

PLUMBING SPECIFICATIONS

220000 GENERAL PROVISIONS FOR PLUMBING WORK

- A. INSTALL ALL WORK IN FULL ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL CODE REQUIREMENTS.
- B. ALL WORK, EQUIPMENT AND MATERIALS UNDER THIS DIVISION SHALL MEET THE APPROVAL OF ALL STATE AND LOCAL AGENCIES HAVING JURISDICTION, AND SHALL COMPLY STRICTLY WITH ALL APPLICABLE CODES. REQUIREMENTS OF THE ABOVE SHALL TAKE PRECEDENCE OVER PLANS AND SPECIFICATIONS.
- C. THE PLUMBING CONTRACTOR WILL BE RESPONSIBLE FOR MATERIAL AND WORKSMANSHIP UNTIL COMPLETION AND FINAL ACCEPTANCE BY THE OWNER. REPLACE ANY DAMAGED, LOST OR STOLEN EQUIPMENT OR MATERIALS AT NO ADDITIONAL COST TO THE OWNER.
- D. SHOULD ANY AMBIGUITIES OR DISCREPANCIES BE FOUND ON THE DRAWINGS OR IN THE SPECIFICATIONS, OR BETWEEN THE DRAWINGS AND SPECIFICATIONS, THEN THE ARCHITECT SHALL INTERPRET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS
- E. ALL EQUIPMENT AND MATERIALS SHALL BE NEW, UNLESS NOTED OTHERWISE.
- F. BEFORE SUBMITTING BID, VISIT THE SITE AND EXAMINE ALL ADJOINING WORK AND CONDITIONS ON WHICH THIS WORK IS IN ANY WAY DEPENDENT, INCLUDING BUT NOT LIMITED TO, MEANS OF MATERIAL EGRESS AND INGRESS, SPACE LIMITATIONS AND PARKING FACILITIES. REPORT ANY DISCREPANCIES TO THE OWNER.
- G. PROVIDE ALL LABOR, MATERIALS, APPLIANCES, TOOLS, SERVICES, RIGGING, SCAFFOLDING, HOISTING, SUPPORT AND SUPERVISION FOR FURNISHING AND INSTALLING ALL PLUMBING WORK AS SHOWN ON THE CONTRACT DRAWINGS AND SPECIFIED HEREIN.
- H. THE DRAWINGS ARE GENERALLY DIAGRAMMATIC AND ARE INTENDED TO CONVEY THE SCOPE OF WORK AND INDICATE GENERAL ARRANGEMENT OF PIPING, EQUIPMENT AND FIXTURES. THE DRAWINGS SHOW THE VARIOUS EQUIPMENT AND PIPING SYSTEMS SCHEMATICALLY. NO ADDED COMPENSATION WILL BE PERMITTED FOR VARIATIONS DUE TO FIELD CONDITIONS. IT IS NOT THE INTENT FOR THE DRAWINGS TO SHOW, OR THE SPECIFICATIONS TO DESCRIBE, COMPLETE DETAILS OF EVERY COMPONENT OF THE SYSTEMS. FURNISH AND INSTALL ALL WORK IN ACCORDANCE WITH STANDARDS OF GOOD PRACTICE AND PROVIDE ALL REQUIRED APPURTENANCES AND ACCESSORIES FOR COMPLETE AND OPERATIONAL SYSTEMS.
- I. FOLLOW DRAWINGS IN LAYING OUT WORK AND CHECK DRAWINGS OF OTHER TRADES TO VERIFY SPACES IN WHICH WORK WILL BE INSTALLED. MAINTAIN MAXIMUM HEADROOM AND SPACE CONDITIONS AT ALL POINTS. WHERE HEADROOM AND SPACE CONDITIONS APPEAR INADEQUATE, ARCHITECT SHALL BE NOTIFIED BEFORE PROCEEDING WITH INSTALLATION.
- J. ALL WORK, EQUIPMENT AND MATERIALS UNDER THIS DIVISION SHALL MEET THE APPROVAL OF ALL STATE AND LOCAL AGENCIES HAVING JURISDICTION, AND SHALL COMPLY STRICTLY WITH ALL APPLICABLE CODES. REQUIREMENTS OF THE ABOVE SHALL TAKE PRECEDENCE OVER PLANS AND SPECIFICATIONS.
- K. SUBMIT A GUARANTEE TO THE ARCHITECT STATING THAT ALL PORTIONS OF THE WORK ARE IN ACCORDANCE WITH THE CONTRACT REQUIREMENTS. GUARANTEE ALL WORK AGAINST FAULTY AND IMPROPER MATERIAL AND WORKSMANSHIP FOR A PERIOD OF ONE YEAR FROM DATE OF FINAL ACCEPTANCE BY THE OWNER. EXCEPT THAT WHERE GUARANTEES OR WARRANTIES FOR LONGER TERMS ARE SPECIFIED ELSEWHERE IN THE SPECIFICATIONS, SUCH LONGER TERM SHALL APPLY.
- L. COORDINATE SPACE REQUIREMENTS WITH OTHER TRADES TO ASSURE THAT ALL MATERIALS CAN BE INSTALLED IN THE SPACE ALLOTTED.
- M. FURNISH AND SET ALL SLEEVES REQUIRED FOR THE WORK OF THIS DIVISION. COORDINATE INSTALLATION WITH THE GENERAL CONTRACTOR.
- N. COORDINATE WITH THE ARCHITECT BEFORE DISCONNECTING ANY EXISTING BUILDING SERVICES.
- O. THE BUILDING WILL BE OCCUPIED AND REMAIN OPERATIONAL DURING THE WORK OF THIS CONTRACT. COORDINATE WORK SCHEDULE WITH THE ARCHITECT AND FACILITY TO MINIMIZE DISRUPTION TO THE OCCUPANTS.
- P. THE PLUMBING CONTRACTOR SHALL SUBMIT FOR REVIEW, SHOP DRAWINGS FOR ALL MATERIALS AND EQUIPMENT FURNISHED AND INSTALLED UNDER THIS CONTRACT.
- Q. DURING THE PROGRESS OF THE WORK, THE PLUMBING CONTRACTOR SHALL MAKE A RECORD OF ALL CHANGES BY WHICH THE ACTUAL INSTALLATION DIFFERS FROM THE CONTRACT DRAWINGS.
- R. AT THE COMPLETION OF CONSTRUCTION THE PLUMBING CONTRACTOR SHALL PREPARE AND DELIVER TO THE FACILITY A SOFT COPY TRANSFER VIA SHAREFILE ALL AS-BUILTS, OPERATING AND MAINTENANCE INSTRUCTION MANUALS, WIRING DIAGRAMS AND VALVE CHARTS COVERING ALL EQUIPMENT INCLUDED IN THIS CONTRACT. THE ARCHITECT AND ENGINEER SHALL BE COPIED ON THE TRANSMISSION.
- S. INSTALLATION OF ACCESS DOORS WILL BE BY THE GENERAL CONTRACTOR.

220100 OPERATION, TESTING AND MAINTNANCE OF PLUMBING

- A. GENERAL TESTING
- A.1 CONTRACTOR SHALL NOTIFY ARCHITECT, FACILITY AND ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE OF STARTING ANY TESTS. NO TESTS SHALL BE PERFORMED UNTIL ACKNOWLEDGMENT OF NOTIFICATION AND APPROVAL HAS BEEN RECEIVED FROM THE ALL PARTIES.
- A.2 AFTER THE ENTIRE INSTALLATION HAS BEEN COMPLETED, ALL REQUIRED ADJUSTMENTS TO EQUIPMENT, INSTRUMENTS, GAUGES, BALANCING VALVES, AIR VENTS, AUTOMATIC CONTROLS, PUMPS, ETC. SHALL BE MADE UNTIL ALL PERFORMANCE REQUIREMENTS ARE MET.
- A.3 TESTING, ADJUSTING AND BALANCING REPORTS SHALL BE SUBMITTED TO THE ARCHITECT FOR REVIEW.
- A.4 ANY DAMAGE RESULTING FROM TESTS SHALL BE REPAIRED OR REPLACED, AND THE TESTS SHALL BE REPEATED UNTIL THE PARTICULAR SYSTEM AND COMPONENT PARTS THEREOF RECEIVE THE APPROVAL OF THE ARCHITECT.
- A.5 IN ADDITION TO THE TESTS SPECIFIED HEREIN, CONTRACTOR SHALL PERFORM ANY AND ALL OTHER TESTS THAT MAY BE REQUIRED BY THE LOCAL MUNICIPALITY OR OTHER GOVERNING BODY, BOARD OR AGENCY HAVING JURISDICTION.
- A.6 ALL HYDRONIC PIPING SYSTEMS SHALL BE HYDROSTATICALLY TESTED PRIOR TO APPLICATION OF INSULATION TO A PRESSURE OF 1-1/2 TIMES THE SYSTEM WORKING PRESSURE (NOT TO EXCEED THE RATED WORKING PRESSURE OF THE PIPING SYSTEM, FITTINGS AND PACKAGED EQUIPMENT CONNECTED TO SAME) FOR A PERIOD OF AT LEAST 24 HOURS. ANY LEAKS FOUND DURING TESTING SHALL BE REPAIRED AND THE SYSTEM SHALL BE RETESTED UNTIL IT PASSES.
- A.7 WATER SYSTEMS SHALL BE BALANCED TO ACHIEVE THE FLOW RATES INDICATED ON THE DRAWINGS FOR PUMPS, ETC. TO WITHIN 10% OF DESIGN FLOW. TEST WATER PIPING AT 1-1/2 TIMES THE STATIC WATER PRESSURE FOR TWO HOURS. IN THE EVENT THAT NEW WATER PIPING CANNOT BE ISOLATED, THE ENTIRE SYSTEM SHALL BE TESTED AT NORMAL OPERATING PRESSURE.
- A.8 ENTIRE DRAINAGE SYSTEM SHALL BE TESTED HYDRO-STATICALLY. IF TESTED AS A COMPLETE UNIT, SYSTEM SHALL BE FILLED WITH WATER TO OVERFLOWING. TEST PRESSURE AT ANY POINT IN THE SYSTEM SHALL NOT BE ALLOWED TO EXCEED THE EQUIVALENT OF A 100 FOOT COLUMN OF WATER. IF TESTED IN SECTIONS, EACH SECTION SHALL BE FILLED TO OVERFLOWING TO A HEIGHT OF AT LEAST 10' ABOVE SECTION UNDER TEST.
- A.9 NO LEAKS WILL BE REPAIRED DURING THE PERIOD OF TEST, BUT WILL BE IMMEDIATELY REPAIRED THEREAFTER, AND THE TEST REPEATED UNTIL NO LEAKS APPEAR WITHIN THIS TEST PERIOD.
- A.10 WHEN ALL PLUMBING FIXTURES ARE CONNECTED TO THE DRAINAGE AND WATER SUPPLY SYSTEMS, THE TRAPS OF SAME HAVE BEEN FILLED WITH WATER (SEALED), AND THE FIXTURES THOROUGHLY CLEANED AND MADE READY FOR SERVICE, THERE SHALL BE APPLIED A FINAL SMOKE TEST WITH SMOKE OF

- HEAVY QUALITY AND FULL VOLUME GIVING A FULL EMISSION OF SMOKE THROUGH ALL OF THE VENT LINES ABOVE THE ROOF. ALL IN COMPLIANCE WITH THE INSPECTION REQUIREMENTS OF THE GOVERNMENTAL AGENCIES HAVING JURISDICTION.
- B. EQUIPMENT TESTS
- B.1 DEMONSTRATE THAT ALL EQUIPMENT AND APPARATUS FULFILL THE REQUIREMENTS OF THE SPECIFICATIONS. ALL EQUIPMENT SHALL BE OPERATED AND TESTED FOR RATED CAPACITIES AND SPECIFIED CHARACTERISTICS. VOLTAGE AND AMPERAGE READINGS SHALL BE TAKEN ON ALL ELECTRIC MOTORS.
- C. AFTER LEAKAGE TESTS ARE COMPLETE, CLEAN ALL PIPING AND EQUIPMENT OF ALL FOREIGN SUBSTANCES INSIDE AND OUT BEFORE BEING PLACED IN OPERATION.
- D. WATER AND SANITARY DRAINAGE PIPING SYSTEMS SHALL BE FILLED WITH CLEAN WATER WITH A CHEMICAL DETERGENT. CLEANING PROCESS SHALL HAVE A DURATION OF 8 HOURS, FOLLOWING A COMPLETE DRAINING AND RINSE OF THE CLEANING SOLUTIONS FROM THE SYSTEMS. CLEAN AND CHECK ALL TRAPS, OUTLETS AND EXPOSED PIPING. IF IT IS IMPRACTICAL TO ISOLATE THE NEW SECTION OF PIPING INSTALLED, FLUSHING THE SYSTEM FROM THE FURTHER FIXTURE SHALL BE SUFFICIENT.
- E. STERILIZATION OF DOMESTIC WATER SYSTEMS SHALL BE ACCOMPLISHED BY USE OF WATER-CHLORINE SOLUTION CONTAINING AT LEAST 50 PPM OF CHLORINE FOR A PERIOD OF AT LEAST 24 HOURS, OR 200 PPM OF CHLORINE FOR A PERIOD OF AT LEAST THREE HOURS. ALL VALVES SHALL BE OPERATED WHILE PIPING IS FILLED WITH THE STERILIZING AGENT. STERILIZATION AND FLUSHING SHALL BE REPEATED IF NECESSARY. IF IT IS IMPRACTICAL TO ISOLATE THE NEW SECTION OF PIPING INSTALLED, FLUSHING THE SYSTEM FROM THE FURTHER FIXTURE SHALL BE SUFFICIENT.
- F. SPECIALTY SYSTEMS SUCH AS DEIONIZED AND REVERSE OSMOSIS WATER SHALL BE CLEANED AND TESTED IN ACCORDANCE WITH MANUFACTURERS WRITTEN INSTRUCTIONS. IF NO WRITTEN INSTRUCTIONS OR RECOMMENDATIONS ARE PROVIDED BY THE MANUFACTURER, CONTRACTOR SHALL PROVIDE CLEANING AND TESTING WITH INDUSTRY STANDARD GOOD PRACTICE FOR SPECIFIC WATER TYPES INCLUDING BUT NOT LIMITED TO RESISTIVITY AND CONDUCTIVITY TESTING WITH SPECIAL INSTRUMENTATION.
- G. IN THE EVENT THAT THE PROJECT WORK IS SUBJECT TO FREEZING CONDITIONS, THE SYSTEMS SHALL BE COMPLETELY DRAINED OF ALL WATER, INCLUDING TRAPS AND MISCELLANEOUS EQUIPMENT AFTER CLEANING, TESTING, FLUSHING, AND STERILIZATION HAS BEEN COMPLETED AND ACCEPTED.
- H. AFTER COMPLETION OF ALL WORK AND ALL TESTS AND AT SUCH TIME AS DESIGNATED BY THE ARCHITECT, PROVIDE THE NECESSARY SKILLED PERSONNEL TO DEMONSTRATE THE ENTIRE INSTALLATION TO THE OWNER'S PERSONNEL FOR A PERIOD OF 8 HOURS.
- I. DURING THE OPERATING PERIOD, FULLY INSTRUCT THE OWNER'S REPRESENTATIVE ON THE COMPLETE OPERATION, ADJUSTMENT AND MAINTENANCE OF THE ENTIRE INSTALLATION.

220505 SELECTIVE DEMOLITION FOR PLUMBING

- A. CUTTING AND PATCHING REQUIRED FOR THE WORK OF THIS CONTRACT SHALL BE PROVIDED BY THE PLUMBING CONTRACTOR.
- B. IN GENERAL, PENETRATIONS THROUGH CONCRETE WALLS AND SLABS SHALL BE CORE DRILLED.
- C. PLUMBING CONTRACTOR SHALL CUT AND PATCH EXISTING PAVEMENT AND STREET SURFACES THAT ARE REMOVED OR DAMAGED FOR THE EXECUTION OF THE WORK. ALL PATCHING SHALL MATCH EXISTING CONDITIONS.
- D. ALL AREAS AND SURFACES THAT ARE PATCHED SHALL MATCH EXISTING ADJACENT FINISHES. WHERE A PAINTED WALL OR CEILING IS DISTURBED AND IS PATCHED, THE ENTIRE WALL OR CEILING MUST BE REPAINTED. EXISTING CEILING TILES, BOARDS, GRIDS, ETC. THAT HAVE BEEN DAMAGED, STAINED, OR MARKED SHALL BE REPLACED WITH NEW MATERIALS EQUIVALENT TO THE EXISTING.
- E. THE PLUMBING CONTRACTOR SHALL BE AWARE THAT ALL CUTTING AND PATCHING OF ROOFING REQUIRED BY THE WORK OF THIS CONTRACT, SHALL BE INCLUDED IN THE BID PRICE AND SHALL BE PERFORMED BY A ROOFING CONTRACTOR WHO IS LICENSED BY THE ROOFING MANUFACTURER, SO AS TO MAINTAIN ROOFING WARRANTIES.
- F. PROVIDE ALL EXCAVATION, BACKFILLING, AND RESTORATION BOTH OUTSIDE AND INSIDE THE BUILDING REQUIRED TO PROPERLY INSTALL THE WORK UNDER THIS CONTRACT. THE CONTRACTOR SHALL COMPLY WITH UTILITY MARK-OUT REQUIREMENTS (NEW YORK STATE INDUSTRIAL CODE 83), INCLUDING CONTACTING LOCAL UTILITY COMPANIES TO MARK AND LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO EXCAVATION. THE CONTRACTOR SHALL ALSO COMPLY WITH OSHA REQUIREMENTS.
- G. PROVIDE, CONTINUE AND MAINTAIN PUMPING AND DEWATERING FOR THE INSTALLATION AND PROTECTION OF THE WORK, INCLUDING KEEPING FREE OF WATER ANY AREAS THAT MAY INTERFERE WITH THE EXECUTION OF THE CONTRACT WORK.

