

CONSULTANT (ENGINEER)

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE
49674, MIAMI, FL 33179
PH-914-257-3455
WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA. LICENSE NO. 28470, EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:

WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS WILL NOT BE APPROVED FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE PLANS AND THE EXISTING CONDITIONS.

DATE ISSUE

05/05/25 90% PERMIT SET

05/30/25 100% PERMIT SET

FAIRWAY, KS BUILDING DEPARTMENT NOTES:

ALL WORK SHALL COMPLY WITH APPLICABLE SECTIONS OF 2012 IRC AND ALL AMENDMENTS AND RULES AND REGULATIONS OF THE DEPARTMENT OF BUILDINGS TO DATE.

- THE CONTRACTOR SHALL ENGAGE THE THE SERVICES OF A PROFESSIONAL ENGINEER TO PROVIDE THE REQUIRED SPECIAL INSPECTIONS AND TESTS.
- 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.
- TESTS OF MECHANICAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SECTIONS OF THE 2012 IMC:
 - VENTILATION SYSTEM-MC 403.3.
 - REFRIGERATION SYSTEMS -MC 1108
- THE FOLLOWING WORK ITEMS, COMPONENTS, MATERIALS, CAPACITIES, ETC. SHALL COMPLY WITH THE REFERENCED CODE OR STANDARD:
 - DUCT CONSTRUCTION AND INSTALLATION-MC 603
 - AIR INTAKES, EXHAUSTS AND RELIEF -MC 401.5
- MINIMUM TEMPERATURE TO BE MAINTAINED IN OCCUPIED SPACES DURING HEATING SEASON: 68 DEG. FAHRENHEIT.
- 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 MC-601.
- 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.
- MECHANICAL SYSTEMS SHALL BE COMMISSIONED PER 2012 IECC C403.2.2, C408.2.1, C408.2.5 FINAL COMMISSIONING REPORT SHALL BE DUE WITHIN 90 DAYS OF RECEIPT OF CERTIFICATE OF OCCUPANCY.
- A COMMISSIONING PLAN SHALL BE DEVELOPED BY A LICENSED DESIGN PROFESSIONAL MECHANICAL ENGINEER OR APPROVED AGENCY.
- A PRELIMINARY REPORT OF COMMISSIONING TEST PROCEDURES AND RESULTS SHALL BE COMPLETED AND CERTIFIED BY THE LICENSED DESIGN PROFESSIONAL ELECTRICAL ENGINEER, MECHANICAL ENGINEER OR APPROVED AGENCY AND PROVIDED TO THE BUILDING OWNER OR OWNERS AUTHORIZED AGENT.
- A FINAL REPORT OF TEST PROCEDURES AND RESULTS, IDENTIFIED AS "FINAL COMMISSIONING REPORT" SHALL BE DELIVERED TO THE BUILDING OWNER OR OWNERS AUTHORIZED AGENT. THE REPORT SHALL BE ORGANIZED WITH MECHANICAL SYSTEM AND SERVICE HOT WATER SYSTEM FINDINGS IN SEPARATE SECTIONS TO ALLOW INDEPENDENT REVIEW.
- ALL HEATING AND COOLING LOADS CALCULATED PER ASHRAE/ACCA 183.
- SMOKE DETECTOR SHALL MEET UL268A

CODE COMPLIANCE

ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THESE PROJECT:

1	INTERNATIONAL BUILDING CODE 2018
2	INTERNATIONAL MECHANICAL CODE 2018
3	INTERNATIONAL PLUMBING CODE 2018
4	INTERNATIONAL ENERGY CONSERVATION CODE 2018
5	NATIONAL ELECTRICAL CODE 2017 (NEC 2017)
6	INTERNATIONAL FUEL GAS CODE 2018

DUCT INSULATION AND ACOUSTICAL LINING:

FURNISH AND INSTALL INSULATION AND/OR LINING WHERE SHOWN ON PLANS OR SPECIFIED BELOW. ALL DUCT SIZES NOTED ON DRAWINGS ARE AIRWAY SIZES WITHOUT SOUND LINING INCLUDED. ADJUST SHEET METAL SIZES ACCORDINGLY. INSULATION PRODUCTS SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING MANUFACTURERS:

- MANVILLE CORP.
- OWENS-CORNING FIBERGLASS CORP.
- CERTAIN-TEED CORP.
- KNAUF

A. DUCT SOUND LINING:

- RECTANGULAR SUPPLY, EXHAUST/RETURN AND RELIEF AIR DUCTS:
 - FLEXIBLE GLASS FIBER TYPE, 1.5 PCF DENSITY, SURFACES EXPOSED TO AIR STREAM SHALL BE COATED TO PREVENT EROSION OF GLASS FIBERS.
- DUCT LINER SHALL HAVE A MAXIMUM FLAME-SPREAD INDEX OF 25 AND SMOKE-DEVELOPED INDEX OF 50 WHEN TESTED ACCORDING TO ASTM E 84, MEET THE REQUIREMENTS OF NFPA 90A, AND SHALL BE LABELED BY UL.

ALL DUCTWORK DIMENSIONS SHOWN ON PLANS ARE CLEAR INSIDE DIMENSIONS.

B. DUCT INSULATION:

- ALL CONCEALED SUPPLY DUCTWORK NOT SOUND LINED AND RUN-OUTS TO AIR DIFFUSERS:
 - 1-1/2" FLEXIBLE GLASS FIBER WITH ALL SERVICE VAPOR BARRIER JACKET, MINIMUM 0.75 PCF DENSITY.
- ALL INTERIOR EXHAUST AIR DUCTWORK BETWEEN BACKDRAFT DAMPER AND DISCHARGE OF BUILDINGS:
 - 1-1/2" FLEXIBLE GLASS FIBER WITH ALL SERVICE VAPOR BARRIER JACKET, MINIMUM 0.75 PCF DENSITY.
- ALL RETURN DUCTWORK NOT LINED:
 - 1-1/2" FLEXIBLE GLASS FIBER DUCT WRAP WITH ALL SERVICE VAPOR BARRIER JACKET, MINIMUM 0.75 PCF DENSITY.
- INSULATED FLEXIBLE DUCT:
 - UL 181, CLASS 1, 2-PLY VINYL FILM, BLACK POLYMER FILM, MULTIPLE LAYERS OF ALUMINUM LAMINATE, OR ALUMINUM LAMINATE AND POLYESTER FILM WITH LATEX ADHESIVE, SUPPORTED BY HELICALLY WOUND, SPRING-STEEL WIRE; FIBROUS-GLASS INSULATION; POLYETHYLENE OR ALUMINIZED VAPOR BARRIER FILM. ALL SUPPLY AND RETURN AIR DUCTWORK CONNECTIONS TO EACH AIR SUPPLY OUTLET AND RETURN INLET: 5' LENGTH MAXIMUM LENGTH, AND NOT PENETRATE WALLS, FLOORS, OR CEILING.

TEST AND BALANCE

TEST AND ADJUST ALL MECHANICAL SYSTEMS AND EQUIPMENT TO ASSURE PROPER BALANCE AND OPERATION. PERFORM TESTS IN ACCORDANCE WITH NEBB OR AABC, AND ASHRAE STANDARDS. SUBMIT COMPLETED TEST AND BALANCE REPORT TO OWNER'S REPRESENTATIVE. BALANCE CONTRACTOR SHALL BE AN INDEPENDENT CERTIFIED TEST AND BALANCE CONTRACTOR, WITH NEBB OR AABC CERTIFICATION. BALANCE ALL SYSTEMS TO WITHIN 5% OF AIRFLOWS INDICATED ON DRAWINGS, AND REPORT ALL DISCREPANCIES TO HVAC INSTALLER FOR CORRECTION. MARK FINAL BALANCE POSITIONS ON DAMPERS WITH PERMANENT MARKER.

ENERGY CODE

ALL MECHANICAL SYSTEMS TO MEET THE REQUIREMENTS OF THE 2018 IECC

SUPPLY AND RETURN AIR DUCTS AND FLENUMS SHALL BE INSULATED WITH A MINIMUM OF R-6 INSULATION WHERE LOCATED IN UNCONDITIONED SPACES AND WHERE LOCATED OUTSIDE THE BUILDING WITH A MINIMUM OF R-8 INSULATION.

LONGITUDINAL AND TRANSVERSE JOINTS, SEAMS AND CONNECTIONS OF SUPPLY AND RETURN DUCTS OPERATING AT A STATIC PRESSURE LESS THAN OR EQUAL TO 2 INCHES WATER GAUGE SHALL BE SECURELY FASTENED AND SEALED WITH WELDS, GASKETS, MASTICS, MASTIC-PLUS-EMBEDDED-FABRIC SYSTEMS OR TAPES INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTION.

PROVIDE BALANCING DAMPERS AT EACH BRANCH DUCT.

PROVIDE O&M INSTRUCTIONS FOR SYSTEMS AND EQUIPMENT TO THE BUILDING OWNER OR DESIGNATED REPRESENTATIVE. MANUALS TO BE PROVIDED WITHIN 90 DAYS OF SYSTEM ACCEPTANCE.

HVAC SYSTEMS AND EQUIPMENT CAPACITY DOES NOT EXCEED CALCULATED LOADS.

THERMOSTATIC CONTROL NOTES:

C403.4.1 THERMOSTATIC CONTROLS (MANDATORY)

THE SUPPLY OF HEATING AND COOLING ENERGY TO EACH ZONE SHALL BE CONTROLLED BY INDIVIDUAL THERMOSTATIC CONTROLS CAPABLE OF RESPONDING TO TEMPERATURE WITHIN THE ZONE. WHERE HUMIDIFICATION OR DEHUMIDIFICATION OR BOTH IS PROVIDED, NOT FEWER THAN ONE HUMIDITY CONTROL DEVICE SHALL BE PROVIDED FOR EACH HUMIDITY CONTROL SYSTEM.

EXCEPTION: INDEPENDENT PERIMETER SYSTEMS THAT ARE DESIGNED TO OFFSET ONLY BUILDING ENVELOPE HEAT LOSSES, GAINS OR BOTH SERVING ONE OR MORE PERIMETER ZONES ALSO SERVED BY AN INTERIOR SYSTEM PROVIDED THAT BOTH OF THE FOLLOWING CONDITIONS ARE MET:
THE PERIMETER SYSTEM INCLUDES NOT FEWER THAN ONE THERMOSTATIC CONTROL ZONE FOR EACH BUILDING EXPOSURE HAVING EXTERIOR WALLS FACING ONLY ONE ORIENTATION (WITHIN ± 45 DEGREES) (0.8 RAD) FOR MORE THAN 50 CONTIGUOUS FEET (15.240 MM).
THE PERIMETER SYSTEM HEATING AND COOLING SUPPLY IS CONTROLLED BY THERMOSTATS LOCATED WITHIN THE ZONES SERVED BY THE SYSTEM.

C403.4.1.2 DEADBAND (MANDATORY)

WHERE USED TO CONTROL BOTH HEATING AND COOLING, ZONE THERMOSTATIC CONTROLS SHALL BE CONFIGURED TO PROVIDE A TEMPERATURE RANGE OR DEADBAND OF NOT LESS THAN 5°F (2.8°C) WITHIN WHICH THE SUPPLY OF HEATING AND COOLING ENERGY TO THE ZONE IS SHUT OFF OR REDUCED TO A MINIMUM.

EXCEPTIONS:

THERMOSTATS REQUIRING MANUAL CHANGEOVER BETWEEN HEATING AND COOLING MODES. OCCUPANCIES OR APPLICATIONS REQUIRING PRECISION IN INDOOR TEMPERATURE CONTROL AS APPROVED BY THE CODE OFFICIAL.

C403.4.1.3 SETPOINT OVERLAP RESTRICTION (MANDATORY)

WHERE A ZONE HAS A SEPARATE HEATING AND A SEPARATE COOLING THERMOSTATIC CONTROL LOCATED WITHIN THE ZONE, A LIMIT SWITCH, MECHANICAL STOP OR DIRECT DIGITAL CONTROL SYSTEM WITH SOFTWARE PROGRAMMING SHALL BE CONFIGURED TO PREVENT THE HEATING SETPOINT FROM EXCEEDING THE COOLING SETPOINT AND TO MAINTAIN A DEADBAND IN ACCORDANCE WITH SECTION C403.4.1.2.

C403.4.2 OFF-HOUR CONTROLS (MANDATORY)

EACH ZONE SHALL BE PROVIDED WITH THERMOSTATIC SETBACK CONTROLS THAT ARE CONTROLLED BY EITHER AN AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROL SYSTEM. EXCEPTIONS:
ZONES THAT WILL BE OPERATED CONTINUOUSLY.
ZONES WITH A FULL HVAC LOAD DEMAND NOT EXCEEDING 6,800 BTU/H (2 KW) AND HAVING A MANUAL SHUTOFF SWITCH LOCATED WITH READY ACCESS.

C403.4.2.1 THERMOSTATIC SETBACK (MANDATORY)

THERMOSTATIC SETBACK CONTROLS SHALL BE CONFIGURED TO SET BACK OR TEMPORARILY OPERATE THE SYSTEM TO MAINTAIN ZONE TEMPERATURES DOWN TO 55°F (13°C) OR UP TO 95°F (29°C).

C403.4.2.2 AUTOMATIC SETBACK AND SHUTDOWN (MANDATORY)

AUTOMATIC TIME CLOCK OR PROGRAMMABLE CONTROLS SHALL BE CAPABLE OF STARTING AND STOPPING THE SYSTEM FOR SEVEN DIFFERENT DAILY SCHEDULES PER WEEK AND RETAINING THEIR PROGRAMMING AND TIME SETTING DURING A LOSS OF POWER FOR NOT FEWER THAN 10 HOURS. ADDITIONALLY, THE CONTROLS SHALL HAVE A MANUAL OVERRIDE THAT ALLOWS TEMPORARY OPERATION OF THE SYSTEM FOR UP TO 2 HOURS. A MANUALLY OPERATED TIMER CONFIGURED TO OPERATE THE SYSTEM FOR UP TO 2 HOURS, OR AN OCCUPANCY SENSOR.

C403.4.2.3 AUTOMATIC START (MANDATORY)

AUTOMATIC START CONTROLS SHALL BE PROVIDED FOR EACH HVAC SYSTEM. THE CONTROLS SHALL BE CONFIGURED TO AUTOMATICALLY ADJUST THE DAILY START TIME OF THE HVAC SYSTEM IN ORDER TO BRING EACH SPACE TO THE DESIRED OCCUPIED TEMPERATURE IMMEDIATELY PRIOR TO SCHEDULED OCCUPANCY.

REGULATIONS, CODES AND STANDARDS:

THIS CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES AND PAY ALL FEES IN CONNECTION WITH SAME FOR WORK PERFORMED UNDER DIVISION 15.

IDENTIFICATION:

ACCESS PANELS SHALL HAVE ENGRAVED PLASTIC MARKERS INDICATING WHAT ACCESS DOOR IS PROVIDED FOR PIPING SHALL HAVE MARKERS NEAR EACH BRANCH VALVE AND PIECE OF EQUIPMENT AND WHERE PIPE PASSES THROUGH WALLS, FLOORS, AND CEILING. SPACE MARKERS AT A MAXIMUM 25' INTERVALS.

OPENINGS, CHASES AND RECESSES:

THIS CONTRACTOR SHALL GIVE GENERAL CONTRACTOR, IN SUFFICIENT TIME, ALL DIMENSIONS NEEDED FOR THE PROPER CONSTRUCTION AND LOCATION OF FORMS, CHASES AND OTHER OPENINGS WHICH MAY BE REQUIRED FOR THE INSTALLATION OF ALL EQUIPMENT, PIPE, DUCTS AND MATERIALS UNDER THIS CONTRACT.

PROTECTION OF EQUIPMENT:

PROTECT AGAINST INJURY FROM WEATHER ALL BUILDING MATERIALS, SUPPLIES, TOOLS, EQUIPMENT, AND FIXTURES INSTALLED OR TO BE INSTALLED, WITH SUITABLE AND SUBSTANTIAL COVERS. COST OF REPLACING OR REPAIRING EQUIPMENT AND FIXTURES MADE NECESSARY BY FAILURE TO PROVIDE SUITABLE PROTECTION SHALL BE PAID BY THIS CONTRACTOR. RESPONSIBILITY FOR THE CARE AND PROTECTION OF MECHANICAL EQUIPMENT AND WORK SHALL REMAIN WITH THIS CONTRACTOR UNTIL IT HAS BEEN TESTED AND ACCEPTED. PROTECT EQUIPMENT OUTLETS, PIPE, DUCT, AND CONDUIT OPENINGS WITH TEMPORARY PLUGS, CAPS, OR APPROVED DEVICES.

PROTECT DEVICES:

ALL GEARS, BELTS, AND MOVING PARTS ARE TO BE AMPLY PROTECTED BY SUBSTANTIAL, NEAT, AND APPROVED PERMANENT GUARDS, CASINGS, OR RAILINGS AS THE CASE MAY REQUIRE AND IN SUCH MANNER AS TO FULLY COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

CLEANING:

AFTER ALL FIXTURES, MATERIALS, AND APPARATUS HAVE BEEN SET AND READY FOR USE, AND BEFORE THIS CONTRACTOR LEAVES THE JOB, HE SHALL THOROUGHLY CLEAN ALL EQUIPMENT FURNISHED AND SET BY HIM, REMOVING ALL STICKERS, RUST STAIN, GREASE, CEMENT, AND OTHER FOREIGN MATTER OR DISCOLORATION ON EQUIPMENT, LEAVING EVERY PART IN ACCEPTABLE CONDITION, READY FOR USE. CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM HIS WORK, LEAVING BUILDING IN CLEAN CONDITION, SUITABLE FOR OCCUPANCY. VACUUM CLEAN INTERIOR OF ALL AIR HANDLING UNITS BEFORE COMPLETION AND PROVIDE NEW FILTERS JUST BEFORE TURNING OVER TO OWNER.

UTILITY COMPANIES:

CONTACT UTILITY COMPANIES AND ADVISE OF PROPOSED WORK PRIOR TO THE START OF THE EXCAVATION.

ACTIVE UTILITIES:

WHEN ENCOUNTERED IN WORK, PROTECT, BRACE, AND SUPPORT EXISTING ACTIVE SEWERS, GAS, ELECTRIC, AND OTHER SERVICES WHERE REQUIRED FOR PROPER EXECUTION OF WORK. IF EXISTING ACTIVE UTILITIES ARE ENCOUNTERED THAT ARE NOT INDICATED, AND WHICH REQUIRE RELOCATION, MAKE REQUEST IN WRITING FOR DETERMINATION. DO NOT PROCEED WITH WORK UNTIL WRITTEN DIRECTIONS ARE RECEIVED. DO NOT PREVENT OR DISTURB OPERATION OF ACTIVE SERVICES THAT ARE TO REMAIN.

INACTIVE UTILITIES:

WHEN ENCOUNTERED IN WORK, REMOVE, CAP, OR PLUG INACTIVE SERVICES. NOTIFY UTILITY COMPANIES OR MUNICIPAL AGENCIES HAVING JURISDICTION; PROTECT OR REMOVE THESE SERVICES AS DIRECTED.

INTERRUPTION OF UTILITIES:

WHERE WORK MAKES TEMPORARY SHUTDOWN OF SERVICES UNAVOIDABLE, SHUT DOWN AT NIGHT, OR AT SUCH TIMES AS APPROVED BY OWNER, WHICH WILL CAUSE LEAST INTERFERENCE WITH ESTABLISHED OPERATING ROUTINE. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVERTIME IF REQUIRED, SO AS TO MAKE THE SHUTDOWN OF SERVICES THE LEAST AMOUNT OF TIME.

PACKAGE ROOFTOP UNITS:

PROVIDE FACTORY-FABRICATED AND FACTORY-TESTED AR HANDLING UNITS AS INDICATED, OF SIZES AND CAPACITIES AS SCHEDULED. CASING SHALL BE CONSTRUCTED OF 16-GA MINIMUM WALL GALVANIZED OR BEMBERIZED STEEL DESIGNED TO WITHSTAND SPECIFIED OPERATING PRESSURES. PROVIDE CASING PANELS AND/OR ACCESS DOORS THAT ARE EASILY AND QUICKLY REMOVABLE FOR INSPECTION AND ACCESS TO INTERNAL PARTS. PROVIDE SINGLE ZONE UNITS CONSISTING OF FAN SECTION, INDIRECT FIRED LP GAS FIRED HEAT EXCHANGER, DX COIL SECTION, FILTER SECTION, ADJUSTABLE FAN MOTOR MOUNTING, AND DRAIN PAN PROVIDE DRAIN PAN LOCATED UNDER COOLING COIL SECTION. PROVIDE DRAIN CONNECTIONS IN A DRAIN PAN ON EACH SIDE AT LOW POINTS. INSULATE UNIT CASING FROM AIR EXHAUST TO COILS, TO AIR OUTLET FROM UNIT. INSTALLATION SHALL HAVE FIRE-RETARDING CHARACTERISTICS COMPLYING WITH NFPA 90A. PROVIDE HIGH EFFICIENCY MOTOR AND ONE SPARE SET OF BELTS AND FILTERS. UNITS SHALL COMPLY WITH ARI 430, NFPA 90A, LL, AND AMCA STANDARDS.

APPROVED MANUFACTURERS ARE CARRIER, TRANE, LENNOX, YORK

EXHAUST FANS:

PROVIDE STANDARD PREFABRICATED INLINE EXHAUST FANS OF TYPE AND SIZE INDICATED, MODIFIED AS NECESSARY TO COMPLY WITH REQUIREMENTS AND AS REQUIRED TO COMPLETE INSTALLATION. PROVIDE FACTORY-WIRED NON-FUSIBLE TYPE DISCONNECT SWITCH AND THERMAL OVERLOAD PROTECTION.

APPROVED MANUFACTURERS ARE GREENHECK, LOREN COOK, PENN VENTILATOR, TWIN CITY FANS, AND ACME.

AIR DISTRIBUTION:

PROVIDE AND INSTALL ALL RIGID DUCTWORK AS SHOWN ON THE DRAWINGS AND AS HEREIN SPECIFIED. CONSTRUCT DUCTWORK AND APPARATUS CASINGS OF GALVANIZED STEEL CONFORMING TO SMACNA "LOW PRESSURE" DUCT CONSTRUCTION STANDARDS 2020". CONSTRUCT DIVIDED FLOW FITTINGS WITH SADDLE TAP WELDED TO DUCT FITTING BODY. ALL CONNECTIONS SHALL BE BELL-MOUTHED AND SMOOTH WITH LONG RADIUS BENDS.

INSULATED FLEXIBLE DUCT SHALL BE INSULATED, SOUND ATTENUATING, LOW VELOCITY TYPE, AND SHALL COMPLY WITH NFPA 90A AND 90B, AND BE US 181 CLASS LABELED. DUCT SHALL BE FACTORY FORMED COMPOSED OF A SPIRAL WOUND, CORROSION RESISTANT WIRE BONDED TO AN INNER FABRIC LINER, INSULATED WITH FIBERGLASS WITH A R FACTOR OF 0.23 OR LESS, AND WITH AN OUTER VAPOR BARRIER OF FIBERGLASS REINFORCED METALIZED FILM, OUTER VAPOR BARRIER CONSTRUCTED OF POLYETHYLENE IS NOT ACCEPTABLE. THE DUCT SHALL BE RATED FOR 6" OF POSITIVE PRESSURE AND SHALL NOT EXCEED 6' IN LENGTH.

PROVIDE MANUAL, SINGLE, OR MULTI-BLADE BALANCING DAMPERS AS INDICATED CONSTRUCTED IN ACCORDANCE WITH SMACNA STANDARDS. DAMPERS SHALL HAVE A PROTECTIVE COAT OF RED ZINC CHROMATE PRIMER OVER A BOND COAT.

PROVIDE MANUFACTURED TURNING VANES IN ALL ELBOWS CONSTRUCTED OF 1 1/2" WIDE CURVED BLADES SET AT 34° O.C., SUPPORTED WITH BARS PERPENDICULAR TO BLADES SET AT 2° O.C. AND SET INTO SIDE STRIPS SUITABLE FOR MOUNTING IN DUCTWORK.

PROVIDE FLEXIBLE DUCT CONNECTIONS WHEREVER DUCTWORK CONNECTS TO VIBRATION ISOLATED EQUIPMENT AND WHERE SHOWN OR NOTED, CONSTRUCT FLEXIBLE CONNECTIONS OF NEOPRENE-COATED FLAMEPROOF FABRIC CRIMPED INTO DUCT FLANGES FOR ATTACHMENT TO DUCT AND EQUIPMENT. PROVIDE ADEQUATE JOINT FLEXIBILITY TO ALLOW FOR THERMAL, AXIAL, TRANSVERSE, AND TORSIONAL MOVEMENT, AND ALSO CAPABLE OF ABSORBING VIBRATIONS OF CONNECTED EQUIPMENT.

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE MISCELLANEOUS ITEMS NECESSARY TO PROVIDE A COMPLETE AND PROPER INSTALLATION IN THE TYPES OF WALLS AND CEILING USED IN THE PROJECT AS SHOWN IN THE GENERAL CONSTRUCTION PLANS.

PROVIDE MANUFACTURER'S STANDARD CEILING AIR DIFFUSERS AND GRILLES WHERE SHOWN, OF SIZE, SHAPE, CAPACITY, AND TYPE INDICATED, CONSTRUCTED OF MATERIALS AND COMPONENTS AS INDICATED, AND AS REQUIRED FOR COMPLETE INSTALLATION. PROVIDE DIFFUSERS AND GRILLES WITH BORDER STYLES THAT ARE COMPATIBLE WITH ADJACENT CEILING SYSTEMS, AND THAT ARE SPECIFICALLY MANUFACTURED TO FIT INTO THE CEILING MODULE WITH ACCURATE FIT AND ADEQUATE SUPPORT.

EXHAUST TERMINATION OUTLET AND PASSAGEWAY SIZE OF DRYER EXHAUST DUCT TERMINALS SHALL BE UNDIMINISHED IN SIZE AND SHALL PROVIDE AN OPEN AREA OF NOT LESS THAN 12.5 SQUARE INCHES.

WHERE A CLOTHES DRYER EXHAUST DUCT PENETRATES A WALL OR CEILING MEMBRANE THE ANNULAR SPACE SHALL BE SEALED WITH NONCOMBUSTIBLE MATERIAL. APPLICABLE FIRE CAULKING OR A NONCOMBUSTIBLE DRYER EXHAUST DUCT WALL RECEPTACLE. DUCTS THAT EXHAUST CLOTHES DRYERS SHALL NOT PENETRATE OR BE LOCATED WITHIN ANY FIREBLOCKING, DRAFTSTOPPING OR ANY WALL, FLOOR/CEILING OR OTHER ASSEMBLY REQUIRED BY THE INTERNATIONAL BUILDING CODE TO BE FIRE-RESISTANCE RATED, UNLESS SUCH DUCT IS CONSTRUCTED OF GALVANIZED STEEL OR ALUMINUM OF THE THICKNESS SPECIFIED IN SECTION 603.4 OF THE IMC AND THE FIRE-RESISTANCE RATING IS MAINTAINED IN ACCORDANCE WITH THE INTERNATIONAL BUILDING CODE. FIRE DAMPERS, COMBINATION FIRE/SMOKE DAMPERS AND ANY SIMILAR DEVICES THAT WILL OBSTRUCT THE EXHAUST FLOW SHALL BE PROHIBITED IN CLOTHES DRYER EXHAUST DUCTS.

EACH VERTICAL RISER SHALL BE PROVIDED WITH A MEANS OF CLEANOUT.

SPECIFICATIONS SCOPE:

THIS SPECIFICATION REQUIRES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO MAKE A COMPLETE AND ACCEPTABLE MECHANICAL INSTALLATION AS SPECIFIED HEREIN AND SHOWN ON DRAWINGS. PROVIDE ALL ITEMS, ARTICLES, OPERATIONS, OR METHODS LISTED, MENTIONED, OR SCHEDULED HEREIN OR ON THE DRAWINGS, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY AND REQUIRED FOR COMPLETION OF THE WORK.

REGULATIONS, CODES AND STANDARDS:

CURRENT CODE REQUIREMENTS SHALL BE SATISFIED, WHERE REQUIRED BY LOCAL, STATE, OR FEDERAL AUTHORITY HAVING JURISDICTION. NO EQUIPMENT WILL BE ACCEPTED UNLESS IT BEARS THE ACCEPTANCE LABEL OF AN APPROPRIATE TESTING AGENCY.

SHOP DRAWINGS:

SUBMIT TO THE PROJECT ENGINEER, FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT LISTED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS. ALLOW 10 BUSINESS DAYS FOR REVIEW BY ARCHITECT/ENGINEER.

SUBMITTALS SHALL INCLUDE AS A MINIMUM THE FOLLOWING:

- PRODUCT DATA: MANUFACTURER'S LITERATURE DESCRIBING ITEM. MODEL NUMBERS PROPOSED SHALL BE IDENTIFIED WHEN THE LITERATURE DESCRIBES MORE THAN (1) ITEM.
- OPERATION CURVES: FOR ALL FANS SHOWING CAPACITIES, PRESSURES, HORSEPOWER, AND EFFICIENCY SHALL BE PROVIDED.
- MANUFACTURER'S SUBMITTAL, SHOWING ELECTRICAL AND MECHANICAL REQUIREMENTS AND CONNECTION LOCATIONS SHALL BE PROVIDED.
- MAINTENANCE DATA: SUBMIT MAINTENANCE DATA AND PARTS LIST FOR EACH TYPE OF EQUIPMENT REQUIRING PERIODIC MAINTENANCE.

ALL SHOP DRAWINGS SUBMITTED SHALL BE STAMPED, DATED, AND SIGNED BY THE CONTRACTOR TO CERTIFY THAT THEY HAVE BEEN CHECKED BY HIM AS TO CAPACITIES, DIMENSIONS, SPACE REQUIREMENTS AND LIMITATIONS, AND ANY AND ALL OTHER REQUIREMENTS, AND FOUND ACCEPTABLE. APPROVAL OF SHOP DRAWINGS BY THE PROJECT ENGINEER SHALL NOT RELIEVE CONTRACTOR FROM FULFILLING OPERATIONAL REQUIREMENTS, OR FURNISHING ALL MATERIAL AND EQUIPMENT SPECIFIED OR NOTED, WHETHER OR NOT SPECIFICALLY SHOWN ON THE SHOP DRAWINGS. THE QUANTITY TO BE SUBMITTED SHALL BE THE NUMBER REQUIRED BY THE GENERAL CONTRACTOR.

AS-BUILT DRAWINGS:

THE CONTRACTOR SHALL SUBMIT AT COMPLETION ONE (1) SET OF MARKED-UP CONTRACT DRAWINGS WHICH SHOW ALL MODIFICATIONS TO THE CONTRACT AND CHANGES OF LOCATIONS, MATERIALS, OR CONFIGURATIONS. THIS SET SHALL BE SUBMITTED WITH THE OPERATING MANUALS TO THE PROJECT ENGINEER.

OPERATING MANUALS:

PROVIDE THREE (3) MANUALS, EACH WITH A COMPLETE SET OF COPIES OF SHOP DRAWINGS REQUIRED FOR THE PROJECT AS WELL AS VALVE CHARTS, MANUFACTURER'S TESTING, CLEANING AND MAINTENANCE INSTRUCTIONS, LIST OF MATERIALS FOR MAINTENANCE, PARTS LIST, WIRING DIAGRAMS, AND NAME AND ADDRESS OF AUTHORIZED SERVICE ORGANIZATIONS AND SUPPLIERS.

INFORMATION SHALL BE BOUND IN 8"x11" 12"x11" THREE-RING, LOOSE-LEAF BINDER, AND INDEXED IN ACCORDANCE WITH THESE SPECIFICATIONS. BINDER COVER SHALL IDENTIFY JOB NAME, DATE, AND NAME AND ADDRESS OF CONTRACTOR, ARCHITECT, AND ENGINEER.

MANUALS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW OF MATERIAL PRIOR TO THE FINAL INSPECTION. MANUALS WILL BE RETURNED TO THE CONTRACTOR FOR THE SUBMITTAL TO THE OWNER AT THE TIME OF SYSTEM INSTRUCTION.

SYSTEM START-UP:

AT A TIME SET BY THE CONTRACTOR, AND AGREED TO BY THE OWNER, ARRANGE TO PLACE EQUIPMENT IN OPERATION. HAVE A FACTORY AUTHORIZED TECHNICIAN ASSIST IN THE EQUIPMENT START-UP AND MAKE NECESSARY ADJUSTMENTS TO PROVE SATISFACTORY OPERATION PRIOR TO TURNING FACILITY OVER TO OWNER. ALL EQUIPMENT SHALL BE RUN FOR THREE (3) HOUR TEST PERIODS. ANY IRREGULARITIES, FAULTY OPERATION, ETC., SHALL BE REPAIRED OR REPLACED PRIOR TO FINAL INSPECTION AND ACCEPTANCE. AFTER TESTING, ALL EQUIPMENT SHALL BE FRESHLY OILED, FILTERS REPLACED WITH CLEAN MEDIA, AND INSTALLATION COMPLETELY FINISHED PRIOR TO ACCEPTANCE.

OWNER INSTRUCTION:

CONTRACTOR SHALL ARRANGE, IN WRITING, WITH THE OWNER, PRIOR TO FINAL INSPECTION, A DATE OR DATES TO INSTRUCT THE OWNER, AND THE OWNER'S DESIGNATED REPRESENTATIVES, IN THE OPERATION AND MAINTENANCE OF THE SYSTEM.

FINAL INSPECTION:

UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE FOLLOWING DATA:

- BALANCE REPORTS
- MAINTENANCE MANUALS

AFTER RECEIVING APPROVAL OF THE ABOVE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING AND MAKE ARRANGEMENTS FOR A FINAL INSPECTION. AFTER THE FINAL INSPECTION IS MADE, THE CONTRACTOR WILL RECEIVE A LIST OF ITEMS REQUIRING ADJUSTMENT, CORRECTION, REPLACEMENT, OR COMPLETION.

THE CONTRACTOR SHALL COMPLY COMPLETELY WITH ALL THE LISTED REQUIREMENTS WITHIN THIRTY (30) DAYS OF THE RECEIPT OF LIST. SHOULD THE CONTRACTOR FAIL TO PERFORM WITHIN THIS TIME LIMIT, THE PROJECT ENGINEER AND/OR OWNER RESERVES THE RIGHT TO HAVE THE WORK COMPLETED BY OTHERS AND THE COST DEDUCTED FROM THE CONTRACT PRICE.

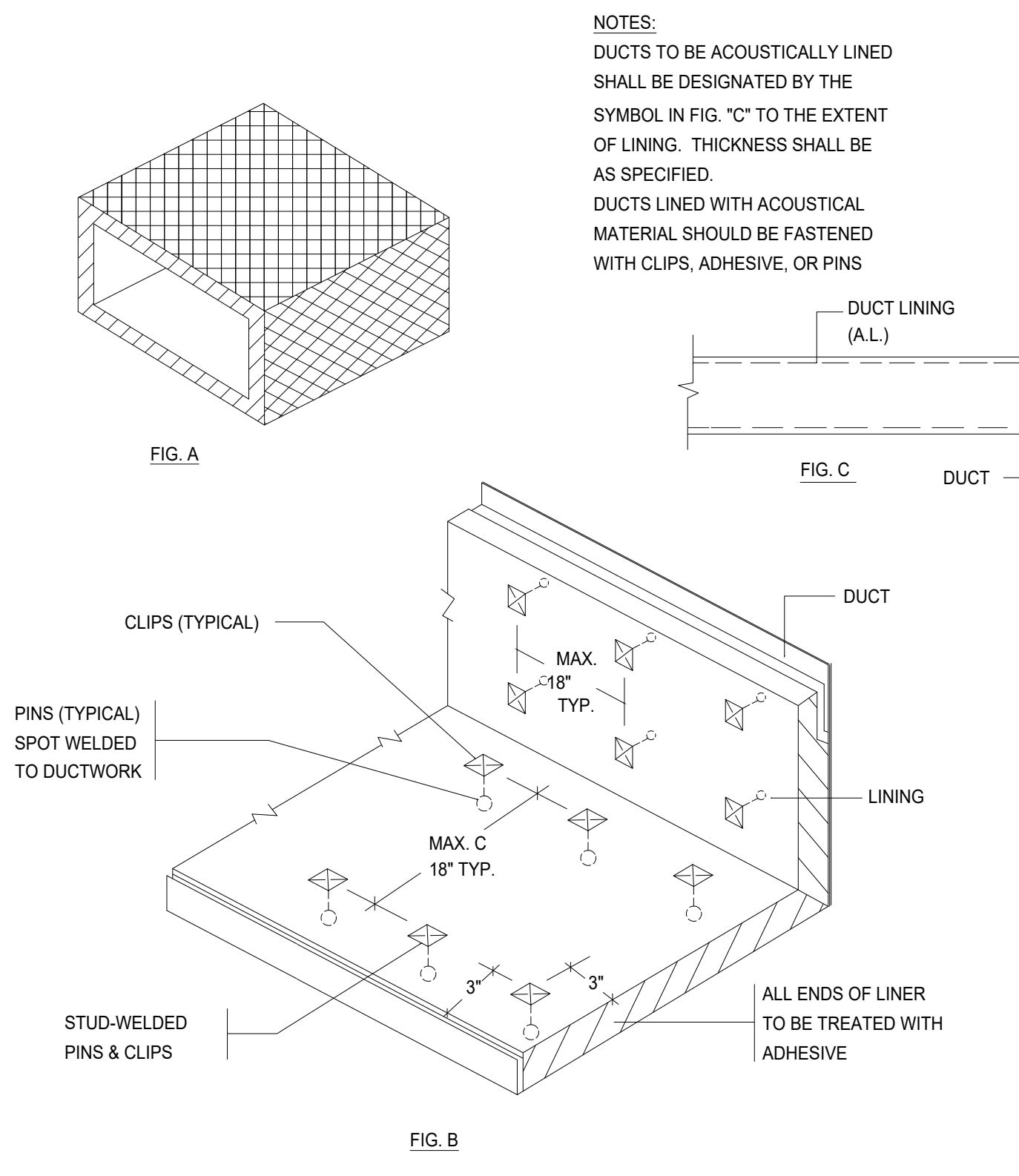
DISPOSAL:

ALL MATERIALS AND EQUIPMENT SHOWN OR INDICATED TO BE REMOVED AND NOT REINSTALLED OR RELOCATED, SHALL BECOME PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE OWNER'S PROPERTY UNLESS SPECIFIED TO THE CONTRARY.

