISMIC SNUBBERS. 7. ELASTOMERIC HANGERS: DOUBLE-DEFLECTION
 - 8. SPRING HANGERS: COMBINATION COIL-SPRING AND ELASTOMERIC-INSERT HANGERS WITH
 - 9. SPRING HANGERS WITH VERTICAL-LIMIT STOP: COIL-SPRING COMBINATION ELASTOMERIC-INSERT HANGERS WITH SPRING AND INSERT IN COMPRESSION AND WITH VERTICAL-LIMIT STOP.
 - 10.PIPE RISER RESILIENT SUPPORT: ALL-DIRECTIONAL, ACOUSTICAL PIPE ANCHOR.

SPRING AND INSERT IN COMPRESSION.

11.RESILIENT PIPE GUIDES.

- B. AIR-MOUNTING SYSTEMS
- 1. AIR MOUNTS: FREESTANDING, SINGLE OR MULTIPLE, COMPRESSED-AIR BELLOWS.
- 2. RESTRAINED AIR MOUNTS: HOUSED COMPRESSED-AIR BELLOWS.
- C. RESTRAINED VIBRATION ISOLATION ROOF-CURB RAILS: FACTORY-ASSEMBLED, FULLY ENCLOSED, INSULATED, AIR- AND WATERTIGHT CURB RAIL; WITH SPRING ISOLATORS MOUNTED ON ELASTOMERIC ISOLATION PADS, AND SNUBBER BUSHINGS.
- D. VIBRATION ISOLATION EQUIPMENT BASES:
- 1. STEEL BASE: FACTORY—FABRICATED, WELDED, STRUCTURAL-STEEL BASES AND RAILS.
- 2. INERTIA BASE: FACTORY-FABRICATED, WELDED, STRUCTURAL-STEEL BASES AND RAILS READY FOR FIELD-APPLIED, CAST-IN-PLACE CONCRETE

1.3 FIELD QUALITY CONTROL

A. TESTING: BY EITHER: OWNER-ENGAGED AGENCY. CONTRACTOR-ENGAGED AGENCY, OR CONTRACTOR.

PART-2 PRODUCTS

- 1.4 VIBRATION ISOLATORS & SEISMIC-RESTRAINT DEVICES
- A. AVAILABLE MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS THAT MAY BE INCORPORATED INTO THE WORK INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:
- B. MANUFACTURERS: SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCTS BY ONE OF THE FOLLOWING:
 - 1. ACE MOUNTINGS CO., INC.
 - 2. AMBER/BOOTH COMPANY, INC.
 - 3. CALIFORNIA DYNAMICS CORPORATION.
- 4. COOPER B-LINE, INC.; A DIVISION OF COOPER INDUSTRIES.
- 5. HILTI, INC.
- 6. ISOLATION TECHNOLOGY, INC.
- 7. KINETICS NOISE CONTROL
- 8. LOOS & CO.; CABLEWARE DIVISION.
- 9. MASON INDUSTRIES.
- 10. TOLCO INCORPORATED; A BRAND OF NIBCO INC.
- 11. UNISTRUT; TYCO INTERNATIONAL, LTD.
- 12. VIBRATION ELIMINATOR CO., INC.
- 13. VIBRATION ISOLATION.
- 14. VIBRATION MOUNTINGS & CONTROLS, INC.

END OF SECTION 230548

SECTION 230593 - TESTING, ADJUSTING, AND BALANCING FOR HVAC

1.1 SUMMARY

- A. TESTING, ADJUSTING, AND BALANCING FOR THE FOLLOWING:
- MOTORS.
- 2. CONDENSING UNITS.
- 3. AIR SYSTEM: CONSTANT VOLUME

1.2 QUALITY ASSURANCE

A. THE CONTRACTOR SHALL PROCURE THE SERVICES OF A TESTING, ADJUSTING AND BALANCING (TAB) SPECIALIST WHO SPECIALIZES IN HEATING, VENTILATION AND AIR CONDITIONING SYSTEMS. THE TAB AGENT SHALL HAVE THE FOLLOWING QUALIFICATIONS: AABC, NEBB OR TABB CERTIFIED.

1.3 EXECUTION

- A. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL EXISTING AIR AND HYDRONIC SYSTEMS THAT ARE TO REMAIN OR TO BE INCORPORATED INTO NEW WORK PRIOR TO THE STARTING OF WORK IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.
- B. THE TAB SPECIALIST SHALL PERFORM FLOW MEASUREMENTS OF ALL NEW AIR AND HYDRONIC SYSTEMS AS LISTED ABOVE IN THE PROJECT SCOPE. A REPORT OF THESE MEASUREMENTS, INDICATING ANY AND ALL DEFICIENCIES SHALL BE SUBMITTED FOR OWNER REVIEW.
- C. THE REPORT SHALL INDICATE A SCHEMATIC DIAGRAM INDICATING LOCATIONS OF ALL EQUIPMENT TESTED AND MEASUREMENT LOCATIONS.
- D. PRIOR TO FINAL INSPECTION OF THE WORK, THE SPECIALIST SHALL BALANCE ALL SYSTEMS AS INDICATED ABOVE TO THE REQUIREMENTS OF THE DESIGN.
- E. THE CONTRACTOR SHALL HAVE FURNISH AND INSTALL ALL ADDITIONAL BALANCING EQUIPMENT, PRESSURE TAPS, GAUGES AND OTHER EQUIPMENT AS REQUIRED FOR A PROPERLY BALANCED SYSTEM AT NO ADDITIONAL COST TO THE OWNER. SUCH ADDITIONAL EQUIPMENT SHALL ADHERE IN STRICT ACCORDANCE WITH THE RESPECTIVE EQUIPMENT MANUFACTURER'S RECOMMENDATIONS.
- F. THE CONTRACTOR SHALL HAVE THE TESTING AND BALANCING SPECIALIST COORDINATE ALL WORK OF THIS S3ECTION WITH THE BUILDING MANAGER. BALANCING WORK SHALL NOT CONFLICT WITH OTHER WORK SO AS TO MAINTAIN COMPLETION WITHIN THE SPECIFIED TIME.
- G. ALL INSTRUMENTS USED FOR TAB SHALL BE MAINTAINED IN GOOD WORKING CONDITION AND ACCURATELY CALIBRATED.

- H. TOLERANCES: PLUS OR MINUS 5 PERCENT OF DESIGN
- I. INSPECTIONS: RANDOM CHECKS BY OWNER OR ARCHITECT TO VERIFY FINAL TESTING, ADJUSTING, AND BALANCING
- J. ADDITIONAL TESTS: RANDOM TESTS WITHIN 90 DAYS OF COMPLETING TAB TO VERIFY BALANCE CONDITIONS AND SEASONAL TESTS. END OF SECTION 230593

SECTION 230713 - DUCT INSULATION

1.1 QUALITY ASSURANCE

- SURFACE-BURNING CHARACTERISTICS: ALL INSULATION SHALL HAVE COMPOSITE (INSULATION JACKET OR FACING AND ADHESIVE USED TO ADHERE THE FACING OR JACKET TO THE INSULATION) A FLAME-SPREAD INDEX OF 25, AND SMOKE-DEVELOPED INDEX OF 50 FOR INSULATION INSTALLED INDOOR, 75, AND SMOKE-DEVELOPED INDEX OF 150 FOR INSULATION INSTALLED OUTDOORS; ACCORDING TO ASTME 84.
- 1.2 FIELD QUALITY CONTROL
- A. FIELD INSPECTIONS: BY OWNER-ENGAGED AGENCY.
- 1.3 INDOOR DUCT AND PLENUM INSULATION SCHEDULE;
- A. CONCEALED, RECTANGULAR, ROUND AND FLAT-OVAL, SUPPLY-RETURN, OUTDOOR-AND EXHAUST-AIR DUCT AND AIR PLENUM INSULATION:
- B. FLEXIBLE ELASTOMERIC, MINERAL-FIBER BLANKET, MINERAL-FIBER BOARD OR POLYOLEFIN WITH MINIMUM INSTALLED THERMAL RESISTANCE AS FOLLOWS: UNCONDITIONED SPACES WITHIN BUILDING: R-6 R-8 WITHIN BUILDING ENVELOPE ASSEMBLY: OUTSIDE OF BUILDING: R-8
- 1.4 ITEMS NOT INSULATED:
 - 1. FIBROUS-GLASS DUCTS.
 - 2. METAL DUCTS WITH DUCT LINER OR SUFFICIENT THICKNESS TO COMPLY WITH ENERGY CODE ANDASHRAE/IESNA 90.1.
 - 3. FACTORY-INSILATED FLEXIBLE DUCTS.
- 4. FACTORY-INSULATED PLENUMS AND CASINGS.
- 5. FLEXIBLE CONNECTORS.
- 6. VIBRATION-CONTROL DEVICES.
- 7. 'FACTORY-INSULATED ACCESS PANELS AND DOORS. 8. DUCTS THAT HAVE INTERNAL ACOUSTICAL LINING.

1.5 PRODUCTS

- A. THE FOLLOWING INSULATION MANUFACTURERS WILL BE ACCEPTABLE:
- 1. JOHNS-MANVILLE
- 2. OWENS-CORNING 1.6 ACOUSTICAL TREATMENT
 - 1. WHERE SHOWN ON THE DRAWINGS, LOW PRESSURE DUCTWORK SHALL BE LINED WITH 1.5" THICK R-6 AS MANUFACTURED BY DUCTMATE, 1-1/2 POUND MINIMUM DENSITY, NEOPRENE COATED, FLEXIBLE FIBERGLASS DUCT LINER. LINING SHALL COMPLY WITH NFPA 90A AND SHALL HAVE A FLAME SPREAD CLASSIFICATION OF NOT MORE THAN 25 AND A SMOKE DEVELOPED RATING NOT MORE THAN 50. DUCT SIZES WHERE LINING IS INDICATED ON PLANS ARE MINIMUM INSIDE CLEAR DIMENSIONS REQUIRED,

END OF SECTION 230713

SECTION 233113 - METAL DUCTS

1.1 CONSTRUCTION

- A. EACH DUCT SYSTEM SHALL BE CONSTRUCTED FOR TH SPECIFIC SMACNA DUCT PRESSURE CLASSIFICATIONS SHOWN ON THE CONTRACT DRAWINGS. WHERE NO PRESSURE CLASSES ARE SPECIFIED BY THE DESIGNER, THE SMACNA 2-1/2 INCH WG PRESSURE CLASS IS THE BASIS OF COMPLIANCE WITH THESE STANDARDS, REGARDLESS OF THE VELOCITY IN THE DUC
- B. ALL DUCTWORK SHALL BE CONSTRUCTED TO SMACNA 2" WG DESIGN AND NOT LESS THAN THE FOLLOWING STANDARDS:
 - 1. DUCTWORK SHALL BE TRANSVERSELY JOINTED BY CONNECTING SEAMS OF COMPANION ANGLES, FORMED FROM 1-1/2"X1-1/2"X1/8" GALVANIZED ANGLES, TACK-WELDED OR RIVETED TO THE DUCT. THE ANGLE FRAME SHALL BE CONTINUOUSLY FLANGED UP INTO PRIGHT OF ANGLE AND EACH CORNER SHALL BE FILLED IN AND GROUND SMOOTH. JOINTS SHALL BE GASKETED WITH 1/8" THICK REINFORCED GASKET, OVERLAPPED AT CORNERS, GASKET SIMILAR TO M-1202 OR APPROVED EQUAL.
- RECTANGULAR FITTINGS AND ALL TRANSITION PIECES FROM RECTANGULAR TO ROUND SHALL BE NO. 16 GAUGE ALL WELDED CONSTRUCTION.
- . HORIZONTAL DUCTS SHALL BE SUPPORTED ON NOT MORE THAN 6' CENTERS. VERTICAL RISERS SHALL BE SUPPORTED AT EACH FLOOR.
- 4. LONGITUDINAL SEAMS FOR RECTANGULAR DUCTWORK SHALL BE PITTSBURGH LOCK SEAMS WITH SEALING COMPOUND, EQUAL TO BENJAMIN FOSTER NO. 30-03 INSERTED INTO SEAM. ALL SEAMS SHALL BE BRUSHED WITH NO. 30-02 AND COVERED WITH APPROVED SEALING TAPE.
- 5. RECTANGULAR DUCTWORK 18 GAUGE AND HEAVIER, FILLER RODS SHALL BE IN ACCORDANCE WITH SPECIFICATIONS FOR IRON AND STEEL GAS WELDING RODS, ASTM 215; AWG A5.2.

6. ALL FITTINGS SUCH AS ELBOWS, TEES, ETC., SHALL BE

OF FIVE (5) PIECE WELDED AIRTIGHT CONSTRUCTION.

NO. 20 GAUGE ZINC COATED STEEL. ELBOWS SHALL BE

C. WHERE LATEST EDITION OF SMACNA DOES NOT CLEARLY STATE GAUGES AND/OR STIFFENERS TO BE USED OR, WHERE SMACNA STANDARDS REQUIRE INTERPRETATION, THE FOLLOWING MINIMUM METAL GAUGES AND BRACING SHALL BE USED:

- <u>USG MAX. SIDE INCHES TRANSVERSE JOINTS AND</u>
- UP TO 12 S SLIP, DRIVE SLIP, ONE INCH POCKET LOCK ON 8 FOOT
- 22 13 TO 24 1"X1"X1/8" ANGLES ON 4 FOOT CENTERS
- 20 25 TO 35 1"X1"X1/8" ANGLES ON 2 FOOT CENTERS
- D. FLAT OVAL OR ROUND DUCTWORK MAY BE PROVIDED IN LIEU RECTANGULAR DUCTWORK WITH THE REINFORCEMENT FOR SERVICE FLAT SIDES SAME AS SPECIFIED FOR THE RECTANGULAR DUCTWORK, AND AS PER SMACNA FLAT OVAL DUCT CONSTRUCTION STANDARDS SHOWN IN FIG. 3-6 AND AS SHOWN IN FIG. 3-1 AND 3-2 FOR ROUND DUCTWORK.
- ALL DUCTWORK SHALL BE SEALED TO CLASS "A" AND LEAK EXTERIOR WALL) TESTED TO MEAT SMACNA CLASS 6 FOR RECTANGULAR AND CLASS 3 FOR ROUND DUCTS.

1.2 MATERIALS

- A. SINGLE-WALL RECTANGULAR DUCTS AND FITTINGS.
- B. DOUBLE-WALL RECTANGULAR DUCTS AND FITTINGS.
- 4. FIBROUS-GLASS OR FLEXIBLE ELASTOMERIC DUCT LINER FOR INTERSTITIAL INSULATION.
- 5. PERFORATED INNER DUCT. C. SINGLE-WALL ROUND AND FLAT-OVAL DUCTS AND FITTINGS.
- D. DOUBLE-WALL ROUND AND FLAT-OVAL DUCTS AND FITTINGS. 1. FIBROUS-GLASS OR FLEXIBLE ELASTOMERIC DUCT LINER FOR INTERSTITIAL INSULATION.
- 2. PERFORATED INNER DUCT.
- E. SHEET METAL MATERIALS:
- 1. GALVANIZED SHEET STEEL.
- 2. PVC-COATED, GALVANIZED SHEET STEEL 3. CARBON-STEEL SHEETS.
- 4. STAINLESS-STEEL SHEETS.

5. ALUMINUM SHEETS.

6. FACTORY-APPLIED ANTI-MICROBIAL COATING

F. DUCT LINER:

- 1. FIBROUS GLASS, TYPE I, FLEXIBLE. a. WITH ANTI-MICROBIAL EROSION-RESISTANT COATING.
- 2. FLEXIBLE ELASTOMERIC.
- 3. NATURAL FIBER
- G. SEALANT MATERIALS: 1. TWO-PART TAPE SEALING SYSTEM.
- 2. WATER-BASED JOINT AND SEAM SEALANT.
- 3. SOLVENT-BASED JOINT AND SEAM SEALANT.
- . FLANGED JOINT SEALANT.
- 5. FLANGE GASKETS. 6. ROUND DUCT JOINT O-RING SEALS.

1.3 SEISMIC-RESTRAINT DEVICES

- CHANNEL SUPPORT SYSTEM. B. STAINLESS-STEEL RESTRAINT CABLES.
- C. HANGER ROD STIFFENER: STEEL TUBE OR STEEL SLOTTED-SUPPORT-SYSTEM SLEEVE WITH INTERNALLY BOLTED CONNECTIONS OR REINFORCING STEEL ANGLE CLAMPED TO HANGER ROD.

- .4 DUCT CLEANING A. CLEAN EXISTING DUCT SYSTEM(S) BEFORE TESTING,
- B. CLEAN THE FOLLOWING ITEMS:

ADJUSTING. AND BALANCING.

- 1. AIR OUTLETS AND INLETS.
- 2. SUPPLY, RETURN, AND EXHAUST FANS. 3. RETURN—AIR DUCTS. DAMPERS. ACTUATORS. AND TURNING VANES.
- 4. SUPPLY-AIR DUCTS, DAMPERS, ACTUATORS, AND TURNING VANES. 5. DEDICATED EXHAUST AND VENTILATION COMPONENTS AND

MAKEUP AIR SYSTEMS.

- 1.5 DUCT SCHEDULE A. ALL DUCTS SHALL BE GALVANIZED STEEL EXCEPT AS FOLLOWS:
 - 1. MOIST ENVIRONMENT DUCT MATERIAL: ALUMINUM.

SECTION 233713 - GRILLES

END OF SECTION 233113

- 1.1 PRODUCTS A. GRILLES SHALL BE FURNISHED AND INSTALLED FOR CAPACITIES AND IN LOCATIONS INDICATED ON DRAWINGS. ALL REGISTERS AND DIFFUSERS SHALL BE PRIME COATED STEEL OR EXTRUDED ALUMINUM FINISHED UNLESS OTHERWISE
- B. MANUFACTURERS: TITUS

NOTED IN BAKED WHITE ENAMEL.

- 1. SUBJECT TO COMPLIANCE WITH REQUIREMENTS, PROVIDE PRODUCT BY ONE OF THE FOLLOWING:
- a. CARNES. b. **KRUEGER.**
- c. **METALAIRE**, INC.
- C. ALL DUCTED RETURN REGISTERS SHALL HAVE AN OPPOSED BLADE DAMPER UNLESS OTHERWISE NOTED.
- END OF SECTION 233713

PIPING INSULATION

CONDENSER DRAIN PIPING

(IF RUNNING THROUGH

- A. PIPING SERVING AS PART OF A HEATING OR COOLING SYSTEM SHALL BE THERMALLY INSULATED IN ACCORDANCE WITH TABLE C403.11.3.
- B. PIPING, VALVES AND FITTINGS TO BE INSULATED:
- 1) LOW TEMPERATURE PIPING SYSTEMS 0 TO 60 DEG F INCLUDING: CONDENSATE DRAIN PIPING.

1.0"

INSULATION SCHEDULE - PIPING SIZE THICKNESS MATERIAL FINISH REFRIGERANT PIPING 1.5"

2)PROTECTIVE COVERINGS SHALL BE INSTALLED ON AREAS OF INSULATION THAT ARE EXPOSED TO WEATHER OR SUBJECT TO MECHANICAL DAMAGE. THE PROTECTIVE COVERING SHALL

a. ARMA-CHEK SILVER" MULTI-LAYER LAMINATE OF ALUMINUM, COATED WITH A UV PROTECTIVE FILM AND BACKED WITH A FLEXIBLE PVC FILM. THE MATERIAL SHOULD BE ADHERED WITH ARMAFLEX 520 ADHESIVE OR EQUIVALENT, AND ALL JOINS AND SEAMS SECURED WITH "ARMA—CHEK SILVER TAPE". INSTALLATION SHALL BE IN ALL CASES TO THE MANUFACTURER'S RECOMMENDATIONS.

b. HIGH DENSITY RUBBER CLADDING OF THE "ARMA-CHECK TYPE BONDED USING AN APPROPRIATE FULL CONTACT ADHESIVE WITH A MINIMUM 50 MM OVERLAP AT ALL JOINTS AND LONGITUDINAL SEAMS. A /EATHER-PROOF MASTIC SEALANT SHALL BE APPLIED OVER SEAMS AND JOINTS. ALL MATERIAL SHALL BE OVERLAPPED AND STAGGERED IN SUCH A WAY AS TO ENSURE A WATERSHED IS ALWAYS PROVIDED. INSTALLATION BE IN ALL CASES TO THE MANUFACTURER'S COMMENDATIONS. ALL EXCESS ADHESIVE VISIBLE ON THE RFACE OF THE COMPLETED ASSEMBLY SHALL BE REMOVED SING AN APPROPRIATE CLEANING MATERIAL.

.METAL CLADDING, COMPRISED OF COATED SHEET METAL, WITH ALL EXTERNAL JOINTS AND FIXING MADE WEATHER-PROOF WITH SILICONE SEALANT.

1) TYPE P-1: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS MAXIMUM 0.24 K-FACTOR AT 75 DEG F MEAN TEMPERATURE WITH FACTORY-APPLIED FIRE-RETARDANT FOIL-SKRIM-KRAFT FACING. ALL SERVICE JACKET. SIMILAR TO OWENS-CORNING 650 ASJ.

2) TYPE P-3: MINIMUM 4 LB DENSITY MOLDED FIBERGLASS FITTING, MAXIMUM 0.23 K-FACTOR AT 75 DEG F MEAN TEMPERATURE SIMILAR TO EPOLUX HAMFAB MOLDED FITTINGS. 3) TYPE P-4: MINIMUM 1 LB DENSITY FIBERGLASS FITTING INSERTS, MAXIMUM 0.27 K-FACTOR AT 75 DEG F MEAN

INSERTS. 4) TYPE P-6: MINIMUM 6 LB MOLDED FOAMED PLASTIC. MAXIMUM 0.27 K-FACTOR AT 75 DEG F MEAN TEMPERATURE. MAXIMUM 0.17 PERMEANCE. SIMILAR TO ARMSTRONG ARMAFLEX

TEMPERATURE SIMILAR TO MANVILLE HI-LO TEMP INSULATION

C. MATERIAL:

- D. FINISH: 1) TYPE F-1: FITTING COVER, MOLDED WHITE PVC JACKET, UL CLASS 1, MAXIMUM PERMEANCE 0.05 SIMILAR TO MANVILLE
- 20X20 MESH WHITE GLASS, POLYESTER OR NYLON CLOTH REINFORCING MEMBRANE, MINIMUM 31 MIL DRY FILM THICKNESS, SIMILAR TO FOSTER TITE-FIT, UL LABEL 3) TYPE F-4: ALUMINUM JACKETING WITH MINIMUM 0.016 IN. WALL THICKNESS AND LONGITUDINAL JOINTS WITH LOCK SEAMS.

4) TYPE F-6: WHITE FINISHING AND INSULATING CEMENT APPLIED

OVER HEXAGONAL WIRE MESH. CEMENT SIMILAR TO KEENE

2) TYPE F-2: WHITE VAPOR BARRIER COATING WITH 10X10 OR

SUPERSLICK.

ZESTRON.

- E. INSTALLATION:
- 1) BEFORE APPLYING INSULATION ALL PRESSURE AND LEAK TESTS SHALL BE COMPLETED AND APPROVED. 2) ALL INSULATION SHALL BE BUTTED FIRMLY TOGETHER. PROVIDE 2 IN. LAMP STRIPS AT ALL SEAMS SECURED WITH ADHESIVE. USE VAPOR BARRIER TAPE AND VAPORSEAL ADHESIVE WHERE

REQUIRED. STAPLES NOT PERMITTED. REFRIGERANT PIPING

3) ALL INSULATION AND VAPOR BARRIERS SHALL BE CONTINUOUS

INSULATION SHALL HAVE MITERED FITTINGS.

PASSING THROUGH SLEEVES, HANGERS, ETC., OR OTHER OPENINGS. PROVIDE SADDLES OR SHIELDS FOR PROTECTION AT ALL HANGINGS. 4) INSULATION FOR STRAINERS OR OTHER FITTINGS OR ACCESSORIES REQUIRING SERVICING OR INSPECTION SHALL

HAVE INSULATION REMOVABLE AND REPLACEABLE WITHOUT

DESCRIPTION DATE

PROJECT INFORMATION: UNCLE WILLIE'S WINGS

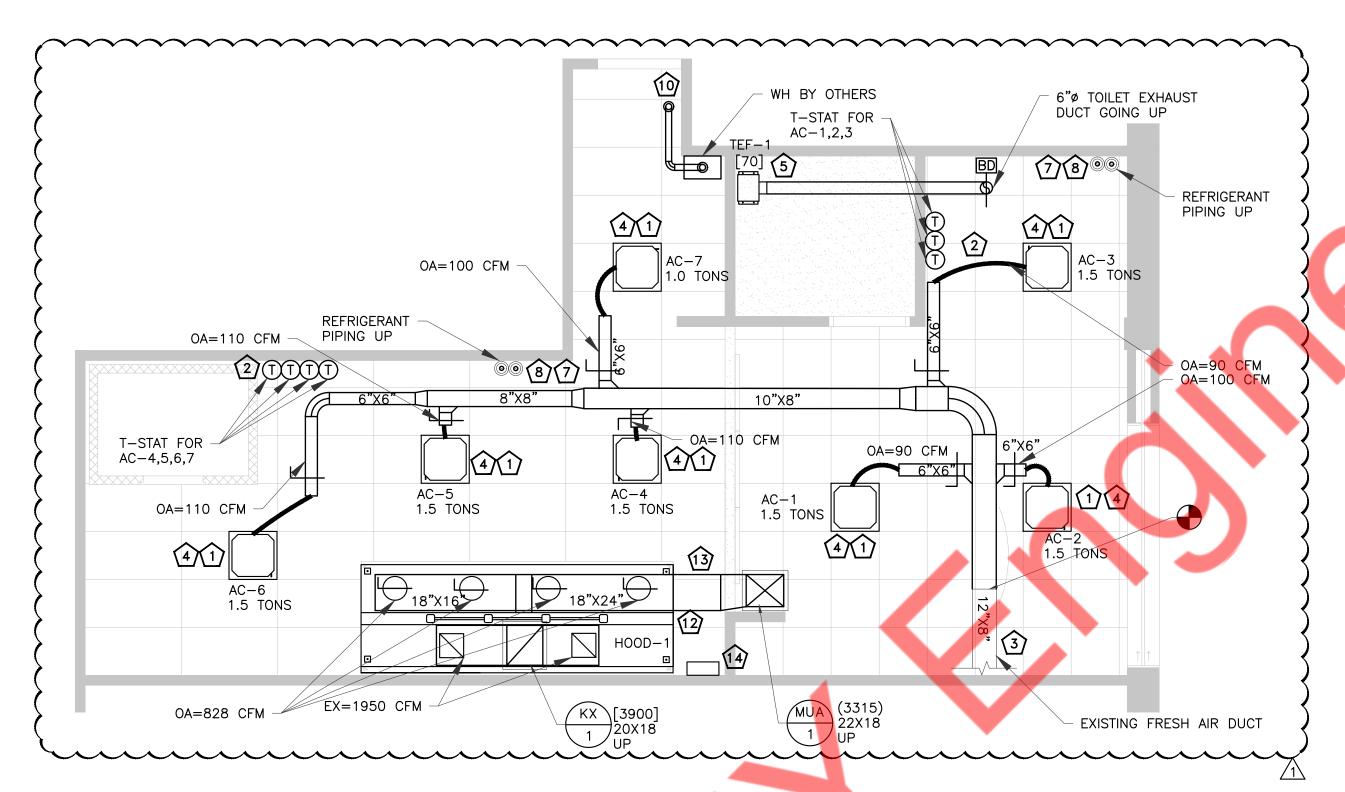
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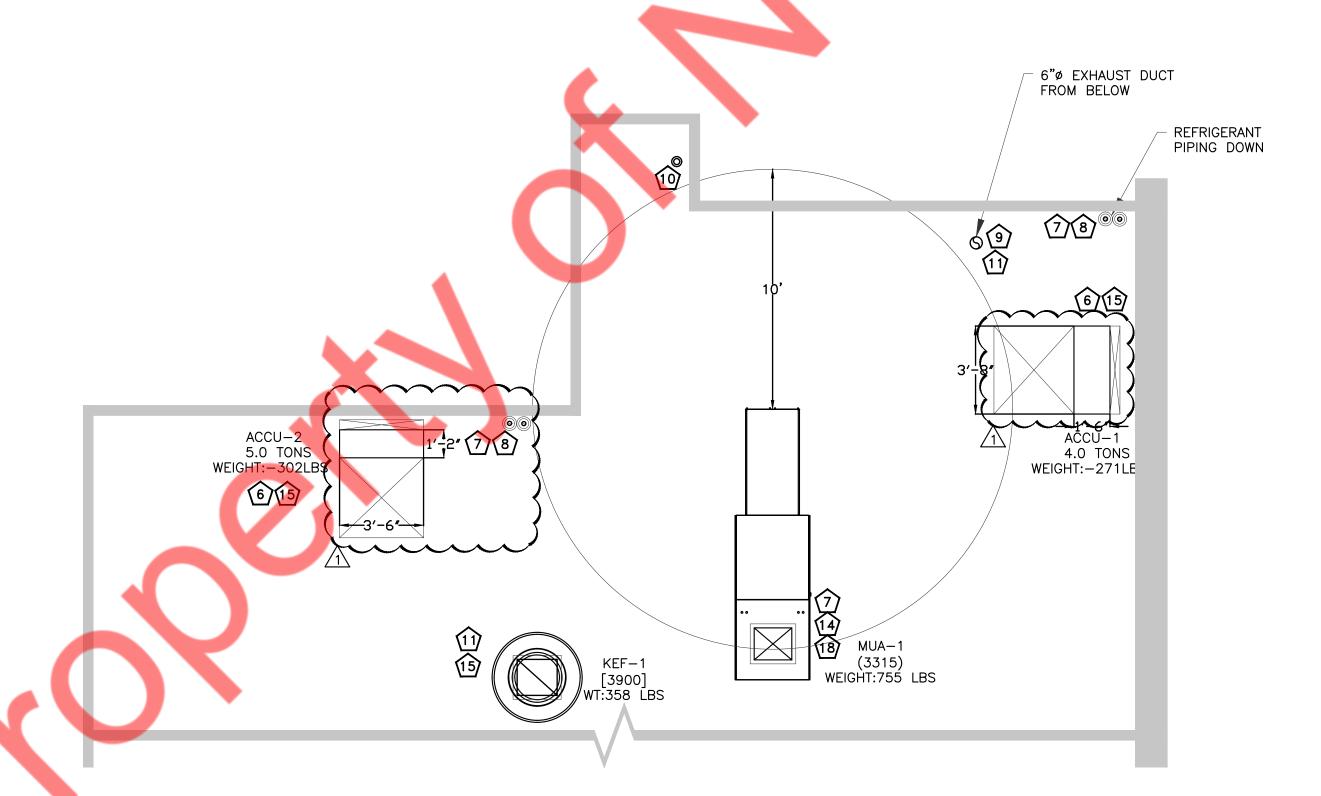
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MECHANICAL SPECIFICATIONS

(2 OF 2)



MECHANICAL FLOOR PLAN - CONCOURSE LEVEL



B MECHANICAL ROOF PLAN - CONCOURSE LEVEL



- A. CONTRACTOR SHALL BALANCE EACH DEVICE WITH THE CFM SHOWN ON PLAN.
- B. NEW DUCTWORK SHOWN ON PLAN ARE SCHEMATIC ONLY. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR PIPING AND DUCTWORK ROUTING. OFFSET AND RUN PIPING, DUCTWORK INSIDE THE STRUCTURE IF REQUIRED. PROVIDE ANY EXTRA PIPING, DUCTWORK, FITTINGS, INSULATIONS AND OTHER ACCESSORIES IN ORDER TO COMPLETE THE INSTALLATION.
- C. COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS WITH OWNER AND STRUCTURAL ENGINEERS.
- EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
- E. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
- F. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
- G. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
- H. COORDINATE WITH ALL TRADES FOR MATERIALS IN RATED AND PLENUM SPACES.
- I. TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO G.C AND OWNER.
- J. NEW DUCTWORK IN CONCEALED AREAS MAY BE RECTANGULAR WITH EQUIVALENT CROSS SECTIONAL FLOW AREA.
- K. PROVIDE R-8 INSULATION FOR OAI DUCT AND R-6 INSULATION FOR SUPPLY AND RETURN DUCT.
- L. PROVIDE 1-1/4" CONDENSATE DRAIN FOR ALL AC'S.
- M. PROVIDE WEATHER PROOF COATING FOR ALL EXTERIOR PIPING INSULATION.
- N. PROVIDE WEATHER PROOF COATING FOR ALL EXTERIOR DUCTING.
- O. PROVIDE FIRE OR FIRE+SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/ BARRIERS. COORDINATE WITH ARCHITECTURAL DRAWING FOR FIRE RATING OF THE WALLS.
- P. PROVIDE 1.5" FIRE WRAP (TWO LAYERS) TO KITCHEN EXHAUST DUCT AS PER MANUFACTURERS RECOMMENDATIONS.

MECHANICAL KEY NOTES

- CONNECT 1-1/4" CD TO SINK/LAV WITH AIR GAP FITTING. INSTALL CONDENSATE DRAIN WITH 1/4" SLOPE TOWARDS SINK. PROVIDE 1" INSULATION TO CONDENSATE DRAIN.
- PROVIDE PROGRAMMABLE THERMOSTAT WITH LOCKING COVER. COORDINATE LOCATION ON SITE WITH ARCHITECT / OWNER. PROVIDE REMOTE SENSOR LOCATED 72" ABOVE FINISHED FLOOR NEAR LOCATION INDICATED. SEAL WALL OPENINGS WITH CAULK. COORDINATE LOCATION ON SITE WITH GENERAL CONTRACTOR AND EQUIPMENT. AVOID LOCATING NEAR OR ABOVE SOURCES OF HEAT.
- CONTRACTOR TO FIELD VERIFY THE EXACT LOCATION OF OUTSIDE AIR TAPPING FROM BASE BUILDING AND CONNECT TO THE NEW DUCT TAPPING OF EQUIPMENT. AND VERIFY THE CFM OF SUPPLIED AIR AS PER REQUIREMENT.
- (4) COORDINATE FINAL LOCATION OF EQUIPMENT WITH STRUCTURAL DRAWINGS.
- © CEILING MOUNTED EXHAUST FAN. INTERCONNECT EXHAUST FAN WITH LIGHTS IN THIS ROOM. REFER TO ELECTRICAL LIGHTING PLAN. FAN SHALL BE SUSPENDED FROM STRUCTURE ABOVE. VERIFY EXACT LOCATION OF STRUCTURAL MEMBERS PRIOR TO INSTALLATION.
- (6) INSTALL OUTDOOR CONDENSING UNITS ON THE ROOF WITH ALL REQUIRED ACCESSORIES. COORDINATE EXACT LOCATION IN FIELD. PROVIDE STEEL DUNNAGE AS REQUIRED.
- 1 INSTALL REFRIGERANT PIPING FROM INDOOR UNITS TO OUTDOOR UNITS AS PER MANUFACTURER RECOMMENDATION. PROVIDE WEATHER PROOF COATING FOR EXPOSED PIPING. PROVIDE PIPING INSULATION AS PER TABLE 6.8.3B FROM ASHRAE/IES STANDARDS 90.1.
- CONTRACTOR TO COORDINATE THE LOCATION OF RISER/PENETRATIONS ON FIELD WITH OWNER/BUILDING ENGINEER. NOTIFY ENGINEER FOR ANY DISCREPANCY BEFORE COMMENCING BID.
- THE EXHAUST DUCT SHALL BE TERMINATED 10 FEET FROM ANY OUTSIDE AIR INTAKE OPENING, 10 FEET FROM THE PROPERTY LINE, 10 FEET ABOVE GRADE, AND NOT LESS THAN 30 INCHES ABOVE THE ROOF.
- ø3"/ø5" CONCENTRIC VENT FOR COMBUSTION AIR INTAKE/EXHAUST FROM GAS FIRED EQUIPMENT TO ROOF TERMINATION KIT.ROUTE PIPING WITH MINIMAL AMOUNT OF BEND AND LENGTH AS REQUIRED BY RESPECTIVE UNIT MANUFACTURERS'S REQUIREMENT.
- ALL EXHAUST AIR SOURCES ON THE ROOF SHALL BE MINIMUM 10 FT. AWAY FROM OUTSIDE AIR INTAKES.
- TYPE-1 HOOD. RUN SHEET METAL DUCT FROM CONNECTION ON HOOD TO RESPECTIVE EXHAUST FAN. OFFSET AND TRANSITION AT CONNECTIONS AS NEEDED. VERIFY DIMENSIONS PRIOR TO FABRICATION OR INSTALLATION. USE FACTORY-MANUFACTURED PIPE AND FITTINGS ONLY. VERIFY LOCATION ON SITE WITH MOST RECENT KITCHEN PLANS.
- DUCT SHALL BE SLOPED 1/4" UNIT VERTICAL IN 12" UNIT HORIZONTAL TOWARD HOOD.
- LOCATION OF ANSUL SYSTEM REMOTE MANUAL PULL STATION. VERIFY EXACT LOCATION WITH KITCHEN EQUIPMENT SUPPLIER.
- (15) COORDINATE EQUIPMENT LOCATION WITH LL/ARCHITECT.