220513 COMMON ELECTRICAL REQUIREMENTS FOR PLUMBING EQUIPMENT

- A. ELECTRICAL POWER WIRING, EXCEPT THAT FURNISHED AS AN INTEGRAL PART OF FACTORY ASSEMBLED EQUIPMENT OR AS OTHERWISE SPECIFIED HEREIN WILL BE PROVIDED BY THE ELECTRICAL CONTRACTOR, (UNLESS OTHERWISE NOTED, ALL CONTROL WIRING SHALL BE FURNISHED AND INSTALLED BY THE PLUMBING CONTRACTOR.)
- B. INSTALLATION OF MOTOR STARTERS WILL BE BY THE ELECTRICAL CONTRACTOR.
- C. THE ELECTRICAL CONTRACTOR WILL FURNISH AND INSTALL ALL LINE VOLTAGE TIME CLOCKS, START/STOP SWITCHES AND EMERGENCY STOP SWITCHES, UNLESS OTHERWISE NOTED.

220516 EXPANSION FITTINGS AND LOOPS FOR PLUMBING PIPING

- A. PROVISIONS SHALL BE MADE FOR EXPANSION AND CONTRACTION OF THE PIPING SYSTEMS TO PREVENT EXCESSIVE STRESSES ON PIPING AND EQUIPMENT. ALL REQUIRED ANCHORS, GUIDES, EXPANSION LOOPS, FLEXIBLE CONNECTORS, ETC. SHALL BE PROVIDED.
- B. JOINTS IN CAST IRON PIPE SHALL BE MADE BY THE USE OF A POSITIVE ONE PIECE DOUBLE SEAL ELASTOMER. EXTRA HEAVY COMPRESSION TYPE GASKETS CONFORMING TO ASTM C-554. GASKET SHALL BE TYLER "T" SEAL, OR APPROVED EQUIVALENT, WITH BLACK MOLDED NEOPRENE AS THE SOLE ELASTOMER. WHERE THIS TYPE OF JOINT IS USED, THE PIPE SHALL HAVE MODIFIED HUBS TO PROVIDE A POSITIVE SEAL AND PLAIN ENDS IN LIEU OF BEADED SPIGOTS. THE FINAL JOINT SHALL BE LEAK TIGHT AT 10 DEGREE DEFLECTION.
- C. JOINTS BETWEEN CAST IRON AND STEEL OR OTHER THREADED PIPING SHALL BE CAULKED. THE ENDS OF SCREWED PIPING SHALL HAVE A RING OR COUPLING SCREWED ON TO FORM A SPOUT. FOR CONNECTIONS BETWEEN LEAD AND CAST IRON PIPE, EXTRA HEAVY CAST BRASS FERULLES SHALL BE USED WITH A WEPED SOLDER JOINT TO LEAD PIPE AND CAULKED INTO HUB OF CAST IRON PIPE.
- D. JOINTS IN THREADED PIPES SHALL BE MADE UP WITH PIPE TAPE. ENDS OF PIPE SHALL BE REAMED FREE FROM BURRS AND THE THREADS SHALL BE CLEAN CUT AND TAPERED. THREAD CEMENT AND CAULKING SHALL NOT BE USED. GRAPHITE SHALL BE APPLIED TO THREADS OF CLEANOUT AND DRAIN PLUGS.

220517 SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING

- A. SLEEVES FOR PIPES PASSING THROUGH MASONRY FLOORS, WALLS, AND PARTITIONS SHALL BE SCHEDULE 40 BLACK STEEL PIPE.

- B. SLEEVES FOR PIPES PASSING THROUGH NON-MASONRY FLOORS, WALLS AND PARTITIONS SHALL BE 22-GAUGE GALVANIZED STEEL.
- C. SLEEVES IN EXTERIOR FOUNDATION WALLS SHALL BE WATERPROOF UNK SEAL OR APPROVED EQUIVALENT.
- D. SLEEVES IN FIRE-RATED WALLS AND FLOORS SHALL BE FIRE-RATED UNK SEAL OR APPROVED EQUIVALENT.
- E. ACCEPTABLE FIRE STOP MATERIALS SHALL INCLUDE FIBERFRAX FLYRE PUTTY AS MANUFACTURED BY FIBERS DIVISION OF CARBORUNDUM CO., FIRE STOP SYSTEM, AS MANUFACTURED BY DOW CORNING CORP., OR APPROVED EQUIVALENT.
- F. FIRE STOPS SHALL CONFORM TO ASTM E-814, UL-1479, AND ULCS-1151M, AND SHALL BE RATED FOR 1/4 TO 3 HOURS DEPENDING ON THE RATING OF THE PENETRATED MATERIAL. FIRE STOPS SHALL ALSO CONFORM TO ASTM E-84 FOR FLAME SPREAD AND SMOKE CONTRIBUTED. AND SHALL BE UL LISTED FOR USE IN THROUGH-PENETRATION FIRE STOP SYSTEM.
- G. PROVIDE SLEEVES AND SEALS FOR ALL PIPE PENETRATIONS THROUGH FLOORS, CEILINGS AND WALLS. SLEEVES SHALL BE SET FLUSH WITH FINISHED WALL SURFACES, BUT EXTENDING 2-INCH ABOVE FINISHED FLOORS. THE OPEN SLEEVE SPACE SHALL BE PACKED WITH NON-COMBUSTIBLE MATERIALS. SLEEVES SHALL HAVE A MAXIMUM INTERNAL DIAMETER 1-INCH LARGER THAN THE OUTSIDE DIAMETER OF THE PIPE OR PIPE INSULATION PASSING THROUGH THEM, AS APPLICABLE. THE ANNULAR SPACE OUTSIDE THE SLEEVE SHALL BE PATCHED TO MATCH THE EXISTING SURFACES. SEALS FOR SLEEVES IN FIRE RATED WALLS SHALL BE FIRE RATED. SEALS FOR SLEEVES IN FOUNDATION WALLS SHALL BE WATERPROOF. PROVIDE ESCUTCHEONS FOR ALL SLEEVES. EXPOSED ESCUTCHEONS SHALL BE CHROMIUM-PLATED BRASS.
- H. SAFE OFF ALL OPENINGS AROUND PIPE PENETRATIONS THROUGH WALLS, FLOORS, CEILINGS, ETC.
- I. PROVIDE FIRE STOPS AT ALL PENETRATIONS THROUGH FIRE RATED WALLS, PARTITIONS, CEILINGS, FLOORS, AND ROOFS.

220523 GENERAL-DUTY VALVES FOR PLUMBING PIPING

- A. ALL PIPING CONNECTIONS TO EQUIPMENT SHALL BE PROVIDED WITH SHUTOFF VALVES. SCREW UNIONS OR FLANGED CONNECTIONS SHALL BE INSTALLED IN PIPING AT ALL CONNECTIONS TO COOLS, CONTROL VALVES, AND ALL EQUIPMENT.
- B. BRANCH PIPING SHALL BE CONTROLLED WITH VALVES WHERE CONNECTED TO SUPPLY MAINS.

220529 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT

- A. PROVIDE HANGERS AND SUPPORTS FOR ALL PIPING AND EQUIPMENT. PIPING SUPPORTS SHALL COMPLY WITH MSS SP-69 STANDARDS.
- B. ALL EQUIPMENT, PIPING, ETC. SHALL BE MOUNTED OR SUSPENDED TO MINIMIZE VIBRATION TRANSMISSION. PROVIDE ISOLATION PADS, RUBBER MOUNTS, SPRING MOUNTS, SEISMIC RESTRAINTS, ETC. AS CALLED FOR ON THE DRAWINGS AND AS REQUIRED TO CONTROL VIBRATION AND MOVEMENT OF PIPING AND EQUIPMENT.
- C. PROVIDE ANCHORS AND GUIDES FOR PIPING WHERE REQUIRED TO CONTROL MOVEMENT.
- D. HANGING MATERIALS SHALL HAVE A SAFETY FACTOR OF 5 BUILT-IN AND BE DESIGNED AND ARRANGED TO MINIMIZE VIBRATION.
- E. PROVIDE SEPARATE SUPPORTS FOR ALL BRANCHES, NO BRANCH TWO FEET IN LENGTH OR OVER SHALL BE INSTALLED WITHOUT AN APPROVED HANGER. PROVIDE HANGERS AT ALL JOINT CONNECTIONS.
- F. ALL FLOOR MOUNTED EQUIPMENT SHALL BE MOUNTED ON 4-INCH HIGH CONCRETE HOUSEKEEPING PADS OVER THE COMPLETE AREA OF THE EQUIPMENT PLUS A MINIMUM OF 6 INCHES ON EACH SIDE OF THE EQUIPMENT. CONCRETE SHALL BE MINIMUM 3000 PSI STRENGTH WITH WIRE MESH REINFORCEMENT.
- G. PIPING WITHIN 25 FEET OF ALL EQUIPMENT THAT IS SUPPORTED BY VIBRATION ISOLATORS SHALL BE SUPPORTED WITH STEEL SPRING AND RUBBER-IN-SHEAR TYPE VIBRATION ISOLATORS, WITH A MINIMUM OF 1-INCH STATIC DEFLECTION.
- H. ALL SUPPORTS SHALL BE METALLIC.
- I. PIPE HANGERS FOR PIPES UP TO 5-INCH SHALL BE ADJUSTABLE CLEVIS TYPE.
- J. PIPING INSTALLED ON ROOFS SHALL BE SUPPORTED BY FACTORY MANUFACTURED FREESTANDING PIPE SUPPORTS AS MANUFACTURED BY MIRO INDUSTRIES, OR APPROVED EQUIVALENT.
- K. UNLESS OTHERWISE NOTED ON DRAWINGS, EQUIPMENT SUPPORT CURBS SHALL BE PREFABRICATED GALVANIZED STEEL AS MANUFACTURED BY THY CURB, OR APPROVED EQUIVALENT.
- L. SUPPLEMENTARY STEEL SUPPORTS SHALL BE PROVIDED WHERE REQUIRED TO SPAN BUILDING FRAMING IN ORDER TO ADHERE TO MAXIMUM HANGER SPACING.
- M. PIPING SUPPORT SPACING AND HANGER ROD SIZE FOR STEEL AND COPPER PIPING SYSTEMS SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

PIPE SIZE 1" AND SMALLER	MAXIMUM HANGER SPACING	MINIMUM ROD SIZE
1-1/4" TO 2"	8'-0"	3/8"

- N. PIPING SUPPORT SPACING AND HANGER ROD SIZE FOR CAST IRON PIPING SYSTEMS SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

PIPE SIZE 1" AND SMALLER	MAXIMUM HANGER SPACING	MINIMUM ROD SIZE
1-1/4" TO 2"	5'-0"	3/8"
2-1/2" TO 3-1/2"	5'-0"	5/8"
4" TO 6"	5'-0"	3/4"

- O. INSTALL BUILDING ATTACHMENTS WITHIN CONCRETE SLABS OR ATTACH TO STRUCTURAL STEEL. SPACE ATTACHMENTS WITHIN MAXIMUM PIPING SPAN LENGTH INDICATED. INSTALL ADDITIONAL ATTACHMENTS AT CONCENTRATED LOADS, INCLUDING VALVES, FLANGES, GUIDES, STRAINERS, AND EXPANSION JOINTS, AND AT CHANGES IN DIRECTION OF PIPING.
- P. PIPING AND EQUIPMENT SHALL BE SUPPORTED FROM BUILDING STEEL FRAMING WHERE EVER POSSIBLE. WHERE NOT POSSIBLE, CONCRETE EXPANSION SHIELDS MAY BE USED IN STONE CONCRETE, BUT THE MAXIMUM HANGER SPACING SHALL BE 1/2 THAT INDICATED IN THE PREVIOUS TABLE. EXPANSION SHIELDS SHALL NOT BE USED IN CINDER CONCRETE.
- Q. VERTICAL LINES SHALL BE ADEQUATELY SUPPORTED AT THEIR BASES EITHER BY A SUITABLE HANGER PLACED IN THE HORIZONTAL LINE NEAR THE RISER OR BY A BASE FITTING SET ON A PEDESTAL OR FOUNDATION, AND AT EVERY FLOOR WITH RISER CLAMP. IN ADDITION, SHAWT BRACING SHALL BE PROVIDED ON ALL VERTICAL NO-HUB PIPE LINES GREATER THAN 10' IN HEIGHT.
- R. NO PIPING OR EQUIPMENT SHALL BE HUNG FROM OTHER PIPING OR EQUIPMENT.

220546 VIBRATION AND SEISMIC CONTROLS FOR PLUMBING PIPING AND EQUIPMENT

- A. PROVIDE VACUUM BREAKERS ON ALL SUBMERGED AND/OR POTENTIALLY SUBMERGED WATER INLETS, AND ON ALL OUTLETS WITH HOSE THREAD. VACUUM BREAKERS SHALL BE FULL SIZE OF PIPE.
- B. SHOCK ABSORBERS SHALL BE INSTALLED ON ALL PIPING SYSTEMS TO ELIMINATE PULSATIONS AND VIBRATIONS.
- C. SHOCK ABSORBERS SHALL BE JAY R SMITH OR EQUAL AND SHALL BE INSTALLED AT END OF RUN FOR BOTH HOT AND COLD WATER LINES.
- D. SHOCK ABSORBERS SHALL BE INSTALLED AT ALL BRANCH PIPING WHERE FLUSH VALVE ACTUATION OR JANITORS FAUCETS ARE INSTALLED. THE SHOCK ABSORBER

SHALL BE INSTALLED BETWEEN THE LAST TWO FIXTURES AND SHALL BE MADE ACCEPTABLE VIA AN ACCESS DOOR OR INSTALLATION ABOVE HUNG CEILING.

220553 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT

- A. PIPE IDENTIFICATION MARKERS SHALL BE PLASTIC WITH SERVICE AND FLOW DIRECTION INDICATED.
- B. EQUIPMENT NAMEPLATES SHALL BE LAMINATED PLASTIC WITH 3/16-INCH HIGH LETTERING.
- C. NAMEPLATE NOMENCLATURE SHALL BE SUBMITTED FOR REVIEW PRIOR TO FABRICATION.
- D. IDENTIFY ALL PIPING THAT IS ACCESSIBLE FOR SERVICING WITH PLASTIC IDENTIFICATION MARKERS. COLOR SCHEME AND SIZES SHALL BE IN ACCORDANCE WITH ANSI STANDARD A13.1.
- E. LOCATE MARKERS AT EACH VALVE, EACH BRANCH OR RISER TAKEOFF, EACH PASSAGE THROUGH WALLS, FLOORS OR CEILINGS AND AT 25-FOOT INTERVALS ON STRAIGHT RUNS OF PIPE.
- F. ALL VALVES WILL BE TAGGED AND A CORRESPONDING CHART BE DELIVERED TO THE OWNER PRIOR TO FINAL PAYMENT.

220576 FACILITY DRAINAGE PIPING CLEANOUTS

- A. CLEANOUTS SHALL BE PROVIDED AND EXTENDED THROUGH WALLS AND FLOORS WHERE NECESSARY. AT ALL CHANGES OF DIRECTION, AT THE END OF ALL HORIZONTAL DRAINS, AND AT ALL TRAPS.
- B. CLEANOUTS SHALL BE SAME SIZE AS PIPE UP TO 4-INCH AND 1/2 PIPE SIZE, BUT NOT LESS THAN 4-INCH. FOR LARGER PIPE.
- C. CLEANOUTS BELOW FLOORS SHALL BE EXTENDED WITH LONG RADIUS FITTINGS TO THE SURFACE OF THE FLOOR. CLEANOUT FITTINGS SHALL BE A DUCCO COATED, CAST IRON, EXTENSION FERRELL WITH CUT-OFF RINGS, AND BRONZE, COUNTERSUNK, CLEANOUT PLUG. CAST IRON COVER HOUSING SHALL BE ADJUSTABLE FOR VARYING FLOOR THICKNESS. BRONZE COVER SHALL BE TRACTOR TYPE, HEAVY DUTY, SCORED, AND SECURED BY VANDALPROOF SCREWS.
- D. CLEANOUTS SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION AND SHALL BE PER LOCAL AND STATE PLUMBING CODES.