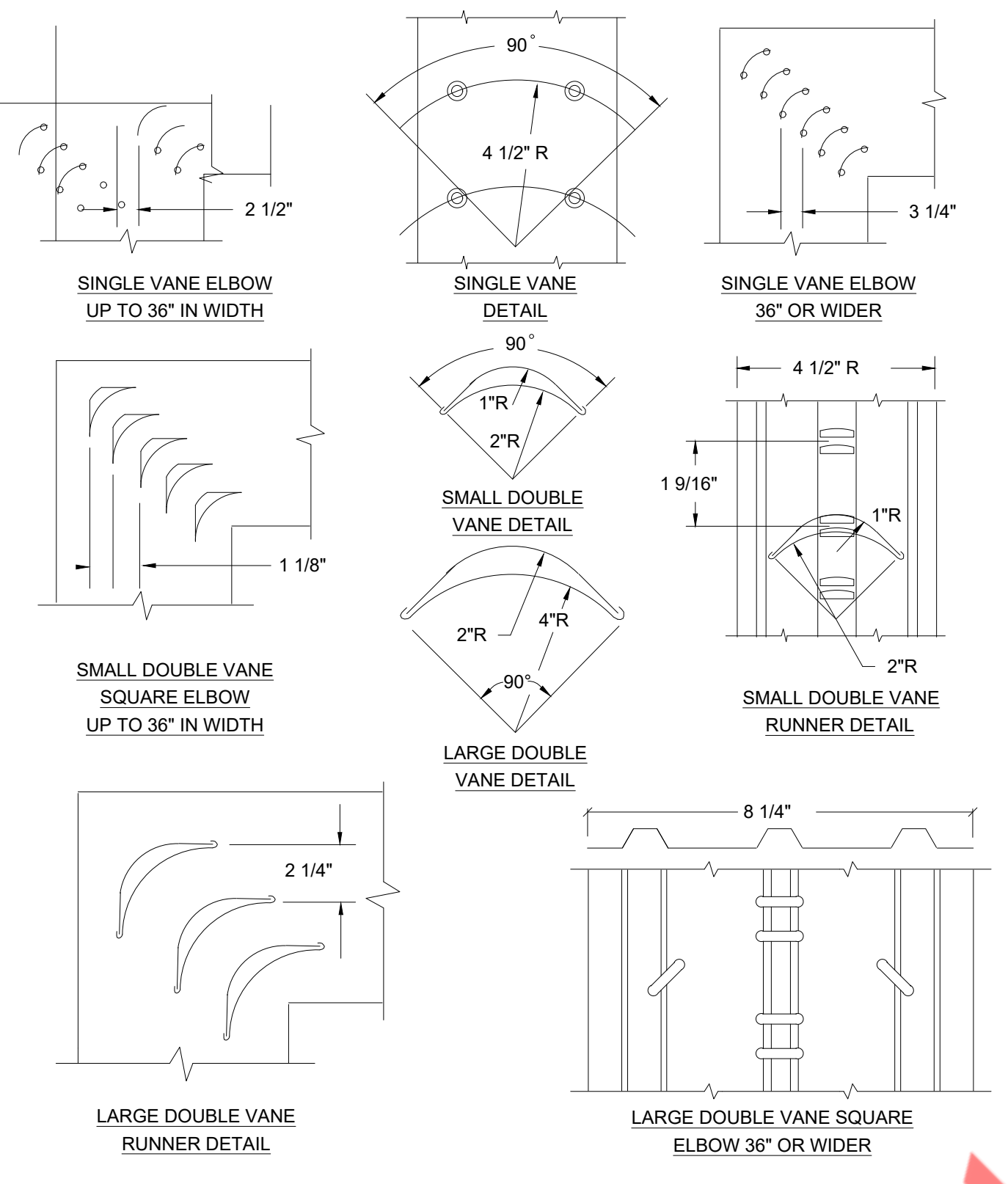
GUARANTEE:

GENERAL NOTES

- THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE TENANT MECHANICAL SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, ACCESSORIES, OPTIONS AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES. ALL ITEMS AND LABOR REQUIRED FOR A COMPLETE TENANT MECHANICAL SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS AND THE BASE BUILDING CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ADDITIONS TO THE CONTRACT.
- REFER TO THE ARCHITECTURAL DRAWINGS FOR EXACT PARTITION LAYOUTS, REFLECTED CEILING PLANS, DIMENSIONS, ETC.
- EXISTING MECHANICAL EQUIPMENT AND DUCTWORK ARE SHOWN BY DASHED LINES. NEW WORK AND RELOCATED WORK ARE SHOWN BY SOLID LINES. EXISTING WORK TO BE REMOVED IS SHOWN CROSSHATCHED. WHEN ANY DUCTWORK OR AIR DISTRIBUTION DEVICE IS REMOVED, THE ASSOCIATED TRUNK DUCT SHALL BE SEALED AIRTIGHT WITH A SHEET METAL PATCH OR CAP.
- VISIT SITE AND CAREFULLY EXAMINE EXISTING CONDITIONS PRIOR TO SUBMITTING BID. THE EXISTING CONDITIONS SHOWN ARE BASED ON DOCUMENTS PROVIDED BY OTHERS AND HAVE NOT BEEN VERIFIED BY THE ENGINEER. IF EXISTING CONDITIONS DIFFER FROM DRAWINGS IN SUCH A MANNER THAT WILL AFFECT PRICING, (I.E., DUCTWORK, VAV OR PIU ARE NOT IN THE SHOWN LOCATION) CONTRACTOR WILL NOTIFY OWNER SO THAT A RESOLUTION CAN BE MADE PRIOR TO SUBMITTING BIDS. NO ALLOWANCE WILL BE MADE FOR LACK OF KNOWLEDGE OF EXISTING CONDITIONS.
- REFER TO THE ARCHITECTURAL REFLECTED CEILING PLANS FOR EXACT LOCATIONS OF ALL CEILING MOUNTED AIR DISTRIBUTION DEVICES. IF ANY ITEMS ARE NOT SHOWN ON THE REFLECTED CEILING PLANS, PREPARE A DRAWING OF THE PROPOSED LOCATION AND PRESENT IT TO THE ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION.
- ALL ROUND AND FLEXIBLE DUCTWORK EXTENDING TO DIFFUSERS SHALL BE SIZED FULL SIZE OF DISTRIBUTION DEVICE INLET, AND TAPS TO THE EXISTING LOW-PRESSURE DUCTWORK SHALL BE MADE WITH SPIN-IN FITTINGS HAVING INTEGRAL SCOPES AND VOLUME DAMPERS. ALL NEW RECTANGULAR DUCTWORK TAPS SHALL BE MADE WITH SPLITTERS OR EXTRACTORS. ALL DUCTWORK SHALL BE CONSTRUCTED AND INSTALLED IN ACCORDANCE WITH SMACNA DUCT STANDARDS. (NEW LOW PRESSURE SPIN-IN FITTINGS AND TAPS SHALL NOT BE MADE WITHIN 5 FT. OF OUTLET OF HEAT PUMP. NEW LOW PRESSURE SPIN-IN FITTINGS SHALL BE MADE NO CLOSER THAN 2" ON CENTER.
- FLEXIBLE DUCTS SHALL BE INSTALLED FREE OF SAGS AND KINKS; SUPPORTED AT NOT MORE THAN 48" O.C.
- TEST AND BALANCE ALL DIFFUSERS, BOXES, FANS, ETC. TO THE AIRFLOWS AND CONDITIONS INDICATED. ALL EXISTING DIFFUSERS, BOXES, FANS, ETC. WHICH ARE NOT NOTED OTHERWISE SHALL BE BALANCED TO THEIR PRIOR DESIGN AIRFLOWS; REFERENCE THE EXISTING RECORD DRAWING AVAILABLE FROM THE OWNER. TESTING AND BALANCING OF HVAC SYSTEM SHALL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS OF AABC OR NEBB AND SHALL BE PERFORMED UNDER THE DIRECT SUPERVISION OF AN AABC OR NEBB CERTIFIED TEST AND BALANCE ENGINEER. SUBMIT 4 COPIES OF THE REPORT TO THE OWNER.
- PORTIONS OF DUCTWORK VISIBLE THROUGH GRILLES AND REGISTERS IN FINISHED AREA SHALL BE PAINTED FLAT BLACK.
- ALL CONTROL WIRING AND TUBING INSTALLED ABOVE THE CEILING SHALL BE LOCATED AS HIGH ABOVE THE CEILING AS POSSIBLE AND SHALL FOLLOW THE DESIGNATED GENERAL ROUTING OF THE DUCTWORK. DO NOT HANG WIRING OR TUBING FROM DUCTWORK. RATHER, SUSPEND FROM THE STRUCTURE. ALL NEW TERMINAL UNITS SHALL BE TIED INTO THE BASE BUILDING CONTROL SYSTEM. SEE BASE BUILDING SPECIFICATIONS FOR REQUIREMENTS.
- SPRINKLER HEADS AND ASSOCIATED BRANCH PIPING SHALL BE PROVIDED AND RELOCATED IN ACCORDANCE WITH NFPA 13 AND ALL PREVAILING LOCAL CODES AS REQUIRED TO PROTECT ALL SPACES IN THIS TENANT AREA. SPRINKLER HEADS SHALL BE SEMI-RECESSED SPRINKLER HEADS IN TENANT AREAS AND CONCEALED FULLY RECESSED TYPE IN PUBLIC CORRIDORS.
- COORDINATE ALL WORK IN OCCUPIED AREAS WITH THE TENANT IN THAT AREA. COORDINATE ALL WORK IN UNOCCUPIED AREAS AND COMMON AREAS WITH LANDLORD.
- THERMOSTATS SHALL BE LOCATED IN EACH ZONE AS SHOWN. THE EXACT LOCATION ON THE WALL INDICATED SHALL BE AS DIRECTED BY THE ARCHITECT. NEW THERMOSTATS SHALL BE SELECTED TO MATCH EXISTING BASE BUILDING THERMOSTATS AND SHALL BE COMPATIBLE WITH EQUIPMENT SERVED.
- ADJUST ALL DIFFUSERS IN CORRIDORS OR WITHIN 3 FEET OF A WALL TO PROVIDE 2-WAY OR 3-WAY BLOW AWAY FROM OR PARALLEL TO WALLS. ALL LAY-IN DIFFUSERS SHALL HAVE 4-WAY BLOW UNLESS NOTED OTHERWISE.
- REFERENCE BASE BUILDING SPECIFICATIONS FOR EQUIPMENT AND MATERIAL REQUIREMENTS. ALL NEW WORK SHALL CONFORM TO BASE BUILDING STANDARD AS A MINIMUM.



1 ACOUSTICAL TREATMENT DUCT LINING
M-0.2 N.T.S.

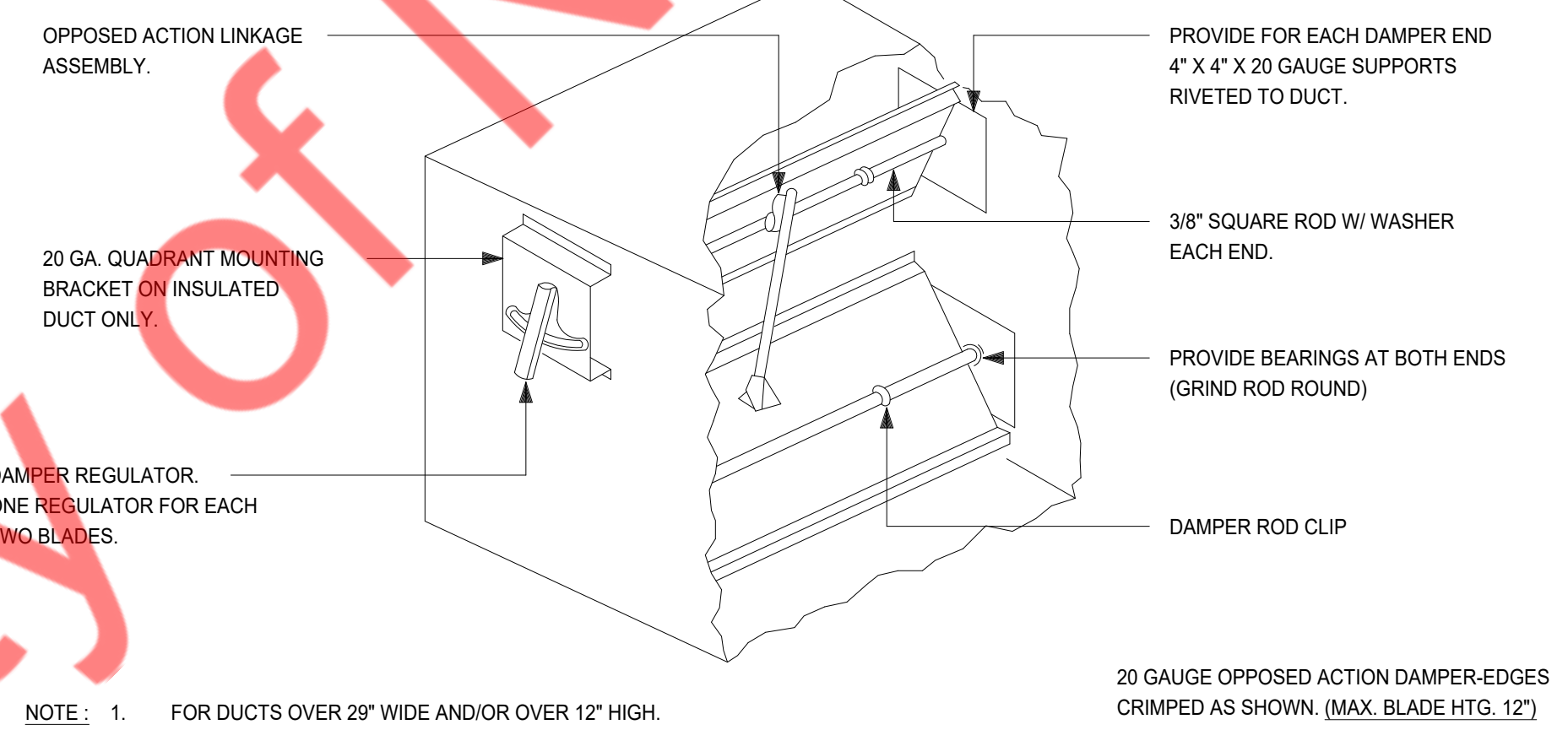


HANGER SIZES*

MAX. SIDE	HANGER	HORIZONTAL SUPPORT ANGLE	MAXIMUM SPACING
30"	1"x18" GAUGE STRAP	NONE REQUIRED	10'-0"
36"	1/4" ROD	1-1/2"x1-1/2"x1/8"	8'-0"
48"	1/4" ROD	2"x2"x1/8"	8'-0"
60"	5/16" ROD	2"x2"x1/8"	8'-0"
84"	3/8" ROD	2"x2"x1/8"	8'-0"

*FOR RECTANGULAR DUCTS

3 DUCT HANGING DETAILS
M-0.2 N.T.S.

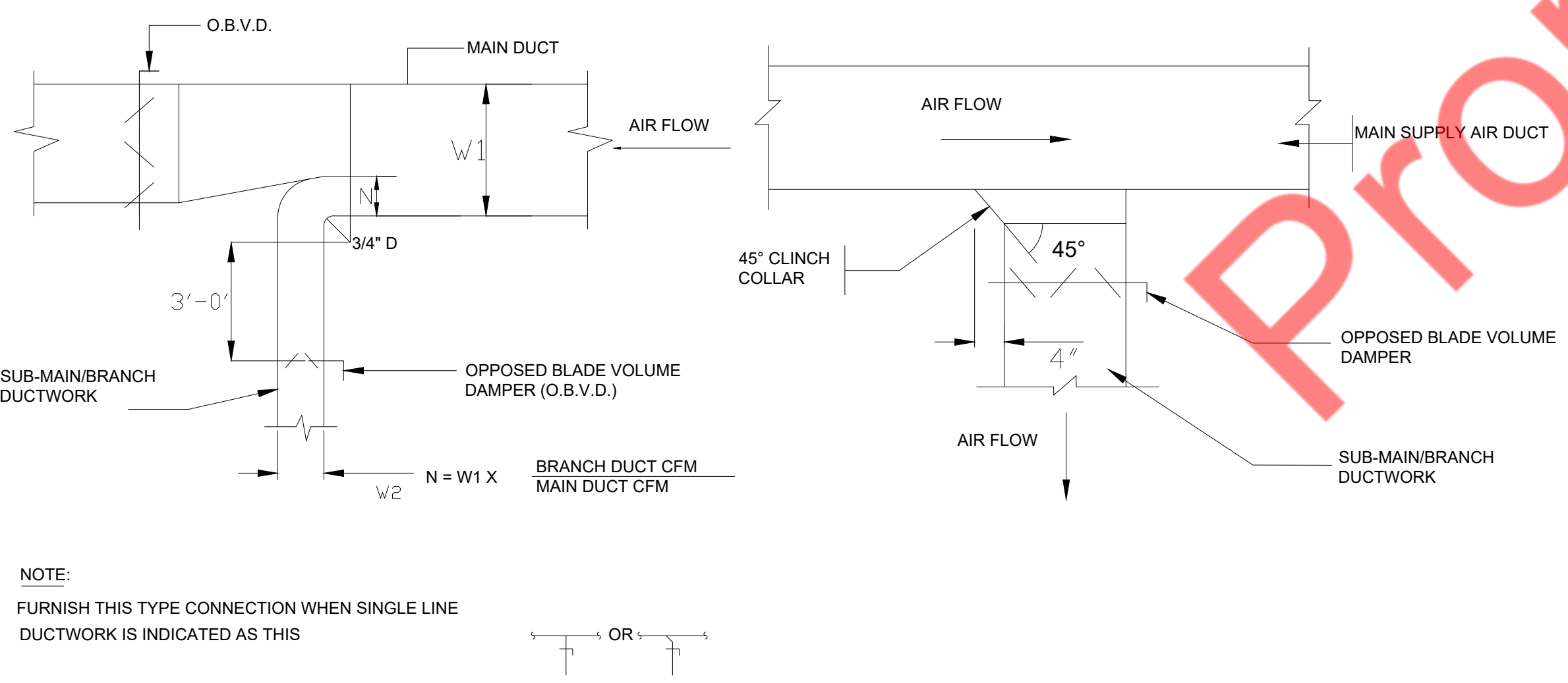


4 ROUND DUCT HANGING DETAILS
M-0.2 N.T.S.

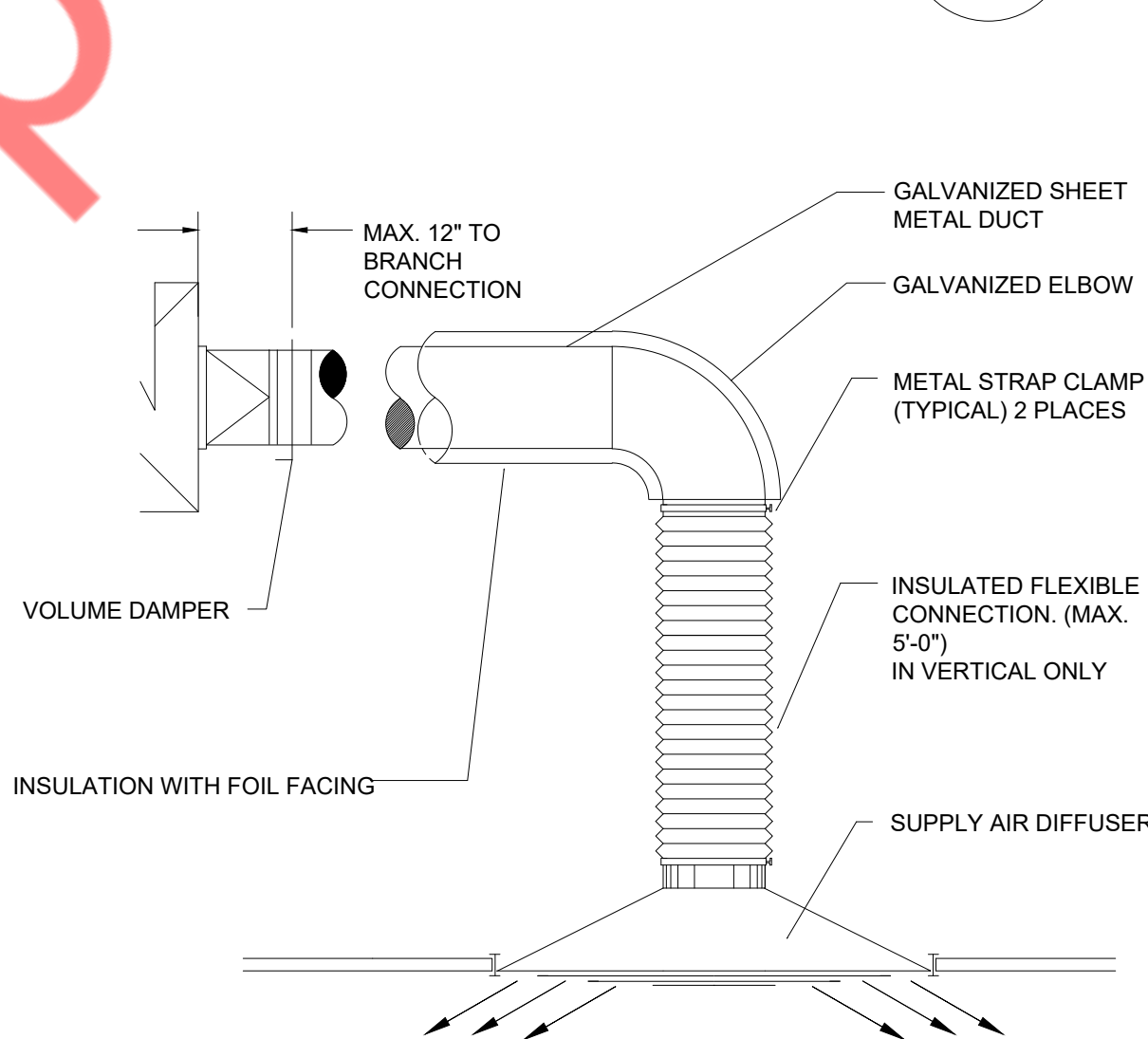
5 LOW VELOCITY DUCTWORK ELBOWS
M-0.2 N.T.S.

6 LOW PRESSURE BALANCING DAMPER
M-0.2 N.T.S.

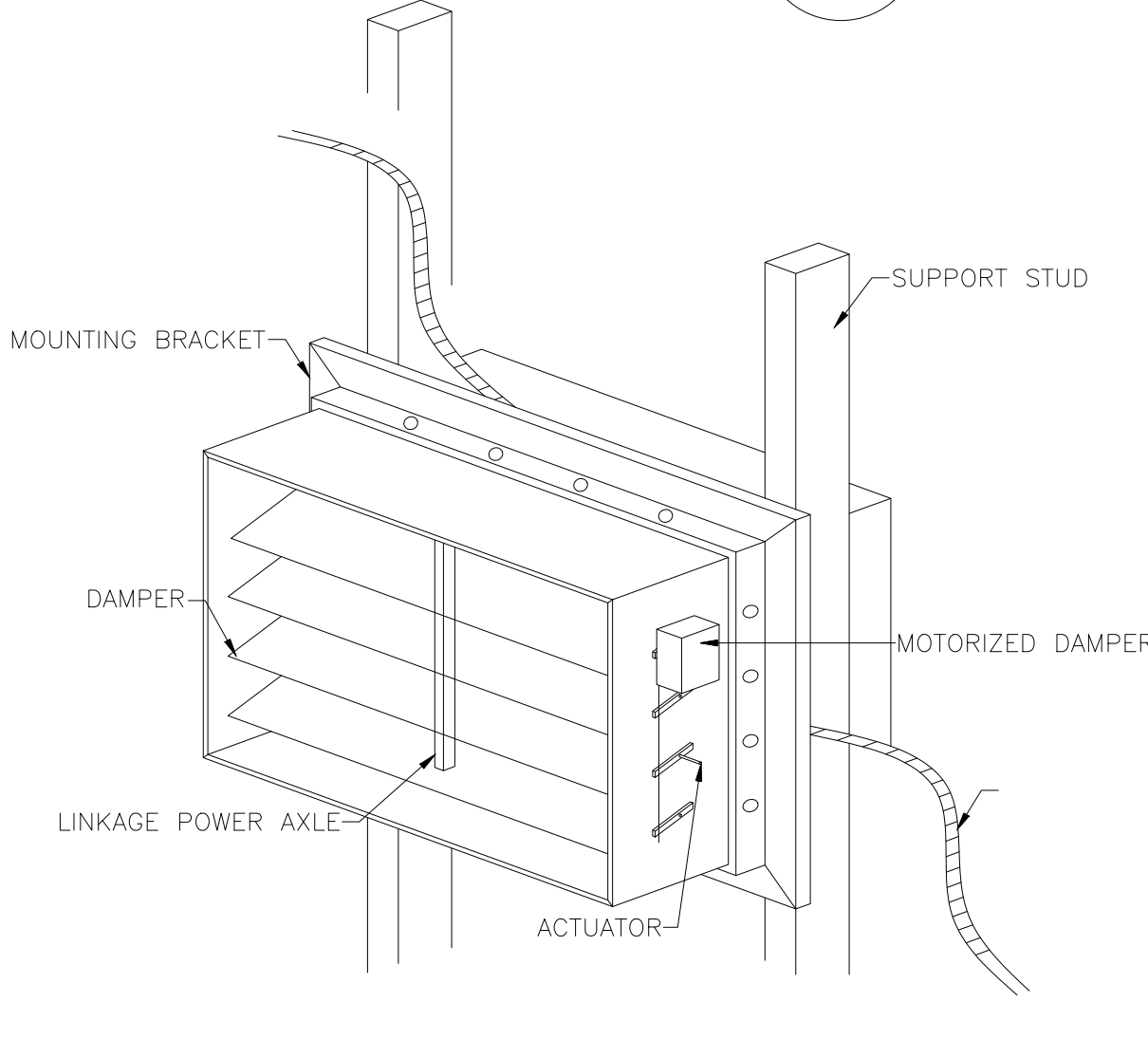
7 ANGLED GRILLE DETAILS
M-0.2 N.T.S.



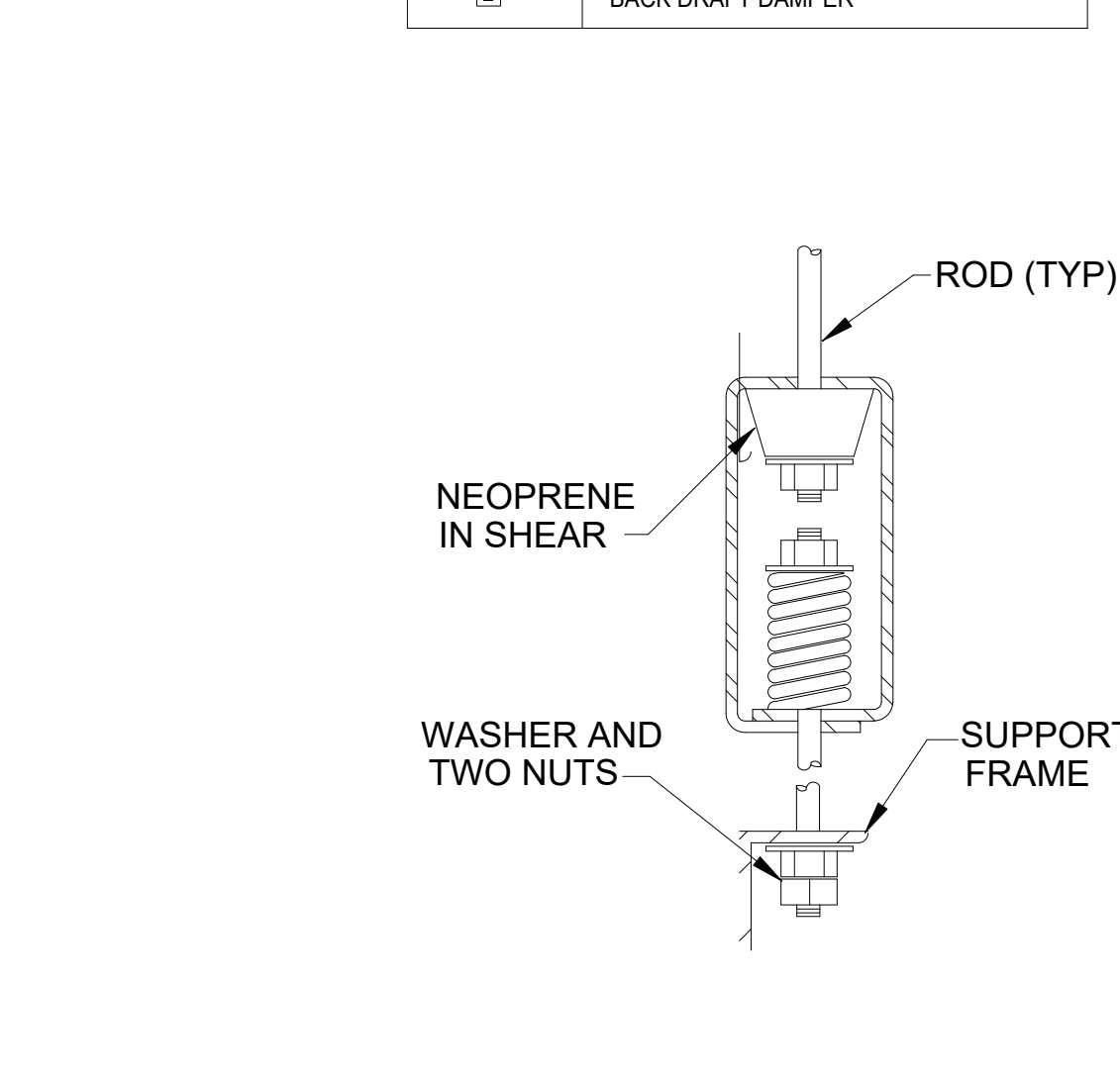
8 SUPPLY AIR DUCTWORK SUB-MAIN/BRANCH DUCT CONNECTION
M-0.2 N.T.S.



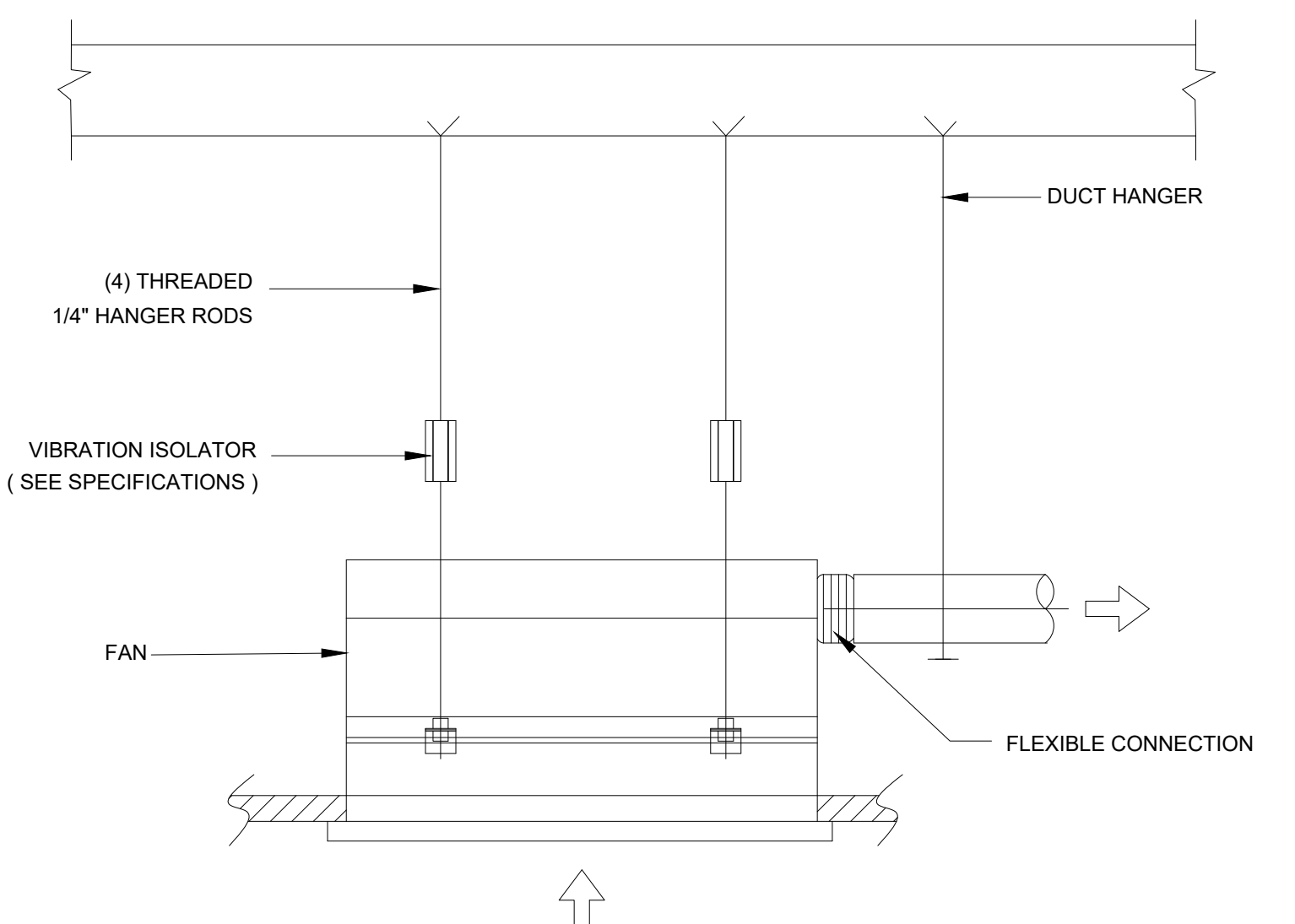
9 DIFFUSER DETAILS
M-0.2 N.T.S.



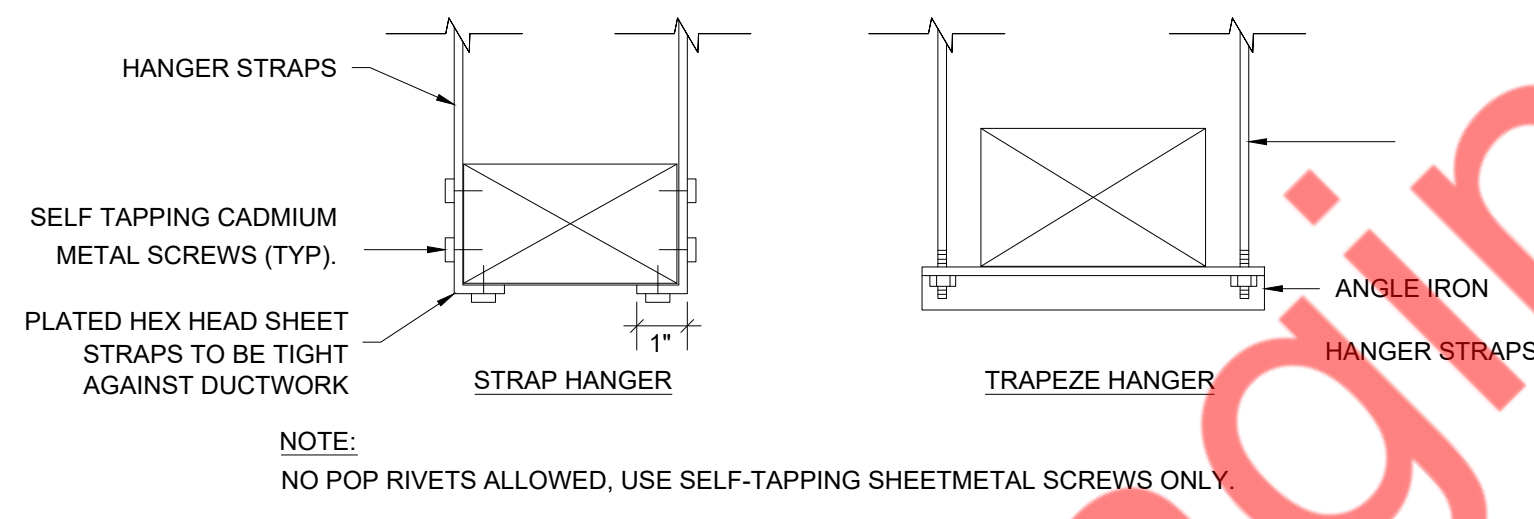
10 MOTORIZED DAMPER DETAILS
M-0.2 N.T.S.



11 VIBRATION ISOLATOR DETAIL
M-0.2 N.T.S.



2 CEILING FAN HANGING SUPPORT DETAIL
M-0.2 N.T.S.



3 DUCT HANGING DETAILS
M-0.2 N.T.S.

ABBREVIATIONS

AC	ABOVE CEILING	ID	INSIDE DIMENSION
AD	ACCESS DOOR	IN	INCHES
ADJ	ADJUSTABLE		
AF	ABOVE FINISHED FLOOR	KW	KILOWATTS
AUTO	AUTOMATIC		
AC	AIR CONDITIONING	LAT	LEAVING AIR TEMPERATURE
AHU	AIR HANDLING UNIT	LB	POUNDS
		LG	LINEAR GRILLE
BAL	BALANCING	LRG	LINEAR RETURN GRILLE
BDD	BACKDRAFT DAMPER	LWR	LOOP WATER RETURN
B/F	BELOW FLOOR	LWS	LOOP WATER SUPPLY
B/G	BELOW GRADE		
B/L	BUTTERFLY	MIN	MINIMUM
BHP	BRAKE HORSEPOWER	MAX	MAXIMUM
BCO	BASE CLEANOUT	MD	MANUAL DAMPER
		MOP	MOTOR OPERATED DAMPER
CFM	CUBIC FEET PER MINUTE	MFR	MANUFACTURER
CEOR	CURVED BLADE CEILING REGISTER	NC	NORMALLY CLOSED
CSD	CEILING SUPPLY DIFFUSER	NG	NATURAL GAS
CU	CONDENSING UNIT	NFWH	NON-FREEZE WALL HYDRANT
CW	COLD WATER (DOMESTIC)	NO	NORMALLY OPEN
CHWS	CHILLED WATER SUPPLY	NOM	NOMINAL
CHWR	CHILLED WATER RETURN		
CWS	CONDENSER WATER SUPPLY	OA	OUTSIDE AIR
CWR	CONDENSER WATER RETURN	OD	OUTSIDE DIMENSION
CCN	CONCENTRIC	OPD	OPPOSED BLADE DAMPER
COND	CONDENSATE		
		PIU	POWERED INDUCTION UNIT
db	DRY BULB	PSI	POUNDS PER SQUARE INCH
DN	DOWN		
DR	DRAIN		
do	DITTO		
dB	DECIBELS		
DWG	DRAWING		
EA	EACH	RA	RETURN AIR
EAT	ENTERING AIR TEMPERATURE	RAD	RADIUS
ECC	ECCENTRIC	RG	RETURN AIR GRILLE
EF	EXHAUST FAN	RL	REDUCER
EOD	EMERGENCY OVERFLOW DRAIN	RE	REFRIGERANT LIQUID
ER	EXHAUST REGISTER	RS	REFRIGERANT SUCTION / RETURN SLOTS
ESP	EXTERNAL STATIC PRESSURE	RTU	ROOFTOP UNIT
EWT	ENTERING WATER TEMPERATURE	RR	RETURN REGISTER
EXH	EXHAUST		
EFF	EFFICIENCY	SP	STATIC PRESSURE
EG	EXHAUST AIR GRILLE	SPS	STATIC PRESSURE SENSOR
		SA	SUPPLY AIR
F	FAHRENHEIT	SD	SANITARY
FCO	FLOOR CLEAN OUT	SD	SMOKE DAMPER / SLOT DIFFUSER
FCU	FAN COIL UNIT	SEN	SENSIBLE
FSD	FIRE/SMOKE DAMPER	SQ	SQUARE
FD	FIRE DAMPER OR FLOOR DRAIN	SR	SUPPLY REGISTER
FLR	FLOOR DRAIN (only)	ST	STORM
FOB	FLAT ON BOTTOM	SS	SPLIT SYSTEM
FOS	FUEL OIL RETURN	SS	SUPPLY AIR GRILLE
FOS	FUEL OIL SUPPLY	SO	
FOT	FLAT ON TOP	TEMP	TEMPERATURE
FPM	FEET PER MINUTE	TG	TRANSFER GRILLE
FPS	FEET PER SECOND	TYP	TYPICAL
FT	FEET		
		UON	UNLESS OTHERWISE NOTED
G	GATE	V	VENT
GA	GAUGE	VA	VALVE
GPM	GALLONS PER MINUTE	VTR	VENT THRU ROOF
GLOBE	GLOBE	VAV	VARIABLE AIR VOLUME
GCO	GRADE CLEANOUT		
		wb	WET BULB
HD	HUB DRAIN	WC	WATER COLUMN
HP	HORSEPOWER	WHA	WATER HAMMER ARRESTOR
HTG	HEATING	WT	WEIGHT
HW	HOT WATER (DOMESTIC)	W	WASTE
HWIR	HOT WATER RETURN	WHP	WATER SOURCE HEAT PUMP
HWRR	HOT WATER REVERSE RETURN		
HWS	HOT WATER SUPPLY		
Hz	HERTZ		

LEGEND

	CEILING SUPPLY DIFFUSER
	CEILING RETURN AIR GRILLE
	CEILING EXHAUST GRILLE
	SIDE-WALL OR DUCT MOUNTED REGISTER
	SLOT DIFFUSER
	MANUAL VOLUME DAMPER
	FIRE DAMPER, FIRE SMOKE DAMPER
	THERMOSTAT
	HUMIDISTAT
	CO2 MONITOR
	MOTOR OPERATED DAMPER
	EXISTING WORK
	NEW WORK
	WORK TO BE REMOVED
	SMOKE DETECTOR
	PRESSURE REGULATOR VALVE
	5 PSI TO 7 WATER GAUGE
	TEMPERATURE SENSOR
	BACK DRAFT DAMPER

CONSULTANT (ENGINEER):
NY ENGINEERS
 NEARBY ENGINEERS
 382 NE 191ST STREET SUITE
 49674, MIAMI, FL 33179
 PH: 914.257.3455
 WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW YORK.
 LICENSE NO. 29470
 EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:

WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS WILL NOT BE APPROVED FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE PLANS AND THE EXISTING CONDITIONS.