ISSUE	DESCRIPTION	DATE
01	HVAC CHANGES	10/17/2022

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UNCLE WILLIE'S WINGS

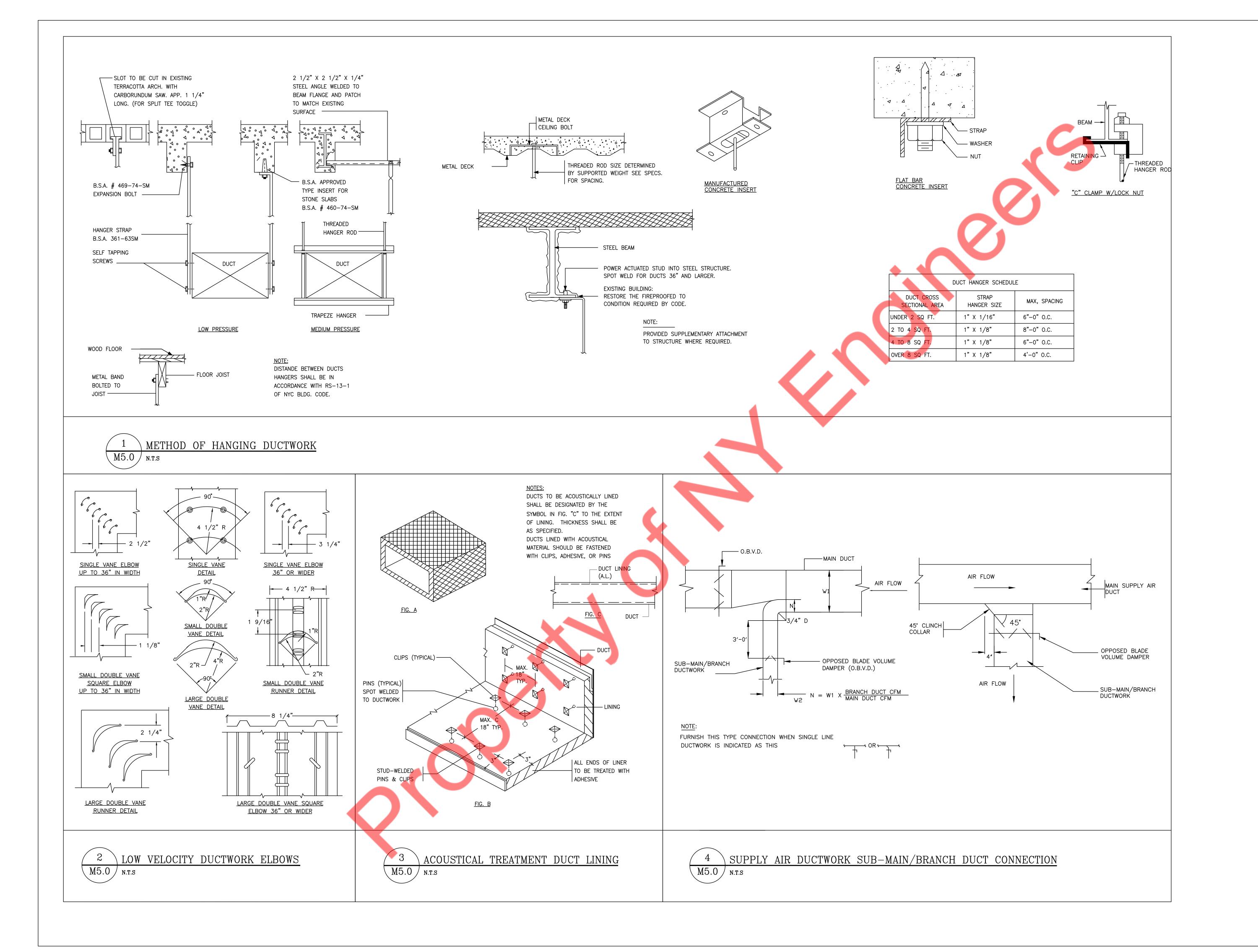
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MECHANICAL PLANS

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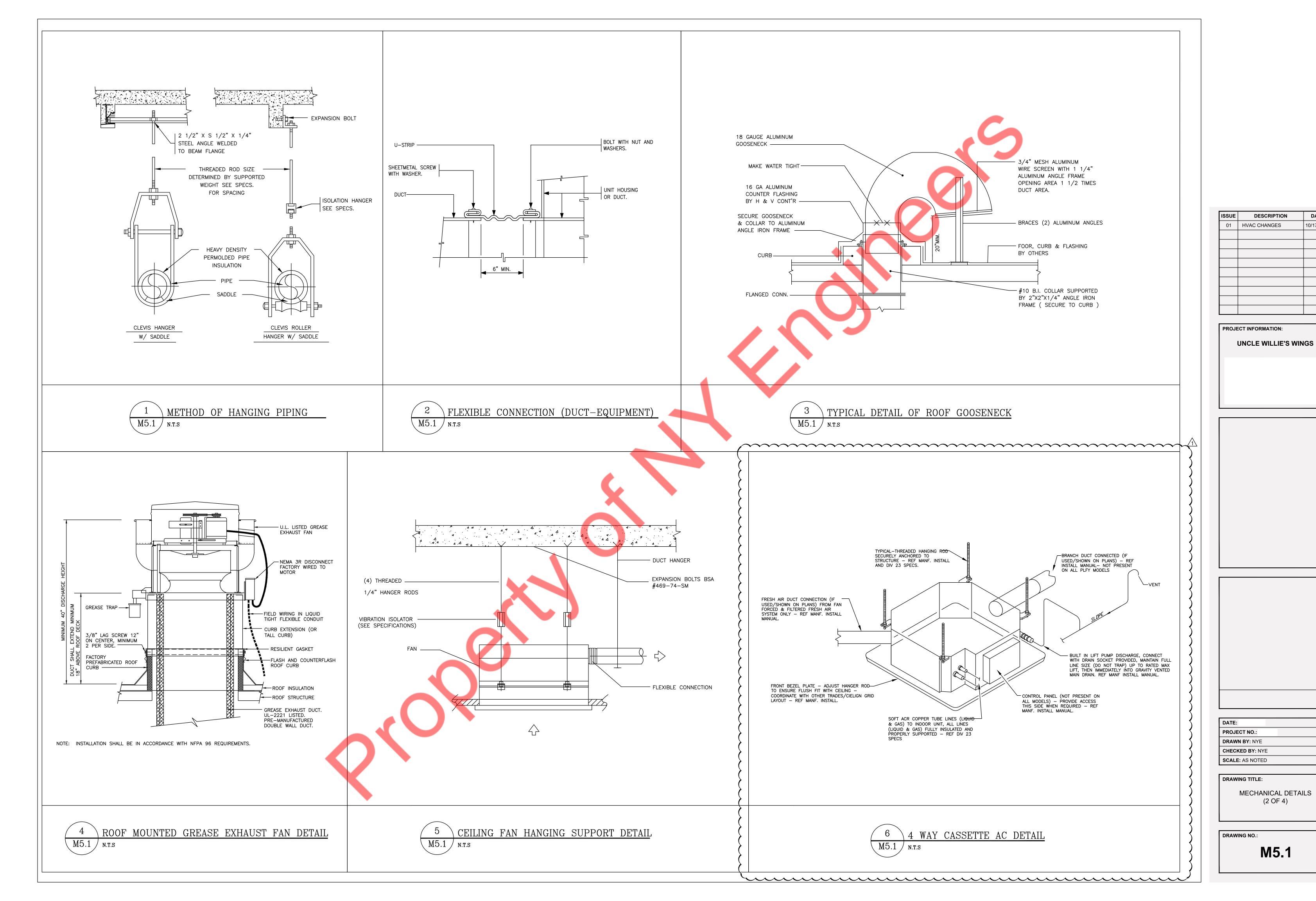
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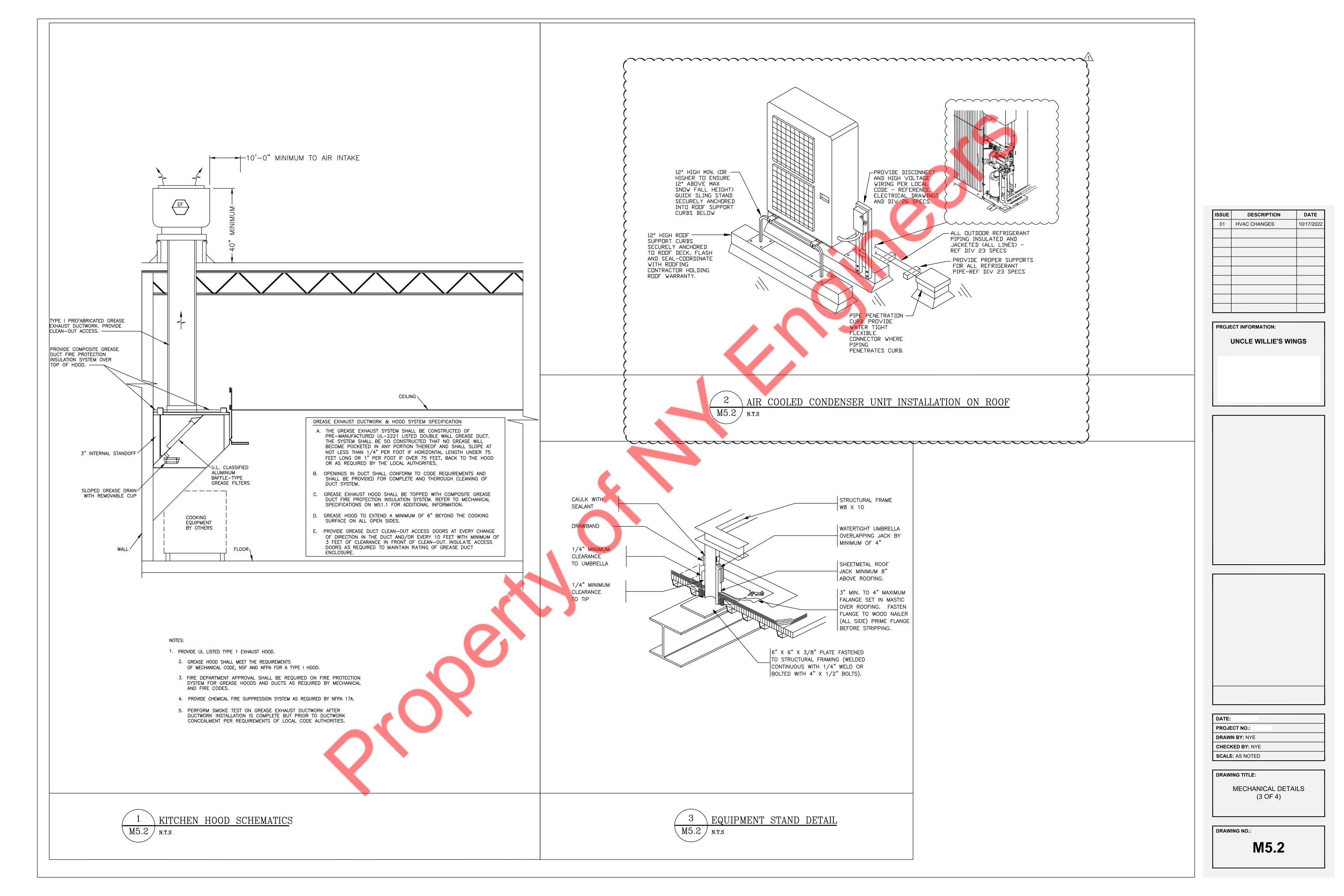
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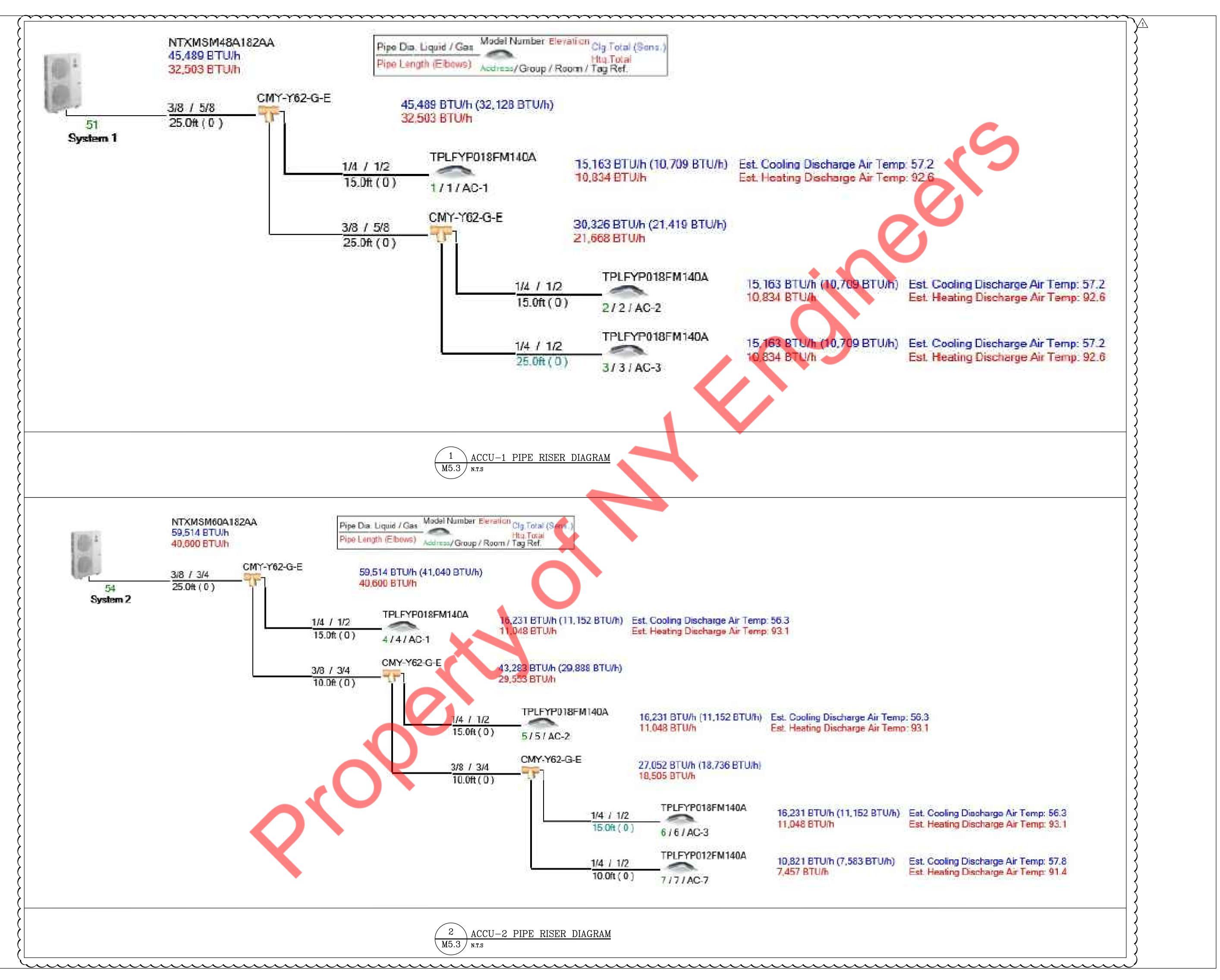
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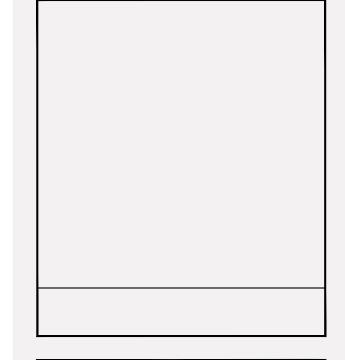




ISSUE	DESCRIPTION	DATE
01	HVAC CHANGES	10/17/2022

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MECHANICAL DETAILS (4 OF 4)

DRAWING NO.:

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}		VRF HEAT PUMP CONDENSING UNITS SCHEDULE																					
>	UNIT TAG	LOCATION	INDOOR UNIT SERVED	CAP.TR	COOLING MBH	HEATING MBH	COMPRESSOR TYPE	NO. OF COMPRESSOR PER UNIT	TYPE OF REFRIGERANT	UNIT DIMENSIONS IN.(HXWXD)	WEIGHT (LBS)	PIPING DII LIQUID-HI PRESSURE	MENSION GAS HIGH- PRESSURE	ELECT (V/Hz/Ph)		MOCP (A)	EER S	SEER	HSPF	СОР	SOUND LEVEL (Dba)	MODEL NO.	MAKE
\ \ \ \	ACCU-1	SEE ON PLAN	AC-1, AC-2 & AC-3	4	48	54	HERMATIC	1	R410	53"X42"X13"	271	3/4"	5/8"	208/60/1	29	40	13.1	23	12	4	54	NTXMSM48A182AA	TRANE- MITSUBISHI
()	ACCU-2	SEE ON PLAN	AC-4, AC-5,AC-6 & AC-7	5	60	66	HERMATIC	1	R410	53"X44"X18"	302	3/4"	3/4"	208/60/1	36	50	13.3	20	12	4	59	NTXMSM60A182AA	TRANE- MITSUBISHI
	NOTES:-		•	•	•	•				•			•	•			<u> </u>			'			•

1. UNIT SHALL HAVE TEN YEAR EXTENDED WARRANTY FOR COMPRESSORS/PARTS.

2. PROVIDE LOW AMBIENT CONTROL FOR CONDENSING UNIT OPERATION DOWN TO -4°F.

3. PROVIDE COMPRESSOR CYCLE PROTECTOR.

4. PROVIDE STEEL RAILS AND VIBRATION ISOLATORS FOR CONDENSER MOUNTING.

5. STEEL RAILS TO BE PROVIDED BY MECH. CONTRACTOR.

6. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEED THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.

7 _																						
>									INI	DOOR UNIT	SCHEDULE											
> [UNIT TAG	AREA	CONNECTED TO	TYPE	CAP.	COOLING HEATING		OUTSIDE	MAX. SOUND	ELE	CTRICAL DATA	4	DIMENSIONS		PIPE SIZ	E	WEIGHT	MODEL NO.	MAKE			
	UNIT TAG	SERVED		CONNECTED TO	CONNECTED TO	CONNECTED TO	CONNECTED TO	ITPE	(TON)	MBH	MBH	AIR FLOW	PRESS.(DBA)	PH/VOLT/HZ	MCA (A)	MOCP (A)	(HXWXD) (IN.)	LIQ. (IN.)	SUCTION (IN.)	DRAIN (ID) (IN.)	(LBS.)	MODEL NO.
		SEE ON		4-WAY CEILING															TARENE-			
	AC-1 PLAN AC	AC-1	ACCU-1	CASSETTE	1.5	18.0	20.0	100	-	1/208-230/60	0.5	15	9"X23"X23"	1/4"	1/2"	1-1/4"	36.6	TPLFYP018FM140A	MITSUBISHI			
ا د	4.0.2	SEE ON	A CCI 1	4-WAY CEILING	4.5	10.0	20.0	00		1/200 220/60	٥٦	4.5	Ollyggllyggll	4 (41)	4 /20	1 1/411	26.6	TD1 EVD04 0E8 44 40 4	TARENE-			
	AC-2 PLAN ACCU-1	ACCU-1	CASSETTE	1.5	18.0	20.0	90	-	1/208-230/60	30/60 0.5	15	9"X23"X23"	1/4"	1/2"	1-1/4"	36.6	TPLFYP018FM140A	MITSUBISHI				
	AC-3	SEE ON	ACCII 1	4-WAY CEILING	1 5	18.0	20.0	90		1/208-230/60	0.5	15	9"X23"X23"	1/4"	1/2"	1-1/4"	36.6	TPLFYP018FM140A	TARENE-			
>	AC-3	PLAN CASSETTE	ACCU-1 CASSE	PLAN ACCO-1	CASSETTE	1.5	16.0	20.0	90	-	1/208-230/60	0.5	15	9 723 723	1/4	1/2	1-1/4	30.0	II LI II OIOI WILTOA	MITSUBISHI		
>	AC-4	SEE ON	ACCU-2	4-WAY CEILING	1.5	18.0	20.0	110	_	1/208-230/60	0.5	15	9"X23"X23"	1/4"	1/2"	1-1/4"	36.6	TPLFYP018FM140A	TARENE-			
>	AC-4	PLAN	ACCO-2	CASSETTE	1.5	16.0	20.0	110	-	1/ 208-230/ 00	0.5	15	15 9 723 723	1/4	1/2	1-1/4	30.0	TPLFYPU18FIVI14UA	MITSUBISHI			
>	AC-5	SEE ON	ACCU-2	4-WAY CEILING	1.5	18.0	20.0	110	_	1/208-230/60	0.5	15	9"X23"X23"	1/4"	1/2"	1-1/4"	36.6	TPLFYP018FM140A	TARENE-			
	AC-3	PLAN	ACCO-2	CASSETTE	1.5	16.0	20.0	110	-	1/ 208-230/ 00	0.5	13	9 AZ3 AZ3	1/4	1/2	1-1/4	30.0	TELETEOTORIVIT40A	MITSUBISHI			
	AC 6	SEE ON	ACCU-2	4-WAY CEILING	1.5	18.0	20.0	110	_	1/208-230/60	0.5	15	9"X23"X23"	1/4"	1/2"	1-1/4"	36.6	TDI EVDO1 9EN/11/10A	TARENE-			
AC-6 SEE ON PLAN	ACCO-2	CASSETTE	1.5	16.0	20.0	110	-	1/ 208-230/ 00	0.5	13	9 AZ3 AZ3	1/4	1/2	1-1/4	30.0	6.6 TPLFYP018FM140A	MITSUBISHI					
>	AC-7	SEE ON	ACCU-2	4-WAY CEILING	1.0	12.0	13.5	100	_	1/208-230/60	0.29	15	9"X23"X23"	1/4"	1/2"	1-1/4"	36.6	TPLFYP012FM140A	TARENE-			
>	AC-7	PLAN	ACCO-2	CASSETTE	1.0	12.0	13.3	100	-	1/ 200-230/ 00	0.29	13	9 AZ3 AZ3	1/4	1/2	1-1/4	30.0	IF LI IF UIZFIVII4UA	MITSUBISHI			

NOTES FOR INDOOR UNIT

1.REFRIGERANT R410A SHALL BE PROVIDED.

2. PROVIDE HANGING BRACKETS WITH MANUFACTURER RECOMMENDED VIBRATION ISOLATORS AND ALL ASSOCIATED ACCESSORIES.

3. ALL REFRIGERANT PIPING TO BE SIZED PER MANUFACTURERS RECOMMENDATIONS.

4. SEE FLOOR PLAN FOR QUANTITIES.

7. PROVISE EQUIPMENT GRILL WITH 3D I-SEE SENSOR.

8. CONTRACTOR SHALL PROVIDE A LONG LINE SET FOR REFRIGERANT PIPING IN THE EVENT THAT TOTAL REFRIGERANT LENGTH EXCEEDS THE MANUFACTURER'S STANDARD RECOMMENDED LENGTH.

9. PROVIDE UNITS WITH 7 DAYS PROGRAMMABLE HEATING AND COOLING WALL MOUNTED CONTROLLERS BY THE UNIT MANUFACTURER.

	EXHUAST FANS SCHEDULE												
TAG	SERVICE	AIRFLOW (CFM)	ESP (IN W.G)	ELEC. DATA (V/Hz/Ph.)	FLA (A)	INPUT POWER	FAN SPEED (RPM)	WEIGHT (LBS.)	SOUND	MODEL	MAKE		
TEF-1	TOILET EXHAUST	70	0.2	115/60/1	0.29	6 (W)	838	12	30 (dBA)	SP-A50-90-VG	GREENHECK		
KEF-1	KITCHEN	3900	1.6	208/60/3	15.80	5 (HP)	886	358	17.1 (Sones)	EADU240H	ECON-AIR		
NOTES :-	•												
1) FAN SWITC	H TO BE PROV	IDED AT AL	L BATHRO	OM FOR ENG	AGING R	ESPECTIVE	FAN.COO	RDINATE	HEIGHT, (COLOR AND STY	LE WITH THE		
OWNER AND	ARCHITECT.												
2) ALL DIRECT	DRIVE FANS S	HALL BE FU	RNISHED '	WITH VARI-G	REEN MC	TOR CON	TROL.						
3) FAN SPEED	SHALL BE EAS	ILY FIELD AI	OJUSTABLI	Ξ.									
4) REFER TO D	ETAILS, FAN S	HALL BE MO	DUNTED W	//SUPPORT F	RAMING	BY OTHERS	5.						
5) PROVIDE M	OTOR STARTE	RS, DISCON	INECTS . A	LL EQUIPMEN	NT NORM	IAL POWER	R WIRING E	BY ELECTR	ICAL CON	ITRACTOR. COO	RDINATE		
POWER REQU	IREMENTS.												
6) PROVIDE RI	JBBER IN SHEA	AR ISOLATIO	ON AND A	LL-THREAD H	ANGING	RODS FOR	INLINE FA	NS.					
7) COORDINA	TE WITH ARCH	I./G.C. ACC	ESS DOOR	S FOR SERVIC	ING ALL	FANS WITH	HIN CEILIN	GS.					
8) TEF-1 FAN S	') COORDINATE WITH ARCH./G.C. ACCESS DOORS FOR SERVICING ALL FANS WITHIN CEILINGS. 3) TEF-1 FAN SHALL BE INTERLOCK WITHLIGHT.												
9) EF-1 SHOUL	D INTERLOCK	WITH HOO	D.										

AIR BALANCE									
LINIT	AREA	SUPPLY AIR	OUTSIDE AIR	RETURN	EXHAUST				
UNIT	SERVED	(CFM)	(CFM)	AIR (CFM)	AIR(CFM)				
OAI	SEE PLAN	0	710	0	0				
TXF-1	SEE PLAN	0	0	0	70				
KEF-1	SEE PLAN	0	0	0	3900				
MUA-1	SEE PLAN	3315	3315	0	0				
TOTAL:		3315	4025	0	3970				
BUII	DING PRESSU	JRE:	55	POS	ITIVE				
NOTES:									
1. CONTRACTOR TO ADJUST MOTORIZED DAMPER ON FRESH AIR TAP TO									
PROVIDE OUT	SIDE AIR AS IV	PROVIDE OUTSIDE AIR AS MENTIONED IN ABOVE TABLE.							

	MAKEUP AIR FAN SCHEDULE													
TAG	SERVICE	MODEL	STATIC IN. WG	CFM (MAX.)	ELEC (V/Hz/Ph.)	POWER	MCA (A)	MOCP (A)		CAPACITY OUTPUT (MBH)	GAS PRESSURE IN. W.C.	EFFICIENCY	WEIGHT (LBS)	MAKE
MUA-1	KITCHEN	EA2-D.500-20D	0.80	3315	208/60/3	3.0 (HP)	11.9	20	223.1	205.3	7"-14"	92%	755	ECON-AIR
NOTES :-	NOTES :-													

1) FAN SPEED SHALL BE EASILY FIELD ADJUSTABLE.

10) PROVIDE ROOF CURB FOR THE EF-1.

2) REFER TO DETAILS, FAN SHALL BE MOUNTED W/SUPPORT FRAMING BY OTHERS.

3) PROVIDE MOTOR STARTERS, DISCONNECTS AND 14" CURB. ALL EQUIPMENT NORMAL POWER WIRING BY ELECTRICAL CONTRACTOR. COORDINATE POWER REQUIREMENTS.

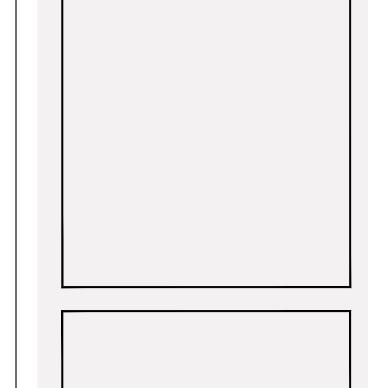
	KITCHEN HOOD SCHEDULE								
	LENGTH		APPLIANCE	COOKING	EXHAUST				
UNITID	(FEET-INCH)	MODEL	DUTY	TEMPERATURE	AIR	CONSTRUCTION			
			DOTT	(DEG F)	(CFM)				
HOOD-1	13'	GCH-1300	HEAVY	600	3900	18 GA, #430 S/S			
NOTES:-	NOTES:-								

1) REFER ATTACHED DRWING FROM RELIABLE FIR & MECHANICAL

ISSUE	DESCRIPTION	DATE
01	HVAC CHANGES	10/17/2022

PROJECT INFORMATION:

UNCLE WILLIE'S WINGS



DATE:
PROJECT NO.:
DRAWN BY: NYE
CHECKED BY: NYE
SCALE: AS NOTED

DRAWING TITLE:

MECHANICAL SCHEDULE

DRAWING NO.:

M6.0

			ELECTRICAL SYMBOLS LIST					GENERAL NOTES (apply to all "e" drawings)
	SWITCHES AND CONTROLS		POWER AND TELECOMMUNICATION		ELECTRICAL AE	BBREVIA	TIONS	1. ALL WORK SHALL BE PERFORMED IN STRICT ACCORDANCE WITH THE CURRENT
\$ _a	20A SPST TOGGLE SWITCH U.O.N. "a" DENOTES LIGHTING FIXTURE CONTROLLED.	J	JUNCTION BOX WITH BLANK COVER PLATE, FLUSH IN FLOOR.	A	AMPERES	EA	EACH	VERSION OF THE NATIONAL ELECTRIC CODE(NEC) 2017 WITH NEW JERSY AMENDMENTS, LOCAL JURISDICTION REQUIREMENTS, AND ALL GOVERNING
\$2	20A 3-WAY TOGGLE SWITCH U.N.O. "a" DENOTES LIGHTING FIXTURE CONTROLLED	-(1)	JUNCTION BOX WITH BLANK COVER PLATE, WALL MOUNTE, +18" AFF OR	A/C, AC	AIR CONDITIONING UNIT	EC	EMPTY CONDUIT/ ELECTRICAL CONTRACTOR	LOCAL CODES, LAWS, AND REGULATIONS. 2. CONTRACTOR SHALL VISIT THE SITE AND BECOME FAMILIAR WITH ALL EXISTING
\$ ³	20A 4-WAY TOGGLE SWITCH U.N.O. "a" DENOTES LIGHTING FIXTURE CONTROLLED	J J	AS NOTED. JUNCTION BOX WITH BLANK COVER PLATE, CEILING MOUNTED	AF	AMPERE FRAME/AMP FUSE	EF	EXHAUST FAN	CONDITIONS THAT MAY AFFECT THE WORK. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED FOR FAILURE TO DO SO.
→ D	WALL BOX INCANDESCENT DIMMER SWITCH, LUTHRON MAESTRO SERIES. "a"		DUPLEX CONVENIENCE RECEPTACLE, +18" AFF OR AS NOTED.	AFF	ABOVE FINISHED FLOOR	ЕМ	EMERGENCY	3. CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, TEST REPORTS, AND CERTIFICATIONS FOR TEMPORARY AND FINAL CERTIFICATE OF OCCUPANCY.
\$a 	DENOTES LIGHTING FIXTURE CONTROLLED.	•	DUPLEX DEDICATED RECEPTACLE, +18" AFF OR AS NOTED.	AS	AMP SWITCH	ЕМТ	ELECTRICAL METALLIC TUBING	4. FIRE STOP ALL PENETRATIONS OF FIRE RATED CONSTRUCTION IN A CODE
<u>(0s)</u>	WALL OCCUPANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE.	П	DUPLEX CONVENIENCE RECEPTACLE - 20A-1P, 125V, NEMA 5-20R MOUNTED	AIC	AMPS INTERRUPTING CAPACITY	EQUIP	EQUIPMENT	APPROVED MANNER IN ORDER TO MAINTAIN FIRE RATING. ALL PENETRATIONS SHALL BE SLEEVED AND SEALED WATERTIGHT.
\$a	WALL MOUNTED VACANCY SENSOR SWITCH, WATTSTOPPER CS-50PIR SERIES.	→ ⇔ ^{CL}	FLUSH IN CELING.	AT	AMP TRIP	ER 	EXISTING TO BE RELOCATED	5. SECURE ALL SUPPORTS TO BUILDING STRUCTURE UTILIZING TOGGLE BOLTS (HOLLOW MASONRY), EXPANSION SHIELDS OR INSERTS (CONCRETE AND
ΨV5 ————————————————————————————————————			DUPLEX RECEPTACLE WITH GFCI PROTECTION	ATS	AUTOMATIC TRANSFER SWITCH	ETR	EXISTING TO REMAIN ELECTRIFIED WORKSTATION	BRICK), MACHINE SCREWS (METAL), BEAM CLAMPS (FRAMEWORK), WOOD SCREWS (WOOD) OR PAN THRU STRAPS (METAL DECK). NAILS, RAWL PLUGS AND WOOD PLUGS ARE NOT PERMITTED. WHERE REQUIRED BY STRUCTURE,
\$ ₀	WALL MOUNTED SPRING WOUND TIME SWITCH TORK	©= AC	DUPLEX RECEPTACLE WITH GFCI PROTECTION MOUNTED ABOVE COUNTER	AUTO	AUTOMATIC AMERICAN WIRE GAUGE	EWF EWH	FURNITURE ELECTRIC WATER HEATER	PROVIDE THRU BOLTS AND FISH PLATES. SUPPORT HORIZONTAL RUNS OF METALLIC RACEWAYS NOT MORE THAN 10 FT APART. SUPPORT RACEWAY
	ASCO CONTACTOR C-25 TORK TIMER T-25 STACKED.	•	ELECTRICAL FLOOR BOX	C	CONDUIT	FA	FIRE ALARM	RISERS AT EACH FLOOR LEVEL. RUN EXPOSED RACEWAYS PARALLEL WITH OR AT RIGHT ANGLES TO WALLS.
– D	DOOR SWITCH		RECEPTACLE FOR DRYER	C/B,CB	CIRCUIT BREAKER	FBO	FURNISHED BY OTHERS, INSTALLED & WIRED BY EC	6. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS. RACEWAYS OVER 10 FT LONG IN WHICH WIRING IS NOT
PC	PHOTOCELL IN NEMA 3R ENCLOSURE.	[NID]	NETWORK INTERFACE DEVICE. NID IS 'ONT' BOX WHICH INCLUDES BOTH	CKT	CIRCUIT	FDR	FEEDER	INSTALLED: FURNISH FISH WIRE. 7. VERIFY LOCATIONS OF OUTLETS AND SWITCHES IN FINISHED ROOMS WITH
-PC	WALL MOUNTED PHOTOCELL MOUNTED IN NEMA 3R ENCLOSURE.		'ONT' AND ITS SISTER BOX AS PER VERIZON STANDARDS. DOUBLE DUPLEX RECEPTACLE - 20A-1P, 125V, NEMA 5-20R.	CLG	CEILING	FIBO	FURNISHED & INSTALLED BY OTHERS, WIRED BY EC	ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISH. IN CENTERING OUTLETS AND LOCATING BOXES AND OUTLETS, ALLOW FOR OVERHEAD PIPES,
OS) _A	CEILING OCCUPANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE. 'A' LETTER REFERES TO WIRING DIAGRAM.	"	TELEPHONE/DATA OUTLET, 4"SQUARE OUTLET BOX WITH SINGLE GANG COLLAR	СОММ	COMMUNICATION	FIXT	FIXTURE	DUCTS AND MECHANICAL EQUIPMENT, EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILINGS AND THE LIKE. CORRECT ANY INACCURACY RESULTING FROM
_(os)	WALL OCCUPANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY	lacksquare	AND BLANK PLATE. PROVIDE 3/4" E.C., U.O.N., UP TO HUNG CEILING AND TERMINATE WITH 90° ELBOW, BUSHING AND DRAG WIRE.	СТ	CURRENT TRANSFORMER	FL	FLOOR	FAILURE TO DO SO WITHOUT EXPENSE TO OWNER.
	SENSOR SCHEDULE.	+	TELEPHONE OUTLET, WALL—MOUNTED +48" AFF UNO TEL / DATA OUTLET TO BE	CU	COPPER	FLUOR	FLUORESCENT	8. CONTRACTOR SHALL PROVIDE A WARRANTY ON ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE.
–(vs)	WALL VACANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE.		PROVIDED WITH 1" CONDUIT U.O.N. TO H.C. AND TERMINATED WITH 90 DEGREE REE ELBOW AND BUSHING. TEL / DATA OUTLET PLATE SHALL BE PROVIDED WITH	*C	DEGREE CELSIUS	G	GROUND	9. ALL UNUSED MATERIALS AND DEBRIS SHALL BE LEGALLY REMOVED AND
(VS)	CEILING VACANCY SENSOR, NUMBER INDICATES TYPE; SEE OCCUPANCY SENSOR SCHEDULE.		1 1/4"DIAMETER GROMMETED OPENING.	*F	DEGREE FAHRENHEIT	GFI	GROUND FAULT INTERRUPTER	DISPOSED OF AWAY FROM THE PREMISES ON A DAILY BASIS. 10. CONTRACTOR SHALL PATCH, PAINT, AND RESTORE EXISTING SURFACES
DS	CEILING MOUNTED DAYLIGHT SENSOR.		DATA OUTLET — (1) PORT UNO, +18" AFF, UNO TEL / DATA OUTLET TO BE PROVIDED WITH 1" CONDUIT U.O.N. TO H.C. AND TERMINATED WITH 90 DEGREE	DIA	DIAMETER	GP	GENERAL PURPOSE	DAMAGED DURING THE COURSE OF THIS CONSTRUCTION TO PRE-EXISTING CONDITIONS OR BETTER.
	WIRING SYSTEMS		ELBOW AND BUSHING. TEL / DATA OUTLET PLATE SHALL BE PROVIDED WITH 1 1/4" DIAMETER GROMMETED OPENING.	DISC	DISCONNECT	HC HP	HUNG CEILING HORSEPOWER	11. MINIMUM SIZE OF CONDUIT SHALL BE ¾", AND TYPE SHALL BE ELECTRICAL METALLIC TUBING (EMT), UNLESS OTHERWISE NOTED. PROVIDE NYLON DRAG
3	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF		MOTORS AND CONTROLS	DP	DOWN DISTRIBUTION PANEL	HWH	HOW WATER HEATER	LINE AND CONDUIT CAP FOR ALL EMPTY CONDUITS.
UP-	1#12 ø, 1#12 N. & 1#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.		AC INDOOR UNIT MOTOR AS NOTED WITH LIQUID TIGHT FLEXIBLE CONNECTION	DWH	DOMESTIC WATER HEATER	HZ	HERTZ	12. CONNECT CONDUIT TO MOTOR CONDUIT TERMINAL BOXES WITH FLEXIBLE CONDUIT (MINIMUM 18 IN. LENGTH AND 50% SLACK). DO NOT TERMINATE IN OR FASTEN RACEWAYS TO MOTOR FOUNDATION.
3 5	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF	M	WITH JUNCTION BOX AND MOTOR SWITCH.	DWG	DRAWING	IC	INTERRUPTING CAPACITY	13. PULL AND JUNCTION BOXES WHERE INDICATED ON THE DRAWINGS, SHALL BE
UP-	2#12 ø, 2#12 N. & 2#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.	M WP	AC OUTDOOR UNIT MOTOR AS NOTED WITH CONTROLLER AND DISCONNECT SWITCH WITH WEATHER PROOF.	JB	JUNCTION BOX	PP	POWER PANEL	CONSIDERED SHOWN AT THEIR APPROXIMATE LOCATION. THE CONTRACTOR SHALL LOCATE THEM AS FIELD CONDITIONS DICTATE. ADDITIONAL PULL AND JUNCTION BOXES NOT SHOWN ON DRAWINGS SHALL BE PROVDED WHERE
3 5 7 UP-	POWER OR LIGHTING CIRCUITRY HOMERUN WITH PANELBOARD DESIGNATION, NUMBER WHERE USED INDICATES CIRCUIT NUMBER. IT SHALL CONSISTS OF		NON FUSED DISCONNECT SWITCH AMPERAGE, AND NUMBER OF POLES	KCMIL	ONE THOUSAND CIRCULAR MILS	PVC	POLYVINYL CHLORIDE	REQUIRED BY APPLICABLE CODE PROVISIONS OR WHERE CALLED FOR BY FIELD CONDITIONS. PULL AND JUNCTION BOXES SHALL BE SURFACE TYPE IN
	3#12 ø, 3#12 N. & 3#12 G. IN 3/4"C, UNLESS OTHERWISE NOTED.	⊢	AS NOTED.	KV	KILOVOLT	PWR	POWER	UNFINISHED AREAS AND INSTALLED CANCEALED IN FINISHED AREAS, AND ALL COVERS TO PULL & JUNCTION BOXES SHALL BE READILY ACCESSIBLE.
	CONDUIT TURNING UP, SEE FLOOR PLANS FOR CONDITIONS. CONDUIT TUIRNING DOWN. SEE FLOOR PLANS FOR CONDITION.	_	30A NON FUSED DISCONNECT SWITCH	KVA	KILOVOLT-AMPERES	R	REMOVE	14. SUPPORT PANEL, JUNCTION AND PULLBOXES INDEPENDENTLY TO BUILDING STRUCTURE WITH NO WEIGHT BEARING ON RACEWAYS.
•	CONDUIT TOTRNING DOWN, SEE FLOOR PLANS FOR CONDITION.		60A NON FUSED DISCONNECT SWITCH	KW	KILOWATTS	RE	RELOCATED EXISTING	15. FOR EXACT LOCATION AND MOUNTING HEIGHT OF LIGHTING FIXTURES AND SWITCH/RECEPTACLE OUTLETS, REFER TO ARCHITECTURAL REFLECTED CEILING
<u>_</u>	CONDUIT AND WIRE TO BUILDING GROUND.		100A NON FUSED DISCONNECT SWITCH	LP	LIGHTING PANEL	REC	RECEPTACLE	AND PÓWER PLANS.
<u> </u>			200A NON FUSED DISCONNECT SWITCH	LTG	LIGHTING	RGS	RIGID GALVANIZED STEEL	16. ALL ELECTRICAL ACCESSORIES AND EQUIPMENT INSTALLED OUTSIDE OR EXPOSED TO WEATHER SHALL HAVE NEMA 3R ENCLOSURES AND SHALL BE TIGHTLY GASKETED FOR A COMPLETE RAINTIGHT INSTALLATION. ALL BUILDING
	CABLE TRAY, WIDTH AND MOUNTING AS NOTED.	4	COMBINATION MAGNETIC STARTER AND DISCONNECT SWITCH, FURNISHED BY HVAC/CONTRACTOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.	MAX	MAXIMUM	RR	REMOVE & RELOCATE	EXTERIOR MOUNTED RECEPTACLES SHALL BE GFCI RATED AND MOUNTED IN WEATHERPROOF ENCLOSURE.
	UNDERGROUND	. = 400	FUSED DISCONNECT SWITCH AND FUSE AMPERAGE AS INDICATED. TOP	MC MCB	MOTOR CONTROLLER MAIN CIRCUIT BREAKER	SECT SPDT	SECTION SINGLE POLE DOUBLE THROW	17. ALL ACCESS PANEL LOCATIONS SHALL BE REVIEWED BY ARCHITECT PRIOR TO INSTALLATION.
	EXISTING	<u> </u>	NUMBER DENOTS SWITCH SIZE AND BOTTOM NUMBER DENOTES FUSE.	MCB MER	MECHANICAL EQUIPMENT ROOM	SPST	SINGLE POLE SINGLE THROW	18. ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION AND INSTALLATION
			COMBINATION SOLID-STATE MOTOR STARTER.	MIN	MINIMUM	SPEC	SPECIFICATION	OF NEW WORK WITH THE GENERAL CONTRACTOR AND OTHER ASSOCIATED TRADES IN A TIMELY MANNER. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING ALL DIMENSIONS AND CONDITIONS PRIOR TO CONSTRUCTION. REFER
	NEW	MD	MOTORIZED DAMPER.	MLO	MAIN LUGS ONLY	SW	SWITCH	TO ALL GENERAL, MECHANICAL, AND ELECTRICAL, DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
<u>(S)</u>	CEILING MOUNTED SMOKE DETECTOR.	FSD	FIRE SMOKE DAMPER	MTD	MOUNTED	SWBD	SWITCHBOARD	19. ALL CONDUITS AND EQUIPMENT TO BE CONCEALED IN FINISHED SPACES UNLESS OTHERWISE NOTED. CONDUITS SHALL BE ENCASED IN THE CONCRETE
\$/co	COMBINATION OF SMOKE AND CO DETECTOR.	M/M/	DUPLEX PUMP. NUMBER INDICATES HP RATING OF PUMP.	MTS	MANUAL TRANSFER SWITCH	SYM	SYMMETRICAL	FLOOR SLAB. 20. ALL EQUIPMENT AND MATERIALS INSTALLED IN PLENUM CEILINGS SHALL BE
	ELECTRICAL DRAWING LIST	S _T	THERMAL OVERLOAD SWITCH AT MOTOR, PROVIDE THERMAL ELEMENTS AS	N	NEUTRAL	SYS	SYSTEMS	APPROVED FOR THAT APPLICATION.
E0.1	ELECTRICAL SYMBOL LIST, ABBREVIATIONS & GENERAL NOTES	c	PER MOTOR RATING.	NE	NEW DEVICE TO REPLACE EXISTING	TELE	TELEPHONE	21. OUTLET BOXES AND JUNCTION BOXES ON OPPOSITE SIDES OF FIRE—RATED WALLS SHALL BE SEPARATED BY A HORIZONTAL DISTANCE OF NOT LESS THAN 24 INCHES, UNLESS FIRE—RATED BOXES OR PUTTY PADS ARE UTILIZED.
E0.2 E0.3	ELECTRICAL SPECIFICATIONS SHEET 1 OF 2 ELECTRICAL SPECIFICATIONS SHEET 2 OF 2	1.5 kW	MANUAL MOTOR SWITCH ELECTRICAL HEATER, NUMBER DENOTES HEATER RATING	— NIC	NOT IN CONTRACT	TEMP	TEMPERATURE	22. COORDINATE ALL FLOOR PENETRATIONS WITH THE STRUCTURAL AND
E1.0	ELECTRICAL SPECIFICATIONS SHEET 2 OF 2 ELECTRICAL LIGHTING PLAN		ANNOTATION	NL	NIGHT LIGHT	TXF	TOILET EXHAUST FAN	ARCHITECTURAL DRAWINGS. CONFIRM PENETRATION LOCATIONS WITH THE ENGINEER AND OWNER BEFORE INSTALLATION.
E2.0	ELECTRICAL POWER & ROOF PLAN	+24"	INDICATES MOUNTING HEIGHT, CENTER LINE TO FINISHED FLOOR.	NTS	NOT TO SCALE	TYP	TYPICAL OTHERWISE NOTER	23. COORDINATE THE MOUNTING HEIGHT AND LOCATION OF RACEWAYS, COMMUNICATIONS OUTLETS, AND RECEPTACLES WITH THE ARCHITECTURAL
E3.0	ELECTRICAL DETAILS			OC	ON CENTER	UON	UNLESS OTHERWISE NOTED	CASEWORK DRAWINGS AND DETAILS. COORDINATE LOCATIONS OF LIGHT FIXTURES, SWITCHES, AND RELATED DEVICES WITH THE ARCHITECTURAL DRAWINGS AND DETAILS.
E4.0	ELECTRICAL PANEL SCHEDULES AND RISER DIAGRAM		KEYED NOTE REFERENCE	PB	POLES PULLBOX	V VA	VOLT/VOLTAGE VOLT AMPERE	24. REFER TO ARCHITECTURAL PLANS FOR FINAL LOACTIONS OF ALL LUMINARIES
		1 E/2-1	DETAIL REFERENCE: DETAIL NUMBER INDICATED ON TOP: DRAWING NUMBER INDICATED ON BOTTOM	PC PC	PERSONAL COMPUTER	VAV	VOLI AMPERE VARIABLE AIR VOLUME	AND SWITCHES, AND FOR ALL FINISHED CEILING HEIGHTS. 25. REFER TO ARCHITECTURAL PLANS FOR FINAL LOCATIONS OF ALL ELECTRICAL
				ø	PHASE	VFD	VARIABLE FREQUENCY DRIVE	DEVICES, AND FOR FINAL CEILING AND WALL HEIGHTS AND LAYOUTS.
			POWER DISTRIBUTION	PNL	PANEL	VP	VAPORPROOF	26. LIGHTING FIXTURES PROVIDED WITH EMERGENCY BATTERY PACKS AND INDICATED WITH SWITCH CONTROL SHALL BE WIRED WITH BATTERY CHARGING/SENSING CIRCUIT WIRED AHEAD OF SWITCH CONTROL.
			MAJOR ELECTRICAL COMPONENT OR DEVICE. VOLTAGE AND	W	WATT	WP	WEATHER PROOF	27. NUMBER(S) SHOWN AT RECEPTACLES, JUNCTION BOXES AND EQUIPMENT
			AMPERAGE AS NOTED.	w	WIRE	XFMR	TRANSFORMER	INDICATES CIRCUIT NUMBERS IN PANÉLBOARD. PROVIDE WIRE AND CONDUIT TO INTERCONNECT EQUIPMENT AND DEVICES WITH SAME CIRCUIT NUMBERS AND RUN TO PANELBOARD.
			DISTRIBUTION PANELBOARD, 208Y/120V—SURFACE OR FLUSH MOUNTED.	WH	WALL HEATER	ZRT	ZONE REGISTER TERMINALS	AND IVOID TO LANEEDONIAD.

ISSUE	DESCRIPTION	DATE

PROJECT INFORMATION:

UNCLE WILLIE'S WINGS

DATE:
PROJECT NO.:
DRAWN BY: NYE
CHECKED BY: NYE
SCALE: AS NOTED

DRAWING TITLE:

ELECTRICAL SYMBOL LIST, ABBREVIATIONS & GENERAL NOTES

DRAWING NO.:

E0.1

ELECTRICAL SPECIFICATIONS

A. THE "GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION," AIA DOCUMENT, LATEST EDITION, AND THESE SPECIFICATIONS AS

APPLICABLE ARE PART OF THIS CONTRACT.