220700 PLUMBING INSULATION

- A. ALL INSULATION SHALL HAVE COMPOSITE FIRE AND SMOKE HAZARD RATINGS, AS TESTED BY PROCEDURE ASTM E-84, NFPA 225, AND UL 723, NOT EXCEEDING A "FLAME SPREAD" OF 25, AND "SMOKE DEVELOPED" OF 50.
- B. INSULATION SHALL BE APPLIED ONLY BY QUALIFIED INSULATING MECHANICS AFTER THE PIPING SYSTEMS HAVE BEEN PRESSURE TESTED AND ACCEPTED AS TIGHT BY THE ARCHITECT.
- C. PROVIDE INSULATION FOR PIPING, FITTINGS AND VALVES AS SPECIFIED BELOW. INSULATION SHALL BE PREFORMED FIBERGLASS PIPE INSULATION AS MANUFACTURED BY KNAUF, OR APPROVED EQUIVALENT.

220719 PLUMBING PIPING INSULATION

- A. COOLING COIL, CONDENSATE DRAIN PIPING
- A.1 ALL COOLING COIL, CONDENSATE DRAIN PIPING SHALL BE INSULATED.
- A.2 THE INSULATION SHALL BE A MINIMUM OF 1-INCH THICK, AND HAVE A THERMAL CONDUCTIVITY OF NO MORE THAN 0.28 BTU-IN/HR-FT<sup>2</sup> OF AT 75 OF MEAN TEMPERATURE.
- A.3 THE INSULATION SHALL HAVE A FACTORY APPLIED ALL SERVICE VAPOR BARRIER JACKET OF KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED. THE LONGITUDINAL LAP SHALL BE FURNISHED WITH SELF-SEALING ADHESIVE.
- A.4 ARMARELX OR SIMILAR PIPE INSULATION IS DEEMED ACCEPTABLE FOR CONDENSATE DRAINAGE PIPING IF MEETING THERMAL CONDUCTIVITIES LISTED ABOVE.
- B. DOMESTIC HOT AND COLD WATER PIPING
- B.1 ALL DOMESTIC COLD WATER, HOT WATER AND RETURN PIPING SHALL BE INSULATED.
- B.2 THE INSULATION SHALL HAVE A FACTORY APPLIED ALL SERVICE VAPOR BARRIER JACKET OF KRAFT PAPER BONDED TO ALUMINUM FOIL AND REINFORCED. THE LONGITUDINAL LAP SHALL BE FURNISHED WITH SELF-SEALING ADHESIVE.
- B.3 THE INSULATION SHALL BE A MINIMUM OF 1-INCH THICK, AND HAVE A THERMAL CONDUCTIVITY OF NO MORE THAN 0.28 BTU-IN/HR-FT<sup>2</sup> OF.
- B.4 PROVIDE INSULATION/PROTECTION FOR ALL EXPOSED PIPING ASSOCIATED WITH HANDICAP LAVATOIRES.

C. FITTINGS AND VALVES

- D.1 ALL VALVES AND FITTINGS SHALL BE INSULATED AND COVERED WITH PRE-MOLDED PVC JACKETING, WHITE IN COLOR, WITH INSERTS OF MATERIAL TO MATCH THE PIPE INSULATION. FITTING COVERS SHALL BE PROTO CORPORATION, OR APPROVED EQUIVALENT.
- D.2 INSERT MATERIAL SHALL HAVE A THERMAL CONDUCTIVITY OF 0.26 BTU-IN/HR-FT<sup>2</sup> OF AT 75 OF MEAN TEMPERATURE.
- D.3 CLOSURE SHALL BE WITH MATCHING PVC TAPE.
- D.4 ANY PIPING INSTALLED IN UNHEATED SPACE SHALL BE PROVIDED WITH 1-1/2 INCH THICK INSULATION AND SHALL BE PROVIDED WITH HEAT TRACE, COORDINATION HEAT TRACE WITH ELECTRICAL CONTRACTOR.
- E. ANY PIPING INSTALLED IN AREAS SUBJECT TO AND EXPOSED TO WEATHER, SHALL BE PROVIDED WITH 2-INCH THICK INSULATION AND SHALL PROVIDED WITH HEAT TRACE, COORDINATION HEAT TRACE WITH ELECTRICAL CONTRACTOR. IN ADDITION TO THE INSULATION, CONTRACTOR SHALL PROVIDE PVC PIPE AND FITTING COVERS THROUGHOUT THE ENTIRE EXPOSED RUN AND SHALL PROVIDE IDENTIFICATION LABELS ON EXTERIOR OF PIPE.
- F. EXCEPT AS INDICATED OTHERWISE HEREIN, PIPE, FITTING AND VALVE INSULATION, ADHESIVES AND FASTENERS SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURERS WRITTEN INSTALLATION INSTRUCTIONS.
- G. ALL PIPE INSULATION, JACKETS, FACINGS, VAPOR BARRIERS AND FINISHES SHALL BE CONTINUOUS AND SEALED THROUGH FLOOR AND WALL SLEEVES, HANGERS, SUPPORTS AND ATTACHMENTS.
- H. WHERE PLANS INDICATE THAT PIPING IS TO BE BURIED BELOW SLABS, INSULATED PIPING ASSEMBLY SHALL BE INSTALLED WITHIN A PVC SLEEVE.
- I. STRAINERS, EXPANSION JOINTS AND OTHER SPECIALTIES REQUIRING PERIODIC SERVICING OR INSPECTION SHALL BE PROVIDED WITH INSULATION COVERS, REMOVABLE AND REPLACEABLE WITHOUT DAMAGING INSULATION, VAPOR BARRIERS OR FINISHES.
- J. INSULATION ON HOT PIPES SHALL BE PROTECTED FROM HANGERS, GUIDES AND ROLLERS BY PIPE SADDLES FILLED WITH PIPE INSULATION OR INSULATING CEMENT.
- K. INSULATION ON COLD PIPES SHALL BE PROTECTED FROM HANGERS, GUIDES AND ROLLERS BY A 180 DEGREE GALVANIZED STEEL SHIELD ON THE OUTSIDE OF THE INSULATION AND VAPOR BARRIER. A HALF-SECTION OF WATERPROOF, CALCIUM SILICATE, HIGH DENSITY INSULATION OF THE SAME THICKNESS AS THE PIPE INSULATION, AND FULL LENGTH OF THE SHIELD, SHALL BE USED TO SUPPORT THE WEIGHT OF THE PIPE AT THE SHIELD. SHIELDS SHALL BE OF SUFFICIENT LENGTH TO ALLOW FOR THE MAXIMUM PIPE MOVEMENT AND HANGER LOAD AT THE SPECIFIED HANGER SPACING.
- L. INSULATE EACH PIPE INDIVIDUALLY.

221000 PLUMBING PIPING

A. PIPING SCHEDULES

- A.1 PIPING MATERIALS SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

SERVICE MATERIAL WEGHT TYPE GAS INSIDE BUILDING STEEL ASTM A-53 SCHEDULE 40 BLACK GAS OUTSIDE BUILDING, ABOVE GROUND LESS THAN 3" DIAMETER STEEL ASTM A-54 SCHEDULE 40 HOT DIPPED GALVANIZED SUMP PUMP EJECTOR MAINS STEEL ASTM-55 SCHEDULE 40 HOT DIPPED GALVANIZED SANITARY, WASTE, VENT AND ROOF DRAINAGE BURIED CAST IRON HUB ASTM A-74 SERVICE WEGHT HUB AND SPIGOT SANITARY, WASTE, VENT AND ROOF DRAINAGE ABOVE GRADE CAST IRON ASTM A-886 SERVICE WEGHT NO HUB DOMESTICATED WATER ABOVE GRADE COPPER ASTM B-88 TYPE 1 HARD DOMESTIC WATER BELOW GRADE 2" AND UNDER COPPER ASTM B-88 TYPE K SOFT EQUIPMENT AND CONDENSATE DRAINS COPPER ASTM-88 TYPE 1 HARD.

- A.2 FITTING MATERIALS AND JOINT TYPE SHALL BE IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

8. SERVICE MATERIAL WEGHT TYPE GAS INSIDE BUILDING, 4" AND LESS DIAMETER MALLEABLE IRON SCHEDULE 40 SCREWED GAS OUTSIDE BUILDING, ABOVE GROUND 3" DIAMETER AND LARGER SEAMLESS STEEL SCHEDULE 40 WELDED SUMP PUMP EJECTOR MAINS GALVANIZED MALLEABLE IRON SCHEDULE 40 SCREWED SANITARY, WASTE, VENT AND ROOF DRAINAGE BURIED CAST IRON HUB ASTM A-74 SERVICE WEGHT HUB AND SPIGOT WITH NEOPRENE GASKETS SANITARY, WASTE, VENT AND ROOF DRAINAGE ABOVE GRADE CAST IRON ASTM A-886 SERVICE WEGHT NO HUB DOMESTIC WATER ABOVE GRADE WROUGHT COPPER ASTM B-16.22 STANDARD LEAD FREE SOLDER ASTM B32 ASTM B613 DOMESTIC WATER BELOW GRADE 2" AND UNDER WROUGHT COPPER ASTM B-16.23 STANDARD BRAZED EQUIPMENT AND CONDENSATE DRAINS WROUGHT COPPER ASTM B-16.24 STANDARD LEAD FREE SOLDER ASTM B32 ASTM B613.

- C. PIPING SHALL BE INSTALLED CONCEALED IN AREAS HAVING HUNG CEILING AND/OR FURRED SPACES UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

- D. PIPING SHALL NOT BE INSTALLED OVER CONTROL PANELS, SWITCHBOARDS, OR OTHER ELECTRICAL EQUIPMENT UNLESS APPROVED BY THE ARCHITECT. WHERE APPROVAL IS GIVEN, PROVIDE DRIP PANS AND SHIELDS TO PROTECT THE ELECTRICAL EQUIPMENT.

- E. CHANGES IN DIRECTION OF PIPING SHALL BE MADE BY APPROPRIATE USE OF WYES, LONG SWEEP QUARTER, BIGHTH, OR SIXTEENTH BENDS OR LONG TURN TEE-WYE FITTINGS. EXCEPT THAT SHORT TURN FITTINGS MAY BE USED FOR CHANGES FROM HORIZONTAL TO VERTICAL IN THE DIRECTION OF FLOW.

- F. CHANGES IN PIPE SIZE SHALL BE MADE WITH REDUCING FITTINGS OR SHOULDER TYPE REDUCERS. ALL PIPING SHALL BE LAID TRUE TO LINE AND GRADE AS SHOWN ON THE DRAWING AND IN SUCH MANNER THAT A TRUE AND EVEN SURFACE AT THE INVERT IS MADE OVER ALL JOINTS AND THROUGHOUT THE ENTIRE LENGTH OF THE DRAIN.

- G. VERTICAL REERS SHALL BE STRAIGHT AND PLUMB WITHOUT OFFSETS, EXCEPT WHERE SPECIFICALLY SHOWN ON DRAWING OR WHERE FIELD CONDITIONS REQUIRE OFFSETS. SUCH OFFSETS SHALL, WHERE POSSIBLE, BE MADE AT AN ANGLE OF 45 DEGREES TO THE HORIZONTAL. BRANCH CONNECTIONS TO VERTICAL REERS SHALL BE WITH WYE FITTINGS AND BIGHTH OR SIXTEENTH BENDS OR TEE-WYE FITTINGS. TEES SHALL NOT BE USED.

- H. PROVIDE DIELECTRIC FITTINGS WHERE PIPING AND/OR EQUIPMENT OF DISSIMILAR METALS ARE CONNECTED.
- I. BRANCHES SHALL BE TAKEN OFF MAINS WITH ELBOWS TO PROVIDE FOR EXPANSION AND CONTRACTION. IN GENERAL, BRANCH PIPING SHALL BE TAKEN OFF THE TOP OF THE MAINS WHERE PRACTICAL.

221300 FACILITY SANITARY SEWAGE

- A. INSTALL CAST-IRON SOIL PIPING ACCORDING TO CISPI'S "CAST IRON SOIL PIPE AND FITTINGS HANDBOOK," CHAPTER IV, "INSTALLATION OF CAST IRON SOIL PIPE AND FITTINGS."
- B. ALL HORIZONTAL SANITARY PIPING SHALL BE RUN ON A UNIFORM GRADE WITH THE MINIMUM PITCH AS REQUIRED BY CODE. PIPING SHALL BE RUN AT A UNIFORM PITCH AND AS STRAIGHT AS POSSIBLE.
- C. MAINTAIN VENT BRANCHES ABOVE FIXTURES IN SUCH MANNER AS TO PRECLUDE THE POSSIBILITY OF VENTS ACTING AS WASTE PIPES. SHOULD LATER BECOME OBSTRUCTED, VENTS SHALL BE GRADED TO DRIP BACK TO A STACK SO AS TO PREVENT ACCUMULATION OF WATER OR SCALE IN BRANCHES. VENT LINES SHALL BE FREE FROM DROPS OR SAGS.
- D. WHERE VENT PIPES CONNECT TO A HORIZONTAL SOIL OR WASTE PIPE, THE VENT SHALL BE TAKEN OFF ABOVE THE CENTER LINE OF THE PIPE AND SHALL RISE VERTICALLY, OR AT AN ANGLE OF 45 DEGREES TO THE VERTICAL, BEFORE OFFSETTING HORIZONTALLY OR CONNECTING TO OTHER VENT LINES. OFFSETS IN VENT STACKS AND DRY WASTE OR DRY SOIL STACKS SHALL BE AT 45 DEGREES. WHERE THIS IS NOT POSSIBLE, THE OFFSET AND ALL OF THE STACK ABOVE THE OFFSET SHALL BE GALVANIZED STEEL PIPE. WHERE POSSIBLE, THE BOTTOM OF VENT REERS SHALL BE CONNECTED TO THE WASTE OF A FIXTURE IN SUCH A MANNER THAT THE BEND IN THE VENT LINE WILL RECEIVE THE WASH OF THE FIXTURE. BRANCH CONNECTIONS TO VENT STACKS MAY BE WITH TEE FITTINGS.
- E. TRAPS FOR FLOOR DRAINS SHALL BE DEEP SEAL TYPE.
- F. ALL PLUMBING TRAPS THAT ARE SUBJECT TO EVAPORATION SHALL BE PROVIDED WITH A TRAP PRIMER IN ACCORDANCE WITH ONE OF THE FOLLOWING THREE TYPES AND LOCATIONS.
- F.1 TRAPS ADJACENT TO FAST CLOSING DEVICES SUCH AS JANITORS SINKS OF WATER CLOSETS SHALL BE OF THE POTABLE WATER SUPPLIED TRAP ASSE 1018 LISTED TYPE PPP P2-500 OR APPROVED EQUAL.
- F.2 TRAPS ADJACENT TO SINKS/LAVATOIRES SHALL BE OF THE WASTE WATER SUPPLIED TRAP ASSE 1044 LISTED TYPE JAY R SMITH PRIMEZE 2698 OR APPROVED EQUAL.
- F.3 TRAPS NOT ADJACENT TO ANY PLUMBING FIXTURES LISTED ABOVE SHALL BE OF THE ELECTRONIC POTABLE WATER SUPPLIED TRAP ASSE 1044 LISTED TYPE PPP P151 (X) OR APPROVED EQUAL.