DATE	ISSUE
05/05/25	90% PERMIT SET
05/30/25	100% PERMIT SET

PROJECT INFORMATION:

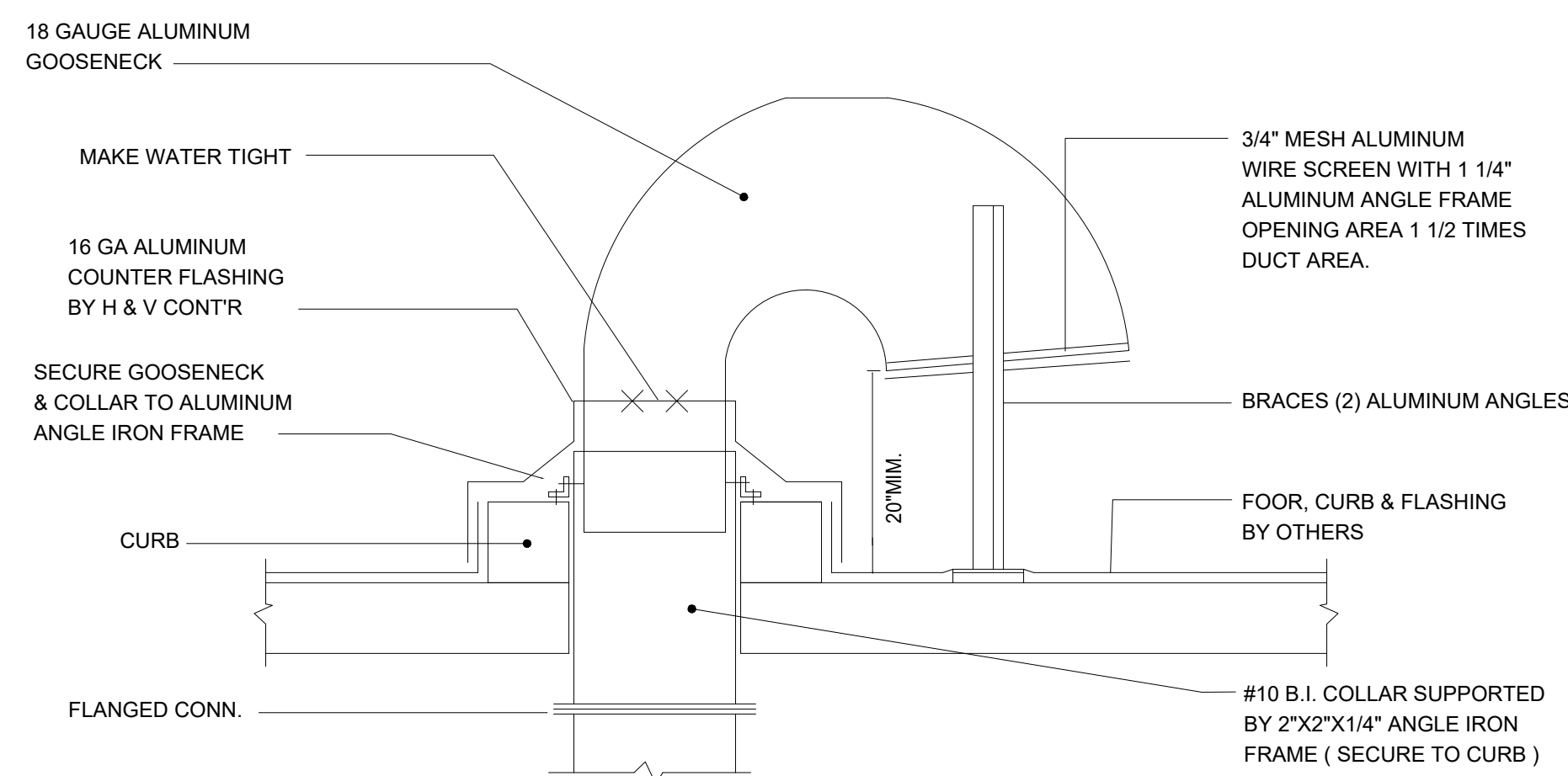
PROJECT NUMBER: 12668-25
 DRAWN BY: NYE
 REVIEWED BY: NYE
 TOTAL SQ. FT.: 1,817 FT.
 DATE: 05/30/25

DRAWING TITLE:

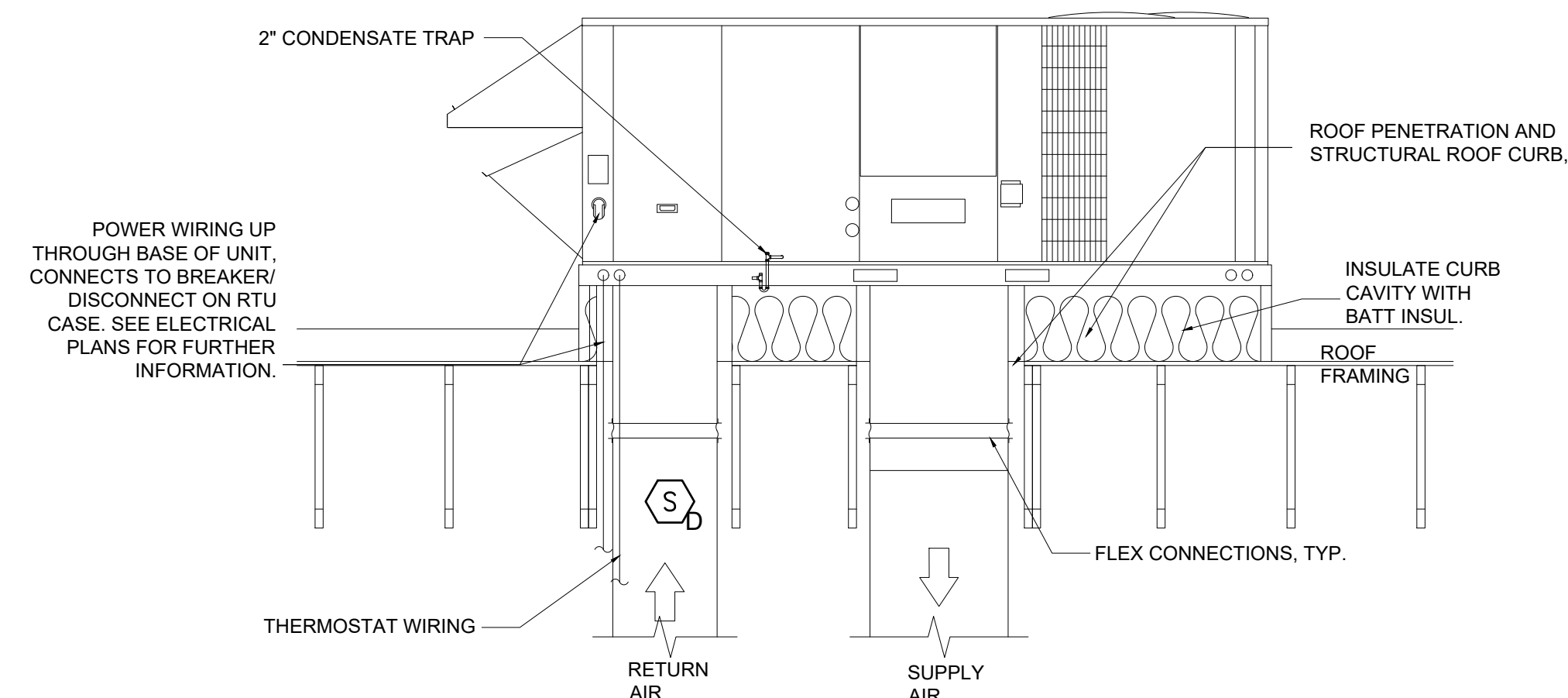
MECHANICAL ABBREVIATION, LEGENDS & DETAILS

DRAWING NUMBER:

M-0.2



1 TYPICAL DETAIL OF ROOF GOOSENECK
M-0.3 N.T.S.



2 RTU INSTALLATION DETAILS
M-0.3 N.T.S.

UNIT ID	MANUFACTURER	EFFICIENCY	MODEL	AREA SERVED	NOMINAL TONS	SUPPLY FAN			TYPE	GAS HEAT			COOLING				ELECTRICAL				APPROX. WEIGHT LBS			
						TOTAL CFM	OUTSIDE AIR CFM	ESP IN OF WC		INPUT MBH	OUTPUT MBH	EFFICIENCY %	TOTAL MBH	SENSIBLE MBH	AMBIENT DB (°F)	ENTERING DB / WB (°F)	EER	SEER	IEER	VOLTS		PHASE	MCA(A)	MOC(P)(A)
(N)RTU-1	TRANE (OR EQUIVALENT)	HIGH	YHK036A3S0L	SEE PLAN	3	1200	250	1.0	NATURAL GAS	80	64	81%	33.4	24.6	95	80/67	13	17.1	-	208-230	3	22	30	800
(N)RTU-2	TRANE (OR EQUIVALENT)	HIGH	YHK102A3S0L	SEE PLAN	8.5	3400	700	1.0	NATURAL GAS	120	97.2	81%	112.9	83.6	95	80/67	12.1	-	16.3	208-230	3	53	70	1450

REMARKS -

- ALL EQUIPMENT MUST BE HIGH EFFICIENCY, MEETING OR EXCEEDING THE ENERGY CODE MINIMUM REQUIREMENTS.
- ELECTRICAL CONNECTION TO BE SINGLE POINT AND TO BE THROUGH THE BOTTOM OF THE UNIT.
- PROVIDE DISCONNECT SWITCH AND AN UNPOWERED GFCI RECEPTACLE.
- CONTRACTOR TO FIELD VERIFY THE SIZE, LOCATION AND CONDITION OF THE EXISTING CURB FOR RTU-2, IF IT IS SUITABLE USE EXISTING ONE & PROVIDE CURB ADAPTER AS REQUIRED, IF NOT THEN PROVIDE NEW 14" ROOF CURB.
- PROVIDE NEW 14" RTU CURB FOR (N)RTU-1.
- CONDENSATE DRAIN WITH 2" DEEP VENTED TRAP DISCHARGE ON APPROVED PLACE OF DISPOSAL.
- CABINET WITH 1/2" FIBERGLASS INSULATION.
- UNIT SHALL BE COMPLETE WITH GAS HEATING SECTION. GAS REGULATOR TO RECEIVE (4.5-14)" GAS PRESSURE FROM MAIN.
- DRY-BULB ECONOMIZER WITH BAROMETRIC RELIEF / 25% MANUAL OUTSIDE AIR DAMPER ASSEMBLY WITH HOOD. PROVIDE FDD.
- PROVIDE 8-WIRE, 24 VAC, AUTOMATIC CHANGEOVER, 2-STAGE HEAT / COOL, REMOTELY PROGRAMMABLE THERMOSTAT.
- REMOTE SENSORS SHALL BE PROVIDED IN RETURN AIR DUCT & WIRED BACK TO PROGRAMMABLE, 24 HOUR, 7 DAY, THERMOSTATS.
- ANTI SHORT CYCLE TIMER.
- THROWAWAY 2" FILTERS (MERV 8).
- PROVIDE ALL COMPRESSORS WITH 5 YEAR WARRANTY.
- RETURN AIR SMOKE DETECTOR - UNIT MOUNTED (N)RTU-2 ONLY.
- VFD SUPPLY FAN.
- PROVIDE HOT GAS REHEAT WITH ASSOCIATED CONTROLS AND SENSORS FOR DEHUMIDIFICATION CONTROL.
- PROVIDE LP CONVERSION KIT FOR RTU.
- PROVIDE LOW AMBIENT CONTROLLER.

NOTE: PROVIDE THE RTU WITH R-454B REFRIGERANT. PROVIDE REFRIGERANT LEAK DETECTOR & MITIGATION RESPONSE SYSTEM AS PER ASHRAE 15 STANDARDS.

EDVC CALCULATION (ASHRAE 15-2022)			
Refrigerant Safety Group	R-454B A2L		Units
	(N) RTU-1	(N) RTU-2	
Equipment Parameters	Value	Value	
Room Floor Area	500	1065	ft²
Ceiling Height	10	9.95	ft
Volume of Main Occupiable Space	5000	10490.25	ft³
Effective Dispersal Volume (V _{eff})	5000	10490.25	ft³
LEL (Lower Flammability Limit)	18.5	18.5	lb/1000 ft³
LEL (converted to lb/ft³)	0.0185	0.0185	lb/ft³
Concentration Factor (CF)	0.5	0.5	(unitless)
Occupancy Factor (F _{occ})	1	1	(unitless)
EDVC (Allowable Limit)	46.25	97.0348125	lb
Refrigerant Charge (mrel)	5.6	9.1	lb
Compliant?	YES	YES	

BUILDING AIR BALANCE				
UNIT	SUPPLY AIR	OUTSIDE AIR	RETURN AIR	EXHAUST AIR
(N) RTU-1	1200	250	950	-
(N) RTU-2	3400	700	2700	-
EF-1	-	-	-	70 CFM
EF-2	-	-	-	300 CFM
EF-3	-	-	-	50 CFM
EF-4	-	-	-	150 CFM
TOTAL:	4600 CFM	950 CFM	3650 CFM	570 CFM
BUILDING PRESSURE:			380 CFM	POSITIVE

TAG	MANUFACTURER	MODEL	LOCATION	AREA SERVED	FAN PERFORMANCE						WEIGHT LBS	CONTROL	
					CFM	ESP	FAN RPM	FLA	VOLTS	PHASE			HZ
EF-1	GREENHECK	SP-A390-VG	SEE PLAN	SEE PLAN	70	0.5	1211	1.5	115	1	60	25	LIGHT SWITCH
EF-2	GREENHECK	SP-A710-VG	SEE PLAN	SEE PLAN	300	0.8	1371	3.5	115	1	60	35	TIME CLOCK
EF-3	GREENHECK	SP-A390-VG	SEE PLAN	SEE PLAN	50	0.5	1211	1.5	115	1	60	25	TIME CLOCK
EF-4	GREENHECK	SP-B200	SEE PLAN	SEE PLAN	150	0.9	980	2.7	115	1	60	25	TIME CLOCK

NOTES:

- PROVIDE FACTORY MOUNTED AND INSTALLED DISCONNECT.
- COORDINATE EXACT POWER REQUIREMENT WITH ELECTRICAL CONTRACTOR.
- ALL DIRECT DRIVE FANS TO HAVE ECM MOTORS.
- MANUFACTURER TO PROVIDE WITH DECORATIVE GRILLE.

VENTILATION CALCULATION IMC 2012																
SL NO	ROOM NAME	AREA	OCCUPANCY AS PER IMC 2012/1000SQ.FT.	OCCUPANCY AS IMC 2012	NO. OF PEOPLE/FIXTURES	FINAL OCCUPANCY	CFM/SQ.FT	CFM/PERSON	OA CFM	EFFECTIVENESS 0.8	REQUIRED OA CFM	PROVIDED OA CFM	EXHAUST AIR CHANGES PER HOUR	CALCULATED EX CFM	PROVIDED EXHAUST CFM	REFERENCE
1	LOBBY 100	216	30	7	5	5	0.06	7.5	50	0.8	63	65	0	0	0	RECEPTION AREA
2	OFFICE 101	40	5	1	2	2	0.06	5	12	0.8	16	20	0	0	0	OFFICE
3	RESTROOM 103	44	0	0	0	0	0	0	0	0.8	0	0	0	70	70	RESTROOM
4	LOCKER ROOM 102	150	0	0	0	0	0	0	0	0.8	0	0	0.5	75	300	LOCKER ROOM
5	CHANGING ROOM 106	35	0	0	0	0	0	0	0	0.8	0	0	0.25	9	50	LOCKER / DRESSING ROOM
6	CORRIDOR	92	0	0	0	0	0.06	0	6	0.8	7	10	0	0	0	CORRIDOR
7	UTILITY/JANITOR ROOM 104A	112	0	0	0	0	0.12	0	13	0.8	17	20	0	0	150	STORAGE
8	UTILITY/JANITOR ROOM 104B	21	0	0	0	0	0.12	0	3	0.8	3	10	0	0	0	STORAGE
9	STUDIO	957	40	39	26	30	0.06	20	657	0.8	822	825	0	0	0	GAME ARCADES
		1667	-	-	-	37	-	-	-	-	927	950	-	-	570	-

AIR TERMINAL						
TAG	MANUFACTURER	MODEL	TYPE	CFM RANGE	NECK SIZE	NOMINAL FACE SIZE
LDS-1	TITUS	ML-39	PLENUM SLOT SUPPLY DIFFUSER-4-SLOT - 1" SLOT	100 CFM PER FEET	10"Ø	48"X6"
CD-1	TITUS	TMS	LOUVERED SUPPLY DIFFUSER	0-120	6"Ø	24"X24"
				121-280	8"Ø	
				281-400	10"Ø	
				401-500	12"Ø	
SG-1	TITUS	300FL	LOUVERED SUPPLY DIFFUSER	50-150	8"X8"	10"X10"
LDR-1	TITUS	MLR-39	PLENUM SLOT RETURN DIFFUSER-4-SLOT - 1" SLOT	100 CFM PER FEET	10"Ø	48"X6"
RG-1	TITUS	350FL	RETURN GRILLE	0-100	6"X6"	24"X24"
				110-220	8"X8"	
				230-350	10"X10"	
				360-520	12"X12"	
RG-2	TITUS	350FL	RETURN GRILLE	110-220	8"X8"	10"X10"

NOTES:

- ALL DIFFUSERS : CONTRACTOR SHALL COORDINATE WITH LATEST ARCHITECTURAL REFLECTED CEILING PLANS TO ENSURE PROPER AIR DEVICE BORDER SELECTION.
- REFER ARCHITECTURAL DRAWINGS FOR CEILING TYPE.
- COORDINATE COLOR/FINISH WITH ARCHITECT.
- PROVIDE VOLUME CONTROL DAMPER/OPPOSED BLADE DAMPER AS ACCESSORY FOR ALL AIR TERMINAL FOR AIR BALANCING.

CONSULTANT (ENGINEER)

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE
49674, MIAMI, FL 33179
PH-914.257.3455
WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA. LICENSE NO. 28470. EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:

WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS WILL NOT BE APPROVED FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE PLANS AND THE EXISTING CONDITIONS.

DATE	ISSUE
05/05/25	90% PERMIT SET
05/30/25	100% PERMIT SET

DATE REVISION

PROJECT INFORMATION:
PROJECT NUMBER: 12668-25
DRAWN BY: NYE
REVIEWED BY: NYE
TOTAL SQ. FT.: 1,817 FT
DATE: 05/30/25

DRAWING TITLE:
MECHANICAL DETAILS & SCHEDULE

DRAWING NUMBER:

M-0.3

MECHANICAL GENERAL NOTES:

1. CODES
THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS, THE CONSTRUCTION DOCUMENTS SHALL GOVERN. HOWEVER, THE CONSTRUCTION DOCUMENTS SHALL NOT BE INTERPRETED AS AUTHORITY TO VIOLATE ANY CODE OR REGULATION.
2. DRAWINGS AND SPECIFICATIONS
THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MORE COMPLETE OR HIGHER STANDARD SHALL PREVAIL.
3. INTERPRETATION OF THE DOCUMENTS
CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY-TO-USE INSTALLATION. IF NOT STATED IN THE PROPOSAL, IT WILL NOT BE CONSIDERED EXTRA.
4. MECHANICAL DRAWINGS
THE MECHANICAL DRAWINGS ARE DIAGRAMMATIC AND SHALL NOT BE SCALED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL DOORS, WALLS, FURNITURE, EQUIPMENT, ETC. THE LOCATION OF DUCTWORK AND PIPING SYSTEM COMPONENTS ARE SCHEMATIC. THE EXACT LOCATION OF THESE SYSTEM COMPONENTS SHALL BE DETERMINED BY THE CONTRACTOR IN THE FIELD. THE CONTRACTOR SHALL CONFIRM THE DIMENSIONS OF THE ACTUAL EQUIPMENT TO BE SUPPLIED FOR THIS PROJECT, AND VERIFY CLEARANCES PRIOR TO STARTING WORK.
5. SITE EXAMINATION
BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE EXISTING CONDITIONS. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION HAS BEEN MADE. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE OR FOR LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH A SITE EXAMINATION BEEN MADE.
6. COORDINATION WITH OTHER TRADES
THE MECHANICAL CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH ELECTRICAL, PLUMBING, ARCHITECTURAL AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, EQUIPMENT LOCATIONS, AND OTHER ADDITIONAL SCOPE OF WORK THAT MAY NOT BE SHOWN ON THE MECHANICAL PLANS.
7. PERMITS, APPLICATIONS, AND RELEASES
THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS, INSPECTIONS, APPLICATIONS, RELEASES, AND FEES REQUIRED BY LOCAL, STATE, AND FEDERAL AGENCIES FOR THE EXECUTION OF THIS WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
8. FIRE STOPPING
ALL PENETRATIONS IN WALL, FLOOR, OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M CO.
9. OWNER FURNISHED EQUIPMENT
EQUIPMENT THAT WILL BE FURNISHED BY THE OWNER WILL BE INDICATED ON A SEPARATE SCHEDULE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR DELIVERY SCHEDULES. THE CONTRACTOR IS TO ASSUME THAT ON-SITE STORAGE MAY NOT BE AVAILABLE WHEN COORDINATING DELIVERY OF EQUIPMENT. THE CONTRACTOR, IN COORDINATION WITH THE OWNER'S REPRESENTATIVE, WILL INSPECT THE DELIVERY FOR ACCURACY AND SHIPMENT DAMAGE AND ACCEPT THE EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO STORE, PROTECT, AND ULTIMATELY INSTALL THE EQUIPMENT.
10. EQUIPMENT
ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.
11. MISCELLANEOUS SUPPORTING MEMBERS
ALL ANGLES, CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC., REQUIRED TO SUPPORT LIGHT FIXTURES, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
12. SAFETY
THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNER'S EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.
13. MANUFACTURER'S INSTALLATION INSTRUCTIONS
THE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR EACH MECHANICAL APPLIANCE OR PIECE OF EQUIPMENT SHALL BE AVAILABLE TO BUILDING DEPARTMENT INSPECTORS AT THE JOB SITE FOR EACH INSPECTION. LISTING AND LABELING SHALL ALSO BE MADE AVAILABLE.
14. TEST AND BALANCE REPORTS
MECHANICAL SYSTEM SHALL BE BALANCED BY AN APPROVED METHOD. PROVIDE A TEST AND BALANCE REPORT TO THE MUNICIPALITY PRIOR TO THE FINAL INSPECTION FOR THEIR FILE. ALSO PROVIDE A REPORT TO THE INSPECTOR AND A REPORT ON-SITE FOR FINAL MECHANICAL INSPECTION. SUCH BALANCING SHALL VERIFY THAT THE VENTILATION SYSTEM IS CAPABLE OF SUPPLYING AND EXHAUSTING THE AIRFLOW RATES REQUIRED BY IMC SECTIONS 403.3

GENERAL NOTES:

1. ALL AIR DISTRIBUTION DEVICES SHALL BE COORDINATED WITH THE ARCHITECTURAL RCP & LIGHTING LAYOUT.
2. COORDINATE ALL WORK ON OTHER FLOORS AND IN OTHER TENANT SPACES WITH OWNERS REP. SO THAT WORK DOES NOT INTERFERE WITH OTHER TENANTS.
3. COORDINATE THE EXACT LOCATION OF ALL THERMOSTATS WITH FINAL FURNITURE LAYOUT, EQUIPMENT LAYOUT, ARCH AND OWNERS REPRESENTATIVE. CONTRACTOR SHALL TIE NEW T-STATS INTO BUILDING EMS AND UPDATE IT ACCORDINGLY.
4. PROVIDE ALL MANUFACTURER AND NEC REQUIRED CLEARANCE FOR ALL EQUIPMENT.
5. ENSURE ALL NEW BUILDING VENTS ARE FITTED WITH ANIMAL SCREENS EXCEPT OTHERWISE NOTED.
6. CONTRACTOR SHALL BALANCE EACH DEVICE WITH THE CFM SHOWN ON PLAN.
7. 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.
8. EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
9. DUCT SIZES SHOWN ON PLANS ARE CLEAR INSIDE AIR STREAM DIMENSIONS.
10. CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
11. CONTRACTOR SHALL COORDINATE EQUIPMENT WEIGHTS AND SUPPORTS BASED ON ACTUAL EQUIPMENT SELECTED.
12. MOUNT DUCTWORK AS HIGH AS POSSIBLE.
13. TEST AND BALANCE AIR SYSTEMS. PROVIDE REPORT TO O.C. AND OWNER.
14. NEW DUCTWORK IN CONCEALED AREAS MAY BE RECTANGULAR WITH EQUIVALENT CROSS SECTIONAL FLOW AREA.
15. PROVIDE FIRE OR FIRE-SMOKE DAMPER WHEREVER DUCTS ARE CROSSING FIRE/SMOKE RATED WALLS/BARRIERS/ROOF PENETRATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR FIRE RATINGS OF THE WALLS.
16. PROVIDE CABLE OPERATED DAMPER IN INACCESSIBLE CEILINGS.
17. COORDINATE FINAL LOCATION OF ALL HVAC EQUIPMENT WITH STRUCTURAL ENGINEER/ OWNER/ ARCHITECT.
18. PROVIDE ACCESS DOOR FOR HVAC UNITS & FANS/AS PER MANUFACTURER RECOMMENDATIONS.
19. R-8 INSULATION (INTERNAL FOR EXPOSED DUCTS AND EXTERNAL FOR CONCEALED DUCTS) FOR SUPPLY & RETURN AIR DUCTS. PROVIDE ACOUSTIC INSULATION ON MAIN SUPPLY AND RETURN DUCTS UP TO 10 FT. FROM HVAC UNIT.

KEYED NOTES: #

1. EXTEND FULL SIZE SUPPLY & RETURN DUCTWORK FROM HVAC EQUIPMENT AS SHOWN. ACOUSTICALLY LINE THE FIRST 15'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS. COORDINATE WITH STRUCTURAL FOR PROVIDING PENETRATIONS IN BETWEEN THE TRUSSES.
2. PROVIDE REMOTE TEMP/HUMIDITY SENSOR MOUNTED IN RETURN DUCT AND WIRE BACK TO T-STAT.
3. LOCATION OF DIGITAL THERMOSTAT CONTROL. INSTALL AND WIRE NEW 7-DAY PROGRAMMABLE THERMOSTAT. COORDINATE EXACT LOCATION WITH ARCHITECT AND OWNER PRIOR TO ROUGH-IN. PROVIDE LOCKABLE COVER.
4. CEILING MOUNTED EXHAUST FAN TO BE INTERLOCKED LIGHT SWITCH/OCCUPANCY SENSOR. PROVIDE BACKDRAFT DAMPER. EXHAUST DUCT SHALL BE GALVANIZED STEEL. FIELD VERIFY ALL ROUTING AND REQUIREMENTS PRIOR TO BID.
5. CEILING MOUNTED EXHAUST FAN TO BE INTERLOCKED TIME CLOCK. PROVIDE BACKDRAFT DAMPER. EXHAUST DUCT SHALL BE GALVANIZED STEEL. FIELD VERIFY ALL ROUTING AND REQUIREMENTS PRIOR TO BID.
6. CONTRACTOR TO PROVIDE NEW DUCT SMOKE DETECTOR IN RETURN DUCTWORK. COORDINATE WITH RTU MANUFACTURER FOR COMPATIBLE CONTROLS AS REQUIRED.
7. EXISTING MAIN SUPPLY & RETURN DROPS TO REMAIN. PROVIDE NECESSARY TRANSITION PIECE AS REQUIRED. CONTRACTOR TO FIELD VERIFY WHETHER THE EXISTING SUPPLY/RETURN DROP CAN BE REUSED. IF NOT REUSABLE PROVIDE NEW SUPPLY & RETURN MAIN DUCT. ACOUSTICALLY LINE THE FIRST 15'-0" OF BOTH SUPPLY AND RETURN MAIN DUCTS.
8. 1" DOOR UNDERCUT FOR AIR PASSAGE. COORDINATE WITH ARCHITECT.

CONSULTANT (ENGINEER):

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE
49674, MIAMI, FL 33179
PH: 914.257.3455
WWW.NY-ENGINEERS.COM

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LICENSE NO. 28470
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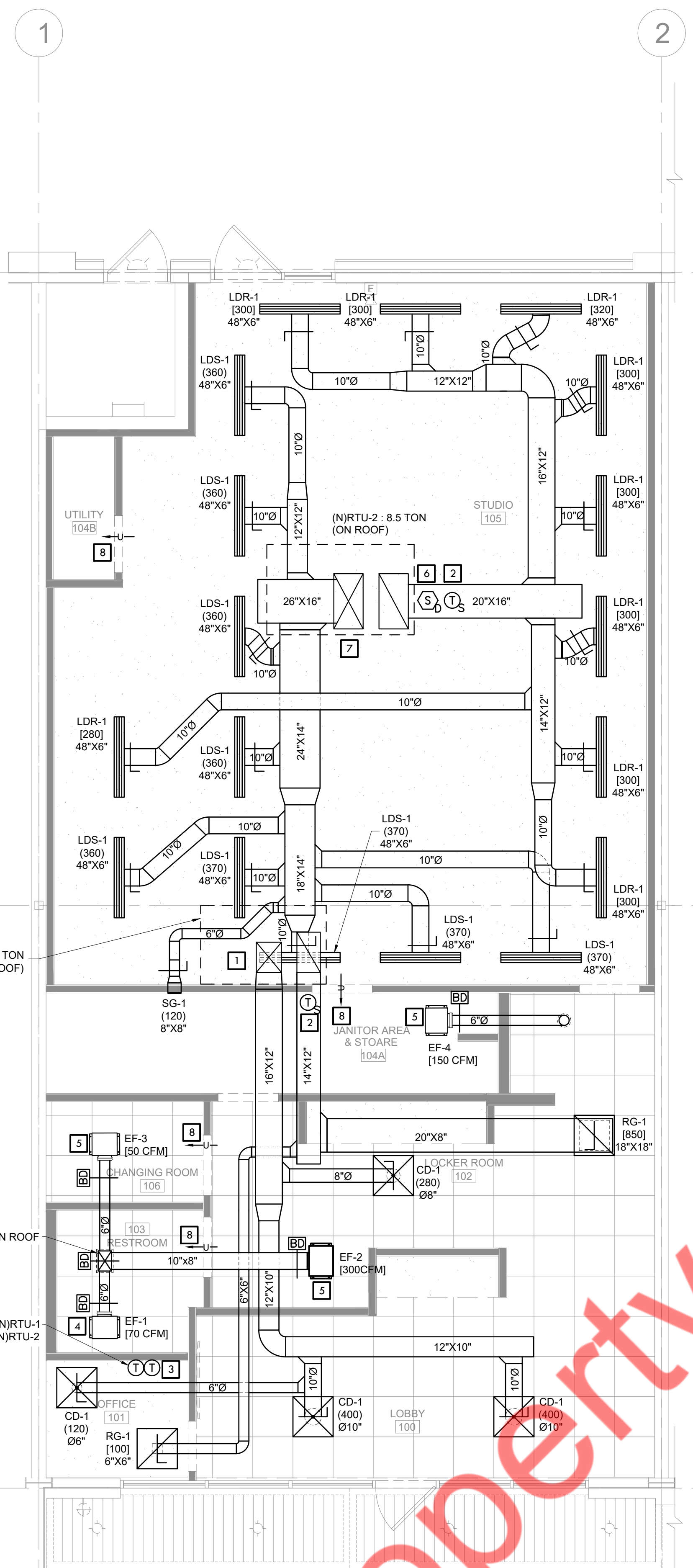
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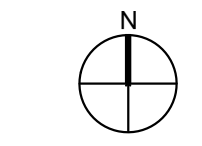
MECHANICAL FLOOR PLAN

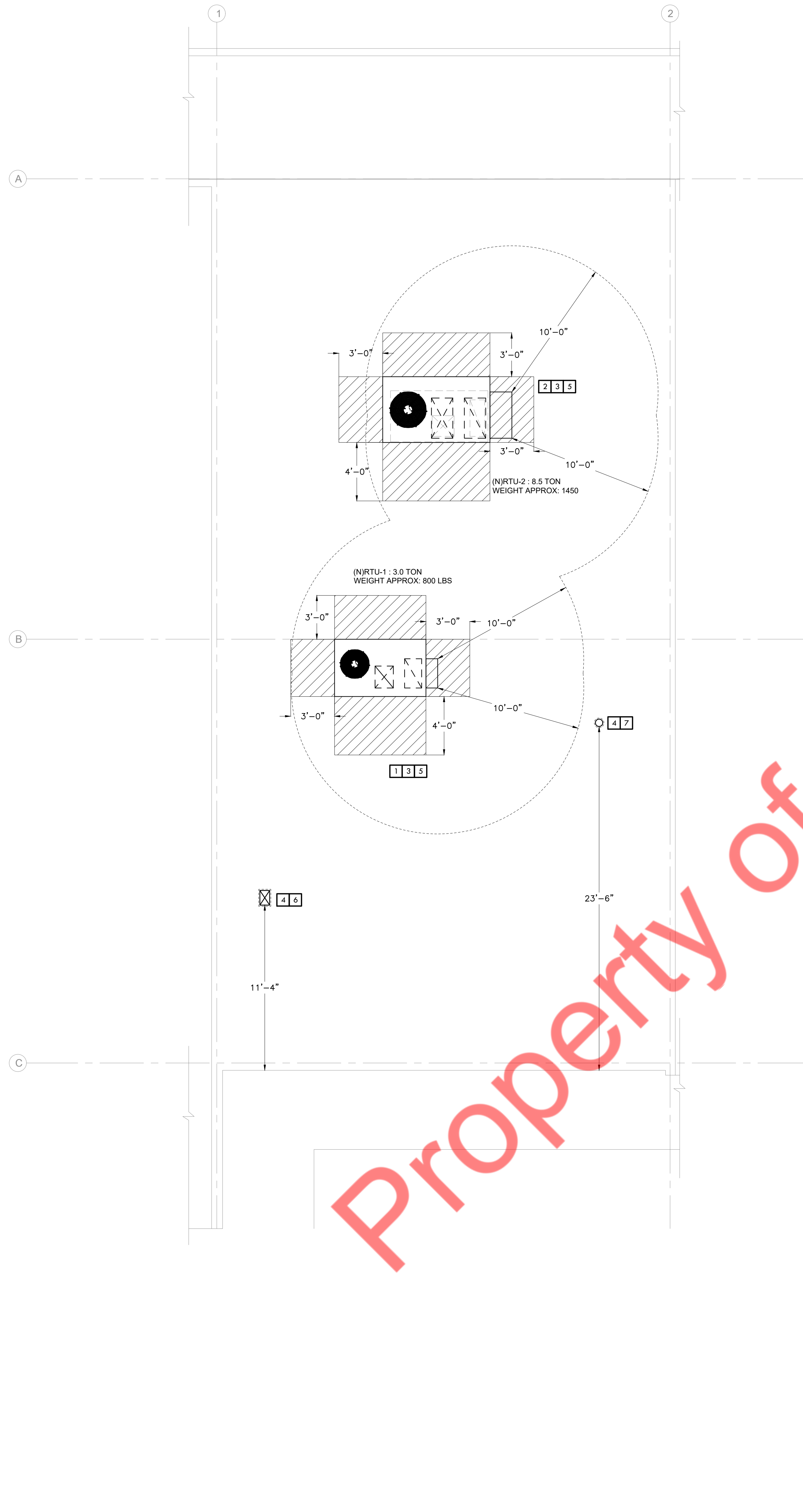
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M-1.0



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- OWNER FURNISHED EQUIPMENT**
EQUIPMENT THAT WILL BE FURNISHED BY THE OWNER WILL BE INDICATED ON A SEPARATE SCHEDULE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR DELIVERY SCHEDULES. THE CONTRACTOR IS TO ASSUME THAT ON-SITE STORAGE MAY NOT BE AVAILABLE WHEN COORDINATING DELIVERY OF EQUIPMENT. THE CONTRACTOR, IN COORDINATION WITH THE OWNER'S REPRESENTATIVE, WILL INSPECT THE DELIVERY FOR ACCURACY AND SHIPMENT DAMAGE AND ACCEPT THE EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO STORE, PROTECT, AND ULTIMATELY INSTALL THE EQUIPMENT.
- EQUIPMENT**
ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE UL LISTING AND LABEL.
- MISCELLANEOUS SUPPORTING MEMBERS**
ALL ANGLES, CHANNELS, AND OTHER MISCELLANEOUS STEEL BOLTS, RODS, ETC., REQUIRED TO SUPPORT LIGHT FIXTURES, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.
- SAFETY**
THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNER'S EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.
- MANUFACTURER'S INSTALLATION INSTRUCTIONS**
THE MANUFACTURER'S INSTALLATION INSTRUCTIONS FOR EACH MECHANICAL APPLIANCE OR PIECE OF EQUIPMENT SHALL BE AVAILABLE TO BUILDING DEPARTMENT INSPECTORS AT THE JOB SITE FOR EACH INSPECTION. LISTING AND LABELING SHALL ALSO BE MADE AVAILABLE.
- TEST AND BALANCE REPORTS**
MECHANICAL SYSTEM SHALL BE BALANCED BY AN APPROVED METHOD. PROVIDE A TEST AND BALANCE REPORT TO THE MUNICIPALITY PRIOR TO THE FINAL INSPECTION FOR THEIR FILE. ALSO PROVIDE A REPORT TO THE INSPECTOR AND A REPORT ON-SITE FOR FINAL MECHANICAL INSPECTION. SUCH BALANCING SHALL VERIFY THAT THE VENTILATION SYSTEM IS CAPABLE OF SUPPLYING AND EXHAUSTING THE AIRFLOW RATES REQUIRED BY IMC SECTIONS 403.3.

GENERAL NOTES:

- COORDINATE LOCATIONS AND SIZES OF ROOF OPENINGS ON FIELD.
- EQUIPMENT SIZES, DIMENSIONS AND REQUIRED CONNECTIONS SHALL BE VERIFIED WITH THE ACTUAL EQUIPMENT SELECTED VENDOR DRAWINGS BEFORE FABRICATION OF DUCTWORK, PIPING ETC.
- CONTRACTOR SHALL COORDINATE ALL ELECTRICAL REQUIREMENTS FOR ALL HVAC BASED ON ACTUAL EQUIPMENT SELECTED PRIOR TO INSTALLATION.
- ALL SOURCE OF MECHANICAL INTAKE SHALL MAINTAIN 10 LINEAR FEET SEPARATION BETWEEN ANY SOURCE OF EXHAUST. CONTRACTOR IS RESPONSIBLE TO ADJUST DUCT LENGTH AS REQUIRED.

KEYED NOTES: #

- CONTRACTOR TO INSTALL NEW ROOFTOP UNIT WITH NEW ROOF CURB FOR (NIRTU-1). PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCT CONNECTIONS. SET OUTSIDE AIR AS INDICATED ON ROOFTOP UNIT SCHEDULES. MECHANICAL CONTRACTOR SHALL SCRIBE INTO UNIT POSITION OF OUTSIDE AIR DAMPER AND LABEL OUTSIDE AIR VOLUME AND PERCENT OF OUTSIDE AIR. TRANSITION AND CONNECT SUPPLY AND RETURN DUCTWORK FROM BELOW. COORDINATE ROUTING THROUGH STRUCTURAL TRUSSES AND OFFSET AS REQUIRED IN CURB SPACE.
- CONTRACTOR TO INSTALL NEW ROOFTOP UNIT. REUSE THE EXISTING CURB/ PROVIDE SUITABLE CURB ADAPTER AS REQUIRED. PROVIDE FLEXIBLE CONNECTORS ON SUPPLY AND RETURN DUCT CONNECTIONS. SET OUTSIDE AIR AS INDICATED ON ROOFTOP UNIT SCHEDULES. MECHANICAL CONTRACTOR SHALL SCRIBE INTO UNIT POSITION OF OUTSIDE AIR DAMPER AND LABEL OUTSIDE AIR VOLUME AND PERCENT OF OUTSIDE AIR. TRANSITION AND CONNECT SUPPLY AND RETURN DUCTWORK FROM BELOW. COORDINATE ROUTING THROUGH STRUCTURAL TRUSSES AND OFFSET AS REQUIRED IN CURB SPACE.
- COORDINATE FINAL LOCATION & WEIGHT OF EQUIPMENT WITH STRUCTURAL DRAWINGS.
- ENSURE TERMINATION OF THE EXHAUST DUCT AT ROOF PROVIDED WITH GOOSENECK AND INSECT SCREEN AND SHALL BE 3 FEET (914 MM) FROM THE PROPERTY LINES. 3 FEET (914 MM) FROM OPERABLE OPENINGS INTO BUILDINGS. 10 FEET (3048 MM) FROM MECHANICAL AIR INTAKES.
- PROVIDE AND ROUTE 1" CONDENSATE DRAIN FROM RTU ON THE ROOF TO THE NEAREST APPROVED POINT OF DISPOSAL. CONNECT TO A DRAIN LINE VIA AIR GAP IN AN APPROVED MANNER.
- TERMINATE 8"X8" EXHAUST DUCT WITH GOOSENECK AND BIRD SCREEN.
- TERMINATE 06" EXHAUST DUCT WITH GOOSENECK AND BIRD SCREEN.

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CONSULTANT (ENGINEER):
NY ENGINEERS
 NEARBY ENGINEERS
 382 NE 191ST STREET SUITE
 49674, MIAMI, FL 33179
 PH: 914.257.3455
 WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

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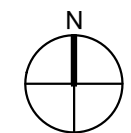
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DRAWN BY:	NYE
REVIEWED BY:	NYE
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DRAWING TITLE:
 MECHANICAL ROOF PLAN

DRAWING NUMBER:
 M-2.0



PLUMBING SPECIFICATIONS

SCOPE: THIS SPECIFICATION REQUIRES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO MAKE A COMPLETE AND ACCEPTABLE PLUMBING INSTALLATION AS SPECIFIED HEREIN AND SHOWN ON DRAWINGS.

PROVIDE ALL ITEMS, ARTICLES, OPERATIONS, OR METHODS LISTED, MENTIONED, OR SCHEDULED HEREIN OR IN THE DRAWINGS, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY AND REQUIRED FOR COMPLETION OF THE WORK.

REGULATIONS, CODES, AND STANDARDS: CURRENT CODE REQUIREMENTS SHALL BE SATISFIED WHERE REQUIRED BY LOCAL, STATE, OR FEDERAL AUTHORITY HAVING JURISDICTION. NO EQUIPMENT WILL BE ACCEPTED UNLESS IT BEARS THE ACCEPTANCE LABEL OF AN APPROPRIATE TESTING AGENCY.

SHOP DRAWINGS: SUBMIT TO THE PROJECT ENGINEER, FOR APPROVAL, SHOP DRAWINGS FOR ALL EQUIPMENT LISTED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS. ALLOW 10 DAYS FOR REVIEW BY ARCHITECT/ENGINEER. SUBMITTALS SHALL INCLUDE AS A MINIMUM THE FOLLOWING:

- A. PRODUCT DATA: MANUFACTURERS' LITERATURE DESCRIBING ITEM, MODEL NUMBERS PROPOSED SHALL BE IDENTIFIED WHEN THE LITERATURE DESCRIBES MORE THAN (1) ITEM.
B. OPERATION CURVES: FOR ALL PUMPS SHOWING CAPACITIES, PRESSURES, HORSEPOWER, AND EFFICIENCY SHALL BE PROVIDED.
C. MANUFACTURERS' SUBMITTAL: SHOWING ELECTRICAL AND PLUMBING REQUIREMENTS AND CONNECTION LOCATIONS SHALL BE PROVIDED.
D. MAINTENANCE DATA: SUBMIT MAINTENANCE DATA AND PARTS LIST FOR EACH TYPE OF EQUIPMENT REQUIRING PERIODIC MAINTENANCE.

ALL SHOP DRAWINGS SUBMITTED SHALL BE STAMPED, DATED, AND SIGNED BY THE CONTRACTOR TO CERTIFY THAT THEY HAVE BEEN CHECKED BY HIM AS TO CAPACITIES, DIMENSIONS, SPACE REQUIREMENTS, AND LIMITATIONS, AND ANY AND ALL OTHER REQUIREMENTS, AND FOUND ACCEPTABLE. APPROVALS OF SHOP DRAWINGS BY THE PROJECT ENGINEER SHALL NOT RELIEVE CONTRACTOR FROM FULFILLING OPERATIONAL REQUIREMENTS, OR FURNISHING ALL MATERIAL AND EQUIPMENT SPECIFIED OR NOTED, WHETHER OR NOT SPECIFICALLY SHOWN ON THE SHOP DRAWINGS. THE QUANTITY TO BE SUBMITTED SHALL BE THE NUMBER REQUIRED BY THE GENERAL CONTRACTING DRAWINGS.

AS-BUILT DRAWINGS: THE CONTRACTOR SHALL SUBMIT AT COMPLETION ONE (1) SET OF MARKED-UP CONTRACT DRAWINGS WHICH SHOW ALL MODIFICATIONS TO THE CONTRACT AND CHANGES OF LOCATIONS, MATERIALS, OR CONFIGURATIONS. THIS SET SHALL BE SUBMITTED WITH THE OPERATING MANUALS TO THE PROJECT ENGINEER.