GENERAL:

B. DRAWING ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. CONDUIT ROUTING IS SHOWN DIAGRAMMATICALLY AND DOES NOT SHOW ALL OFFSETS, DROPS AND RISES OF RUNS. THE CONTRACTOR SHALL ALLOW IN HIS PRICE FOR ROUTING OF CONDUIT TO AVOID OBSTRUCTIONS. COORDINATION WITH EXISTING SERVICES. INCLUDING THOSE OF OTHER TRADES, IS

REQUIRED, MAINTAIN HEADROOM AND SPACE CONDITIONS.

- C. BIDDERS, BEFORE SUBMITTING PROPOSALS, SHALL VISIT AND CAREFULLY EXAMINE THE AREA AFFECTED BY THIS WORK TO FAMILIARIZE THEMSELVES WITH THE EXISTING CONDITIONS AND THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT, OR MATERIALS, REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- D. INSTALL WORK SO AS TO BE READILY ACCESSIBLE FOROPERATION, MAINTANANCE AND REPAIR, MINOR DEVIATIONS FROM DRAWING MAY BE MADE TO ACCOMPLISH THIS, BUT CHANGES WHICH INVOLVE EXTRA COST SHALL NOT BE MADE WITHOUT APPROVAL.
- E. REMOVAL AND RELOCATION OF CERTAIN EXISTING WORK MAY BE NECESSARY FOR THE PERFORMANCE OF THE GENERAL WORK. ALL EXISTING CONDITIONS CANNOT BE COMPLETELY DETAILED ON THE DRAWINGS. THE CONTRACTOR SHALL SURVEY THE SITE AND INCLUDE ALL CHANGES AND CHARGES IN MAKING UP THE WORK PROPOSAL.
- F. CONNECTIONS TO EXISTING WORK: INSTALL NEW WORK AND CONNECT TO EXISTING WORK WITH MINIMUM INTERFERENCE TO EXISTING FACILITIES. TEMPORARY SHUTDOWNS OF EXISTING SERVICES SHALL BE PERFORMED AT NO ADDITIONAL CHARGES. AT TIMES NOT TO INTERFERE WITH NORMAL OPERATION OF EXISTING FACILITIES AND ONLY WITH WRITTEN CONSENT OF OWNER. ALARM AND EMERGENCY SYSTEMS SHALL NOT BE INTERRUPTED. MAINTAIN CONTINUOUS OPERATION OF EXISTING FACILITIES AS REQUIRED WITH NECESSARY TEMPORARY CONNECTIONS BETWEEN NEW AND EXISTING WORK. CONNECT NEW WORK TO EXISTING WORK IN NEAT AND ACCEPTABLE MANNER. RESTORE EXISTING DISTURBED WORK TO ORIGINAL CONDITION, INCLUDING MAINTENANCE OF WIRING CONTINUITY AS REQUIRED.
- G. DISCONNECT, REMOVE AND/OR RELOCATE EXISTING MATERIAL, EQUIPMENT AND OTHER WORK AS NOTED OR REQUIRED FOR PROPER INSTALLATION OF NEW WORK.
- H. THE CONTRACTOR SHALL KEEP ALL EQUIPMENT AND MATERIALS, AND ALL PARTS OF THE BUILDING EXTERIOR SPACES AND ADJACENT STREETS, SIDEWALKS AND PAVEMENTS, FREE FROM MATERIAL AND DEBRIS RESULTING FROM THE EXECUTION OF THIS WORK. EXCESS MATERIALS WILL NOT BE PERMITTED TO ACCUMULATE EITHER ON THE INTERIOR OR THE EXTERIOR.
- SEAL OPENINGS THROUGH PARTITIONS, WALLS AND FLOORS WITH MINERAL WOOL OR OTHER NONCOMBUSTIBLE MATERIAL, UNLESS OTHERWISE NOTED.
- J. PROVIDE ALL NECESSARY FLASHING AND COUNTER FLASHING TO MAINTAIN THE WATERPROOFING INTEGRITY OF THE BUILDING AS REQUIRED BY THE INSTALLATION OR REMOVAL OF CONDUIT AND EQUIPMENT, PROVIDE EQUIPMENT CURBS AS REQUIRED.
- K. ALL EXISTING MATERIAL, EQUIPMENT AND CONSTRUCTION DEBRIS TO BE REMOVED UNDER THIS CONTRACT SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF SPECIFIC EQUIPMENT ND APPARATUS REQUESTED BY THE BUILDING REPRESENTATIVE, ARCHITECT OR AS NOTED TO BE RELOCATED ON THE DRAWINGS. REMOVED EQUIPMENT SHALL BE PROPERLY DISPOSED OF BY THIS CONTRACTOR.
- THE CONTRACTOR'S PROPOSAL FOR ALL WORK SHALL BE PREDICATED ON THE PERFORMANCE OF THE WORK DURING REGULAR WORKING HOURS. WHEN SO DIRECTED, HOWEVER, THE CONTRACTOR SHALL INSTALL WORK DURING OVERTIME HOURS AND THE ADDITIONAL COST TO BE CHARGED THEREFORE SHALL BE ONLY THE "PREMIUM" PORTION OF THE WAGES PAID.
- M. UNLESS OTHERWISE SPECIFICALLY NOTED OR SPECIFIED, INCLUDE ALL CUTTING AND PATCHING OF EXISTING FLOORS, WALLS, PARTITIONS AND OTHER MATERIALS IN THE EXISTING BUILDING. THE CONTRACTOR SHALL RESTORE THESE AREAS TO ORIGINAL CONDITION.
- N. ALL MATERIAL AND EQUIPMENT SHALL BE NEW UNLESS OTHERWISE NOTED AND SHALL BE IN ACCORDANCE WITH BUILDING STANDARDS.
- O. INSURANCE: PROVIDE IN ACCORDANCE WITH OWNER/BUILDING REQUIREMENTS AND SHALL INCLUDE A HOLD HARMLESS CLAUSE FOR OWNER AND ENGINEER.
- P. THE FINAL ACCEPTANCE SHALL BE MADE AFTER THE CONTRACTOR HAS ADJUSTED HIS EQUIPMENT. TESTED THE VARIOUS SYSTEMS. DEMONSTRATED THAT IT FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL THE REQUIRED CERTIFICATED OF INSPECTION AND APPROVAL.
- GENERAL PROVISIONS FOR ELECTRICAL WORK:
- A. DEFINITIONS:
- 1) "PROVIDE": TO FURNISH, INSTALL AND CONNECT UP COMPLETE AND READY FOR SAFE AND REGULAR OPERATION THE PARTICULAR WORK REFERRED TO UNLESS SPECIFICALLY OTHERWISE NOTED.
- 2) "INSTALL": TO ERECT, MOUNT AND CONNECT COMPLETE WITH RELATED ACCESSORIES.
- 3) "FURNISH" OR "SUPPLY": TO PURCHASE, PROCURE, ACQUIRE. AND DELIVER COMPLETE WITH RELATED ACCESSORIES.
- 4) "WORK": LABOR, MATERIALS, EQUIPMENT, APPARATUS, CONTROLS, ACCESSORIES AND OTHER ITEMS REQUIRED FOR PROPER AND COMPLETE INSTALLATION.
- 5) "WIRING": RACEWAY. FITTINGS, WIRE, BOXES, AND RELATED ITEMS.
- 6) "CONCEALED": EMBEDDED IN MASONRY OR OTHER CONSTRUCTION, INSTALLED IN FURRED SPACES, WITHIN DOUBLE PARTITIONS OR HUNG CEILINGS, IN TRENCHES, IN CRAWL SPACES, OR IN
- 7) "EXPOSED": NOT INSTALLED UNDERGROUND OR "CONCEALED" AS DEFINED ABOVE.
- 8) "SIMILAR" OR "EQUAL": EQUAL IN MATERIALS, WEIGHT, SIZE, DESIGN AND EFFICIENCY OF SPECIFIED PRODUCT.
- TEMPORARY LIGHT AND POWER: PROVIDE TEMPORARY LIGHT AND POWER SYSTEMS AT EARLIEST POSSIBLE DATE WITHIN THE CONSTRUCTION AREAS FOR THE REQUIREMENTS OF ALL TRADES AS HEREIN DESCRIBED. EXTEND SYSTEMS TO NEW CONSTRUCTION AS SOON AS PHYSICALLY POSSIBLE. MAINTAIN SYSTEM DURING WORKING OWNER. PROVIDE ALL REQUIRED MAINTENANCE, INCLUDING LAMPS AND SOCKETS.
- C. QUALITY ASSURANCE
 - 1) QUALITY OF MATERIALS: ALL EQUIPMENT SHALL BE NEW SPECIFICATION GRADE, FREE FROM DEFECTS AND LISTED BY APPROVED TESTING AGENCY AND BEARING THEIR LABEL MATERIALS AND EQUIPMENT OF SIMILAR APPLICATION SHALL BE OF SAME MANUFACTURER, EXCEPT AS NOTED.

- 2) GUARANTEE: ALL MATERIALS AND WORKMANSHIP SHALL BE GUARANTEED AS DEFINED IN PARAGRAPH 2.C.
- 3) CURRENT CHARACTERISTICS:
- a. SERVICE: 277/480 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.
- b. DISTRIBUTION: 120/208 VOLT, 3 PHASE, 4 WIRE, 60 HERTZ WITH GROUNDED NEUTRAL.

4) HEIGHTS OF OUTLETS:

- a. FROM FINISHED FLOOR TO CENTERLINE OF OUTLETS FOR:
 - RECEPTACLES AND TELEPHONES: 1 FT-6 IN.

 - WALL FIXTURES: 7 FT-0 IN.
 - MOTOR CONTROLLERS: 5 FT-0 IN. - CLOCKS: 7 FT 6 IN
- b. EXCEPTIONS: AT JUNCTION OF DIFFERENT WALL FINISH
- - 1) MOVING OF EQUIPMENT: WHERE NECESSARY, SHIP IN CARTED SECTIONS OF SIZE TO PERMIT PASSING THROUGH AVAILABLE
 - 2) ACCESSIBILITY: FOR OPERATION, MAINTENANCE AND REPAIR, MINOR DEVIATIONS SHALL BE PERMITTED, CHANGES OF MAGNITUDE OR INVOLVING EXTRA COST ARE NOT PERMISSIBLE WITHOUT REVIEW. GROUP CONCEALED ELECTRICAL EQUIPMENT REQUIRING ACCESS WITH EQUIPMENT FREELY ACCESSIBLE THROUGH ACCESS DOORS.
- 1) NAMEPLATES: PROVIDE BLACK LAMICOID SHEET WITH 3/4 IN. WHITE LETTERING, FASTENED WITH EPOXY CEMENT FOR EACH DISCONNECT SWITCH, CIRCUIT BREAKER, PANEL, CABINET, TRANSFORMER, ENCLOSURE, MOTOR CONTROLLER AND THE LIKE. NAMEPLATES SHALL DESCRIBE THE NAME AND NUMBER OF EACH COMPONENT.
- 2) CABLE TAGS: TAG EACH CONDUCTOR PASSING THROUGH SPLICE OR PULLBOX WITH A WHITE LINEN TAG, INDICATING POINT OF ORIGIN AND TERMINATION OF THE CIRCUIT.

3) INSERTS AND SUPPORTS:

- a. INSERTS: STEEL, SLOTTED TYPE, FACTORY PAINTED.
- SINGLE ROD: SIMILAR TO GRINNELL FIG. 281.
- WITH END CAPS AND CLOSURE STRIPS.
- MAXIMUM LOADING 75 PERCENT OF RATING.
- b. SUPPORTS FROM BUILDING CONSTRUCTION: INSERTS, BEAM CLAMPS, STEEL FISHPLATES (IN CONCRETE FILL ONLY), CANTILEVER BRACKETS OR OTHER MEANS. SUBMIT FOR
- c. GROUPED LINES AND SERVICES: TRAPEZE HANGERS OF BOLTED ANGLES OR CHANNELS.
- d. WHERE BUILDING CONSTRUCTION IS INADEQUATE: PROVIDE ADDITIONAL FRAMING, SUBMIT FOR REVIEW.
- PAINT SHALL BE THE BEST GRADE FOR ITS PURPOSE. DELIVER IN ORIGINAL SEALED CONTAINERS AND APPLY IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS. COLORS SHALL BE AS SELECTED GALVANIZED OR DIPPED IN ZINC BASED PRIMER FOR: OUTLET SUPPORTS. ZINC BASED PRIMER WITH FINISH TO MATCH EQUIPMENT AND RACEWAYS. A FIELD-APPLIED ZINC BASED PRIME COAT SHALL BE UTILIZED FOR STEEL OR IRONWORK.
- BRUSH AND CLEAN WORK PRIOR TO CONCEALING, PAINTING AND ACCEPTANCE. PAINTED EXPOSED WORK SOILED OR DAMAGED; CLEAN AND REPAIR TO MATCH ADJOINING WORK BEFORE FINAL ACCEPTANCE. REMOVE DEBRIS FROM INSIDE AND OUTSIDE OF
- H. FINAL LOCATIONS AND MOUNTING ORIENTATIONS OF ALL SWITCHES, RECEPTACLES AND LIGHT FIXTURES SHALL BE VERIFIED WITH
- PRIOR TO INSTALLATION.

SCOPE OF WORK:

- EQUIPMENT, SERVICES AND FEES NECESSARY FOR COMPLETE AND SAFE INSTALLATION IN CONFORMING WITH THE NATIONAL ELECTRICAL CODE (NEC) WITH LOCAL ADOPTIONS, AND ALL OTHER HAVING JURISDICTION, AS INDICATED ON DRAWINGS AND HERE SPECIFIED.
- ADDENDA ARE MADE PART OF THIS CONTRACT AND SHALL APPLY TO ALL WORK UNDER THE CONTRACT UNLESS OTHERWISE AMENDED, MODIFIED, SUPPLIED OR SPECIFIED HEREIN.
- REPLACE OR REPAIR PROMPTLY AND ASSUME RESPONSIBILITY FOR ALL EXPENSES INCURRED FOR ANY WORKMANSHIP AND EQUIPMENT IN WHICH DEFECTS DEVELOP WITHIN ONE YEAR FROM THE DATE OF FINAL CERTIFICATE FOR PAYMENT AND/OR FROM DATE OR ACTUAL USE OF EQUIPMENT OR OCCUPANCY OF SPACES BY OWNER INCLUDED UNDER THE VARIOUS PARTS OF THE WORK, WHICHEVER, DATE IS EARLIER, THIS WORK SHALL BE DONE AS DIRECTED BY THE OWNER. THIS GUARANTEE SHALL ALSO PROVIDED THAT WHERE DEFECTS OCCUR, THE CONTRACTOR WILL ASSUME RESPONSIBILITY OF OTHER TRADES AFFECTED BY DEFECTS, REPAIRS OR REPLACEMENTS IN EQUIPMENT SUPPLIED BY THE CONTRACTOR
- THE CONTRACTOR SHALL GIVE NECESSARY NOTICE, FILE DRAWINGS AND SPECIFICATIONS WITH ALL DEPARTMENTS HAVING JURISDICTION, WORK AND PAY ALL FEES THEREFORE. THE CONTRACTOR SHALL ARRANGE FOR INSPECTION AND TESTS OF ANY OR ALL PARTS OF THE WORK IF SO REQUIRED BY AUTHORITIES AND PAY ALL CHARGES FOR SAME. THE CONTRACTOR SHALL PAY ALL COSTS FOR, AND FURNISH THE OWNER BEFORE FINAL BILLING, ALL CERTIFICATES NECESSARY EVIDENCE THAT THE WORK INSTALLED CONFORMS WITH ALL REGULATIONS WHERE THEY APPLY TO THIS WORK.
- CONTRACTOR SHALL PERFORM ALL CONTROLLED INSPECTIONS IN ACCORDANCE WITH THE BUILDING CODE. SECURE ALL REQUIRED PERMITS AND APPROVALS AND TRANSMIT SAME TO OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES.
- AREAS WITH NO ELECTRICAL WORK SHALL REMAIN AS IS. CONTRACTOR SHALL MAINTAIN CONTINUITY OF ALL ELECTRICAL SYSTEMS TO ALL AREAS NOT COVERED BY THIS RENOVATION AND SHALL PROVIDE 48 HOUR NOTICE TO LANDLORD OF ANY PLANNED POWER INTERRUPTIONS OR SIGNAL SYSTEM OUTAGES.

SHOP DRAWINGS

- A. PRIOR TO THE INSTALLATION OF ANY WORK AND PROCUREMENT OF EQUIPMENT, CONTRACTOR SHALL PROVIDE COMPLETE SETS OF COORDINATED SHOP DRAWINGS OF ALL NEW AND EXISTING EQUIPMENT, INDICATING CAPACITY, DIMENSIONS AND SEQUENCE OF OPERATION FOR WRITTEN APPROVAL BY THE ARCHITECT AND

4) APPROVAL STAMP OF PRIME CONTRACTOR

WALL SWITCHES: 4 FT-0 IN.

- MATERIALS, ON MOLDING OR BREAK IN WALL SURFACE, IN VIOLATION OF CODE, OR AS NOTED OR DIRECTED.
- PRODUCT DELIVERY, STORAGE AND HANDLING
 - MATERIALS

- MULTI-ROD: SIMILAR TO FEE AND MASON SERIES 9000
- CLIP FORM NAILS FLUSH WITH INSERTS.

- BY ARCHITECT OR ENGINEER. UTILIZE GALVANIZED IRON PRIMER ON PANEL AND PULL BOXES, AFTER FABRICATION. UTILIZE HOT DIPPED BOXES, JUNCTION BOXES, CONDUIT HANGERS, RODS, INSERTS AND SURROUNDINGS SHALL BE USED FOR MARRED SURFACES OF STEEL
- MATERIAL AND EQUIPMENT.
- ALL ACCESS DOOR LOCATIONS SHALL BE REVIEWED BY ARCHITECT

- SCOPE OF WORK SHALL CONSIST OF PROVIDING LABOR, MATERIALS, APPLICABLE INDUSTRY, NATIONAL AND LOCAL CODES AND AUTHORITIES
- ALL DRAWINGS, PLANS, DETAILS, SPECIFICATIONS AND SPECIFICATION
- THE CONTRACTOR SHALL FURNISH A WRITTEN GUARANTEE TO

B. INDICATE ON EACH SHOP DRAWINGS SUBMITTED:

1) PROJECT NAME AND LOCATION

- 2) NAME OF ARCHITECT AND ENGINEER
 - 3) ITEM IDENTIFICATION

SUBMISSIONS:

- 1) SUBMISSIONS 11 IN. X 17 IN. OR SMALLER: IF THE SUBMISSION IS A CATALOG CUT, THEN THE CONTRACTOR SHALL SUBMIT ONE ORIGINAL AND TWO COPIES. OTHERWISE, HE SHALL SUBMIT THREE COPIES. THE ARCHITECT WILL FORWARD THE ORIGINAL AND ONE COPY (TWO COPIES WHEN NO ORIGINAL IS RECEIVED) TO THE ENGINEER. ALL CATALOG CUTS SHALL BE COMPLETE.
- 2) SUBMISSIONS LARGER THAN 11 IN. X 17 IN.: SUBMIT TWO PRINTS AND ONE PAPER SEPIA TO THE ARCHITECT. THE ARCHITECT WILL FORWARD ONE PRINT AND THE PAPER SEPIA TO THE ENGINEER.
- D. SUBMIT SHOP DRAWINGS FOR THE FOLLOWING:
- 1) SAFETY/DISCONNECT SWITCHES
- 3) CIRCUIT BREAKERS
- 4) PANELBOARDS/LOADCENTER (INCLUDING DIMENSIONS, SCHEDULES, AND CATALOG CUTS).
- 5) RACEWAYS
- 6) WIRE AND CABLE
- 7) WALL SWITCHES
- 8) INSERTION RECEPTACLES
- 9) MOMENTARY CONTACT SWITCHES
- 10) TIME SWITCHES
- 11) LIGHTING FIXTURES. 12) TRANSFORMER.
- E. ASSIST AND PROVIDE ALL NECESSARY INFORMATION, DIAGRAMS SKETCHES, ETC. TO THE HVAC CONTRACTOR, FOR THE PREPARATION OF COORDINATED SHOP DRAWINGS INDICATING ROUTING OF FEEDERS, CONTROL CONDUITS, RECESSED FIXTURES AND ADJACENT NEARBY PIPING AND DUCTWORK WHERE APPLICABLE, CERTIFIED BY ALL TRADES THAT COORDINATION HAS BEEN ESTABLISHED. SUBMIT FOUR(4) BOOKBOUND OPERATING AND SERVICE MANUALS WHICH SHALL INCLUDE COPIES OF ALL SHOP DRAWING. PROVIDE SHOP DRAWINGS FOR PANELS, FIXTURES, WIRING DEVICES, CON CABLE, DISCONNECT SWITCH, RELAYS, CONTRACTORS, AND OTHER SYSTEMS AS DIRECTED BY THE ENGINEER.
- AS-BUILT DRAWINGS AND EQUIPMENT OPERATIONAL INSTRUCTIONS
- A. UPON COMPLETION AND ACCEPTANCE OF WORK, CONTRACTOR SHALL FURNISH WRITTEN INSTRUCTIONS AND EQUIPMENT MANUALS AND DEMONSTRATE TO THE OWNER THE PROPER OPERATION AND MAINTENANCE OF ALL EQUIPMENT AND APPARATUS FURNISHED UNDER THIS CONTRACT.
- B. THESE INSTRUCTIONS SHALL BE TYPED ON 8-1/2 IN. X 11 IN. PAPER AND BOUND IN THREE RING BINDERS WITH CLEAR ACETATE COVERS. CONTRACTOR SHALL GIVE THREE COPIES OF THE INSTRUCTIONS TO THE OWNER AND ONE COPY TO THE ENGINEER.
- C. THE INSTRUCTION BOOKLET SHALL BEAR THE NAME, ADDRESS AND TELEPHONE NUMBER OF THE PROJECT, ARCHITECT AND ENGINEER.
- AFTER COMPLETION OF THE INSTALLATION.
- LOW-VOLTAGE DISTRIBUTION EQUIPMENT: PROVIDE COMPLETE EQUIPMENT INCLUDING: SWITCHES, FUSES,

INDICATING THE AS INSTALLED CONDITIONS OF THE WORK.

"AS-BUILT" DRAWINGS SHALL BE PROVIDED TO THE ARCHITECT

D. REPRODUCIBLE "AS-BUILT" DRAWINGS SHALL BE PROVIDED

- CIRCUIT BREAKERS, PANELS AND TRANSFORMERS. ALL EQUIPMENT SHALL CONFORM TO NEMA, ANSI AND IEEE
- STANDARDS. DISCONNECT SWITCHES SHALL BE FUSED OR NONFUSED AS NOTED. TAGE SHALL BE AS REQUIRED. SWITCHES SHALL BE HEAVY DUTY, CEPT AS NOTED, AND HORSEPOWER RATED FOR MOTOR LOADS. OGGLE TYPE SWITCHES SHALL BE NONFUSED, LOAD BREAK, HAVING MAXIMUM RATINGS OF 20 AMP AT 600 VOLTS AND 30 AMP AT 240 VOLTS. TWO-POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 6808F. THREE-POLE SWITCHES SHALL BE SIMILAR TO HART AND HEGEMAN NO. 7810F. KNIFE-BLADE TYPE SWITCHES SHALL BE LOAD BREAK, QUICK-MAKE- QUICK-BREAK, UL CLASS R UP TO 600 AMP. MAXIMUM RATING EXCEPT AS NOTED SHALL BE 800 AMP. ARC QUENCHERS SHALL BE PROVIDED. SWITCHES SHALL BE SIMILAR TO GENERAL ELECTRIC QMR. ALL SWITCH ENCLOSURES

SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FUSES:

SYMMFTRICAL.

- A. CIRCUITS 0 TO 600 AMPERES SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMAN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP)SP (250V) /LPS-RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS SYMMETRICAL.
- B. MOTOR CIRCUITS ALL INDIVIDUAL MOTOR CIRCUITS WITH FULL LOAD AMPERE RATINGS (FLA) OF 480 AMPERES OR LESS SHALL BE PROTECTED BY FUSES SIMILAR TO CURRENT LIMITING BUSSMANN LOW-PEAK DUAL-ELEMENT TIME-DELAY LPN-RK (AMP)SP (250V) /LPS-RK (AMP)SP (600V) OR LPJ (AMP)SP (600V) (UL CLASS RK1 OR CLASS J), AND BE LISTED BY UL WITH AN INTERRUPTING RATING OF 300,000 AMPERES RMS
- C. ALL FUSES SHALL BE PROVIDED BY SAME MANUFACTURER.
- D. PROVIDE 1 SPACE MATCHING FUSE FOR EACH SET OF 3.
- CIRCUIT BREAKERS: MOLDED CASE BREAKERS SHALL BE THERMAL-MAGNETIC, QUICK-MAKE-QUICK-BREAK, BOLT-ON TYPE, MANUALLY OPERATED WITH INSULATED TRIP-FREE HANDLE. MULTI-POLE TYPE BREAKERS SHALL CONTAIN INTERNAL TRIP BAR. TERMINALS SHALL BE SUITABLE FOR COPPER OR ALUMINUM CABLE. FURNISH AUXILIARY DEVICES WHERE REQUIRED FOR SHUNT-TRIPPING, OPEN A ND CLOSE MOTOR OPERATOR AND ALARM INDICATION. ENCLOSURES SHALL BE DEAD FRONT, NEMA TYPE 1, EXCEPT AS NOTED. FRAMES, IC AND INTERCHANGEABLE TRIPS SHALL BE AS FOLLOWS, UNLESS OTHERWISE NOTED:
- 1) 120 VOLTS, 100-AMP FRAME: 10,000 AMPS, 1 POLE.

2) 120/240 VOLTS, 225-AMP FRAME: 22,000 AMPS MINIMUM

- DISTRIBUTION PANELBOARDS, CIRCUIT BREAKER TYPE:
 - A. THREE PHASE, 4 OR 5 WIRE, COPPER BUS BARS, WITH 2, 3, OR 4 WIRE BRANCHES, AS NOTED. CAPACITY OF PANEL AND CIRCUITS, AS NOTED BELOW. PANELBOARD TO HAVE GROUND BUS SAME SIZE AS PHASE BUSES.
 - CABINETS: CODE GAUGE GALVANIZED SHEET STEEL PRIMED AND PAINTED WITH TRIM AND DOOR, TYPE AS NOTED, LAP AND RIVET CORNERS OR FORM AS APPROVED.
- TRIM: ONE PIECE FULL FINISH PRIMED AND PAINTED SHEET STEEL TRIM SHALL BE MOUNTED WITH A CONTINUOUS PIANO HINGE CONFIGURED IN SUCH A MANNER THAT IT SHALL BE POSSIBLE TO GAIN FULL ACCESS TO CIRCUIT BREAKERS AND WIRING GUTTERS WITHOUT REMOVING THE TRIM. PROVIDE A MULTI-PIN CYLINDER LOCK (YALE, CORBIN OR EQUAL) TO LATCH THE TRIM. KEYS SHALL BE
- D. HARDWARE: MULTI-PIN, CYLINDER LOCKS WITH MILLED KEYS. ALL PANELS SHALL BE KEYED ALIKE. DOOR OVER 48" HIGH SHALL EQUIPPED WITH A CHROME PLATED VAULT HANDLE, BUILT-IN LOCK AND 3-POINT CATCH FASTENING DOOR AT TOP, BOTTOM AND CENTER.
- E. HINGES: CONCEALED, CONTINUOUS PIANO HINGE AS DESCRIBED
- F. DIRECTORY HOLDER: MEAL FRAME WITH NONBREAKABLE TRANS COVER AND DIRECTORY CARD. ENTRIES TO BE TYPEWRITTEN BY ELECTRICAL CONTRACTOR. PROVIDE AN ENGRAVED LAMINATED NAMEPLATE ADJACENT TO EACH BRANCH BREAKER. MOUNT WITH SELF TAPPING MACHINE SCREWS.
- FURNISH MULTI-CABLE LUGS WHERE REQUIRED. DOUBLE LUGGING NOT PERMITTED. SECURE LUGS TO BUS BY STUD BOLTS.
- PANELBOARD CONSTRUCTION FOR BOLTED TYPE BREAKERS. MINIMUM SHORT CIRCUIT RATING 25,000 AMPERES, RMS SYMMETRICAL FOR ALL 120/208V APPLICATIONS, INDIVIDUAL CIRCUIT BREAKERS SHALL HAVE MINIMUM 100A FRAME, TRIPS SIZED AS SHOW ON THE PLANS.
- MINIMUM GUTTER SPACES: PANELS WITH 225 AMPERE MAINS, 5-34" MINIMUM, 400 AMPERES AND OVER, MINIMUM GUTTERS 8". FOR PANELS WITH THROUGH FEEDERS, INCREASE GUTTER WIDTH BY 2" MINIMUM AND PROVIDE A SHEET STEEL BARRIER BETWEEN THE PANEL GUTTER AND THE THROUGH FEEDER PORTION OF THE BACK BOX. BRANCH CIRCUIT BREAKERS SHALL BE MECHANICALLY INTERLOCKED WHEN SHOWN ON DRAWINGS.
- DISTRIBUTION AND SUB-DISTRIBUTION PANELBOARDS SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.
- PANELBOARD SHALL HAVE MAIN CIRCUIT BREAKER OR MAIN LUGS AS INDICATED ON THE DRAWINGS. QUANTITY, POLES AND TRIP RATINGS OF BRANCH CIRCUIT BREAKERS TO BE AS INDICATED ON DRAWINGS.
- PANELBOARD SHALL HAVE ENGRAVED WHITE CORE, BLACK LAMACOID NAMEPLATE SCREWED ONTO PANE TRIM WITH DESIGNATION LISTED
- (PANELBOARD NAME, VOLTAGE, RATING OR MAINS IN AMPS). DISTRIBUTION PANELBOARDS, SWITCH AND FUSE:
- THREE PHASE, 3 OR 4 WIRE WITH COPPER BUS BARS. ALL THROUGH BUS SHALL BE INSULATED.
- NEMA CLASS 1 CONSTRUCTION TO ACCOMMODATE FUSIBLE, INDIVIDUALLY ENCLOSED SWITCHES, FRONT REMOVABLE, SWITCH AND DOOR INTERLOCKS. COVERS TO BE PAD-LOCKABLE.

PANELBOARD SHALL BE CONSTRUCTED OF CODE-GAUGE STEEL, GRAY

FINISH OVER RUST INHIBITOR, FOR SURFACE MOUNTING, BOX AND

SUPPORT OF INTERIOR AND ACCURATE ALIGNMENT OF INTERIOR WITH FRONT. TRIMS TO BE FASTENED TO BACK BOX WITH SCREWS.

PANEL FRAME SHALL BE FLANGED AND REINFORCED FOR RIGID

- D. ALL BRANCH SWITCHES SHALL HAVE INDIVIDUAL ENGRAVED LAMICOID NAMEPLATES (BLACK WITH WHITE CORE). E. DISTRIBUTION PANELBOARD CONSTRUCTION MINIMUM SHORT CIRCUIT
- RATING 25,000 AMPERES, REMS SYMMETRICAL FOR ALL 120/208V APPLICATIONS. APPLICATIONS.
- F. DISCONNECTS 1) DISCONNECT SWITCHES SHALL CONFORM TO NEMA AND UL
 - STANDARDS, AND SHALL BE HORSEPOWER RATED. 2) SWITCHING MECHANISM SHALL BE QUICK-MAKE, QUICK-BREAK, SINGLE THROW WITH EXTERNAL OPERATING HANDLE MECHANCIALLY INTERLOCKED WITH ENCLOSURE COVER TO PROVIDE ACCESS TO INTERIOR WHEN DISCONNECT IS IN OFF POSITION ONLY PROVIDE MEANS TO LOCK OPERATING HANDLE IN THE OPEN AND CLOSED
 - POSITION. DESIGNATE ON THE ENCLOSURE THE OPEN AND CLOSED POSITION OF THE OPERATING HANDLE. 3) SWITCHES SHALL BE OF THE DOUBLE STATIONARY CONTACT TYPE.

4) SWITCHES SHALL BE EQUIPPED WITH REJECTION TYPE FUSE

- HOLDERS, FUSIBLE AS SHOWN ON THE DRAWINGS; PROVIDE COMPLETE WITH FUSES AS SCHEDULED.
- G. INSTALLATION 1) DISTRIBUTION PANELBOARD SHALL BE MOUNTED TO STRUCTURAL STEEL CHANNEL (KINDORF) WHICH SHALL BE BOLTED TO THE WALL
- USING EXPANSION ANCHORS FOR LARGE PANELS.
- H. IDENTIFICATION 1) PROVIDE NAMEPLATE AT EACH SWITCH IDENTIFYING THE LOAD
- SFRVFD. 2) NAMEPLATES SHALL BE MOUNTED ON THE FRONT COVER SECURED WITH SELF-TAPPING SCREWS OR NUTS AND BOLTS. NAMEPLATES SHALL BE LAMINATED PHENOLIC, BLACK WITH A MINIMUM OF 1/4"
- HIGH WHITE LETTERING. I. DISTRIBUTION AND SUB-DISTRIBUTION PANELBOARDS SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.
- SWITCHBOARD COMPANY OR APPROVED EQUAL. K. PANELBOARD SHALL HAVE MAIN CIRCUIT BREAKER OR MAIN LUGS AS INDICATED ON THE DRAWINGS. QUANTITY, POLES AND TRIP RATINGS

OF BRANCH CIRCUIT BREAKERS TO BE AS INDICATED ON DRAWINGS.

NAMEPLATE SCREWED ONTO PANE TRIM WITH DESIGNATION LISTED

L. PANELBOARD SHALL HAVE ENGRAVED WHITE CORE, BLACK LAMACOID

POWER PANELBOARDS SHALL BE SIMILAR TO GENERAL ELECTRIC TYPE

"OMR", AS MANUFACTURED BY ATLAS SWITCH COMPANY, ELECTRIC

- (PANELBOARD NAME, VOLTAGE, RATING OR MAINS IN AMPS).
- M. MATERIALS 1) RACEWAYS:
 - a. RIGID STEEL CONDUIT: FULL-WEIGHT PIPE, GALVANIZED, THREADED.
 - b. ELECTROMETALLIC TUBING (EMT): THIN WALL PIPE, GALVANIZED, THREADLESS.
 - c. FLEXIBLE STEEL CONDUIT: CONTINUOUS SINGLE STRIP,

d. WIREWAYS: WIRE SHALL BE AS NOTED, MINIMUM NO. 16 GAUGE

STEEL WITH GROUND CONTINUITY. FINISH SHALL BE BAKED

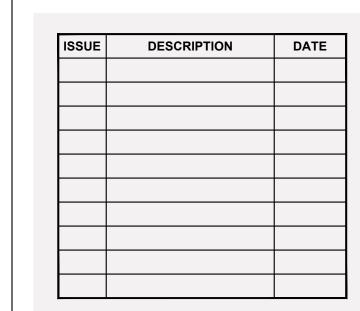
- ENAMEL. COVERS SHALL BE SCREW-ON.
- e. SURFACE METAL RACEWAY: SIZE AS NOTED. BASE 0.04 IN., COVER 0.25 IN. MATERIAL SHALL BE STEEL. FINISH SHALL BE BAKED ENAMEL. COVERS SHALL BE SCREW-ON.

2) FITTINGS AND ACCESSORIES:

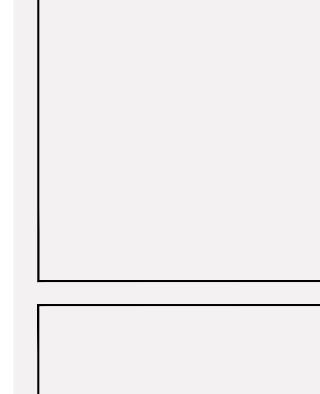
- a. RIGID STEEL: NONSPLIT, THREADED, STEEL OR MALLEABLE IRON. ZINC DIE CAST NOT PERMITTED.
- b. ELECTROMETALLIC TUBING: COMPRESSION TYPE. GALVANIZED RIGID STEEL ELBOWS, 2 IN. OR LARGER.
- c. FLEXIBLE METALLIC CONDUIT: ANGLE WEDGE TYPE WITH
- d. BUSHINGS: METALLIC INSULATED TYPE.

INSULATED THROAT.

- a. OUTLET BOXES: EXCEPT AS OTHERWISE REQUIRED BY CONSTRUCTION, DEVICES OR WIRING, BOXES SHALL BE STAMPED STEEL, 4 IN. SQUARE OR OCTAGON FOR FIXTURES. BOXES ABOVE CEILING SHALL BE 1-1/2 IN. DEEP. BOXES IN CEILING OR SLAB SHALL BE 3 IN. DEEP. BOXES IN WALL FOR FIXTURES SHALL BE 2-3/4 IN. DEEP. BOXES IN WALL FOR RECEPTACLES AND SWITCHES SHALL BE 1-1/2 IN. DEEP. FURNISH WITH RAISED COVERS AND FIXTURE STUDS WHERE REQUIRED. WITHOUT FIXTURE OR DEVICE: FURNISH BLANK COVER. OFFSET BACK-TO-BACK OUTLETS WITH MINIMUM 6 IN.
- b. JUNCTION AND PULL BOXES: GALVANIZED SHEET STEEL WITH SCREW-ON COVERS, EXCEPT AS NOTED. FURNISH WITH INSULATED SUPPORTS FOR CABLES. LOCATIONS SHALL BE AS NOTED OR REQUIRED AND ACCESSIBLE. PROVIDE BARRIERS IN NEW AND RENOVATED BOXES BETWEEN 120/208 VOLT AND 265/460 VOLT WIRING AND BETWEEN EMERGENCY AND NORMAL WIRING. FLOOR BOXES SHALL BE SUITABLE FOR CONDUIT AND DEVICES NOTED. RAISED OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH ABOVE FLOOR FITTING. TELEPHONË: BUSHED HOLE. POWER: DUPLEX RECEPTACLE OR OTHER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY. FLUSH OUTLETS SHALL BE HUBBELL #B2414 SERIES WITH FLUSH FLOOR FITTING FOR TELEPHONE AND FLUSH DUAL FLAP COVER WITH DUPLEX RECEPTACLE FOR POWER AS NOTED. INCREASE SIZE TO SUIT AS NECESSARY.



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DRAWING TITLE: **ELECTRICAL SPECIFICATIONS**

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SCALE: AS NOTED

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ELECTRICAL SPECIFICATIONS (CONT.)

N. PROVIDE RACEWAYS ONLY AS HEREIN SPECIFIED, EXCEPT AS NOTED.
RACEWAYS SHALL BE RUN CONCEALED, EXCEPT AS NOTED.

PROVIDE RACEWAY SUPPORT UTILIZING CEILING TRAPEZE, STRAP HANGERS, OR WALL BRACKETS. PROVIDE U-BOLTS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND CONNECTED TO ACCEPTABLE SUPPORTS. PROVIDE RISER CLAMPS AT EACH FLOOR LEVEL OF RISER RACEWAYS AND RESTING ON SLAB. FOR THROUGH-THE-FLOOR SYSTEMS, UTILIZE AN ASSEMBLY SIMILAR TO HUBBELL FIRE RATED POKE-THROUGH-FLOOR BOX SYSTEM. FOR ABOVE FLOOR FITTINGS TELEPHONE SHALL BE BUSHED HOLE AND POWER SHALL BE DUPLEX RECEPTACLE OR OTHER AS NOTED. PROVIDE SEPARATION BARRIER BETWEEN POWER AND TELEPHONE COMPARTMENTS. PROVIDE JUNCTION BOX ON UNDERSIDE OF FLOOR. PACK FITTING TO RESTORE FIRE RATING OF FLOOR.

SECURE ALL RACEWAYS TO SUPPORTS WITH PIPE STRAPS OR U-BOLTS. SPACING OF SUPPORTS SHALL BE A MINIMUM OF 10 FT ON CENTER FOR METALLIC RACEWAY AND AS REQUIRED FOR NONMETALLIC RACEWAY. SPACING SHALL BE 5 FT ON CENTER FOR WIREWAYS AND PER CODE AND AS NOTED FOR OTHERS. MOUNT SUPPORTS TO STRUCTURE MASONRY WITH TOGGLE BOLTS ON HOLLOW MASONRY, EXPANSION SHIELDS OR INSERTS IN CONCRETE AND BRICK, MACHINE SCREWS ON METAL, BEAM CLAMPS ON FRAMEWORK, WOOD SCREWS ON WOOD, AND PAN THROUGH STRAPS IN METAL DECK. NAILS, RAWL PLUGS OR WOOD PLUGS SHALL NOT BE PERMITTED. WHERE REQUIRED BY STRUCTURE, FURNISH THROUGH BOLTS AND FISHPLATES.

EXPOSED RACEWAYS SHALL BE RUN PARALLEL WITH OR AT RIGHT ANGLES TO WALLS. PROVIDE CLEARANCE WITH WATER, STEAM OR OTHER PIPING (MINIMUM 3 IN. SEPARATION FROM STEAM AND HOT WATER PIPES, EXCEPT 1 IN. FROM PIPE COVER AT CROSSINGS AND 18 IN. FOR PARALLEL RUNS). FOR HUNG CEILING OUTLETS, RUN IN HUNG CEILING AND CONNECT TO CEILING SUPPORT CHANNELS. IN MASONRY AND POURED CONCRETE, RUN VERTICALLY ONLY.

MAINTAIN GROUNDING CONTINUITY OF INTERRUPTED METALLIC RACEWAYS WITH GROUND CONDUCTOR, AND IN FLEXIBLE CONDUIT FOR FEEDERS AND MOTOR TERMINAL CONNECTIONS.

EMPTY RACEWAYS OVER 10 FT LONG: PROVIDE FISH OR PULL WIRE, GALVANIZED OR NYLON ROPE.

RIGID STEEL CONDUIT SHALL BE PERMITTED FOR FEEDERS AND BRANCH CIRCUITS. PAINT MALE THREADS OF FIELD-THREADED CONDUIT WITH GRAPHITE-BASE PIPE COMPOUND AND BUTT CONDUIT ENDS. TOUCH UP MARRED SURFACES AND FIELD-CUT THREADS, CRC-COLD GALVANIZED. EMT SHALL BE PERMITTED FOR BRANCH CIRCUITS ONLY, IN DRY LOCATIONS, DRY WALLS, HUNG CEILINGS, HOLLOW BLOCK WALLS AND FURRED SPACES. EMT SHALL NOT BE PERMITTED IN RAISED FLOORS. FLEXIBLE STEEL CONDUIT SHALL BE UTILIZED FOR SHORT CONNECTIONS WHERE RIGID CONDUIT IS IMPRACTICAL. FROM OUTLET BOX TO RECESSED LIGHTING FIXTURE: PROVIDE MINIMUM 4 FT AND MAXIMUM 6 FT LENGTHS. FOR FINAL CONNECTION TO MOTOR TERMINAL BOX, TRANSFORMER AND OTHER VIBRATING EQUIPMENT: PROVIDE WITH POLYVINYL SHEATHING AND GROUND CONDUCTOR. MINIMUM LENGTH: 18 IN. WITH SLACK. CONNECT GROUND CONDUCTOR TO ENCLOSURE OR RACEWAY AT EACH END. FOR EXPANSION JOINT CROSSINGS. CROSS AT RIGHT ANGLES AND ANCHOR ENDS.

CUT CONDUIT ENDS SQUARE. REAM SMOOTH. PAINT MALE THREADS OF FIELD THREADED RACEWAYS WITH GRAPHITE BASE PIPE COMPOUND. DRAW UP TIGHT WITH RACEWAY COUPLING.

ALL COUPLINGS SHALL BE COMPRESSION TYPE. NO SET SCREW FITTINGS.

EXPANSION FITTINGS SHALL BE INSTALLED AT RIGHT ANGLES WITH CLIP JOINT CENTERED IN EXPANSION JOINT. PROVIDE A LENGTH OF RUN IN ACCORDANCE MANUFACTURER'S RECOMMENDATIONS. PRESET FITTINGS SHALL ALLOW FOR TEMPERATURE VARIATION.