REQUIRED SUBMITTALS - DIVISION 22:

- 22 01 00 OPERATION AND MAINTENANCE OF PLUMBING
- 22 05 05 SELECTIVE DEMOLITION FOR PLUMBING
- 22 05 17 SLEEVES AND SLEEVE SEALS FOR PLUMBING PIPING
- 22 05 18 ESCUTCHEONS FOR PLUMBING PIPING
- 22 0529 GENERAL-DUTY VALVES FOR PLUMBING PIPING, BALL, CHECK, BPP
- 22 0529 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIP
- 22 05 33 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT
- 22 07 19 PLUMBING PIPING INSULATION
- 22 10 00 PLUMBING PIPING AND EQUIPMENT
- 22 11 18 SHOP DRAWINGS AND AS-BUILTS
- 22 11 19 PLUMBING SPECIALTIES
- 22 40 00 PLUMBING FIXTURES

1	ISSUED FOR BID	03/17-2023
NO.	REVISION	DATE

IT IS A VIOLATION OF THE NEW YORK STATE EDUCATION LAW FOR ANY PERSON, UNLESS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER ANY ITEM ON THIS DRAWING AND/OR RELATED SPECIFICATION, ALL ALTERATIONS MUST BE MADE IN COMPLIANCE WITH THE NEW YORK STATE EDUCATION LAW. THE PROFESSIONAL ENGINEER WHOSE SEAL APPEARS HEREON ASSUMES NO RESPONSIBILITY FOR ANY SUCH ALTERATION OR REUSE WITHOUT HIS WRITTEN CONSENT.	SEAL:
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CLIENT:

SUNY PURCHASE COLLEGE

SUNY PURCHASE APARTMENT  
REPAIR ALUMNI VILLAGE  
INTERIOR RENOVATIONS OF THE  
COMMONS APARTMENTS  
10.1 (ADA COMPLIANT) & 10.3

DRAWING TITLE:

PLUMBING SPECIFICATIONS

DRAWN BY:	SE	SCALE:	AS NOTED
DESIGNED BY:	AO	DATE:	10-04-22
CHECKED BY:	AO	PROJECT NO:	10652
PLOT DATE/TIME:	3/17/2023 3:56:52 PM		
DRAWING NO:	P-401.00		
SHEET:	7	OF	7



\\LEAB02\PROJECTS\10652\AUTOCAD PROJECTS\10652-E-001.DWG 6 5 4 3 2 1 0 1/2

ELECTRICAL SYMBOL LIST	
SYMBOL	DESCRIPTION
	NOTE: NUMBER WITHIN DIAMOND TO BE SPECIFIC TO AREA/ITEM AS INDICATED ON DRAWINGS. NOTE - NUMBER WITHOUT DIAMOND IS A GENERAL NOTE AND PERTAINS TO ALL CONDITIONS WHERE IT MAY APPLY.
	BRANCH CIRCUIT WIRING
	CONDUIT TURNED UP.
	CONDUIT TURNED DOWN.
	EXISTING RECESSED MOUNTED ELECTRICAL PANELBOARD TO REMAIN, U.O.N.
	WALL MOUNTED DUPLEX RECEPTACLES 'GFI' DENOTES GROUND FAULT INTERRUPTER
	WALL MOUNTED DOUBLE DUPLEX RECEPTACLE. 'USB' DENOTES UNIVERSAL SERIAL BUS.
	WALL MOUNTED SIMPLEX RECEPTACLE.
	WALL MOUNTED DUPLEX TELEPHONE/DATA OUTLET. IN AREAS WITH CEILINGS, PROVIDE 1" EMPTY CONDUIT TO 6" ABOVE NEAREST ACCESSIBLE CEILING. IN AREAS WITH NO CEILING, PROVIDE 1" EMPTY CONDUIT TO 12" BELOW DECKING. INSTALL NYLON DRAG LINES IN ALL EMPTY CONDUITS.
	CEILING MOUNTED TELECOMMUNICATION OUTLET
	SYMBOLS DEPICTED WITH LIGHT LINES SHALL INDICATE EXISTING DEVICE OR EQUIPMENT TO REMAIN, U.O.N.
	HEAT DETECTOR
	EXISTING SMOKE DETECTOR
	COMBINATION SMOKE DETECTOR AND CARBON MONOXIDE DETECTOR
	EXISTING CEILING MOUNTED DOWN LIGHT FIXTURE
	EXISTING WALL MOUNTED LIGHTING FIXTURE "P" INDICATES PULL CORD CONTROL
	3 WAY WALL TOGGLE SWITCH "A" - DENOTES LIGHTING CONTROL
	EXISTING WALL TOGGLE SWITCH "A" - DENOTES LIGHTING CONTROL
	UNDER COUNTER LIGHTING
	TWO HEAD EMERGENCY BATTERY PACK LIGHTS
	EXISTING WALL MOUNT OCCUPANCY SENSOR SWITCH.
	MOTOR
	JUNCTION BOX
	THERMOSTAT
	NEW RECESSED MOUNTED ELECTRICAL PANELBOARD
	HOMERUN
	THERMAL OVERLOAD SWITCH

ELECTRICAL ABBREVIATIONS	
A	AMPERE
AF	AMPERE FRAME
AFF	ABOVE FINISHED FLOOR
AT	AMPERE TRIP
BKR	BREAKER
C	CONDUIT
CB	CIRCUIT BREAKER
COMM	COMMUNICATION
CKT	CIRCUIT
DIA	DIAMETER
DN	DOWN
E.EX	EXISTING
ELEC	ELECTRICAL
EMT	ELECTRICAL METAL TUBING
ETR	EXISTING TO REMAIN
FT	FEET OR FOOT
G.GND	GROUND
GFI	GROUND FAULT INTERRUPTER
KAIC	KILO-AMPS INTERRUPTING CAPACITY
KVA	KILOVOLT AMPERE
KW	KILOWATT
LTG	LIGHTING
PH.Ø	PHASE
PNL	PANEL
PWR	POWER
REFRIG	REFRIGERATOR
TYP	TYPICAL
UON	UNLESS OTHERWISE NOTED
V	VOLTAGE
W	WIRE

## DEMOLITION NOTES

- PROVIDE ALL LABOR, MATERIAL, EQUIPMENT, STORAGE FACILITIES, SERVICES AND SUPERVISION NECESSARY FOR THE COMPLETE AND SATISFACTORY DEMOLITION WORK AS INDICATED ON DRAWINGS AND SPECIFIED HEREIN.
- THE PROTECTION OF ANY AND ALL EXISTING WORK TO REMAIN SHALL INCLUDE BUT IS NOT LIMITED TO THE PROTECTION OF ALL MATERIALS, EQUIPMENT AND WORK LIABLE TO BE DAMAGED THROUGH OPERATIONS UNDER THIS CONTRACT. CONTRACTOR WILL BE HELD RESPONSIBLE FOR ALL DAMAGES OCCURRING FROM WORK.
- WORK SHALL BE EXECUTED IN AN ORDERLY AND CAREFUL MANNER WITH DUE CONSIDERATION FOR PUBLIC SAFETY AND IN CONFORMANCE WITH OSHA STANDARD.
- PREVENT DUST, ODORS, DIRT AND DEBRIS FROM MIGRATING TO OTHER AREAS. THIS INCLUDES HVAC UNITS.
- REMOVAL OF ANY MATERIAL AND EQUIPMENT SHALL INCLUDE ALL ASSOCIATED ITEMS SUCH AS FASTENERS, SUPPORTS, CONDUIT, FLASHING, ADHESIVE, ETC.
- DEBRIS IS TO BE REMOVED AS IT ACCUMULATES. DO NOT STORE OR PERMIT DEBRIS TO ACCUMULATE ON SITE. IF THE CONTRACTOR FAILS TO REMOVE DEBRIS PROMPTLY OR PROPERLY, THE OWNER HAS THE RIGHT TO REMOVE AT THE CONTRACTOR'S EXPENSE.
- ANY AND ALL EXISTING EQUIPMENT OR MATERIALS TO BE RE-USED AS DETERMINED BY ENGINEER/ARCHITECT, OR NOT INDICATED ON THE DRAWINGS TO BE RETAINED BY THE OWNER SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES. REMOVED ITEMS SERVICEABLE BY THE OWNER SHALL BE TURNED OVER FOR STORAGE AND LOCATED AS REQUIRED.
- INCLUDE ALL COSTS FOR REMOVALS. THESE COSTS SHALL INCLUDE WORK DESCRIBED HEREIN AND INDICATED ON THE DRAWINGS WITH ALLOWANCES FOR NORMAL UNFORESEEN DIFFICULTIES WHEN CONCEALED WORK HAS BEEN OPENED. NO CLAIMS FOR ADDITIONAL WORK ASSOCIATED WITH DEMOLITION WILL BE ACCEPTED, EXCEPT IN SPECIFIC CASES CONSIDERED JUSTIFIABLE BY THE ARCHITECT/ENGINEER.
- REMOVE EXISTING ELECTRICAL WORK WHICH IS AFFECTED BY THE DEMOLITION PLAN. ALL WORK WHICH IS NO LONGER REQUIRED TO FUNCTION SHALL BE DE-ENERGIZED AND DISCONNECTED AT THE SOURCE OF POWER SUPPLY.
- TAKE POSSESSION AND REMOVE FROM THE PREMISES ALL ABANDONED MATERIALS AND EQUIPMENT UNLESS OTHERWISE REQUESTED BY THE OWNER, IN WHICH CASE REMOVE WITHOUT DAMAGE ALL SUCH EQUIPMENT AND DELIVER TO OWNER WITHIN BUILDING AT LOCATION DESIGNATED BY CONSTRUCTION MANAGER. COORDINATE LOCATION WITH CONSTRUCTION MANAGER.
- PRIOR TO SUBMISSION OF BID VISIT SITE AND EXAMINE EXISTING CONDITIONS, QUANTITIES AND DIFFICULTIES THAT WILL BE INCURRED DURING THE PERFORMANCE OF WORK. CLAIMS FOR ADDITIONAL COMPENSATION THAT ARE DUE TO THE FAILURE TO EXAMINE THE PREMISES WILL NOT BE CONSIDERED.
- TRACE ALL CONDUITS AND WIRING BEFORE REMOVAL TO CONFIRM AREAS TO REMAIN ARE NOT INTERRUPTED.

## GENERAL NOTES

- PERFORM ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE, PERTINENT NFPA CODES AND RULES AND REGULATIONS OF ALL LOCAL, NY STATE AND FEDERAL AUTHORITIES HAVING JURISDICTION. PROVIDE OWNER WITH CERTIFICATE OF INSPECTION.
- DO ALL NECESSARY CUTTING AND ROUGH PATCHING. THE FOLLOWING WORK WILL BE DONE BY OTHERS: FINISH PAINTING AND PATCHING, MASONRY AND CONCRETE FOUNDATIONS FOR EQUIPMENT.
- ELECTRICAL DRAWINGS INDICATE THE SIZE AND GENERAL LOCATION OF WORK. SCALED DIMENSIONS SHALL NOT BE USED.
- PREPARE AND FURNISH TO THE ENGINEER "AS-BUILT" PLANS FOR ALL WORK INSTALLED.
- PROVIDE TEMPORARY LIGHT AND POWER AT CONSTRUCTION AREAS, IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND ACCEPTED STANDARDS ESTABLISHED BY O.S.H.A.
- ALL PARTS OF THE WORK AND ASSOCIATED EQUIPMENT SHALL BE TESTED AND ADJUSTED TO WORK PROPERLY AND BE LEFT IN PERFECT OPERATING CONDITION. THIS SHALL INCLUDE MEGGER TESTS BETWEEN PHASES AND BETWEEN EACH PHASE AND GROUND OF ALL FEEDERS, AND PANELBOARDS. CORRECT DEFECTS DISCLOSED BY THESE TESTS.
- PHASING OF THE WORK SHALL BE IN ACCORDANCE WITH DRAWINGS AND AS DIRECTED BY THE ENGINEER.
- SPLICES IN CONDUCTORS SHALL BE ELIMINATED WHEREVER POSSIBLE, AND WHERE NECESSARY (ONLY AS APPROVED BY ENGINEER) ARE ONLY TO BE MADE IN READILY ACCESSIBLE JUNCTION BOXES.
- PROPERLY CLEAN-UP AND STORE ALL MATERIALS, TOOLS AND EQUIPMENT AFTER EACH WORK PERIOD.
- PROVIDE APPROVED FIRE STOPPING AT ALL PENETRATIONS THROUGH FIRE RATED FLOORS, WALLS AND PARTITIONS TO MAINTAIN FIRE RATING OF FLOOR, WALLS OR PARTITIONS.
- MAINTAIN POWER AND LIGHTING THROUGHOUT. ALL REQUIRED INTERRUPTIONS SHALL BE AS DIRECTED BY ENGINEER.
  - MAINTAIN ADEQUATE ACCESS TO ALL JUNCTION, TERMINATION AND PULL BOXES.
  - MAINTAIN ADEQUATE ACCESS TO ALL EQUIPMENT FOR OPERATION, MAINTENANCE AND REPAIRS.
- SUPPORT WALL MOUNTED ELECTRICAL EQUIPMENT (I.E. PANELBOARDS, TRANSFORMERS, ETC.) BY UNISTRUT CHANNELS SECURED TO FLOOR AND CEILING. UNLESS WALL IS OF MASONRY TYPE WHICH IS OF SUITABLE CONSTRUCTION TO SUPPORT WEIGHT OF EQUIPMENT, OR EXCEPT AS OTHERWISE NOTED OR SPECIFIED.
- INSTALL CONDUIT CONCEALED IN WALLS, HUNG CEILINGS OR IN FLOOR SLABS. SPLICE BOXES IN NON-ACCESSIBLE LOCATIONS ARE NOT PERMITTED. IN UNFINISHED AREAS (E.G. MECHANICAL EQUIPMENT ROOMS, ELECTRICAL EQUIPMENT ROOMS, ETC.) CONDUITS RUN EXPOSED.
- SURVEY EXISTING ELECTRICAL EQUIPMENT, DEVICES AND RACEWAYS WHETHER OR NOT SHOWN ON THE DRAWINGS, WHICH MAY INTERFERE WITH THE WORK, TO DETERMINE THE SOURCE OF POWER AND THE LOAD IT SERVES. DISCONNECT AND EITHER REMOVE COMPLETELY OR RELOCATE AND RECONNECT THESE EQUIPMENT, DEVICES AND RACEWAYS AS DIRECTED BY THE ENGINEER.
- EXISTING EQUIPMENT INDICATED TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER, UNLESS OTHERWISE DIRECTED.
- MAINTAIN CIRCUIT CONTINUITY FOR ALL EXISTING EQUIPMENT TO REMAIN IN SERVICE.
- PROVIDE EXPANSION FITTINGS IN ALL CONDUIT AND ELECTRICAL RACEWAY RUNS WHERE THEY CROSS BUILDING EXPANSION LINES.

PANEL: 10.1				MOUNTING: RECESSED MOUNTED				LOCATION: FIRST FLOOR			
SERVICE: 120/208V 1Ø 3W W/GROUND BUS						MAINS: MLO					
BUS RATING: 225A						SHORT CIRCUIT RATING: 22KA RMS SYM					
CKT. BKR.		BRANCH CIRCUIT				BRANCH CIRCUIT				CKT. BKR.	
AMPS TRIP	POLE	DESIGNATION	VOLT AMPS	NO	NO	VOLT AMPS	DESIGNATION	POLE	AMPS TRIP		
50	2	RANGE	9700	1 3	2 4	6240	DRYER	2	40		
20	1	KITCHEN SINK GFI RECEPTACLE	180	5	6	1200	WASHER	1	20		
20	1	REFRIGERATOR	500	7	8	360	ENTRY RECEPTACLES	1	20		
20	1	LIVING ROOM AC RECEPTACLE	1000	9	10	540	LIVING ROOM RECEPTACLES	1	20		
20	1	KITCHEN COFFEE RECEPTACLE	1000	11	12	1050	KITCHEN MICROWAVE RECEPTACLE	1	15		
20	1	RESTROOM GFI RECEPTACLE	180	13	14	32	RESTROOM LIGHTING AND EF-1	1	20		
20	1	BEDROOM 2 RECEPTACLES	540	15	16	-	UNDER COUNTER LIGHTING	1	20		
20	1	BED ROOM 2 AC RECEPTACLE	100	17	18	1000	BEDROOM 1 AC RECEPTACLE	1	20		
20	1	BEDROOM 3 RECEPTACLES	540	19	20	900	BEDROOM RECEPTACLES	1	20		
20	1	BEDROOM 3 AC RECEPTACLE	1000	21	22	1000	BEDROOM 1 AC RECEPTACLE	1	20		
20	1	CONTROLS	250	23	24	-	BEDROOM 1 LIGHTING	1	20		
20	1	BEDROOM 2 LIGHTING	-	25	26	-	LIVING ROOM LIGHTNING	1	20		
20	1	BEDROOM 3 LIGHTING	-	27	28	-	SPARE	1	20		
20	1	SPARE		29	30		SPARE	1	20		
20	1	SPARE		31	32		SPARE	1	20		
20	1	SPARE		33	34		SPARE	1	20		
-	1	SPACE		35	36		SPACE				
-	1	SPACE		37	38		SPACE				
-	1	SPACE		39	40		SPACE				
-	1	SPACE		41	42		SPACE				
SUBTOTAL:			14990	12322							
TOTAL:			27312								

\* DENOTES ARC FAULT CIRCUIT BREAKER INTERRUPTER (AFCI) CIRCUIT BREAKER.