OPERATING MANUALS: PROVIDE THREE (3) MANUALS, EACH WITH A COMPLETE SET OF COPIES OF SHOP DRAWINGS REQUIRED FOR THE PROJECT AS WELL AS VALVE CHARTS, MANUFACTURERS TESTING, CLEANING AND MAINTENANCE INSTRUCTIONS, LIST OF MATERIALS FOR MAINTENANCE, PARTS LIST, WIRING DIAGRAMS, AND NAME AND ADDRESS OF AUTHORIZED SERVICE ORGANIZATIONS AND SUPPLIERS. INFORMATION SHALL BE BOUND IN 8 1/2"x11" THREE-RING, LOOSE-LEAF BINDER, AND INDEXED IN ACCORDANCE WITH THESE SPECIFICATIONS. BINDER COVER SHALL IDENTIFY JOB NAME, DATE, AND NAME AND ADDRESS OF CONTRACTOR, ARCHITECT, AND ENGINEER. MANUALS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW OF MATERIAL PRIOR TO THE FINAL INSPECTION. MANUALS WILL BE RETURNED TO THE CONTRACTOR FOR THE SUBMITTAL TO THE OWNER AT THE TIME OF SYSTEM INSTRUCTION.

SYSTEM START-UP: AT A TIME SET BY THE CONTRACTOR, AND AGREED TO BY THE OWNER, ARRANGE TO PLACE EQUIPMENT IN OPERATION, HAVE A FACTORY AUTHORIZED TECHNICIAN ASSIST IN THE EQUIPMENT START-UP AND MAKE NECESSARY ADJUSTMENTS TO PROVE SATISFACTORY OPERATION PRIOR TO TURNING FACILITY OVER TO OWNER. ALL EQUIPMENT SHALL BE RUN FOR THREE 8-HOUR TEST PERIODS. ANY IRREGULARITIES, FAULTY EQUIPMENT, ETC., SHALL BE REPAIRED OR REPLACED PRIOR TO FINAL INSPECTION AND ACCEPTANCE. AFTER TESTING, ALL EQUIPMENT SHALL BE FULLY OILED AND INSTALLATION COMPLETELY FINISHED PRIOR TO ACCEPTANCE.

OWNER INSTRUCTION: CONTRACTOR SHALL ARRANGE, IN WRITING, WITH THE OWNER, PRIOR TO FINAL INSPECTION, A DATE OR DATES TO INSTRUCT THE OWNER, AND THE OWNER'S DESIGNATED REPRESENTATIVES, IN THE OPERATION AND MAINTENANCE OF THE SYSTEM.

FINAL INSPECTION: UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE FOLLOWING DATA:

1. MAINTENANCE MANUALS - AFTER RECEIVING APPROVAL OF THE ABOVE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING AND MAKE ARRANGEMENTS FOR A FINAL INSPECTION. AFTER THE FINAL INSPECTION IS MADE, THE CONTRACTOR WILL RECEIVE A LIST OF ITEMS REQUIRING ADJUSTMENT, CORRECTION, REPLACEMENT, OR COMPLETION. THE CONTRACTOR SHALL COMPLY COMPLETELY WITH ALL THE LISTED REQUIREMENTS WITHIN THIRTY (30) DAYS OF THE RECEIPT OF LIST. SHOULD THE CONTRACTOR FAIL TO PERFORM WITHIN THIS TIME LIMIT, THE PROJECT ENGINEER AND/OR OWNER RESERVES THE RIGHT TO HAVE THE WORK COMPLETED BY OTHERS AND THE COST DEDUCTED FROM THE CONTRACT PRICE.

DISPOSAL: ALL MATERIALS AND EQUIPMENT SHOWN, OR INDICATED TO BE REMOVED AND NOT REINSTALLED OR RELOCATED, SHALL BE OWNED PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE OWNER'S PROPERTY UNLESS SPECIFIED TO THE CONTRARY.

EQUIPMENT PADS, FOUNDATIONS, AND PITS: PROVIDE ALL NECESSARY EQUIPMENT PADS, FOUNDATIONS, AND PITS WHICH ARE REQUIRED AS PART OF THIS PROJECT. COST OF CONSTRUCTING THESE SHALL BE A PART OF THE RESPECTIVE PLUMBING / MECHANICAL INSTALLATION. EACH FLOOR MOUNTED PIECE OF EQUIPMENT SHALL BE PROVIDED WITH A 4" HIGH CONCRETE BASE, PLUMB AND SMOOTH. CONCRETE IS TO BE COMPOSED OF ONE PART PORTLAND CEMENT, TWO PARTS CLEAN, SHARP SAND, AND FOUR PARTS CRUSHED STONE OR GRAVEL 1/2 TO 3/4" IN SIZE. MINIMUM 3500 PSI STRENGTH ACHIEVED IN 28 DAYS. BASES SHALL BE ATTACHED TO THE BUILDING FLOOR WITH EXPANSION BOLTS ON 3 CENTERS. MINIMUM OF TWO BOLTS PER BASE. EXPANSION BOLTS SHALL BE SET PRIOR TO POURING SUCH THAT BOLT HEADS WILL BE CONCEALED WITHIN THE PORED BASE. BASE EXPANSION BOLTS SET IN MEMBRANE FLOORS SHALL BE PLACED SO AS NOT TO IMPAIR INTEGRITY OF THE WATERPROOF MEMBRANE. PROVIDE ALL NECESSARY ANCHOR BOLTS FOR EQUIPMENT SUPPLIED. PROVIDE LAYOUT DIMENSIONS AND ANCHOR BOLT INSERTS FOR ANY OTHER CONTRACTOR REQUIRED TO CONSTRUCT THESE.

GUARANTEE: THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS SUPPLIED BY HIM FOR ONE (1) YEAR AFTER ACCEPTANCE OF THE WORK IN HIS CONTRACT. IF, DURING THE GUARANTEE PERIOD, ANY DEFECTS OF FAULTY MATERIALS ARE FOUND, HE SHALL CORRECT IMMEDIATELY AND REPAIR ANY DAMAGE TO OTHER MATERIALS OR INSTALLATIONS CAUSED BY THE DEFECT.

EXTENDED WARRANTIES: WHEN EQUIPMENT IS FURNISHED BY THE CONTRACTOR, OR MANUFACTURER, WITH A WARRANTY LONGER THAN ONE (1) YEAR, THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A COPY ALONG WITH RECEIPTS OR OTHER DOCUMENTS NECESSARY FOR FUTURE WARRANTY REPAIRS. UNLESS OTHERWISE REQUIRED, EXTENDED WARRANTIES ARE FOR EQUIPMENT ONLY, NOT MATERIALS OR LABOR TO INSTALL.

MATERIALS AND EQUIPMENT: ALL EQUIPMENT AND MATERIALS TO BE INCORPORATED IN THIS CONTRACT WORK SHALL BE NEW AND OF THE MAKES AND TYPES AS SPECIFIED AND CONTRACTED FOR NO REMOVED EQUIPMENT SHALL BE RE-INSTALLED OR RE-USED.

PROPOSED EQUIPMENT AND MATERIALS: THIS CONTRACTOR SHALL SUBMIT A COMPLETE LIST OF PROPOSED EQUIPMENT AND MATERIALS, DESIGNATING MANUFACTURER'S NAME AND MODEL NUMBER OR TYPE, FOR PROJECT ENGINEER'S APPROVAL. CONTRACTOR SHALL MAKE SUCH SUBMITTAL WITHIN 15 DAYS AFTER NOTICE TO PROCEED AND BEFORE ORDERING ANY MATERIAL OR EQUIPMENT. APPROVAL OF SUCH A LIST SHALL IN NO WAY RELIEVE THE CONTRACTOR FROM RESPONSIBILITY OF SUBMITTING SHOP DRAWINGS, NOR SHALL IT CONSTITUTE FINAL APPROVAL. SHOULD THE SHOP DRAWINGS BE FOUND TO BE PARTIALLY OR WHOLLY NOT IN FULL AGREEMENT WITH SPECIFICATION REQUIREMENTS.

INSTALLATION: INSTALLATION OF ALL MATERIAL, ITEMS OR EQUIPMENT AS SHOWN ON DRAWINGS OR DESCRIBED IN SPECIFICATIONS SHALL CONFORM AS NEARLY AS POSSIBLE TO MANUFACTURER'S RECOMMENDED PROCEDURE, UNLESS DESIGNATED OTHERWISE. SHOULD SELECTION OF APPROVED ALTERNATE EQUIPMENT REQUIRE REVISIONS, THIS CONTRACTOR SHALL MAKE ALL CHANGES TO ACCOMMODATE SUCH EQUIPMENT. CONTRACTOR SHALL PREPARE DRAWINGS OF REVISIONS FOR APPROVAL BY PROJECT ENGINEER PRIOR TO BEGINNING WORK. CHANGES AND DRAWINGS SHALL BE MADE AT NO CHANGE IN CONTRACT AMOUNT.

REGULATIONS, CODES AND STANDARDS: THIS CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES AND PAY ALL FEES IN CONNECTION WITH SAME FOR WORK PERFORMED UNDER DIVISION 15.

OPENINGS, CHASES AND RECESSES: THIS CONTRACTOR SHALL GIVE GENERAL CONTRACTOR, IN SUFFICIENT TIME, ALL DIMENSIONS NEEDED FOR THE PROPER CONSTRUCTION AND LOCATION OF FORMS, CHASES AND OTHER OPENINGS WHICH MAY BE REQUIRED FOR THE INSTALLATION OF ALL EQUIPMENT, PIPE AND MATERIALS UNDER THIS CONTRACT.

PROTECTION OF EQUIPMENT: PROTECT AGAINST INJURY FROM WEATHER ALL BUILDING MATERIALS, SUPPLIES, TOOLS, EQUIPMENT, AND FIXTURES INSTALLED OR TO BE INSTALLED, WITH SUITABLE AND SUBSTANTIAL COVERS. COST OF REPLACING OR REPAIRING EQUIPMENT AND FIXTURES MADE NECESSARY BY FAILURE TO PROVIDE SUITABLE PROTECTION SHALL BE PAID BY THIS CONTRACTOR. RESPONSIBILITY FOR THE CARE AND PROTECTION OF PLUMBING / MECHANICAL EQUIPMENT AND WORK SHALL REMAIN WITH THIS CONTRACTOR UNTIL IT HAS BEEN TESTED AND ACCEPTED. PROTECT EQUIPMENT OUTLETS, PIPE AND CONDUIT OPENINGS WITH TEMPORARY PLUGS, CAPS, OR APPROVED DEVICES.

PROTECT DEVICES: ALL GEARS, BELTS, AND MOVING PARTS ARE TO BE AMPLY PROTECTED BY SUBSTANTIAL, NEAT, AND APPROVED PERMANENT GUARDS, CASINGS, OR RAILINGS AS THE CASE MAY REQUIRE AND IN SUCH MANNER AS TO FULLY COMPLY WITH ALL LOCAL, STATE, AND FEDERAL REGULATIONS.

CLEANING: AFTER ALL FIXTURES, MATERIALS, AND APPARATUS HAVE BEEN SET AND READY FOR USE, AND BEFORE THIS CONTRACTOR LEAVES THE JOB, HE SHALL THOROUGHLY CLEAN ALL EQUIPMENT FURNISHED AND SET BY HIM REMOVING ALL STICKERS, RUST STAINS, GREASE, CEMENT, AND OTHER FOREIGN MATTER OR DISCOLORATION ON EQUIPMENT, LEAVING EVERY PART IN ACCEPTABLE CONDITION, READY FOR USE. CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM HIS WORK, LEAVING BUILDING IN CLEAN CONDITION, SUITABLE FOR OCCUPANCY. VACUUM CLEAN INTERIOR BEFORE COMPLETION AND PROVIDE NEW FILTERS JUST BEFORE TURNING OVER TO OWNER.

ACTIVE UTILITIES: WHEN ENCOUNTERED IN WORK, PROTECT, BRACE, AND SUPPORT EXISTING ACTIVE SEWERS, GAS, ELECTRIC, AND OTHER SERVICES WHERE REQUIRED FOR PROPER EXECUTION OF WORK. IF EXISTING ACTIVE UTILITIES ARE ENCOUNTERED THAT ARE NOT INDICATED, AND WHICH REQUIRE RELOCATION, MAKE REQUEST IN WRITING FOR DETERMINATION. DO NOT PROCEED WITH WORK UNTIL WRITTEN DIRECTION ARE RECEIVED. DO NOT PREVENT OR DISTURB OPERATION OF ACTIVE SERVICES THAT ARE TO REMAIN.

INACTIVE UTILITIES: WHEN ENCOUNTERED IN WORK, REMOVE, CAP, OR PLUG INACTIVE SERVICES. NOTIFY UTILITY COMPANIES OR MUNICIPAL AGENCIES HAVING JURISDICTION, PROTECT OR REMOVE THESE SERVICES AS DIRECTED.

INTERRUPTION OF UTILITIES: WHERE WORK MAKES TEMPORARY SHUTDOWN OF SERVICES UNAVOIDABLE, SHUT DOWN AT NIGHT, OR AT SUCH TIMES AS APPROVED BY OWNER, WHICH WILL CAUSE LEAST INTERFERENCE WITH ESTABLISHED OPERATING ROUTINE. ARRANGE TO WORK CONTINUOUSLY, INCLUDING OVERTIME IF REQUIRED, SO AS TO MAKE THE SHUTDOWN OF SERVICES THE LEAST AMOUNT OF TIME.

MATERIALS

- A. COPPER TUBE AND FITTINGS
1. COPPER DWV TUBE: ASTM B 306, DRAINAGE TUBE, DRAWN TEMPER.
B. PVC PIPE AND FITTINGS
1. SOLID-WALL PVC PIPE: ASTM D 2865, DRAIN WASTE, AND VENT.
2. ADHESIVE PRIMER: ASTM F 866.
3. SOLVENT CEMENT: ASTM D 2564.

PIPE AND FITTINGS:

- A. POTABLE WATER IN BUILDING ABOVEGROUND, COLD, HOT, TEMPERED, AND RE-CIRCULATING:
1. COPPER, TYPE L, 3" AND SMALLER, HARD TEMPER WITH CAST BRONZE OR WROUGHT COPPER FITTINGS, OR WITH BRASS OR BRONZE FLARE FLANGES. JOINTS SHALL BE MADE WITH 95% TIN/ANTIMONY SOLDER OR BRAZED. SOLDER CONTAINING LEAD SHALL NOT BE USED. FLUX SHALL BE NON-CORROSIVE TYPE.
B. POTABLE WATER, UNDERGROUND:
1. COPPER, 3" AND SMALLER, TYPE K, SOFT TEMPER WITH BRASS OR BRONZE 125 LB. HEAVY DUTY LONG COLLAR FLARED TYP E FITTINGS. JOINTS INSIDE BUILDING MAY BE CAST BRONZE AND WROUGHT SOLDER JOINT FITTINGS WITH 15% SILVER BRAZING ALLOY AND SILVER BRAZING FLUX.
C. UNDERGROUND WASTE AND VENT:
1. SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS.
D. ABOVEGROUND WASTE AND VENT
1. COPPER DWV TUBE, COPPER DRAINAGE FITTINGS, AND SOLDERED JOINTS.
2. SOLID WALL PVC PIPE, PVC SOCKET FITTINGS, AND SOLVENT-CEMENTED JOINTS.

VALVE:

ALL VALVES OF ONE TYPE SHALL BE OF ONE MANUFACTURER AND WITH NAME OR TRADEMARK OF MANUFACTURER CAST OR STAMPED ON BODY OF VALVE.

STEM SHALL HAVE BRASS/TEFLON SEALS, AND CHROME PLATED VALVE.

FURNISH AND INSTALL REQUIRED VALVES FOR PROPER FLOW CONTROL, ISOLATION FOR INSPECTION, MAINTENANCE AND REPAIR OF EACH PIECE OF EQUIPMENT, EACH MAIN, AND BRANCH SERVICE LINE.

UNIONS:

- PROVIDE UNIONS IN ALL PIPING CONNECTING TO EQUIPMENT SUBJECT TO REPAIR OR REMOVAL.
A. UNIONS SHALL BE OF THE SAME MATERIAL AND FINISH AS THE PIPING SYSTEM. AVOID UNIONS IN STRAIGHT PIPE RUNS OR IN CONCEALED LOCATIONS.
1. STEEL PIPING SIZES 2" AND SMALLER, MALLEABLE IRON UNIONS WITH GROUND JOINT BRASS TO IRON SEAT, 150 LB. WORKING PRESSURE, GRINNELL 463, STOCKHAM 694, BLACK OR GALVANIZED.
2. COPPER PIPING: ALL PIPE SIZES: COPPER, GROUND JOINT UNION, CHASE 402, MUELLER WC407.

MAKE ALL REDUCTIONS IN PIPE SIZE WITH ECCENTRIC OR CONCENTRIC, AS APPROPRIATE. REDUCING FITTINGS TO ALLOW FOR COMPLETE GRAVITY DRAINING OF LINES. USE NO BUSHINGS. ALL PIPE NIPPLES SHALL BE OF THE SAME MATERIAL AS LINES IN WHICH THEY OCCUR. MINIMUM SIZE OF FITTER PIPING SHALL BE 1/2" EXCEPT WITHIN 12" OF PLUMBING FIXTURE. SUPPORT ALL PIPING ADEQUATELY TO PREVENT SAG AND ROCKETING.

A. CONCEALED PIPING: ALL PIPING SHALL BE CONCEALED EXCEPT AS OTHERWISE SHOWN OR SPECIFIED. PIPING TO BE CONCEALED MUST BE INSULATED, IF REQUIRED, BEFORE PERMANENT WALLS OR CEILINGS ARE INSTALLED.

B. EXPOSED PIPING: INSTALL EXPOSED PIPING AS CLOSE TO CEILINGS AND BEAMS AS POSSIBLE, MAINTAINING HIGHEST POSSIBLE HEADROOM CONSISTENT WITH THE CORRECT PITCHING OF THE PIPE.

C. THREADED PIPE: ALL SCREW THREADS SHALL BE AMERICAN STANDARD TAPER PIPE THREAD. USE GRAPHITE OR TEFLON TAPE AS LUBRICANT FOR ASSEMBLING. LUBRICATION OF THREADED JOINTS WILL BE ALLOWED ONLY ON THE MALE PIPE THREADS.

SANITARY WASTE PIPING SPECIALTIES:

- A. FLOOR DRAINS: FLOOR DRAINS SHALL BE THE DEEP SEAL TYPE WHERE SUBJECT TO EVAPORATION.
1. FOR ABOVE GROUND TRAPS PROVIDE TRAP PRIMER
2. FOR BURIED TRAPS PROVIDE GREEN DRAIN WATERLESS TRAP SEAL FOR BURIED TRAPS. OIL SHALL NOT BE DISCHARGED TO PUBLIC SEWER.
B. FLOOR CLEANOUTS: ADJUSTABLE FLOOR CLEANOUT, DURA-COATED CAST IRON BODY WITH GAS AND WATERTIGHT ABS TAPERED THREAD PLUG AND ROUND SCORATED CAST IRON EXTRA-HEAVY-DUTY SECURED TOP ADJUSTABLE TO FLOOR FINISH. ZURN Z-1400 OR EQUAL.

PRESSURE TESTS: ALL PIPING AND RELATED EQUIPMENT SHALL PROVE TIGHT UNDER REQUIRED TESTS. CONTRACTOR SHALL PROVIDE ALL NECESSARY INSTRUMENTS, GAUGES, APPARATUS, AND PERSONNEL TO PERFORM THE TESTS. ALL TESTS FOR PIPING SYSTEMS, EXCEPT FINAL TESTS OF COMPLETE SYSTEM, SHALL BE MADE BEFORE PIPE IS COVERED, CONCEALED, OR CONNECTED TO FIXTURES AND EQUIPMENT. REMOVE OR PROTECT FROM DAMAGE EQUIPMENT NOT INTENDED TO BE SUBJECTED TO TEST PRESSURES REQUIRED. ALL TEST PRESSURES SHALL REMAIN CONSTANT FOR THE REQUIRED PERIOD WITHOUT ADDITION TO THE TESTING MEDIUM. ALL TESTS SHALL BE MADE IN THE PRESENCE OF THE PROJECT ENGINEERS' DULY AUTHORIZED REPRESENTATIVE. TESTS REQUIRED SHALL NOT BE LESS THAN THE FOLLOWING AND NOT LESS THAN THE APPLICABLE CODES:

- A. INTERIOR SEWER AND VENTS: PNEUMATIC, 8 PSI/G, 15 MINUTES
B. POTABLE WATER: HYDROSTATIC, 150 PSIG, 2 HOURS.

ALL PIPE SHALL PROVE ABSOLUTELY TIGHT FOR THE ENTIRE DURATION OF THE TEST AS EVIDENCED BY BOTH VISUAL INSPECTION AND PRESURE GAUGE READABLE TO ONE PSIG INCREMENTS; IF ANY LEAK OCCURS, THE CONTRACTOR SHALL MAKE REPAIR, OR OTHER CORRECTIVE ACTION AND CONDUCT THE TEST AGAIN.

DISINFECTING AND CLEANING:

ALL PIPING SYSTEMS SHALL BE THOROUGHLY CLEANED AND DISINFECTED PRIOR TO OPERATION AND/OR CONNECTION TO EXISTING SYSTEMS. WHERE NEW SYSTEMS CONNECT TO EXISTING, PROVIDE VALVES, DRAINS, ETC., TO ISOLATE THE NEW FOR PROPER CLEANING.

PLUMBING INSULATION: INSULATION SHALL COMPLY WITH ASHRAE, NFPA, ANSI/ASTM, AND FEDERAL SPECIFICATIONS. INSULATION PRODUCTS SHALL BE MANUFACTURED BY ONE OF THE FOLLOWING MANUFACTURERS:

- 1. MANVILLE CORP.
2. OWENS-CORNING FIBERGLASS CORP.
3. CERTAIN-TEED CORP.
4. KNAUF

REFERENCES: ASTM C547, STANDARD SPECIFICATION FOR MINERAL FIBER PIPE INSULATION. ASTM E24, STANDARD TEST METHOD FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS. UL 723, TEST FOR SURFACE BURNING CHARACTERISTICS OF BUILDING MATERIALS.

PRODUCTS SHALL NOT CONTAIN ASBESTOS, LEAD, MERCURY, OR MERCURY COMPOUNDS.

INSULATION SCHEDULE: DOMESTIC COLD WATER PIPING: ALL SIZES, 1" INSULATION WITH ASJ JACKET. DOMESTIC HOT WATER PIPING: FOR PIPE SIZES UP TO 1-1/4", 1" INSULATION WITH ASJ JACKET IS REQUIRED. FOR 1-1/2" PIPE SIZE, 1-1/2" INSULATION IS REQUIRED. DOMESTIC HOT WATER RETURN PIPING: ALL SIZES, 1" INSULATION WITH ASJ JACKET. STORM WATER PIPING: ALL SIZES, 1" INSULATION WITH ASJ JACKET.

INSULATION TO HAVE A 0 24 BTU/IN*HRY*FT2 F. ALL INSULATION TYPES SHALL HAVE FIRE AND SMOKE HAZARD CLASSIFICATION RATINGS FOR EACH INSULATION TYPE AS A COMPOSITE UNIT ASSEMBLY. COMPOSITE ASSEMBLY SHALL CONSIST OF BASIC INSULATION BODY, JACKET OR FACING, AND ADHESIVE BINDING JACKET OF FACING TO INSULATION BODY. RATINGS SHALL NOT EXCEED A FLAME SPREAD CLASSIFICATION OF 25 AND SMOKE DEVELOPED CLASSIFICATION OF 50. ALL INSULATION PRODUCTS, OR THEIR SHIPPING CARTONS OR PACKAGES SHALL BEAR A LABEL, INDICATING THAT FLAME AND SMOKE RATINGS DO NOT EXCEED THE STATED REQUIREMENTS.

WHERE PIPE IS SUPPORTED FROM THE INSULATION SUCH AS WITH CLEVIS HANGERS, INSTEAD OF FROM THE PIPE ITSELF, INSERTS AND PROTECTION SHIELDS SHALL BE UTILIZED.

INSULATE ALL PVC PIPING IN PLENUM CEILINGS WITH INSULATION HAVING A FLAME SPREAD CLASSIFICATION OF 25 AND SMOKE DEVELOPED CLASSIFICATION OF 50. AVOID INSTALLING PVC PIPING IN PLENUM CEILINGS.

PLUMBING FIXTURES AND TRIM: COMPLY WITH ALL APPLICABLE PORTIONS OF THE PLUMBING CODE, ANSI STANDARDS, PDI STANDARDS, FEDERAL STANDARDS, UL COMPLIANCE, STATE STANDARDS, LOCAL STANDARDS, AND AMERICANS WITH DISABILITIES ACT (ADA).

APPROVED MANUFACTURERS LIST: AMERICAN STANDARD, CRANE, ELLER, UNIVERSAL-RUNDLE, KOHLER, CHICAGO FAUCET, DELTA FAUCET, SPEAKMAN, SLOAN VALVE, BENEKE, FORBES-WRIGHT, AND OLSONITE.

WATER CLOSETS INSTALLED IN ACCESSIBLE STALLS SHALL HAVE THE FLUSH HANDLE MOUNTED ON THE WIDE SIDE OF THE ROOM AT NO MORE THAN 44" ABOVE THE FLOOR. ALL WATER CLOSETS SHALL BE EQUIPPED WITH SEATS OF SMOOTH, NON-ABSORBENT MATERIAL. ALL SEATS OF WATER CLOSETS PROVIDED FOR PUBLIC USE SHALL BE ANTIMICROBIAL, PLASTIC MATERIAL AND OPEN-FRONT STYLE. NO WATER CLOSET SEAT SHALL BE MORE THAN 1-1/2" THICK.

WATER SUPPLIES & TRAPS: FURNISH ALL NECESSARY SUPPLIES, WASTES, TRAPS, STOPS, AND CONNECTORS FROM THE ROUGHED-IN SERVICE TO FIXTURES, EXPOSED FLUSH TANK, WASTE, AND SUPPLY PIPES AT THE FIXTURES. SHALL BE POLISHED CHROMIUM PLATED BRASS PIPE, STOP VALVES, FLUSH TANKS, ESCUTCHEONS, ETC. SHALL BE HEAVY CAST BRASS WITH POLISHED CHROMIUM PLATING. WATER LINES TO EACH FIXTURE SHALL BE EQUIPPED WITH CHROME PLATED BRASS, LOOSE KEY STOP VALVES, SCREW DRIVER STOPS SHALL BE PROVIDED WITH ALL FLUSH TANKS.

DRINKING FOUNTAINS: DRINKING FOUNTAINS SHALL BE WALL MOUNTED, VANDAL RESISTANT BLEVEL ROUND MADE FROM 18 GAUGE #34 STAINLESS STEEL. BOLTS MOUNTED INTO POWDER COATED STEEL BACK PANEL UNIT SHALL BE ACTIVATED BY FRONT MOUNTED SELF-CLOSING BUTTONS, BY USING LESS THAN 5 LBS OF FORCE, WHICH ACTIVATES INTERNALLY MOUNTED VALVES WITH ADJUSTABLE STREAM REGULATORS FOR CONTROLLING THE WATER FLOW. BUBBLERS SHALL BE POLISHED CHROME PLATED BRASS WITH NON-SQUIRT FEATURES AND OPERATE ON WATER PRESSURE RANGE OF 20-105 PSIG. UNIT SHALL ADHERE TO ANSI A117.1 AND AMERICANS WITH DISABILITIES ACT OF 1990. INSTALL OFF-THE-FLOOR CARRIER SUPPORTS, AFFIXED TO BUILDING SUBSTRATE, INSTALL WATER PIPING WITH SHUTOFF VALVE ON SUPPLY TO EACH FIXTURE TO BE CONNECTED TO THE WATER DISTRIBUTION PIPING. INSTALL TRAP AND WASTE PIPING ON DRAIN OUTLET OF EACH FIXTURE TO BE CONNECTED TO SANITARY DRAINAGE SYSTEM. ADJUST FIXTURE FLOW REGULATORS FOR PROPER FLOW AND STREAM HEIGHT.

ELECTRIC TANK TYPE WATER HEATERS: WATER HEATER TO BE CSA CERTIFIED AND ASME RATED T&B RELIEF VALVE AND UL 174 APPROVED. PROVIDE PRODUCTS BY ONE OF THE FOLLOWING: BRADFORD WHITE, LOCHINVAR, RHEEM, A.O SMITH, OR STATE. MINIMUM PRESSURE RATING OF STORAGE TANK, 150 PSI. GLASS-LINED STEEL STORAGE TANK HEATING ELEMENTS TO BE ZINC PLATED COPPER SHEATHS. FACTORY INSTALLED TERMINAL BLOCK, ADJUSTABLE TEMPERATURE CONTROL, RANGE OF 110°F TO 170°F. MANUAL RESET HIGH TEMPERATURE CUTOFF.

SUPPORT UNITS FROM STRUCTURE ABOVE WITH THREADED ROD SUPPORTS. INSTALL SHUT-OFF VALVE ON INLET SIDE OF WATER HEATER. INSTALL COMBINATION TEMPERATURE-AND-PRESSURE RELIEF VALVES IN TOP PORTION OF STORAGE TANKS. USE RELIEF VALVES WITH SENSING ELEMENTS THAT EXTEND INTO TANKS. EXTEND COMMERCIAL-WATER-HEATER RELIEF-VALVE OUTLET, WITH DRAIN PIPING SAME AS DOMESTIC-WATER PIPING IN CONTINUOUS, DOWNWARD PITCH, AND DISCHARGE BY POSITIVE AIR GAP ONTO CLOSEST FLOOR DRAIN.

POTABLE WATER HEATERS SHALL BE LISTED AND LABELED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS INSTRUCTION AND SHALL BE CAPABLE OF BEING REMOVED WITHOUT FIRST REMOVING A PERMANENT PORTION OF THE BUILDING STRUCTURE OR PIPING.

CODE COMPLIANCE

ALL WORK AND MATERIAL SHALL BE PERFORMED AND INSTALLED IN COMPLIANCE WITH THE FOLLOWING CODES AS ADOPTED AND AMENDED BY THE INSPECTING AUTHORITY. NOTHING IN THESE DRAWINGS IS TO BE CONSTRUCTED TO PERMIT WORK NOT CONFORMING TO THESE CODES OR OTHERS APPLICABLE TO THE PROJECT.

Table with 2 columns: Item Number and Code Reference. 1. INTERNATIONAL BUILDING CODE 2018; 2. INTERNATIONAL MECHANICAL CODE 2018; 3. INTERNATIONAL PLUMBING CODE 2018; 4. INTERNATIONAL ENERGY CONSERVATION CODE 2018; 5. NATIONAL ELECTRICAL CODE 2017 (NEC 2017); 6. INTERNATIONAL FUEL GAS CODE 2018.

PLUMBING GENERAL NOTES

1. CODES:

THE WORK SHALL COMPLY WITH ALL APPLICABLE LOCAL, MUNICIPAL, AND NATIONAL CODES. WHERE THE CONSTRUCTION DOCUMENTS INDICATE MORE RESTRICTIVE REQUIREMENTS THAN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MOST COMPLETE OR HIGHER STANDARD SHALL PREVAIL.

2. DRAWINGS AND SPECIFICATIONS:

THE CONTRACTOR SHALL BE RESPONSIBLE FOR READING AND COMPLYING WITH BOTH THE DRAWINGS AND SPECIFICATIONS. IN THE EVENT OF A CONFLICT OR INCONSISTENCY BETWEEN THE DRAWINGS, NOTES, SPECIFICATIONS, OR CODES, THE REFERENCE WHICH PROVIDES THE MOST COMPLETE OR HIGHER STANDARD SHALL PREVAIL.

3. INTERPRETATION OF THE DOCUMENTS:

CAREFULLY COMPARE THE DRAWINGS AND SPECIFICATIONS, CHECKING MEASUREMENTS AND CONDITIONS UNDER WHICH THIS INSTALLATION IS TO BE MADE. FOR CLARIFICATION BETWEEN VARIOUS DRAWINGS, BETWEEN DRAWINGS OR SPECIFICATION, OR BETWEEN SECTIONS OF THE SPECIFICATION, THE MATTER SHALL BE REFERRED TO THE ENGINEER BEFORE ANY WORK IS EXECUTED. THE CONTRACTOR SHALL STATE IN THEIR PROPOSAL ANY EXCEPTIONS NECESSARY TO MAKE THIS A COMPLETE, READY TO USE INSTALLATION. IF NOT STATED IN THE PROPOSAL, IT WILL NOT BE CONSIDERED EXTRA.

4. SITE EXAMINATION:

BEFORE SUBMITTING A BID, THE CONTRACTOR SHALL VISIT THE SITE, EXAMINE THE PREMISES, AND MAKE A THOROUGH SURVEY OF THE EXISTING CONDITIONS. THE SUBMISSION OF A PROPOSAL WILL BE CONSTRUED AS EVIDENCE THAT SUCH AN EXAMINATION MADE. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE OR FOR LATER CLAIMS FOR LABOR, EQUIPMENT, MATERIALS REQUIRED, OR FOR DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN HAD SUCH AN SITE EXAMINATION BEEN MADE.

5. COORDINATION WITH OTHER TRADES:

THE PLUMBING CONTRACTOR SHALL OBTAIN A COMPLETE SET OF ARCHITECTURAL AND ENGINEERING DOCUMENTS AND COORDINATE WITH ELECTRICAL, MECHANICAL, ARCHITECTURAL AND OTHER TRADES FOR EXACT DIMENSIONS, CLEARANCES, EQUIPMENT LOCATIONS, AND OTHER ADDITIONAL SCOPES OF WORK THAT MAY NOT BE SHOWN ON THE PLUMBING PLANS.

6. PERMITS, APPLICATIONS AND RELEASES:

THE CONTRACTOR SHALL OBTAIN AND PAY FOR ALL PERMITS INSPECTIONS, APPLICATIONS, RELEASES AND FEES REQUIRED BY LOCAL, STATE AND FEDERAL AGENCIES FOR THE EXECUTION OF THIS WORK. SCHEDULING OF ALL REQUIRED INSPECTIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

7. FIRE STOPPING:

ALL PENETRATIONS IN WALL, FLOOR OR CEILINGS SHALL BE SUITABLY CLOSED UP AND SEALED WITH AN INTUMESCENT FIRE STOPPING COMPOUND LISTED IN THE MOST RECENT FACTORY MUTUAL RESEARCH CORPORATION (FMRC) APPROVAL GUIDE. FIRE STOPPING PRODUCTS SHALL BE MANUFACTURED BY 3M CO.

8. OWNER FURNISHED EQUIPMENT:

EQUIPMENT THAT WILL BE FURNISHED BY THE OWNER WILL BE INDICATED ON A SEPARATE SCHEDULE. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER FOR DELIVERY SCHEDULE. THE CONTRACTOR SHALL ASSURE THAT ON-SITE STORAGE MAY NOT BE AVAILABLE. WHEN COORDINATING DELIVERY OF EQUIPMENT, THE CONTRACTOR, IN COORDINATION WITH THE OWNER'S REPRESENTATIVE, WILL INSPECT THE DELIVERY FOR ACCURACY AND SHIPPING DAMAGE AND ACCEPTING THE EQUIPMENT. THE CONTRACTOR SHALL BE RESPONSIBLE TO STORE, PROTECT, AND ULTIMATELY INSTALL THE EQUIPMENT.

9. EQUIPMENT:

ALL MATERIALS AND EQUIPMENT USED IN THIS INSTALLATION SHALL BE NEW, AND HAVE THE APPROPRIATE LISTING AND LABEL.

10. MISCELLANEOUS SUPPORTING MEMBERS:

ALL ANCHOR CHANNELS, AND OTHER MISCELLANEOUS STEEL, BOLTS, RODS, ETC., REQUIRED TO SUPPORT LIGHT FIXTURE, CONDUIT, RACEWAY, LADDER TRAY, OR OTHER ELECTRICAL EQUIPMENT OR DEVICES SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR.

11. SAFETY:

THE CONTRACTOR SHALL TAKE ALL STEPS NECESSARY TO ENSURE THE SAFETY OF THE OWNERS EMPLOYEES, BUILDING EMPLOYEES AND GUESTS, AS WELL AS THEIR OWN FORCES, BY ADEQUATELY PROTECTING ANY EXPOSED LIVE CONDUCTORS, OR DEVICES THROUGHOUT THE COURSE OF THIS WORK.

12. WATER SERVICE PROTECTION:

ALL INCOMING WATER SERVICES SHALL BE EQUIPPED WITH AN APPROVED REDUCED PRESSURE BACKFLOW PREVENTER INSTALLED IN-LINE OF EQUAL PIPE DIAMETER OF THE WATER SERVICE AND SHALL BE LOCATED NO MORE THAN FIVE FEET ABOVE THE FLOOR. REDUCED PRESSURE BACKFLOW PREVENTER ASSEMBLIES SHALL BE TESTED AND APPROVED BY A CROSS CONNECTION CONTROL DEVICE INSPECTOR BEFORE INITIAL OPERATION, AND AT LEAST ANNUALLY THEREAFTER.

13. CONNECTIONS TO EQUIPMENT:

ALL EQUIPMENT INCLUDING, BUT NOT LIMITED TO, SODA MACHINES, COFFEE MACHINES, ICE MAKERS, DISHWASHERS, TO BE PROTECTED FROM BACKFLOW PER STATE OF KANSAS CODE.

14. FIXTURES:

ALL NEW AND REPLACED PLUMBING FIXTURES SHALL BE LABELED WATERSENSE PRODUCT AS SPECIFIED BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY.

15. DISTRIBUTION PIPE:

ANY WATER DISTRIBUTION PIPE HAVING BEEN TERMINATED OR IS AN UNUSED SEGMENT SHALL HAVE NO "DEAD ENDS". NO SEGMENT OF PIPE WITH A DEVELOPED LENGTH OF MORE THAN TWO FEET SHALL BE PERMITTED.

16. EXISTING PLUMBING:

ALL EXISTING PLUMBING THAT MAY POSE A HEALTH OR SAFETY HAZARD MUST BE REVISED TO MEET FAIRBANKY CITY, KANSAS PLUMBING CODE. ALL UNUSED WATER PIPING TO BE CAPPED WITHIN 6" OF MAIN.

PLUMBING CONTRACTOR TO SCOPE ALL EXISTING SANITARY SYSTEMS TO VERIFY LOCATION, SLOPE, AND CONDITION OF EXISTING SANITARY. ANY DEFICIENCIES SHOULD BE REPORTED TO THE OWNER PRIOR TO CONNECTING TO EXISTING SYSTEMS.

WHEN MULTIPLE SYSTEMS ARE INSTALLED, CONTRACTOR TO VERIFY CONNECTION TO CORRECT SYSTEM, I.E. GREASE OR OIL WASTE SYSTEMS.

CONTRACTOR TO MAINTAIN AN AS-BUILT DRAWING SHOWING THE LOCATION OF THE EXISTING SANITARY AND PROVIDE A COPY TO OWNER UPON CLOSEOUT OF PROJECT.

17. BALL VALVES:

ALL BALL VALVES 1-1/2" AND BELOW FOR DOMESTIC WATER SHALL BE OF LEAD FREE TYPE 1417 (91) SWDA.

18. DEAD ENDS:

NO DEAD ENDS IN SUPPLY OR SANITARY.

EVOLVE

CONSULTANT (ENGINEER)

NY ENGINEERS

NEARBY ENGINEERS
382 NE 1918T STREET SUITE
49674, MIAMI, FL 33179
PH-914-257-3455
WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA. LICENSE NO. 25410. EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:

WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS WILL NOT BE APPROVED FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE DIMENSIONS AND THE EXISTING CONDITIONS.

Table with 2 columns: DATE and ISSUE. 05/05/25 90% PERMIT SET; 05/30/25 100% PERMIT SET

Table with 2 columns: DATE and REVISION. Multiple empty rows.

PLUMBING CONTRACTOR TO SCOPE ALL EXISTING SANITARY SYSTEMS TO VERIFY LOCATION, SLOPE, AND CONDITION OF EXISTING SANITARY. ANY DEFICIENCIES SHOULD BE REPORTED TO THE OWNER PRIOR TO CONNECTING TO EXISTING SYSTEMS.

Table with 2 columns: DATE and REVISION. Multiple empty rows.