RACEWAYS PASSING THROUGH FIRE—RATED CONSTRUCTION: SEAL OPENING WITH FIRE SEALANT.

O. PROVIDE CABLE SUPPORTS IN ACCORDANCE WITH NATIONAL ELECTRIC CODE ARTICLE 300.19. CABLE SUPPORTS SHALL UTILIZE A ONE-PIECE PLUG WITH POZI-GRIP WEDGING PLUG AS MANUFACTIURED BY OZ-GEDNEY. TYPE SF SHALL BE USED FOR ARMORED CABLE.

INSTALL CABLE SUPPORTS AT THE TOP OF A VERTICAL RISE AND PROVIDE INTERMEDIATE ADDITIONAL SUPPORTS AS REQUIRED TO LIMIT SUPPORTED CONDUCTOR LENGTHS TO NOT GREATER THAN THOSE SPECIFIED IN TABLE 300.19(A).

- P. ERECT WALL AND SWITCH OUTLETS IN ADVANCE OF FURRING AND FIREPROOFING. OUTLET BOXES SHALL BE SET SQUARE AND TRUE WITH BUILDING FINISH. SECURE TO BUILDING STRUCTURE BY ADJUSTABLE STRAP IRON OR GROUT IN WITH MASONRY. VERIFY OUTLET LOCATIONS IN FINISHED SPACES WITH ARCHITECTURAL DRAWINGS OF INTERIOR DETAILS AND FINISHES. PROVIDE BARRIERS BETWEEN SWITCHES CONNECTED TO DIFFERENT PHASES FOR VOLTAGES EXCEEDING 150 VOLTS TO GROUND.
- Q. PANEL, JUNCTION AND PULL BOXES SHALL BE LOCATED CLEAR OF OTHER TRADES. CONCEAL JUNCTION AND PULL BOXES IN FINISHED SPACES. WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. BOXES SHALL BE ACCESSIBLE. SUPPORT BOXES FROM BUILDING STRUCTURE, INDEPENDENT OF CONDUIT. PROVIDE FLOOR—TO—CEILING CHANNELS FOR MOUNTING ON DRYWALL AND LIGHTWEIGHT CONSTRUCTION. OUTLET BOXES FOR FIXTURES RECESSED IN HUNG CEILINGS SHALL BE ACCESSIBLE THROUGH OPENING CREATED BY REMOVAL OF FIXTURE. SECURE TO BLACK IRON SUPPORT. MOTOR TERMINAL BOXES: COORDINATE WITH MOTOR BRANCH CIRCUIT CONDUIT AND WIRING; ADD BOX VOLUME WHERE REQUIRED.
- R. FIRE SEALANTS: PROVIDE FOR RACEWAYS AND WIRE PASSING THROUGH FLOOR SLOTS, SLEEVES OR OPENINGS IN FIRE—PARTITIONS
- S. PERFORM CONTINUITY TESTS OF RESISTANCE OF FEEDER CONDUITS FROM SERVICE TO POINT OF FINAL DISTRIBUTION USING 1 CONDUCTOR RETURN. MAXIMUM RESISTANCE SHALL BE 25 OHMS.
- O. WIRE AND CABLE:
- A. PROVIDE WIRE AND CABLE COMPLETE WITH ACCESSORIES. SIZE REFERENCE SHALL BE AWG EXCEPT AS NOTED.
- B. CONDUCTORS SHALL BE COPPER, ASTM STANDARD SOLID (NO. 10 AND SMALLER) OR STRANDED (NO. 8 AND LARGER).

 GENERAL USE CABLING SHALL BE NO. 12 MINIMUM. AT 120 VOLTS AND OVER 100 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM. AT 265 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 10 MINIMUM.

- C. CONTROL AND ALARM CABLING, EXCEPT AS NOTED, SHALL BE NO. 14 MINIMUM. AT 120 VOLTS AND OVER 200 FT CIRCUIT LENGTH PROVIDE NO. 12 MINIMUM. OTHER VOLTAGES AND PHASES: ADJUST CABLE SIZING AS REQUIRED TO MAINTAIN VOLTAGE DROP. INCREASE RACEWAY SIZES FOR LARGER WIRE AS REQUIRED.
- D. INSULATION SHALL BE RUBBER AND THERMOPLASTIC MEETING ASTM AND IPCEA STANDARDS. TYPE THW OR THWN SHALL BE UTILIZED FOR FEEDERS AND BRANCH CIRCUITS EXCEPT AS NOTED. TYPE SFF—2 SHALL BE UTILIZED FOR BRANCH CIRCUITS LOCATED IN WIRING CHANNELS OF CONTINUOUS FLUORESCENT FIXTURES AND IN AMBIENT TEMPERATURES OVER 90 DEG C. FOR UNGROUNDED ISOLATED BRANCH CIRCUITS PROVIDE CROSS—LINKED POLYETHYLENE INSULATION (TYPE XHHW).
- ARMORED CABLE (BX) SHALL BE UTILIZED FOR BRANCH CIRCUITS IN DRY HOLLOW LOCATIONS, HUNG CEILINGS, AND BLOCK WALLS. WHEN USED IN LIEU OF WIRING IN CONDUIT, STATE IN PROPOSAL THAT PRICE IS BASED UPON THE USE OF HOSPITAL GRADE 'BX'.
- F. COLOR CODING SHALL BE AS FOLLOWS:

120/208 VOLT SYSTEM: 277/480 VOLT SYSTEM: BLACK FOR A PHASE BROWN FOR A PHASE ORANGE FOR C PHASE BLUE FOR C PHASE YELLOW FOR C PHASE

1) NEUTRAL WIRE SHALL UTILIZE WHITE OUTER COVERING THROUGHOUT. EQUIPMENT GROUND WIRE SHALL UTILIZE GREEN OUTER COVERING THROUGHOUT.

WHERE COLOR-CODED CABLE IS NOT AVAILABLE, CERTIFY IN WRITING AND REQUEST PERMISSION TO OVERLAP CONDUCTORS WITH 6 IN. OF COLOR TAPING IN ACCESSIBLE LOCATIONS.

- G. PROVIDE FLAMEPROOF LINEN OR FIBER TAGS IN ACCESSIBLE LOCATIONS. FOR FEEDERS INDICATE FEEDER NUMBER, SIZE, PHASE AND POINTS OF ORIGIN AND TERMINATIONS. FOR CONTROL AND ALARM WIRING INDICATE TYPE (CONTROL OR ALARM), SIZE OF WIRE, AND POINTS OF ORIGIN AND TERMINATIONS.
- H. TERMINATIONS, SPLICES AND TAPS UNDER 600 VOLTS: COPPER CONDUCTORS NO. 10 AND SMALLER SHALL UTILIZE COMPRESSION—TYPE OF TWIST—ON SPRING—LOADED CONNECTORS AND CLEAR NYLON—INSULATED COVERING. COPPER CONDUCTORS NO. 8 AND LARGER SHALL UTILIZE MECHANICAL BOLTED PRESSURE OR HYDRAULIC COMPRESSION TYPE USING MANUFACTURER'S RECOMMENDED TOOLING. CABLE LUGS AND CONNECTORS SHALL UTILIZE COMPRESSION TYPE OF SAME METAL AS CONDUCTOR. PROVIDE TO MATCH CABLE, WITH MARKING INDICATING SIZE AND TYPE. COPPER LUG CONNECTIONS TO BUS BARS: USE ANTISEIZE COMPOUND ON TANGE
- NOT MORE THAN 3 LIGHTING OR CONVENIENCE OUTLET CIRCUITS SHALL BE INSTALLED IN ONE CONDUIT UNLESS OTHERWISE INDICATED. PULL NO THERMOPLASTIC WIRES AT TEMPERATURES LOWER THAN 32 DEG F. PROVIDE SEPARATE RACEWAYS FOR CONDUCTORS OF 120/208 AND 265/460 VOLT SYSTEMS, EXCEPT 460 VOLT MOTOR BRANCH CIRCUIT WIRING AND RELATED 120 VOLT CONTROL WIRING. THERMOPLASTIC WIRES SHALL NOT BE INSTALLED IN COMPUTER AREA RAISED FLOORS.
- J. LEAVE WIRES WITH SUFFICIENT SLACK TO PERMIT MAKING FINAL CONNECTIONS.
- K. PERFORM CONTINUITY AND INSULATION TESTS. MEGGER TEST 100 PERCENT OF FEEDERS, 10 PERCENT OF BRANCH CIRCUITS AND ALL MOTOR BRANCH CIRCUITS OVER 25 HP.

PERFORM TESTS PRIOR TO CONNECTING EQUIPMENT AND IN PRESENCE OF AUTHORIZED REPRESENTATIVES. SUBMIT WRITTEN REPORT OF RESULTS. CORRECT OR REPLACE CABLE TESTING BELOW MANUFACTURER'S STANDARDS.

11. WIRING DEVICES:

- A. WIRING DEVICES SHALL BE SPECIFICATION GRADE UNLESS OTHERWISE SPECIFIED. ALL DEVICES SHALL BE FLUSH MOUNTED, UNLESS OTHERWISE NOTED. PROVIDE COMPLETE MATERIAL AND ACCESSORIES AS NOTED.
- B. LOCAL WALL SWITCHES SHALL BE ROCKER TYPE, QUIET OPERATING, RATED 20 AMP, 120/277 VOLT, AC. SIMILAR TO LEVITON DECORA SERIES A5621 (SINGLE POLE), A5623 (3-WAY) AND A5624 (4-WAY).
- C. STRAIGHT BLADE RECEPTACLES SHALL BE RESIDENTIAL GRADE DUPLEX CONVENIENCE 125 VOLTS, 2 POLE, 3 WIRE, U GROUND SLOT, DECORA SERIES BY LEVITON. GROUNDED, EXCEPT AS NOTED.
- 1)SINGLE GANG, RECESSED, DUPLEX RECEPTACLE: TAMPER RESISTANT, 2—POLE, 3—WIRE GROUNDING, 15A, 125V, NEMA 5—20R; LEVITON 689 SERIES (COLOR AS SPECIFIED BY ARCHITECT).
- 2) USB CHARGER/ DUPLEX TAMPER-RESISTANT RECEPTACLE TAMPER RESISTANT,
- D. DEVICE PLATES: SEE ARCHITECT FOR TYPE. FOR RECEPTACLES WITH OTHER THAN 120 VOLT, INSCRIBED VOLTAGE AVAILABLE.
- E. COLORS: COORDINATE COLORS WITH ARCHITECT.
- F. MOUNTING ORIENTATION OF RECEPTACLES (HORIZONTAL OR VERTICAL): COORDINATE WITH ARCHITECT.

12. LIGHTING FIXTURES:

- A. FIXTURES TO BE AS SPECIFIED BY ARCHITECT AND SHALL BE COMPLETELY FACTORY ASSEMBLED, WIRED AND EQUIPPED WITH ALL NECESSARY SOCKETS, BALLASTS, SUPPORTING HARDWARE AND ACCESSORIES. REFER TO DRAWINGS FOR INDIVIDUAL FIXTURE DESCRIPTIONS.
- B. FIXTURE CATALOG NUMBERS USED TO ILLUSTRATE EQUIPMENT TYPE DO NOT NECESSARILY DENOTE REQUIRED MOUNTING EQUIPMENT OR ACCESSORIES. PROVIDE ACCESSORIES TO SUIT.
- C. BALLAST: CLASS P, HIGH POWER FACTOR, LOWEST AVAILABLE NEMA RATED NOISE LEVEL, ET1 AND CBM APPROVED. ENERGY SAVING TYPE. TRIGGER START FOR 24—INCH LAMPS AND RAPID START FOR 48—INCH. TWO LAMP BALLASTS; NO THREE LAMP BALLASTS. BALLASTS SHALL BE ADVANCE MAGNETEK. UNIVERSAL OR EQUAL.
- D. LED DRIVERS SHALL BE ELECTRONIC TYPE, LABELED AS COMPLIANT WITH RADIO FREQUENCY INTERFERENCE (RFI) REQUIREMENTS OF FCC TITLE 47, PART 15 AND COMPLY WITH NEMA SSL 1 "ELECTRONIC"

- DRIVERS FOR LED DEVICES, ARRAYS OR SYSTEMS". LED DRIVERS SHALL HAVE A SOUND RATING OF "A", HAVE A MINIMUM EFFICIENCY OF 85% AND BE RATED FOR A THD OF LESS THAN 20% AT ALL INPUT VOLTAGES.
- E. DIMMABLE LED DRIVERS SHALL BE CAPABLE OF DIMMING WITHOUT LED STROBING OR FLICKER ACROSS THEIR FULL DIMMING RANGE. PROVIDE TYPE OF LED DRIVER AS PER LIGHTING FIXTURE SCHEDULE, DIMMABLE LED DRIVERS SHALL BE 0-10V WHERE NOT INDICATED.
- F. CONTINUOUS ROW, TWO LAMP STRIP FIXTURES SHALL BE STAGGERED TYPE.
- G. EXIT SIGNS SHALL BE PRECISION DIE—CAST ALUMINUM HOUSING WITH LASER—FORMED ACRYLIC LEGEND. EXIT SIGNS SHALL COMPLY WITH UL 924 AND BE MEA APPROVED. AC POWERED WITH PREMIUM LONG—LIFE NICKEL CADMIUM BATTERY WITH STANDARD UL LISTED 3—HOUR RUN TIME. PROVIDE WITH INTEGRAL AUTOMATIC CHARGER IN A SELF CONTAINED POWER PACK. LED INDICATOR WITH PUSH TO TEST SWITCH.

13. TELEPHONE CONDUIT SYSTEM:

- A. PROVIDE COMPLETE SYSTEM OF: RACEWAYS AND ACCESSORIES, OUTLET BOXES, SLEEVES AND FISHWIRES.
- B. EQUIPMENT SHALL CONFORM TO REQUIREMENTS OF TELEPHONE COMPANY.
- C. OUTLETS SHALL BE:
- 1) WALL: 4 IN. SQUARE WITH BUSHED COVER PLATE.
- D. PROVIDE FISHWIRES, IN RACEWAYS OVER 10 FT LONG.
- E. CONDUIT SHALL BE 3/4 IN. MINIMUM. FURNISH EMPTY CONDUIT FROM OUTLET BOX TO BUSHED END THRU WALL 6" BELOW THE PLASTER CEILING.
- F. FACE RACEWAYS IN ROOMS SHALL HUBBELL HBL500, HBL750 OR HBL2000 SERIES OR AS ACCEPTABLE.

14. GROUNDING AND BONDING:

- A. PROVIDE GROUNDING SYSTEM IN ACCORDANCE WITH (NATIONAL ELECTRICAL CODE), AND THESE SPECIFICATIONS. THE WIRING SYSTEM SHALL BE INSTALLED AS REQUIRED TO PROVIDE A CONTINUOUSLY GROUNDED SYSTEM. WHERE FLEXIBLE CONDUIT IS USED FOR PART OF A CONDUIT RUN, EXCEPT LIGHTING BRANCH CIRCUITS, AN INSULATED GROUNDING CONDUCTOR SHALL BE PROVIDED IN THE CONDUIT AND CONNECTED TO GROUNDING BUSHINGS AT EACH END OF THE RUN.
- B. USE EXOTHERMIC WELDING PROCESS FOR INACCESSIBLE CONNECTIONS.
- C. EXTEND EXISTING SYSTEM GROUND TO INCLUDE ALL THE ELECTRICAL EQUIPMENT IN THE SCOPE OF WORK.
- D. WHERE FLEXIBLE METALLIC CONDUIT IS USED AN INTERNAL BONDING CONDUCTOR SHALL BE INSTALLED.
- E. IN ADDITION, FURNISH A SEPARATE INSULATED GREEN EQUIPMENT GROUND CONDUCTOR WHERE INDICATED ON DRAWINGS AND FOR THE FOLLOWING BRANCH CIRCUITS:

 1) CIRCUITS SERVING ANY WALL BOX DIMMER.
- 2) CIRCUITS SERVING ANY ISOLATED GROUND RECEPTACLES.
 TERMINATE GROUND DIRECTLY AT AN EQUIPMENT GROUNDING
 CONDUCTOR TERMINAL OF THE SOURCE AT THE SOURCE, OR
 AS OTHER WISE NOTED ON DRAWINGS.
- 3) CIRCUITS SERVING ANY DUPLEX OR SIMPLEX COMPUTER RECEPTACLES
- 4) ANY CIRCUIT SERVED VIA AN ISOLATION TRANSFORMER OR COMPUTER POWER DISTRIBUTION UNIT.

15. PANELBOARDS:

- A. PANELBOARDS SHALL BE OF THE DEAD FRONT TYPE
 MANUFACTURED IN CODE GAUGE AND SIZE BOXES FOR MOUNTING
 AS INDICATED ON PLANS COMPLETE WITH TRIM, DOORS AND LOCKS.
 ALL LOCKS SHALL BE KEYED ALIKE.
- B. CIRCUIT BREAKERS SHALL BE OF THE BOLT—ON THERMAL MAGNETIC MOLDED CASE TYPE, AND SHALL HAVE THE TRIP RATINGS AND NUMBER OF POLES SHOWN IN SCHEDULES ON THE CONTRACT DRAWINGS. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL RATED BUS. MINIMUM GUTTER SPACES SHALL BE 5-3/4". SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. PROVIDE 25% COPPER GROUND BUS AND 100% COPPER NEUTRAL BUS AND INCREASE NEUTRAL BUS INDICATED.
- C. LOCKING TABS SHALL BE PROVIDED ON ALL CIRCUIT BREAKERS SERVING EMERGENCY LIGHTING, FIRE ALARM SYSTEM, SECURITY SYSTEMS AND OTHER EMERGENCY OR CRITICAL EQUIPMENT AND AS NOTED ON THE CONTRACT DRAWINGS. A TOTAL OF 5 SPARE LOCKING TABS SHALL BE FURNISHED TO THE OWNER.
- D. BUSES SHALL BE HARD DRAWN COPPER OF 98 PERCENT CONDUCTIVITY AND SHALL HAVE CROSS SECTIONAL AREAS LARGE ENOUGH TO LIMIT THE TEMPERATURE RISE, WHEN CARRYING FULL LOAD, TO 35 DEGREES C. ABOVE AN AMBIENT INSIDE THE ENCLOSURE OF 55 DEGREES C. AS DEFINED IN IEEE STANDARD RULES. MAIN BUS CAPACITY SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.
- E. ENCLOSURES SHALL BE SURFACE OR FLUSH AS INDICATED. TRIMS SHALL BE SECURED TO PANEL WITH MACHINE SCREWS. COVERS SHALL BE HINGED DOOR—IN—DOOR CONSTRUCTION WITH CYLINDER LOCKS AND CATCHES. LOCKS MUST BE COMPATIBLE WITH BUILDING STANDARD KEY SYSTEM AND WHEN NONE EXISTS, THEY SHALL BE SIMILAR TO A YALE NO. 911 KEY.
- F. DISTRIBUTION AND SUB-DISTRIBUTION PANELBOARD SHALL BE A MINIMUM OF 30" WIDE AND 10" DEEP.
- G. ALL STANDARD PANELBOARDS SHALL BE A MINIMUM OF 20" WIDE AND 5 3/4" DEEP.
- H. FURNISH ALL PANELBOARDS WITH FEED-THRU LUGS UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
- I. ALL NEW PANELBOARDS SHALL BE PROVIDED WITH AN ENGRAVED WHITE CORE LAMACOID NAMEPLATE, WITH 3/4 IN. WHITE LETTERING ON A BLACK BACKGROUND, WITH DESIGNATION LISTED (PANELBOARD NAME), FASTENED WITH EPOXY CEMENT OR OVAL HEAD CHROME PLATED MACHINE SCREWS.
- J. THE CIRCUIT DIRECTORY SHALL BE TYPEWRITTEN AND PROVIDED INSIDE EACH PANEL DOOR TO INDICATE EQUIPMENT AND/OR AREA SERVED. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR

- PLASTIC, TRANSPARENT COVER. THE TYPEWRITTEN LIST INDICATING CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.
- K. TIE-BARS SHALL NOT BE USED TO CREATE MULTI-POLE CIRCUITS. MAXIMUM 42 CIRCUITS ALLOWED.
- L. ONLY ONE WIRE SHALL BE INSTALLED UNDER EACH CIRCUIT BREAKER LUG.
- M. SHORT CIRCUIT RATING OF PANELBOARDS SHALL NOT BE LESS THAN AS INDICATED ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN. WHERE NOT INDICATED OR SPECIFIED THE MINIMUM SHORT CIRCUIT RATING SHALL BE EQUAL TO THE INTERRUPTING CAPACITY OF THE LOWEST RATED CIRCUIT BREAKER IN THE PANELBOARD, BUT IN NO CASE LESS THAN 10,000 AMPERES R.M.S. SYMMETRICAL FOR 208Y/120 VOLT SYSTEM AND 14,000 AMPERES R.M.S. SYMMETRICAL FOR 480Y/277 VOLT SYSTEM. SERIES RATED PANELBOARDS SHALL BE USED TO ACHIEVE REQUIRED SHORT CIRCUIT RATINGS.
- N. FOR ALL EXISTING PANELBOARDS, CONTRACTOR SHALL PROVIDE NEW CIRCUIT BREAKERS TO REPLACE EXISTING AS REQUIRED AS INDICATED ON DRAWINGS.

16. LOADCENTERS

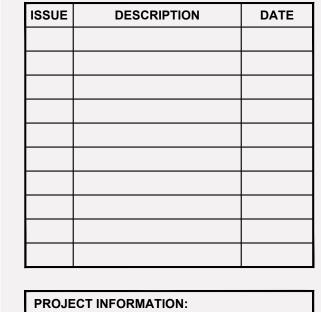
- A. LOAD CENTERS SHALL COMPLY WITH UL67 AND MEET FEDERAL SPECIFICATION W-P-115c.
- B. CIRCUIT BREAKERS SHALL BE OF THE PLUG—IN, THERMAL MAGNETIC MOLDED CASE TYPE, AND SHALL HAVE THE TRIP RATINGS AND NUMBER OF POLES SHOWN IN SCHEDULES ON THE CONTRACT DRAWINGS. FOR BLANK (SPACE) COMPARTMENTS, PROVIDE FULL RATED BUS. TANDEM OR DUPLEX TYPE CIRCUIT BREAKERS SHALL NOT BE PERMITTED. ONLY ONE WIRE SHALL BE INSTALLED UNDER EACH CIRCUIT BREAKER LUG. TIE—BARS SHALL NOT BE USED TO CREATE MULTI—POLE CIRCUITS.
- BUSES SHALL BE HARD DRAWN COPPER OF 98 PERCENT CONDUCTIVITY AND SHALL HAVE CROSS SECTIONAL AREAS LARGE ENOUGH TO LIMIT THE TEMPERATURE RISE, WHEN CARRYING FULL LOAD, TO 35 DEGREES C. ABOVE AN AMBIENT INSIDE THE ENCLOSURE OF 55 DEGREES C. AS DEFINED IN IEEE STANDARD RULES. MAIN BUS CAPACITY SHALL BE AS SHOWN ON THE CONTRACT DRAWINGS.
- D. ENCLOSURES MANUFACTURED IN CODE GAUGE AND SIZE BOXES FOR FLUSH MOUNTING AS INDICATED ON PLANS COMPLETE WITH TRIM, DOORS AND LOCKS. ALL LOCKS SHALL BE KEYED ALIKE. MINIMUM GUTTER SPACES SHALL BE 5-3/4". SIDES, TOP AND BOTTOM, INCREASE FOR THROUGH FEEDERS. PROVIDE 25% COPPER GROUND BUS AND 100% COPPER NEUTRAL BUS AND INCREASE NEUTRAL BUS INDICATED. ALL LOAD CENTERS SHALL BE 14 %" WIDE AND 3 %"
- E. THE CIRCUIT DIRECTORY SHALL BE TYPEWRITTEN AND PROVIDED INSIDE EACH PANEL DOOR TO INDICATE EQUIPMENT AND/OR AREA SERVED. DIRECTORY HOLDER SHALL BE METAL FRAME WITH CLEAR PLASTIC, TRANSPARENT COVER. THE TYPEWRITTEN LIST INDICATING CIRCUIT NUMBERS, OUTLETS SUPPLIED AND THEIR LOCATIONS SHALL BE PROVIDED.
- F. SHORT CIRCUIT RATING OF PANELBOARDS SHALL NOT BE LESS THAN AS INDICATED ON THE CONTRACT DRAWINGS OR SPECIFIED HEREIN. WHERE NOT INDICATED OR SPECIFIED THE MINIMUM SHORT CIRCUIT RATING SHALL BE EQUAL TO THE INTERRUPTING CAPACITY OF THE LOWEST RATED CIRCUIT BREAKER IN THE PANELBOARD, BUT IN NO CASE LESS THAN 22,000/10,000 AMPERES R.M.S. SYMMETRICAL SERIES RATING FOR 208Y/120 VOLT. SERIES RATED LOAD CENTERS SHALL BE USED TO ACHIEVE REQUIRED SHORT CIRCUIT RATINGS.

17. SMOKE ALARMS:

- A. PROVIDE SOLID STATE, PHOTOELECTRIC TYPE, HARD—WIRED SMOKE ALARM WITH 9V BATTERY BACKUP AND INTEGRAL TEMPORAL PATTER EVACUATION HORN. EDWARDS 517 SERIES OR APPROVED EQUAL.
- B. THREE POSITION TEST FEATURE THAT SIMULATES ACTUAL SMOKE CONDITIONS. SHALL CONTAIN MAINTENANCE INDICATOR.
- C. PROVIDE WITH INTEGRAL 135 DEGREE F ISOLATED HEAT DETECTION OR INTEGRAL RELAY RATED 0.6A AT 125V AC., AS INDICATED ON THE PLANS AND DRAWINGS.
- D. DEVICE SHALL BE RATED TO OPERATE AT A RANGE OF 40°f TO
- E. UL LISTED TO UL217 AND APPROVED.

18. INTERCOM CONDUIT SYSTEM:

- A. PROVIDE COMPLETE SYSTEM OF: RACEWAYS AND ACCESSORIES, OUTLET BOXES, SLEEVES AND FISHWIRES.
- B. EQUIPMENT SHALL CONFORM TO REQUIREMENTS OF INTERCOM MANUFACTURER.
- C. OUTLETS SHALL BE:
 - 1)WALL: 4 IN. SQUARE WITH SINGLE GANG COVER PLATE.
- D. PROVIDE FISHWIRES, IN RACEWAYS OVER 10 FT LONG.
- E. CONDUIT SHALL BE 3/4 IN. MINIMUM. FURNISH EMPTY CONDUIT FROM EACH APARTMENT TO MAIN INTERCOM CONTROLLER AT ENTRANCE.



UNCLE WILLIE'S WINGS

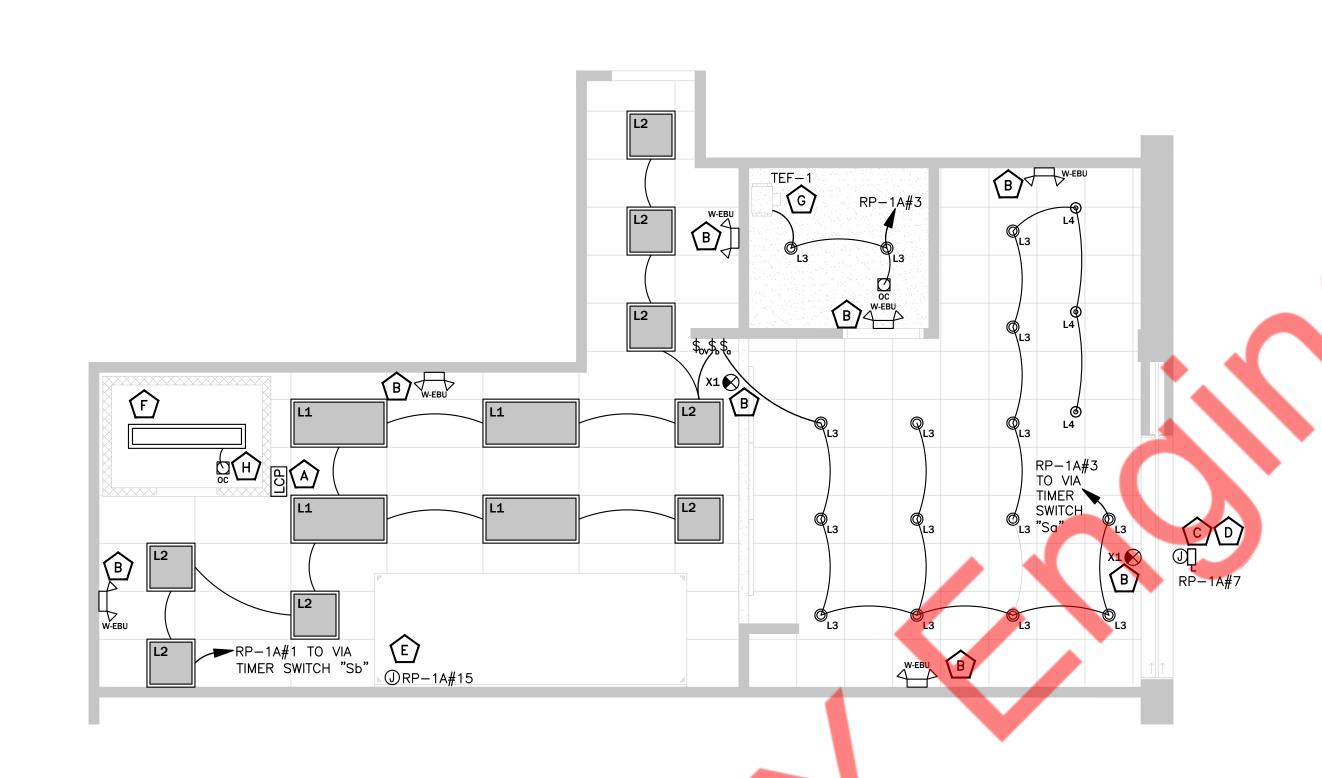
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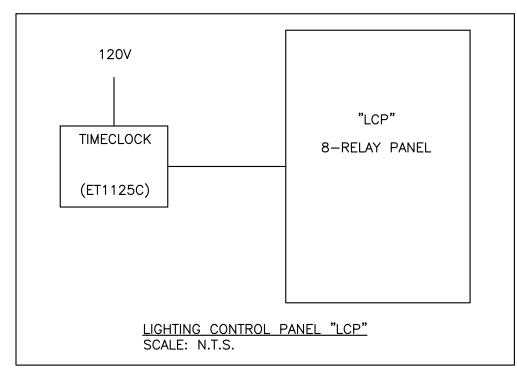
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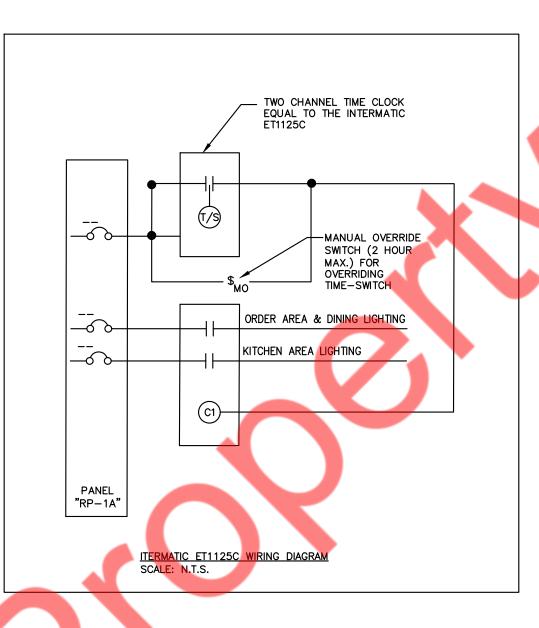
<u>'LCP' SCHEDULE</u>								
RELAY #	ZONE TAG	CONTROL TYPE	CIRCUIT #	DESCRIPTION				
1	а	TIMER	RP-1A#3	ORDER AREA & DINING LIGHTING				
2	Ь	TIMER	RP-1A#1	KITCHEN AREA LIGHTING				



ITERMATIC ET1125C 24-HOUR ELECTRONIC TIME SWITCH:

NOTES

- ITERMATIC TIMER BOX SHALL BE LOCATED AS CLOSE TO PANELBOARD AS PRACTICAL.
 PROVIDE WIRING FROM LOW VOLTAGE SWITCH TO RELAY CABINET REQUIRED FOR
 EACH RELAY AS REQUIRED.
- 2. PROGRAM LIGHTING SCHEDULE AND HOURS OF OPERATION WITH OWNER.
- 3. PROVIDE LOW VOLTAGE OVERRIDE SWITCH AS INDICATED ON DRAWINGS ITERMATIC ET1125C SERIES. LOW-VOLTAGE OVERRIDE SWITCH CONTROLS SHALL INITIATE AN OVERRIDE OF A MAXIMUM TIME OF NO MORE THAN TWO (2) HOURS.
- 4. PROVIDE TWO (2) HOUR TRAINING ON PROGRAMMING OF SYSTEM & SYSTEM OPERATION.



A LIGHTING PLAN - CONCOURSE LEVEL

1/4"=1'-0"

	LIGHTING FIXTURE SCHEDULE							
CODE	MANUFACTURER	MODEL	QUANTITY	VOLTS/PHASE	WATTS	LAMP TYPE	MOUNTING	DESCRIPTION
L1	LITHONIA	EPANL 2X4 4000LMHE 80CRI 35K MVOLT SLD	4	120/277V	31	LED	RECESSED	2' X 4' LED FLAT PANEL
L2	LITHONIA	EPANL 2X2 3400LM 80CRI 35K MVOLT SLD	8	120/277V	30	LED	RECESSED	2' X 2' LED FLAT PANEL
L3	LITHONIA	LDN6 35/15 L06BR LSS MVOLT EZ10	15	120/277V	20.5	LED	RECESSED	6" LED DOWNLIGHT
L4	Y LIGHTING - ACCESS LIGHTING	ACC186262-9	3	120V	10	LED	SURFACE	PENDANT LIGHT
W-EBU	EXITRONIX	LED-95-WH	2	120/277V	3	LED	UNIVERSAL	EMERGENCY LED
X1	EXITRONIX	VLED-U-WH-EL90-R	2	120/277V	2.2	LED	WALL	EXIT LED LIGHT

ELECTRICAL LIGHTING PLAN KEYED WORK NOTES:

BID FOR THE ELECTRICAL.

CONTROL SYSTEM FOR CONTROLS.

WITH THE EQUIPMENT SUPPLIER.

E JUNCTION BOX ON HOOD FOR RE-WIRED HOOD LIGHTS.

E.C. SHALL COORDINATE EXACT LOCATION OF THE LIGHTING CONTROL PANEL "LCP" WITH ARCHITECT/OWNER.

B CONNECT ALL EMERGENCY EGRESS AND NIGHT LIGHTING FIXTURES TO THE NEAREST LIGHTING BRANCH CIRCUIT AHEAD OF ALL SWITCHING AND CONTROLS PER STATE AND LOCAL CODES.

WIRING REQUIREMENTS WITH THE SIGN SUPPLIER PRIOR TO SUBMITTING A

PROVIDE A 30AMP DISCONNECT SWITCH WITH LOCK-OFF CAPABILITY FOR STOREFRONT SIGN. VERIFY EXACT LOCATION AND ELECTRICAL REQUIREMENTS

LIGHTING BY W.I.B MANUFACTURER. E.C. TO PROVIDE RACEWAYS, WIRING AND LAMPS FOR ALL LIGHT FIXTURES FURNISHED WITH THE FREEZER/COOLER STORAGE UNIT. COORDINATE THE INSTALLATION OF SWITCHES AND PLATES

LINE VOLTAGE LOW TEMPERATURE WALKIN OCCUPANCY SENSOR EQUAL TO WATT STOP PER CB-100. LOW VOLTAGE OCC SENSOR SHALL BE PROVIDED BY WALKIN BOX SUPPLIER. E.C TO PROVIDE ELECTRICAL CONNECTIONS.

G TEF-1 SHALL BE CIRCUITED AND CONTROLLED ALONG WITH THE LIGHT FIXTURES IN THE RESTROOM AREA.

CONNECTION TO STOREFRONT SIGN. VERIFY EXACT LOCATION OF POWER FEED AND PUNCH—THRU WITH SIGNAGE CONTRACTOR TO ENSURE NO EXCESSIVE CONDUIT IS RUN NEITHER INSIDE NOT OUTSIDE. TIE CIRCUIT INTO LIGHTING

VERIFY THE EXACT LOCATIONS OF SIGNS, AND FASCIA BOXES BEFORE INSTALLATION OF JUNCTION BOXES. E.C. SHALL VERIFY EXACT SIGN(S)

REFER TO REFLECTED CEILING PLAN IN ARCHITECTURAL DRAWINGS FOR MORE INFORMATION ON COLORS AND TRIMS REQUIRED.

E.C. SHALL RECEIVE APPROVAL FROM ARCHITECT/ OWNER FOR LIGHTING FIXTURE SELECTIONS BEFORE PURCHASE AND INSTALLATION.

ISSUE	DESCRIPTION	DATE

PROJECT INFORMATION:

UNCLE WILLIE'S WINGS

DATE:

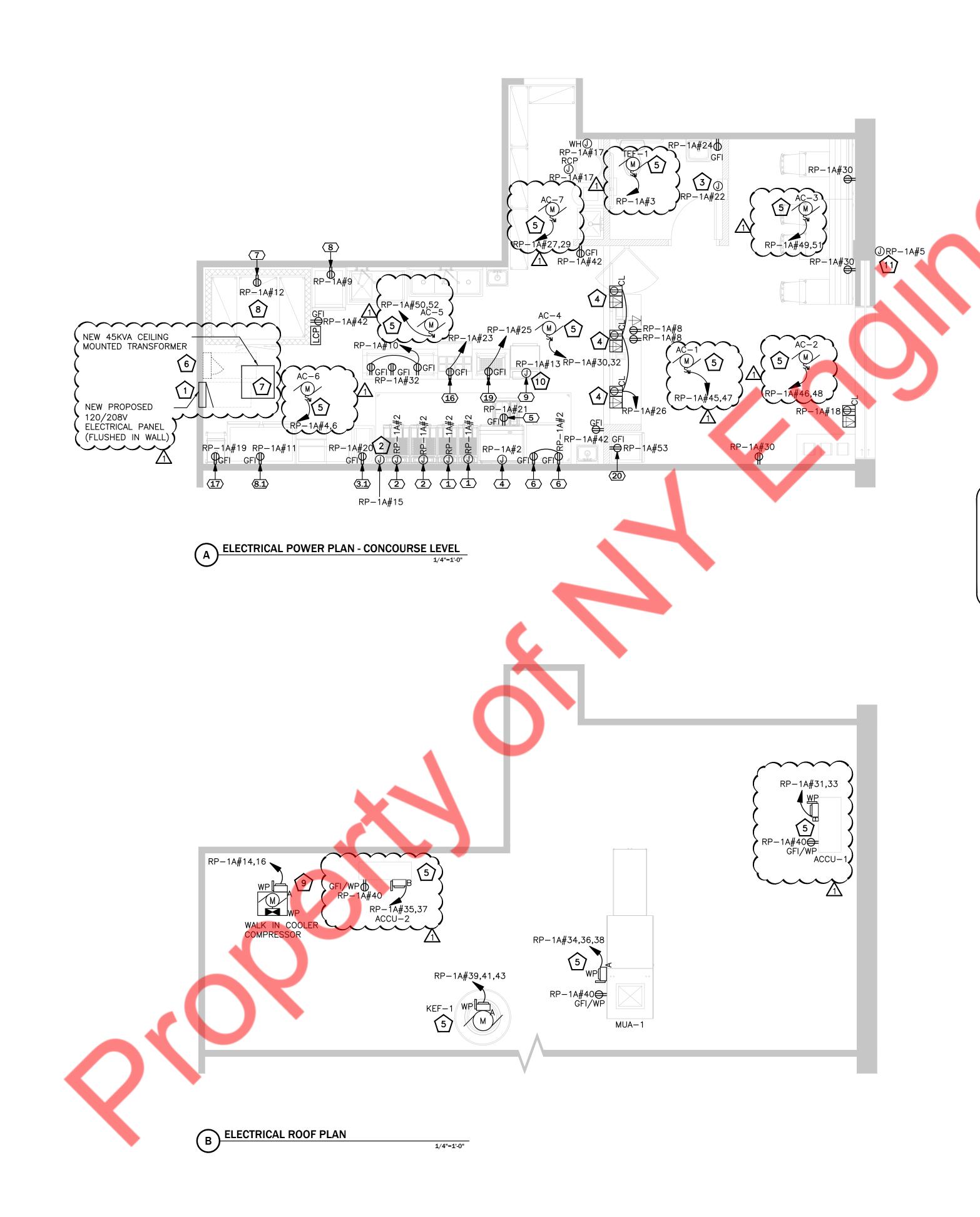
DATE:
PROJECT NO.:
DRAWN BY: NYE
CHECKED BY: NYE
SCALE: AS NOTED

DRAWING TITLE:

ELECTRICAL LIGHTING PLAN

DRAWING NO.:

E1.0



KITCHEN EQUIPMENT SCHEDULE:

ITEM NO.	DESCRIPTION	VOLTAGE	PHASE	AMPS	kW	CONN. TYPE	NEMA
3.1	HEAT LAMP	120	1	4.2	1.73	CORD & PLUG	5-15P
5	REFRIGERATED BASE EQUIPMENT STAND	115	1	2.3	0.99	CORD & PLUG	5-15P
6	GAS CONVECTION OVEN	120	1	1	0.25	CORD & PLUG	5-15P
7	WALK-IN COOLER	208	1	14.4	1.88	HARD WIRE	
8	REACH-IN FREEZER, SINGLE DOOR	115	1	6.3	1.26	CORD & PLUG	5-15P
8.1	REACH-IN FREEZER, DOUBLE DOOR	115	1	8.6	1.20	CORD & PLUG	5-15P
9	ICE MAKER WITH BIN	115	1	7.2	1.44	HARD WIRE	JB
16	SANDWICH/ SALAD PREP. REFRIGERATOR	115	1	2.3	1.68	CORD & PLUG	5-15P
17	FRYER FILTER, MOBILE	120	1	2.5	0.30	CORD & PLUG	5-15P
19	DISPLAY CASE, COUNTERTOP	110	1	6.8	0.8	CORD & PLUG	5-15P
20	REFRIGERATED	115	1	2.1	0.40	CORD & PLUG	5-15P

KITCHEN EQUIPMENT SCHEDULE GENERAL NOTES: E.C. TO COORDINATE WITH ARCHITECT/ KITCHEN EQUIPMENT SPECIALIST FOR CONNECTION TYPE AND HEIGHT PRIOR TO ROUGH IN.

ELECTRICAL POWER PLAN GENERAL NOTES:

- A. VERIFY MOUNTING HEIGHTS OF ALL RECEPTACLES WITH EQUIPMENT SUPPLIED PRIOR TO
- B. E.C. TO PROVIDE CORD & PLUG CONNECTIONS FOR EQUIPMENT AS REQUIRED. C. ALL 120V, 20A OUTLETS IN THE FOOD PREP AREA SHALL BE GROUND FAULT INTERRUPT
- D. ALL CIRCUITS FOR P.O.S. (POINT OF SALE) EQUIPMENT SHALL BE CONNECTED TO THE
- SAME PHASE OF POWER IN THE PANEL. ALL BRANCH CIRCUIT BREAKERS SUPPLYING P.O.S EQUIPMENT SHALL HAVE LOCKING HANDLES DEVICES.
- E. EACH RECEPTACLE TYPE (LOCKING OR STRAIGHT BLADE) SHALL MATCH THAT OF THE EQUIPMENT FURNISHED.