EXISTING PANEL: 10.3				MOUNTING: RECESSED MOUNTED				LOCATION: SECOND FLOOR			
SERVICE: 120/208V 1Ø 3W W/GROUND BUS				MAINS: MLO							
BUS RATING: 225A				SHORT CIRCUIT RATING: 22KA RMS SYM							
CKT. BKR.		BRANCH CIRCUIT			BRANCH CIRCUIT			CKT. BKR.			
AMPS TRIP	POLE	DESIGNATION	VOLT AMPS	NO	NO	VOLT AMPS	DESIGNATION	POLE	AMP. TRIP		
20	1	BR COMPUTER		1	2		LR / KIT LIGHT	1	20		
20	1	BR COMPUTER		3	4		LR / KIT RECEPTACLE	1	20		
20	1	BR COMPUTER		5	6		REFRIDGE	1	20		
20	1	LR COMPUTER		7	8		KIT. MICROWAVE	1	20		
20	1	BR COMPUTER		9	10		BATH LIGHT	1	20		
20	1	BR COMPUTER		11	12		BATH GFI	1	20		
20	1	BR COMPUTER		13	14		KITCHEN GFI	1	20		
20	1	BR LIGHT		15	16		NOT USED	1	20		
20	1	KIT. EHAUST		17	18		DRYER	2	40		
20	1	KITCHEN		19	20						
20	1	NOT USED		21	22		RANGE	2	50		
20	1	HVAC CONTROLS		23	24						
20	1	RESTROOM EF		25	26		EM LIGHTS FOYER	1	20		
20	1	KIT / ISLAND GFI		27	28		WASHER	1	20		
20	1	KIT / ISLAND GFI		29	30		KIT GFI	1	20		
20	1	RESTROOM GFI		31	32		NOT USED	1	20		
20	1	NOT USED		33	34		NOT USED	1	20		
20	1	NOT USED		35	36		NOT USED	1	20		
20	1	NOT USED		37	38		NOT USED	1	20		
20	1	NOT USED		39	40		NOT USED	1	20		
20	1	NOT USED		41	42		NOT USED	1	20		
SUBTOTAL:				####	####						
TOTAL:				####							

\* DENOTES ARC FAULT CIRCUIT BREAKER INTERRUPTER (AFCI) CIRCUIT BREAKER.  
\*\* CIRCUIT BREAKER SHALL MATCH EXISTING.

LIZARDOS

LONG ISLAND | NEW YORK CITY | CHARLOTTE | DANBURY

200 Old Country Road | Suite 670  
Mineola | NY 11501  
516 484 1020 Lizardos.com

Lizardos Engineering Associates D.P.C.

1	ISSUED FOR BID	03/17/2023
NO.	REVISION	DATE

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SEAL:

CLIENT:

SUNY PURCHASE COLLEGE

PROJECT TITLE:

SUNY PURCHASE APARTMENT  
REPAIR ALUMNI VILLAGE  
INTERIOR RENOVATIONS OF THE  
COMMONS APARTMENTS  
10.1 (ADA COMPLIANT) & 10.3

DRAWING TITLE:

ELECTRICAL LEGEND,  
ABBREVIATIONS AND NOTES

DRAWN BY: ET SCALE: AS NOTED

DESIGNED BY: GL DATE: 11-29-22

CHECKED BY: RA PROJECT NO: 10652

PLOT DATE/TIME: 3/17/2023 3:53:26 PM

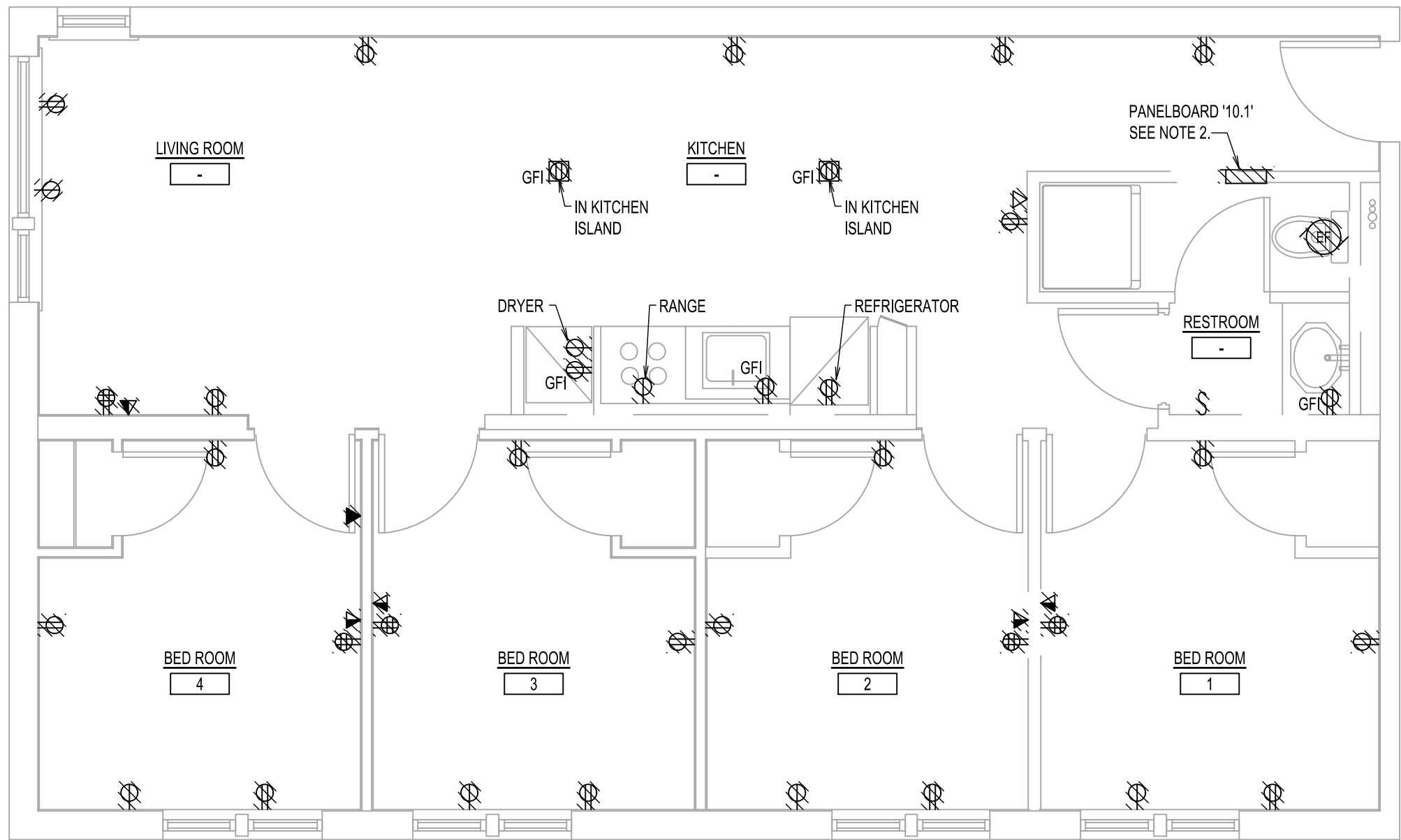
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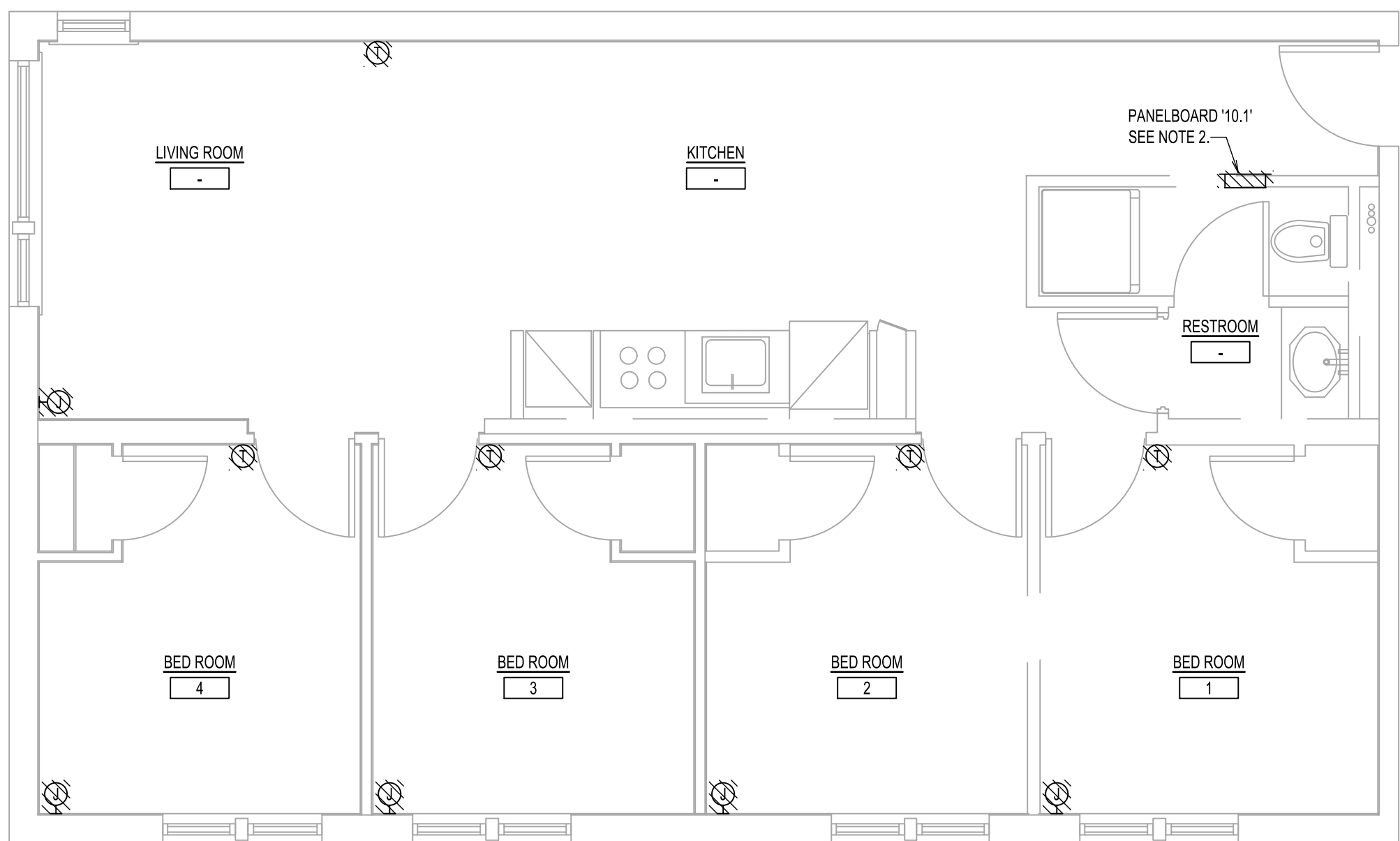
SHEET: 1 OF 7

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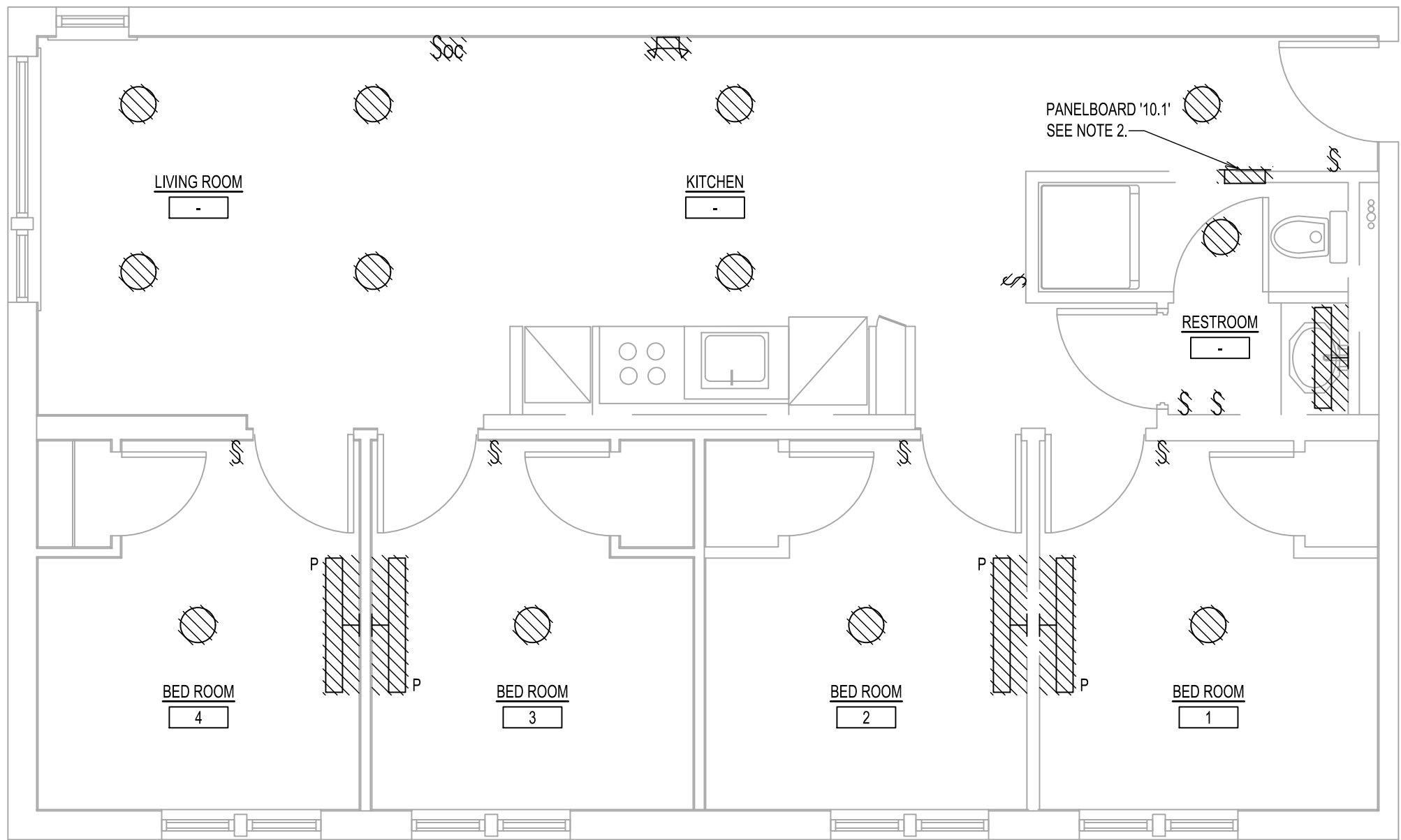
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FIRST FLOOR POWER DEMOLITION PLAN  
SCALE: 1/4"=1'-0"



FIRST FLOOR MECHANICAL POWER DEMOLITION PLAN  
SCALE: 1/4"=1'-0"



FIRST FLOOR LIGHTING DEMOLITION PLAN  
SCALE: 1/4"=1'-0"

#### NOTES

- REFER TO DRAWING E-001 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
- DISCONNECT POWER FEEDS AT PANEL, REUSE AND RECONNECT TO NEW PANEL AT NEW LOCATION. REFER TO DRAWING E-201 FOR NEW PANEL LOCATION. EXISTING PANEL SHALL BE TEMPORARILY SUPPORTED UNTIL NEW WALL IS CONSTRUCTED.