DATE REVISION

PROJECT INFORMATION:

PROJECT NUMBER: 12668-25
DRAWN BY: NYE
REVIEWED BY: NYE
TOTAL SQ. FT.: 1,817 FT
DATE: 05/30/25

DRAW

PLUMBING SYMBOLS LIST

PLUMBING LEGENDS

--- SAN ---	SANITARY PIPING
--- EX SAN ---	EXISTING SANITARY PIPING
----	VENT PIPING
----	COLD WATER PIPING
----	EXISTING COLD WATER PIPING
----	HOT WATER PIPING
----	RECIRCULATING HOT WATER PIPING
---	GAS PIPING
---	SECONDARY BFP
---	BALANCING VALVE
---	PIPE UP OR DOWN
---	PIPE UP
---	UNION
---	ISOLATION VALVE
---	FLOOR CLEANOUT
---	BACKFLOW PREVENTER
---	GAS SHUT-OFF VALVE
---	POINT OFF CONNECTION
---	RE-CIRCULATION PUMP
---	HUB / FLOOR DRAIN
---	CONDENSATE DRAIN

PLUMBING ABBREVIATIONS

AG	ABOVE GROUND SANITARY
AFF/AFG	ABOVE FINISHED FLOOR/GRADE
AHJ	AUTHORITY HAVING JURISDICTION
BFP	BACKFLOW PREVENTER
CW	COLD WATER
CC	CONTRACTORS CHOICE
CO	CLEANOUT
CD	CONDENSATE DRAIN
ETR	EXISTING TO REMAIN
ET	EXPANSION TANK
EV	EQUIPMENT VENDOR
EWC	ELECTRIC WATER COOLER
F	FRANCHISE
FCO	FLOOR CLEANOUT
FD	FLOOR DRAIN
FPHB	FROST-PROOF HOSE BIB
GAL	GALLONS
GC	GENERAL CONTRACTOR
HD	HUB DRAIN
HW	HOT WATER
HWR	HOT WATER RETURN
IW	INDIRECT WASTE
LAV	LAVATORY
MS	MOP SINK
OB	OUTLET BOX
OC	OWNERS CHOICE
PC	PLUMBING CONTRACTOR
RPZ	REDUCED-PRESSURE BACKFLOW PREVENTER
RCP	RECIRCULATION PUMP
SAN	SANITARY
SK	SINK
TMV	THERMOSTATIC MIXING VALVE
TYP	TYPICAL
V	VENT
VIF	VERIFY IN FIELD
VLL	VERIFY WITH LANDLORD
VTR	VENT THRU ROOF
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WATER HEATER
WD	WASHER DRYER
WHA	WATER HAMMER ARRESTOR

PLUMBING DRAWING LIST

P-0.1	PLUMBING SPECIFICATIONS SHEET
P-0.2	PLUMBING SYMBOLS, ABBREVIATIONS AND SCHEDULE
P-1.0	PLUMBING SANITARY, VENT FLOOR PLAN AND RISER DIAGRAM
P-2.0	PLUMBING WATER SUPPLY FLOOR PLAN AND RISER DIAGRAM
P-3.0	PLUMBING GAS PLAN AND RISER DIAGRAM
P-4.0	PLUMBING DETAILS

PLUMBING FIXTURE SCHEDULE

TAG	FIXTURE	MATERIAL	MANUFACTURER	MODEL	MOUNTING	FAUCET / FLUSH VALVE		NOTES
						MANUFACTURER	MODEL	
WC	WATER CLOSET ADA	WHITE VITREOUS CHINA	ZURN	Z5560.000.01.03.36 LH OR RH	FLOOR	-	-	FLOOR-MOUNTED TWO-PIECE ELONGATED BOWL. PRESSURE-ASSISTED TOILET. ADA 1.6 GPF. ROUGH-IN PROVIDE ANTIMICROBIAL OPEN FRONT SEAT WITHOUT COVER. COORDINATE TRIP LEVER WITH WIDE SIDE OF FIXTURE.
LAV	LAVATORY SINK	WHITE CERAMIC	CERASTYLE	0796000-U	WALL MOUNTED	NAMEEK	LIUSLN-NO	WALL HUNG LAVATORY. WHITE CERAMIC. REAR OVERFLOW. RECESSED SELF-DRAINING DECK WITH NAMEEK'S SINGLE HANDLE FAUCET. RIGID SPOUT (MATTI BLACK FINISH)
MS	MOP SINK	WHITE DURASTONE	MUSTEE	63M	FLOOR MOUNTED	MUSTEE	63.600A	24"x24"x10" DEEP MOP SINK. DRAIN SHALL BE INTEGRALLY MOLDED. COMPLETE WITH DRAIN SEAL. FOR INSTALLATION OF 3" ABS, PVC (SCH 40S) AND IRON PIPE. CHROME-PLATED SERVICE FAUCET W/ VACUUM BREAKER STOPS. 65.600 THREE SPRING-LOADED RUBBER HOLDERS MOP HANGER.
EWC	ELECTRIC WATER COOLER	STAINLESS STEEL	ELKAY	LZSTLG8WSSK	WALL MOUNTED	-	-	TWO STATION, SELF-CONTAINED, WALL HUNG ELECTRIC REFRIGERATED WATER COOLER WITH BOTTLE FILLER & FILTER. ADA COMPLIANT 60HZ, 115V.
FD	FLOOR DRAIN	CAST IRON	ZURN	FD2290	FLOOR MOUNTED	-	-	CAST IRON BODY. BOTTOM OUTLET. CLAMP COLLAR POLISHED NICKEL BRONZE. LIGHT DUTY STRAINER
TMV	THERMOSTATIC MIXING VALVE	-	ACORN	STP7069	-	-	-	COMPACT THERMOSTATIC MIXING VALVE FOR INDIVIDUAL FAUCETS. ACCURATE TEMPERATURE CONTROL WITH FLOWS AS LOW AS 0.25 GPM. INLET STRAINER
OB	OUTLET BOX	ABS	SOUIX CHIEF	696	WALL	-	-	OUTLET BOX FOR WASHER/DRYER WITH 1/2" HW AND CW CONNECTIONS AND 2" DRAIN CONNECTION

- NOTE:
1. PROVIDE WITH 1/2" TRAP PRIMER TO FLOOR DRAIN (TP), WATTS TP300 OR EQUIVALENT.
 2. CONTRACTOR TO CROSS REFERENCE ALL LISTED PLUMBING FIXTURES WITH OWNER PROVIDED DIP (DESIGN INTENT PACKAGE) TO ENSURE ALL PLUMBING RELATED ITEMS ARE COORDINATED PROPERLY.

ELECTRIC TYPE HOT WATER HEATER WITH STORAGE

TAG	TOTAL NO. OF HEATERS	TEMP. SET POINT DEG. F.	RATED STORAGE (GALLONS)	MEASURED STORAGE (GALLONS)	POWER INPUT	ELECTRICAL DATA	RECOVERY CAP. (GPM/GPH) @ RISE	STORAGE WATER TEMP.	TYPE	MANUFACTURER & MODEL NO.	EFFICIENCY	REMARKS
						V/PH/Hz						
WH-1	1	140	20	19	4 KW	208V/1Ø/60Hz	18 GPH @ 90°F	140°F	ELECTRIC STORAGE TANK TYPE WATER HEATER (ABOVE MOP SINK SHELF MOUNTED)	A.O. SMITH MODEL DEL-20	-	-DIMENSIONS 21.75"D X 22.25"H -SHELF MOUNTED ELECTRIC WATER HEATER ABOVE MOP SINK -PROVIDE EXPANSION TANK (ET-1), HOT WATER & RE-CIRCULATION PUMP (RCP-1). -MAINTAIN CLEARANCE AS PER MANUFACTURER RECOMMENDATION -CSA CERTIFIED AND ASME RATED T&P RELIEF VALVE

PUMP SCHEDULE

TAG	QUANTITY	SERVICE	LOCATION	PERFORMANCE DATA/PUMP			PUMP CONSTRUCTION DATA		MOTOR DATA/PUMP								
				GPM	TDH (FT)	WATER TEMP. (°F)	PUMP TYPE	IMPELLER MATERIAL	MHP PER PUMP	STARTER TYPE	V/PH/Hz	RPM	F.L.A.	SERVICE FACTOR	WEIGHT (LBS)	MFR MODEL	REMARKS
RCP-1	01	HWR CIRC. SYSTEM	UTILITY / JANITOR (104A)	2	10	110	INLINE	NORYL	125 WATTS	AQUA STAT	115/1/60	2800	1.10	1.0	10.4	BELL & GOSSETT NBF-25	INLINE ON HW RETURN LINE AT WATER HEATER WITH NEMA 1 RATED MOTOR

EXPANSION TANK SCHEDULE

TAG	QUANTITY	LOCATION	SERVICE	TYPE	CONNECTION SIZE	MAX WORKING PRESSURE (PSI)	SHIPPING WEIGHT (LBS)	TANK VOLUME (GAL)	MAKE	REMARKS
EXPANSION TANK (ET-1)	01	HOT WATER HEATER	HOT WATER	DIAPHRAGM	3/4"	150	10	2.0	AMTROL ST-5C-DD	AMTROL THERMXTROL ASME APPROVED ST-5C-DD DIMENSIONS- 14"(H) x 8"(DIA.)

PLUMBING FIXTURE COUNT AND SIZING

FIXTURE	USE	SUPPLY TYPE	NO.	DRAIN		COLD WATER		HOT WATER		TOTAL WSFU
				D.F.U.	TOTAL D.F.U.	F.U. C.W.	TOTAL F.U. C.W.	F.U. H.W.	TOTAL F.U. H.W.	
WATER CLOSET (FLUSH TANK)	PUBLIC	FLUSH TANK	1	4	4	5.0	5.0	--	--	5.0
LAVATORY	PUBLIC	FAUCET	1	1	1	1.5	1.5	1.5	1.5	2.0
SERVICE / MOP SINK	PUBLIC	FAUCET	1	2	2	2.25	2.25	2.25	2.25	3.0
WASHER DRYER (WD)	PUBLIC	AUTOMATIC	1	2	2	2.25	2.25	2.25	2.25	3.0
DRINKING FOUNTAIN	PUBLIC	FAUCET	1	0.5	0.5	0.25	0.25	--	--	0.25
FLOOR DRAIN			1	5	5	--	--	--	--	0.5
TOTAL			--	--	--	14.5	--	11.25	--	6.00

PROBABLE DEMANDS/ AND PIPE SIZING REQUIREMENTS:
 DRAIN: SAN 14.5 DFU
 SUPPLY: CW 13.75 WSFU
 SUPPLY: HW 6.00 WSFU
 USE 4" SANITARY (MIN)
 USE 1" WATER SUPPLY
 USE 3/4" WATER SUPPLY

SANITARY AND WATER SUPPLY PIPE SIZES BASED ON THE INTERNATIONAL PLUMBING CODE 2012.

GENERAL NOTES

1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY FITTINGS AS REQUIRED BY ALL APPLICABLE CODES AND GOVERNING AUTHORITIES.
2. CONTRACTOR SHALL VERIFY AND CORRECT AS REQUIRED TO MEET ALL CODES AND REGULATIONS ANY POSSIBLE DISCREPANCIES BETWEEN TYPE AND SIZE OF CONNECTION SPECIFIED IN PLUMBING FIXTURE SCHEDULE AND FIXTURES ACTUALLY INSTALLED ON THE SITE.
3. ALL SANITARY PIPE SLOPE SHALL BE NOT LESS THAN 1/4" PER FOOT FOR PIPE DIAMETER 1-1/2" TO 2" AND NOT LESS THAN 1/8" PER FOOT FOR PIPE DIAMETER 3" TO 6".
4. VENT PIPING SHOWN ON FLOOR PLANS IS ONLY INDICATIVE EXCEPT FOR VTR LOCATIONS.
5. VALVES AND FITTINGS SHALL BE OF SAME SIZE OF LINE ON WHICH THEY ARE LOCATED, UNLESS OTHERWISE INDICATED ON DRAWINGS.
6. CONTRACTOR SHALL COORDINATE ALL WORK WITH OTHER TRADES.
7. CONTRACTOR SHALL FIELD VERIFY ALL GIVEN MEASUREMENTS PRIOR TO LAYING AND CONNECTING ALL SANITARY AND WASTE PIPING AND NOTIFY ARCHITECT OF ANY DISCREPANCIES.
8. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER ARRESTORS AS SPECIFIED.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING FIRE RATING AND WEATHERPROOFING INTEGRITY OF ALL PIPING AND PENETRATIONS.
10. ALL WATER SUPPLY AND SANITARY LINES SHALL BE RUN AS CLOSE TO PLANS AS POSSIBLE WITH NO CHANGES IN SIZING.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY SUPPORTING DEVICES FOR ALL FIXTURES INCLUDED IN CONTRACT OR HEREIN SPECIFIED OR OTHERWISE.
12. CHANGES IN THE DIRECTION OF SANITARY PIPING SHALL NOT BE MADE WITH FITTINGS WHICH WILL CAUSE EXCESSIVE REDUCTION IN THE VELOCITY OF FLOW OR CREATE ANY OTHER ADVERSE EFFECT UNLESS PHYSICALLY IMPOSSIBLE (IE. USE OF SANITARY TEE IN A HORIZONTAL CONNECTION, USE OF A DOUBLE SANITARY TEE IN A VERTICAL STACK, IN GENERAL, USE OF SHORT-RADIUS FITTINGS FOR BRANCH TO HOUSE DRAIN OR STACK CONNECTION).
13. ALL DRAINAGE PIPING SHALL BE MARKED WITH THE SEAL OF APPROVAL OF THE NATIONAL SANITATION FOUNDATION.
14. PROVIDE ACCESS PANELS TO ALL VALVES WITHIN CHASES OR ABOVE NONACCESSIBLE CEILINGS. REFER TO ARCHITECTURAL DRAWINGS FOR CEILING TYPES.
15. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS OF PLUMBING FIXTURE MOUNTING HEIGHTS, AND DIMENSIONS.
16. ALL VENTS THROUGH ROOF SHALL BE MIN. 10'-0" FROM ANY AIR INTAKES.
17. CONTRACTOR SHALL INSTALL DIELECTRIC UNIONS AT CONNECTIONS OF DISSIMILAR METALS.
18. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS (INCLUDING PIPE ROUTING AND EQUIPMENT LOCATIONS) TO ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO THE INSTALLATION OR PURCHASING OF ANY PIPING AND/OR EQUIPMENT.
19. CLEANOUTS SHALL BE PROVIDED AT THE LOCATIONS INDICATED AND A MINIMUM WHERE REQUIRED BY CODE. FLOOR CLEANOUTS SHALL BE A MINIMUM OF 4" AND SHALL BE COMPLETE WITH A FLUSH PLUG AND REMOVABLE SCORIATED BRONZE FLOOR PLATE. PROVIDE CARPET BUTTONS IN CARPETED AREAS.
20. PROVIDE BACKFLOW PROTECTION DEVICES REQUIRED BY AGENCIES HAVING JURISDICTION. BACKFLOW DEVICES REQUIRING TESTING SHALL BE INSTALLED NO HIGHER THAN 8' A.F.F.
21. COORDINATE INSTALLATION OF PLUMBING WORK WITH OTHER TRADES SO AS TO AVOID UNNECESSARY DELAY OR INTERFERENCES. REVIEW ARCHITECTURAL AND EQUIPMENT SHEETS.
22. ALL PROPOSED POKE-THRU AND TRENCHING LOCATIONS TO BE REVIEWED AND APPROVED BY LANDLORD'S STRUCTURAL ENGINEER BEFORE CUTTING OR DRILLING IS PERMITTED.
23. PROVIDE QUARTER-TURN ISOLATION VALVES FOR ALL PLUMBING EQUIPMENTS.

CONSULTANT (ENGINEER)

NY ENGINEERS
 NEARBY ENGINEERS
 382 NE 191ST STREET SUITE
 49674, MIAMI, FL 33179
 PH: 914.257.3455
 WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF NEW YORK.
 LICENSE NO. 29470
 EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:

WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS WILL NOT BE APPROVED FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE PLANS AND THE EXISTING CONDITIONS.

DATE	ISSUE
05/05/25	90% PERMIT SET
05/30/25	100% PERMIT SET

DATE REVISION

PROJECT NUMBER:	12668-25
DRAWN BY:	NYE
REVIEWED BY:	NYE
TOTAL SQ. FT.:	1,817 FT
DATE:	05/30/25

DRAWING TITLE:

PLUMBING SYMBOLS, ABBREVIATIONS & SCHEDULES

DRAWING NUMBER:

P-0.2

CONSULTANT (ENGINEER):
NY ENGINEERS
 NEARBY ENGINEERS
 382 NE 191ST STREET SUITE
 49674, MIAMI, FL 33179
 PH: 914.257.3455
 WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.
 LICENSE NO. 28470
 EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:
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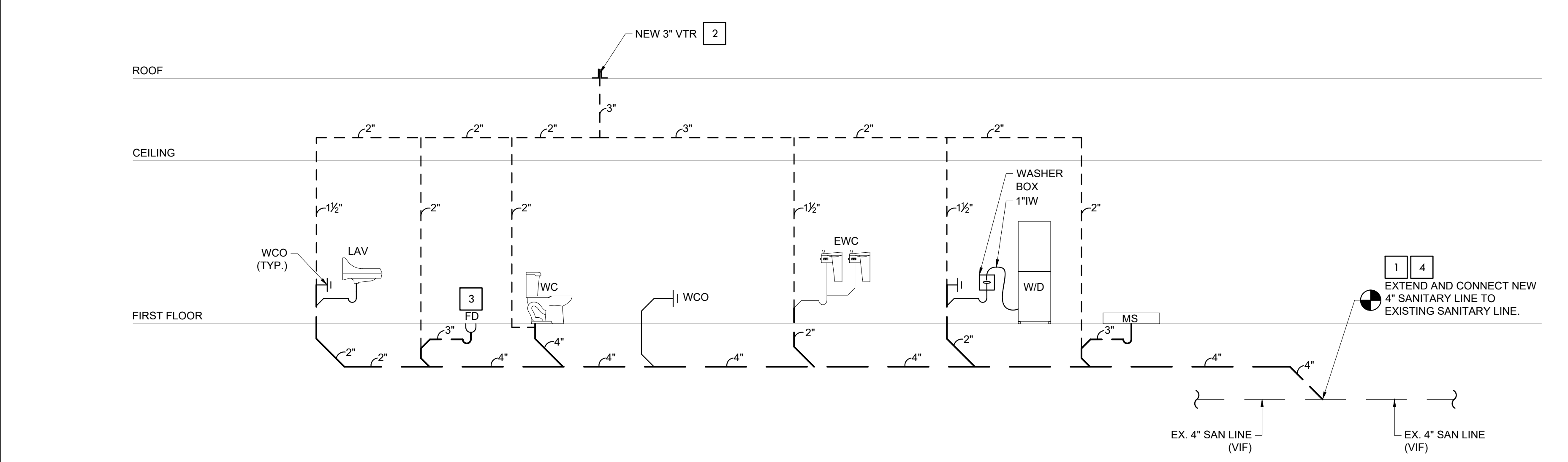
DRAWING TITLE:
PLUMBING SANITARY, VENT FLOOR PLAN & RISER DIAGRAM

DRAWING NUMBER:
P-1.0

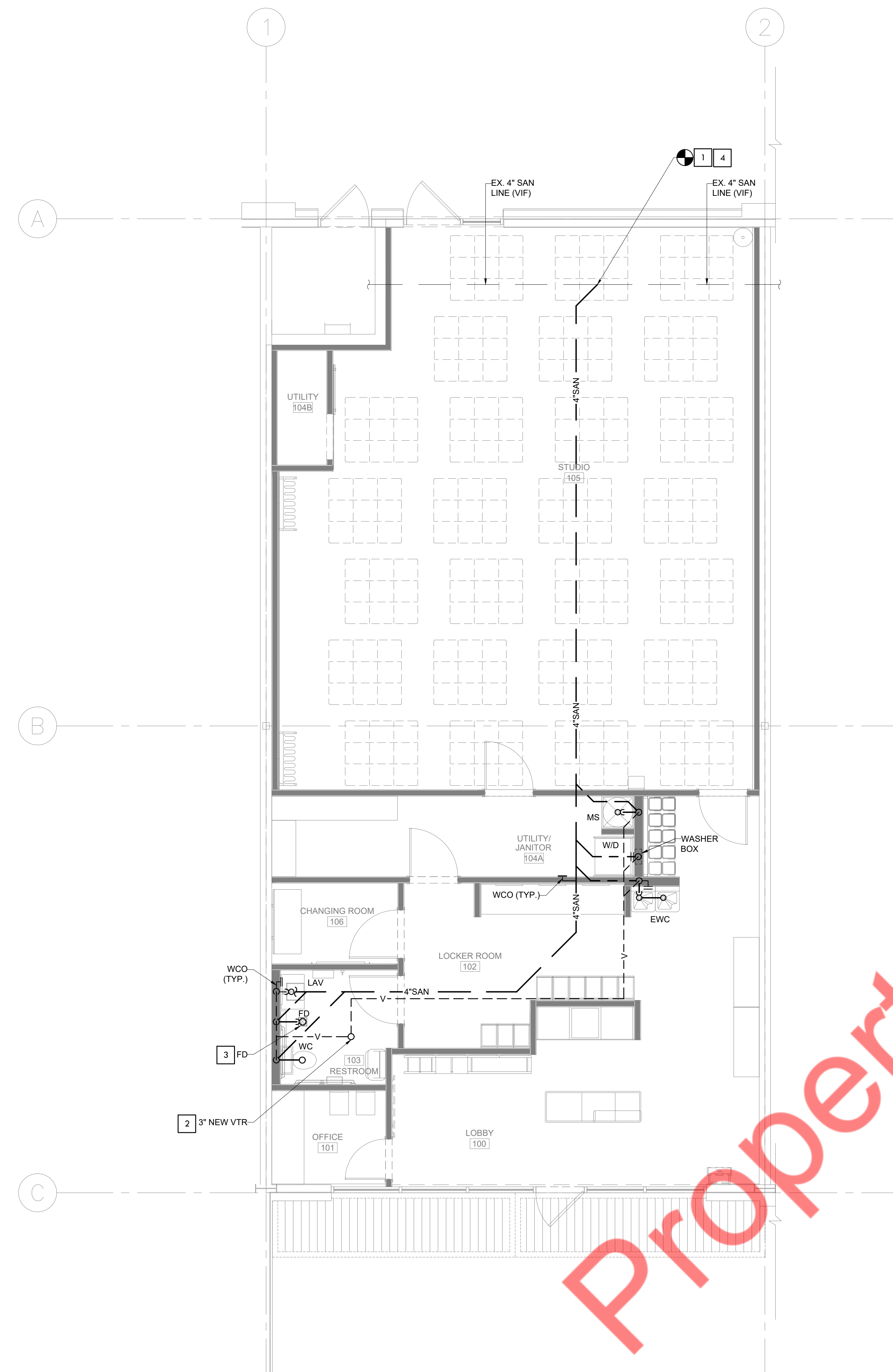
- GENERAL NOTES:**
- ANY CHANGES AND/OR UPGRADES TO TENANT'S EXISTING PLUMBING SYSTEMS SHALL COMPLY WITH ALL CODES AND ALL CRITERIA. EXISTING SYSTEMS SHALL POSSESS THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.
 - WATER LINES SHALL BE COPPER TUBE TYPE-L, PERMITTED (OPTIONAL PIPE MATERIAL SHALL BE CPVC / PEK). THERE SHALL BE NO PIPING JOINTS OF FITTINGS INSTALLED IN WATER PIPING BELOW THE FLOOR SLAB.
 - PLUMBING IS NOT PERMITTED IN ANY DEMISING PARTITIONS. FURROUT THE WALL AS NECESSARY.
 - EXHAUST AND PLUMBING VENTS SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ANY OUTSIDE AIR INTAKE, AND 5'-0" FROM ANY DEMISING WALL VERTICAL PLANE.
 - ALL FLOOR DRAINS ARE REQUIRED TO HAVE TRAP PRIMERS.
 - ANY UNUSED PLUMBING EQUIPMENT, PIPING, ETC., WITHIN OR SERVING THE PREMISES MUST BE COMPLETELY REMOVED TO POINT OF ORIGIN. DO NOT ABANDON IN PLACE.
 - ALL FLOOR PENETRATIONS MUST BE CORE BORED, SLEEVED, GROUTED, SEALED AND MADE WATERPROOF.
 - IF NOT ALREADY EXISTING, INSTALL A SHUT OFF VALVE ON DOMESTIC WATER LINE INSIDE SPACE.
 - TENANT IS REQUIRED TO INSTALL A WATERPROOF MEMBRANE IN ALL WET AREAS OF THE SPACE. TENANT SHALL USE A 30 MIL POLYETHYLENE CLEAVAGE MEMBRANE (EQUAL TO NOBLESEAL TS) INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ANSI A108. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 6" OR EQUAL TO THE HEIGHT OF THE FLOOR BASE.
 - NO ROOF PENETRATIONS PERMITTED WITHIN ROOF WATER PLY. REFER TO ROOF PLAN FOR LOCATIONS.
 - REFER TO RISER DIAGRAM FOR ALL WASTE AND VENT SIZES.
 - VERIFY WITH THE LOCAL BUILDING AUTHORITY THAT CONDENSATE DRAINAGE CAN BE ROUTED TO THE MOP SINK.
 - THE SUSPENSION OF ANY ITEMS FROM BASE BUILDING STRUCTURE BY MEANS OF DRILLING, WELDING, SHOOTING ARE PROHIBITED. CONTRACTOR TO MAKE SURE ALL THE EQUIPMENTS AND PIPES TO BE SUPPORTED BY MEANS OF THE BEAM CLAMPS.
 - ALL SANITARY PIPING CONNECTING TO AND DOWNSTREAM OF TOILETS SHALL BE 4" OR LARGER.
 - NO 90° HORIZONTAL TURNS SHALL BE USED IN THE SANITARY PIPING SYSTEM. ALL HORIZONTAL TURNS SHALL BE MADE WITH 45° ELBOWS WITH PIPE IN BETWEEN THE TWO ELBOWS.
 - ROUTE HW WATER LOOP DOWN IN WALL TO FIXTURE. MINIMIZE DISTANCE FROM THE LOOP TO HOT WATER DISCHARGE.
 - COORDINATE OVERALL PIPING DIAMETER (INCLUDING INSULATION) WITH WALL DEPTH.
 - NOTIFY ARCHITECT IF OVER ALL PIPE DIAMETER EXCEEDS WALL DEPTH.
 - ALL UNDERGROUND SANITARY WASTE AND VENT PIPING SHALL BE PVC DWV SOLID WALL SCHEDULE 40 WITH SOCKET-TYPE, SOLVENT WELDED JOINTS IN SIZES UP TO 12" 14" AND LARGER PIPING SHALL BE PVC DWV SOLID WALL SCHEDULE 80 WITH SOCKET TYPE, SOLVENT WELDED JOINT. ALL PVC PIPING SHALL BE INSTALLED IN ACCORDANCE TO ASTM D2321. HUBLESS CAST IRON IS THE APPROVED SUBSTITUTE MATERIAL FOR DRAIN. CONTRACTOR TO CO-ORDINATE WITH THE AHJ FOR THE MATERIAL AS PER THE LOCAL AHJ.
 - ALL HORIZONTAL SANITARY, WASTE, & STORM PIPING SHALL BE SLOPED AT 1/8" PER FOOT, UNLESS OTHERWISE NOTED OR REQUIRED BY CODE, IN DIRECTION OF FLOW.
 - ALL PLUMBING SHUTOFF VALVE SHALL BE COORDINATED WITH MECHANICAL EQUIPMENT AND SHALL BE EASILY ACCESSIBLE EASILY ACCESSED FOR FUTURE OPERATION.
 - ALL PROPOSED POKE-THRU AND TRENCHING LOCATIONS TO BE REVIEWED AND APPROVED BY LANDLORD'S STRUCTURAL ENGINEER BEFORE CUTTING OR DRILLING IS PERMITTED.
 - PROVIDE QUARTER-TURN ISOLATION VALVES FOR ALL PLUMBING EQUIPMENTS.

- SANITARY AND VENT KEYED NOTES:**
- EXTEND AND CONNECT NEW 4" SANITARY PIPING TO THE EXISTING SANITARY LINE IN THE SPACE. CONTRACTOR SHALL VERIFY THE EXISTING SANITARY LINE PIPE SIZE, LOCATION, INVERT, DIRECTION OF FLOW & TIE-IN CONNECTION PRIOR TO BID.
 - NEW 3" VENT THROUGH ROOF WITH WATERPROOF SEAL. COORDINATE PENETRATION WITH GENERAL CONTRACTOR PRIOR TO START OF WORK. OFFSET AS REQUIRED TO MAINTAIN 10'-0" CLEARANCE FROM ALL FRESH AIR INTAKES.
 - PROVIDE THE TRAP PRIMER FOR ALL THE FLOOR DRAINS.
 - CONTRACTOR TO COORDINATE WITH THE LANDLORD /BASE BUILDING ENGINEER PRIOR TO THE NEW CONNECTION TO THE EXISTING BASE BUILDING SYSTEM.

2 SCALE NTS PLUMBING GENERAL NOTES & KEYED NOTES



3 SCALE NTS SANITARY RISER DIAGRAM



1 SCALE 1/4" = 1' - 0" PLUMBING SANITARY AND VENT FLOOR PLAN

Property of NY Engineers

CONSULTANT (ENGINEER):
NY ENGINEERS
 NEARBY ENGINEERS
 382 NE 191ST STREET SUITE
 49674, MIAMI, FL 33179
 PH-914.257.3455
 WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:
 HEREBY CERTIFY THAT THESE DOCUMENTS WERE
 PREPARED OR APPROVED BY ME, AND THAT I AM
 DULY LICENSED PROFESSIONAL ENGINEER UNDER
 THE LAWS OF THE STATE OF FLORIDA.
 LICENSE NO. 28470
 EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:
 WRITTEN DIMENSIONS HOLD
 PREFERENCE OVER SCALED
 DIMENSIONS. DO NOT SCALE THE
 DRAWINGS. THE CONTRACTORS MUST
 VISIT JOB SITE TO VERIFY ALL EXISTING
 CONDITIONS AND DIMENSIONS BEFORE
 SUBMITTING BIDS. REPORT ANY
 DISCREPANCIES OF ANY CONDITIONS
 WHICH MAY INTERFERE WITH THE
 PROPER EXECUTION OF THE CONTRACT
 TO THE TENANT'S REPRESENTATIVE.
 REPORT DISCREPANCIES DURING
 BIDDING PROCESS AND BEFORE START
 OF CONSTRUCTION. CHANGE ORDERS
 WILL NOT BE APPROVED FOR ISSUES
 ARISING FROM THE FIELD CONDITIONS
 OR CONFLICTS BETWEEN THE PLANS
 AND THE EXISTING CONDITIONS.

DATE	ISSUE
05/05/25	90% PERMIT SET
05/30/25	100% PERMIT SET

DATE	REVISION

PROJECT INFORMATION:	
PROJECT NUMBER:	12668-25
DRAWN BY:	NYE
REVIEWED BY:	NYE
TOTAL SQ. FT.:	1,817 FT
DATE:	05/30/25

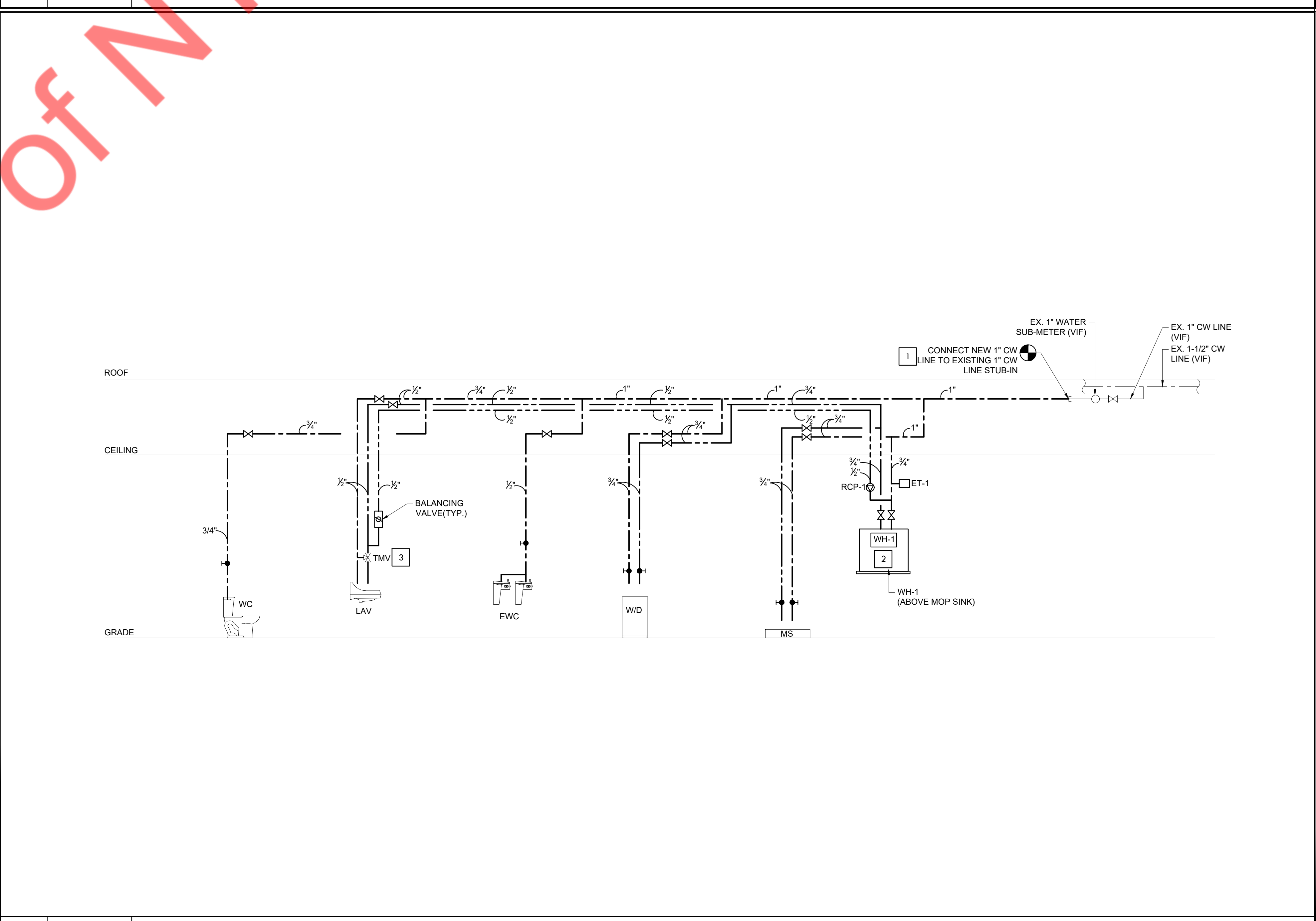
DRAWING TITLE:
PLUMBING WATER SUPPLY FLOOR PLAN & RISER DIAGRAM

DRAWING NUMBER:
P-2.0

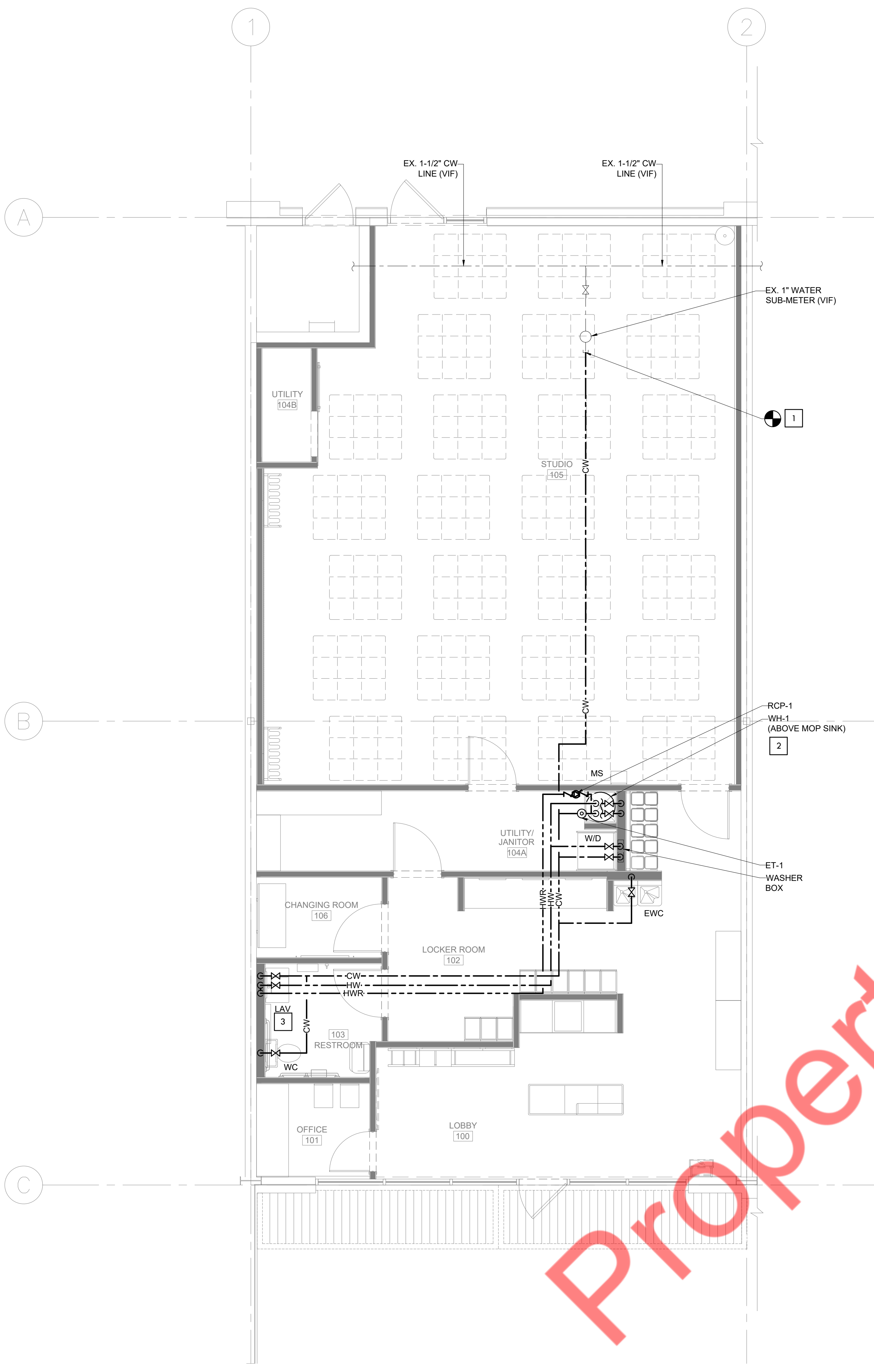
- GENERAL NOTES**
- ANY CHANGES AND/OR UPGRADES TO TENANT'S EXISTING PLUMBING SYSTEMS SHALL COMPLY WITH ALL CODES AND ALL CRITERIA. EXISTING SYSTEMS SHALL POSSESS THE CAPACITY TO HANDLE ANY AND ALL CHANGES IN LOAD.
 - ALL WATER LINES SHALL BE COPPER TUBE TYPE-L PERMITTED (OPTIONAL PIPE MATERIAL SHALL BE CPVC / PE-X). THERE SHALL BE NO PIPING JOINTS OF FITTINGS INSTALLED IN WATER PIPING BELOW THE FLOOR SLAB.
 - PLUMBING IS NOT PERMITTED IN ANY DEMISING PARTITIONS. FURROUT THE WALL AS NECESSARY.
 - EXHAUST AND PLUMBING VENTS SHALL BE LOCATED A MINIMUM OF 10'-0" AWAY FROM ANY OUTSIDE AIR INTAKE, AND 5'-0" FROM ANY DEMISING WALL VERTICAL PLANE.
 - ALL FLOOR DRAINS ARE REQUIRED TO HAVE TRAP PRIMERS.
 - ANY UNUSED PLUMBING EQUIPMENT, PIPING, ETC., WITHIN OR SERVING THE PREMISES MUST BE COMPLETELY REMOVED TO POINT OF ORIGIN. DO NOT ABANDON IN PLACE.
 - ALL FLOOR PENETRATIONS MUST BE CORE BORED, SLEEVED, GROUTED, SEALED AND MADE WATERPROOF.
 - IF NOT ALREADY EXISTING, INSTALL A SHUT OFF VALVE ON DOMESTIC WATER LINE INSIDE SPACE.
 - TENANT IS REQUIRED TO INSTALL A WATERPROOF MEMBRANE IN ALL WET AREAS OF THE SPACE. TENANT SHALL USE A 30 MIL POLYETHYLENE CLEAVAGE MEMBRANE (EQUAL TO NOBLESEAL TS) INSTALLED PER MANUFACTURERS RECOMMENDATIONS AND ANSI A109. MEMBRANE MUST BE EXTENDED UP THE WALL A MINIMUM OF 6" OR EQUAL TO THE HEIGHT OF THE FLOOR BASE.
 - NO ROOF PENETRATIONS PERMITTED WITHIN ROOF WATER PLY. REFER TO ROOF PLAN FOR LOCATIONS.
 - REFER TO RISER DIAGRAM FOR ALL WASTE AND VENT SIZES.
 - VERIFY WITH THE LOCAL BUILDING AUTHORITY THAT CONDENSATE DRAINAGE CAN BE ROUTED TO THE MOP SINK.
 - THE SUSPENSION OF ANY ITEMS FROM BASE BUILDING STRUCTURE BY MEANS OF DRILLING, WELDING, SHOOTING ARE PROHIBITED. CONTRACTOR TO MAKE SURE ALL THE EQUIPMENTS AND PIPES TO BE SUPPORTED BY MEANS OF THE BEAM CLAMPS.
 - ALL SANITARY PIPING CONNECTING TO AND DOWNSTREAM OF TOILETS SHALL BE 4" OR LARGER.
 - NO 90° HORIZONTAL TURNS SHALL BE USED IN THE SANITARY PIPING SYSTEM. ALL HORIZONTAL TURNS SHALL BE MADE WITH 45° ELBOWS WITH PIPE IN BETWEEN THE TWO ELBOWS.
 - ROUTE HW WATER LOOP DOWN IN WALL TO FIXTURE. MINIMIZE DISTANCE FROM THE LOOP TO HOT WATER DISCHARGE.
 - COORDINATE OVERALL PIPING DIAMETER (INCLUDING INSULATION) WITH WALL DEPTH.
 - NOTIFY ARCHITECT IF OVER ALL PIPE DIAMETER EXCEEDS WALL DEPTH.
 - ALL UNDERGROUND SANITARY WASTE AND VENT PIPING SHALL BE PVC DWV SOLID WALL SCHEDULE 40 WITH SOCKET-TYPE, SOLVENT WELDED JOINTS IN SIZES UP TO 12" / 14" AND LARGER PIPING SHALL BE PVC DWV SOLID WALL SCHEDULE 80 WITH SOCKET TYPE, SOLVENT WELDED JOINT. ALL PVC PIPING SHALL BE INSTALLED IN ACCORDANCE TO ASTM 02321. HUBLESS CAST IRON IS THE APPROVED SUBSTITUTE MATERIAL FOR DRAIN. CONTRACTOR TO CO-ORDINATE WITH THE A/E FOR THE MATERIAL AS PER THE LOCAL A/E.
 - ALL HORIZONTAL SANITARY, WASTE, & STORM PIPING SHALL BE SLOPED AT 1/8" PER FOOT, UNLESS OTHERWISE NOTED OR REQUIRED BY CODE, IN DIRECTION OF FLOW.
 - ALL PROPOSED POKE-THRU AND TRENCHING LOCATIONS TO BE REVIEWED AND APPROVED BY LANDLORD'S STRUCTURAL ENGINEER BEFORE CUTTING OR DRILLING IS PERMITTED.
 - PROVIDE QUARTER-TURN ISOLATION VALVES FOR ALL PLUMBING EQUIPMENTS.