ELECTRICAL POWER PLAN KEYED WORK NOTES:

- NEW 150A, 120/208V, 3-PHASE, 4-WIRE ELECTRICAL PANEL "RP-1A" PANEL FOR ightharpoonup the project space. E.C shall coordinate with architect/ owner for LOCATION OF NEW ELECTRICAL PANEL "RP-1A" IN FILED.
- LUCATION OF NEW ELECTRICAL PANEL IN TO THE TOTAL CONTRACTOR TO JUNCTION BOX FOR HOOD/ANSUL SYSTEM. ELECTRICAL CONTRACTOR TO COORDINATE EXACT POWER REQUIREMENT WITH HOOD MANUFACTURER AND MAKE POWER PROVISION ACCORDINGLY.
- JUNCTION BOX FOR HAND DRYER. COORDINATE MOUNTING HEIGHT TO COMPLY WITH ADA.
- REFER TO EQUIPMENT SPECIFICATIONS FOR DATA AND POWER REQUIREMENTS AND LOCATIONS FOR ALL MENU BOARDS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE DISCONNECT AND FUSE REQUIREMENT FOR MECHANICAL UNIT WITH MECHANICAL CONTRACTOR AND EQUIPMENT MANUFACTURER PRIOR TO ROUGH-IN AND PROVIDE AS REQUIRED. COORDINATE LOCATION OF DISCONNECT WITH MANUFACTURER AND MECHANICAL CONTRACTOR PRIOR TO ROUGH-IN. LOCATE AS REQUIRED TO MAINTAIN NEC CLEARANCES.
- EXISTING 100A, 277/480V, 3-PHASE, 4-WIRE ELECTRICAL PANEL SHALL REMAIN. E.C SHALL VERIFY THE ELECTRICAL RATING, SIZE, LOCATION AND OPERABLE CONDITION OF EXISTING ELECTRICAL PANEL IN FIELD. REPLACE IF FOUND INOPERABLE. BASE BID ACCORDINGLY. INFORM ENGINEER FOR ANY DISCREPANCY FOUND BEFORE COMMENCING ANY WORK.
- (NEW 45KVA CEILING MOUNTED, 3-PHASE 480V DELTA PRIMARY AND 120/208V WYE SECONDARY TRANSFORMER FOR THE PROJECT SPACE. E.C SHALL COORDINATE \mathcal{L} with architect/ owner for location of New Transformer in Filed. ELECTRICAL CONTRACTOR TO COORDINATE EXACT POWER REQUIREMENT WITH WALK 18 IN BOX MANUFACTURER AND MAKE POWER PROVISION ACCORDINGLY.
- E.C. TO FIELD VERIFY LOCATION OF COMPRESSOR UNIT AND PROVIDE POWER 9 CONNECTION WITH NECESSARY ELECTRICAL FIXTURES/ DISCONNECTS AS PER MANUFACTURER REQUIREMENTS.
- ELECTRICAL CONTRACTOR TO COORDINATE EXACT POWER REQUIREMENT WITH ICE 10) MACHINE AND BIN MANUFACTURER AND MAKE POWER PROVISION ACCORDINGLY.
- ELECTRICAL CONTRACTOR TO COORDINATE EXACT POWER REQUIREMENT & LOCATION OF EXTERNAL SIGN BOARD WITH ARCHITECT AND MAKE POWER PROVISION ACCORDINGLY.

ISSUE	DESCRIPTION	DATE
01	HVAC CHANGES	10/17/2022

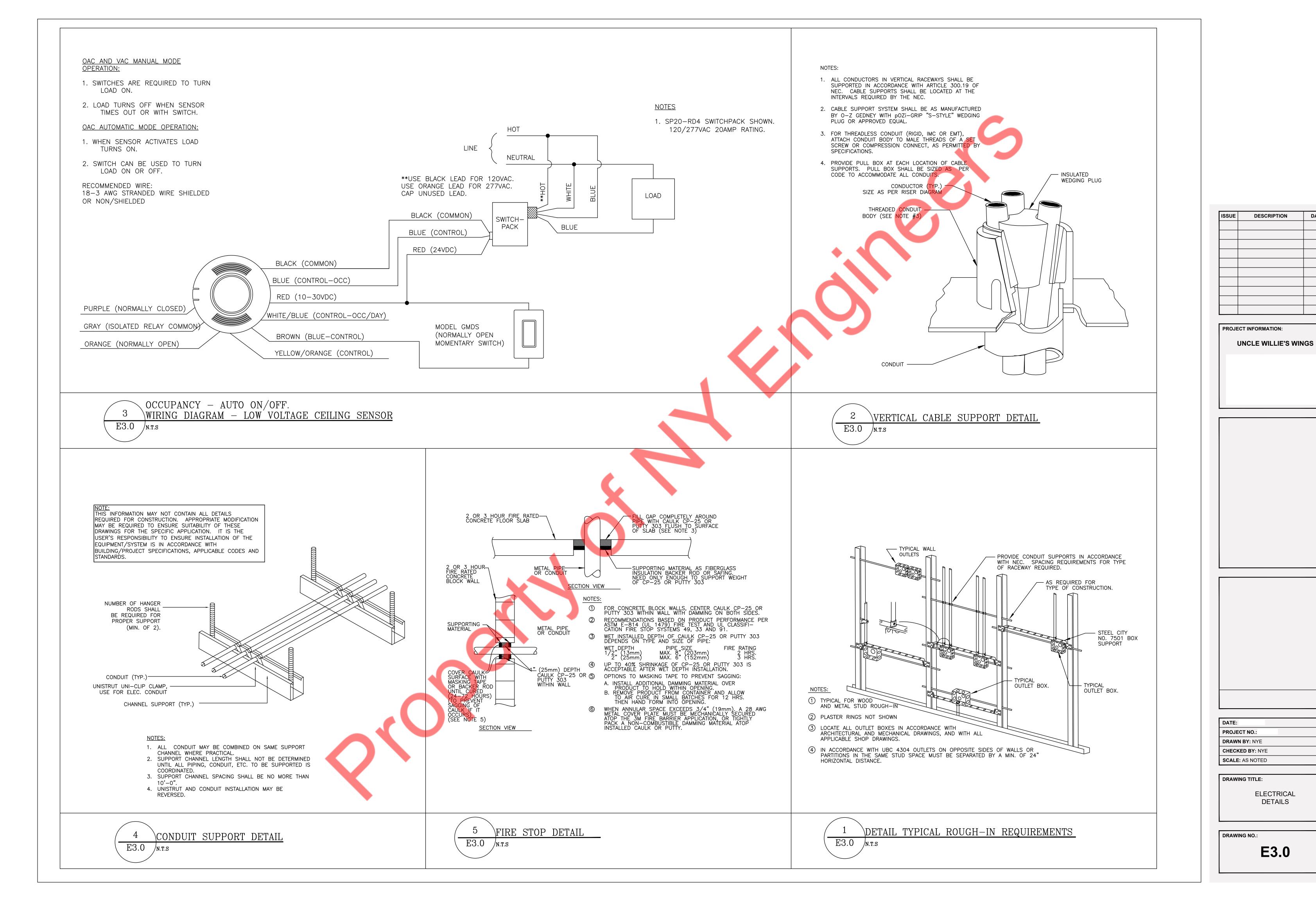
PROJECT INFORMATION: **UNCLE WILLIE'S WINGS**

DATE: PROJECT NO.: DRAWN BY: NYE CHECKED BY: NYE **SCALE**: AS NOTED

DRAWING TITLE:

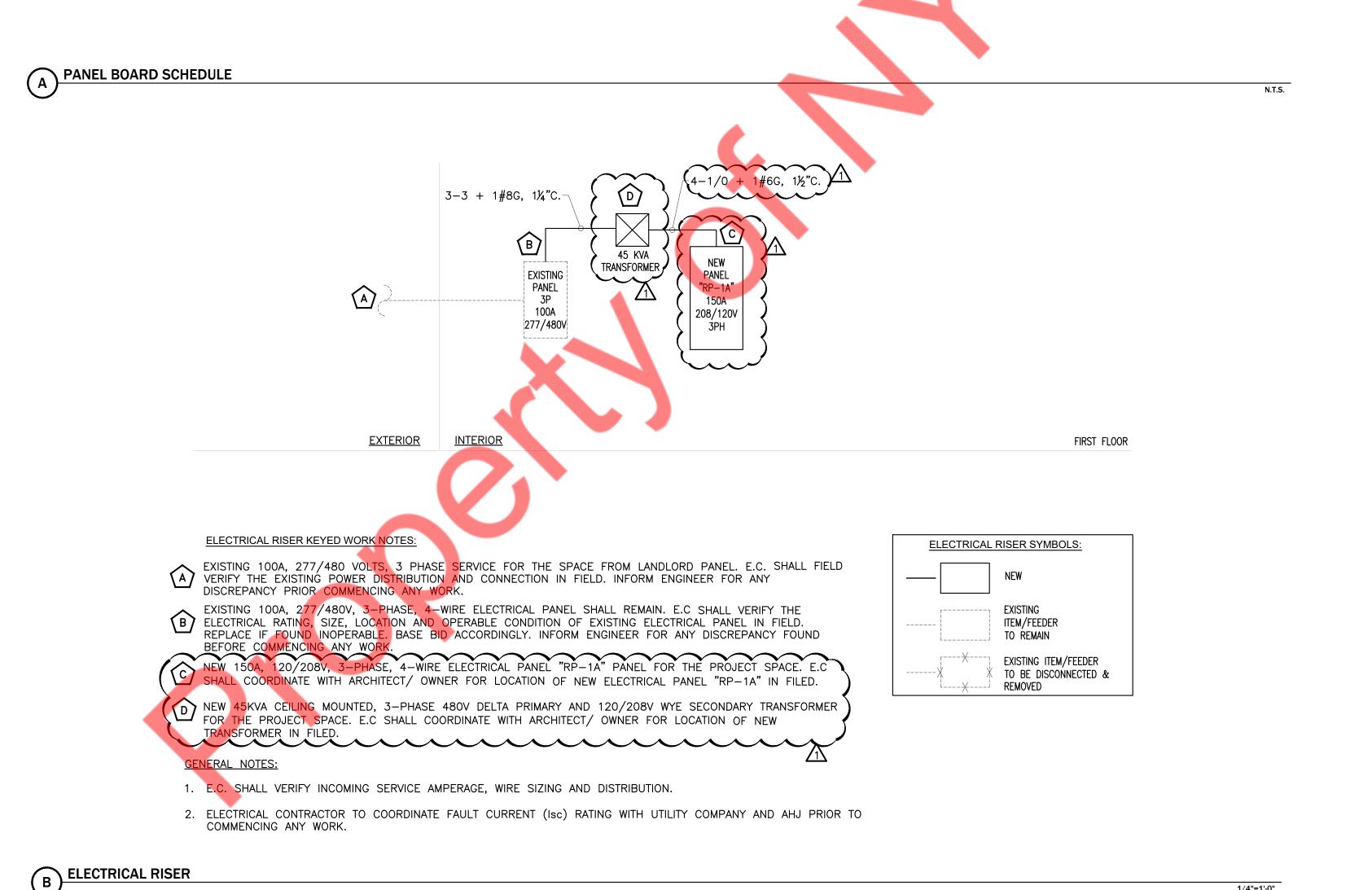
ELECTRICAL POWER & ROOF PLAN

DRAWING NO.:



DATE

ANEL:	RP-1A													MOUNTING: SURFACE		
8Y/120	VOLTS,		3	PHASE,			4	WIRE						PANEL LOCATION: FOOD PREP		
AIN CB:	150 A		MLO:			BUS:	225 A	MIN,						FED FROM: TRANSFORMER		
TE:																
CKT NO.	TRIP AMPS	DES	CRIPTION	OF LOAD	LOAD TYPE	LOAD (KVA)	MINIMUM BRANCH CIRCUIT	A P	ER PHASE (K\	/A) C	MINIMUM BRANCH CIRCUIT	LOAD (KVA)	LOAD TYPE	DESCRIPTION OF LOAD	TRIP AMPS	скт по
1	20	KITCHEN AREA LIG	SHTING		E	0.50	2#12, #12G, 3/4"C	1.64			2#12, #12G, 3/4"C	1.14	R	1 GAS FLOOR FRYER,2 GAS FLOOR FRYER, 4 GAS GRIDDLE,6 GAS CONVECTION OVEN	20	2
3	20	DINING AREA, RES	STROOM LI	GHTING & TEF-1	E	0.50	2#12, #12G, 3/4"C		0.55		2#12, #12G, 3/4"C	0.05	М	AC-6	2P-15	4
5	20	JB FOR SIGN BOA	RD		E	0.20	2#12, #12G, 3/4"C			0.25		0.05	M			6
7	20	SIGNAGE			L	1.00	2#12, #12G, 3/4"C	1.36			2#12, #12G, 3/4"C	0.36	R	POS RECEPTACLE	20	8
9	20	8 REACH-IN FREE	ZER, SINGLE	DOOR	E	0.73	2#12, #12G, 3/4"C		1.27		2#12, #12G, 3/4"C	0.54	E	PREP TABEL RECEPTACLE	20	10
11	20	8.1 REACH-IN FRE	EZER, DOU	BLE DOOR	E	0.98	2#12, #12G, 3/4"C			2.71	2#12, #12G, 3/4"C	1.73	E	7 WALK IN BOX	20	12
13	20	9 ICE MAKER WIT	H BIN		E	0.82	2#12, #12G, 3/4"C	1.82			2#10, #10G, 3/4"C	1.00	E	WALK IN COOLER COMPRESSOR	2P-30	14
15	20	JB FOR HOOD LIG	HTING, JB I	FOR HOOD	L	0.40	2#12, #12G, 3/4"C 2#12, #12G, 3/4"C		1.40		2#10, #100, 3/4 C	1.00	E	WALK IN COOLER CONTRESSOR	2P-30	16
17	20	RCP-1			М	0.20	2#12, #12G, 3/4"C			0.92	2#12, #12G, 3/4"C	0.72	R	FOH RECEPTACLE	20	18
19	20	17 FRYER FILTER,	MOBILE	_	Е	0.30	2#12, #12G, 3/4"C	0.80			2#12, #12G, 3/4"C	0.50	L	3.1 HEAT LAMP	20	20
21	20	5 REFRIGERATED	BASE EQUI	PMENT STAND	E	0.26	2#12, #12G, 3/4"C		1.26		2#12, #12G, 3/4"C	1.00	0	HAND DRYER	20	22
23	20	16 SANDWICH/ SA	ALAD PREP.	REFRIGERATOR	E	0.27	2#12, #12G, 3/4"C			0.45	2#12, #12G, 3/4"C	0.18	R	RESTROOM RECEPTACLE	20	24
25	20	19 DISPLAY CASE,	COUNTER	ГОР	E	0.80	2#12, #12G, 3/4"C	1.34			2#12, #12G, 3/4"C	0.54	R	43" DIGITAL MENU BOARD	20	26
27	2P-15	AC-7	VVV		Н	0.03	2#12, #12G, 3/4"C		0.13		2#12, #12G, 3/4"C	0.10	Н	WH-1	20	28
29	\\ \rangle \ra	AC-7			Н	0.03	2#12, #120, 3/4 C			0.08	2#12, #12G, 3/4"C	0.05	M	AC-4	2P-15	30
31	2P-40	ACCU-1			Н	3.02	2#8, #10G, 3/4"C	3.07			2#12, #120, 3/4 C	0.05	M	AC-4	2P-15	32
33	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	ACCU-1			Н	3.02	2#8, #10G, 3/4 C		4.44			1.43	Н			34
35	20.50	ACCIL 2			Н	3.74	2#8, #10G, 3/4"C			5.17	3#12, #12G, 3/4"C	1.43	Н	MUA-1	3P-20	36
37	2P-50	ACCU-2			Н	3.74	2#8, #10G, 3/4 C	5.17				1.43	Н			38
39	\ <u>\</u>				М	2.00	3		2.54		2#12, #12G, 3/4"C	0.54	R	ROOF RECEPTACLE	20	40
41	3P-30A	KEF-1			М	2.00	3#10, #10G, 3/4"C 🕻			2.72	2#12, #12G, 3/4"C	0.72	R	KITCHEN RECEPTACLE	20	42
43	7(М	2.00	│	2.10			2#12, #12G, 3/4"C	0.10	0	FIRE ALARM CONTROL PANEL	20	44
45	20.15	AC-1			М	0.05	2#12, #12G, 3/4"C		0.10		2#12, #12G, 3/4"C	0.05	M	AC 2	2P-15	46
47	2P-15	AC-1			М	0.05	2#12, #120, 3/4 C			0.10	(2#12, #120, 3/4 C	0.05	М	AC-2	72-12	48
49	20.15	AC-3			М	0.05	2#12 #120 2/4"0	0.10			2#12 #120 2/4"0	0.05	М	ACE	2P-15	50
51	2P-15	AC-3			М	0.05	2#12, #12G, 3/4"C		0.10		2#12, #12G, 3/4"C	0.05	M	AC-5	2P-15	52
53	20	20 REFRIGERATED	MERCHAN	NDISER	E	0.24	2#12, #12G, 3/4"C			0.24				SPARE	1 20	54
						TOTAL	CONNECTED LOAD (KVA)	15.20	11.60	12.30			4			



ISSUE	DESCRIPTION	DATE
01	HVAC CHANGES	10/17/2022
	111710 017111020	10/11/2022
PROJE	ECT INFORMATION:	
ļ	UNCLE WILLIE'S W	/INGS

DATE:
PROJECT NO.:
DRAWN BY: NYE
CHECKED BY: NYE
SCALE: AS NOTED

DRAWING TIT	- 1
DIXAWING III	•

ELECTRICAL PANEL SCHEDULE AND RISER DIAGRAM

DRAWING NO.:

PLUMBING LEGENDS BUI

PLUM	BING LEGENDS
	EXISTING DOMESTIC COLD WATER PIPING
	DOMESTIC COLD WATER PIPING
	DOMESTIC HOT WATER PIPING
	HOT WATER RECIRCULATION PIPING
	VENT PIPING
	EXISTING SANITARY PIPING
	WASTE (SANITARY SEWER)
	UNDERGROUND WASTE (SANITARY SEWER
	EXISTING GAS PIPING
	GAS PIPING
$-\!$	GATE VALVE
	BALANCING VALVE
	PIPE UP
 5	PIPE DOWN
	FLOOR DRAIN
•	FLOOR CLEAN OUT
	FLOOR SINK
GC	GENERAL CONTRACTOR
СО	FLOOR CLEAN OUT
FD	FLOOR DRAIN
CW	COLD WATER
HW	HOT WATER
•	

PLUMBING ABBREVIATIONS

NOT ALL SYMBOLS AND ABBREVIATIONS IN THIS

LEGEND WILL APPEAR IN DRAWING.

TIE INTO EXISTING

CLEANOUT
CLEAN OUT DECK PLATE
COLD WATER
HOT WATER
HOT WATER RETURN
SANITARY
VENT
WASTE
LAVATORY
WATER CLOSET
TYPICAL
DOWN
ABOVE FINISH FLOOR
FLOOR DRAIN
SQUARE FEET
BACK FLOW PREVENTER
KITCHEN SINK
HOT WATER HEATER
SINK
STORM
FLOOR SINK
FLOOR DRAIN

BUILDING DEPARTMENT PLUMBING NOTES

- 1. ALL PLUMBING SYSTEMS (SANITARY, WASTE, VENT & WATER DISTRIBUTION PIPING SYSTEMS) AND ASSOCIATED EQUIPMENT SHALL BE INSTALLED, OPERATED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF 2018 NATIONAL STANDARD PLUMBING CODE NEW JERSEY EDITION (NSPC).
- 2. INSTALLATION OF UNDERGROUND PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTION 2.6.6.
- 3. PROTECTION OF PIPING AND PLUMBING SYSTEM AS PER CHAPTER 2 SECTION 2.9.
- . TRENCHING, EXCAVATION AND BACKFILL AS PER CHAPTER 2 SECTION 2.6.
- 5. MATERIAL USED IN PLUMBING SYSTEM SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 3.
- 6. EQUIPMENT CONNECTIONS AND JOINING OF PIPING SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 4.
- 7. DEEP SEAL TRAPS FOR FLOOR DRAINS AND CLEAN—OUTS SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 5.
- 8. DRAINAGE PIPE CLEANOUTS AS PER SECTION 5.4.

CHAPTER 11

- 9. VERTICAL AND HORIZONTAL PIPING SHALL BE SUPPORTED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 8.
- 10. WATER SUPPLY SYSTEM SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE REQUIREMENTS OF CHAPTER 10.
- 11. THE SANITARY DRAINAGE SYSTEM SHALL BE SIZED AND INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF
- 12. VENT PIPING FOR THE SANITARY DRAINAGE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH REQUIREMENTS OF CHAPTER
- 13. INSPECTION AND TESTING OF PLUMBING AND GAS PIPING SYSTEM SHALL BE IN ACCORDANCE WITH CHAPTER 15 OF 2018 NSPC AND SECTION 406 OF 2018 IFGC.

PLUMBING DRAWING LIST

- PO.1 PLUMBING NOTES AND SPECIFICATIONS(1 OF 2)
- PO.2 PLUMBING NOTES AND SPECIFICATIONS(2 OF 2)
- P1.0 PLUMBING SANITARY FLOOR PLAN
- P1.1 PLUMBING DOMESTIC WATER FLOOR PLAN
- P1.2 PLUMBING GAS PLAN
- P5.0 PLUMBING DETAILS
- P6.0 PLUMBING RISER DIAGRAMS

GAS SPECIAL INSPECTION AND TESTING

- 1. ALL GAS PIPING INSPECTIONS AND TESTING SHOULD BE AS PER IFGC 2018 SECTION 107.
- 2. UNDERGROUND INSPECTION SHALL BE MADE AFTER TRENCHES OR DITCHES ARE EXCAVATED AND BEDDED, PIPING IS INSTALLED AND BEFORE BACKFILL IS PUT IN PLACE. WHEN EXCAVATED SOIL CONTAINS ROCKS, BROKEN CONCRETE, FROZEN CHUNKS AND OTHER RUBBLE THAT WOULD DAMAGE OR BREAK THE PIPING OR CAUSE CORROSIVE ACTION, CLEAN BACKFILL SHALL BE ON THE JOB SITE.
- 3. ALL GAS PIPING INSPECTIONS DONE ARE TO FOLLOW BUILDING IFGC 2018 SECTION 406.
- 4. INSTALLATIONS SHALL BE TESTED AS REQUIRED IN THIS CODE AND IN ACCORDANCE WITH SECTIONS 107.3.1 OF INTERNATIONAL FUEL GAS CODE THROUGH TESTS SHALL BE MADE BY THE PERMIT HOLDER AND WITNESSED BY THE DEPARTMENT OR AN APPROVED AGENCY.

PLUMBING SPECIFICATIONS

- 1. BASIC PLUMBING REQUIREMENTS, MATERIALS AND METHODS
 1.01 SCOPE
- A. PROVIDE ALL MATERIAL, TOOLS, SUPERVISION AND LABOR INCLUDING ALL MISCELLANEOUS AND INCIDENTAL ITEMS REQUIRED FOR COMPLETE AND OPERABLE PLUMBING INSTALLATIONS AS SHOWN OR DESCRIBED ON THE DRAWINGS AND IN THESE SPECIFICATIONS.
- B. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL NEW CONDITIONS AND MATERIALS WITHIN THE CONSTRUCTION AREA. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED TO THE OWNER'S SATISFACTION.
- C. OBTAIN ALL PERMITS, PAY ALL PERMIT FEES AND SCHEDULE ALL REQUIRED INSPECTIONS. COPIES OF ALL PERMITS AND INSPECTION CERTIFICATES SHALL BE FORWARDED TO THE OWNER
- D. THE GENERAL CONDITIONS OF THE CONTRACT AND ALL DIVISION 1
 REQUIREMENTS APPLY TO THE WORK OF THIS SECTION.
- E. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING BID TO DETERMINE CONDITIONS AND THE EXTENT OF THE WORK. BY COMMENCING WORK, THE CONTRACTOR ACKNOWLEDGES HIS CONFIRMATION OF ALL CONDITIONS AS ACCEPTABLE WITH REFERENCE TO HIS CONTRACT, SCOPE OF WORK AND BID PRICE SUCH THAT NO ADDITIONAL COMPENSATION SHALL BE FORTHCOMING FOR UNFORESEEN EXISTING CONDITIONS.
- F. IN ALL AREAS SUBJECT TO FREEZING CONDITIONS, THE CONTRACTOR SHALL PROVIDE FREEZE PROTECTION FOR ALL DOMESTIC WATER PIPING INSTALLED UNDER HIS CONTRACT.
- G. ALL ELECTRICAL REQUIREMENTS SHALL BE COORDINATED WITH THE CONTRACTOR FOR ELECTRICAL WORK. THIS CONTRACTOR IS RESPONSIBLE FOR ALL LOW VOLTAGE WIRING FOR EQUIPMENT INSTALLED UNDER HIS CONTRACT. THE CONTRACTOR FOR ELECTRICAL WORK IS RESPONSIBLE FOR LINE VOLTAGE POWER WIRING ONLY.
- H. COLOR AND FINISH SELECTIONS FOR ALL MATERIALS, INCLUDING PAINTING OF PIPING, SHALL BE AS DIRECTED AND/OR APPROVED BY THE ARCHITECT.
- I. MINOR DETAILS NOT SHOWN OR SPECIFIED, BUT NECESSARY FOR THE PROPER AND ACCEPTABLE CONSTRUCTION, INSTALLATION OR OPERATION OF ANY PART OF THE WORK AS DETERMINED BY THE ENGINEER SHALL BE INCLUDED AS IF SPECIFIED OR INDICATED ON THE DRAWINGS.
- J. THIS CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIREMENTS FOR THE INSTALLATION, CONNECTION, EXTENSION OR MODIFICATION TO ALL UTILITY SERVICES WITH RESPECTIVE PROVIDERS INCLUDING PAYMENT OF ALL ASSOCIATED FEES.
- K. THE CONTRACTOR IS RESPONSIBLE FOR ALL PAINTING ASSOCIATED WITH CUTTING AND PATCHING. ALL PAINTING IN AREAS WITH COMPLETE FINISH RENOVATIONS SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

1.02 SUBMITTALS

- A. SUBMITTAL REQUIREMENTS SHALL BE COORDINATED WITH THE ARCHITECT AND AUTHORITIES HAVING JURISDICTION. UNLESS OTHERWISE DIRECTED, CONTRACTOR SHALL PROVIDE SUBMITTALS AS LISTED BELOW.
- 1. PIPE AND FITTINGS
- VALVES
 HANGERS AND SUPPORTS
- 4. PLUMBING PIPING LAYOUT5. TESTS
- 6. PLUMBING FIXTURES
- 7. WATER HEATERS & ACCESSORIES
 8. FLOOR DRAINS
- 9. MIXING VALVES10. ALL SCHEDULED PLUMBING EQUIPMENT
- B. SUBMITTALS FROM SUPPLIERS OR MANUFACTURERS WHICH DO NOT BEAR THE STAMP OF THE SUBMITTING CONTRACTOR INDICATING THAT THE CONTRACTOR HAS REVIEWED THE SUBMITTAL FOR CONFORMANCE WITH THE PROJECT REQUIREMENTS WILL BE RETURNED REJECTED.
- C. THE ENGINEER'S REVIEW OF SUBMITTALS IS A COURTESY WHICH DOES NOT RELIEVE THE CONTRACTOR FROM CONFORMING WITH THE CONSTRUCTION DOCUMENTS, REGARDLESS OF THE ACTION INDICATED BY THE SHOP DRAWINGS STAMP.
- D. REVIEW OF SHOP DRAWINGS BY THE ENGINEER SHALL BE LIMITED TO THE INITIAL REVIEW, AND A SECOND REVIEW OF ANY REQUIRED RESUBMITTED DATA. IF THE ENGINEER IS REQUIRED TO REVIEW SHOP DRAWINGS FOR A THIRD (OR MORE) SUBMISSION OF THE SAME ITEM, THE CONTRACTOR SHALL BE LIABLE FOR COMPENSATING THE ENGINEER FOR THESE SUBSEQUENT REVIEWS AS PER THE ENGINEER'S CURRENT HOURLY RATE SCHEDULE.
- SUBMIT PROOF OF APPROVAL AND/OR CONFIRMATION OF SATISFACTORY TEST RESULTS TO THE OWNER AND THE ARCHITECT.
- SUBMIT TO THE OWNER'S MAINTENANCE PERSONNEL OPERATION AND MAINTENANCE DATA FOR ALL SYSTEM COMPONENTS, SERVICING REQUIREMENTS, INSPECTION DATA, REPLACEMENT PART NUMBERS AND AVAILABILITY AND CONTACT INFORMATION FOR SERVICE/SUPPLY COMPANY.
- FOR ALL BELOW GRADE PIPING WHERE ACTUAL INSTALLATION DEVIATES FROM CONSTRUCTION DRAWINGS, THE CONTRACTOR SHALL PROVIDE AS—BUILT DRAWINGS INDICATING BELOW GRADE PIPE LOCATIONS DIMENSIONED TO NEAREST COLUMN LINES.
- H. RECORD AS—BUILT DRAWINGS SHALL BE SUPPLIED TO THE OWNER/TENANT AFTER COMPLETION OF THE WORK SHOWING ANY ALTERATIONS, ADDITIONS AND/OR DELETIONS TO THE SYSTEM(S) INSTALLED.

1.03 SUBSTITUTIONS

- A. ALL EQUIPMENT SHALL BE PRODUCTS OF THE SPECIFIED MANUFACTURER OR MANUFACTURERS. ALL BIDS SHALL BE BASED ON THE SPECIFIED MANUFACTURER OR MANUFACTURER'S EQUIPMENT. FOR SUBSTITUTIONS OF OTHER MANUFACTURER'S EQUIPMENT TO BE CONSIDERED, THE SUBSTITUTION MUST BE INDICATED PRIOR TO BIDDING WITH THE REASON FOR THE PROPOSED SUBSTITUTION IDENTIFIED, AND THE PROPOSED CREDIT TO THE OWNER INDICATED. THE ENGINEER SHALL DETERMINE THE ACCEPTABILITY OF ANY PROPOSED SUBSTITUTIONS.
- B. THE CONTRACTOR ASSUMES ALL RESPONSIBILITY FOR COORDINATING THE WORK OF OTHER TRADES WHICH MAY BE AFFECTED BY SUBSTITUTIONS, INCLUDING ALL RELATED COSTS.

1.04 DEFINITIONS

A. FURNISH: TO PURCHASE, PROCURE, ACQUIRE AND DELIVER, COMPLETE WITH RELATED ACCESSORIES.

- B. INSTALL: TO ERECT, MOUNT AND CONNECT, COMPLETE WITH RELATED
- ACCESSORIES.
- C. PROVIDE: TO FURNISH AND INSTALL.
- D. PLUMBING CONTRACTOR, THE CONTRACTOR, THIS CONTRACTOR: THE CONTRACTOR FOR PLUMBING WORK WHICH IS SPECIFIED HEREIN AND SHOWN ON THESE DRAWINGS.
- E. REFER TO THE NATIONAL STANDARD PLUMBING CODE FOR ADDITIONAL DEFINITIONS.

1.05 DRAWINGS

- A. THE DRAWINGS ARE DIAGRAMMATIC AND ARE INTENDED TO ILLUSTRATE THE GENERAL ARRANGEMENT AND ROUTING OF PIPING AND GENERAL LOCATIONS OF EQUIPMENT. PRECISE LOCATIONS OF EQUIPMENT, RISERS AND STACKS, AND ROUTING AND ELEVATION OF ALL PIPING SYSTEMS SHALL BE COORDINATED IN THE FIELD WITH THE ARCHITECT, ARCHITECTURAL DRAWINGS, THE WORK OF OTHER TRADES, EXISTING AND NEW BUILDING CONDITIONS AND/OR THE PREFERENCES OF THE OWNER/TENANT AS CONSTRUCTION PROCEEDS. ALL PIPING SHALL BE INSTALLED CONCEALED IN FINISHED SPACES, UNLESS NOTED OTHERWISE.
- B. PROVIDE ALL NECESSARY INCIDENTAL MATERIALS AND ACCESSORIES REQUIRED TO MAKE THE WORK COMPLETE IN ALL RESPECTS, EVEN IF NOT PARTICULARLY SHOWN OR SPECIFIED.
- C. REFER TO PLUMBING EQUIPMENT/FIXTURE SCHEDULE ON THE DRAWINGS FOR ALL FIXTURE AND EQUIPMENT SPECIFICATIONS.
- D. REFER TO FIXTURE CONNECTION SIZE SCHEDULE FOR ALL FIXTURE ROUGHING SIZE REQUIREMENTS.
- E. VERIFY ALL INDICATED CONDITIONS BEFORE STARTING WORK AND REPORT ANY DISCREPANCIES. THE DRAWINGS REFLECT CONDITIONS WHICH CAN BE REASONABLY INTERPRETED FROM THE EXISTING VISIBLE CONDITIONS OR FROM DRAWINGS AND INFORMATION FURNISHED BY THE OWNER.
- F. LOCATE ALL FIXTURES AND EQUIPMENT AS PER THE FINAL ARCHITECTURAL DRAWINGS.

06 PRODUCTS

- A. SANITARY AND VENT PIPING:
 - 1. ABOVE GRADE PIPING SHALL BE HUBLESS CAST IRON PIPE WITH STAINLESS STEEL COUPLINGS AND ELASTOMERIC GASKETS WITH A MINIMUM NO. OF BANDS PER COUPLING AS PER CISPI 310-12.
- 2. SLOPE OF DRAINAGE SYSTEM SHALL BE 1/8" PER FOOT OF RUN FOR PIPE OVER 3" (I.D.) AND 1/4" PER FOOT OF RUN FOR PIPE 3" AND SMALLER (I.D.). VENT PIPING SHALL BE PITCHED TO DRAIN.
- 3. ALL CAST IRON SOIL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE (CISPI) AND BE LISTED BY NSF INTERNATIONA
- B. DOMESTIC WATER PIPING:
- 1. ABOVE GRADE WATER PIPING SHALL BE TYPE 'L' HARD-DRAWN COPPER TUBE.
- 2. FITTINGS IN DOMESTIC WATER PIPING SHALL BE WROUGHT COPPER OR CAST BRASS.
- 3. JOINTS SHALL BE MADE WITH LEAD-FREE SOLDER.
- 4. THE ENTIRE DOMESTIC WATER DISTRIBUTION SYSTEM SHALL BE INSULATED INCLUDING ALL VALVES, FITTINGS, ETC.
- 5. COMPLY WITH NSF 61 FOR MATERIALS FOR WATER-SERVICE PIPING AND SPECIALTIES FOR DOMESTIC WATER.
- 6. ALL DOMESTIC WATER PIPING ABOVE GRADE SHALL BE INSULATED WITH FIRE—RETARDANT, FACTORY—APPLIED JACKET. PROVIDE COLD WATER PIPING WITH FACTORY—APPLIED VAPOR BARRIER. INSULATION REQUIREMENT SHOULD COMPLY WITH ASHRAE 90.1 2016 SECTION ENERGY CONSERVATION CODE 7.4.3 REFER BELOW TABLE.

	MINIMUM PIPE INSULATION THICKNESS													
FLUID OPERATING		CONDUCTIVITY			AL PIPE ZE (IN)							
TEMPERATURE RANGE AND USAGE (°F)	CONDUCTIVITY BTU· IN./ (H· FT2· °F)	MEAN RATING TEMPERATURE, °F		1 to < 1½	1½ to < 4	4 to < 8	<8							
141-200	0.25-0.29	125	1.5	1.5	2	2	2							
105-140	0.21-0.28	100	1.0	1.0	1.5	1.5	1.5							
40-60	0.21-0.27	75	0.5	0.5	1.0	1.0	1.0							

- 7. AS PER ASHRAE 90.1 2016 SECTION 7.4.4.1 TEMPERATURE CONTROLS SHALL BE PROVIDED THAT ALLOW FOR STORAGE TEMPERATURE ADJUSTMENT FROM 120° OR LOWER TO A MAXIMUM E. TEMPERATURE COMPATIBLE WITH INTENDED USE.
- 8. AS PER ASHRAE 90.1 2016 SECTION 7.4.4.2, SYSTEM DESIGNED TO MAINTAIN USAGE TEMPERATURE IN HOT WATER PIPES, SUCH AS RE-CIRCULATING HOT WATER SYSTEMS OR HEAT TRACE, SHALL BE EQUIPPED WITH AUTOMATIC TIME SWITCHES OR OTHER CONTROLS THAT CAN BE USED TO SWITCH THE USAGE TEMPERATURE MAINTENANCE SYSTEM DURING EXTENDED PERIOD WHEN HOT WATER IS NOT REQUIRED.
- 9. AS PER ASHRAE 90.1 2016 SECTION 7.4.4.3, TEMPERATURE CONTROLLING MEANS SHALL BE PROVIDED TO LIMIT THE MAXIMUM TEMPERATURE OF WATER DELIVERED FROM LAVATORY FAUCETS IN PUBLIC FACILITY RESTROOMS TO 110°F.
- 10. AS PER ASHRAE 90.1 2016 SECTION 7.4.4.4, WHEN USED TO MAINTAIN STORAGE TANK WATER TEMPERATURE, RECIRCULATING PUMPS SHALL BE EQUIPPED WITH CONTROLS LIMITING OPERATION TO A PERIOD FROM THE START OF THE HEATING CYCLE TO A MAXIMUM OF FIVE MINUTES AFTER THE END OF THE HEATING CYCLE.
- 11. SEAL ALL JOINTS BETWEEN SEGMENTS OF INSULATION.
- 12. PROVIDE SHIELDS BETWEEN HANGERS AND INSULATION.

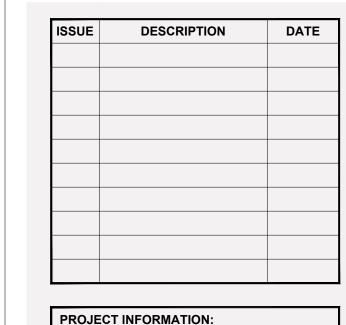
- A. HANGERS AND SUPPORTS:
- HANGERS SHALL BE STANDARD STEEL, MALLEABLE OR WROUGHT IRON, AS MANUFACTURED BY GRINNELL OR APPROVED EQUAL, SUITABLE FOR THE TYPE OF CONSTRUCTION. PIPING SHALL NOT BE HUNG FROM OTHER PIPE.
- 2. SECTIONS OF INDIVIDUAL PIPE RUNS SHALL BE SUPPORTED BY CLEVIS HANGERS.
- 3. ALL EQUIPMENT SHALL BE PROVIDED WITH APPROVED SUPPORTS.
- 4. PROVIDE SEISMIC RESTRAINTS IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND STANDARDS AND THE REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
- 5. UNLESS OTHERWISE INDICATED OR REQUIRED BY AUTHORITIES HAVING JURISDICTION, THE FOLLOWING SHALL BE PROVIDED WITH SEISMIC RESTRAINTS AS REQUIRED BY THE BOCA NATIONAL BUILDING CODE, SECTION 1610.6.4: ALL EQUIPMENT AND MACHINERY, ALL NEW PIPING 2-1/2" AND LARGER (1-1/4" AND LARGER INBOILER/MECHANICAL ROOMS) WITH HANGERS GREATER THAN 12" IN LENGTH FROM THE TOP OF PIPE TO THE STRUCTURE.
- 6. SUPPORTS SHALL BE PROVIDED IN STRICT ACCORDANCE WITH
 THE RECOMMENDATIONS OF THE PIPING MANUFACTURER.

HEATING CABLES SHALL BE SELF—REGULATING, CAPABLE OF MAINTAINING MINIMUM TEMPERATURE OF 40°F.

- C. CABLE MUST BE OF PARALLEL CONSTRUCTION SO THAT IT CAN BE CUT TO LENGTH WITHOUT CHANGING ITS POWER OUTPUT PER UNIT LENGTH.
- 3. THE HEATER CABLE ASSEMBLY SHALL HAVE A MONOLITHIC HEATING CORE CONSTRUCTION CONSISTING OF TWO PARALLEL 16 AWG NICKELPLATED COPPER BUS CONDUCTORS WITH A SEMICONDUCTIVE PTC POLYMER EXTRUDED OVER AND BETWEEN THESE PARALLEL CONDUCTORS. A POLYETHYLENE DIELECTRIC INSULATING JACKET IS EXTRUDED OVER THE HEATING ELEMENT CORE.
- 4. THE SEMICONDUCTIVE HEATING MATRIX AND PRIMARY INSULATING JACKET SHALL BE CROSS—LINKED BY IRRADIATION.
- 5. THE BASIC CABLE WILL BE COVERED BY MEANS OF A METALLIC BRAID OF TINNED COPPER. THE BRAID WILL PROVIDE A NOMINAL COVERAGE OF EIGHTY PERCENT (80%) AND WILL EXHIBIT A RESISTANCE NOT EXCEEDING 0.0.0045 OHM/FT.
- 6. THE CABLE SHALL BE COVERED WITH A CORROSION RESISTANT OVERJACKET OF THERMOPLASTIC ELASTOMER (FOR POSSIBLE EXPOSURE TO AQUEOUS SOLUTIONS, MILD ACIDS OR BASES) OR FLUOROPOLYMER (FOR POSSILBE EXPOSURE TO ORGANIC CHEMICALS OR CORROSIVES).
- 7. LONG TERM STABILITY SHALL BE ESTABLISHED BY THE SERVICE LIFE PERFORMANCE TEST PER IEEE 515 STD-2004.

VALVES:

- PROVIDE GATE VALVES, BUTTERFLY OR BALL VALVES FOR SHUT—OFF DUTY ON MAIN AND BRANCH SUPPLY LINES. FOR ALL PIPE RUNS 2" AND SMALLER, PROVIDE BALL FOR ALL PIPE RUNS LARGER THAN 2" AND SMALLER THAN 4", PROVIDE GATE VALVES. PIPING 4" AND LARGER, PROVIDE BUTTERFLY VALVES FOR SHUT—OFF DUTY.
- 2. ALL FIXTURES WITH THE EXCEPTION O FLUSHOMETER-EQUIPPED WATER CLOSETS AND URINALS SHALL HAVE STOP VALVES TO CONTROL SUPPLY TO THE FIXTURE. WHERE SUPPLIES ARE EXPOSED PROVIDE CHROME-PLATED STOPS WITH CHROME-PLATED ESCUTCHEONS ON PIPING PENETRATIONS.
- 3. ALL PLUMBING FIXTURES AND EQUIPMENT TO HAVE SHUT-OFF VALVES ON SUPPLY LINES.
- 4. ALL BRANCH LINES TO HAVE SHUT-OFF VALVES.
- 5. ALL VALVES SHALL BE ACCESSIBLE. PROVIDE ACCESS DOORS WHERE REQUIRED FOR VALVE ACCESS.
- 6. PROVIDE GLOBE VALVES FOR THROTTLING/BALANCING OF THE HOT WATER CIRCULATING SYSTEM.
- SLEEVES AND ESCUTCHEONS:
- 1. SLEEVES THROUGH STRUCTURAL CONCRETE MEMBERS AND SLEEVES FOR WALLS BELOW GRADE AND FLOORS ON GRADE SHALL BE STANDARD WEIGHT GALVANIZED SCHEDULE 40 STEEL PIPE. SLEEVES THROUGH OTHER THAN STRUCTURAL COMPONENTS OF THE BUILDING SHALL BE 20 GAGE GALVANIZED SHEET METAL WITH LOCK SEAM JOINTS. USG THERMAFIBER SAFING INSULATION SHALL BE INSTALLED BETWEEN PIPE AND SLEEVE.
- 2. PIPE ESCUTCHEON PLATES SHALL BE INSTALLED WHERE EXPOSED PIPING PASSES THROUGH WALLS, CEILINGS, AND FLOORS AND SHALL BE MINIMUM 20 GAGE STEEL. PROVIDE CHROME PLATED ESCUTCHEON PLATES IN FINISHED AREAS.
- F. DRAINAGE ACCESSORIES
- a. INSTALL THE WORK OF THIS SECTION IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, UNLESS OTHERWISE SPECIFIED.
- b. SECURE EXTERNAL COMPONENTS IN PLACE WITH VANDAL RESISTANT FASTENERS OR DEVICES WHICH CANNOT BE REMOVED WITHOUT SPECIAL TOOLS.
- G. INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.
- H. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'-0" IN LENGTH.