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Mineola | NY 11501  
516 484 1020    Lizardos.com

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PROJECT TITLE:

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REPAIR ALUMNI VILLAGE  
INTERIOR RENOVATIONS OF THE  
COMMONS APARTMENTS  
10.1 (ADA COMPLIANT) & 10.3

DRAWING TITLE:

ELECTRICAL FIRST FLOOR  
POWER AND LIGHTING -  
DEMOLITION PLANS

DRAWN BY:	ET	SCALE:	AS NOTED
DESIGNED BY:	GL	DATE:	11-29-22
CHECKED BY:	RA	PROJECT NO:	10652

PLOT DATE/TIME: 3/17/2023 3:53:38 PM

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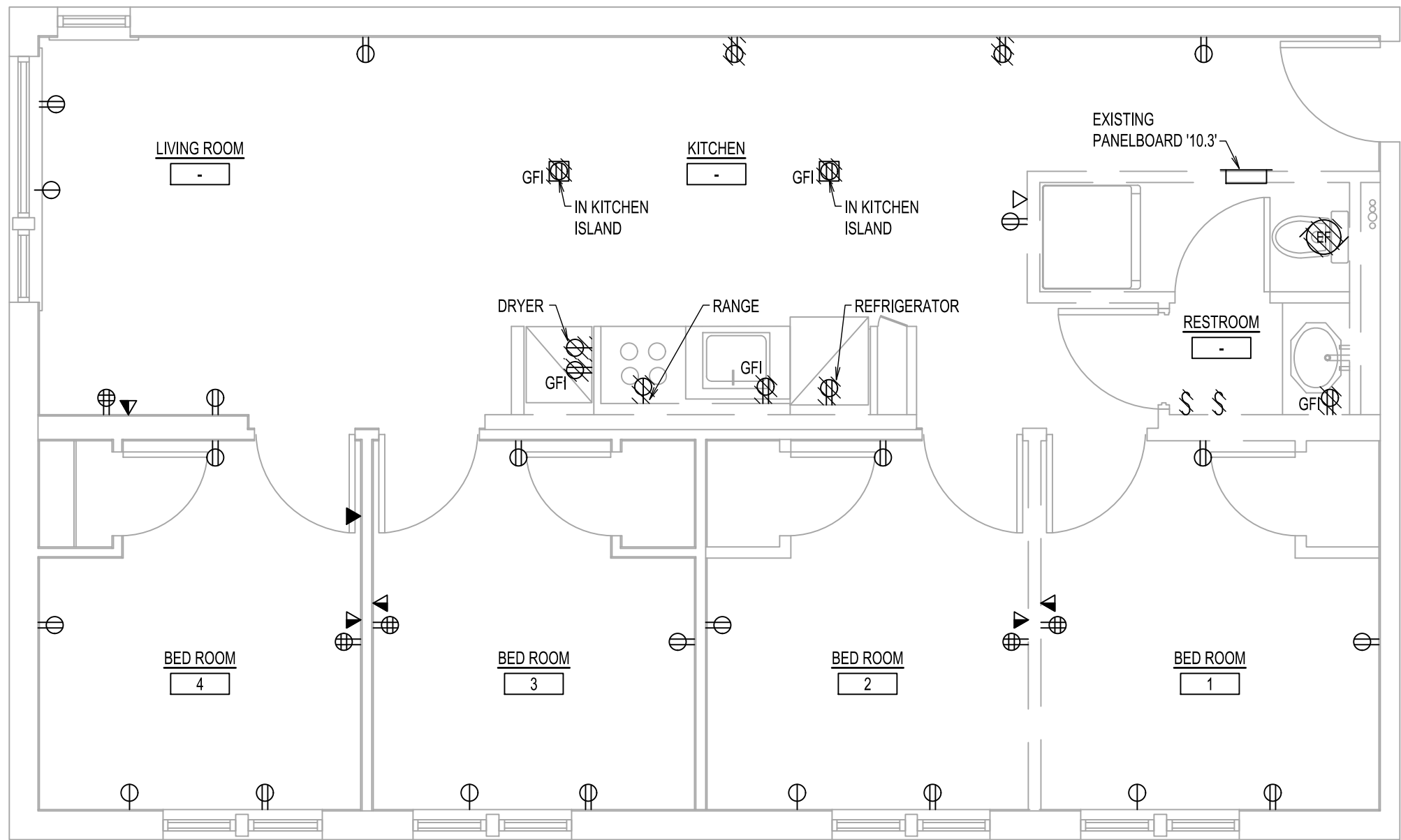
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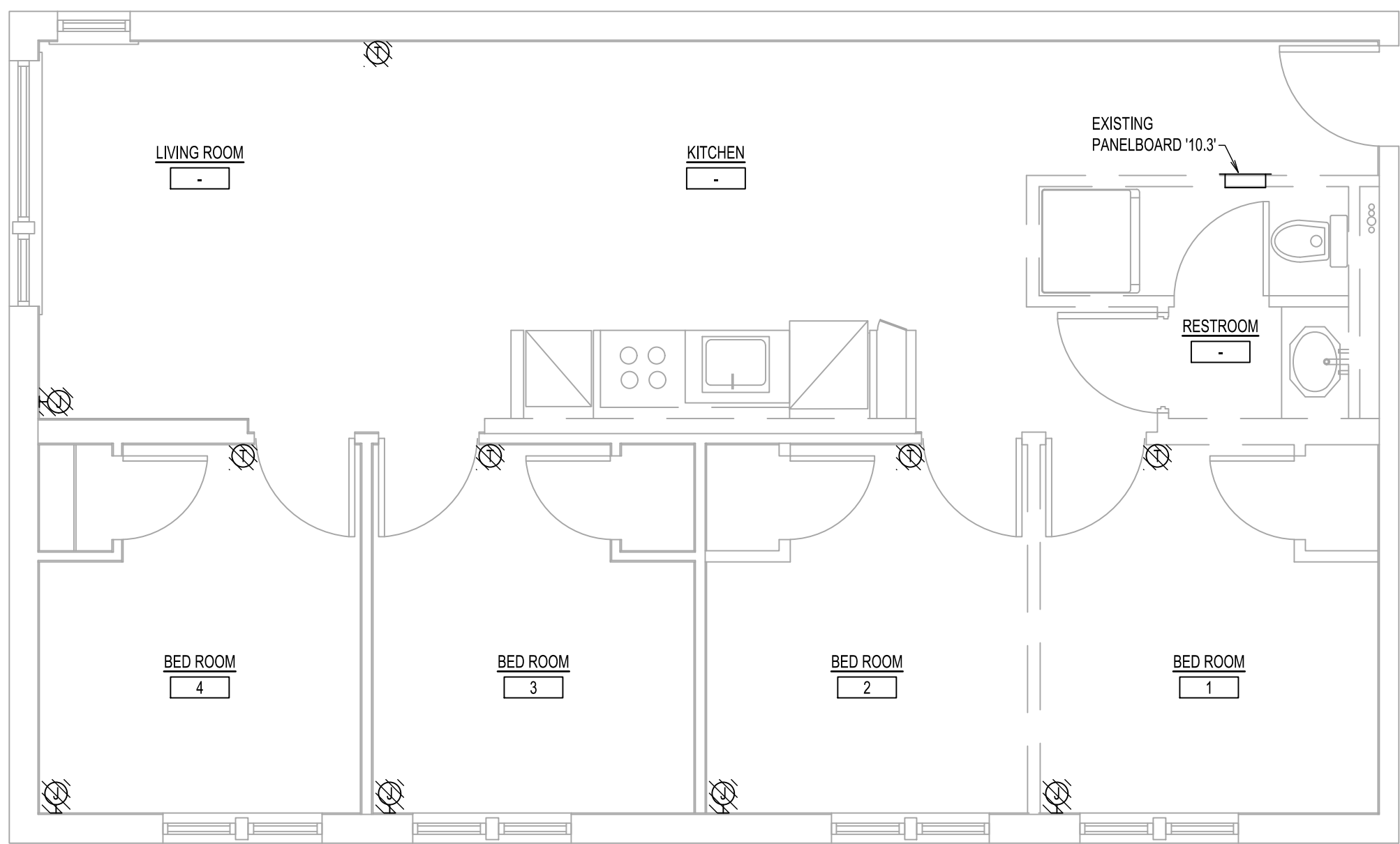


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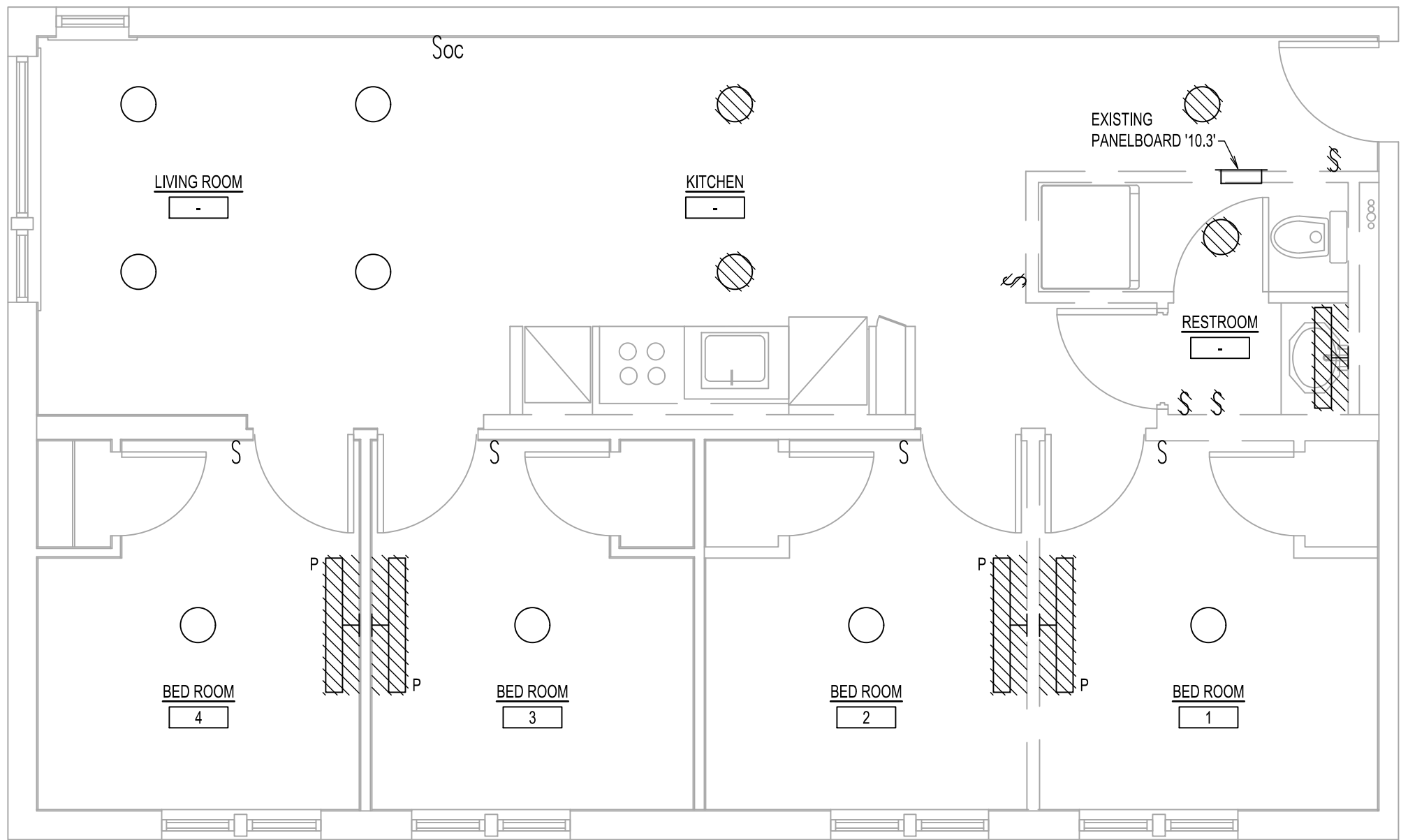
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SECOND FLOOR POWER DEMOLITION PLAN  
SCALE: 1/4"=1'-0"



SECOND FLOOR MECHANICAL POWER DEMOLITION PLAN  
SCALE: 1/4"=1'-0"



SECOND FLOOR LIGHTING DEMOLITION PLAN  
SCALE: 1/4"=1'-0"

#### NOTES

1. REFER TO DRAWING E-001 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.

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SUNY PURCHASE COLLEGE

PROJECT TITLE:

SUNY PURCHASE APARTMENT  
REPAIR ALUMNI VILLAGE  
INTERIOR RENOVATIONS OF THE  
COMMONS APARTMENTS  
10.1 (ADA COMPLIANT) & 10.3

DRAWING TITLE:

ELECTRICAL SECOND FLOOR POWER,  
LIGHTING - DEMOLITION PLANS

DRAWN BY:	ET	SCALE:	AS NOTED
DESIGNED BY:	GL	DATE:	11-29-22
CHECKED BY:	RA	PROJECT NO:	10652

PLOT DATE/TIME: 3/17/2023 3:53:52 PM

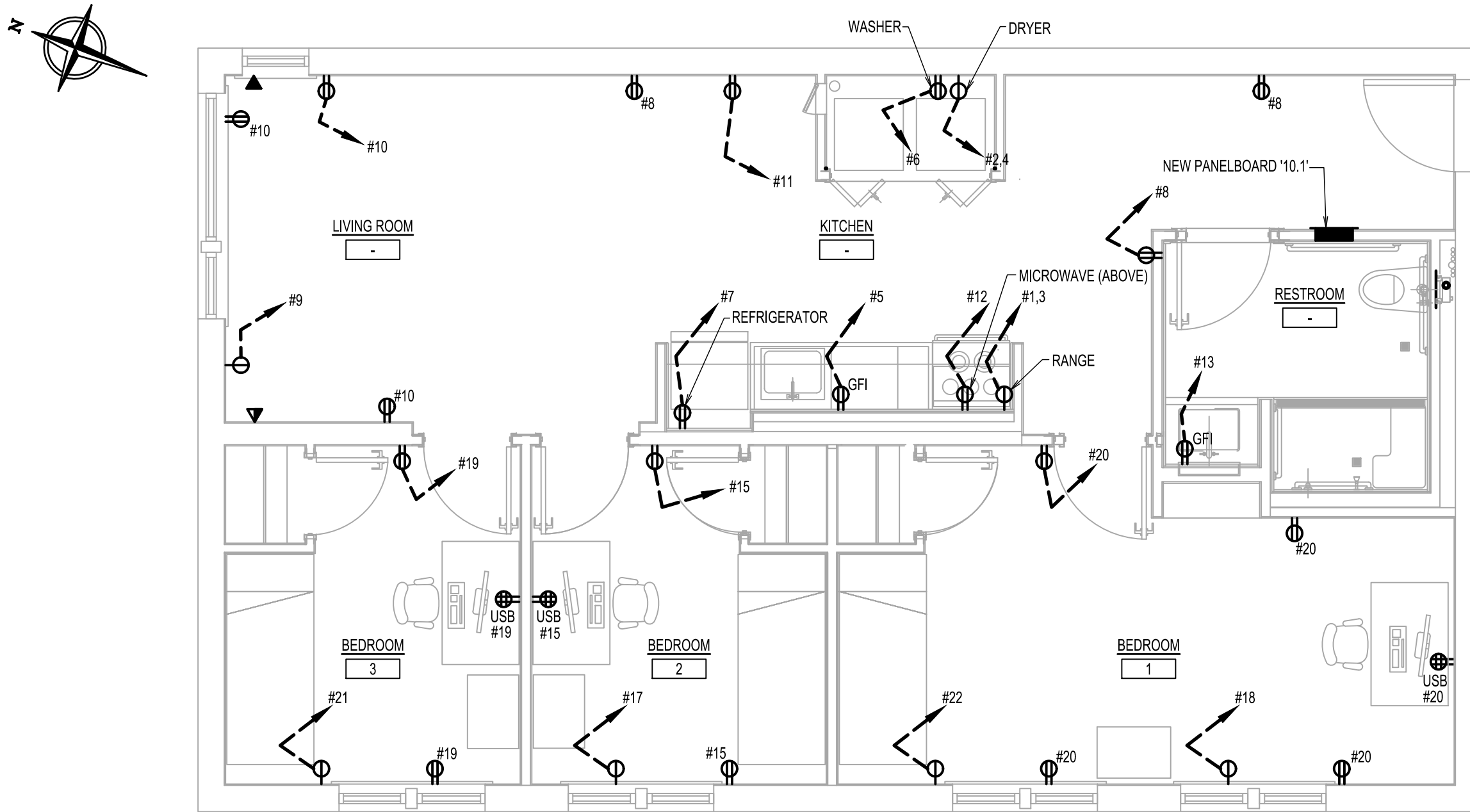
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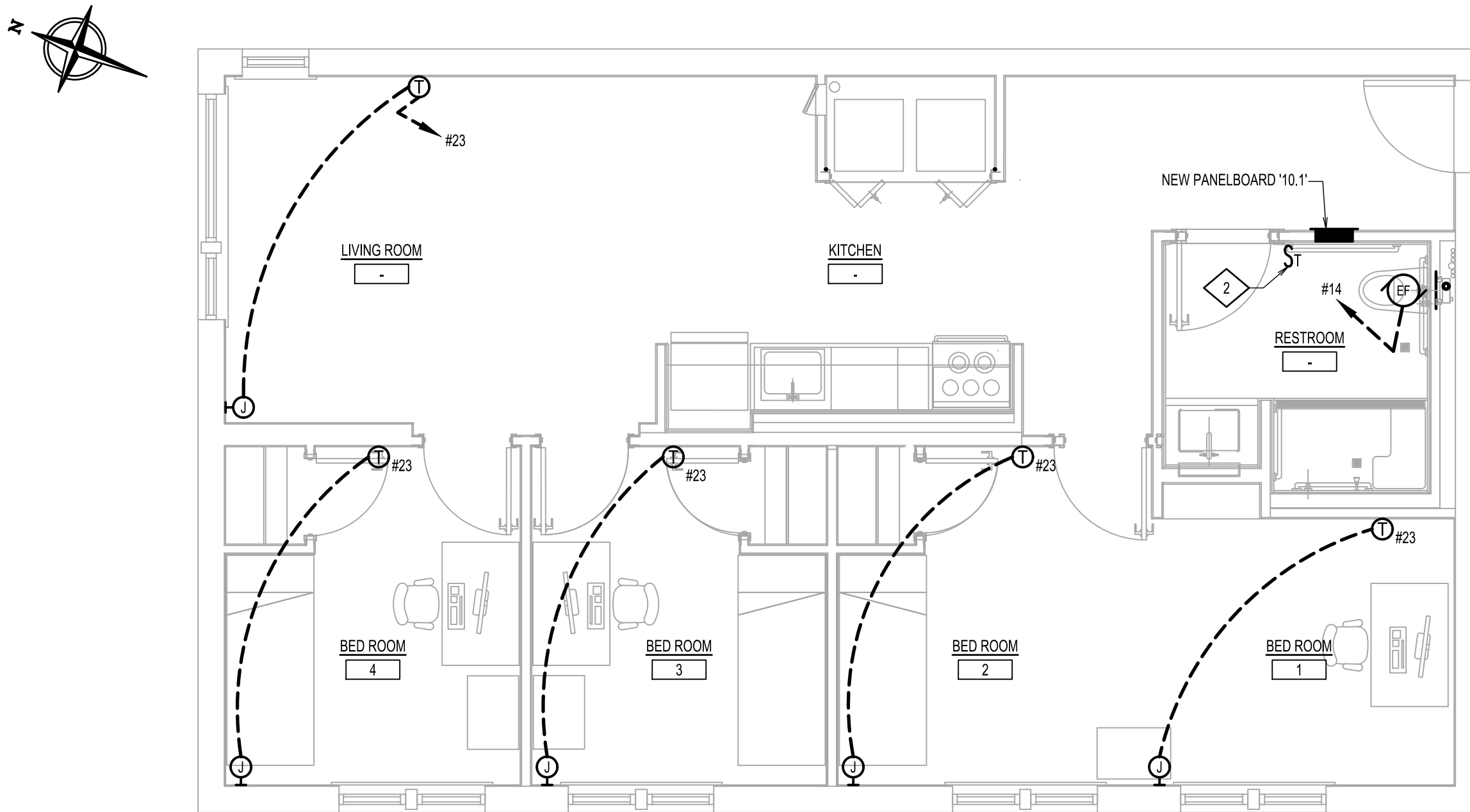
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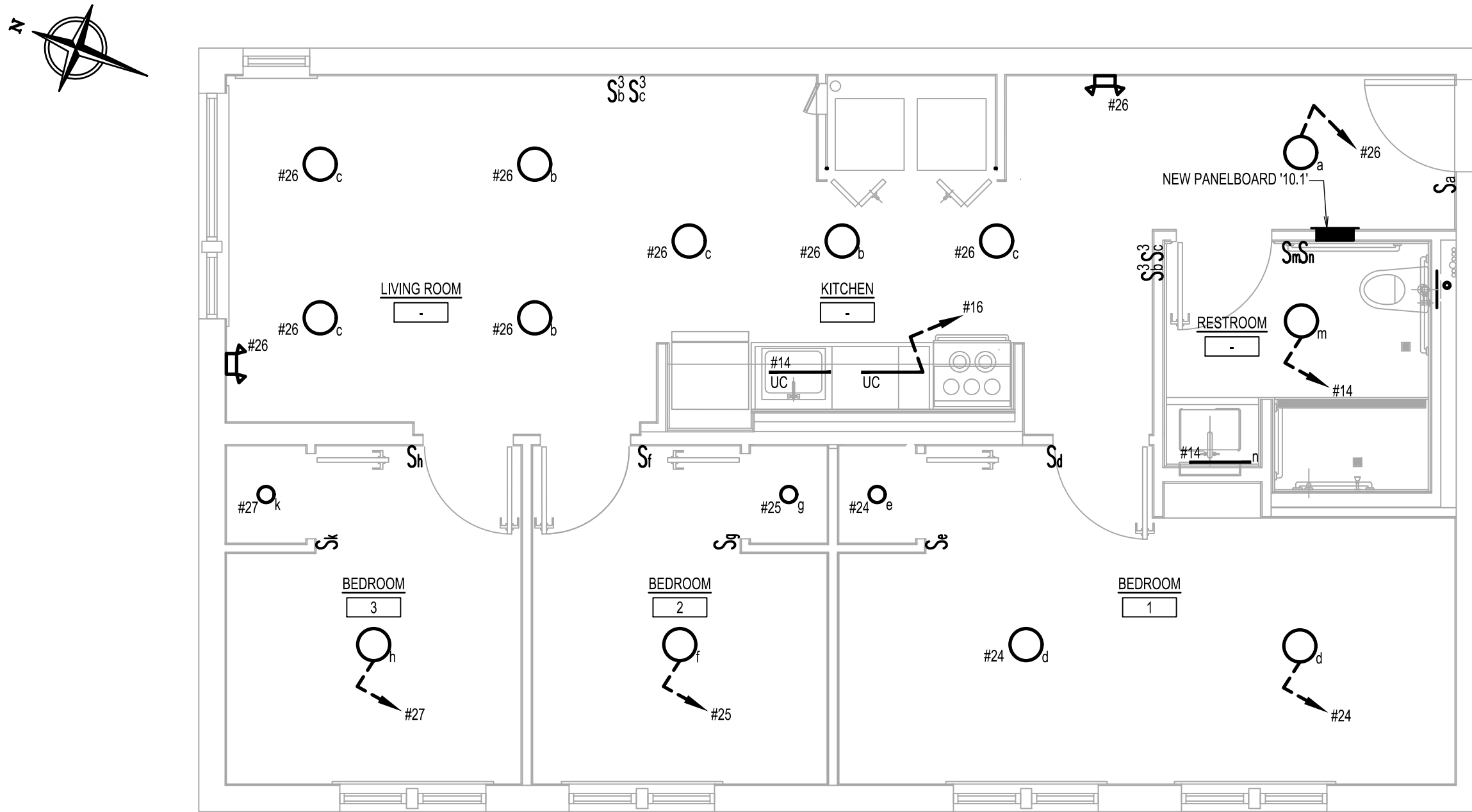
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FIRST FLOOR POWER NEW WORK PLAN  
SCALE: 1/4"=1'-0"