- WATER SUPPLY KEYED NOTES**
- CONNECT NEW 1" CW LINE WITH EXISTING WATER METER TO THE EXISTING COLD WATER LINE STUB-IN FOR THE SPACE. CONTRACTOR TO FIELD VERIFY EXISTING WATER METER AND WATER STUB-IN LOCATION AND SIZE. UPGRADE IF REQUIRED. BASE BID ACCORDINGLY.
 - PROVIDE STORAGE TANK TYPE ELECTRIC WATER HEATER (WH-1) WITH THERMAL EXPANSION TANK (ET-1) AND RE-CIRCULATION PUMP (RCP-1) HOT WATER RETURN PIPING, ASSOCIATED ACCESSORIES AND FITTINGS.
 - PROVIDE APPROVED ASSE 1070 THERMOSTATIC MIXING VALVE SET TO 110°F AT LAVATORY.

2 PLUMBING GENERAL NOTES & KEYED NOTES

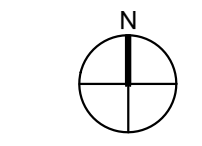


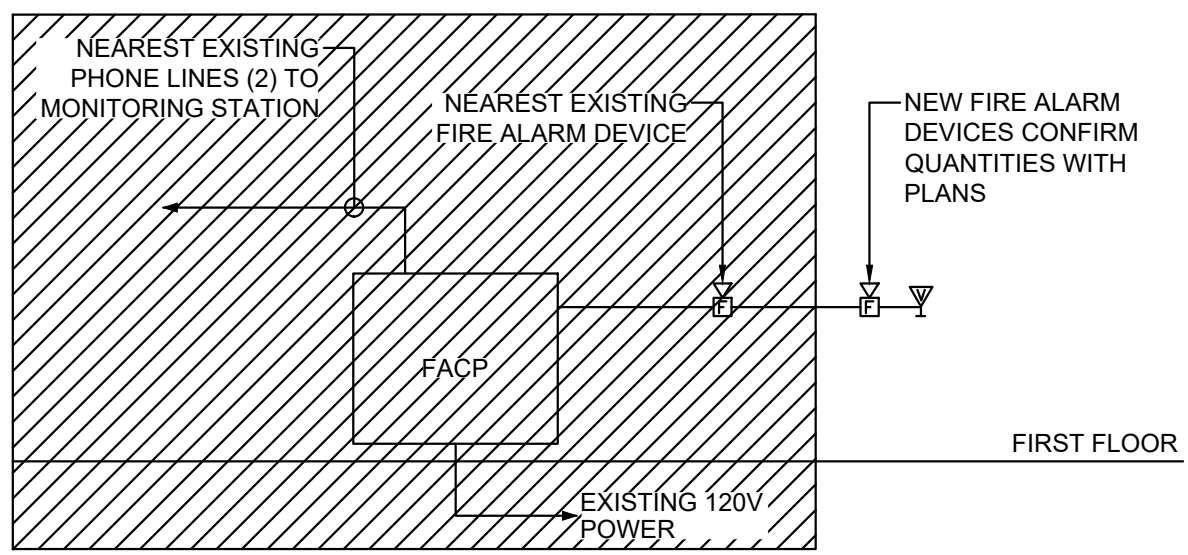
3 WATER SUPPLY RISER DIAGRAM



1 PLUMBING WATER SUPPLY FLOOR PLAN

SCALE
 1/4" = 1' - 0"

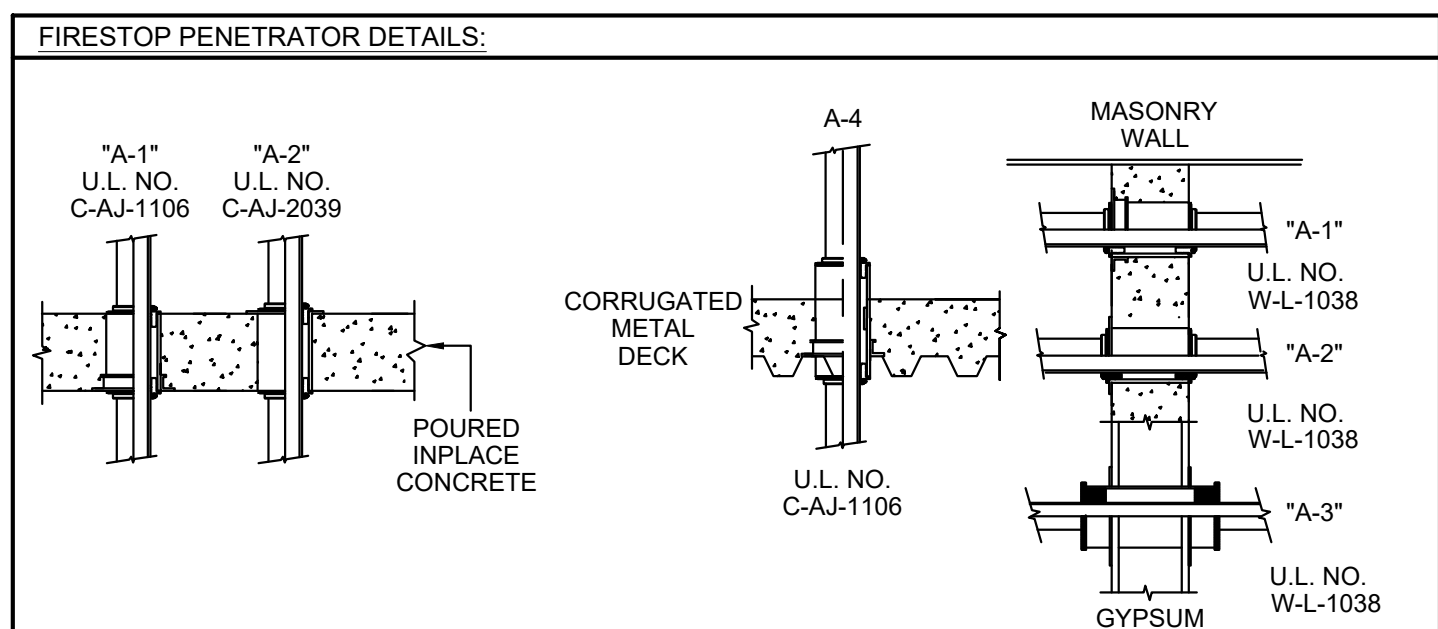




1 PARTIAL FIRE ALARM RISER Scale: N.T.S.

FIRE ALARM GENERAL NOTES: 1. ALL WORK TO THE FIRE ALARM SYSTEM SHALL COMPLY WITH ALL LOCAL FIRE CODES, LAWS, REGULATIONS, ORDINANCES, AND THE REQUIREMENTS OF KANSAS FIRE ALARM CODE 2016 (NFPA 72, 2016 EDITION).

SEQUENCE OF OPERATION: UPON CHANGE IN STATUS OF ANY DEVICE ON THE SYSTEM, THE FIRE ALARM CONTROL PANEL SHALL ACTIVATE AUDIBLE AND VISIBLE CHANGE INDICATORS AND DISPLAY THE SYSTEM POINT NUMBER, POINT DESCRIPTION, AND MESSAGE ASSOCIATED WITH THE POINT.



USE PROSET "FIRESTOP PENETRATORS", U.L. CLASSIFIED IN THE BUILDING MATERIALS DIRECTORY, TESTED BY ASTM E-814. USE FOR ALL APPLICABLE PIPE PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS OR FLOOR/CEILING ASSEMBLIES IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

ELECTRICAL SYSTEM AND EQUIPMENT METHOD OF COMPLIANCE PRESCRIPTIVE X PERFORMANCE ENERGY COST BUDGET PROVIDE A STANDARD RISER DIAGRAM WHICH INDICATES DESIGNATED POINTS FOR CHECK METERING.

COMcheck Software Version COMcheckWeb Interior Lighting Compliance Certificate

Project Information Energy Code: 2018 IECC Project Title: PVOLVE_Fairway, KS Project Type: New Construction

Additional Efficiency Package(s) Credits: 1.0 Required 0.0 Proposed

Table with 4 columns: A Area Category, B Floor Area (ft2), C Allowed Watts / ft2, D Allowed Watts. Row 1: 1-Exercise Center, 1817, 0.65, 1181.

Table with 5 columns: Fixture ID, Description / Lamp / Wattage Per Lamp / Ballast, A, B Lamps / Fixture, C # of Fixture (C X D), D Watt. Row 1: 1-Exercise Center, LED - 1: L1: 4' LED Recessed Downlight: Other: 1, 29, 10, 290.

Interior Lighting Compliance Statement Compliance Statement: The proposed interior lighting design represented in this document is consistent with the building plans, specifications, and other calculations submitted with this permit application.

Michael Tobias Name - Title Signature Date: 05/13/25

Project Title: PVOLVE_Fairway, KS Report date: 05/13/25

ELECTRICAL GENERAL NOTES: 1. ALL WORK THIS DIVISION SHALL COMPLY WITH ALL LOCAL BUILDING CODES, LAWS, REGULATIONS, ORDINANCES, AND THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE 2018 (IBC 2018).

PRE-CONSTRUCTION DEMOLITION NOTES: 1. REFER TO THE ARCHITECTURAL DEMOLITION PLANS FOR SCOPE RELATED TO THE LAYOUT OF WALLS, CEILING, ETC., TO BE REMOVED.

APPLICABLE CODES: ALL WORK SHALL COMPLY WITH THE PROVISIONS OF THE SPECIFICATIONS AND DRAWINGS, AND SHALL SATISFY ALL APPLICABLE CODES, ORDINANCES, AND REGULATIONS OF ALL GOVERNING BODIES INVOLVED.

DRAWING LIST Table with 2 columns: ID, Description. Row 1: E0.1 ELECTRICAL SYMBOL LIST, ABBREVIATIONS & GENERAL NOTES.

ELECTRICAL SYMBOL LEGEND Table with 3 columns: SYMBOL, DESCRIPTION, ON CENTER MTG. HT. Includes symbols for concealed conduit, exposed conduit, raceway, outlets, switches, and various lighting fixtures.

CONSULTANT (ENGINEER): NY ENGINEERS NEARBY ENGINEERS 382 NE 191ST STREET SUITE 49674, MIAMI, FL 33179

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF KANSAS.

CONTRACTOR'S NOTES: WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS.

Table with 2 columns: DATE, ISSUE. Row 1: 05/05/25, 100% PERMIT SET.

Table with 2 columns: DATE, REVISION. Multiple empty rows for tracking changes.

PROJECT INFORMATION: PROJECT NUMBER: 12668-25 DRAWN BY: NYE REVIEWED BY: NYE TOTAL SQ. FT.: 1,817 FT DATE: 05/30/25

DRAWING TITLE: ELECTRICAL SYMBOL LIST, ABBREVIATIONS & GENERAL NOTES

DRAWING NUMBER: E-0.1

ELECTRICAL SPECIFICATIONS:

SCOPE: THIS SPECIFICATION REQUIRES ALL MATERIALS, EQUIPMENT, AND LABOR NECESSARY TO MAKE A COMPLETE AND ACCEPTABLE ELECTRICAL INSTALLATION AS SPECIFIED HEREIN AND SHOWN ON DRAWINGS. PROVIDE ALL ITEMS, ARTICLES, OPERATIONS, OR METHODS LISTED, MENTIONED, OR SCHEDULED HEREIN OR ON THE DRAWINGS, INCLUDING ALL LABOR, MATERIALS, EQUIPMENT, AND INCIDENTALS NECESSARY AND REQUIRED FOR COMPLETION OF THE WORK.

REGULATIONS, CODES, AND STANDARDS : CURRENT CODE REQUIREMENTS SHALL BE SATISFIED WHERE REQUIRED BY LOCAL, STATE, OR FEDERAL AUTHORITIES HAVING JURISDICTION. NO EQUIPMENT WILL BE ACCEPTED UNLESS IT BEARS THE ACCEPTANCE LABEL OF AN APPROPRIATE TESTING AGENCY.

SHOP DRAWINGS : SUBMIT TO THE PROJECT ENGINEER, FOR APPROVAL. SHOP DRAWINGS FOR ALL EQUIPMENT LISTED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE GENERAL CONDITIONS AND SUPPLEMENTARY CONDITIONS. ALLOW 10 BUSINESS DAYS FOR REVIEW BY ARCHITECT/ENGINEER. SUBMITTALS SHALL INCLUDE AS A MINIMUM THE FOLLOWING:

- PRODUCT DATA, MANUFACTURER'S LITERATURE DESCRIBING ITEM. MODEL A, NUMBERS PROVIDED SHALL BE IDENTIFIED WHEN THE LITERATURE DESCRIBES MORE THAN (1) ITEM.
- MANUFACTURER'S SUBMITTAL : SHOWING ELECTRICAL REQUIREMENTS AND B. CONNECTION LOCATIONS SHALL BE PROVIDED.
- MAINTENANCE DATA, SUBMIT MAINTENANCE DATA AND PARTS LIST FOR EACH C. TYPE OF EQUIPMENT REQUIRING PERIODIC MAINTENANCE.

ALL SHOP DRAWINGS SUBMITTED SHALL BE STAMPED, DATED, AND SIGNED BY THE CONTRACTOR TO CERTIFY THAT THEY HAVE BEEN CHECKED BY HIM AS TO CAPACITIES, DIMENSIONS, SPACE REQUIREMENTS AND LIMITATIONS, AND ANY AND ALL OTHER REVISIONS REQUIRED. APPROVAL OF SHOP DRAWINGS BY THE PROJECT ENGINEER SHALL NOT RELIEVE CONTRACTOR FROM FULFILLING OPERATIONAL REQUIREMENTS, OR FURNISHING ALL MATERIAL AND EQUIPMENT SPECIFIED OR NOTED, WHETHER OR NOT SPECIFICALLY SHOWN ON THE SHOP DRAWINGS. THE QUALITY OF THE SUBMITTED SHALL BE THE NUMBER REQUIRED BY THE GENERAL CONTRACTOR.

AS-BUILT DRAWINGS : THE CONTRACTOR SHALL SUBMIT AT COMPLETION ONE (1) SET OF MARKED-UP CONTRACT DRAWINGS WHICH SHOW ALL MODIFICATIONS TO THE CONTRACT AND CHANGES OF LOCATIONS, MATERIALS, OR CONFIGURATIONS. THIS SET SHALL BE SUBMITTED WITH THE OPERATING MANUALS TO THE PROJECT ENGINEER.

OPERATING MANUALS : PROVIDE THREE (3) MANUALS, EACH WITH A COMPLETE SET OF COPIES OF SHOP DRAWINGS REQUIRED FOR THE PROJECT INCLUDING, MANUFACTURER'S TESTING, CLEANING AND MAINTENANCE INSTRUCTIONS, LIST OF MATERIALS FOR MAINTENANCE, PARTS LIST, WIRING DIAGRAMS, AND NAME AND ADDRESS OF AUTHORIZED SERVICE ORGANIZATION AND SUPPLIERS. INFORMATION SHALL BE BOUND IN 8 1/2X11" THREE-RING, LOOSE-LEAF BINDER, AND INDEXED IN ACCORDANCE WITH THESE SPECIFICATIONS. BINDER COVER SHALL IDENTIFY JOB NAME, DATE, AND NAME AND ADDRESS OF CONTRACTOR, ARCHITECT, AND ENGINEER. MANUALS SHALL BE SUBMITTED TO THE PROJECT ENGINEER FOR REVIEW OF MATERIAL PRIOR TO THE FINAL INSPECTION. MANUALS WILL BE RETURNED TO THE CONTRACTOR FOR THE SUBMITTAL TO THE OWNER AT THE TIME OF SYSTEM INSTRUCTION.

OWNER INSTRUCTION : CONTRACTOR SHALL ARRANGE, IN WRITING, WITH THE OWNER, PRIOR TO FINAL INSPECTION, A DATE OR DATES TO INSTRUCT THE OWNER, AND THE OWNER'S DESIGNATED REPRESENTATIVES, IN THE OPERATION AND MAINTENANCE OF THE SYSTEM.

FINAL INSPECTION : UPON COMPLETION OF ALL WORK, THE CONTRACTOR SHALL SUBMIT FOR APPROVAL THE FOLLOWING DATA:

- TESTING REPORTS
- MAINTENANCE MANUALS

AFTER RECEIVING APPROVAL OF THE ABOVE, THE CONTRACTOR SHALL NOTIFY THE PROJECT ENGINEER IN WRITING AND MAKE ARRANGEMENTS FOR A FINAL INSPECTION. AFTER THE FINAL INSPECTION IS MADE, THE CONTRACTOR WILL RECEIVE A LIST OF REVISIONS TO BE MADE. UPON RECEIVING APPROVAL, OR COMPLETION, THE CONTRACTOR SHALL COMPLY COMPLETELY WITH ALL THE LISTED REQUIREMENTS WITHIN THIRTY (30) DAYS OF THE RECEIPT OF LIST. SHOULD THE CONTRACTOR FAIL TO PERFORM WITHIN THIS TIME LIMIT, THE PROJECT ENGINEER AND/OR OWNER RESERVES THE RIGHT TO HAVE THE WORK COMPLETED BY OTHERS AND THE COST DEDUCTED FROM THE CONTRACT PRICE.

GUARANTEE : THE CONTRACTOR SHALL GUARANTEE ALL WORKMANSHIP AND MATERIALS SUPPLIED BY HIM FOR ONE (1) YEAR AFTER ACCEPTANCE OF THE WORK IN HIS CONTRACT. IF, DURING THE GUARANTEE PERIOD, ANY DEFECTS OF FAULTY MATERIALS ARE FOUND, HE SHALL CORRECT IMMEDIATELY AND REPAIR ANY DAMAGE TO OTHER MATERIALS OR INSTALLATIONS CAUSED BY THE DEFECT.

EXTENDED WARRANTIES : WHEN EQUIPMENT IS FURNISHED BY THE CONTRACTOR, OR MANUFACTURER, WITH A WARRANTY LONGER THAN ONE (1) YEAR, THE CONTRACTOR SHALL PROVIDE THE OWNER WITH A COPY ALONG WITH RECEIPTS OR OTHER DOCUMENTS NECESSARY FOR FUTURE WARRANTY REPAIRS, UNLESS OTHERWISE REQUIRED. EXTENDED WARRANTIES ARE FOR EQUIPMENT ONLY, NOT MATERIALS OR LABOR TO INSTALL.

MATERIALS AND EQUIPMENT : ALL EQUIPMENT AND MATERIALS TO BE INCORPORATED IN THIS CONTRACT WORK SHALL BE NEW AND OF THE MAKES AND TYPES AS SPECIFIED AND CONTRACTED FOR. NO REMOVED EQUIPMENT SHALL BE RE-INSTALLED OR RE-USED.

INSTALLATION : INSTALLATION OF ALL MATERIAL, ITEMS OR EQUIPMENT AS SHOWN ON DRAWINGS OR DESCRIBED IN SPECIFICATIONS SHALL CONFORM AS NEARLY AS POSSIBLE TO MANUFACTURER'S RECOMMENDED PROCEDURE, UNLESS DESIGNATED OTHERWISE. SHOULD SELECTION OF APPROVED ALTERNATE EQUIPMENT REQUIRE REVISIONS, THIS CONTRACTOR SHALL MAKE ALL CHANGES TO ACCOMMODATE SUCH EQUIPMENT. CONTRACTOR SHALL PREPARE DRAWINGS OF REVISIONS FOR APPROVAL BY PROJECT ENGINEER PRIOR TO BEGINNING WORK. CHANGES AND DRAWINGS SHALL BE MADE AT NO CHANGE IN CONTRACT AMOUNT.

REGULATIONS, CODES AND STANDARDS : THIS CONTRACTOR SHALL OBTAIN ALL PERMITS AND LICENSES AND PAY ALL FEES IN CONNECTION WITH SAME FOR WORK PERFORMED UNDER DIVISION 15.

OPENINGS, CHASES AND RECESSES : THIS CONTRACTOR SHALL GIVE GENERAL CONTRACTOR, IN SUFFICIENT TIME, ALL DIMENSIONS NEEDED FOR THE PROPER CONSTRUCTION AND LOCATION OF FORMS, CHASES AND OTHER OPENINGS WHICH MAY BE REQUIRED FOR THE INSTALLATION OF ALL EQUIPMENT, PIPE, DUCTS AND MATERIALS UNDER THIS CONTRACT.

PROTECTION OF EQUIPMENT : PROTECT AGAINST INJURY FROM WEATHER ALL BUILDING MATERIALS, SUPPLIES, TOOLS, EQUIPMENT, AND FIXTURES INSTALLED OR TO BE INSTALLED, WITH SUITABLE AND SUBSTANTIAL COVERS. COST OF REPAIRING OR REPAIRING EQUIPMENT AND FIXTURES MADE NECESSARY BY FAILURE TO PROVIDE SUITABLE PROTECTION SHALL BE PAID BY THIS CONTRACTOR. RESPONSIBILITY FOR THE CARE AND PROTECTION OF MECHANICAL EQUIPMENT AND WORK SHALL REMAIN WITH THIS CONTRACTOR UNTIL IT HAS BEEN TESTED AND ACCEPTED. PROTECT EQUIPMENT OUTLETS, PIPE, DUCT, AND CONDUIT OPENINGS WITH TEMPORARY PLUGS, CAPS, OR APPROVED DEVICES.

CLEANING : AFTER ALL FIXTURES, MATERIALS, AND APPARATUS HAVE BEEN SET AND READY FOR USE, AND BEFORE THIS CONTRACTOR LEAVES THE JOB, HE SHALL THOROUGHLY CLEAN ALL EQUIPMENT FURNISHED AND SET BY HIM REMOVING ALL STICKERS, RUST STAINS, GREASE, CEMENT, AND OTHER FOREIGN MATTER OR DISCOLORATION ON EQUIPMENT, LEAVING EVERY PART IN ACCEPTABLE CONDITION. READY FOR USE. CONTRACTOR SHALL REMOVE FROM THE SITE ALL DEBRIS RESULTING FROM HIS WORK, LEAVING BUILDING IN CLEAN CONDITION, SUITABLE FOR OCCUPANCY.

UTILITY COMPANIES : CONTACT UTILITY COMPANIES AND ADVISE OF PROPOSED WORK PRIOR TO THE START OF ANY EXCAVATION.

CONDUIT AND FITTINGS : ALL CONDUIT SHALL BE THINWALL WITH SET SCREW FITTINGS. ALL CONNECTORS SHALL HAVE INSULATED BUSHINGS OR THROAT-TYPE BUSHINGS.

SURFACE RACEWAY SHALL BE WIREMOLD NO. 500 OR NO. 700.

UNDERGROUND RACEWAY : RNC, TYPE EPC-40-PVC COMPLYING WITH NEMA TC2 AND UL 651 DIRECT BURIED. MINIMUM BURIAL DEPTH OF 18".

BOXES AND COVERS : ALL BOXES SHALL BE OF PROPER SIZE AND SHAPE FOR ALL CONDUITS AND CONDUCTORS ENTERING THEM.

CABLE AND WIRE : ALL WIRE SHALL HAVE COPPER CONDUCTORS AND BE LISTED BY UNDERWRITERS LABORATORIES, INC. ALL WIRE SHALL BE TYPE THWN 75C, INSULATION FOR SIZES NO. 6 TO 500 MCM AND TYPE THHN 90C, INSULATION FOR SIZES NO. 12 TO NO. 8.

ELECTRICAL WIRING DEVICES:

SCHEDULE OF ALL ELECTRICAL DEVICES:

DEVICE	MANUFACTURER'S NAME AND CATALOG NUMBER	RATING
SINGLE POLE SW.	HUBBELL H221-H BRYANT 84901-H A-H H998-1	20 AMP @ 120 V.
THREE WAY SW.	HUBBELL 81223-1 BRYANT 84903A A-H 81993-1	20 AMP @ 120 V.
DUPLEX CONVENIENCE OUTLET	HUBBELL 85352-1 BRYANT 85352-1 A-H 85739-5-I	20 AMP @ 120 V.
DUPLEX GROUND INTERRUPTING	HUBBELL 8GF5352-1 FAULT CIRCUIT BREAKER A-H 8GF5352-1	20 AMP @ 120 V.
SIMPLEX 30A	BRYANT 89630FR	30 AMP 9 240V.

FLOOR BOXES SHALL BE TAMPER RESISTANT COMBINATION POP-UP BOX WITH DUPLEX RECEPTACLE AND DATA PORTS, WATER TIGHT GASKET, NICKEL PLATE BRASS FINISH.

WET LOCATION RECEPTACLES SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED.

ALL DEVICES AND COVERS TO BE WHITE.

WIRING DEVICE PLATES :

ALL DEVICE PLATES SHALL BE FURNISHED WITH PROPER OPENINGS FOR THE DEVICE WITH WHICH IT IS BEING USED. WHERE REQUIRED, MULTIPLE GANG PLATES FOR CORRECT COMBINATION SHALL BE USED WITH THE PROPER OPENING FOR THE DEVICE WITH WHICH THEY ARE BEING USED. THE PLATES SHALL BE COLOR AS SELECTED BY ARCHITECT

OPENINGS IN CONSTRUCTION:

OPENINGS BETWEEN CONDUIT AND FLOORS OR WALLS THROUGH FIRE OR SMOKE BARRIERS SHALL BE CLOSED WITH FIRE STOP MATERIAL TO MAINTAIN FIRE OR SMOKE BARRIER RATING. FIRE STOP MATERIAL SHALL BE DOW CORNING 3-6548 SILICONE RTV FOAM, CHASE TECHNOLOGY CORP. CT-RP-855 FIRE RESISTANT FOAM SEALANT, 3M, 303 FIRE BARRIER, T 3 B 540 FIRE BARRIER OR NELSON FLAMESEAL.

INSTALLATION OF RACEWAYS AND CONDUITS:

ALL CONDUIT SHALL BE CONCEALED IN WALL CONSTRUCTION AND/OR ABOVE CEILING CONSTRUCTION EXCEPT IN MECHANICAL EQUIPMENT ROOMS, WHERE IT MAY BE EXPOSED AT THE CEILING OR ON WALLS. THE ROUTING OF CONDUIT SHOWN ON THE DRAWINGS IS DIAGRAMMATIC ONLY, AND THIS CONTRACTOR SHALL INSTALL CONDUIT AS REQUIRED TO COMPLETE THE SYSTEMS SO AS NOT TO INTERFERE WITH OTHER TRADES IN BOTH ELEVATION AND LOCATION. INSTALL FLEXIBLE CONDUIT FOR FINAL CONNECTIONS FOR ALL RECESSED LIGHTING FIXTURES, (FLUORESCENT AND INCANDESCENT), AND ALL VIBRATION GENERATING EQUIPMENT EXCEPT WHERE FLEXIBLE LIQUID TIGHT IS SPECIFICALLY CALLED FOR. A MAXIMUM LENGTH OF FLEXIBLE STEEL CONDUIT SHALL BE LIMITED TO 6'-0".

INDOOR OCCUPANCY / VACANCY SENSORS:

OCCUPANT SENSOR CONTROLS WILL BE INSTALLED IN THE FOLLOWING SPACE TYPES, CLASSROOMS, LECTURE/TRAINING ROOMS, CONFERENCE/MEETING/MULTIPURPOSE ROOMS, COPY/PRIINT ROOMS, LOUNGES/BREAK ROOMS, ENCLOSED OFFICES, OPEN PLAN OFFICE AREAS, RESTROOMS, STORAGE ROOMS, LOCKER ROOMS, OTHER SPACES 300 SQUARE FEET OR LESS THAT ARE ENCLOSED BY FLOOR TO CEILING HEIGHT PARTITIONS, AND WAREHOUSES. THESE CONTROLS SHALL AUTOMATICALLY TURN OFF LIGHTS WITHIN 20 MINUTES OF ALL OCCUPANTS LEAVING THE SPACE, SHALL TURN THE LIGHTS ON TO NOT MORE THAN 50 PERCENT POWER, AND HAVE A MANUAL CONTROL TO ALLOW OCCUPANTS TO TURN LIGHTS OFF. FIELD OF VIEW, WITH A MINIMUM COVERAGE AREA OF 2,100 SQ. FT. PIR SENSING TECHNOLOGY. SP SWITCH, VACANCY SENSOR MANUAL ON. ACCEPTABLE MANUFACTURERS1 COOPER HUBBELL, LEVITON, SENSOR SWITCH, LUTRON, NSI, WATT STOPPER

CEILING SENSOR - STANDARD RANGE: 360 DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE AREA OF 450 SQ. FT. PIR SENSING TECHNOLOGY. ACCEPTABLE MANUFACTURERS1 COOPER HUBBELL, LEVITON, SENSOR SWITCH, LUTRON, NSI, WATT STOPPER

CEILING SENSOR - EXTENDED RANGE: 360 DEGREE FIELD OF VIEW, WITH A MINIMUM COVERAGE AREA OF 2400 SQ. FT. PIR SENSING TECHNOLOGY. ACCEPTABLE MANUFACTURERS1 COOPER HUBBELL, LEVITON, SENSOR SWITCH, LUTRON, NSI, WATT STOPPER

LIGHTING TIMER CONTROL:

INTERMITTENT ETIQC OR SIMILAR 24-HOUR LCIRCUIT ELECTRONIC CONTROL, 120-277 VAC, 60 HZ, SPST INDOOR METAL ENCLOSURE TO ALLOW FOR UP-TO-THE-MINUTE PROGRAMMING, 7-DAY ASTRONOMIC, BATTERY BACKUP FOR POWER LOSS, UP TO 28 EVENTS TOTAL, AND AUTOMATIC DAYLIGHT SAVING TIME CORRECTIONS WITHOUT THE NEED OF USER INTERVENTION.

WIRING JOINTS:

MAKE ALL BRANCH CIRCUIT JOINTS FOR WIRE UP TO AND INCLUDING NO. 10 AWG WITH EXPANDABLE STEEL SPRING AND POLYPROPYLENE BODY-TYPE CONNECTORS AND WIRE NUTS MANUFACTURED BY IDEAL, SCOTCH, BUCHANAN OR ARCHITECT/ENGINEER APPROVED EQUAL.

HEIGHTS OF WALL SWITCHES AND RECEPTACLES:

FOR ADDITIONS OR ALTERATIONS, DETERMINE THE EXACT HEIGHT OF EACH LIGHT, RECEPTACLE OUTLETS, AND OUTLET BOXES ON THE PREMISES AND EXAMINE THE GENERAL DRAWINGS AND DETAILS TO SEE THAT OUTLETS ARE PROPERLY SPACED AND LOCATED WITH RELATION TO THE INTERIOR FINISH AND TREATMENT. MOUNTING HEIGHTS SHALL BE HELD AS NEAR AS POSSIBLE TO THE CENTERLINE OF THE EQUIPMENT. FOR NEW CONSTRUCTION, SEE TABLE ON FIRST E-SHEET.

TELEPHONE/DATA CONDUIT SYSTEM:

IN GENERAL, ALL OUTLETS SHOWN SHALL HAVE A 1" EMPTY CONDUIT STUBBED INTO CORRIDOR/CEILING OR INTO CEILING SPACE WHERE THE CEILING TILE IS REMOVABLE. THE CONDUITS SHALL BE STUBBED.

INTO AREAS THAT ARE ACCESSIBLE FOR INSTALLATION OF TELEPHONE CABLES. THE CONDUIT STUBS SHALL BE FURNISHED WITH PLASTIC BUSHINGS.

IN CERTAIN AREAS WHERE THE CEILING ARE PLASTER OR CONCEALED SPLINE TILE, A COMPLETE CONDUIT SYSTEM FROM OUTLET TO TERMINAL CABINETS SHALL BE INSTALLED. ALL TELEPHONE/DATA OUTLETS SHALL BE FURNISHED WITH BLANK COVER/PLATES. THE COVER/PLATES SHALL BE OF THE SAME MATERIAL AND FINISH AS OTHER DEVICE PLATES IN THE PROJECT.

ALL TELEPHONE/DATA OUTLETS SHALL BE 4" X 4" X 2-1/8" DEEP BOXES WITH SINGLE SQUARE CUT COVER. INSTALL ALL CONDUITS WITH NYLON FISH LINES TO FACILITATE THE EASY INSTALLATION OF TELEPHONE CABLES. ALL OUTLETS SHALL BE MOUNTED AS NOTED ELSEWHERE IN THIS SPECIFICATIONS, EXCEPT FOR UNITS INDICATED AS WALL OUTLETS WHICH SHALL BE MOUNTED 48" ABOVE THE FLOOR. ELECTRICAL CONTRACTOR TO PROVIDE AND INSTALL DATA AND PHONE CABLING.

PANELBOARDS:

ALL PANELBOARDS SHALL BE OF THE CIRCUIT BREAKER, DEAD FRONT TYPE WITH SEPARATE GROUND BUS AND SHALL BE FOR THE VOLTAGE AS INDICATED ON THE DRAWINGS AND IN THE PANELBOARD SCHEDULES.

PHASE, NEUTRAL, AND GROUND BUSES SHALL BE HARD-DRAWN COPPER. CONDUCTOR CONNECTORS SHALL BE MECHANICAL TYPE AND HARD-DRAWN COPPER. GROUND BUS SHALL BE ADEQUATE FOR FEEDER AND BRANCH-CIRCUIT EQUIPMENT GROUNDING.

PANELBOARD BACK BOXES AND TRIM SHALL BE FACTORY FINISHED STEEL AND SHALL BE RATED NEMA 250 TYPE I FOR INDOOR LOCATIONS, TYPE 3R FOR OUTDOOR LOCATIONS, AND TYPE 4X FOR KITCHEN LOCATIONS.

PANELBOARDS SHALL BE FULLY RATED TO INTERRUPT SYMMETRICAL SHORT-CIRCUIT CURRENT AVAILABLE AT TERMINALS

PANELBOARD SHALL BE LISTED BY UL AND BEAR UL LABEL.

PANELBOARDS SHALL BE MARKED WITH MAXIMUM SHORT CIRCUIT CURRENT ON THE OUTSIDE OF EACH PANEL AND ABOVE THE DOOR. AN ARC FLASH HAZARD WARNING SIGN, AND A PERMANENTLY ATTACHED AND ENGRAVED SIGN AS SPECIFIED UNDER "IDENTIFICATION OF EQUIPMENT" SHALL BE INSTALLED INDICATING THE POWER SYSTEMS, VOLTAGE, ETC. IN 1/4" LETTERS, I.E., (120/208 VOLT, 3 PHASE, 4 WIRE, PANEL A).

I. BRANCH TYPE PANELBOARD

- ACCEPTABLE MANUFACTURERS
 - EATON ELECTRICAL
 - GENERAL ELECTRIC
 - SIEMENS
 - SQUARE D
- DOORS1 CONCEALED HINGES, SECURED WITH FLUSH LATCH AND TUMBLER LOCK, KEYS UNKEYED.
- MAIN1 LUGS OR CIRCUIT BREAKER AS INDICATED ON PANEL SCHEDULE.
- BRANCH OVERCURRENT PROTECTIVE DEVICE1 BOLT-ON CIRCUIT BREAKERS.

GROUNDING:

PROVIDE A GROUND WIRE IN ALL RACEWAYS. PROVIDE A NEUTRAL WIRE AT EACH SWITCH BOX LOCATION. ALL RECEPTACLES REQUIRE A PIGTAIL GROUNDING WIRE TO THE BOX.

INSTALL ALL OUTLETS WITH A GREEN JUMPER WIRE FROM THE GROUND TERMINAL OF THE OUTLET TO A GROUNDING LUG IN THE OUTLET BOX. INSTALL SEPARATE GREEN GROUND WIRE (IN ADDITION TO BRANCH CIRCUIT CONDUCTORS) AND BOND TO ELECTRICAL EQUIPMENT WHERE FLEXIBLE METAL CONDUIT AND LIQUID TIGHT FLEXIBLE CONDUIT IS USED AS A FINAL CONNECTION TO ELECTRICAL EQUIPMENT. BOND THE GREEN CONDUCTOR TO CONDUIT SYSTEM IN THE LAST JUNCTION BOX AND TO ALL ELECTRICAL EQUIPMENT, I.E., LIGHTING FIXTURES, MOTORS AND OTHER EQUIPMENT.

THE COMPLETE GROUNDING SYSTEM SHALL BE DONE WITH GROUNDING CONDUCTORS THROUGHOUT THE ENTIRE PROJECT INSTALLATION. SEPARATE GROUNDING CONDUCTORS FOR ALL BRANCH CIRCUITS ARE NOT SHOWN ON THE DRAWINGS, BUT SHALL BE INCLUDED IN ALL RACEWAYS AS IF SET FORTH ON THE DRAWINGS. SEPARATE GROUNDING CONDUCTORS SHALL BE INSTALLED IN ALL BRANCH CIRCUITS. GROUNDING CONDUCTORS SHALL BE INSTALLED IN THE SAME CONDUIT RUNS AS THE PHASE AND NEUTRAL CONDUCTORS. THE SIZE OF THE GROUNDING CONDUCTORS SHALL BE IN STRICT ACCORDANCE WITH TABLE NO. 250-122 OF THE NATIONAL ELECTRICAL CODE.

BONDING:

PROVIDE BONDING JUMPER BETWEEN HOT AND COLD WATER PIPES WITH A JUMPER SIZED ACCORDING TO NEC TABLE 250.102.

DISCONNECT SWITCHES:

ALL DISCONNECT SWITCHES SHALL BE HEAVY-DUTY MULTIPLE POLE ENCLOSED-TYPE SAFETY SWITCHES. ALL SWITCHES SHALL BE THE FUSIBLE TYPE WITH REJECTION-TYPE FUSE CLIPS.

ALL SWITCHES SHALL BE NEMA 1 OR 3R ENCLOSURES AND SHALL BE UL LISTED.

EACH DISCONNECT SWITCH SHALL BE FURNISHED WITH AN ENGRAVED PLASTIC ORL LIGHTING IN THE LOCAL AREA. METAL STRIP AS SPECIFIED UNDER "IDENTIFICATION OF EQUIPMENT" PERMANENTLY ATTACHED TO OUTSIDE COVER, INDICATING DEVICE USAGE OR EQUIPMENT CONTROLLED. SUCH AS FAN EFF-1, NUMBER SHALL BE THE SAME AS THOSE ON DRAWINGS AND TEMPERATURE CONTROL DIAGRAMS.

ENCLOSED CIRCUIT BREAKERS:

PROVIDE INDIVIDUALLY ENCLOSED MOLDED CASE CIRCUIT BREAKERS AS SHOWN ON THE PLANS. ALL CIRCUIT BREAKERS SHALL MEET FEDERAL SPECIFICATION W-C-C-375B AND BOTH CIRCUIT BREAKER AND THE ENCLOSURE SHALL BE UL LISTED.

MOLDED CASE CIRCUIT BREAKERS SHALL HAVE OVERTCENTER TOGGLE-TYPE MECHANISMS, PROVIDING QUICK-MAKE, QUICK-BREAK ACTION. BREAKERS SHALL BE CALIBRATED FOR OPERATION IN AN AMBIENT TEMPERATURE OF 40° C. EACH CIRCUIT BREAKER SHALL HAVE TRIP INDICATION BY HANDLE POSITION AND SHALL BE TRIP-FREE. THREE POLE BREAKERS SHALL BE COMMON TRIP. EACH CIRCUIT BREAKER SHALL HAVE A PERMANENT TRIP UNIT CONTAINING INDIVIDUAL THERMAL AND MAGNETIC TRIP ELEMENTS IN EACH POLE.

CIRCUIT BREAKERS WITH FRAME SIZES GREATER THAN 100 AMPERES SHALL HAVE VARIABLE MAGNETIC TRIP ELEMENTS WHICH ARE SET BY A SINGLE ADJUSTMENT. A BUTTON SHALL BE PROVIDED ON THE COVER FOR MECHANICALLY TRIPPING THE CIRCUIT BREAKER. THE CIRCUIT BREAKERS SHALL BE CONSTRUCTED TO ACCOMMODATE THE SUPPLY CONNECTIONS AT EITHER END OF THE CIRCUIT BREAKER.

BREAKER SHALL BE UL LISTED WITH A SHORT CIRCUIT CURRENT RATING OF 42,000 RMS SYMMETRICAL AMPERES.

NEUTRALS SHALL BE INSTALLED IN DEVICE ENCLOSURE. NEUTRALS SHALL BE INSULATED AND ARE TO BE MANUFACTURED FOR USE IN SERVICE ENTRANCE APPLICATIONS.

ENCLOSURES SHALL BE NEMA 1, FURNISHED WITH KNOCKOUTS WHERE PRACTICAL, AND SHALL BE FABRICATED FROM SHEET STEEL WHICH CONFORMS TO UL 50. THE ENCLOSURE SHALL BE GIVEN AN ELECTRO DEPOSITED, GRAY BAKED ENAMEL FINISH. PADLOCKING PROVISIONS SHALL BE PROVIDED TO ALLOW LOCKING THE CIRCUIT BREAKER IN THE "OFF" POSITION. ENCLOSURES SHALL BE UL LISTED.

ENCLOSED BREAKERS SHALL BE MANUFACTURED BY SQUARE D, GENERAL ELECTRIC OR SIEMENS ITE.

FORWARD SUBMITTALS TO ARCHITECT/ENGINEER FOR REVIEW.

INTERIOR LIGHT FIXTURES:

FURNISH EACH FIXTURE WITH LAMPS AS NOTED ON THE FIXTURE SCHEDULE. ALL FIXTURES SHALL BE CSA LISTED.

PROVIDE ALL LIGHT FIXTURES AS SHOWN ON THE DRAWINGS AND AS HEREINAFTER SPECIFIED.