UNCLE WILLIE'S WINGS



DATE:
PROJECT NO.:
DRAWN BY: NYE
CHECKED BY: NYE

DRAWING TITLE:

SCALE: AS NOTED

PLUMBING NOTES AND SPECIFICATIONS (1 OF 2)

DRAWING NO.:

P0.

- I. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.
- J. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE—PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.
- K. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.
- L. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT
- M. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.

CONNECTION TO MAIN.

- N. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.
- O. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY
- P. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.

THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.

- Q. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.
- R. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.
- S. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.
- T. INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.
- U. PROVIDE WATER HAMMER ARRESTERS ON SUPPLY PIPING TO ALL FLUSHOMETER VALVES AND QUICK-CLOSING VALVES.
- 2. INSTALLATION
 V. MAINTAIN ALL REQUIRED AND RECOMMENDED CLEARANCES FOR
 2.01 GENERAL
 2.01 GENERAL
- A. ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.
- B. EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.
- C. EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.
- WORK AND THE CONSTRUCTION SCHEDULE.

D. COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED

- E. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS END PIPE.
- F. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.
- G. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.
- H. COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED. PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WORK OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.
- I. NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED SPACES.
- J. PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZE CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.
- K. THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.
- L. WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE CONNECTIONS BY PROVIDING CAPPED AND VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

2.02 ABOVE GRADE

- a. INSTALL PLUMBING PIPING IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.
- b. ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN. IN DOMESTIC WATER SYSTEMS, PROVIDE DRAIN VALVES AT MAIN SHUT—OFF VALVES AND ALL LOW POINTS IN PIPING.
- C. USE EXISTING CONNECTIONS AT MAINS WHERE AVAILABLE FOR NEW BRANCH PIPING. LOCATE ALL RISERS AND PIPING BEFORE CONSTRUCTION COMMENCES AND TAKE CARE NOT TO DAMAGE SAME ANY DAMAGE OCCURRING TO THE EXISTING PIPING WILL

2.03 INSULATION

COVER ALL HOT WATER AND HOT WATER RECIRCULATION PIPE WITH 1" THICK FOR PIPE SIZE UP TO 1½" AND 1½" THICK FOR PIPE SIZE 1½" AND GREATER WITH MANVILLE MICRO-LOK AP-T PLUS FIBERGLASS INSULATION. COVER ALL COLD WATER PIPE WITH ½" THICK FOR PIPE SIZE UP TO 1¼" AND 1" THICK FOR PIPE SIZE 1½" AND GREATER WITH 1" MANVILLE MICRO-LOK AP-T PLUS FIBERGLASS INSULATION. FITTINGS AND VALVES SHALL BE INSULATED WITH MANVILLE ZESTON 2000 PVC INSULAT-ED FITTING COVERS. INSTALL ALL INSULATION AS PER MANUFACTURERS RECOMMENDATIONS. ALL INSULATION MATERIAL SHALL COMPLY WITH THE 2018 INTERNATIONAL BUILDING CODE REQUIREMENT OF A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DEVELOPED RATING NOT TO EXCEED 50. ALL PIPE INSULATION SHALL COMPLY WITH ASHRAE 90.1 2016 STANDARD.

. DRAINAGE ACCESSORIES

- 1. GENERAL:
- a. INSTALL THE WORK OF THIS SECTION IN ACCORDANCE WITH THE MANUFACTURER'S PRINTED INSTALLATION INSTRUCTIONS, UNLESS OTHERWISE SPECIFIED.
- b. SECURE EXTERNAL COMPONENTS IN PLACE WITH VANDAL RESISTANT FASTENERS OR DEVICES WHICH CANNOT BE REMOVED WITHOUT SPECIAL TOOLS.

K. DEVICES

- a. CLEANOUT & CLEANOUT PLUG
- THREADED PIPE FITTING OR CAST IRON FERRULE WITH GAS TIGHT CLEANOUT PLUG
- PLUG SHOULD BE CAST BRASS OR BRONZE, WITH THREADED END, AND RAISED OR COUNTERSUNK HEAD.
- LUBRICATE THREADS OF CLEANOUT PLUG WITH ANTI-SEIZE LUBRICANT BEFORE FINAL INSTALLATION.
- b. CLEANOUT WALL PLATE
- IT SHOULD BE ROUND, STAINLESS STEEL OR POLISHED CHROME PLATED BRONZE COVER PLATE WITH STAINLESS STEEL VANDAL RESISTANT FASTENER TO SECURE TO CLEANOUT PLUG.
 c. CLEANOUT DECK PLATE
- IT SHOULD BE STANDARD DUTY FLOOR CLEANOUT FITTING WITH COATED CAST IRON BODY; ROUND, POLISHED NICKEL BRONZE SCORIATED TOP SECURED TO CLEANOUT PLUG WITH STAINLESS STEEL VANDAL RESISTANT FASTENER; THREADED HEIGHT ADJUSTMENT, CAST IRON HEAD, GAS TIGHT CLEANOUT PLUG, AND CONNECTION TO MATCH PIPING OPTION SELECTED.
- GRILLE FREE AREA SHOULD BE AT LEAST EQUAL TO CROSS—SECTION AREA OF PIPE TO WHICH CONNECTION MADE AND MADE OF POLISHED NICKEL BRONZE, WITH REMOVABLE GRATE, EITHER PERFORATED OR BAR TYPE. GRATE ATTACHED TO GRILLE BODY WITH VANDAL RESISTANT FASTENER.

L. INDIRECT WASTE FLOOR SINK

- a. IT SHOULD BE COMBINATION OF FUNNEL DRAIN AND P TRAP WITH POLISHED CHROME PLATED CAST BRASS CONSTRUCTION WITH 4" TOP DIA., 4" DEEP WITH THREADED OUTLET.
- M. INSTALL PIPING TO CONSERVE BUILDING SPACE. DO NOT INTERFERE WITH USE OF BUILDING SPACE AND THE WORK OF OTHER TRADES. ALL PIPING RUN IN CEILING SHALL BE INSTALLED TIGHT TO THE STRUCTURE ABOVE.
- N. INSTALL PIPING TO ALLOW FOR EXPANSION AND CONTRACTION WITHOUT STRESSING PIPE, JOINTS OR CONNECTED EQUIPMENT. PROVIDE PIPE ANCHORS, GUIDES AND EXPANSION JOINTS OR LOOPS IN ALL HOT WATER AND HOT WATER CIRCULATING MAIN SUPPLY PIPING AND SEGMENTS OF SUCH PIPE THAT EXCEED 30'-0" IN LENGTH.
- O. IN ALL AREAS WITH FINISHED SURFACES, SYSTEM PIPING AND COMPONENTS SHALL BE CONCEALED ABOVE OR WITHIN FINISHED SURFACES.
- P. REDUCTIONS IN PIPE SIZES SHALL BE MADE WITH ONE—PIECE REDUCING FITTINGS. BUSHINGS ARE NOT ACCEPTABLE. USE FLANGED FITTINGS AT THE BASE OF RISERS.
- Q. VENT PENETRATIONS THROUGH THE ROOF SHALL BE FLASHED.
- R. IF WATER PRESSURE EXCEEDS 80 PSI, A WATER PRESSURE REDUCING VALVE SHALL BE INSTALLED IN WATER PIPING AT CONNECTION TO MAIN.
- S. PROVIDE DIELECTRIC FITTINGS BETWEEN DISSIMILAR METALS.
- T. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.
- J. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.
- V. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.
- W. PIPE BACKFLOW PREVENTER DRAINS TO FLOOR DRAIN OR OTHER APPROVED INDIRECT WASTE SOURCE.
- V. PROVIDE ACCESS DOORS/PANELS FOR SERVICE AND ACCESS TO ALL VALVES AND OTHER SYSTEM COMPONENTS ENCLOSED IN WALLS AND CEILINGS. ACCESS DOORS SHALL BE FURNISHED BY THIS CONTRACTOR, INSTALLED BY THE GENERAL CONTRACTOR.
- Y. ALL FIXTURES REQUIRING VACUUM BREAKERS SHALL BE EQUIPPED WITH INTEGRAL VACUUM BREAKERS.
- Z. ANY PENETRATIONS THROUGH FIRE RATED PARTITIONS, FLOORS, OR CEILINGS SHALL BE STEEL SLEEVED AND SEALED WITH 3M BRAND UL RATED FIRE BARRIER CAULK OR APPROVED EQUAL.

- AA. WHEN THE WATER PIPING SYSTEM IS COMPLETE, THOROUGHLY FLUSH ALL DIRT, SEDIMENT, SOLDER, ETC., OUT OF THE SYSTEM, REMOVING ALL STRAINERS, VALVE STEM SEATS, ETC., REQUIRED TO ACCOMPLISH THE FLUSHING.
- AB. AT ALL INDIRECT WASTE DRAINS, MAINTAIN AIR GAP AS REQUIRED BY CODE.
- AC. INSTALL SLEEVES FOR ALL PIPES WHICH PASS THROUGH WALLS, FLOORS, AND CEILINGS. WHERE PIPES ARE TO BE INSULATED, THE SLEEVE SHALL BE LARGE ENOUGH TO ACCOMMODATE INSULATION. SLEEVES SHALL BE FLUSH WITH FINISHED SURFACES AT BOTH ENDS. ON FINISHED SURFACES IN EXPOSED AREAS PROVIDE ESCUTCHEONS COMPATIBLE WITH FINISH.
- AD. PROVIDE WATER HAMMER ARRESTERS ON SUPPLY PIPING TO ALL FLUSHOMETER VALVES AND QUICK—CLOSING VALVES.
- AE. UNLESS OTHERWISE INDICATED, TRAPS SEALS AT ALL FLOOR DRAINS SHALL BE MAINTAINED BY AN APPROVED TRAP PRIMING DEVICE.
- AF. MAINTAIN ALL REQUIRED AND RECOMMENDED CLEARANCES FOR ALL PLUMBING SYSTEM COMPONENTS AND EQUIPMENT.
- AG. MAINTAIN MINIMUM 10'-0" CLEARANCE BETWEEN ALL PLUMBING V.T.R.S AND ALL OUTDOOR AIR INTAKES. OFFSET VENT STACKS AND STACK VENTS IF AND AS REQUIRED BELOW ROOF TO MAINTAIN SUCH CLEARANCE WHETHER OR NOT SUCH OFFSET IS INDICATED ON THE DRAWINGS. PROVIDE ALL REQUIRED SEISMIC SUPPORTS.

2. INSTALLATION

2 O1 GENERAL

- A. ALL WORK WHICH REQUIRES DISRUPTION OF THE ROOFING SHALL BE DONE BY A CONTRACTOR CERTIFIED BY THE ROOFING MANUFACTURER AS REQUIRED TO MAINTAIN ANY EXISTING ROOF WARRANTIES.
- B. EXTERIOR INSTALLATIONS TO BE WEATHER PROOF IN ALL RESPECTS.
- C. EXTERIOR MATERIALS AND EQUIPMENT SHALL BE PAINTED TO PREVENT CORROSION, COLOR PER ARCHITECT.
- D. COORDINATE THE PLUMBING WORK WITH ALL OTHER AFFECTED WORK AND THE CONSTRUCTION SCHEDULE.
- E. REAM PIPE AND TUBE ENDS. REMOVE BURRS. BEVEL PLAIN AND FERROUS END PIPE.
- F. REMOVE SCALE AND FOREIGN MATERIAL, FROM INSIDE AND OUTSIDE, BEFORE ASSEMBLY.
- G. PREPARE PIPING CONNECTIONS TO EQUIPMENT WITH FLANGES AND UNIONS.
- H. COORDINATION WITH THE WORK OF OTHER TRADES IS REQUIRED.
 PROVIDE OFFSETS IN PIPING SYSTEMS OR MINOR DEVIATIONS TO THE INDICATED PIPE ROUTING IN ORDER TO COORDINATE THE PLUMBING WORK WITH THE WOR OF ALL OTHER TRADES AND THE GENERAL BUILDING CONDITIONS.
- I. NO DOMESTIC WATER PIPING SHALL BE INSTALLED IN UNHEATED
- J. PRIOR TO DISCONNECTING AND CONNECTING NEW WORK TO EXISTING SYSTEMS, THE PLUMBING CONTRACTOR SHALL NOTIFY THE PROPERTY MANAGER AND OFFER A PROPOSED SCHEDULE OF WORK. ESB WILL AUTHORIZE CONNECTIONS AND COORDINATE NECESSARY SHUT DOWNS AND DRAIN DOWNS AS REQUIRED. SHUT DOWNS AND DRAIN DOWNS MAY BE PERFORMED BY THE PLUMBING CONTRACTOR ONLY AFTER RECEIVING ESB AUTHORIZATION, AND SHOULD BE PERFORMED UNDER SUPERVISION OF ESB PERSONNEL. THREE (3) DAYS ADVANCE NOTICE TO THE PROPERTY MANAGER IS REQUIRED.
- K. THE PLUMBING CONTRACTOR IS ADVISED THAT DUE TO THE NATURE OF THE OPERATIONS AND TENANT REQUIREMENTS, CONNECTIONS TO EXISTING SYSTEMS MAY HAVE TO BE MADE AFTER REGULAR WORKING HOURS. THE PROPERTY MANAGER WILL ADVISE THE PLUMBING CONTRACTOR OF THE TIME CONSTRAINTS UPON RECEIPT AND APPROVAL OF THE PLUMBING CONTRACTOR'S REQUEST FOR SHUT DOWN AND CONNECTION TO EXISTING SYSTEMS.
- L. WHEN CONNECTING TO EXISTING STACKS AND RISERS, PROVISION IS TO BE MADE FOR FUTURE CONNECTIONS BY PROVIDING CAPPED AND VALVED OUTLETS ON DOMESTIC WATER RISERS AND PLUGGED OUTLETS ON THE SANITARY AND VENT STACKS.

2.02 ABOVE GRADE

- A. INSTALL PLUMBING PIPING IN ACCORDANCE WITH RECOGNIZED INDUSTRY PRACTICES TO ENSURE THAT PIPING COMPLIES WITH REQUIREMENTS AND SERVES INTENDED PURPOSES.
- B. ROUTE PIPING IN AN ORDERLY MANNER, PLUMB AND PARALLEL TO BUILDING STRUCTURE. MAINTAIN GRADIENT. SLOPE PIPING AND ARRANGE SYSTEMS TO DRAIN. IN DOMESTIC WATER SYSTEMS, PROVIDE DRAIN VALVES AT MAIN SHUT—OFF VALVES AND ALL LOW POINTS IN PIPING.
- C. USE EXISTING CONNECTIONS AT MAINS WHERE AVAILABLE FOR NEW BRANCH PIPING, LOCATE ALL RISERS AND PIPING BEFORE CONSTRUCTION COMMENCES AND TAKE CARE NOT TO DAMAGE SAME. ANY DAMAGE OCCURRING TO THE EXISTING PIPING WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

2.03 INSULATION (PIPE AND FITTINGS)

A.PIPING

COVER ALL HOT WATER PIPE WITH 1" THICK FOR PIPE SIZE UP TO 1¼" AND 1½" THICK FOR PIPE SIZE 1½" AND GREATER WITH MANVILLE MICRO-LOK AP-T PLUS FIBERGLASS INSULATION. COVER ALL COLD WATER PIPE WITH ½" THICK FOR PIPE SIZE UP TO 1¼" AND 1" THICK FOR PIPE SIZE 1½" AND GREATER WITH 1" MANVILLE MICRO-LOK AP-T PLUS FIBERGLASS INSULATION. FITTINGS AND VALVES SHALL BE INSULATED. INSTALL ALL INSULATION AS PER MANUFACTURERS RECOMMENDATIONS. ALL INSULATION MATERIAL SHALL COMPLY WITH THE 2018 INTERNATIONAL BUILDING CODE REQUIREMENT OF A FLAME SPREAD RATING NOT TO EXCEED 25 AND A SMOKE DEVELOPED RATING NOT TO EXCEED 50. ALL PIPE INSULATION SHALL COMPLY WITH ASHRAE 90.1 2016 STANDARD.

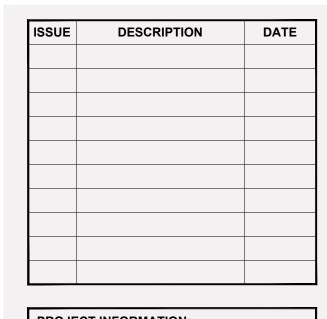
3. TESTING

- A. AT THE COMPLETION OF THE PLUMBING WORK, COMPLETELY TEST THE ENTIRE INSTALLATION OF ALL SYSTEMS FOR PROPER OPERATION AND COMPLIANCE WITH APPLICABLE CODES AND LOCAL REQUIREMENTS. CORRECT ALL DEFICIENCIES FOUND.
- B. TESTING OF THE INSTALLED SYSTEMS SHALL BE MADE BY THE CONTRACTOR IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER.
- C. THE CONTRACTOR SHALL NOT COVER UP OR PERMANENTLY CONCEAL PIPING, DEVICES OR ANY PORTION OF NEWLY CONSTRUCTED PLUMBING SYSTEM(S) UNTIL SUCH SYSTEM, OR PORTION OF THE SYSTEM, HAS BEEN TESTED IN THE PRESENCE OF A REPRESENTATIVE OF THE OWNER AND INSPECTED BY THE LOCAL INSPECTOR AND APPROVED IN WRITING, EXCEPT PIPING PASSING THROUGH FLOORS, WALLS, PARTITIONS, OR BEAMS, FOR DISTANCES EQUAL TO THE THICKNESS OF SUCH FLOOR, WALL, PARTITION OR BEAM.
- D. THIS CONTRACTOR SHALL NOTIFY THE VARIOUS DEPARTMENTS, BUREAUS AND INDIVIDUALS AT LEAST TWO WEEKS IN ADVANCE OF THE TIME THAT
- THE TESTS ARE TO BE CONDUCTED.

 E. ALL DEFECTIVE PARTS SHALL BE REPLACED OR CORRECTED BY THIS CONTRACTOR AND AN EXTRA TEST OR TESTS SHALL BE MADE UNTIL THE OPERATION IS SATISFACTORY. ALL ARRANGEMENTS AND EXPENSES NECESSARY TO CONDUCT ALL TESTS REQUIRED BY THESE SPECIFICATIONS AND THE VARIOUS AGENCIES HAVING JURISDICTION OVER THE WORK INSTALLED UNDER THIS CONTRACT SHALL BE MADE BY THIS CONTRACTOR. NO EXTRA COMPENSATION WILL BE ALLOWED FOR THESE TESTS, THE COST THEREOF BEING INCLUDED IN THE LUMP SUM BID FOR THIS CONTRACT.
- F. WHERE ANY EVIDENCE OF STOPPAGE IS FOUND IN PIPING OR EQUIPMENT, THIS CONTRACTOR SHALL DISCONNECT, CLEAN, REPAIR AND RECONNECT ALL OBSTRUCTED PIPING OR EQUIPMENT AND SHALL ALSO PAY FOR ALL NECESSARY CUTTING AND REPAIRS TO ADJOINING WORK.
- G. ALL PIPING AND EQUIPMENT SHALL BE THOROUGHLY CLEANED INSIDE AND OUT, OF DIRT, CUTTINGS, OILS AND OTHER FOREIGN SUBSTANCES AND SHALL BE LEFT CLEAN.
- H. ALL REQUIRED TESTS SHALL BE WITNESSED BY LOCAL AUTHORITIES AND THE OWNER'S REPRESENTATIVE.
- I. ALL EQUIPMENT WILL BE FACTORY TESTED.
- J. CONTRACTOR SHALL IDENTIFY TO THE OWNER'S REPRESENTATIVE ANY LEAKS OR DAMAGE THAT OCCURS AS A RESULT OF SYSTEM TESTING. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO LIMIT ANY POTENTIAL DAMAGE. CORRECTIVE ACTION REQUIRED AS A RESULT OF TESTING SHALL BE PERFORMED IMMEDIATELY AND AT THE CONTRACTOR'S
- K. REPORT IN WRITING TO AUTHORITIES HAVING JURISDICTION, THE ARCHITECT AND THE OWNER THE RESULTS OF ALL TESTING.
- L. TESTING REQUIREMENTS
- a. TEST ALL DOMESTIC WATER PIPING HYDROSTATICALLY TO 125
- b. HYDROSTATIC TEST PRESSURES SHALL REMAIN CONSTANT WITH NO VARIATION FOR 120 MINUTES.
- c. TESTS SHALL BE WITNESSED BY THE BUILDING ENGINEER.
 d. THE PLUMBING CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGE DUE TO TEST FAILURES AND LEAKAGE IN THE TEST AREA AND ADJACENT TENANT OR ESB SPACES.
- M. REFILL ENTIRE POTABLE HOT AND COLD WATER SUPPLY SYSTEM WITH CHLORINE SOLUTION (HTH OLIN CHEMICAL CORP.) AT A STRENGTH TO MEET STANDARDS OF THE DEPARTMENT OF HEALTH, AND FOR A PERIOD OF RETENTION AS STIPULATED.
- N. THOROUGHLY FLUSH PIPING SYSTEM WITH FRESH WATER IMMEDIATELY PRIOR TO FINAL ACCEPTANCE.
- O. INSPECTION & TESTING SHALL BE AS PER 2018 NATIONAL STANDARD PLUMBING CODE (2018 NSPC).

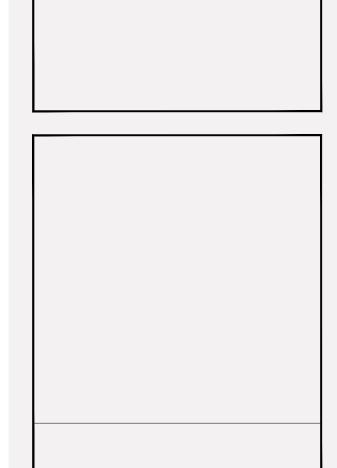
4. WARRANTY

A. EQUIPMENT, MATERIALS AND WORKMANSHIP FURNISHED UNDER THIS CONTRACT SHALL BE GUARANTEED BY THE CONTRACTOR FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF THE WORK BY THE OWNER. THE CONTRACTOR SHALL KEEP THE WORK IN GOOD REPAIR FOR ONE YEAR AFTER THE DATE OF FINAL APPROVAL. THE CONTRACTOR SHALL, AT HIS OWN EXPENSE, PROMPTLY CORRECT AND REPAIR ANY AND ALL BREAKS, FAILURES OR WEAR DUE TO FAULTY MATERIALS, WORKMANSHIP OR EQUIPMENT. ALL SETTLEMENTS OF SURFACES THAT MAY OCCUR WITHIN THAT PERIOD SHALL ALSO BE PROMPTLY REPAIRED.



PROJECT INFORMATION:

UNCLE WILLIE'S WINGS



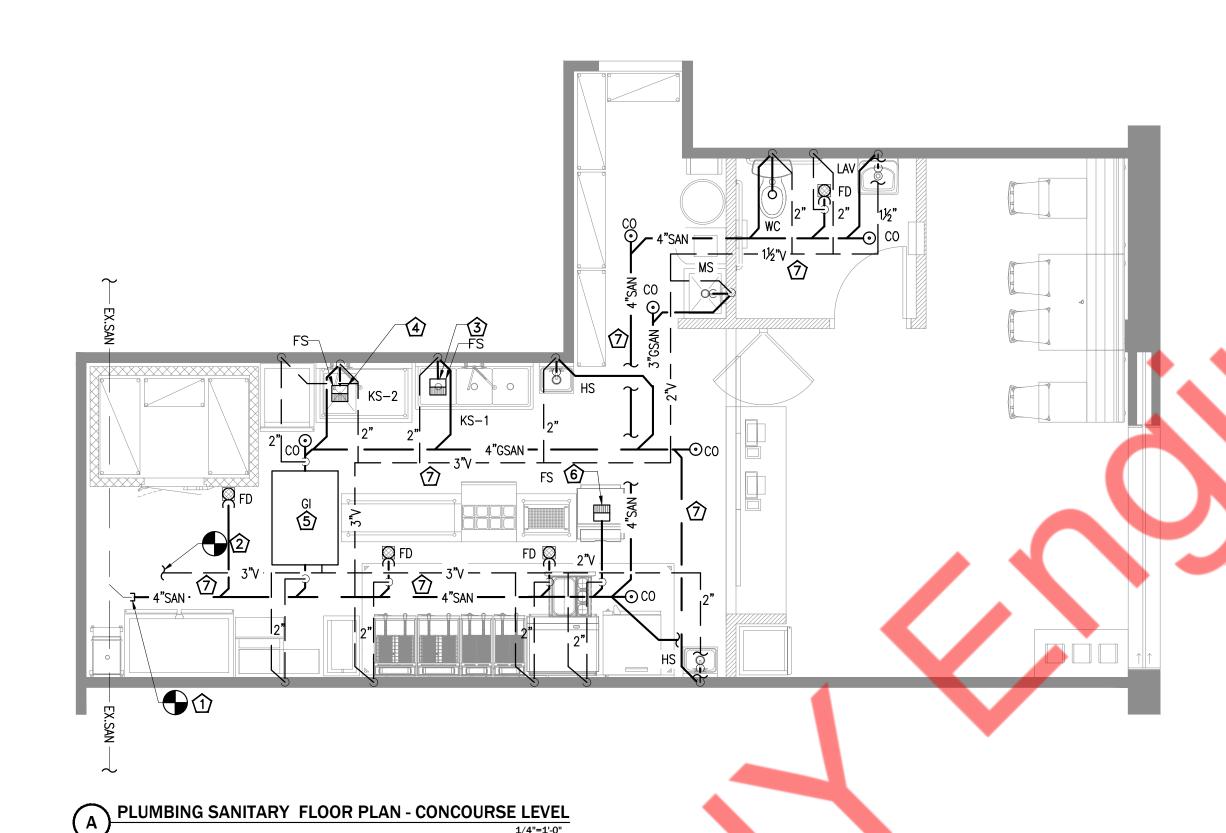
DATE:
PROJECT NO.:
DRAWN BY: NYE
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SCALE: AS NOTED

DRAWING TITLE:

PLUMBING NOTES AND SPECIFICATIONS (2 OF 2)

DRAWING NO.:

P0.2



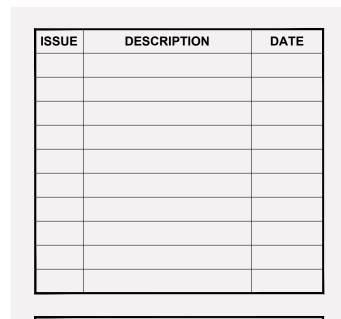
				GREA	SE TRAP SIZING CA	LCULATION				
FIXTURE	OLIANITITY	DIMENSIONS			VOLUME		DEDCENTACE LICACE/0/)	ACTUAL USAGE	FLOW RATE(GPM	
	QUANTITY	LENGTH(IN)	WIDTH(IN)	DEPTH(IN)	CUBIC INCHES	GALLONS	PERCENTAGE USAGE(%)	(GALLONS)	1 MIN.	2 MIN.
3 COMP. SINK	1	18	18	14	13608	58.9	0.75	44.2	44.2	22.1
MOP SINK	1	16	20	6	1920	8.3	0.75	6.2	6.2	3.1
1 COMP SINK	1	16	20	12	3840	16.6	0.75	12.5	12.5	6.2
HAND SINK	2	14	10	5.5	1540	6.7	0.75	5.0	5.0	2.5
								TOTAL:	67.9	33.94
							PROPOSED GF	REASE TRAP:	G	B-75

SCHIER GREASE INTERCEPTOR DO NOT REQUIRE AN EXTERNAL FLOW CONTROL SYSTEM OF AIR INTAKE. IT HAS BUILT IN FLOW CONTROL VALVE.

PLUMBING SANITARY KEYED NOTES:

- CONNECT NEW 4" SANITARY WASTE PIPE TO EXISTING 4" SANITARY STUB-OUT. CONTRACTOR TO VERIFY IN FIELD EXACT SIZE AND LOCATION.
- CONNECT NEW 3" VENT PIPE TO EXISTING SYSTEM. CONTRACTOR TO VERIFY IN FIELD EXACT SIZE AND LOCATION.
- PROVIDE #3, 2" SEPARATE INDIRECT WASTE LINES FROM 3 COMP SINK TO FLOOR SINK WITH APPROVED AIR GAP.
- PROVIDE 1-1/2" INDIRECT WASTE FROM 1 COMP SINK TO FLOOR SINK.
- GREASE INTERCEPTOR—SCHIER GB—75 GREASE TRAP FOR INDOOR INSTALLATION, FLOW RATE—75 GPM. CONTRACTOR TO REFER MANUFACTURER GUIDELINES FOR INSTALLATION. COORDINATE LOCATION OF GREASE INTERCEPTOR WITH OWNER AS PER ACTUAL SITE CONDITIONS.
- 6 ROUTE INDIRECT WASTE FROM ICE MAKER MACHINE TO FLOOR SINK WITH APPROVED AIR GAP.
- ALL EXPOSED SANITARY PIPING SHALL BE PROVIDED WITH INSULATION AND HEAT TRACING.

	1 1				PLUMBING FIXTUR	T. SOFIEDOLE
MARK	FIXTURE		ONN.	l	MANUFAC. & MODEL	DESCRIPTION
WC	WATER CLOSET	4"	3/4"	HW —	AM. STD. 3043.102	VITREOUS CHINA, 16-3/4" HIGH ELONGATED BOWL, 1.6 GPF, SIPHON JET; W/ZURN Z-6000-WS1-YBYC FLUSH TANK MOUNTED 11" ABOVE WATER CLOSET; CHURCH 9500CT OPEN FRONT SEAT, WHITE SOLID PLASTIC.
LAV	LAVATORY	2"	1/2"	1/2"	COMMERCIAL INTERIORS MANUFACTURING MODEL R-2030	WITH AM. STANDARD 6056.205-V10 - INNSBROOK AC VERSION PROXIMITY FAUCET, WITH V10 1.0 GPM VANDAL RESISTANT AERATOR, AND 605XTMV MIXING VALVE, POLISH CHROME FINISH
FD	FLOOR DRAIN	3"	_	-	ZURN Z-1732-33	ALL TYPE 304 STAINLESS STEEL HEAVY DUTY ADJUSTABLE FLOOR DRAIN WITH INTEGRAL ANCHOR FLANGE.
FS	FLOOR SINK	3"	-	-	ZURN Z-1900-2-33 12"X12"X6" A.R.E	3" FLOOR SINK, 12"X12" A.R.E SANI—FLOR RECEPTOR, ANTI SPLASH STRAINER, ACID RESIST. PORCELAIN ENAMEL INTERIOR AND SQ. TOP
WH	WATER HEATER	_	3/4"	3/4"	RINNAI CU199i	GAS TYPE TANKLESS WATER HEATER SIMULTANEOUS GPM CAPACITY — 5.5 GPM @ 90°F RISE. DIMENSION 18.5"L X 11.45"B X 26.4"H, BTU CAPACITY —199 MBTUH
GI	GREASE INTERCEPTOR	4"	_	_	SCHIER GB-75	INDOOR, BELOW GRADE INSTALLATION 75 GPM FLOW RATE, 861 LBS. GREASE CAPACITY. DIM 33"X47"X40"
RCP	RECIRCULATION PUMP	_	_	_	GRUNDFOS UPS 15-18	2 GPM FLOW RATE, 10 FT TOTAL HEAD, 0.115 HP MOTOR
ET	EXPANSION TANK	_	_	_	AMTROL ST-5	2 GALLON TANK VOLUME , DIM. DIA 8" X 13" H SHIPPING WEIGHT 5 LBS



PROJECT INFORMATION:

UNCLE WILLIE'S WINGS

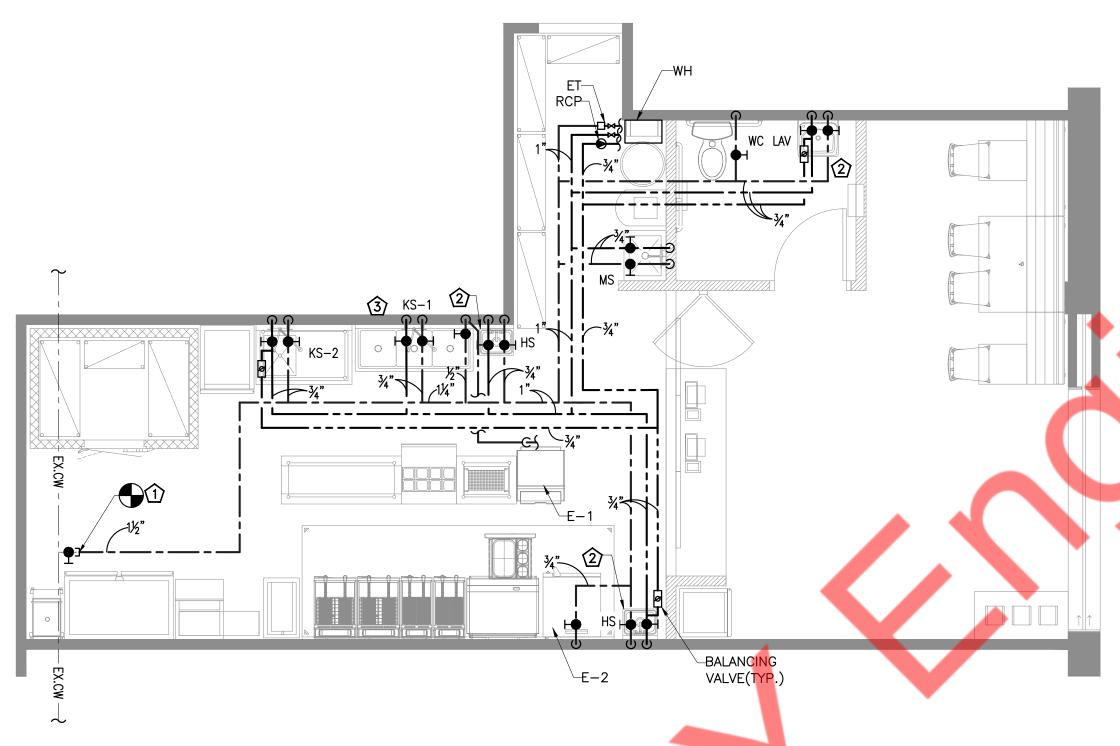
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PLUMBING SANITARY FLOOR PLAN

DRAWING NO.:

P1.0



PLUMBING DOMESTIC WATER KEYED NOTES:

SERVICE.

CONNECT NEW 1-1/2" DOMESTIC WATER PIPE TO EXISTING
2" WATER LINE INTO THE BUILDING. CONTRACTOR TO
VERIFY WATER SUBMETER AND BACKFLOW PREVENTER
REQUIREMENT

PROVIDE TEMPERATURE MIXING VALVE, SET AT 110°F, ON ALL HANDSINKS, LAVATORIES.

WITH LANDLORD PRIOR TO BID. CONTRACTOR TO FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING WATER

CHEMICAL DISPENSING SYSTEM SHALL BE PROVIDED WITH VACUUM BREAKER AND INTEGRAL FAUCET CHECK

PLUMBING DOMESTIC WATER FLOOR PLAN - CONCOURSE LEVEL

	KITCHEN EQUIPMENT SCHEDULE												
QTY.	TAG	DESCRIPTION		WATER		WAS	STE	REMARKS					
				COLD	НОТ	DIRECT	INDIRECT						
1	MS	MOP SINK		3/4"	3/4"	3"	_						
1	KS-1	SINK, 3 COMPARTMENT		3/4"	¾"	1	2"						
2	HS	HAND SINK		1/2"	<i>1</i> /2"	1½"	-						
1	KS-2	SINK, 1 COMPARTMENT		3/4"	3/4"	_	1½"						
1	E-1	ICE MACHINE		1/2"	_	-	1½"						
1	E-2	GAS CONVECTION OVEN		3/4"	_	_	_						

ISSUE	DESCRIPTION	DAT

PROJECT INFORMATION:

UNCLE WILLIE'S WINGS

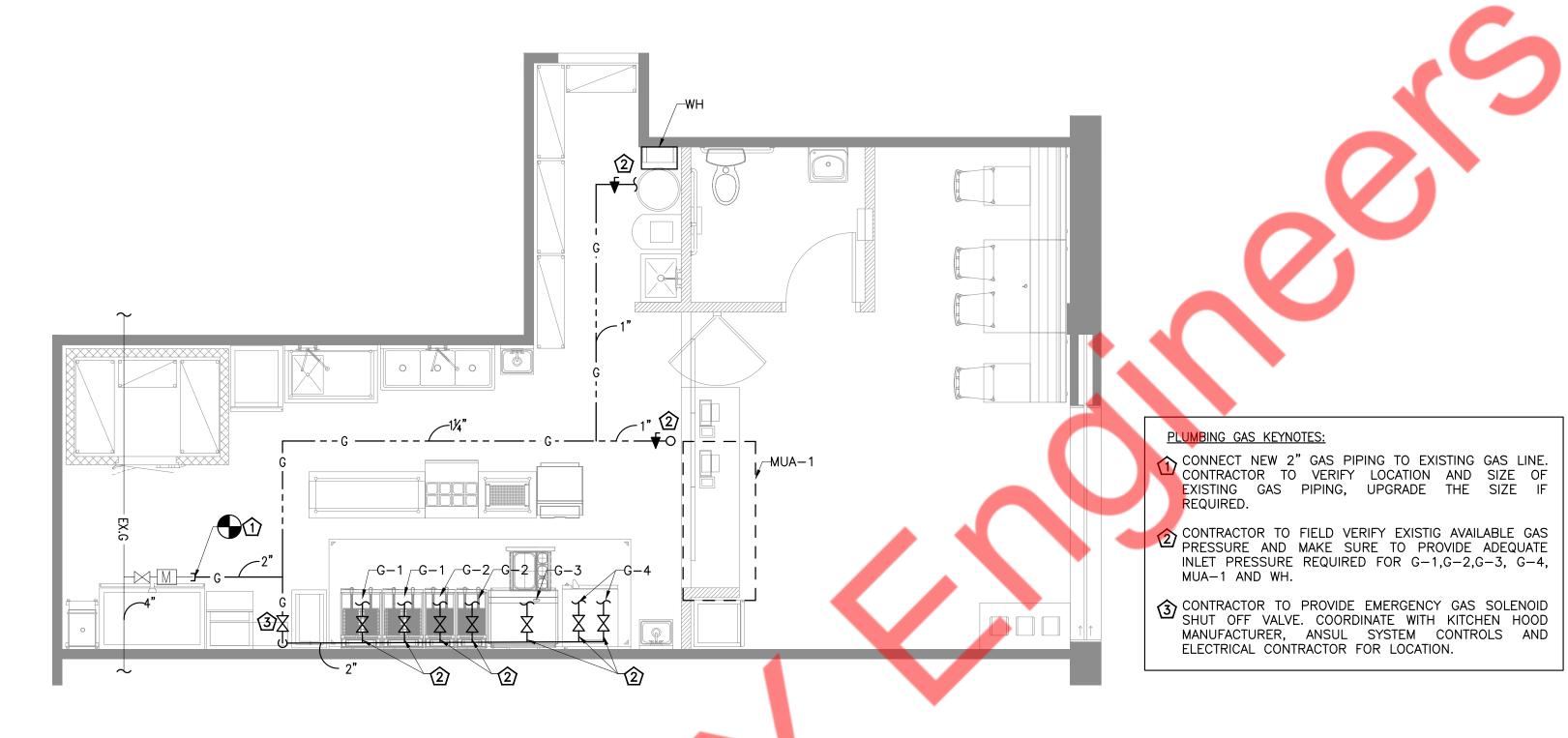
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DRAWN BY: NYE
CHECKED BY: NYE
SCALE: AS NOTED

DRAWING TITLE:

PLUMBING DOMESTIC WATER FLOOR PLAN

DRAWING NO.:

P1.1



MUA-1 AND WH.

PLUMBING GAS PLAN - CONCOURSE LEVEL

GAS PIPE SIZING PER TABLE 402.4(2), INTERNATIONAL FUEL GAS CODE, 2018.