FIRST FLOOR MECHANICAL POWER NEW WORK PLAN  
SCALE: 1/4"=1'-0"



FIRST FLOOR LIGHTING NEW WORK PLAN  
SCALE: 1/4"=1'-0"

#### NOTES

- REFER TO DRAWING E-001 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
- ◇ EXHAUST FAN SWITCH SHALL BE ON SAME GANG BOX AS LIGHTING SWITCHES.

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CLIENT:

SUNY PURCHASE COLLEGE

PROJECT TITLE:

SUNY PURCHASE APARTMENT  
REPAIR ALUMNI VILLAGE  
INTERIOR RENOVATIONS OF THE  
COMMONS APARTMENTS  
10.1 (ADA COMPLIANT) & 10.3

DRAWING TITLE:

ELECTICAL FIRST FLOOR POWER,  
LIGHTING - NEW WORK PLANS

DRAWN BY:	ET	SCALE:	AS NOTED
DESIGNED BY:	GL	DATE:	11-29-22
CHECKED BY:	RA	PROJECT NO:	10652

PLOT DATE/TIME: 3/17/2023 3:54:07 PM

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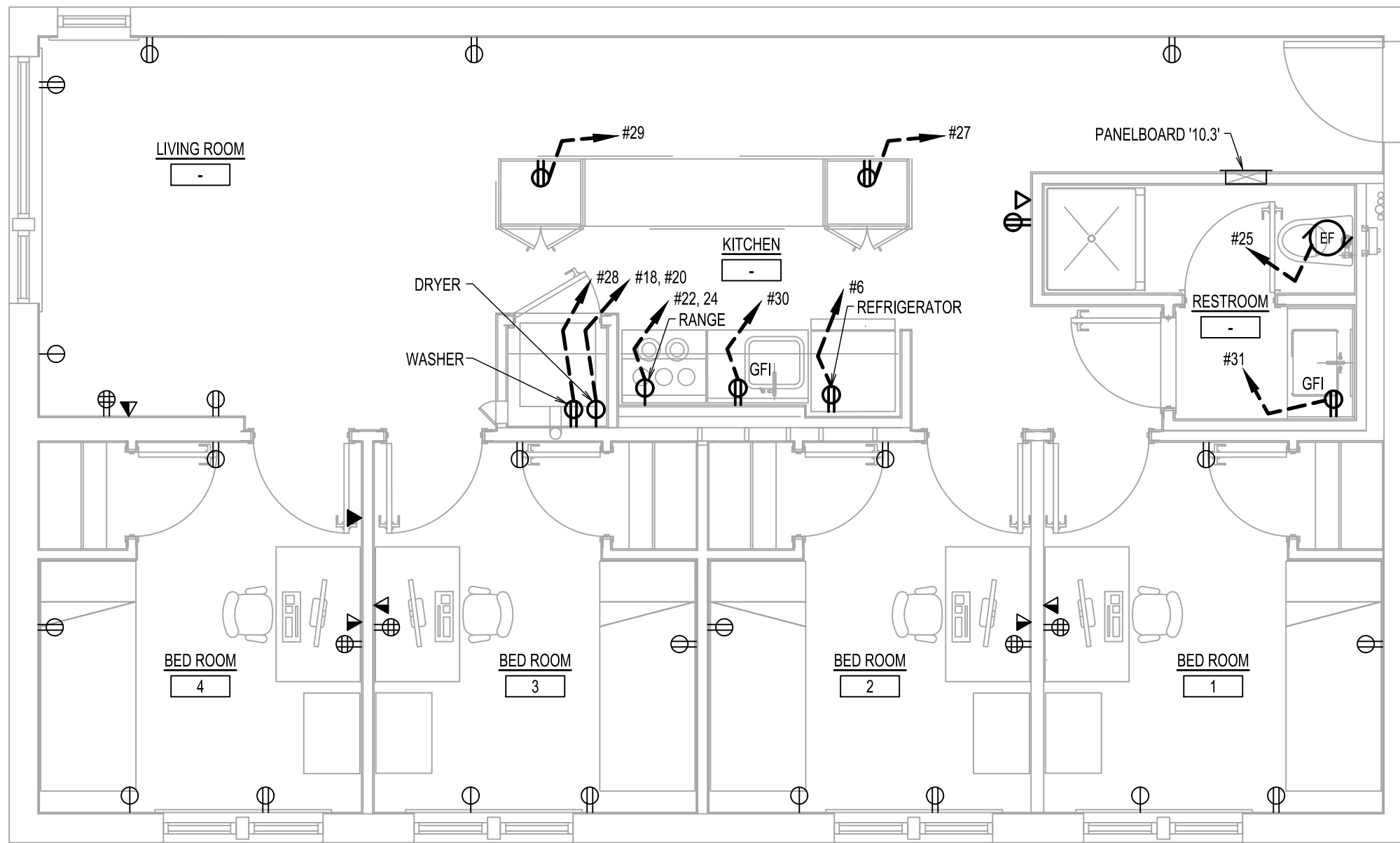
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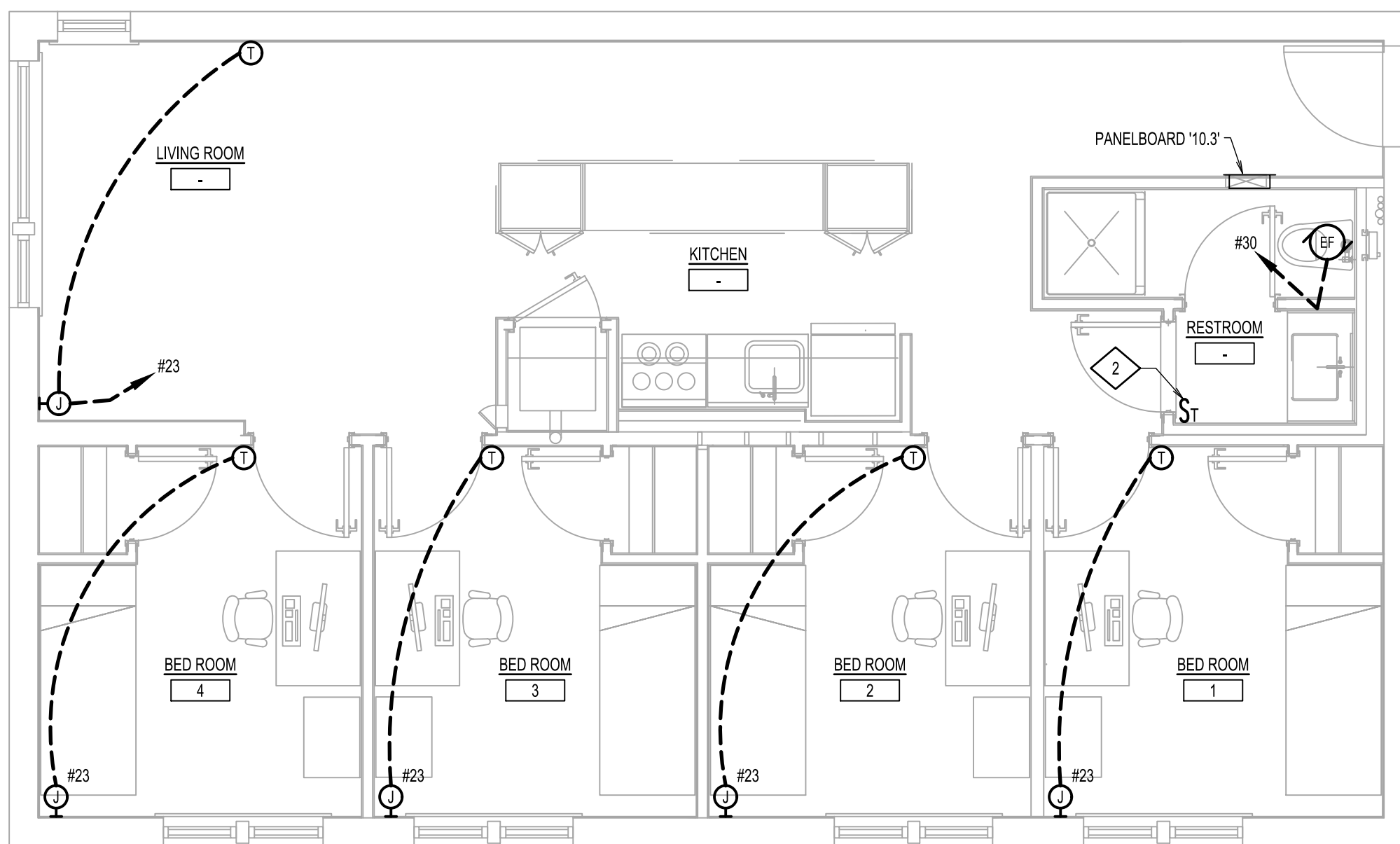


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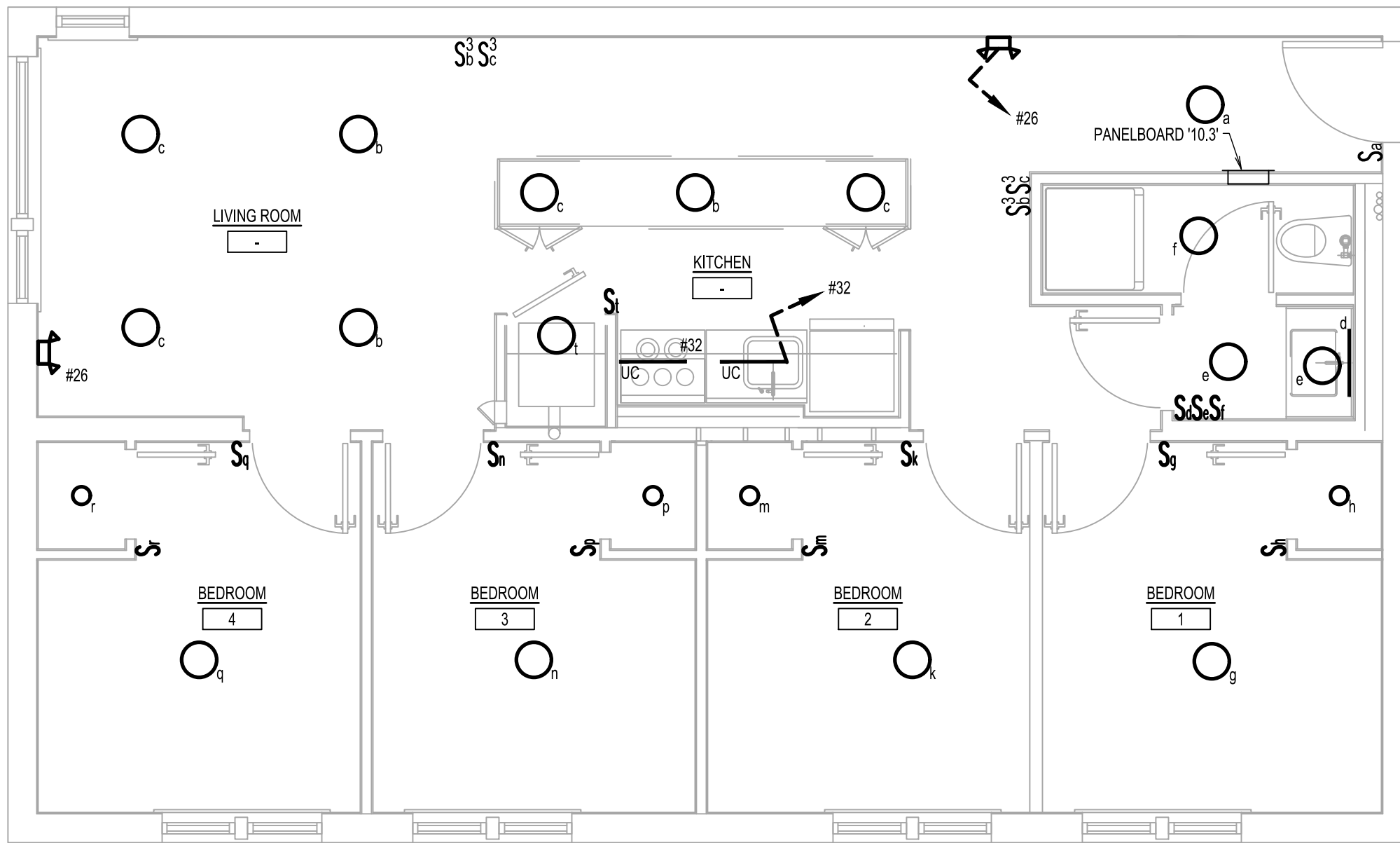
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SECOND FLOOR POWER DEMOLITION PLAN  
SCALE: 1/4"=1'-0"



SECOND FLOOR MECHANICAL POWER DEMOLITION PLAN  
SCALE: 1/4"=1'-0"



SECOND FLOOR LIGHTING DEMOLITION PLAN  
SCALE: 1/4"=1'-0"

#### NOTES

1. REFER TO DRAWING E-001 FOR ELECTRICAL LEGEND, ABBREVIATIONS AND NOTES.
2. EXHAUST FAN SWITCH SHALL BE ON SAME GANG BOX AS LIGHTING SWITCHES.