ALL RECESSED FIXTURES SHALL BE SUITABLE FOR INSTALLATION IN THE CEILING AND/OR THE SUSPENSION SYSTEM THEY ARE TO BE INSTALLED IN. CHECK THE FIXTURE TYPES AGAINST THE APPROVED TYPE OF CEILING MATERIAL IN EACH ROOM AND INSTALL THE PROPER FLUORESCENT FIXTURE TRIMS TO FIT THE CEILING SUSPENSION SYSTEM.

ALL FIXTURES SHALL BE SUITABLE FOR OPERATION AT 120 VOLT, (277 VOLT) 60 HERTZ UNLESS OTHERWISE NOTED ON THE FIXTURE SCHEDULE.

FIXTURES SHALL HAVE SPECIFIED FINISH, WHERE FINISH IS NOT MENTIONED, IT SHALL BE OBTAINED FROM THE ARCHITECT/ENGINEER.

FORWARD A BOUND BROCHURE OF ALL LIGHTING FIXTURES INDICATING FIXTURE TYPES, FINISHES, LAMPS, DETAILS, ETC. TO THE ARCHITECT/ENGINEER FOR REVIEW. SEE LIGHT FIXTURE SCHEDULE ON THE DRAWINGS FOR ADDITIONAL INFORMATION.

LED FIXTURES:

LED FLAT PANEL FIXTURES1 SEAMLESS ALUMINUM FRAME, SATIN WHITE LENS WITH FULLY LUMINOUS APPEARANCE, T-BAR CLIPS FOR INSTALLATION INTO 15/16" T-GRID CEILINGS, LONG-LIFE LEDs, HIGH-EFFICIENCY DRIVER, 70% LED LUMEN MAINTENANCE AT 60,000 HOURS, 0-10V DIMMING DRIVER, DIMS TO 10%.

LOW PROFILE VOLU/METRIC FIXTURES1 CENTER BASKET DESIGN, HIGH REFLECTIVE MATTE WHITE POWDER PAINT FINISHED REFLECTOR, END PLATES WITH T-BAR CLIPS, 80% LED LUMEN MAINTENANCE AT 60,000 HOURS.

CSA CERTIFIED TO MEET US AND CANADIAN STANDARDS, 5-YEAR LIMITED WARRANTY.

EXIT LIGHTING SYSTEM:

CONNECT ALL EXIT LIGHTING UNITS TO AN UNSWITCHED CIRCUIT ORIGINATED FROM THE SAME BRANCH CIRCUIT AS THAT SERVING NORMAL LIGHTING IN THE LOCAL

ALL EXIT FIXTURES AS NOTED IN LIGHT FIXTURE SCHEDULE ON THE DRAWINGS SHALL BE OF THE SELF-CONTAINED TYPE WITH THE FOLLOWING ITEMS:

- MAINTENANCE FREE, RECHARGEABLE, NICKEL CADMIUM BATTERY HAVING A 10 YEAR LIFE RATING AND WARRANTY AND CAPABLE OF POWERING THE CONNECTED LAMPS FOR 1-1/2 HOURS TO 87-1/2% OF INITIAL NOMINAL BATTERY VOLTAGE
- AUTOMATIC CHARGER WITH MULTI-RATE, SOLID-STATE RECTIFIER WITH SENSING
- DEVICE AND CHARGE TRANSFORMER TO CHARGE THE BATTERY TO 100% OF BATTERY CAPACITY WITHIN 12 HOURS FOLLOWING FULL RATED LOAD DISCHARGE TO 87-1/2% NOMINAL VOLTAGE
- TEST SWITCH TO SIMULATE A POWER FAILURE AND TO CYCLE THE CHARGING CIRCUIT
- AUTOMATIC TRANSFER SWITCH TO IMMEDIATELY ENERGIZE ALL LAMPS CONNECTED TO UNIT UPON FAILURE OF NORMAL POWER.
- PILOT AND READY LIGHT.
- MOUNT INTEGRAL BATTERY AND CHARGER EMERGENCY PACK WITHIN THE EXIT HOUSING AND ACCESSIBLE FOR SERVICE WITHOUT REMOVING EXIT SIGN FROM ITS MOUNTING.
- LED LAMPS.

THESE UNITS SHALL BE FULLY AUTOMATIC WITH SOLID-STATE SWITCHING. UPON NORMAL AC POWER FAILURE, TWO EMERGENCY LAMPS WILL OPERATE ON BATTERY POWER FOR THE MINIMUM REQUIRED 1-1/2 HOURS WITHOUT REDUCING BATTERY VOLTAGE LOWER THAN 87-1/2% OF NOMINAL RATED VOLTAGES AS REQUIRED BY NEC AND OSHA. UPON RESTORATION OF REGULAR POWER SUPPLY, THE UNIT SHALL SWITCH BACK TO NORMAL MODE AND CHARGER SHALL REPLENISH BATTERY WITHIN 24 HOURS.

FORWARD SUBMITTALS TO ARCHITECT/ENGINEER FOR REVIEW.

BATTERY-OPERATED EMERGENCY LIGHT (SURFACE):

CONNECT ALL BATTERY OPERATED EMERGENCY LIGHTING UNITS TO AN UNSWITCHED CIRCUIT ORIGINATED FROM THE SAME BRANCH CIRCUIT AS THAT SERVING NORMAL

PROVIDE WHERE SHOWN ON THE DRAWINGS, SURFACE SELF-CONTAINED, BATTERY-OPERATED EMERGENCY LIGHTING UNIT.

THE SURFACE, BATTERY-OPERATED EMERGENCY LIGHTING UNITS SHALL BE SUITABLE FOR CEILING MOUNTING WITH PROPER MOUNTING BRACKETS AT A HEIGHT AS INDICATED ON THE DRAWINGS. UNIT SHALL HOUSING SHALL BE THERMOPLASTIC. UNIT SHALL HAVE REMOVABLE COVER TO PROVIDE FULL ACCESS TO BATTERY, CHARGER, WIRING AND OTHER COMPONENTS. FINISH SHALL BE MATTE WHITE AND CHROME LAMPHEADS.

THE SURFACE BATTERY-OPERATED, EMERGENCY LIGHTING UNITS SHALL BE COMPLETE WITH THE FOLLOWING:

- TWO ADJUSTABLE LED LAMPHEADS
- 3.6V PREMIUM GRADE, NICKEL CADMIUM BATTERY WITH 10 YEAR EXPECTED LIFE.
- ENVIRONMENTALLY COATED, SOLID STAGE CHARGER, LOW VOLTAGE DISCONNECT
- FULLY ADJUSTABLE 1.5WATT, GLARE-FREE LIGHTING HEADS.
- INJECTION-MOLDED, FLAME RETARDANT, HIGH IMPACT, THERMOPLASTIC HOUSING.
- LOW-PROFILE TEST SWITCH AND LED CHARGE RATE INDICATOR LIGHT
- REGULATED CHARGE VOLTAGE
- AC LOCKOUT
- OVERLOAD/SHORT CIRCUIT PROTECTION
- BROWN OUT PROTECTION
- UL 924 LISTED.

CONNECT UNIT TO AN UNSWITCHED 120 VOLT CIRCUIT. THIS CIRCUIT SHALL BE THE SAME CIRCUIT THAT SERVES THE CORRIDOR OR AREA LIGHTING.

FORWARD SUBMITTALS TO ARCHITECT/ENGINEER FOR REVIEW.

SUPPORT FOR LIGHT FIXTURES:

SUPPORT ALL FIXTURES FROM THE BUILDING STRUCTURE AND NOT FROM THE CEILING SUSPENSION SYSTEM (SUCH AS A T-BAR SYSTEM FOR A SUSPENDED ACOUSTICAL TILE CEILING). SUPPORT THE FIXTURES FROM THE BAR JOISTS, FLOOR STRUCTURE OR ROOF STRUCTURE ABOVE WITH 12 GAUGE ZINC COATED STEEL WIRE. INSTALL MINIMUM OF TWO HANGERS FOR EACH FIXTURE, WHERE A FIXTURE OCCURS UNDER DUCTS. THE WIDTH OF DUCT SHALL BE SPANNED WITH METAL FRAMING CHANNEL, SUSPENDED AND SUPPORTED AT BOTH ENDS AND THE FIXTURE ATTACHED TO THE METAL FRAMING CHANNEL.

WHERE RECESSED FIXTURES OCCUR IN GRID SYSTEM FIXTURES SHALL BE SECURELY FASTENED TO THE GRID SYSTEM MEMBERS WITH SAFETY TIE-BAR CLIPS, FURNISH AND INSTALL 4 CLIPS PER FIXTURE.

FIRE ALARM DEVICES:

VISUAL SIGNAL APPLIANCES SHALL BE PROVIDED IN EACH OF THE FOLLOWING AREAS: MEETING ROOMS, RESTROOMS, HALLWAYS, LOBBIES, AND ANY OTHER GENERAL OR COMMON USE AREAS. BATHROOMS SHALL ALSO REQUIRE VISUAL ALARMS.

TRANSFORMERS:

TRANSFORMERS SHALL BE AS MANUFACTURED BY SCHNEIDER ELECTRIC OR APPROVED EQUAL.

ALL INSULATING MATERIALS ARE TO EXCEED NEMA ST20 STANDARDS AND BE RATED FOR 220° C UL COMPONENT RECOGNIZED INSULATION SYSTEM.

TRANSFORMERS 15 KVA AND LARGER SHALL BE 150° C TEMPERATURE RISE ABOVE 40° C AMBIENT. TRANSFORMERS 25 KVA AND LARGER SHALL HAVE A MINIMUM OF 4-2 3/8" FULL CAPACITY PRIMARY TAPS, EXACT VOLTAGES AND TAPS TO BE AS DESIGNATED ON THE PLANS OR THE TRANSFORMER SCHEDULE.

THE MAXIMUM TEMPERATURE OF THE TOP OF THE ENCLOSURE SHALL NOT EXCEED 50° C RISE ABOVE 4 40° C AMBIENT.

TRANSFORMERS SHALL BE LOW LOSS TYPE, EFFICIENCY SHALL BE TESTED IN ACCORDANCE WITH NEMA TP-2 AND CSA 802-2.00.

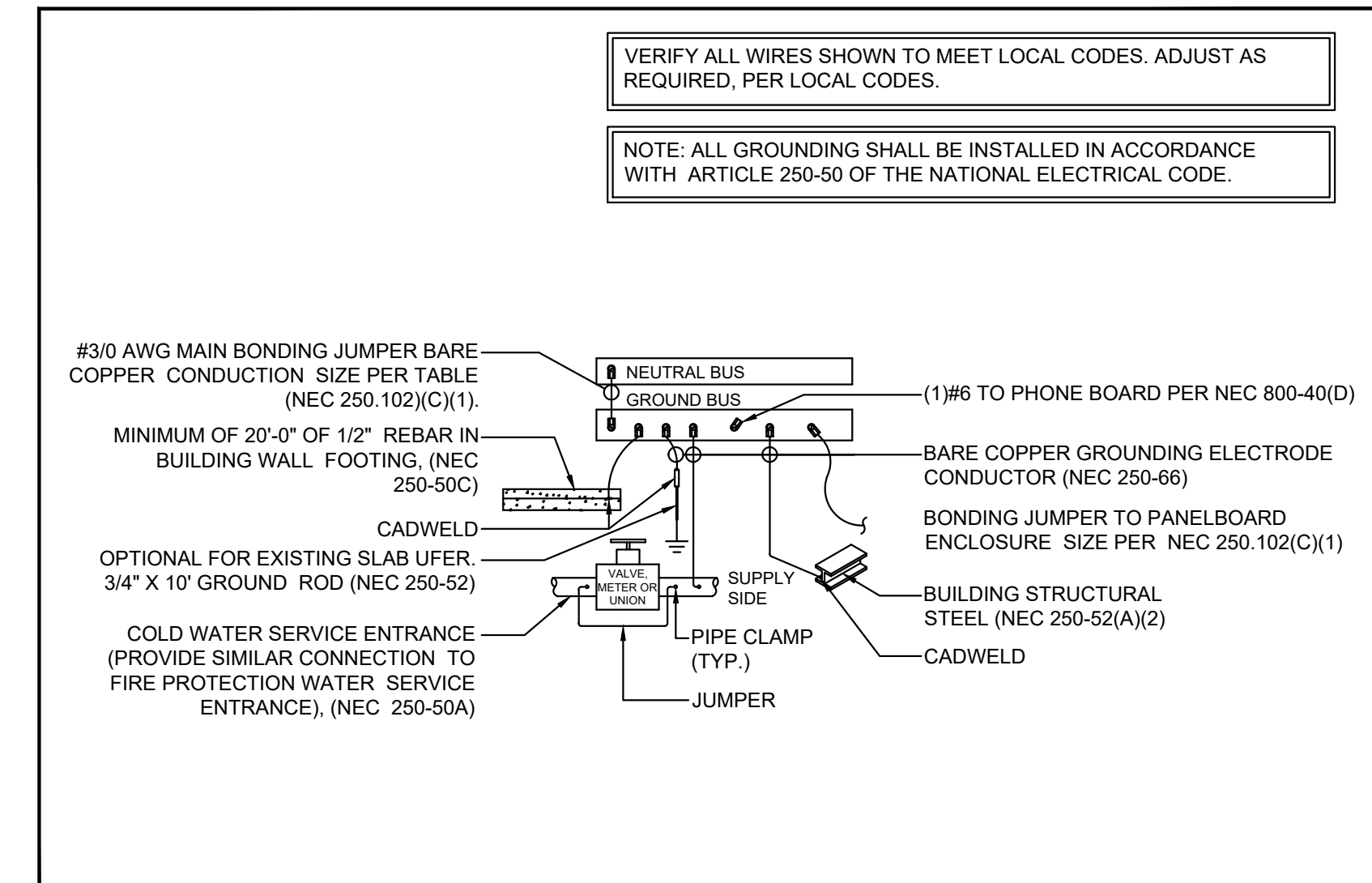
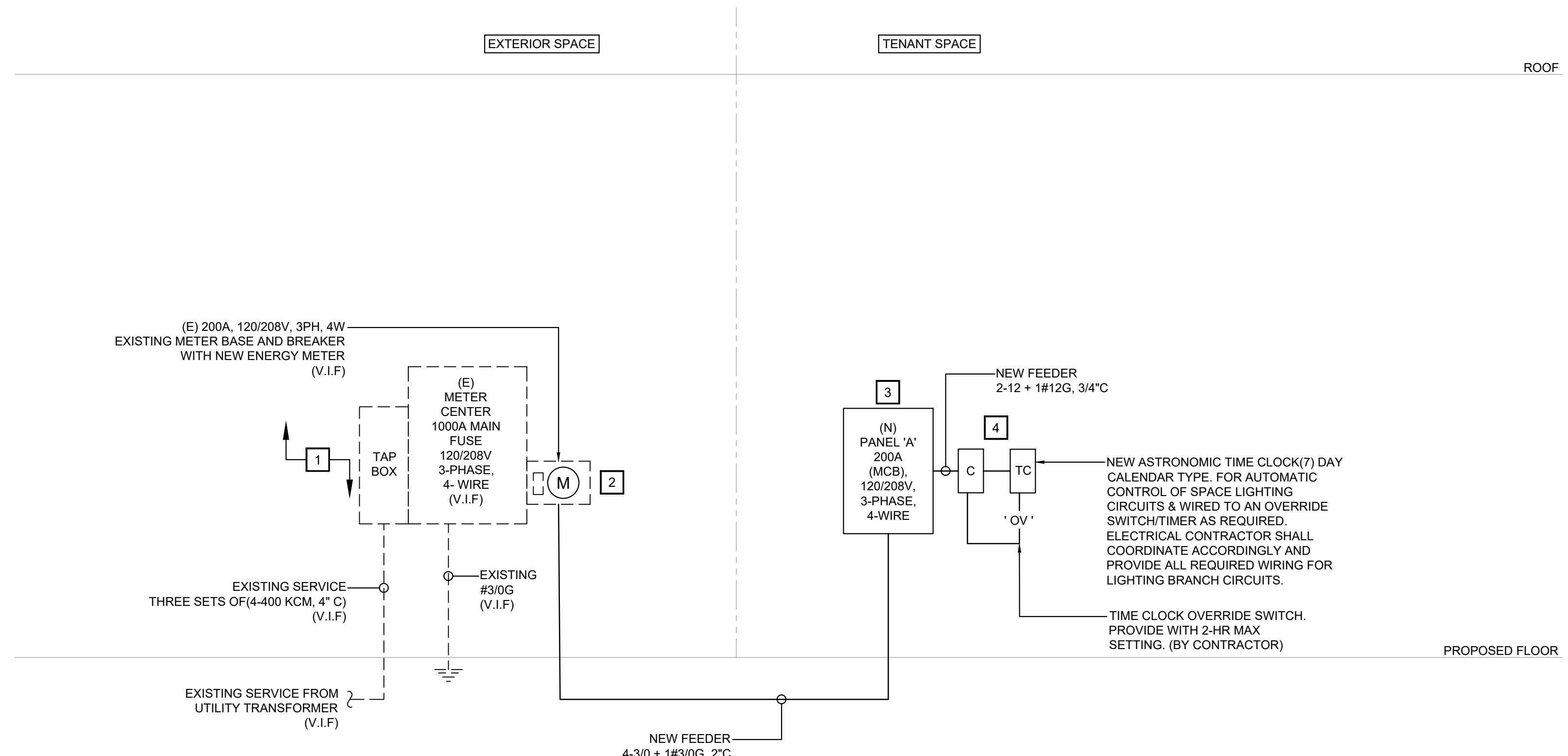
TRANSFORMER COILS SHALL BE OF THE CONTINUOUS WOUND CONSTRUCTION AND SHALL BE IMPREGNATED WITH NON HYGROSCOPIC, THERMOSETTING VARNISH.

ALL CORES TO BE CONSTRUCTED WITH LOW HYSTERESIS AND EDDY CURRENT LOSSES. MAGNETIC FLUX DENSITIES ARE TO BE KEPT WELL BELOW THE SATURATION POINT TO PREVENT CORE OVERHEATING. CORES FOR TRANSFORMERS GREATER THAN 500 KVA SHALL BE CLAMPED UTILIZING INSULATED BOLTS THROUGH THE CORE LAMINATIONS TO ENSURE PROPER PRESSURE THROUGHOUT THE LENGTH OF THE CORE. THE COMPLETED CORE AND COIL SHALL BE BOLTED TO THE BASE OF THE ENCLOSURE, BUT ISOLATED BY MEANS OF RUBBER VIBRATION-ABSORBING MOUNTS. THERE SHALL BE NO METAL-TO-METAL CONTACT BETWEEN THE CORE AND COIL AND THE ENCLOSURE EXCEPT FOR A FLEXIBLE SAFETY GROUND STRAP. SOUND ISOLATION SYSTEMS REQUIRING THE COMPLETE REMOVAL OF ALL FASTENING DEVICES WILL NOT BE ACCEPTABLE.

THE CORE OF THE TRANSFORMER SHALL BE VISIBLY GROUNDED TO THE ENCLOSURE BY MEANS OF A FLEXIBLE GROUNDING CONDUCTOR SIZED IN ACCORDANCE WITH APPLICABLE UL AND NEC STANDARDS.

THE TRANSFORMER ENCLOSURES SHALL BE VENTILATED AND BE FABRICATED OF HEAVY GAUGE, SHEET STEEL CONSTRUCTION. THE ENTIRE ENCLOSURE SHALL BE FINISHED UTILIZING A CONTINUOUS PROCESS CONSISTING OF DEGREASING, CLEANING, AND PHOSPHATIZING, FOLLOWED BY ELECTROSTATIC DEPOSITION OF POLYMER POLYESTER POWDER COATING AND B

LEGEND:
 --- NEW
 - - - - - EXISTING



2 SCALE N.T.S. GROUNDING ELECTRODE SYSTEM DETAILS:

GENERAL NOTES:

- PROPER CLEARANCE MUST BE MAINTAINED ABOUT ELECTRICAL EQUIPMENT PER N.E.C. FIELD VERIFY EXACT MOUNTING SPACE AVAILABLE IN ELECTRICAL ROOM/AREA PRIOR TO INSTALLATION OF ELECTRICAL EQUIPMENT.
- MAKE ALL FINAL ELECTRICAL CONNECTIONS FOR A COMPLETE ELECTRICAL DISTRIBUTION SYSTEM. ALL CONNECTIONS/DISCONNECTIONS TO LANDLORDS/UTILITIES SERVICE EQUIPMENT SHALL BE AS DIRECTED BY LANDLORDS/UTILITIES SITE REPRESENTATIVE. TENANT GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TERMINATION/DISCONTINUATION EXPENSES.
- SYSTEM SHALL BE GROUNDED TO THE MAIN BUILDING'S GROUNDING SYSTEM.
- DISCONNECT SWITCHES AND PANELS SHALL BE INSTALLED ON PLYWOOD BACKBOARDS.
- TENANT CONTRACTOR MUST VERIFY ELECTRICAL SERVICE, SUB-FEED WIRING AND PANELS PRIOR TO START OF TENANT'S ELECTRICAL WORK. TENANT GENERAL CONTRACTOR SHALL MAKE APPLICATION TO THE LOCAL UTILITY FOR CONTINUED METERED ELECTRIC SERVICE IN THE TENANT'S NAME. TENANT GENERAL CONTRACTOR SHALL CONFIRM ALL LOCAL UTILITY GUIDELINES AND REQUIREMENTS PRIOR TO BID. SHALL INCLUDE THE COSTS OF THESE REQUIREMENTS IN THE BID, AND SHALL COMPLY WITH THEM DURING CONSTRUCTION. AVAILABLE FAULT CURRENT AT SERVICE EQUIPMENT SHALL BE LEGIBLY MARKED IN THE FIELD WITH THE MAXIMUM AVAILABLE FAULT CURRENT PER NATIONAL ELECTRICAL CODE (NEC) OF ARTICLE 110.24.
- CONTRACTOR SHALL COORDINATE SHORT CIRCUIT RATING (ISC) WITH UTILITY & AHJ, PRIOR TO COMMENCING ANY WORK, TYPICAL FOR ALL ELECTRICAL EQUIPMENT.
- CONTRACTOR SHALL VERIFY INCOMING SERVICE AMPERAGE, WIRE SIZING AND DISTRIBUTION.
- CONTRACTOR SHALL COORDINATE WITH BASE BUILDING FOR THE EXACT LOCATION OF THE EXISTING SWITCH GEAR AND EXACT POWER DISTRIBUTION.
- CONTRACTOR SHALL VERIFY OPERABLE CONDITION INFIELD OF ALL EXISTING TO REMAIN ELECTRICAL DEVICES/EQUIPMENTS AND REPLACE WITH NEW IF FOUND INOPERABLE.
- DRAWING ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS AND WORK. ALL CONDUIT ROUTING AND OFFSETS, DROPS AND RISES OF RUNS ARE NOT SHOWN ON THE PLANS AND ARE SHOWN DIAGRAMMATICALLY IN THE RISERS. 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.
- CONTRACTOR SHALL FIELD VERIFY FINAL LENGTH OF FEEDER. VOLTAGE DROP SHALL NOT EXCEED 3%. NOTIFY EOR OF ANY DISCREPANCY.

KEYED NOTES:

- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH BASE BUILDING/LANDLORD/OWNER FOR EXACT POWER DISTRIBUTION. FINAL LOCATIONS AND ANY SERVICE SHUTDOWNS REQUIRED PRIOR TO COMMENCING ANY WORK. INFORM ENGINEER ON RECORD FOR ANY DISCREPANCIES. BASE BID ACCORDINGLY.
- EXISTING 200A, 120/208V, 3PH, 4W METER BASE AND BREAKER WITH NEW ENERGY METER. ELECTRICAL CONTRACTOR SHALL VERIFY IN FIELD THE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN. BASE BID ACCORDINGLY.
- NEW 200A (MCB), 208Y/120V, 3 PHASE, 4-WIRE ELECTRICAL PANEL 'A'. ELECTRICAL CONTRACTOR SHALL VERIFY IN FIELD THE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO ROUGH IN. BASE BID ACCORDINGLY. CONTRACTOR SHALL MAINTAIN ALL WORKING SPACE CLEARANCES AS REQUIRED BY CODE.
- NEW TIME CLOCK WITH CONTACTOR. ELECTRICAL CONTRACTOR SHALL COORDINATE THE EXACT LOCATION AND REQUIREMENT WITH ARCHITECT/OWNER PRIOR TO ROUGH IN. BASE BID ACCORDINGLY.

VERIFY THE FOLLOWING PRIOR TO BID/PRICING:

- EXISTING CONDUIT AND FEEDERS SIZE BETWEEN TENANT SPACE AND LANDLORD SWITCHBOARD.
- EXISTING MAIN SERVICE DISCONNECT RATING.
- EXISTING METER.

IF THE EXISTING SERVICE DISCONNECT AND FEEDERS ARE RATED FOR LESS THAN THE RATING SHOWN ON THIS RISER. NOTIFY THE PROJECT MANAGER AND ENGINEER IMMEDIATELY PRIOR TO SUBMITTING BID/PRICING PACKAGE SO DRAWINGS CAN BE REVISED AND UPDATED ACCORDINGLY.

ELECTRICAL PANEL SCHEDULE

PANELBOARD PANEL TYPE NEMA TYPE ENCLOSURE	A		VOLTAGE MAINS		120/208 V		PHASE BUS RATING		3		WIRE		4		
	MCB	1	POLE	WIRE SIZE	200A SURFACE	TOTAL WATTS	PHASE	TOTAL WATTS	BKR. SIZE	WIRE SIZE	POLE	DESCRIPTION	CKT TAG	EQT TAG	CKT. NO.
1			2	10	30	2,000	A	6,358	70	4	3	(N) RTU-2	(N)		2
3						2,000	B	6,358					(N)		4
5						2,639	C	6,358					(N)		6
7	(N)		3	10	30	2,639	A	800	20	12	1	WASHER	(N)		8
9						2,639	B	310	20	12	1	EXHAUST FAN (EF-4)	(N)		10
11	(N)		1	12	20	410	C	300	20	12	1	LIGHTING	(N)	TC/a,b	12
13	(N)		1	12	20	1,500	A	560	20	12	1	LIGHTING	(N)	TC/c,d	14
15	(N)		1	12	20	1,500	B	300	20	12	1	LIGHTING	(N)		16
17	(N)		1	12	20	1,200	C	450	20	12	1	LIGHTING	(N)	TC/e,g	18
19	(N)		1	12	20	800	A	360	20	12	1	IT QUAD RECEPTACLE	(N)		20
21	(N)		1	12	20	800	B	360	20	12	1	IT QUAD RECEPTACLE	(N)		22
23	(N)		1	12	20	180	C	180	20	12	1	TIMECLOCK	(N)		24
25	(N)		1	12	20	540	A	540	20	12	1	OFFICE GENERAL RECEPTACLE	(N)		26
27	(N)		1	12	20	540	B	540	20	12	1	LOBBY BRAND WALL/GENERAL RECEPTACLE	(N)		28
29	(N)		1	12	20	360	C	540	20	12	1	LOCKER ROOM/ CHANGING ROOM GENRAL RECEPTACLE	(N)		30
31	(N)		1	12	20	720	A	180	20	12	1	STUDIO iPad RECEPTACLE	(N)		32
33	(N)		1	12	20	180	B	540	20	12	1	STUDIO GENERAL RECEPTACLE	(N)		34
35	(N)		1	12	20	360	C	540	20	12	1	STUDIO GENERAL RECEPTACLE	(N)		36
37	(N)		1	12	20	180	A	2,500	30	10	2	DRYER	(N)/GFCI		38
39	(N)		1	12	20	180	B	2,500							40
41	(N)		1	12	20		C		20		1	SPARE			42

ALL PHASES TO BE BALANCED TO WITHIN 7%
 A= 19,777 WATTS
 B= 18,447 WATTS
 C= 13,517 WATTS

(E) EXISTING TO REMAIN
 (N) NEW CIRCUIT
 GFCI GROUND FAULT CURRENT INTERRUPTER
 IG CIRCUITS WITH ISOLATED GROUND
 TC CIRCUITS ON TIMECLOCK
 EMS ROUTING TO THE EMS PANEL
 C BREAKER LOCK
 a,b,c SWITCHES CONTROLLING LIGHTS

TOTAL CONNECTED LOAD	51,741	WATTS	144	AMPS
TOTAL DEMAND LOAD	53,219	WATTS	148	AMPS

ELECTRICAL LOAD SUMMARY

DESCRIPTION	NEC CONNECTED KW	VOLT	PHASE	NEC DEMAND FACTOR	NEC DEMAND KW
LIGHTING- 120V	1.6	120	1	1.25	2.0
EXTERIOR SIGN	1.2	120	1	1.25	1.5
RECEPTACLES	8.1	120	1	>10KW=10*[0.5*(KW-10)]	8.1
S/W OUTLETS	3.1	120	1	1.25	3.9
EXH. FANS	0.9	120	1	1.00	0.9
DRYER	5.0	208	1	1.00	5.0
REF. EQUIPMENT	0.8	120	1	1.00	0.8
ROOFTOP UNITS	27.0	208	3	1.00	27.0
HOT WATER HEATER	4.0	208	1	1.00	4.0
TOTALS	51.7				53.2

NOTES:
 * USE GREATER VALUE OF THE TWO CATEGORIES.
 *** 125% OF THE LARGEST MOTOR OR COMPRESSOR IN SYSTEM APPLIED ONLY ON ONE UNIT.
 *** N.E.C. ARTICLE 220-12 REQUIREMENT (200 VA PER FOOT OF SHOW WINDOW)
 MINUS ACTUAL SHOW WINDOW LIGHTING KVA.

N.E.C. DEMAND KVA x 1,000
 SYSTEM VOLTAGE x 1.732

MINIMUM FEEDER AMPERAGE

53.2 x 1000 = 53,219 147.7 AMPS USE (NEW) 200AMP FEEDER FROM EXISTING METER CENTER.
 208 x 1.732 = 360

Property of NY Engineers

CONSULTANT (ENGINEER):

NY ENGINEERS
 NEARBY ENGINEERS
 382 NE 191ST STREET SUITE
 49674, MIAMI, FL 33179
 PH:914.257.3455
 WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF FLORIDA.
 LICENSE NO. 29470
 EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:

WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS WILL NOT BE APPROVED FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE PLANS AND THE EXISTING CONDITIONS.

DATE	ISSUE
05/05/25	100% PERMIT SET
05/30/25	100% PERMIT SET

DATE REVISION

PROJECT INFORMATION:

PROJECT NUMBER: 12668-25
 DRAWN BY: NYE
 REVIEWED BY: NYE
 TOTAL SQ. FT.: 1,817 FT
 DATE: 05/30/25

DRAWING TITLE:

ELECTRICAL RISER DIAGRAM AND PANEL SCHEDULES

DRAWING NUMBER:

E-0.3

LEGEND:
 - - - - - NEW
 - - - - - EXISTING

GENERAL NOTES:

- COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS WITH ARCHITECTURAL PLANS. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS, DETAILS, AND LIGHTING NOTES FOR FURTHER INFORMATION OF DEVICE PLACEMENT AND OTHER RELEVANT INFORMATION.
- HATCHED AREA IS NOT IN SCOPE OF WORK.
- 'E' DENOTES EXISTING FIXTURE/DEVICE TO REMAIN, 'R' DENOTES EXISTING FIXTURE/DEVICE TO BE RELOCATED.
- SEE LIGHTING FIXTURE SCHEDULE FOR LIGHTING POWER DENSITY INFORMATION.
- PROVIDE AN UNSWITCHED "HOT", FROM BUILDING EMERGENCY DISTRIBUTION, TO ALL IDENTIFIED EGRESS FIXTURES SHOWN.
- ALL SWITCHES FOR LIGHTS, SHADES, ETC. WHICH ARE SHOWN TO BE MOUNTED IN THE SAME GENERAL AREA SHALL BE GANGED TOGETHER AND SHARE A MULTI-GANG COVER PLATE WHERE POSSIBLE.
- REFER TO SHEET E-0.3 & E-1.0 FOR LOCATION OF ELECTRICAL DISTRIBUTION PANELS.
- ALL EXIT SIGNS ARE TYPE 'E1' UNLESS OTHERWISE NOTED.
- WALL MOUNTED OCCUPANCY SENSORS W/ SINGLE OVERRIDE SHALL BE LUTRON #MS-OPS0M2-DV-WH. WALL MOUNTED OCCUPANCY SENSORS W/ DUAL OVERRIDE SHALL BE LUTRON #MS-CPS0-DV-WH OR APPROVED EQUAL.
- THE CEILING MOUNTED OCCUPANCY SENSOR IS TO BE LUTRON LOS-G07-2000-WH OR APPROVED EQUAL. PROVIDE POWER PACK AS REQUIRED TO COMPLETE SYSTEM. CONNECT TO THE SUPPLY SIDE OF THE SWITCH IN THIS SPACE. DEVICE SHALL CONTROL ALL SWITCHES IN THIS SPACE (I.E. SWITCHES SHALL BE ON THE LOAD SIDE OF THE SENSOR).
- ALL CONTROL CABLING PROVIDED AS A PART OF ANY LIGHTING CONTROL SYSTEM SHALL BE PLENUM RATED.
- LOWER CASE LETTERS IN LIGHTING FIXTURES AND ADJACENT TO SWITCHES IN EACH INDIVIDUAL ROOM AREA INDICATE WHICH LIGHT FIXTURE IS TO BE CONTROLLED FROM EACH CORRESPONDING SWITCH IN THAT ROOM/AREA.
- CIRCUIT HOMERUN DESIGNATIONS ARE NOTED FOR DESIGN INTENT ONLY BASED ON FIELD OBSERVATIONS OF EXISTING PANEL SCHEDULES, WHERE AVAILABLE. CONTRACTOR TO INFERM ALL SPARE CIRCUIT BREAKERS AND THOSE MADE AVAILABLE DUE TO DEMOLITION.
- DIMMING SWITCHES SHALL BE LUTRON DIVA #DWWCL-153PH-WH OR APPROVED EQUAL WALL MOUNTED DIMMING SWITCHES.
- COORDINATE FINAL SWITCH LOCATIONS THROUGHOUT THE PROJECT AREA WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN.

KEYED NOTES: #

- EXIT/EMERGENCY LIGHT. CONNECT (ALWAYS HOT) TO LOCAL LIGHTING CIRCUIT AHEAD OF SWITCHING.
- LIGHTING NEAR ELECTRICAL PANELS SHALL NOT BE CONTROLLED BY ANY AUTOMATIC MEANS AND SHALL BE COMPILED AS PER NEC 110.26(D).
- NEW TIME CLOCK/LIGHTING CONTACTOR FOR AUTOMATIC CONTROL OF SPACE LIGHTING CIRCUITS & WIRED TO AN OVERRIDE SWITCH/TIMER AS REQUIRED. ELECTRICAL CONTRACTOR SHALL COORDINATE ACCORDINGLY AND PROVIDE ALL REQUIRED WIRING FOR LIGHTING BRANCH CIRCUITS.
- NEW EXHAUST FAN OPERATED THROUGH MOTOR/WALL SWITCH/TIME CLOCK. SEE MECHANICAL DRAWINGS FOR MORE INFORMATION AND SPECIFICATION.
- NEW DIMMER SWITCH BANK LOCATION. ELECTRICAL CONTRACTOR TO COORDINATE THE FINAL LOCATION OF SWITCH BANK WITH ARCHITECT/OWNER. DIMMER SWITCHES SHALL BE RATED FOR TOTAL LOAD OF SWITCHED CIRCUIT AND LAMP TYPE AS REQUIRED. DIMMERS SHALL BE PROVIDED WITH AN ON/OFF SWITCH. SEE DETAIL IN THIS SHEET FOR ADDITIONAL INFORMATION.
- J-BOX FOR LED TAPE LIGHT FIXTURE. CONTRACTOR SHALL COORDINATE EXACT LOCATION AND POWER REQUIREMENT WITH THE VENDOR PRIOR TO ROUGH-IN. BASE BID ACCORDINGLY.
- ELECTRICAL CONTRACTOR TO INTERLOCK THE MOTION/OCCUPANCY SENSORS IN LOBBY & LOCKER ROOM. COORDINATE EXACT ELECTRICAL REQUIREMENT WITH THE VENDOR. BASE BID ACCORDINGLY.
- EXISTING EXTERIOR LIGHT FIXTURES SHALL REMAIN. ELECTRICAL CONTRACTOR TO COORDINATE WITH BASE BUILDING FOR ITS EXISTING CIRCUITING & CONTROLS. PROVIDE CONNECTION ACCORDINGLY.