			KITCHEN EQUIPMENT SCHEI	DULF (GAS)		
QTY.	TAG	DESCRIPTION	TOTALIN EQUIT MENT SOTILE	GAS	REMARKS	
\(\frac{\pi}{1}\)	170	DESCRIPTION		UAS	KEMAKKO	
				MBTUH		
2	G-1	GAS FLOOR FRYER		340		
2	G-2	GAS FLOOR FRYER		272		
1	G-3	GAS GRIDDLE		90		
2	G-4	GAS CONVECTION OVEN		66		
1	WH	WATER HEATER		199		
1	MUA-1	MAKE UP AIR UNIT		224		
		TOTAL		1191		

ISSUE	DESCRIPTION	DAT

PROJECT INFORMATION: **UNCLE WILLIE'S WINGS**

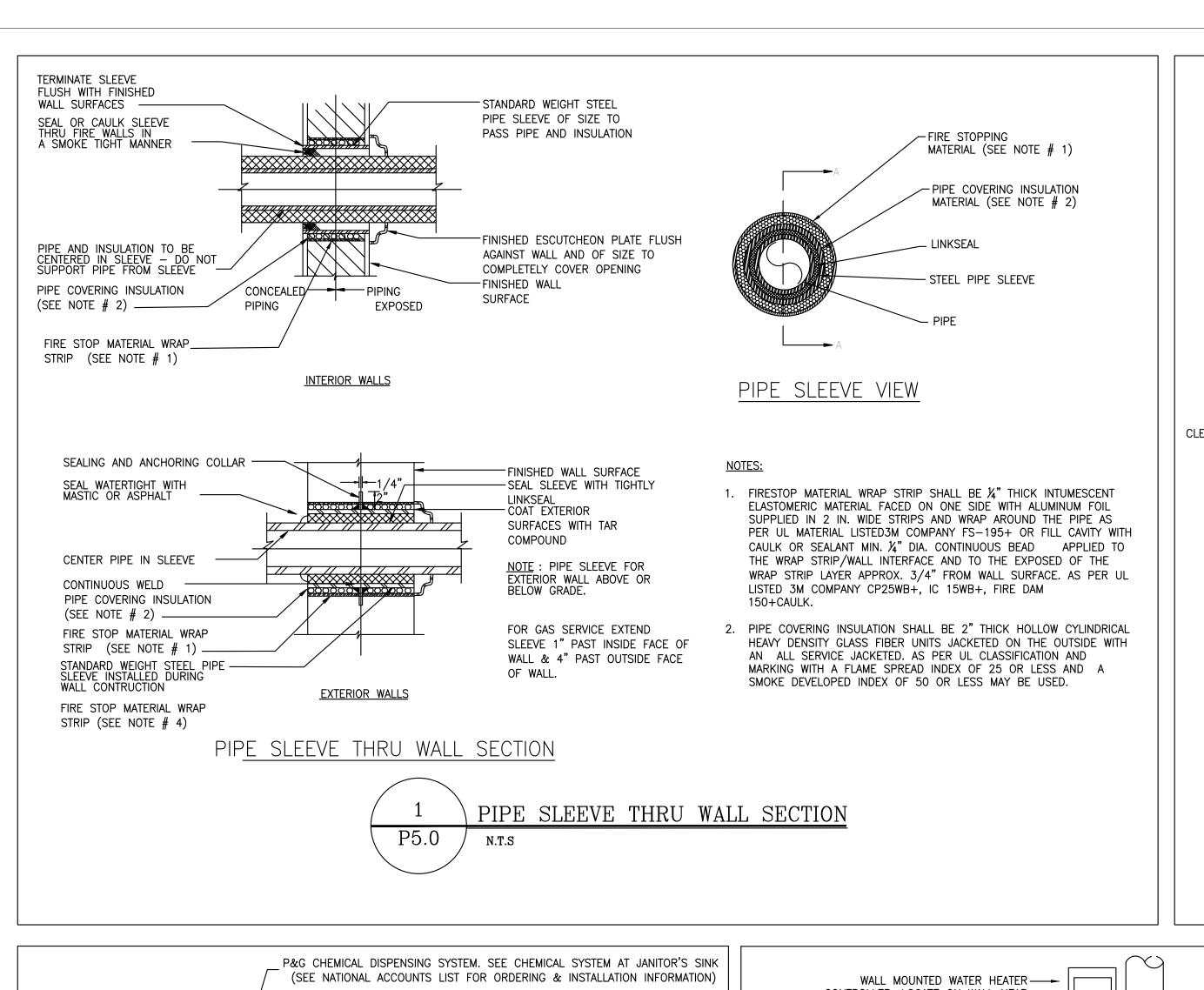
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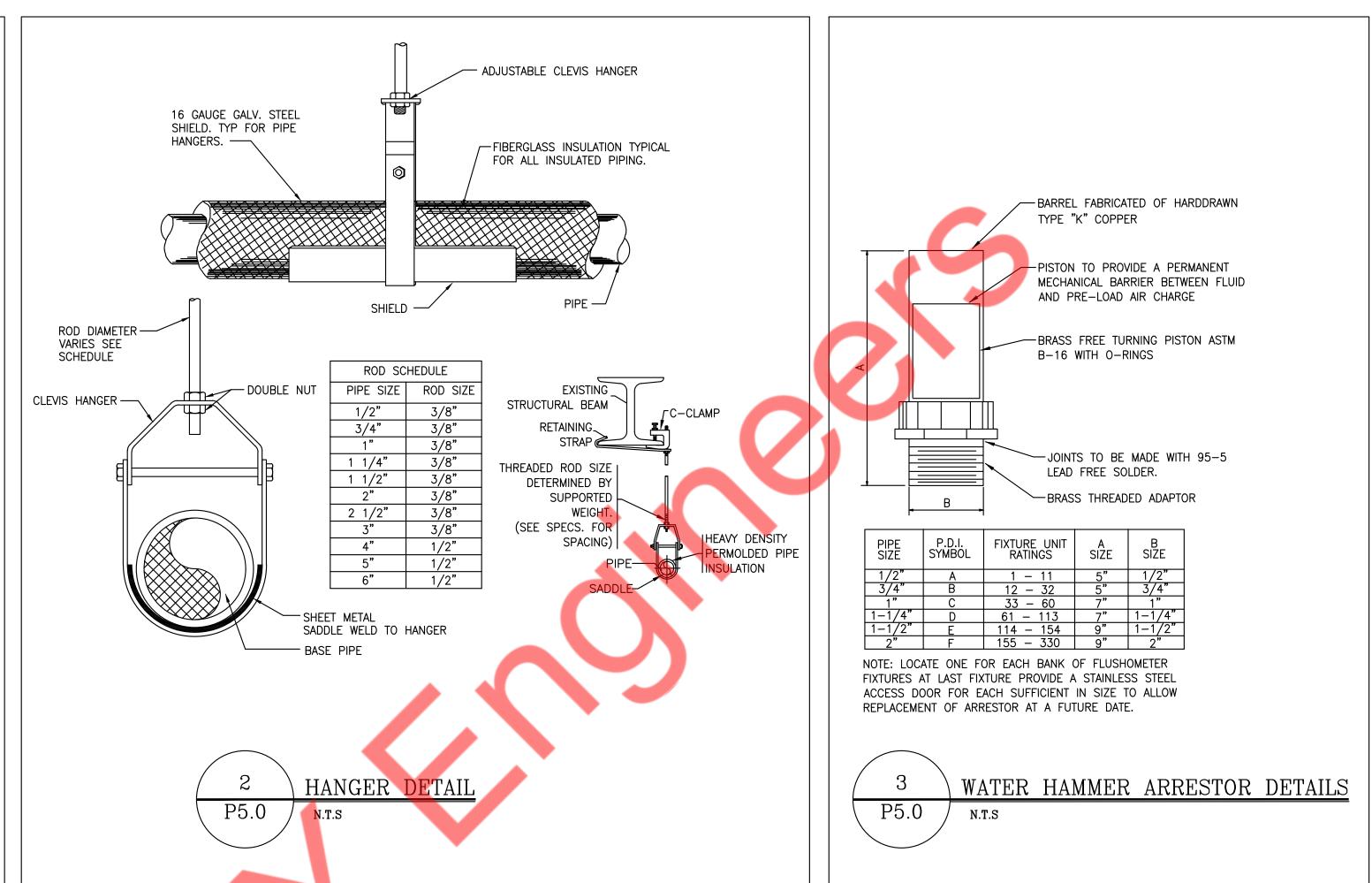
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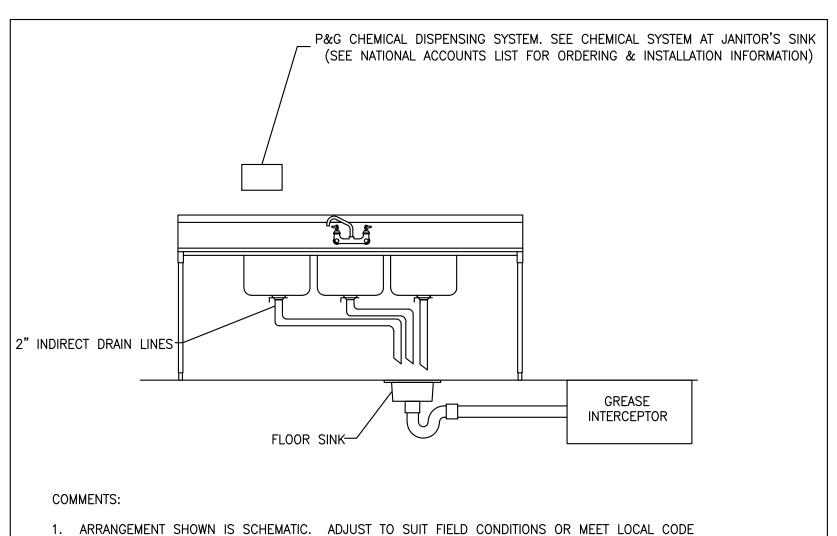
PLUMBING GAS PLAN

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P1.2

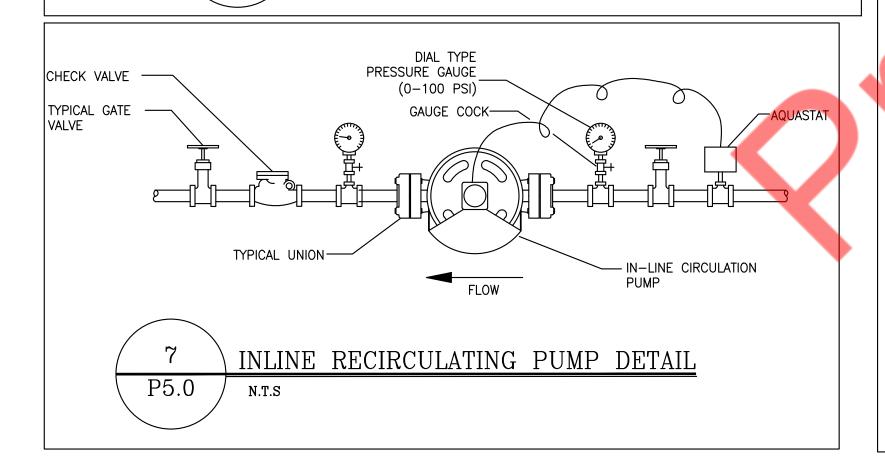


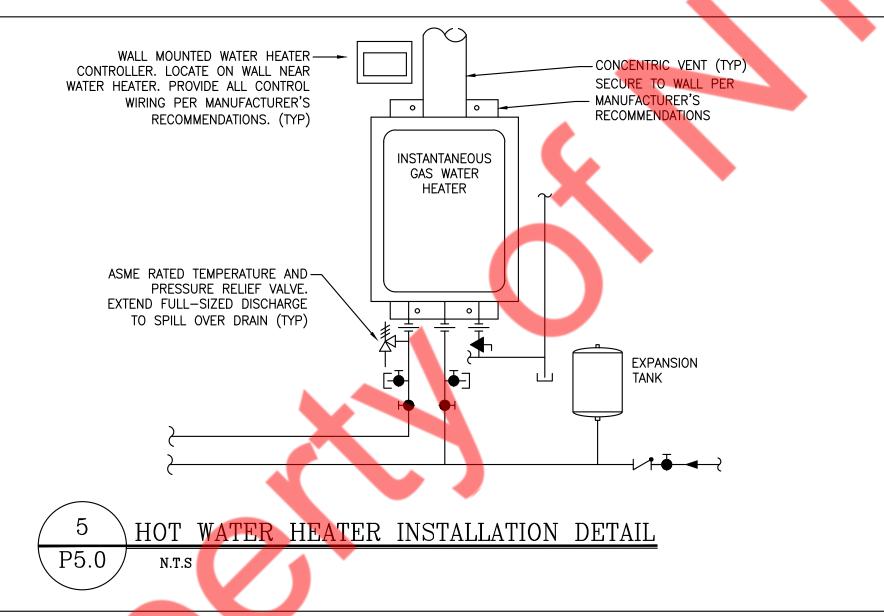


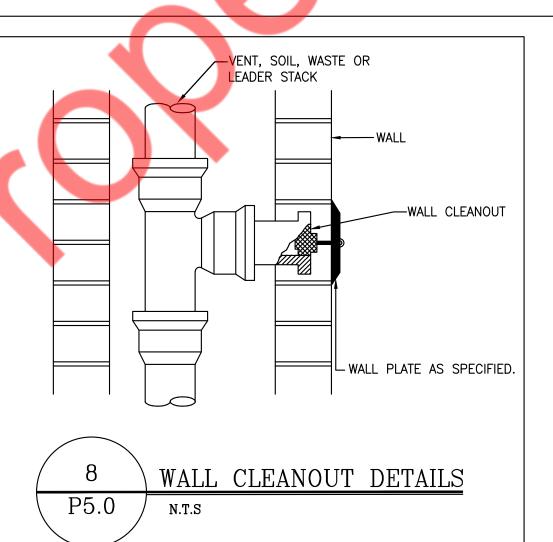


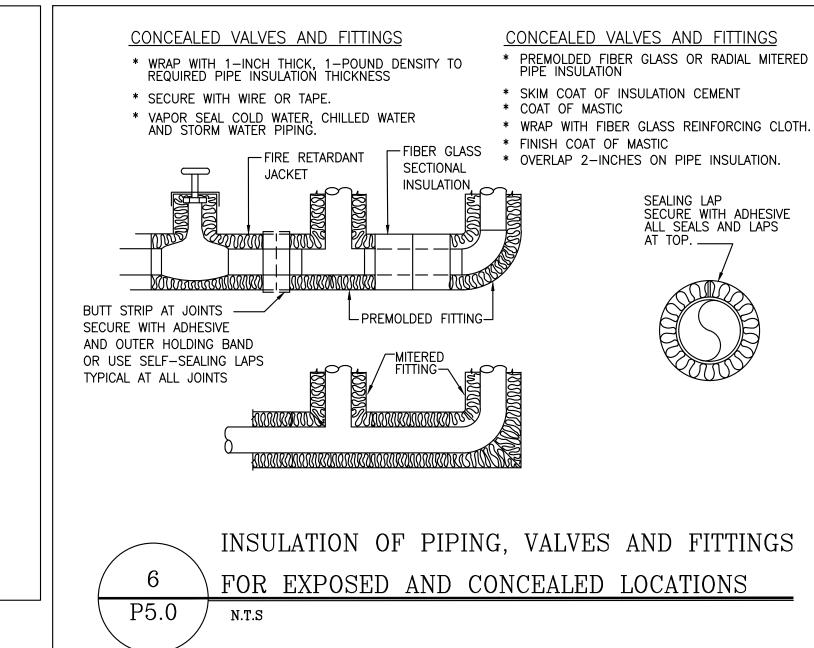
REQUIREMENTS. HUBLESS CAST IRON PIPE, FITTINGS AND CONNECTORS ALL AROUND SINK AND TRAP. CONNECT GREASE TRAP FROM CENTER COMPARTMENT. 3. COORDINATE INDIVIDUAL BAY DRAINAGE, AIR GAP, & DRAIN FUNNEL WITH LOCAL CODE REQUIREMENTS.

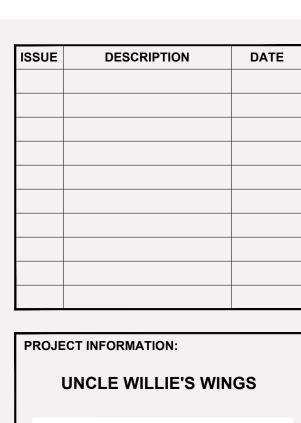
3 COMPARTMENT SINK DETAILS P5.0 N.T.S

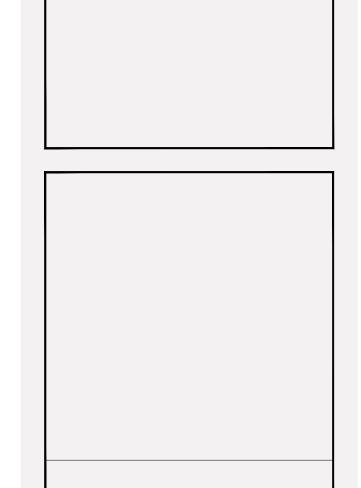












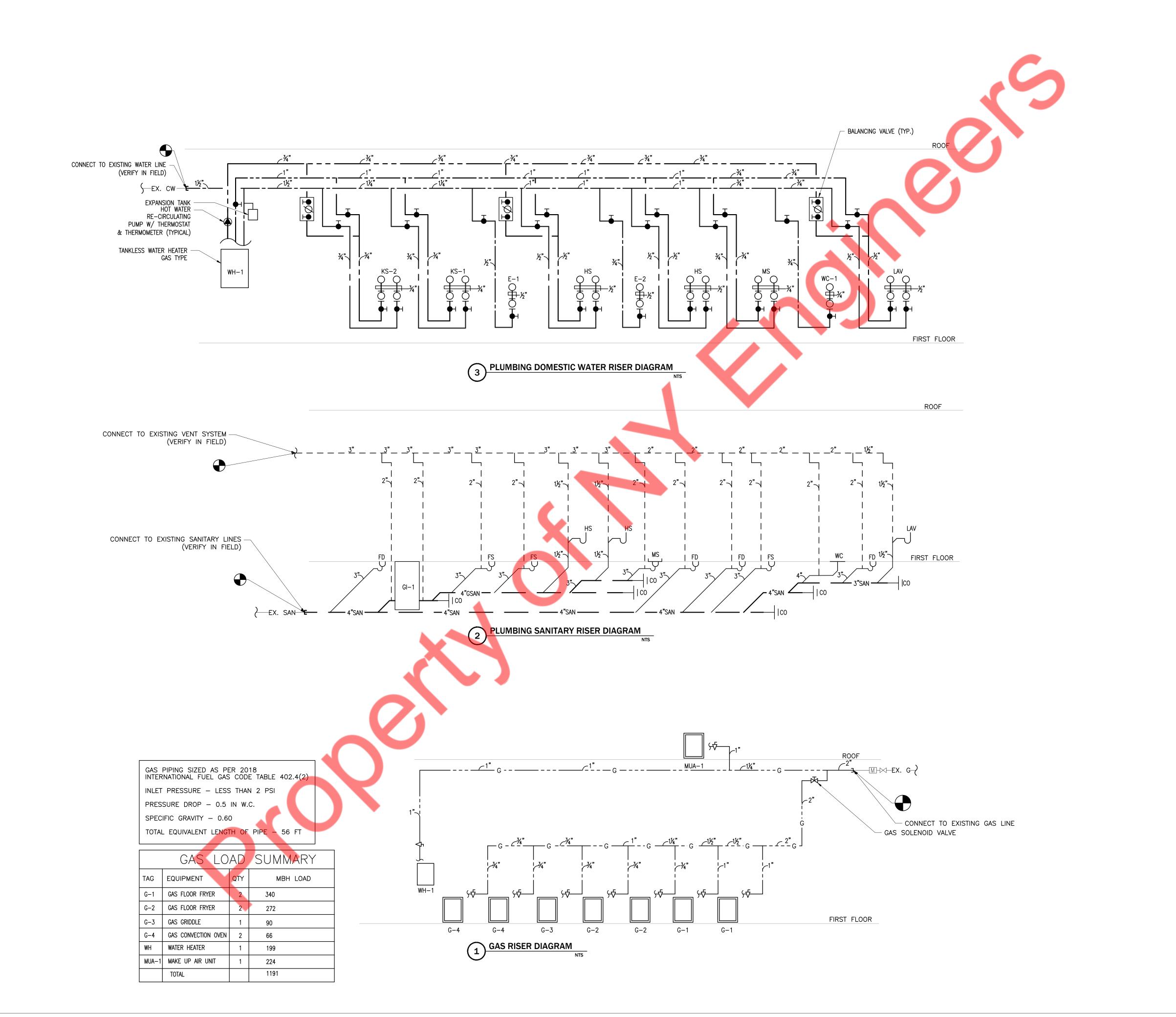
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PLUMBING DETAILS

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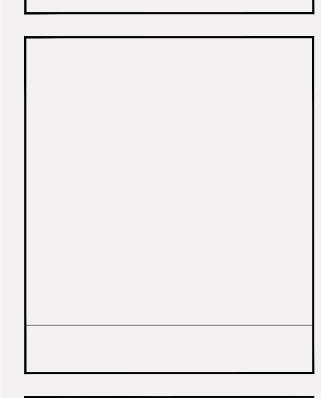
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ISSUE	DESCRIPTION	DATE

PROJECT INFORMATION:

UNCLE WILLIE'S WINGS



DATE:
PROJECT NO.:
DRAWN BY: NYE
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SCALE: AS NOTED

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PLUMBING RISER DIAGRAMS

DRAWING NO.:

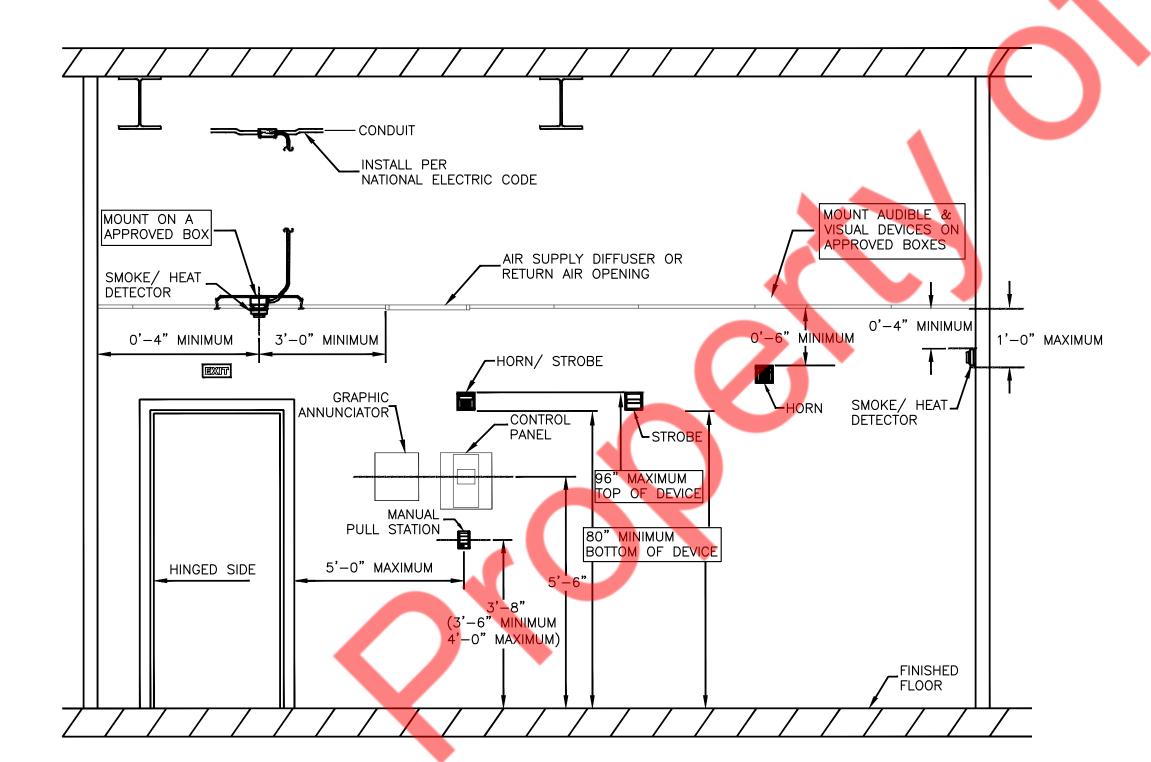
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					Р	ROJECT DATA						
PROJECT DESCRIPTION	BUILDING OCCUPANCY						FI	RE ALARM SYSTEM FEATURES				
NEW BUILDING	Χ	ASSEMBLY GROUP A (A1,A2,A3,A4 AND A5)		RESIDENTIAL GROUP R (R1,R2 AND R3)	1	TOTAL NUMBER OF LEVELS		ATRIUM	STA	AIR PRESSURIZATION	X	NON-VOICE EVACUATION
FIRE ALARM SYSTEM UPGRADE		BUSINESS GROUP B		STORAGE GROUP S (S1 AND S2)	1	ABOVE GROUND LEVELS		FIRE DEPARTMENT ACCESS	PO	ST FIRE SMOKE PURGE		VOICE EVACUATION
LIFE SAFETY SYSTEM UPGRADE		EDUCATIONAL GROUP E		UTILITY AND MISCELLANEOUS GROUP U	0	BELOW GROUND LEVELS	Χ	FULLY SPRINKLERED	GE	NERATOR		PARTIAL/SELECTIVE EVACUATION
X RENOVATION		FACTORY INDUSTRIAL GROUP F (F1 AND F2)		OTHER:	0	NUMBER OF ELEVATOR BANKS		PARTIALLY SPRINKLERED	FIR	RE PUMP		GENERAL EVACUATION
EMERGENCY REPAIR		HIGH-HAZARD GROUP H (H1,H2,H3,H4 AND H5)			0	NUMBER OF EGRESS STAIRS		NON-SPRINKLERED	ОТІ	HER:		DIGITAL ALARM COMMUNICATOR
TENANT ADDITION		INSTITUTIONAL GROUP I (I1,I2 AND I3)						PRE-ACTION SPRINKLER	ОТІ	HER:		PRE-SIGNAL SYSTEM
OTHER:		MERCANTILE GROUP M										FIRE FIGHTER'S TELEPHONE SYSTEM

			CONTR	OL UNIT	ANNUN	CIATION			1	NOTIFICA	TION			
	SYSTEM OUTPUTS INDICATING/CONTROLLED DEVICES STEM INPUTS IATING DEVICES	ACTIVATE COMMON ALARM SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	SOUND INTERNAL BUZZER AT FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	TEXT MESSAGE DISPLAY DEVICE TYPE & LOCATION OF THE ACTIVATING DEVICES ON LCD OF FIRE ALARM CONTROL PANEL & OUTLYING ANNUNCIATORS.	ACTIVATE EVACUATION SIGNAL THROUGH HORNS AND FLASH THE STROBES THROUGHOUT THE BUILDING.	TRANSMIT "MANUAL" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "SMOKE/HEAT" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "WATERFLOW" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "SUPERVISORY" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "TROUBLE" ALARM SIGNAL TO FIRE DEPARTMENT VIA AN APPROVED CENTRAL STATION MONITORING COMPANY.	TRANSMIT "TROUBLE" ALARM SIGNAL TO BASE BUILDING FIRE ALARM CONTROL PANEL.	
		A	В	С	D	E	F	G	Н	1	J	К	L	
1	MANUAL PULL STATION													1
2	TENANT FACP													2
3	AREA SMOKE DETECTOR													3
4	SPRINKLER CONTROL VALVE/TAMPER SWITCH													4
5	ALARM ACTIVATION OF OTHER SUBSYSTEM				Ø									5
6	FIRE ALARM AC POWER FAILURE													6
7	FIRE ALARM SYSTEM LOW BATTERY													7
8	OPEN CIRCUIT													8
9	GROUND CIRCUIT													9
10	NOTIFICATION APPLIANCE CIRCUIT SHORT				(10
11	HEAT DETECTOR													11

FIRE ALARM NOTES:

- 1. ALL EQUIPMENT AND WIRING INDICATED ON THESE PLANS IS NEW (U.O.N.).
- 2. PROVIDE WIRING AS REQUIRED BETWEEN ALL DEVICES AND EQUIPMENT AS REQUIRED TO PERFORM FIRE ALARM SYSTEM FUNCTIONS.
- 3. WIRING FOR FIRE ALARM DEVICES IN FINISHED SPACES WITHOUT HUNG CEILING SHALL BE INSTALLED IN EMT CONDUIT.
- 4. ALL STROBES AND HORN/STROBES SHALL BE FLUSH WALL MOUNTED FINISH BY ARCHITECT, APPROVED FOR USE IN AUTHORITY HAVING JURISDICTION (AHJ).
- 5. FOR WALL MOUNTED F.A. DEVICES PROVIDE 3/4" CONDUIT TERMINATED IN NEAREST ACCESSIBLE CEILING.
- 6. WIRING FOR FIRE ALARM DEVICES IN UNFINISHED SPACES SHALL BE INSTALLED IN RGS CONDUIT UP TO 8'-0" AFF AND THEN IN EMT CONDUIT ABOVE 8'-0" AFF.
- CONTRACTOR SHALL VERIFY ALL WIRING WITH FIRE ALARM VENDOR AND OBTAIN WIRING DIAGRAMS BEFORE PROCEEDING WITH THE START OF ANY WORK.
- 8. ALL WIRING SHALL BE IN ACCORDANCE WITH THE AHJ.
- 9. PROVIDE ALL REQUIRED EXPANSION PANELS, PC BOARDS, POWER SUPPLIES, BATTERIES, FUSE CUTOUTS AND BRANCH CIRCUITS, ETC, FOR A COMPLETE AND OPERATIONAL FIRE ALARM SYSTEM.
- 10. STROBES AND HORNS SHALL BE WIRED ON ALTERNATING A—B CIRCUITING IN ALL AREAS, AS INDICATED ON THE RISER DIAGRAM.
- 11. FIRE ALARM DEVICES SHOULD BE COMPATIBLE AND CONNECTED WITH BASE BUILDING FACP.
- 12. CONTRACTOR SHALL PERFORM ALL LOCAL BUILDING DEPT. FILINGS AND OBTAIN ALL APPROVALS. CONTRACTOR SHALL OBTAIN ALL REQUIRED SIGNED & SEALED LOCAL BUILDING DEPT. FORMS AND ALL REQUIRED SETS OF DRAWINGS FROM ENGINEER OF RECORD AND BUILDING DEPT. EXPEDITOR.
- 13. UPON COMPLETION OF INSTALLATION THE SYSTEM SHALL BE 100% PRE-TESTED BY THE FIRE ALARM VENDOR AND THE LICENSED ELECTRICAL CONTRACTOR PRIOR TO LOCAL FIRE DEPARTMENT INSPECTION.



ABBREVIATIONS						
ABOVE FINISHED FLOOR						
CONDUIT						
EXISTING						
EXISTING TO BE LOWERED						
ELEVATOR LOBBY						
ELECTRIC METALLIC TUBING						
FIRE ALARM						
FIRE ALARM CONTROL PANEL						
FUSED DISCONNECT SWITCH						
GROUND						
NEW						
NEW TO REPLACE EXISTING						
NOT TO SCALE						
REMOVE						
RELOCATED EXISTING						
RIGID GALVANIZED STEEL						
RELOCATED POSITION						
UNLESS OTHERWISE NOTED						
WIRE						

TYPICAL DEVICE MOUNTING DETAIL

DIVISION 16 - FIRE ALARM

PART 1 – GENERAL

1.1 DESCRIPTION OF WORK

A. WORK UNDER THIS SECTION INCLUDES, BUT IS NOT NECESSARILY LIMITED TO, FURNISHING AND INSTALLING THE FOLLOWING:

1. FIRE ALARM PANEL, WIRING AND DEVICES

- B. ALL WORK SHALL BE COMPLETE AND ITEMS, EQUIPMENT, ETC., SHALL BE ELECTRICALLY CONNECTED FOR PROPER AND CORRECT OPERATION.
- C. ALL WORK UNDER THIS CONTRACT SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE FOLLOWING CODES AND STANDARDS IN SO FAR AS THEY APPLY:
 - . NATIONAL ELECTRICAL CODE
 - 3. UNDERWRITER'S LABORATORIES, INC., STANDARDS AND APPROVED
 - 4. ELECTRICAL TESTING LABORATORIES STANDARDS.5. NORTH CAROLINA BUILDING CODE, LATEST EDITION AND REVISIONS.6. ALL LOCAL CODES AND ORDINANCES.
- THE FIRE ALARM CONTRACTOR SHALL BE LICENSED IN THE STATE OF NORTH CAROLINA AND HAVE ALL LICENSES REQUIRED FOR THE WORK.
- OBTAIN ALL PERMITS, LICENSES, INSPECTIONS, ETC. REQUIRED FOR THE WORK AND PAY FOR THE SAME. FURNISH FINAL CERTIFICATE OF INSPECTION AND APPROVAL FROM THE ELECTRICAL INSPECTOR HAVING JURISDICTION PRIOR TO ACCEPTANCE OF THE WORK.
- F. ALL WORK SHALL BE DONE BY SKILLED MECHANICS AND SHALL PRESENT A NEAT, TRIM, WORKMANLIKE CONDITION WHEN COMPLETED.

1.2 INTENT

THE INTENT OF THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS IS TO CONVEY AS REASONABLY AS POSSIBLE THE REQUIREMENTS FOR A COMPLETE JOB READY FOR THE BUILDING TO OPERATE. THE FIRE ALARM CONTRACTOR SHALL TAKE THIS INTO CONSIDERATION AND INCLUDE IN HIS BASE BID ALLOWANCE FOR CONTINGENCIES AS WILL ALLOW HIM TO PROVIDE MINOR PIECES OF EQUIPMENT AND LABOR NOT SPECIFICALLY INDICATED BUT REQUIRED FOR THE JOB TO OPERATE PROPERLY, AT NO ADDITIONAL COST TO THE OWNER.

1.3 COORDINATION

- A. COORDINATE WORK WITH OTHER CONTRACTORS. NOTIFY ARCHITECT OF APPARENT CONFLICT EARLY TO EXPEDITE CONSTRUCTION. IF STRUCTURAL DAMAGE APPEARS IMMINENT, STOP WORK AND NOTIFY ARCHITECT FOR A DECISION BEFORE RESUMING OPERATIONS.
- B. LOCATIONS SHOWN ARE APPROXIMATE. THE DRAWINGS DO NOT GIVE EXACT DETAILS AS TO ELEVATIONS AND LOCATIONS OF VARIOUS PIPES, FITTINGS, DUCTS, CONDUITS, ETC., AND DO NOT SHOW ALL OFFSETS AND OTHER INSTALLATION DETAILS WHICH MAY BE REQUIRED. COORDINATE ALL LOCATIONS WITH ARCHITECT BEFORE ANY ROUGH—IN.

1.4 SHOP DRAWINGS

A. PROVIDE COMPLETE SHOP DRAWINGS PER NCSFC SECTION 907.1 TO THE LOCAL FIRE MARSHAL INCLUDING:

1. FLOORPLAN WITH ROOM NAMES
2. LOCATION OF ALL FA DEVICES

2. LOCATION OF ALL FA DEVICES3. LOCATION OF PANELS4. POWER CONNECTIONS5. BATTERY CALCULATIONS

6. CONDUCTOR TYPES AND SIZES

7. VOLTAGE DROP CALCULATIONS
8. EQUIPMENT CUT—SHEETS, MODEL, NUMBERS, ETC.

8. EQUIPMENT CUT—SHEETS, MODEL, NUMBERS, ETC

PART 2 - PRODUCTS AND MATERIALS

2.1 GENERAL

A. ALL MATERIAL SHOULD BE NEW AND SHALL BEAR THE MANUFACTURER'S NAME TRADE, AND UL LABEL WHERE SUCH STANDARD HAS BEEN ESTABLISHED FOR THE PARTICULAR MATERIAL. MATERIALS SHALL BE STANDARD PRODUCTS OF MANUFACTURER'S REGULARLY ENGAGED IN MANUFACTURER OF THE REQUIRED TYPE OF EQUIPMENT AND THE MANUFACTURER'S LATEST APPROVED DESIGN.

 BOXES INSTALLED IN CONCEALED LOCATIONS SHALL BE SET FLUSH WITH THE FINISHED SURFACES.
 PROVIDE RATED BOXES ON ALL FIRE BARRIERS AND WALLS INSTALLED PER CODE.

PART 3 - EXECUTION

3.1 FIRE ALARM SYSTEM EQUIPMENT

A. PROVIDE A COMPLETE OPERABLE FIRE ALARM SYSTEM AS SHOWN ON THE DRAWINGS AND AS REQUIRED BY STATE AND LOCAL CODES.

B. ALL FIRE ALARM SYSTEM CABLES SHALL BE INSTALLED IN CONDUIT. SIZE AS REQUIRED BY THE EQUIPMENT SUPPLIER. PROVIDE A SUBMITTAL OF ALL DEVICES AND A RISER DIAGRAM FOR APPROVAL BEFORE INSTALLATION OF ANY EQUIPMENT.

3.2 CLEAN UP

A. DURING CONSTRUCTION, KEEP THE SITE CLEAN OF DEBRIS. UPON COMPLETION, AND BEFORE FINAL INSPECTION, CLEAN UP THE PREMISES TO REMOVE ALL EVIDENCE OF WORK. IN ADDITION UPON COMPLETION OF CONSTRUCTION LEAVE EQUIPMENT CLEAN.

3.3 GUARANTEE

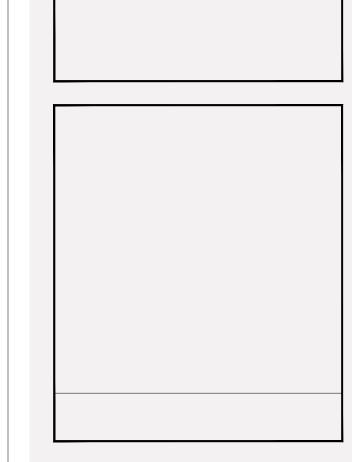
A. GUARANTEE ALL MATERIALS AND LABOR INCLUDED IN THE FIRE ALARM WORK FOR A PERIOD OF ON YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER. ANY PART OR PARTS OF THE WORK OR EQUIPMENT WHICH PROVE TO BR DEFECTIVE DURING THE GUARANTEE PERIOD SHALL BE REPLACED AT NO ADDITIONAL COST TO THE OWNER.

	FIRE ALARM DRAWING LIST
F1.0	FIRE ALARM PLAN NOTES AND SPECIFICATIONS
F2.0	FIRE ALARM PLAN AND RISER DIAGRAM

ISSUE	DESCRIPTION	DATE

PROJECT INFORMATION:

UNCLE WILLIE'S WINGS



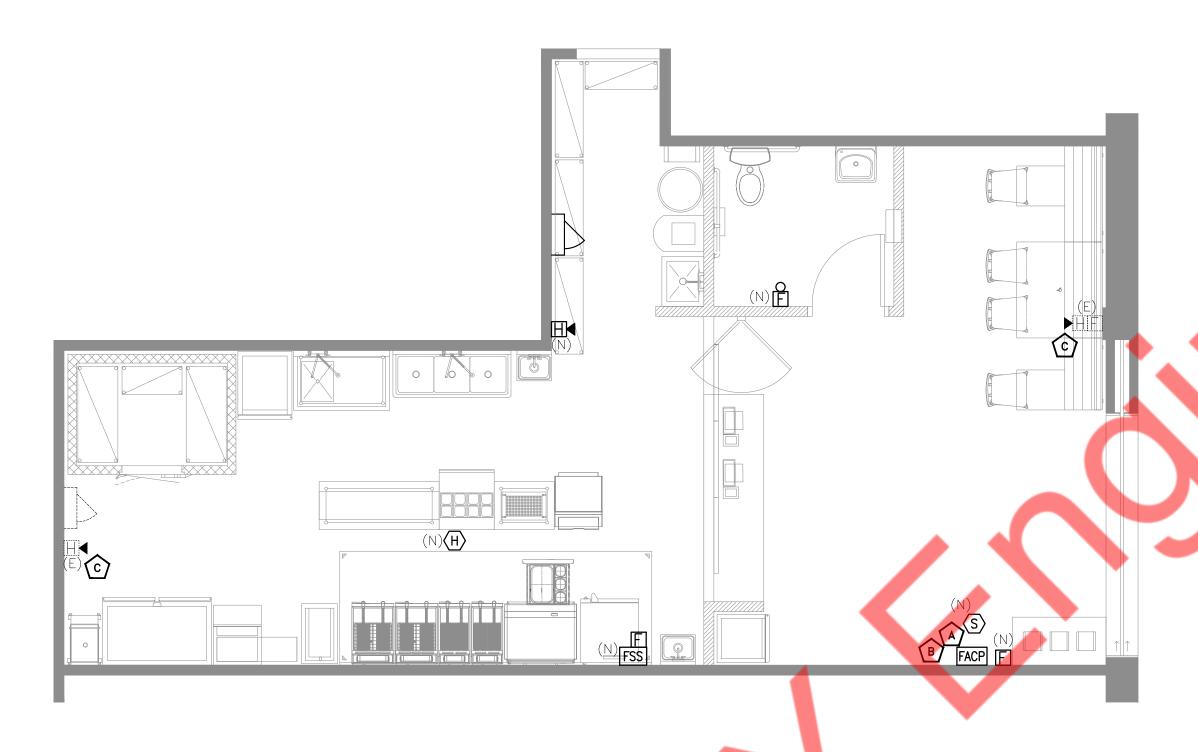
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SCALE: AS NOTED

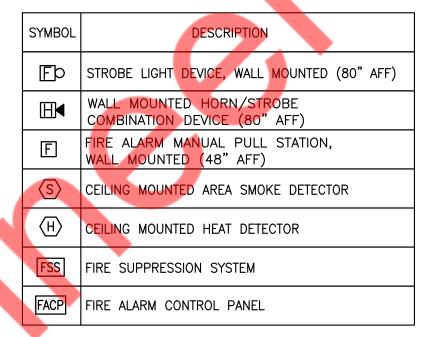
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FIRE ALARM PLAN NOTES AND SPECIFICATIONS

DRAWING NO.:

F1.0



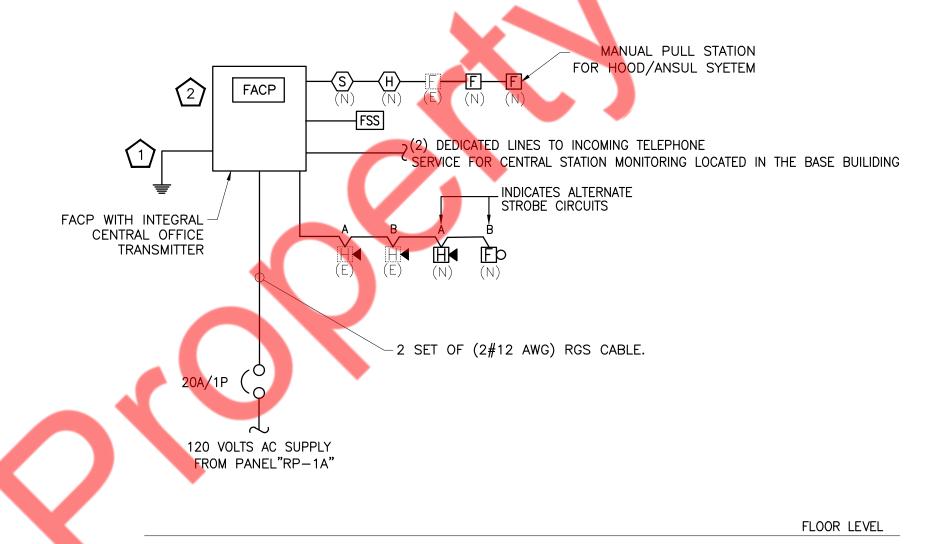


- FIRE ALARM PLAN KEYED WORK NOTES:
- E.C. TO COORDINATE WITH LOCAL FIRE OFFICIAL AND FACILITY MANAGER FOR LOCATION OF FACP. FACP SHALL BE LOCATED AS PER THE DIRECTION FROM THE AUTHORITY HAVING JURISDICTION (AHJ) AND LOCAL FIRE DEPARTMENT.
- TENANT REQUIRED TO PROVIDE NEW FIRE
 ALARM PANEL FOR SPACE AND CONNECT TO
 GATEWAY 1 FIRE ALARM SYSTEM
- CONTRACTOR TO COORDINATE WITH

 ARCHITECT/OWNER FOR EXACT LOCATION OF
 EXISTING FIRE ALARM DEVISES. REPLACE IF
 FOUND INOPERABLE.

FIRE ALARM PLAN - CONCOURSE LEVEL

1/4"=1:-0"



FIRE ALARM RISER NOTES:

- ALL COMPONENTS REQUIRED TO MAKE SYSTEM WORKABLE SHALL BE INCLUDED IN BID PRICE.
- 2. EACH FA RELAY SHALL HAVE MINIMUM OF THREE SETS OF 2 CONTACT 10A RATED @ 120V (TYPICAL).
- 3. COORDINATE WIRING DIAGRAM WITH FIRE ALARM VENDOR SHOP DRAWINGS. FOR STROBES MAXIMUM CURRENT PER ZONE SHALL NOT EXCEED 1.5A. ZONES FOR STROBES & STROBE/HORNS AS PER FIRE ALARM VENDOR SHOP DRAWINGS (TYPICAL).
- 4. ALL FIRE ALARM WIRING SHALL BE INSTALLED IN CONDUIT WHERE REQUIRED BY AHJ.
- 5. THIS RISER DIAGRAM IS A SCHEMATIC REPRESENTATION OF THE FIRE ALARM SYSTEM. ALL WIRING SHALL BE AS PER APPROVED MANUFACTURER SHOP DRAWINGS.
- 6. EACH FIRE ALARM INDICATING DEVICES CIRCUIT TO HAVE A MAXIMUM OF 14 DEVICES PER CIRCUIT. CONTRACTOR TO SUPPLY REQUIRING NUMBER OF INDICATING CIRCUIT TO PROVIDE REDUNDANT CIRCUITING (A,B) SCHEME.
- 7. ALL FIRE ALARM CONDUITS SHALL BE MINIMUM 3/4".
- 8. ALL WATER FLOW AND TAMPER SWITCH DEVICES SHALL BE CONNECTED TO FIRE ALARM CONTROL PANEL (FACP). COORDINATE EXACT LOCATION AND QUANTITIES WITH FIRE PROTECTION CONTRACTOR.

KEYED WORK NOTES:

- THE FIRE ALARM CONTROL PANEL CABINET SHALL BE GROUNDED SECURELY TO EITHER A COLD WATER PIPE OR A GROUNDING ROD.
- TENANT REQUIRED TO PROVIDE NEW FIRE ALARM PANEL FOR SPACE AND CONNECT TO GATEWAY 1 FIRE ALARM SYSTEM.