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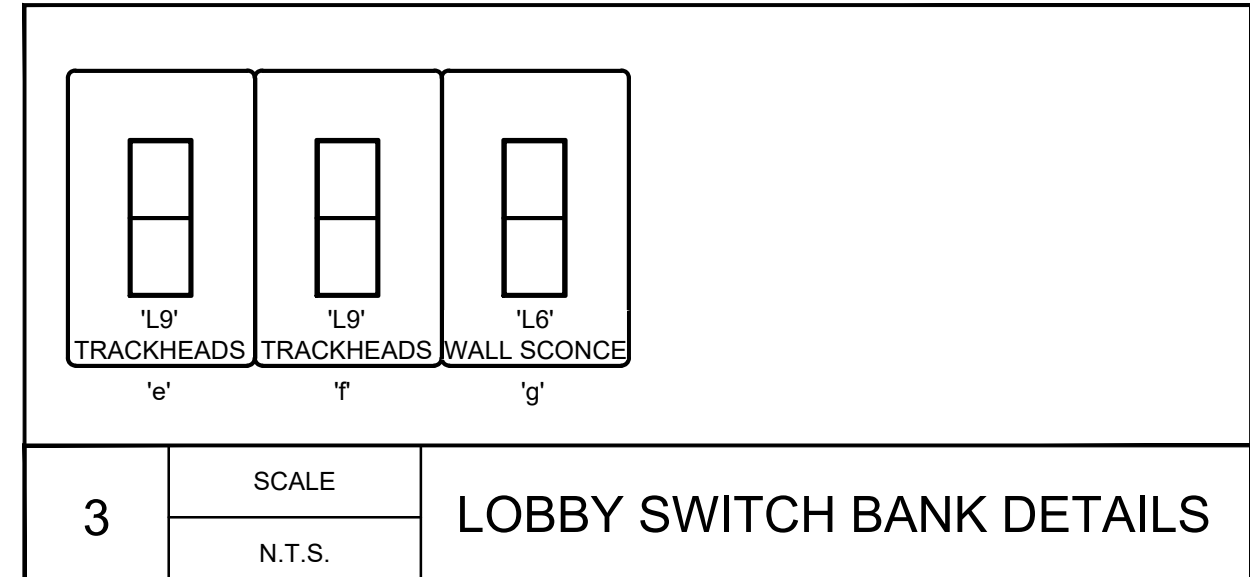
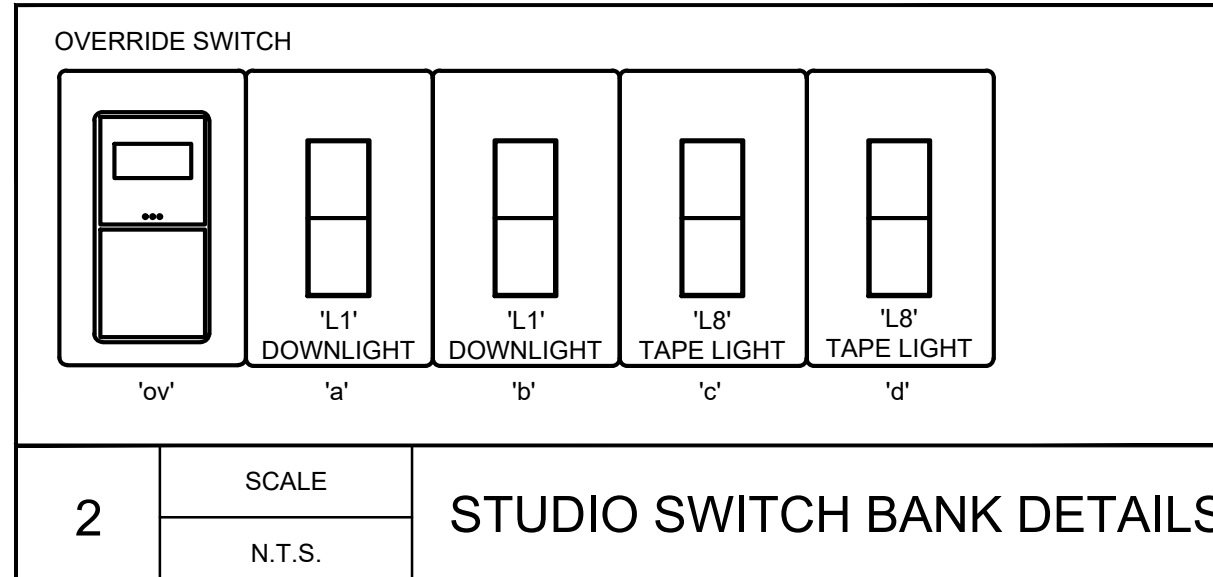
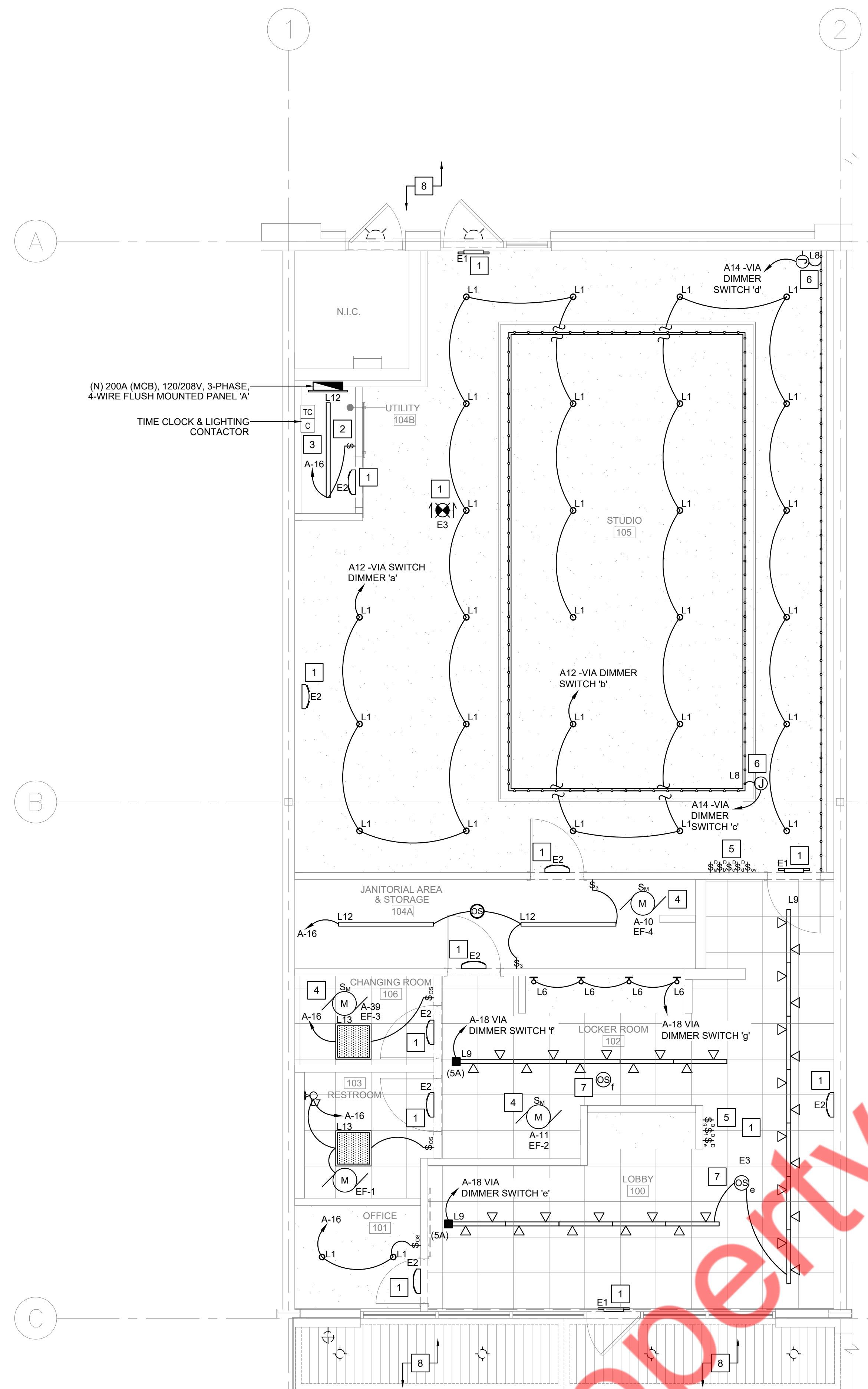
PROFESSIONAL SEAL:

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CONTRACTOR'S NOTES:

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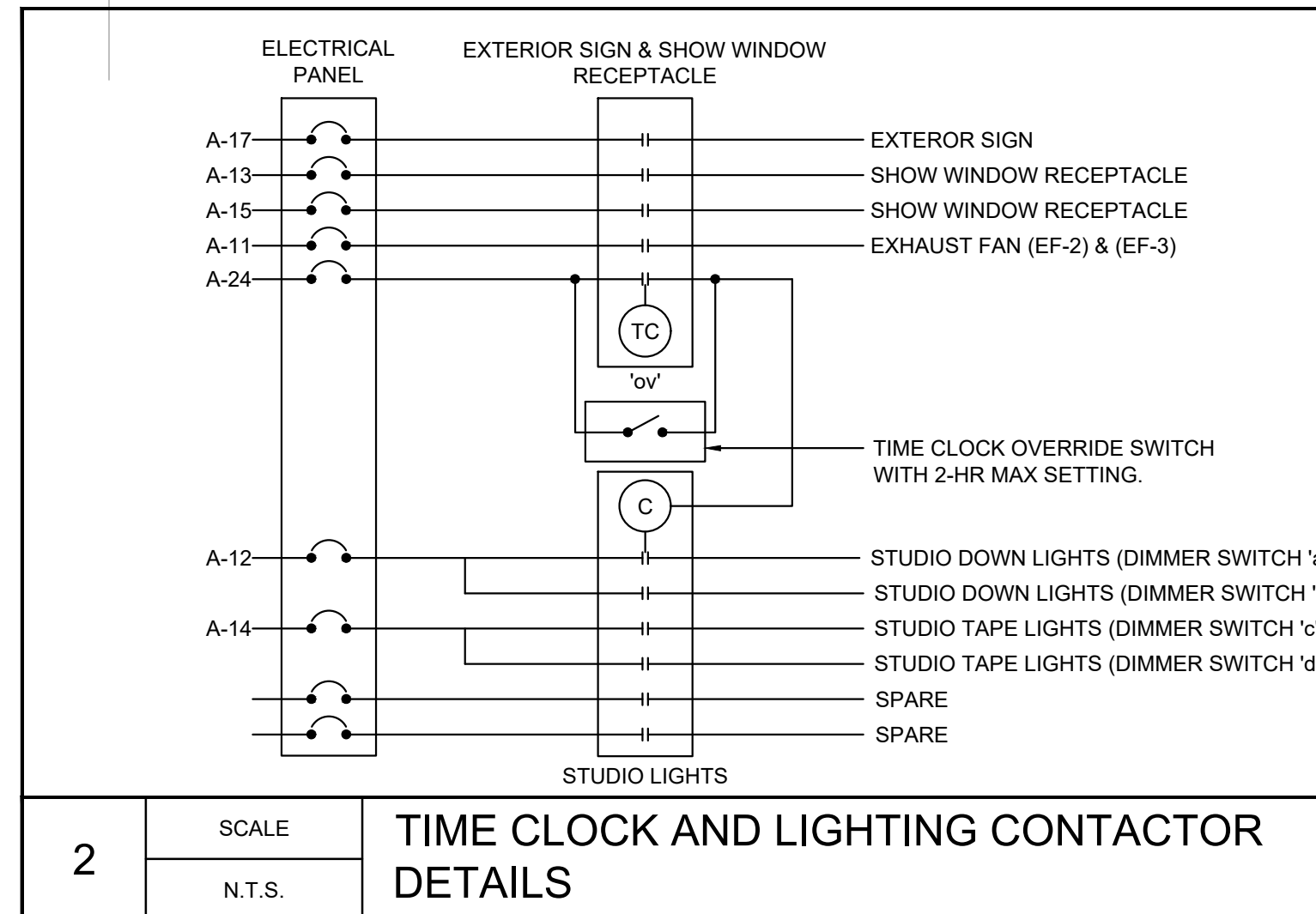
DATE	ISSUE
05/05/25	100% PERMIT SET
05/30/25	100% PERMIT SET



LIGHTING FIXTURE SCHEDULE:

TAG	MANUF.	DESCRIPTION	MODEL	WATTS	VOLTAG E	LOCATION	PROV. BY	INSTALL BY	REMARKS
L1	SPECIALTY LIGHTING GROUP	WHITE 4" LED RECESSED DOWNLIGHT	CR47-790K-30K-12-E26GU24	10W	120V	STUDIO & OFFICE AREA	GC	GC	WHITE FINISH WITH 3000K RECESSED MOUNTED HALLWAYS/ INCLUDES NEW CONSTRUCTION HOUSING. LONG LED'S, ELV DIMMING DRIVER
L6	CEDAR & MOSS LIGHTING	DECORATIVE WALL MOUNT SCONCE	VENUS	10W	120V	BEAUTY BAR AREA	GC	GC	BRASS DECORATIVE WALL MOUNTED SCONCE LED LIGHT FIXTURE. LONG LIFE LED'S, 0-10V DIMMING DRIVER.
L8	ELEMENTAL DIODE	LED TAPE LIGHT	RGB 60	4.9W/FT	120V	STUDIO	GC	GC	COLOR CHANGING LED TAPE LIGHT. LONG LIFE LED'S, 0-10V DIMMING DRIVER.
L9	ATTAIN LIGHTING	DIRECTIONAL TRACK HEADS	TRACK HEADS	10W	120V	LOBBY & LOCKER ROOM	GC	GC	TRACK AND HEADS. LONG LIFE LED'S, 0-10V DIMMING DRIVER.
L12	ATTAIN LIGHTING	48" LED SUSPENDED LINEAR	48" LED/35K	35W	120V/277V	UTILITY/ JANITOR ROOM	GC	GC	48" WHITE LINEAR LED LIGHT FIXTURE. LONG LIFE LED'S, 0-10V DIMMING DRIVER.
L13	ATTAIN LIGHTING	2X2 LED FLAT PANEL	2X2 SELECTABLE COLOR TEMP	30W	120V/277V	RESTROOM & CHANGING ROOM	GC	GC	2X2 WHITE FRAME FLAT PANEL LED LIGHT FIXTURE. LONG LIFE LED'S, 0-10V DIMMING DRIVER.
E1	SPECIALTY LIGHTING GROUP	COMBINATION EXIT/EMER LIGHT	BSTLEDXTEU2RW	4W	120V	-	GC	GC	SURFACE MOUNT LED EMERGENCY EXIT/SIGN LIGHT. SEALED NICKEL-CADMIUM OR LITHIUM IRON PHOSPHATE BATTERY. WHITE POLYCARBONATE HOUSING FULLY ADJUSTABLE LAMP HEADS (2). AC ON LIGHT, TEST SWITCH, OVERLOAD/SHORT CIRCUIT PROTECTION 90 MINUTES BATTERY LIFE.
E2	SPECIALTY LIGHTING GROUP	EMERGENCY BATTERY LIGHT	BSTLEDR-1	1W	120V	-	GC	GC	SURFACE MOUNT LED EMERGENCY EXIT LIGHT. SEALED NICKEL-CADMIUM OR LITHIUM IRON PHOSPHATE BATTERY. WHITE POLYCARBONATE HOUSING FULLY ADJUSTABLE LAMP HEADS (2). AC ON LIGHT, TEST SWITCH, OVERLOAD/SHORT CIRCUIT PROTECTION 90 MINUTES BATTERY LIFE.
E3	TBD	EXIT DIRECTIONAL SIGN	TBD	TBD	120V	-	GC	GC	-
E4	SPECIALTY LIGHTING GROUP	EXTERIOR EMERGENCY LIGHT	PRE-EMERGENCY	1W	120V	-	GC	GC	SURFACE MOUNT EXTERIOR LED EMERGENCY EXIT LIGHT. DIE CAST ALUMINUM HOUSING AND YAMATO RESISTANT POLYCARBONATE GLASS LENS. HOUSING FULLY ADJUSTABLE LAMP HEADS (2).

LIGHT FIXTURE SCHEDULE NOTES:
 1. ALL LAMPS TO BE 3500K UNLESS NOTED.
 2. ALL FINISH TYPES SHOULD BE COORDINATED WITH THE ARCHITECT/INTERIOR DESIGNER(S).



SPRINKLER GENERAL NOTES

- ALL SPRINKLER WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF N.F.P.A.-13-2016 AND ALL LOCAL AUTHORITIES.
- ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
- ALL SPRINKLER HEADS SHALL BE INSTALLED AT CENTER OF TILE IF CEILING IS PROVIDED.
- 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.
- THE SPRINKLER SYSTEMS ARE TO BE HYDROSTATIC TESTED FOR A (2) HOUR MINIMUM AT 200 PSI. PRESSURE AND ARE TO BE TESTED WITH AUTHORIZED BUILDING PERSONNEL. COORDINATE ALL TESTING WITH BUILDING MANAGER.
- 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.
- DRAWING INDICATES SPRINKLER SYSTEM DESIGN ONLY. CONTRACTOR RESPONSIBLE FOR OFFSETS, DROPS AND RISES FOR COORDINATION WITH OTHER TRADES.
- G.C. SHALL BE RESPONSIBLE FOR ALL FINAL TESTS AND INSPECTIONS OF COMPLETED WORK REQUIRED BY THE BUILDING MANAGEMENT PRIOR TO OCCUPANCY OF SPACE.
- ALL SPRINKLER WORK SHALL BE TESTED AND MADE OPERATIONAL PRIOR TO CARPET AND FURNITURE INSTALLATION. G.C. SHALL REPAIR AND/OR REPLACE ALL FINISHES DAMAGED BY DEFECTIVE SPRINKLER WORK AT HIS EXPENSE.
- ALL BURNING, CUTTING, SOLDERING AND WELDING SHALL BE COORDINATED WITH BUILDING FIRE SYSTEMS WITH BUILDING MANAGEMENT, AS REQUIRED.
- 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.
- REFER TO ENGINEERING DRAWINGS FOR SPRINKLER HEADS, LIGHT SENSORS AND FIRE DETECTION DEVICES.
- ALL WORK TO BE DONE DURING THE HOURS DESIGNATED BY OWNER.
- UPON COMPLETION OF ALL SPRINKLER WORK, CONTRACTOR SHALL TEST AND INSPECT ENTIRE SPRINKLER SYSTEM. ENTIRE SYSTEM SHALL BE FULLY OPERATIONAL AND APPROVED IN COMPLIANCE WITH ALL AHJ.
- UPON SUCCESSFUL COMPLETION OF ALL TESTING, CONTRACTOR SHALL PRIME AND PAINT ALL EXPOSED SPRINKLER PIPING. COLOR AND FINISH SHALL BE AS PER ARCHITECT.
- 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.
- FOR SPRINKLER WORK DONE IN ACCORDANCE WITH THE REQUIREMENTS OF N.F.P.A.-13-2016, HYDROSTATIC TESTS IN ACCORDANCE WITH REFERENCE STANDARD N.F.P.A. 13-2016, AS MODIFIED FOR FAIRWAY, KANSAS ARE NECESSARY.
- CONTRACTOR SHALL COORDINATE WITH OTHER TRADES AND SHALL INSTALL NEW WORK TO CLEAR DUCTWORK AND LIGHTING FIXTURES.
- ALL SPRINKLER WORK SHALL COMPLY WITH BUILDING STANDARDS AND REQUIREMENTS.
- DRAWING INDICATES SPRINKLER SYSTEM DESIGN ONLY. CONTRACTOR RESPONSIBLE FOR OFFSETS, DROPS AND RISES FOR COORDINATION WITH OTHER TRADES.
- PROVIDE AUXILIARY DRAINS AT TRAPPED SECTIONS OF PIPING AS REQUIRED BY NFPA.
- 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.
- 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

- THE INSTALLATION, COMPONENTS, SIZING, SPACING, CLEARANCES, POSITION AND TYPE OF SYSTEMS SHALL CONFORM TO THE INTERNATIONAL BUILDING CODE 2018, SECTION 903.
- ONLY APPROVED MATERIALS SHALL BE USED AS PER INTERNATIONAL BUILDING CODE 2018, SECTION 104.9.
- DIRECT CONNECTION OF SPRINKLERS TO THE PUBLIC WATER SYSTEM SHALL CONFORM TO INTERNATIONAL BUILDING CODE 2018, SECTION 903.3.5.
- SPRINKLER SHALL BE PROTECTED AGAINST FREEZING AND INJURY AS PER NFPA 13-2016 CHAPTER 7 SECTION 7.6.
- THE OCCUPANCY OF THE AREAS TO BE SPRINKLERED IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE 2018, 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 INTERNATIONAL BUILDING CODE 2018, SECTION 903.
- STOCK OF EXTRA SPRINKLERS WILL BE FURNISHED AS PER NFPA 13-2016 SECTION 6.2.9 (REQUIRED FOR EACH TEMPERATURE RATING).
- SPRINKLER ALARM SHALL BE IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE 2018, SECTION 907.
- SPACING, LOCATION AND POSITION OF SPRINKLER WILL BE AS PER INTERNATIONAL BUILDING CODE 2018, SECTION 903.3.
- ALL BLIND SPACES EXCEEDING 6" IN WIDTH OR DEPTH WHICH CONTAIN COMBUSTIBLE MATERIAL WILL BE SPRINKLERED.
- ALL PIPE PASSING THROUGH WALLS WILL COMPLY WITH SECTION INTERNATIONAL BUILDING CODE 2018, SECTION 714.
- THERE IS NO HIGH PILED STORAGE AS DEFINED IN INTERNATIONAL BUILDING CODE 2018, SECTION 3201.
- DISTANCE OF SPRINKLERS FROM HEAT SOURCE SHALL BE AS PER NFPA 13-2016 SECTION 8.3.2.5.
- THIS APPLICATION IS NOT FILED AS A RESULT OF ACTION BY THE FIRE COMMISSIONER AS AUTHORIZED BY BS & A TO MODIFY THE CERTIFICATE OF OCCUPANCY NOR IS SUCH ACTION PENDING.
- ALL VALVES SHALL BE IDENTIFIED AS REQUIRED BY NFPA 13-2016, SECTION 6.6.
- A ONE PIECE REDUCING FITTING OF GOOD DESIGN SHOULD BE USED WHEREVER A CHANGE IS MADE IN THE SIZE OF PIPE, AS PER NFPA 13-2016 SECTION 6.4.7.
- ALL VALVES ON CONNECTIONS TO WATER SUPPLIES TO SPRINKLER SHALL BE APPROVED O.S. & Y. OR APPROVED INDICATOR TYPE.
- DRAIN VALVES AND TEST VALVES SHALL BE APPROVED TYPE AS PER NFPA-13-2016 SECTION 6.6.3
- 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-13-2016, SECTION 9.1.
- TEMPERATURE RATING SHALL COMPLY WITH NFPA-13-2016 SECTION 8.3.2.
- MINIMUM CLEARANCE TO BELOW SPRINKLER DEFLECTOR AS PER NFPA-13-2016 SECTION 8.5.6.
- MINIMUM BRANCH PIPE SIZE TO BE ONE INCH (1").
- 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.
- WET SPRINKLER SYSTEM SUBJECTED TO FREEZING SHOULD COMPLY WITH NFPA 13-2016 SEC. 12.4.
- INSPECTION AND TESTS OF SPRINKLERS SHALL BE CONDUCTED AS PER INTERNATIONAL BUILDING CODE 2018, SECTION 904.4.

SPRINKLER SPECIFICATIONS

- PART 1 - GENERAL
- 1.01 REQUIREMENTS
- 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 CODE.
 - BEFORE SUBMITTING HIS BID, THE SPRINKLER CONTRACTOR SHALL VISIT THE 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.
 - 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.
 - THE SCHEDULING OF THE SPRINKLER WORK SHALL BE COORDINATED WITH BUILDING MANAGEMENT, WITH OTHER CONTRACTORS AND WITH THE ENGINEER.
 - 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 FIRE DEPARTMENT 48 HOURS NOTICE PRIOR TO SHUT-DOWN OF SPRINKLER, OR OTHER SYSTEMS.
- 1.02 WORK INCLUDED
- WORK SHALL INCLUDE ALL SPRINKLER WORK FURNISHED AND INSTALLED AS INDICATED ON THE PLANS AND AS SPECIFIED HEREIN.
 - ALL WORK SHALL COMPLY WITH REQUIREMENTS OF THE CITY BUILDING CODE, N.F.P.A. STANDARD 13-2016, FAIRWAY, KANSAS STATE FIRE DEPARTMENT AND OWNERS INSURANCE RATING ORGANIZATION.
 - PROVIDE COMPLETE NEW SPRINKLER SYSTEM CONNECTING TO EXISTING SPRINKLER SYSTEM ALARM CHECK VALVE ASSEMBLY.
 - THESE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED, ANY DIMENSIONS NOT SHOWN SHALL BE OBTAINED FROM FIELD MEASUREMENTS.
 - PROVIDE COMPUTER GENERATED HYDRAULIC CALCULATIONS IN ACCORDANCE WITH INTERNATIONAL BUILDING CODE 2018 OR LOCAL AHJ, BUILDING DEPARTMENT AND NFPA STANDARDS.
- 1.03 SHOP DRAWINGS AND SUBMITTALS
- THE CONTRACTOR SHALL SUBMIT, FOR APPROVAL, FULLY COORDINATED SHOP DRAWINGS, CAPACITY, DATA, AND CATALOG CUTS OF THE FOLLOWING:
 - PIPE AND FITTINGS
 - VALVES
 - HANGERS AND SUPPORTS
 - SPRINKLER PIPING LAYOUT
 - TESTS
 - SPRINKLER HEADS
 - HYDRAULIC CALCULATIONS
 - THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED. CONTRACTOR SHALL SUBMIT CALCULATIONS WITH SHOP DRAWINGS. CALCULATIONS SHALL BE PERFORMED IN ACCORDANCE WITH REQUIREMENTS OF NFPA 13-2016, AND FAIRWAY, KANSAS, INTERNATIONAL BUILDING CODE 2018.
 - ADD APPROPRIATE HOSE ALLOWANCE.
 - THE SPRINKLER CONTRACTOR SHALL OBTAIN THE LATEST FIRE PUMP TEST AT THE SITE TO VERIFY THE AVAILABLE WATER SUPPLY.
- 1.04 BUILDING DEPARTMENT FILING, PERMITS AND CERTIFICATES
- THE SPRINKLER CONTRACTOR SHALL FILE ALL REQUIRED DRAWINGS AND HYDRAULIC CALCULATIONS WITH THE BUILDING DEPARTMENT AND BE RESPONSIBLE FOR OBTAINING FINAL APPROVAL.
 - ARRANGE FOR INSPECTION AND TESTS OF ANY AND ALL PARTS OF THE WORK AS REQUIRED BY AUTHORITIES HAVING JURISDICTION AND PAY ALL CHARGES FOR SAME.
- 1.05 INSPECTION AND TESTING
- THE SPRINKLER SYSTEM SHALL BE INSPECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY BUILDING CODE FIRE DEPARTMENT INSPECTOR.
 - 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 NFPA.
 - 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
- 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.
- 2.10 AS-BUILT DRAWINGS
- PREPARE AND SUBMIT "AS BUILT" DRAWINGS AT THE COMPLETION OF THE PROJECT.
- 2.11 SPRINKLER HEADS
- SPRINKLERS SHALL BE RATED FOR ORDINARY TEMPERATURES (155 DEG. F) EXCEPT AS REQUIRED NEAR HEATERS OR LOCATIONS WHERE ELEVATED TEMPERATURES MAY NORMALLY BE EXPECTED OR AS OTHERWISE INDICATED ON THE CONTRACT DRAWINGS.
 - SPRINKLER HEADS SHALL BE BY TYCO SPRINKLER CO., INC. MANUFACTURE OR APPROVED EQUAL, UL AND FM APPROVED, AS FOLLOWS:
 - SPRINKLER HEADS IN FINISHED CEILINGS WITH CONCEALED PIPING SHALL BE SAME AS EXISTING SPRINKLER MODEL.
 - CONCEALED SPRINKLER HEADS SHOULD BE AUTOMATIC TYCO MODEL TY3531.
 - PENDENT SPRINKLER HEADS SHOULD BE AUTOMATIC TYCO MODEL TY3221.
 - UPRIGHT SPRINKLER HEADS SHOULD BE AUTOMATIC TYCO MODEL TY3121.
 - PROVIDE SPARE SPRINKLER EMERGENCY CABINETS CONFORMING TO NFPA 13.
 - SPRINKLER EMERGENCY CABINETS SHALL BE OF TYCO SPRINKLER CO., INC. OR APPROVED EQUAL, UL AND FM APPROVED.
 - CABINET SHALL BE CONSTRUCTED OF 22 GAUGE STEEL WITH PRIME COAT AND MANUFACTURER'S BAKED ENAMEL FINISH IN COLOR SELECTED BY THE ARCHITECT.
 - CABINET SHALL CONTAIN A MINIMUM OF 6 SPRINKLER HEADS OF EACH TYPE EMPLOYED.
 - PRESSURE GAUGE
 - ASHCROFT SERIES 1079, OR APPROVED OTHER, 4-1/2" DIAMETER, 0-300 P.S.I. RANGE, 5 P.S.I. INTERVALS.
- PART 3 - EXECUTION
- 3.01 GUARANTEE
- GUARANTEE FOR A PERIOD OF ONE (1) YEAR FROM 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 BE DEFECTIVE OR UNSATISFACTORY WITH IN THE PERIOD OF THE GUARANTEE.
- 3.02 INSTALLATION
- PIPING
 - 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.
 - SPRINKLER PIPING SHALL BE INSTALLED SO THAT THE SYSTEM CAN BE DRAINED.
 - PIPE SHALL BE REMOVED BY REAMING.
 - 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.
 - PIPE JOINTS
 - THREADED JOINTS SHALL BE MADE UP OF TIGHT USING PIPE JOINT TEFLON COMPOUND OR TAPE, APPLIED ON THE MALE THREADS ONLY.
- 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 ALTERNATIONS SHALL BE LISTED ON THE PROPOSAL AS CONTRACTOR ALTERNATIVE.
- 2.07 LEAK DAMAGE
- 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, ITS 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.
- ALL SPRINKLER PIPING SHALL BE SUBSTANTIALLY SUPPORTED AND SHALL COMPLY WITH THE STANDARDS FOR THE NATIONAL FIRE PROTECTION ASSOCIATION FOR THE INSTALLATION OF SPRINKLER SYSTEMS AND AS REQUIRED BY THE CITY BUILDING CODE.
 - HANGERS AND THEIR COMPONENTS SHALL BE FERROUS. HANGERS SHALL BE ADJUSTABLE FLAT IRON TYPE OF CLEVIS TYPE.
 - 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 200 LBS. APPLIED AT THE POINT OF HANGING. CONTRACTOR SHALL SUBMIT DETAIL OF SUPPORT FOR REVIEW AND APPROVAL.
 - SPRINKLER PIPING SHALL BE SUPPORTED INDEPENDENTLY OF THE CEILING SHEATHING.
 - WHEN SPRINKLER PIPING IS INSTALLED BELOW DUCTWORK, PIPING SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE, NOT FROM THE DUCTWORK.
 - 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.
 - EXPANSION SHIELDS FOR SUPPORTING PIPES UNDER CONCRETE CONSTRUCTION MAY BE 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.

SPRINKLER LEGENDS AND ABBREVIATIONS	
	NEW CONCEALED PENDENT SPRINKLER HEAD
	NEW UPRIGHT SPRINKLER HEAD

HAZARD CLASSIFICATION AND DESIGN DENSITY	
OCCUPANCY: LIGHT HAZARD	MINIMUM DESIGN DENSITY: 0.10 GPM/SQ. FT.
OCCUPANCY: ORDINARY HAZARD	MINIMUM DESIGN DENSITY: 0.15 GPM/SQ. FT.

SPRINKLER DRAWING LIST

- SP-001 SPRINKLER NOTES, SYMBOLS & SPECIFICATIONS
- SP-100 SPRINKLER PLAN
- SP-200 SPRINKLER DETAILS

SPACING BETWEEN SPRINKLER HEADS

LIGHT HAZARD: 15' MAX.
ORDINARY HAZARD: 15' 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.

- GENERAL NOTES:**
- FOR SPRINKLER WORK ONLY.
 - ALL SPRINKLER HEADS MEET DESIGN CRITERIA PER COVERAGE.

SPRINKLER SCHEDULE

SYMBOL	NAME	COVERAGE	AREA	METAL	TEMPERATURE (°F)	RESPONSE	K-FACTOR	NPT	MFG	MODEL#	APPROVALS
	CONCEALED PENDENT	STANDARD	LH/0H CEILING	BRASS	155	QUICK	5.6	1/2"	TYCO	SERIES RF-II TY3531	FM APPROVED
	UPRIGHT	STANDARD	OPEN AREAS	BRASS	155	QUICK	5.6	1/2"	TYCO	SERIES FRL TY3121	FM APPROVED

NOTE: 1. COORDINATE ALL SPRINKLER COLOR FINISHES WITH ARCHITECT.

CONSULTANT (ENGINEER)

NY ENGINEERS
NEARBY ENGINEERS
382 NE 191ST STREET SUITE
49674, MIAMI, FL 33179
PH 914.257.3455
WWW.NY-ENGINEERS.COM

PROFESSIONAL SEAL:

HEREBY CERTIFY THAT THESE DOCUMENTS WERE PREPARED OR APPROVED BY ME, AND THAT I AM DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF KANSAS. LICENSE NO. 29470, EXPIRATION DATE: 04/30/2027

CONTRACTOR'S NOTES:

WRITTEN DIMENSIONS HOLD PREFERENCE OVER SCALED DIMENSIONS. DO NOT SCALE THE DRAWINGS. THE CONTRACTORS MUST VISIT JOB SITE TO VERIFY ALL EXISTING CONDITIONS AND DIMENSIONS BEFORE SUBMITTING BIDS. REPORT ANY DISCREPANCIES OF ANY CONDITIONS WHICH MAY INTERFERE WITH THE PROPER EXECUTION OF THE CONTRACT TO THE TENANT'S REPRESENTATIVE. REPORT DISCREPANCIES DURING BIDDING PROCESS AND BEFORE START OF CONSTRUCTION. CHANGE ORDERS WILL NOT BE APPROVED FOR ISSUES ARISING FROM THE FIELD CONDITIONS OR CONFLICTS BETWEEN THE PLANS AND THE EXISTING CONDITIONS.

DATE	ISSUE
05/05/25	90% PERMIT SET
05/30/25	100% PERMIT SET

DATE REVISION

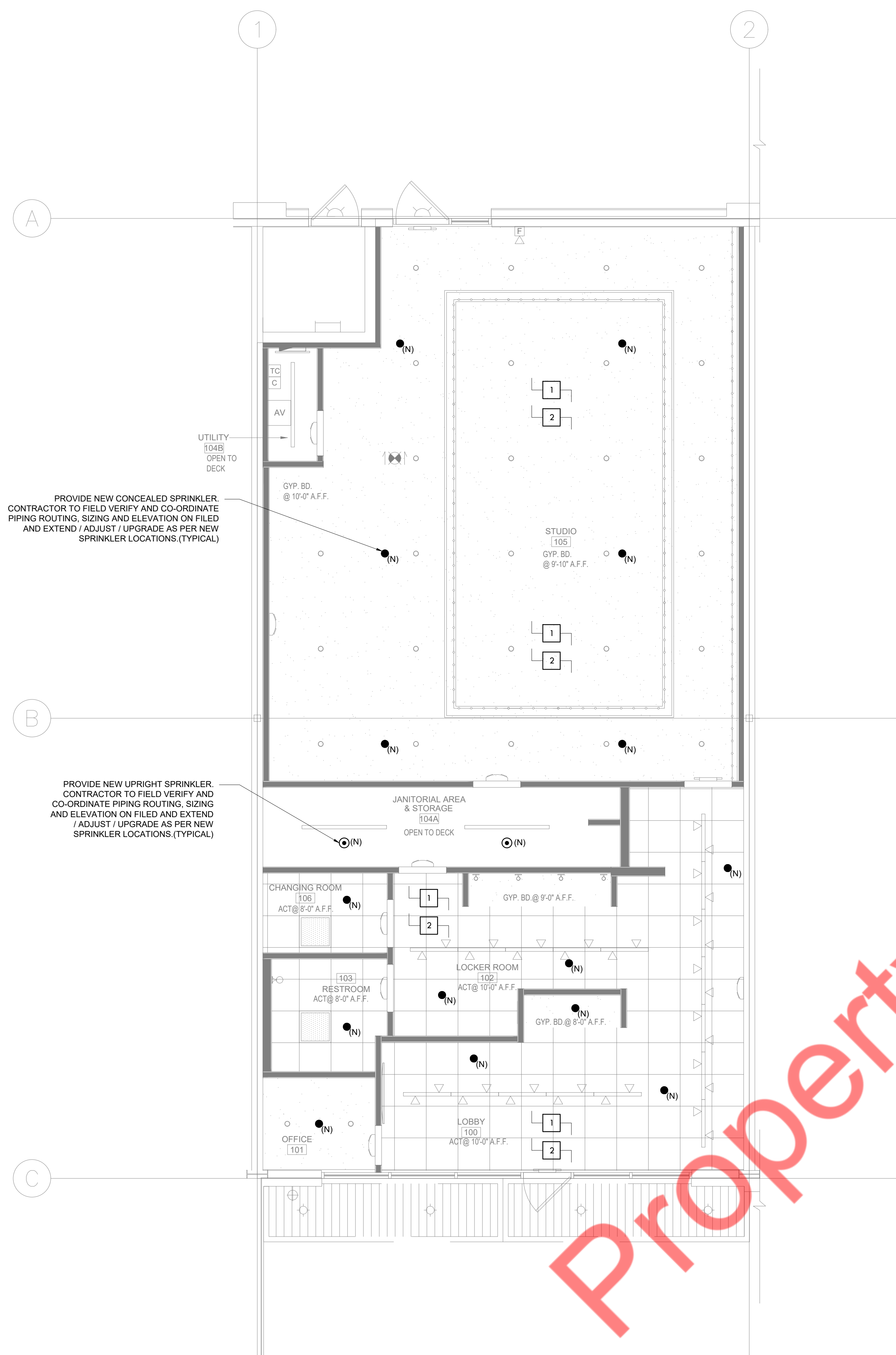
PROJECT INFORMATION:	
PROJECT NUMBER:	12668-25
DRAWN BY:	NYE
REVIEWED BY:	NYE
TOTAL SQ. FT.:	1,817 FT
DATE:	05/30/25

DRAWING TITLE:

SPRINKLER NOTES, SYMBOLS AND SPECIFICATIONS

DRAWING NUMBER:

SP-001



- GENERAL NOTES:**
1. CONTRACTOR TO FIELD VERIFY TO INSTALL ALL SPRINKLER HEADS TO BE MAX. 12" FROM CEILING.
 2. ALL NEW SPRINKLER HEADS LOCATION TO BE COORDINATED WITH LIGHTING AND DIFFUSERS TO AVOID CONFLICT.
 3. ALL SPRINKLER HEADS & PIPING TO BE COORDINATED OTHER TRADES.
 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 DRAWING INDICATE SIZE, CONNECTION POINTS, AND ROUTES 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 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 0'.
 6. COVERAGE AREA PER SPRINKLER SHALL BE MAX. 225 SQ.FT FOR LIGHT HAZARD AND 130 SQ.FT. FOR ORDINARY HAZARD.
 7. ALL SPRINKLER HEADS MEET DESIGN CRITERIA PER COVERAGE.
 8. AUXILIARY DRAIN SHALL BE PROVIDED AT THE TRAPPED SECTIONS.
 9. FOR SPRINKLER WORK ONLY.
 10. ALL BRANCH TAKE-OFF FOR EACH SPRINKLER TO BE MIN. 1".
 11. ALL FIRE EQUIPMENT SHALL BE COMPATIBLE AND FULLY INTEGRATED INTO THE EXISTING LANDLORD SYSTEM.
 12. ANY EXISTING SPRINKLER PIPING THAT IS SPECIFIED FOR REUSE SHALL BE VISUALLY INSPECTED FOR IMPAIRMENTS PRIOR TO BEING PLACED IN SERVICE.
 13. DRAINING AND REFILLING OF THE SPRINKLER SYSTEM REQUIRED FOR THIS WORK SHALL BE COORDINATED WITH, AND COMPLETED IN CONJUNCTION WITH, THE ON-SITE BUILDING ENGINEERING STAFF.

- KEYED NOTES:**
1. CONTRACTOR TO PROVIDE NEW SPRINKLER PIPING AS PER SPRINKLER HEAD LOCATION SHOWN ON THE PLAN. CONTRACTOR TO MAKE SURE SPRINKLER PIPE SIZING AS PER NFPA 13.
 2. CONTRACTOR SHALL ENSURE THERE ARE NO COMBUSTIBLE MATERIALS IN THE ABOVE CEILING SPACE TO PREVENT THE NEED FOR SPRINKLERS IN THAT AREA AS PER NFPA 13.

CONTRACTOR'S NOTE:

THE SPRINKLER SUBCONTRACTOR IS REQUIRED TO VISIT THE SITE DURING BIDDING AND VERIFY LOCATION(S) OF WHERE SPRINKLER PIPING/EQUIPMENT IS INDICATED TO BE PLACED, THEIR ROUTE(S) AND POSSIBLE INTERSECTIONS(S) WITH OTHER EQUIPMENT / WORK / STRUCTURE (I.E. STEEL BEAMS, ETC.) TO BE INSTALLED AND/OR EXISTING TO REMAIN. THIS SUBCONTRACTOR IS TO VERIFY HEIGHTS "TO BE INSTALLED" TO MAINTAIN DESIGNED CEILING HEIGHTS AND HEAD ROOM. ANY DISCREPANCIES BETWEEN DESIGNED AND ACTUAL TO BE TOLD TO THE GENERAL CONTRACTOR AND INDICATED ON THE BID FORM.

HAZARD CLASSIFICATION AND DESIGN DENSITY

OCCUPANCY: LIGHT HAZARD
MINIMUM DESIGN DENSITY: 0.10 GPM/SQ. FT.
OCCUPANCY: ORDINARY HAZARD
MINIMUM DESIGN DENSITY: 0.15 GPM/SQ. FT.

SPRINKLER HEAD COUNT

NEW CONCEALED SPRINKLER	15
NEW UPRIGHT SPRINKLER	2
TOTAL SPRINKLER	17

CONSULTANT (ENGINEER):
NY ENGINEERS
 NEARBY ENGINEERS
 382 NE 191ST STREET SUITE
 49674, MIAMI, FL 33179
 PH-914.257.3455
 WWW.NY-ENGINEERS.COM

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DRAWING TITLE:
SPRINKLER PLAN

DRAWING NUMBER:
SP-100

ATTACH TO EXIST. BUILDING STRUCTURE USING AN APPROVED METHOD OF SUPPORT (TYP.) REPAIR DAMAGED OR REMOVED FIRE PROOFING

ROD (SIZE AS REQUIRED)

CLEVIS HANGER

PIPE

SLEEVE

1/2" (MIN.) 1 1/2" (MAX.) OPENING SURROUNDING EACH PENETRATING ITEM.

NOTES:
 ① FLAME SEAL PUTTY - MINIMUM OF 1" THICK (UL APPROVED)
 ② PIPE STUFFED CERAMIC FIBER INSULATION (UL APPROVED 1479 SEALANT)
 ③ WALL OR FLOOR

3/4" DRAIN VALVE

3/4" PLUGGED ELBOW OR NIPPLE AND CAP

ATTACH TO EXIST. BUILDING STRUCTURE USING AN APPROVED METHOD OF SUPPORT (TYP.)

TWO ELBOWS

BRANCH LINE

1" DROP NIPPLE

1 X 1/2 REDUCER

1" ELBOW

1" EXTRA HEAVY NIPPLE

SPRINKLER HANGER

BRANCH TEE WITH 1" OUTLET

SUSPENDED CEILING

1 SCALE N.T.S. HANGER DETAILS TYPICAL

SEAL OR CAULK SLEEVE THRU FIRE WALLS IN A SMOKE TIGHT MANNER. PROVIDE U.L. LISTED FIRE STOPPING SYSTEM

STANDARD WEIGHT STEEL PIPE SLEEVE OF SIZE TO PASS PIPE AND INSULATION

FINISHED ESCUTCHEON PLATE FLUSH AGAINST WALL AND OF SIZE TO COMPLETELY COVER OPENING

FINISHED WALL SURFACE

PIPE THRU FIRE RATED WALL OR FLOOR

MINERAL WALL INSULATION TIGHTLY PACKED FOR FULL DEPTH OF WALL

SEAL BOTH SIDES WITH NON-HARDENING WATER PROOF CAULK

METAL PIPE SLEEVE

PIPE

PARTITION

PIPE PENETRATION THRU NON FIRE RATED WALL

2 SCALE N.T.S. FIRE STOPPING DETAIL FOR FIRE/ SMOKE RATED WALL/FLOOR OPENINGS

CEILING SLAB

UPRIGHT SPRINKLER HEAD

RISER NIPPLE

SPRINKLER BRANCH MAIN

3 SCALE N.T.S. TYPICAL DRAIN CONNECTION FOR TRAPPED LINES ON WET PIPE SPRINKLER SYSTEMS

KEYNOTES:
 1. 1" NIPPLE (INLET)
 2. NUT
 3. ADAPTER RING
 4. COLLAR
 5. 304 STAINLESS STEEL FLEXIBLE BRAIDED HOSE (1" NOMINAL DIAMETER) (LENGTHS AVAILABLE 31", 48", 60", & 72")
 6. COLLAR
 7. NUT
 8. REDUCING OUTLET (AVAILABLE 1/2" OR 3/4" FMPT)
 9. CENTER BRACKET ASSEMBLY
 10. SQUARE BAR (AVAILABLE IN 24" AND 48" LENGTHS)
 11. END BRACKET ASSEMBLY
 12. SHEET METAL SCREW
 13. 922 MECHANICAL T OUTLET STYLE 922 FIRELOCK (1" FMPT) SEE METALLIC SUBMITTAL NUMBER 10.95

MIN. PER FM= 7"

2 1/2" MIN FROM ENDS

MAXIMUM TOTAL OF 3 BENDS

BRAIDED AQUAFLEX FLEXIBLE HOSE SPRINKLER ASSEMBLIES FOR STANDARD PENDENT SPRINKLERS

DROP CEILING TILE

CEILING COVER PLATE

SPRINKLER HEAD

4 SCALE N.T.S. NEW CONCEALED PENDENT SPRINKLER HEAD DETAIL

HILTI QUICK BOLT OR SIMILAR

CONCRETE SHIELD

PIPE HANGER

PIPE

HANGER AT CONCRETE

TOGGLE

WIRE AND PLASTER CEILING

FENDER WASHER

HEX NUT

THREADED ROD

THREADED ROD

PIPE HANGER

PIPE

HANGER IN PLASTER CEILING FOR 1" TO 1 1/2" PIPING ONLY

ROD SCHEDULE		
PIPE SIZE	ROD SIZE	SPACING
1"	3/8"	5'-8"
1 1/4"	3/8"	6'-10"
1 1/2"	3/8"	8'-10"
2"	3/8"	10'-12"

CONSULTANT (ENGINEER):
NY ENGINEERS
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SPRINKLER DETAILS

DRAWING NUMBER:

SP-200