ISSUE DESCRIPTION DATE

PROJECT INFORMATION:

UNCLE WILLIE'S WINGS

DATE:

DATE:
PROJECT NO.:
DRAWN BY: NYE
CHECKED BY: NYE
SCALE: AS NOTED

DRAWING TITLE:

FIRE ALARM PLAN AND RISER DIAGRAM

DRAWING NO.:

F2.0

SPRINKLER GENERAL NOTES

- 1. ALL SPRINKLER WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF 1. THE INSTALLATION, COMPONENTS, SIZING, SPACING, CLEARANCES, POSITION N.F.P.A.-13-2016 AND ALL LOCAL AUTHORITIES.
- 2. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
- 3. ALL SPRINKLER HEADS SHALL BE INSTALLED AT CENTER OF TILE IF CEILING IS
- 4. GENERAL CONTRACTOR SHALL COORDINATE FINAL FURNITURE/EQUIPMENT HEIGHT ELEVATIONS AND LOCATIONS WITH SPRINKLER INSTALLATION. ENGINEER SHALL BE NOTIFIED WHEN FURNITURE/EQUIPMENT IS LESS THAN 18" TO UNDERSIDE OF CEILING.
- 5. THE SPRINKLER SYSTEMS ARE TO BE HYDROSTATIC TESTED FOR A (1) HOUR MINIMUM AT 200 PSI. PRESSURE AND ARE TO BE WITNESSED BY AUTHORIZED BUILDING PERSONNEL. COORDINATE ALL TESTING WITH BUILDING MANAGER.
- 6. PIPES SIZES SHOWN ARE BASED ON DESIGN PIPING LAYOUTS ONLY. ACTUAL PIPE SIZES SHALL BE DETERMINED BY CONTRACTORS HYDRAULIC CALCULATIONS BASED ON HIS INSTALLATION DRAWINGS. CONTRACTOR SHALL ALLOW FOR THIS AND INCLUDE THIS IN HIS CONTRACT PRICE.
- 7. DRAWING INDICATES SPRINKLER SYSTEM DESIGN ONLY. CONTRACTOR RESPONSIBLE FOR OFFSETS, DROPS AND RISES FOR COORDINATION WITH OTHER
- 8. G.C. SHALL BE RESPONSIBLE FOR ALL FINAL TESTS AND INSPECTIONS OF COMPLETED WORK REQUIRED BY THE BUILDING MANAGEMENT PRIOR TO 9. SPACING, LOCATION AND POSITION OF SPRINKLER WILL BE AS PER 2018 OCCUPANCY OF SPACE.
- 9. ALL SPRINKLER WORK SHALL BE TESTED AND MADE OPERATIONAL PRIOR TO 10. ALL BLIND SPACES EXCEEDING 6" IN WIDTH OR DEPTH WHICH CONTAIN CARPET AND FURNITURE INSTALLATION. G.C. SHALL REPAIR AND/OR REPLACE ALL FINISHES DAMAGED BY DEFECTIVE SPRINKLER WORK AT HIS EXPENSE.
- 10. ALL BURNING, CUTTING, SOLDERING AND WELDING SHALL BE COORDINATED WITH BUILDING FIRE SYSTEMS WITH BUILDING MANAGEMENT, AS REQUIRED.
- 11. G.C. SHALL BE RESPONSIBLE FOR OBTAINING PERMITS AND APPROVALS REQUIRED BY BUILDING INSPECTOR AND FIRE MARSHALL IN CONJUNCTION WITH CHANGES TO EXISTING SPRINKLER SYSTEM.
- 12. REFER TO ENGINEERING DRAWINGS FOR SPRINKLER HEADS, LIGHT SENSORS AND FIRE DETECTION DEVICES.
- 13. ALL WORK TO BE DONE DURING THE HOURS DESIGNATED BY OWNER.
- 14. UPON COMPLETION OF ALL SPRINKLER WORK, CONTRACTOR SHALL TEST AND 15. THIS APPLICATION IS NOT FILED AS A RESULT OF ACTION BY THE FIRE INSPECT ENTIRE SPRINKLER SYSTEM. ENTIRE SYSTEM SHALL BE FULLY OPERATIONAL AND APPROVED IN COMPLIANCE WITH ALL AHJ.
- 15. UPON SUCCESSFUL COMPLETION OF ALL TESTING, CONTRACTOR SHALL PRIME 16. ALL VALVES SHALL BE IDENTIFIED AS REQUIRED BY NFPA 13 SECTION 6.6. AND PAINT ALL EXPOSED SPRINKLER PIPING. COLOR AND FINISH SHALL BE AS PER ARCHITECT.
- 16. CONTRACTOR SHALL INCLUDE IN HIS BID THE COST TO PROVIDE (5) FIVE ADDITIONAL SPRINKLERS INSTALLED. EXACT LOCATIONS OF THESE SPRINKLER HEADS SHALL BE DETERMINED IN FIELD.
- 17. FOR SPRINKLER WORK DONE IN ACCORDANCE WITH THE REQUIREMENTS OF STANDARD NFPA 13-2016, AS MODIFIED FOR CITY OF NEWARK, NEW JERSEY, ARE NECESSARY.
- 18. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND SHALL INSTALL NEW WORK TO CLEAR DUCTWORK AND LIGHTING FIXTURES.
- 19. ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
- 20. DRAWING INDICATES SPRINKLER SYSTEM DESIGN ONLY. CONTRACTOR 22. 18" MINIMUM CLEARANCE TO BELOW SPRINKLER DEFLECTOR AS PER RESPONSIBLE FOR OFFSETS, DROPS AND RISES FOR COORDINATION WITH OTHER
- 21. PIPES SIZES SHOWN ARE BASED ON SCHEDULE OF PIPE SIZE PIPING LAYOUTS ONLY. ACTUAL PIPE SIZES SHALL BE DETERMINED BY CONTRACTORS HYDRAULIC CALCULATIONS BASED ON HIS INSTALLATION DRAWINGS. CONTRACTOR SHALL ALLOW FOR THIS AND INCLUDE THIS IN HIS CONTRACT PRICE.
- 22. PROVIDE AUXILIARY DRAINS AT TRAPPED SECTIONS OF PIPING AS REQUIRED BY
- 23. GENERAL CONTRACTOR SHALL COORDINATE FINAL FURNITURE/ EQUIPMENT HEIGHT ELEVATIONS AND LOCATIONS WITH SPRINKLER INSTALLATION. ENGINEER SHALL BE NOTIFIED WHEN FURNITURE/EQUIPMENT IS LESS THAN 18" TO UNDERSIDE OF CEILING PRIOR TO INSTALLATION.

24. COMPOSITE DRAWINGS

- CONTRACTOR SHALL BE GIVEN A SEPIA TRANSPARENCIES TO IMPOSE THEIR WORK FOR A COORDINATED ALLOCATION OF SPACE. PROCEDURE SHALL INCLUDE HVAC CONTRACTOR TO INDICATE DUCT WORK, PIPING, STRUCTURAL AND ARCHITECTURAL DETAILS. SEPIAS SHALL BE GIVEN TO PLUMBING, SPRINKLER AND ELECTRICAL TRADES WHO WILL DRAW HIS WORK ON DRAWINGS. HVAC CONTRACTORS SHALL HOLD A COORDINATION MEETING WITH ALL CONTRACTORS TO ELIMINATE INTERFERENCE OR CONFLICTS IN INSTALLING WORK. IF UNABLE TO EACH AGREEMENT ISSUE, ARCHITECT SHALL MAKE BINDING DECISION.
- 25. CONTRACTOR SHALL COORDINATE SPRINKLER MAIN AND BRANCHES WITH NEW CONSTRUCTION TO AVOID CONFLICTS WITH CEILING HEIGHTS, DUCTWORK, LIGHTING FIXTURES, BEAMS. CONTRACTOR TO ADJUST PIPING ACCORDINGLY TO ACCOMMODATE NEW CONSTRUCTION.

BUILDING DEPARTMENT SPRINKLER NOTES

- AND TYPE OF SYSTEMS SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION SECTION 903.
- 2. ONLY APPROVED MATERIALS SHALL BE USED AS PER INTERNATIONAL FIRE CODE 2018 EDITION SECTION 104.7
- 3. DIRECT CONNECTION OF SPRINKLERS TO THE PUBLIC WATER SYSTEM SHALL CONFORM TO 2018 INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION
- 4. SPRINKLER SHALL BE PROTECTED AGAINST FREEZING AND INJURY AS PER NFPA 13-2016 SEC. 8.16.4
- 5. THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED IN ACCORDANCE WITH 2018 INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION SECTION 903.2
- PIPING, FITTINGS, SPECIFICATIONS, PIPE SCHEDULES, SYSTEM TEST PIPES, PROTECTION AGAINST CORROSION, DAMAGE, VALVES, HANGERS, SPRINKLERS GUARDS AND SHIELDS SHALL BE AS PER WITH 2018 INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION, SECTION 903.2
- 7. STOCK OF EXTRA SPRINKLERS WILL BE FURNISHED AS PER NFPA 13-2016 SECTION 6.2.9 (REQUIRED FOR EACH TEMPERATURE RATING).
- 8. SPRINKLER ALARM SHALL BE IN ACCORDANCE WITH 2018 INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION, SECTION 907.
- INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION, SECTION 903.3
- COMBUSTIBLE MATERIAL WILL BE SPRINKLERED. 11. ALL PIPE PASSING THROUGH WALLS WILL COMPLY WITH SECTION 2018
- INTERNATIONAL BUILDING CODE NEW JERSEY EDITION SECTION 714. 12. THERE IS NO HIGH PILED STORAGE AS DEFINED IN INTERNATIONAL FIRE
- CODE 2018 SECTION 3201
- 13. DISTANCE OF SPRINKLERS FROM HEAT SOURCE SHALL BE AS PER NFPA 13-2016 SECTION 8.3.2.5
- 14. ALL PIPES PASSING THROUGH FOUNDATION WALLS SHALL BE PROTECTED AS PROVIDED BY SECTION 2.9.1 OF 2018 NATIONAL STANDARD PLUMBING
- COMMISSIONER AS AUTHORIZED BY BS & A TO MODIFY THE CERTIFICATE OF OCCUPANCY NOR IS SUCH ACTION PENDING.
- 17. A ONE PIECE REDUCING FITTING OF GOOD DESIGN SHOULD BE USED WHEREVER A CHANGE IS MADE IN THE SIZE OF PIPE, AS PER NFPA 13
- 18. ALL VALVES ON CONNECTIONS TO WATER SUPPLIES TO SPRINKLER SHALL BE APPROVED O.S. & Y. OR APPROVED INDICATOR TYPE.
- N.F.P.A.-13-2016, HYDROSTATIC TESTS IN ACCORDANCE WITH REFERENCE 19. DRAIN VALVES AND TEST VALVES SHALL BE APPROVED TYPE AS PER NFPA-13-2016 SECTION 6.6.3
 - 20. HANGERS SHOULD BE SUPPORTED BY WROUGHT IRON U TYPE OR APPROVED ADJUSTABLE HANGERS. HANGERS SHALL BE OF THE TYPE APPROVED FOR USE WITH THE PIPE OR TUBE INVOLVED, AS PER NFPA-13
 - 21. TEMPERATURE RATING SHALL COMPLY WITH NFPA-13-2016 SECTION 8.3.2
 - NFPA-13-2016 SECTION 8.5.6
 - 23. AUTOMATIC INTERLOCK CUTOFF SWITCH FOR VENTILATION WILL CONFORM TO CHAPTER 6 OF THE MECHANICAL CODE (APPLICABLE ONLY IF THERE IS AN AIR SYSTEM UTILIZING RECIRCULATED AIR AND REQUIRING A THERMOSTATIC
 - 24. MINIMUM BRANCH PIPE SIZE TO BE ONE INCH (1").

SECTION 9.1

- 25. THIS APPLICATION IS MADE ONLY FOR WORK INDICATED ON THE SPECIFICATION SHEET. ALL OTHER MATTERS SHOWN ARE NOT TO BE RELIED UPON OR TO BE CONSIDERED AS EITHER BEING APPROVED OR IN ACCORDANCE WITH APPLICABLE CODES.
- 26. WET SPRINKLER SYSTEM SUBJECTED TO FREEZING SHOULD COMPLY WITH NFPA 13-2016 SEC. 8.16.4.
- 27. INSPECTION AND TESTS OF SPRINKLERS SHALL BE CONDUCTED AS PER 2018 INTERNATIONAL BUILDING CODE, NEW JERSEY EDITION, SECTION 901.

SPRINKLER DRAWING LIST

- SP0.1 SPRINKLER GENERAL NOTES, SYMBOLS, PLOT PLAN AND RISER
- SP0.2 SPRINKLER NOTES & SPECIFICATIONS
- SP1.0 SPRINKLER FLOOR PLAN SP5.0 SPRINKLER DETAILS

SPACING BETWEEN SPRINKLER HEADS

LIGHT HAZARD: 15' MAX. ORDNIARY HAZARD: 11.6' MAX

NOTE: MAXIMUM DISTANCE BETWEEN SPRINKLER HEADS & WALLS IS 1/2 THE DISTANCE BETWEEN HEADS.

PROTECTION AREA OF SPRINKLER HEADS

LIGHT HAZARD 225 SQ. FT. ORDINARY HAZARD : 130 SQ. FT.

DESIGN CRITERIA SUMMARY:

HYDRAULIC CALCULATIONS FOR RESTAURANT SERVING AREA BASED ON THE FOLLOWING:

OCCUPANCY: ORDINARY I MINIMUM DESIGN DENSITY: 0.15 GPM/SQ. FT. DESIGN AREA OF APPLICATION: 1500 SQ. FT.

OCCUPANCY: LIGHT MINIMUM DESIGN DENSITY: 0.1 GPM/SQ. FT. DESIGN AREA OF APPLICATION: 1500 SQ. FT.

GENERAL NOTES:

1. FOR SPRINKLER WORK ONLY. 2. ALL SPRINKLER HEADS MEET DESIGN CRITERIA PER COVERAGE.

SPRINKLER LEGEND

EXISTING SPRINKLER PIPING TO REMAIN

NEW SPRINKLER PIPING

NEW CONCEALED SPRINKLER HEAD EXISTING UPRIGHT SPRINKLER HEAD

DRY PENDENT SPRINKLER HEAD

SPRINKLER CAPPED OUTLET

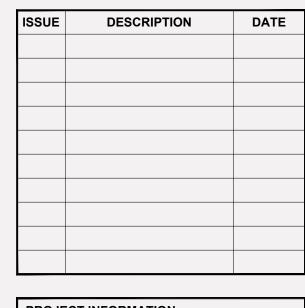
SPRINKLER PIPING POINT OF CONNECTION

SPRINKLER PIPING POINT OF DISCONNECTION PIPE THRU RATED WALL

EXISTING SPRINKLER VALVE

EXISTING DRAIN VALVE

DISCONNECT AND REMOVE EXISTING UPRIGHT SPRINKLER HEAD WITH BRANCH PIPING AND CAP (TYP.). CONNECT NEW CONCEALED SPRINKLER HEAD WITH BRANCH PIPING AND EXTEND TO NEW LOCATION AS SHOWN ON FLOOR



PROJECT INFORMATION: **UNCLE WILLIE'S WINGS**

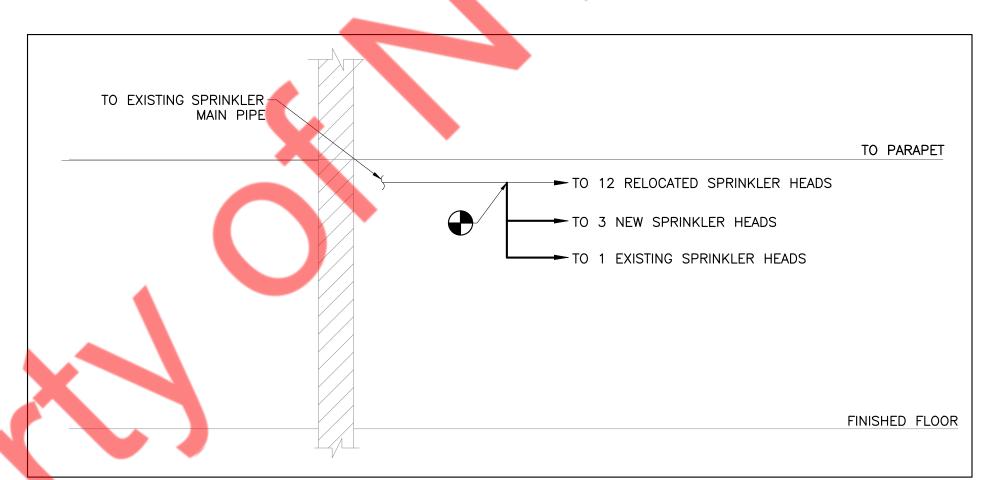
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DRAWING TITLE:

SPRINKLER GENERAL NOTES. SYMBOLS, PLOT PLAN AND RISER DIAGRAM

DRAWING NO.:

SP0.1



SPRINKLER RISER DIAGRAM

	SPRINKLER SCHEDULE									
SYMBOL	NAME	COVERAGE	AREA	METAL	TEMPERATURE (°F)	K-FACTOR	NPT	MFG	MODEL#	APPROVALS
•	CONCEALED	STANDARD	LH/OH AREAS WITH CEILING	BRASS	155	5.6	½"	TYC0	SERIES RF-II TY3531	UL/FM
O _(D)	DRY PENDANT	STANDARD	WALK IN FREEZER/COOLER	BRASS	155	5.6	1"	TYC0	SERIES DS-1 TY3255	UL/FM
•	UPRIGHT	STANDARD	LH/OH OPEN AREAS	BRASS	165	5.6	1/2"	TYCO	SERIES TY-FRL TY3121	UL/FM

NOTE: 1. COORDINATE ALL SPRINKLER COLOR FINISHES WITH ARCHITECT. 2. ALL SPRINKLER SHOULD BE MEA APPROVED

SPRINKLER SPECIFICATIONS

PART 1 – GENERAL

1.01 REQUIREMENTS

- A. THE SPRINKLER CONTRACTOR SHALL BE A LICENSED, AUTHORIZED INSTALLER OF SPRINKLER SYSTEMS AND SHALL HAVE HAD A MINIMUM OF FIVE YEARS EXPERIENCE IN THE INSTALLATION OF SPRINKLER SYSTEMS IN THE CITY OF
- SITE AND SHALL FULLY FAMILIARIZE HIMSELF WITH, AND BECOME FAMILIAR WITH THE DIFFICULTIES THAT WILL ATTEND THE EXECUTION OF THIS WORK. CONTRACTOR SHALL PERFORM THIS PRIOR TO SUBMITTING HIS PROPOSAL. SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE, AND LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OR MATERIALS REQUIRED BECAUSE OF DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN EXAMINATION BEEN MADE.
- C. UPON REVIEW OF THE DRAWINGS AND SPECIFICATIONS, PRIOR TO SUBMITTING HIS PROPOSAL, THE SPRINKLER CONTRACTOR SHALL INFORM ARCHITECT AND/OR ENGINEER OF ANY DISCREPANCIES OR REQUEST CLARIFICATION IN WRITING, IF NECESSARY, CONCERNING THE INTENT OF THE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE SPRINKLER SYSTEM INSTALLATION. LATER CLAIMS WILL NOT BE RECOGNIZED FOR EXTRA LABOR, EQUIPMENT OF MATERIALS SHOULD SUCH PROCEDURE NOT BE FOLLOWED.
- D. THE SCHEDULING OF THE SPRINKLER WORK SHALL BE COORDINATED WITH BUILDING MANAGEMENT, WITH OTHER CONTRACTORS AND WITH THE ENGINEER.
- E. NECESSARY SHUT-DOWNS OF BASE BUILDING SPRINKLER SYSTEM MUST BE COORDINATED WITH BUILDING MANAGEMENT. SHUT-DOWNS OF BASE BUILDING SYSTEMS SHALL TAKE PLACE AFTER OR BEFORE NORMAL BUSINESS HOURS AND SHALL BE CONSIDERED OVERTIME WORK. THE CONTRACTOR MUST GIVE BUILDING MANAGEMENT AND CITY OF NEWARK FIRE DEPARTMENT 48 HOURS NOTICE PRIOR TO SHUT-DOWN OF SPRINKLER, OR OTHER SYSTEMS.

1.02 WORK INCLUDED

- A. WORK SHALL INCLUDE ALL SPRINKLER WORK FURNISHED AND INSTALLED AS INDICATED ON THE PLANS AND AS SPECIFIED HEREIN.
- 1. ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE 2018 2.05 PHASING INTERNATIONAL BUILDING CODE NEW JERSEY EDITION, N.F.P.A. STANDARD 13-2016, INTERNATIONAL FIRE CODE 2015, CITY OF NEWARK FIRE DEPARTMENT AND OWNERS INSURANCE RATING ORGANIZATION.
- OF WORK. SCALED DIMENSIONS SHALL NOT BE USED. ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM FIELD MEASUREMENTS.

2. THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION

PROVIDE COMPUTER GENERATED HYDRAULIC CALCULATIONS IN ACCORDANCE WITH CITY OF NEWARK BUILDING DEPARTMENT AND NFPA STANDARDS.

1.03 SHOP DRAWINGS AND SUBMITTALS

- A. THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, FULLY COORDINATED SHOP 2.07 LEAK DAMAGE DRAWINGS, CAPACITY, DATA, AND CATALOG CUTS OF THE FOLLOWING:
 - 1. PIPE AND FITTINGS
 - VALVES
 - HANGERS AND SUPPORTS SPRINKLER PIPING LAYOUT
- TESTS SPRINKLER HEADS
- HYDRAULIC CALCULATIONS SIAMESE CONNECTION
- A. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED. CONTRACTOR A. ALL SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED AND SHALL SHALL SUBMIT CALCULATIONS WITH SHOP DRAWINGS. CALCULATIONS SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF NFPA 13-2016. INTERNATIONAL FIRE CODE 2015, AND 2018 INTERNATIONAL BUILDING CODE NEW JERSEY EDITION.

1.04 BUILDING DEPARTMENT FILING, PERMITS AND CERTIFICATES

- A. THE SPRINKLER CONTRACTOR SHALL FILE ALL REQUIRED DRAWINGS AND HYDRAULIC CALCULATIONS WITH THE BUILDING DEPARTMENT AND BE RESPONSIBLE FOR OBTAINING FINAL APPROVAL.
- B. ARRANGE FOR INSPECTION AND TESTS OF ANY AND ALL PARTS OF THE WORK AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND PAY ALL CHARGES FOR

1.05 INSPECTION AND TESTING

- A. THE SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE 2018 INTERNATIONAL BUILDING CODE NEW JERSEY EDITION FIRE DEPARTMENT INSPECTOR.
- B. THE SPRINKLER SYSTEM SHALL BE SUBJECTED TO A HYDROSTATIC PRESSURE TEST FOR A PERIOD OF TWO HOURS AT A PRESSURE OF AT LEAST 200 PSIG OR 50 PSI IN EXCESS OF THE MAXIMUM PRESSURE TO BE MAINTAINED WHEN THE MAXIMUM PRESSURE IN THE SYSTEM IS IN EXCESS OF 150 PSI AS PER
- C. THE BUILDING DEPARTMENT SHALL BE NOTIFIED THAT THE SYSTEM IS READY FOR REINSPECTION AND TESTING. THE BUILDING DEPARTMENT INSPECTOR SHALL WITNESS THE TEST. FINAL APPROVAL OF THE SPRINKLER SYSTEM SHALL BE OBTAINED FROM BUILDING DEPARTMENT, AND FIRE DEPARTMENT.

PART 2 - MATERIALS

2.01 GENERAL

- A. THE SPRINKLER SYSTEM SHALL BE COMPLETE WITH ALL PIPE, FITTINGS, VALVES, DRAINAGE SYSTEM AND VALVES, HANGERS AND SUPPORTS. ALSO, MISCELLANEOUS WORK ITEMS, SUCH AS, SIGNS AS REQUIRED, VALVE TAGS, ETC., AND ALL OTHER RELATED EQUIPMENT, APPARATUS AND MATERIAL ITEMS NECESSARY FOR COMPLETE, APPROVED TYPE SYSTEM, READY FOR FUTURE EXTENSION.
- B. ALL PIPE, FITTINGS, HANGERS, SUPPORTS, SPRINKLER HEADS, ETC., SHALL CONFORM TO THE 2018 INTERNATIONAL BUILDING CODE AND NATIONAL FIRE PROTECTION ASSOCIATION'S REQUIREMENTS AS TO TYPES OF MATERIALS, ARRANGEMENT, SIZES AND INSTALLATION. PIPING PENETRATING FIRE RATED

PARTITIONS SHALL HAVE OPENING SEALED WITH U.L. APPROVED FIREPROOF

2.02 SPRINKLER PIPING

- ALL SPRINKLER PIPING SHALL BE SCHEDULE 40, IN ACCORDANCE WITH NFPA 13-2016. PIPE SHALL BE UL/FM APPROVED.
- B. BEFORE SUBMITTING HIS BID, THE SPRINKLER CONTRACTOR SHALL VISIT THE B. STEEL PIPE SHALL BE BETHLEHEM STEEL CO., ALLIED TUBE, BERGER INDUSTRIES OR APPROVED.
 - AS PER NFPA 13-2016 PIPE OR TUBE USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS SPECIFIED IN TABLE 6.3.1.1 OR SHALL BE IN ACCORDANCE WITH 6.3.1.1
 - AS PER NFPA 13-2016, FITTINGS USED IN SPRINKLER SYSTEMS SHALL BE OF THE MATERIALS LISTED IN TABLE 6.4.1 OR SHALL BE IN ACCORDANCE WITH 6.4.1. FITTING SHALL BE UL/FM APPROVED. CONTRACTOR.

2.03 CUTTING AND PATCHING

- 1. DO ALL CUTTING AND CORE DRILLING NECESSARY FOR THE INSTALLATION OF SPRINKLER WORK. ACCURATELY LAYOUT WORK FOR WHICH CUTTING IS REQUIRED. PATCH AND RESTORE ANY DAMAGE WORK TO LIKE NEW
- 2. FOR REPLACEMENT OF THE WORK REMOVED, MATCH EXISTING IN NATURE, CONSTRUCTION AND FINISH.
- 3. MAINTAIN THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIAL OR RUBBISH COVERED BY THE WORK. REMOVE ALL SURPLUS MATERIALS. TOOLS ETC. AND LEAVE PREMISES CLEAN.

2.04 FIRE STOPPING

INSTALLATION SHALL BE IN STRICT ACCORDANCE WITH THE MANUFACTURERS PUBLISHED DIRECTIONS AND PER FIRE TESTED DESIGNS THAT HAVE BEEN ACCEPTED BY THE APPROPRIATE CODE AUTHORITY HAVING JURISDICTION.

PHASING SHALL BE COORDINATED BETWEEN THE SPRINKLER CONTRACTOR AND GENERAL CONTRACTOR. SPRINKLER INSTALLATION SHALL BE PHASED IN A MANNER WHICH WILL ALLOW FULL OCCUPANCY OF THE EXISTING FACILITY WHILE THE INSTALLATION IS IN PROGRESS.

2.06 ALTERNATES/SUBSTITUTIONS

CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY CONTRACTOR PROPOSED SUBSTITUTIONS OF THE MATERIALS OR METHODS OF INSTALLATION FROM THAT SPECIFIED. THESE ALTERATIONS SHALL BE LISTED ON THE PROPOSAL AS CONTRACTOR ALTERNATIVE.

THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE DURING THE INSTALLATION AND TESTING PERIODS OF THE SPRINKLER SYSTEM FOR ANY LOSS OR DAMAGE TO THE WORK OF OTHERS, TO THE BUILDING, IT'S CONTENTS ETC. CAUSED BY LEAKS IN THE EQUIPMENT. BY UNPLUGGED OR DISCONNECTED PIPES, FITTINGS ETC. OR BY OVERFLOW, AND SHALL PAY FOR THE NECESSARY REPLACEMENTS OR REPAIRS TO THE WORK OF OTHERS, DAMAGED BY SUCH LEAKAGE.

2.08 INSERTS, HANGERS, ETC.

- COMPLY WITH THE STANDARDS FOR THE NATIONAL FIRE PROTECTION ASSOCIATION FOR THE INSTALLATION OF SPRINKLER SYSTEMS AND AS REQUIRED BY THE 2018 INTERNATIONAL BUILDING CODE NEW JERSEY EDITION.
- B. HANGERS AND THEIR COMPONENTS SHALL BE FERROUS. HANGERS SHALL BE ADJUSTABLE FLAT IRON TYPE OF CLEVIS TYPE.
- C. SPRINKLER PIPING OR HANGERS SHALL NOT BE USED TO SUPPORT
- NON-SYSTEM COMPONENTS. SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE WHICH MUST SUPPORT THE ADDED LOAD OF THE WATER-FILLED

PIPE PLUS A MINIMUM OF 250 LBS. APPLIED AT THE POINT OF HANGING. CONTRACTOR SHALL SUBMIT DETAIL OF SUPPORT FOR REVIEW AND APPROVAL.

- E. SPRINKLER PIPING SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING
- WHEN SPRINKLER PIPING IS INSTALLED BELOW DUCTWORK, PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE, NOT FROM TH
- MAXIMUM DISTANCE BETWEEN HANGERS SHALL NOT EXCEED 12 FT. FOR 1 AND 1-1/4" SIZES NOR 15' FOR SIZES 1-1/2" AND LARGER.
- H. EXPANSION SHIELDS FOR SUPPORTING PIPES UNDER CONCRETE CONSTRUCTION MAYBE USED IN A HORIZONTAL POSITION IN THE SIDES OF BEAMS. IN CONCRETE HAVING GRAVEL OR CRUSHED STONE AGGREGATE, EXPANSION SHIELDS MAY BE USED IN THE VERTICAL POSITION TO SUPPORT PIPES 4" OR LESS IN DIAMETER.

2.09 ESCUTCHEONS

PROVIDE ESCUTCHEONS ON ALL EXPOSED PIPING PASSING THROUGH WALLS, PARTITIONS, FLOORS AND CEILINGS. ESCUTCHEON SHALL BE HELD IN PLACE BY INTERNAL TENSION OR SET SCREW.

2.10 AS-BUILT DRAWINGS

PREPARE AND SUBMIT "AS BUILT" DRAWINGS AT THE COMPLETION OF THE

2.11 SPRINKLER HEADS

A. SPRINKLERS SHALL BE RATED FOR ORDINARY TEMPERATURES (135/165 DEG. F) EXCEPT AS REQUIRED NEAR HEATERS OR LOCATIONS WHERE ELEVATED

- TEMPERATURES MAY NORMALLY BE EXPECTED OR AS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS.
- B. SPRINKLER HEADS SHALL BE BY TYCO SPRINKLER CO., INC. MANUFACTURE OR APPROVED EQUAL, UL AND FM APPROVED, AS FOLLOWS:
- 1. SPRINKLER HEADS IN FINISHED CEILINGS WITH CONCEALED PIPING SHALL BE AUTOMATIC TYCO MODEL TY3531.
- 2. UPRIGHT SPRINKLER HEADS SHOULD BE AUTOMATIC TYCO MODEL TY3121.
- 3. DRY PENDENT SPRINKLER HEADS SHOULD BE AUTOMATIC TYCO MODEL
- 4. PROVIDE SPARE SPRINKLER EMERGENCY CABINETS CONFORMING TO NFPA
- 5. SPRINKLER EMERGENCY CABINETS SHALL BE OF TYCO SPRINKLER CO., INC. OR APPROVED EQUAL, UL AND FM APPROVED.
- 6. CABINET SHALL BE CONSTRUCTED OF 22 GAUGE STEEL WITH PRIME COAT AND MANUFACTURER'S BAKED ENAMEL FINISH IN COLOR SELECTED BY THE
- 7. CABINET SHALL CONTAIN A MINIMUM OF 6 SPRINKLER HEADS OF EACH TYPE EMPLOYED.

2.12 PRESSURE GAUGE

ASHCROFT SERIES 1079, OR APPROVED OTHER, 4-1/2" DIAMETER, 0-200 P.S.I. RANGE, 20 P.S.I. INTERVALS.

PART 3 - EXECUTION

3.01 GUARANTEE

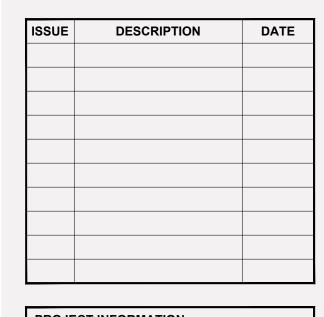
A. GUARANTEE FOR A PERIOD OF ONE (1) YEAR FORM THE DATE OF ACCEPTANCE BY THE OWNER, ALL MATERIALS, APPARATUS AND WORKMANSHIP WHETHER FURNISHED BY HIMSELF OR BY HIS SUBCONTRACTORS AND HE SHALL REPLACE OR REPAIR IN A MANNER APPROVED BY THE ARCHITECTS, WITHOUT COST TO THE OWNER, ANY PART OR PARTS OF THE WORK WHICH MAY PROVE DEFECTIVE OR UNSATISFACTORY WITH IN THE PERIOD OF THE GUARANTEE.

3.02 INSTALLATION

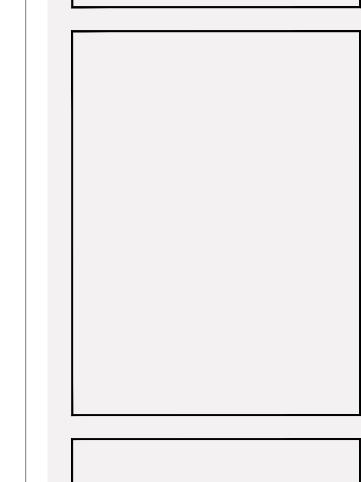
- 1. INSTALL PIPING AS SHOWN ON THE CONTRACT DRAWINGS AND STRAIGHT AND DIRECT AS POSSIBLE, FORMING RIGHT ANGLES OR PARALLEL LINES WITH BUILDING WALLS, NEATLY SPACED, WITH RISERS PLUMB AND TRUE.
- 2. SPRINKLER PIPING SHALL BE INSTALLED SO THAT THE SYSTEM CAN BE
- 3. PIPE SHALL BE REMOVED BY REAMING.
- 4. BEFORE INSTALLING PIPE, THOROUGHLY CLEAN THE INSIDE FREE OF CUTTING AND FOREIGN MATTER. CUT ALL PIPE SQUARE AND SMOOTH AND MAKE UP ALL JOINTS TO REQUIRED LIMITS.

B. PIPE JOINTS

1. THREADED JOINTS SHALL BE MADE UP OF TIGHT USING PIPE JOINT TEFLON COMPOUND OR TAPE, APPLIED ON THE MALE THREADS ONLY.



PROJECT INFORMATION: **UNCLE WILLIE'S WINGS**



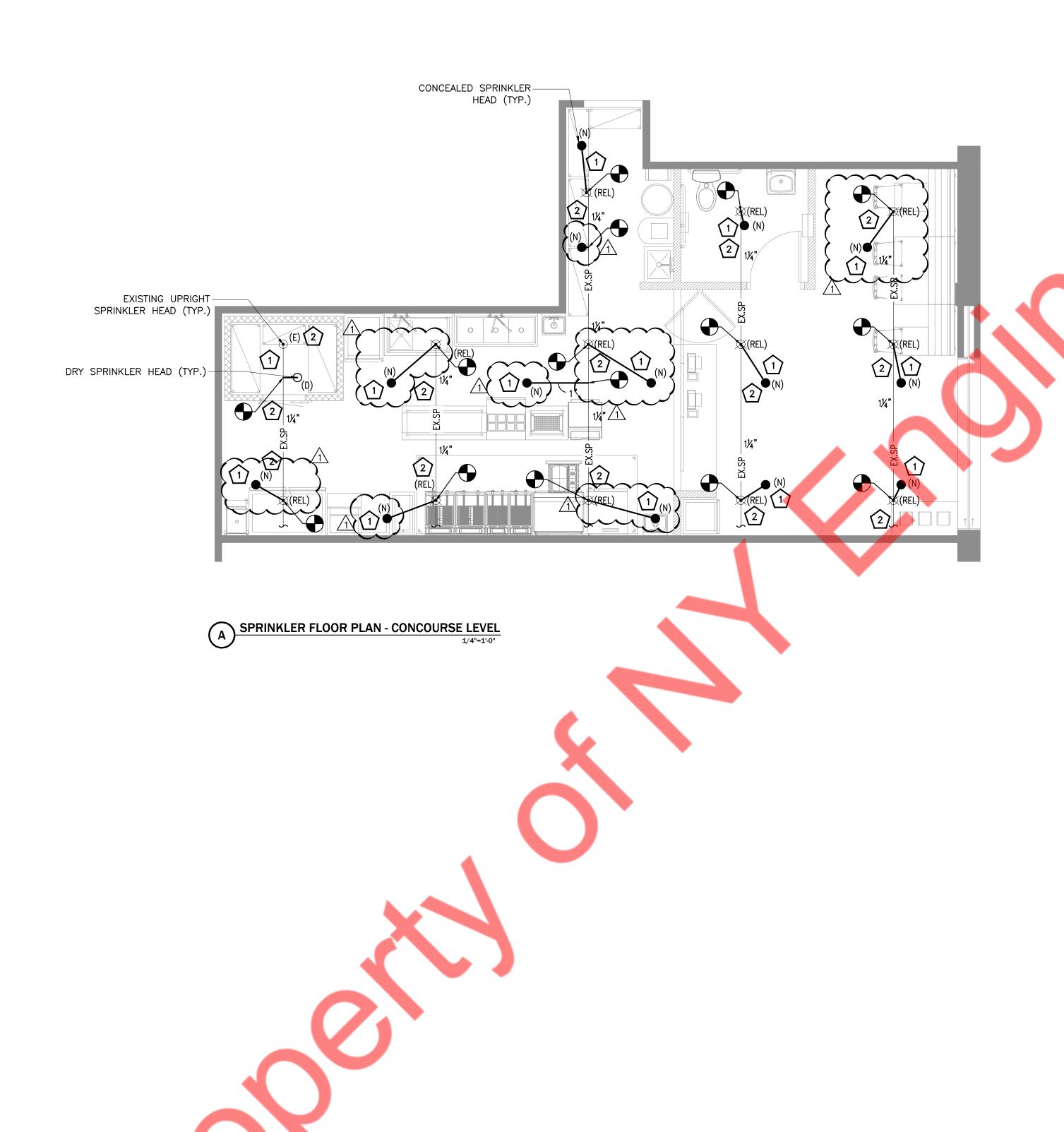
DATE: 05/09/2022 **PROJECT NO.:** Z073-22 DRAWN BY: NYE **CHECKED BY:** NYE **SCALE:** AS NOTED

DRAWING TITLE:

SPRINKLER NOTES AND SPECIFICATIONS

DRAWING NO.:

SP0.2



GENERAL NOTES:

- CONTRACTOR TO FIELD VERIFY TO INSTALL ALL SPRINKLER HEADS TO BE MAX. 12" FROM CEILING.
- ALL NEW SPRINKLER HEADS LOCATION TO BE COORDINATED WITH LIGHTING AND DIFFUSERS TO AVOID CONFLICT.
- 3. ALL SPRINKLER HEADS & PIPING TO BE COORDINATED WITH EXISTING & NEW SERVICES.
- 4. ANY WORK SHOWN ON THE DRAWINGS AND NOT PARTICULARLY DESCRIBED IN THE SPECIFICATIONS OR DETAILS, OR ANY WORK WHICH MAY BE DEEMED NECESSARY TO COMPLETE THE CONTRACT SHALL BE PROVIDED BY THE
- CONTRACTOR AS PART OF THIS CONTRACT.

 5. FOR PURPOSES OF CLEARNESS AND LEGIBILITY, SPRINKLER DRAWINGS ARE ESSENTIALLY DIAGRAMMATIC AND SIZE AND LOCATION OF EQUIPMENT ARE DRAWN TO SCALE WHEREVER POSSIBLE. THE DRAWINGS INDICATE SIZE, CONNECTION POINTS, AND ROUTED OF PIPES. IT IS NOT INTENDED, HOWEVER, THAT ALL OFFSETS, RISES AND DROPS ARE SHOWN. PROVIDE PIPING AS REQUIRED TO FIT STRUCTURE, AVOID OBSTRUCTIONS, AND RETAIN CLEARANCES, HEADROOM OPENINGS AND PASSAGEWAYS. ALL SPRINKLER PIPING AT CEILING SHALL BE ROUTED TIGHT TO EXISTING SLAB AS
- REQUIRED.
 6. CONTRACTOR TO FIELD VERIFY FEASIBILITY OF SLAB PENETRATION IF
- REQUIRED AS PER STRUCTURAL REQUIREMENT.

 7. ALL SPRINKLER HEADS & PIPING TO BE COORDINATED WITH EXISTING &
- NEW SERVICES.

 8. CONTRACTOR TO FIELD VERIFY EXACT LOCATION AND SIZE OF EXISTING
- SYSTEM AND RELOCATE HEADS WHEREVER SHOWN.

 9. ALL PENDANT SPRINKLERS MUST BE SPACED AS FOLLOWS —
- MAXIMUM 7.5' FROM WALL
 MAXIMUM DISTANCE BETWEEN 2 SPRINKLER HEADS IS 15'.
- MINIMUM DISTANCE BETWEEN 2 SPRINKLER HEADS IS 6'.
 COVERAGE AREA PER SPRINKLER SHALL BE MAX. 150 SQ.FT.
 ALL SPRINKLER HEADS MEET DESIGN CRITERIA PER COVERAGE.
- 11. AUXILIARY DRAIN SHALL BE PROVIDED AT THE TRAPPED SECTIONS.
- ALL EXISTING SPRINKLER SYSTEM AT THIS FLOOR TO BE DEMOLISHED UNLESS OTHERWISE NOTED.
- 13. FOR SPRINKLER WORK ONLY.

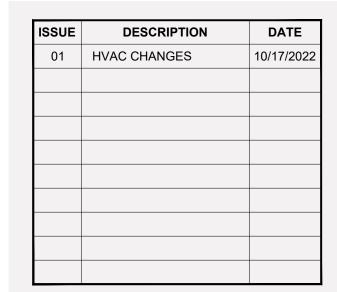
SPRINKLER KEYNOTES

 $\overbrace{1}$ ALL BRANCH TAKE-OFF FOR EACH SPRINKLER TO BE MIN. 1".

ALL EXISTING SPRINKLER PIPING AND EXISTING TO REMAIN SPRINKLER HEADS TO BE RAISED AT SUFFICIENT HEIGHT. COORDINATE WITH REFLECTED CEILING PLAN AND STRUCTURAL DRAWINGS FOR RAISING HEIGHT.

SPRINKLERS	
EXISTING UPRIGHT HEADS TO BE RELOCATED	12
NEW CONCEALED HEAD	02
DRY SPRINKLER HEAD	01
EXISTING UPRIGHT SPRINKLER HEAD	01
TOTAL	16

HA	HAZARD CLASSIFICATION AND DESIGN DENSITY:								
	AREA : KITCHEN AREA								
MINIMUM	OCCUPANCY: DESIGN DENSITY:	ORDINARY HAZARD 0.15 GPM/SQ. FT.							
	AREA : HA	ALL AREA							
MINIMUM	OCCUPANCY: DESIGN DENSITY:	LIGHT HAZARD 0.1 GPM/SQ. FT.							



PROJECT INFORMATION:

UNCLE WILLIE'S WINGS

DATE:
PROJECT NO.:

PROJECT NO.:

DRAWN BY: NYE

CHECKED BY: NYE

SCALE: AS NOTED

DRAWING TITLE:

SPRINKLER FLOOR PLAN

DRAWING NO.:

SP1.0