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CLIENT:		
SUNY PURCHASE COLLEGE		
PROJECT TITLE:		
SUNY PURCHASE APARTMENT REPAIR ALUMNI VILLAGE INTERIOR RENOVATIONS OF THE COMMONS APARTMENTS 10.1 (ADA COMPLIANT) & 10.3		
DRAWING TITLE:		
ELECTICAL SECOND FLOOR POWER, LIGHTING - NEW WORK PLANS		
DRAWN BY:	ET	SCALE: AS NOTED
DESIGNED BY:	GL	DATE: 11-29-22
CHECKED BY:	ABD	PROJECT NO: 10652
PLOT DATE/TIME:		3/17/2023 3:54:20 PM
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ELECTRICAL SPECIFICATIONS

26 00 01 GENERAL STANDARDS

A. GENERAL REQUIREMENTS

1. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, VISIT THE SITE TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER IN WRITING OF ANY DISCREPANCIES NOTED BETWEEN THE EXISTING CONDITIONS AND DRAWINGS AND SPECIFICATIONS.
2. VERIFY ALL MEASUREMENTS AT THE SITE, AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.
3. THE WORK SHALL BE CAREFULLY LAID OUT IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES, WHERE SUCH WORK IS NECESSARY, HOWEVER, THE WORK SHALL BE PATCHED AND/OR REPAIRED IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER.
4. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED FOR THE WORK.
5. CUTTING OF BEAMS, FLOORS OR WALLS FOR PIPING OR CONDUIT SHALL BE DONE AS APPROVED BY THE OWNER IN A CAREFUL MANNER, WITH CORE DRILLS, SO AS NOT TO SERIOUSLY IMPAIR THE APPEARANCE OR STRENGTH OF THE STRUCTURE.
6. PROVIDE ALL DRILLING AND PATCHING FOR EXPANSION BOLTS, HANGERS AND OTHER SUPPORTS FOR PROPER AND SAFE INSTALLATION OF WORK.
7. WORK SHALL BE FIRST-CLASS IN EVERY RESPECT AND SHALL BE NEATLY PERFORMED IN A PRACTICAL AND WORKMANLIKE MANNER BY SUFFICIENT ELECTRICIANS SKILLED IN THE WORK THEY ARE TO DO USING THE BEST PRACTICES OF THEIR TRADE, AND UNDER CONTINUOUS, COMPETENT SUPERVISION, THE WORK SHALL BE ORGANIZED IN ADVANCE OF OPERATION AND CARRIED OUT EFFICIENTLY WITHOUT DELAYS WHICH WOULD IMPEDE PROGRESS OR THE QUALITY OF THE WORK OF OTHER TRADES AND THE WORK AS A WHOLE.
8. MATERIALS AND EQUIPMENT PROVIDED SHALL BE NEW AND APPROVED FOR THE APPLICATION AND SHALL CONFORM TO THE SPECIFIED CODES AND STANDARDS. DEFECTIVE OR DAMAGED MATERIALS SHALL BE REPLACED OR REPAIRED IN A MANNER APPROVED BY THE OWNER.
9. EQUIPMENT SHALL BEAR THE UL LABEL AND SHALL MEET OR EXCEED NEMA STANDARDS.
10. INCLUDE IN BID THE COST OF ALL REQUIRED PERMITS, FEES, INSPECTIONS, TESTS AND CERTIFICATES OF APPROVAL.

B. CODES, REGULATIONS AND STANDARDS

1. WORK SHALL COMPLY WITH THE REQUIREMENTS OF THE FOLLOWING CODES:
  - a. FEDERAL, STATE AND LOCAL CODES HAVING JURISDICTION.
  - b. NATIONAL FIRE PROTECTION ASSOCIATION.
  - c. NATIONAL ELECTRICAL CODE AND ALL AMENDMENTS/ADDENDUM AS ISSUED BY THE AUTHORITY HAVING JURISDICTION.
  - d. ENERGY CONSERVATION CODE AS ADOPTED BY AUTHORITY HAVING JURISDICTION AND ALL ASSOCIATED AMENDMENTS/ADDENDUMS.

C. SUBMITTALS

1. SHOP DRAWINGS
  - a. SHOP DRAWINGS SUBMITTALS SHALL CONSIST OF ONE REPRODUCIBLE AND THREE PRINTS, OR SIX PHOTOCOPIES.
  - b. SUBMIT SHOP DRAWINGS OF THE FOLLOWING:
    - 1) PANELBOARDS
    - 2) LIGHTING FIXTURES
    - 3) WIRING DEVICES
    - 4) IDENTIFICATION AND TAGGING
2. AS-BUILT DRAWINGS
  - a. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER IN AUTOCAD 2020 FORMAT OR LATEST VERSION, WHICHEVER IS MORE RECENT, "AS-BUILT" DRAWINGS ON CD-ROM MEDIA. DRAWINGS SHALL INCLUDE ALL FIELD CHANGES AND DIMENSIONS TO ACCURATELY LOCATE ALL OUTLETS, DEVICES, EQUIPMENT AND THE LIKE.
3. SERVICE MANUALS
  - a. UPON COMPLETION OF THE WORK, FULLY INSTRUCT THE OWNER AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
  - b. PROVIDE THREE COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

D. SPECIAL REQUIREMENTS

1. MAINTENANCE OF EXISTING FACILITIES AND CONDUCT OF THE WORK.
  - a. THE BUILDING WILL BE OCCUPIED AND IN OPERATION DURING THE PROGRESS OF THE WORK. WHEN NECESSARY TO TEMPORARILY HALT BUILDING EGRESS OR FLOW OF PERSONNEL TRAFFIC, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. IT IS REQUIRED THAT THE WORK INDICATED AND/OR SPECIFIED BE CARRIED OUT WITH A MINIMUM OF INTERFERENCE TO THE ESTABLISHED ROUTINE OF THE BUILDING.
  - b. NO WORK SHALL BE LEFT INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. AT NO TIME SHALL THE WORK INTERFERE WITH OR CUT OFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
  - c. PROVIDE, ERECT, MAINTAIN AND BE RESPONSIBLE FOR THE SAFE AND LEGAL USE OF ALL SCAFFOLDING OR ADDITIONAL BRACING AND SERVICES THAT MAY BE REQUIRED FOR THE DELIVERY OR ERECTION OF THE EQUIPMENT AND CONSTRUCTION MATERIALS PROVIDED OR INSTALLED. DETERMINE THE SPECIFIC ARRANGEMENTS FOR FURNISHING AND USE OF ALL SUCH SCAFFOLDING EQUIPMENT, AND REMOVE SUCH EQUIPMENT WHEN IT IS NO LONGER REQUIRED.
  - d. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON.

E. CLEANING

1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE DETAILED PROCEDURES SPECIFIED HEREIN, OR AS DIRECTED.

F. GUARANTEE

1. FURNISH, IN WRITING, A COMPLETE GUARANTEE AGAINST DEFECTIVE MATERIALS AND IMPROPER WORKMANSHIP, SATISFACTORY TO OWNER, FOR ALL PARTS, COMPONENTS AND OPERATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF ACCEPTANCE OF THE COMPLETE INSTALLATION BY THE OWNER.
2. GUARANTEE SHALL INCLUDE COMPLETE MAINTENANCE OF THE SYSTEM, INCLUDING REPLACEMENT PARTS, ALL LABOR AND MATERIALS TO MAINTAIN THE SYSTEM IN PROPER OPERATING CONDITION FOR THE GUARANTEE PERIOD.

26 00 02 SCOPE OF WORK

A. WORK INCLUDED

1. WORK UNDER THE ELECTRICAL CONTRACT SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
  - a. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS TO THE OWNER.
  - b. PROCURE NECESSARY PERMITS AND APPROVALS AND PAYING REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK.
  - c. PROTECT, TEST, BALANCE, CLEAN, ADJUST AND GUARANTEE ALL OF THE WORK TO SAFELY, PROPERLY AND CONTINUOUSLY OPERATE.
  - d. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
  - e. PROVIDE IDENTIFICATION LABELS, TAGS, CHARTS AND DIAGRAMS.
  - f. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK.
  - g. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED.
  - h. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR ROOF, FLOOR AND WALL PENETRATIONS.
  - i. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATIONS DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED.
  - j. TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
  - k. ELECTRICAL DEMOLITION.
  - l. PANELS AND FEEDERS AS INDICATED.
  - m. COMPLETE WIRING SYSTEMS FOR LIGHT AND POWER INSTALLATIONS, HVAC EQUIPMENT AND MISCELLANEOUS DEVICES, INCLUDING FEEDERS TO PANELS, AND BRANCH CIRCUIT WIRING.
  - n. CONTROL AND INDICATION WIRING AND CONNECTIONS EXTERNAL TO EQUIPMENT INCLUDING CONTROL DEVICES PROVIDED UNDER OTHER CONTRACTS OR SPECIFICATION DIVISIONS.
  - o. BRANCH CIRCUITS EXTENDING TO ALL LIGHTING OUTLETS, RECEPTACLES.
  - p. RECEPTACLES, LOCAL SWITCHES AND MISCELLANEOUS WIRING DEVICES AS INDICATED.
  - r. SMOKE DETECTORS AND MISCELLANEOUS SYSTEMS AS INDICATED.
  - s. LIGHTING FIXTURES AS SCHEDULED ON ARCHITECTURAL, COMPLETE WITH LAMPS, HANGERS, SUPPORTS AND ACCESSORIES.
  - t. GROUNDING OF ELECTRICAL SYSTEMS AND EQUIPMENT.
  - u. BALANCE ALL LOADS ON PANELBOARDS.
  - v. EMPTY CONDUIT FOR TELEPHONE AND DATA CABLES.

B. WORK NOT INCLUDED

1. TELEPHONE INSTRUMENTS OR WIRING.
2. DATA PROCESSING AND EQUIPMENT CABLES AND CABLING.

26 05 19 WIRES AND CABLES

- A. WIRE AND CABLE SHALL BE 600 VOLT, COPPER, WITH THHN/THWN-2 90 DEGREES C. INSULATION EXCEPT AS NOTED.
- B. WIRE FOR POWER AND LIGHTING SHALL BE NOT LESS THAN NO. 12 AWG. WIRE NO. 8 AND LARGER SHALL BE STRANDED.
- C. CONTROL WIRING SHALL BE NOT LESS THAN NO. 14 AWG, STRANDED OR SOLID AS REQUIRED BY THE APPLICATION, IN SINGLE CONDUCTORS OR MULTI-CONDUCTOR CABLES. CONTROL WIRING SHALL CONSIST OF MULTI-CONDUCTOR CABLES WHEREVER POSSIBLE. CABLES SHALL BE PROVIDED WITH AN OVERALL FLAME-RETARDANT EXTRUDED JACKET.
- D. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONSIDERED USED AND SHALL NOT BE RE-PULLED.
- E. BRANCH CIRCUIT WIRING FOR SINGLE PHASE APPLICATIONS SHALL UTILIZE SEPARATE NEUTRALS FOR EACH PHASE CONDUCTOR. UNDER NO CIRCUMSTANCES SHALL ANY SWITCH OR CIRCUIT BREAKER BREAK A NEUTRAL CONDUCTOR.
- F. IN PANELS, PHASE LEGS SHALL BE ALTERNATELY BUSSED TO EACH CIRCUIT BREAKER IN A MANNER TO EFFECT BALANCING THE BRANCH CIRCUIT CONNECTIONS AS NEARLY AS POSSIBLE OVER EACH PHASE. LOADS ON EACH PANEL BUSS SHALL BE BALANCED TO WITHIN 10% OF EACH OTHER.
- G. HOMERUNS AND BRANCH CIRCUIT WIRING FOR 120 VOLT CIRCUITS SHALL BE AS FOLLOWS:

LENGTH, FT.	HOME RUN WIRE SIZE	CIRCUIT WIRE SIZE
0 TO 50	NO. 12	NO. 12
51 TO 100	NO. 10	NO. 12
101 TO 150	NO. 8	NO. 10
- H. PROVIDE A GREEN INSULATED GROUND CONDUCTOR WITH ALL FEEDERS AND BRANCH CIRCUITS.

26 05 23 CONTROLS

- A. ALL WIRING 120V OR GREATER EXTERNAL TO EQUIPMENT PROVIDED BY THE OWNER OR UNDER OTHER DIVISIONS OF THE WORK, INCLUDING WIRING AND CONNECTIONS FOR REMOTE CONTROLS, INTERLOCKING, TEMPERATURE CONTROLS, VARIOUS ALARM AND SUPERVISORY FUNCTIONS, AS WELL AS ALL POWER SUPPLY WIRING, SHALL BE PROVIDED UNDER THIS DIVISION OF THE WORK UNLESS NOTED OTHERWISE.
- B. REFER TO "E", "M" AND "ME" DRAWINGS WHERE APPLICABLE FOR REQUIRED CONTROL EQUIPMENT, WIRING AND CONNECTIONS PROVIDED UNDER THIS DIVISION.

26 05 33.13 RACEWAYS

- A. ALL WIRING SHALL BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
  1. INTERIOR FEEDERS SHALL BE INSTALLED IN RIGID METALLIC CONDUIT, OR IMC.
  2. EXTERIOR WIRING SHALL BE INSTALLED IN GALVANIZED RIGID STEEL CONDUIT.
  3. ALL WORK INSTALLED IN UNFINISHED SPACES, ELECTRICAL CLOSETS, MECHANICAL ROOMS, PUMP ROOMS, AND THE LIKE SHALL BE RUN EXPOSED AND SHALL BE INSTALLED IN GR3 OR IMC, UNLESS INDICATED OTHERWISE.
  4. MINIMUM SIZE CONDUIT SHALL BE 3/4 INCH TRADE SIZE UNLESS OTHERWISE INDICATED.
  5. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT SHALL BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.
  6. BRANCH CIRCUIT WIRING CONCEALED IN WALLS SHALL BE INSTALLED IN IMC OR EMT.
  7. LIGHTING BRANCH CIRCUIT WORK CONCEALED WITHIN HUNG OR FURRED CEILINGS SHALL BE INSTALLED IN FLEXIBLE METALLIC CONDUIT (GREENFIELD) OR METAL CLAD CABLE (MC).
  8. CONDUIT SHALL BE RUN CONCEALED IN HUNG OR FURRED CEILINGS, IN FINISHED AREAS, BAR-JOIST CONSTRUCTION, MASONRY, METAL AND DRYWALL PARTITIONS.
  9. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCE.
  10. CONDUIT FITTINGS, CONNECTORS, COUPLING, ELLS, NIPPLES AND THE LIKE SHALL BE OF MATERIAL AND CONSTRUCTION SUITABLE FOR THE CONDUIT SYSTEM USED.
    - a. SETSCREW FITTINGS SHALL NOT BE USED.
    - b. FITTINGS FOR GALVANIZED RIGID STEEL, IMC AND RIGID ALUMINUM CONDUITS SHALL BE OF THE THREADED TYPE.
    - c. FITTINGS FOR EMT AND FLEXIBLE CONDUIT SYSTEMS SHALL BE COMPRESSION TYPE, RATED RAIN/TIGHT/CONCRETE/TIGHT, UNLESS NOTED OTHERWISE.
  11. WALL MOUNTED TELEPHONE OUTLETS SHALL CONSIST OF 3/4 INCH EMT STUBBED IN THE ACCESSIBLE HUNG CEILING AND TERMINATING IN A STANDARD THREE INCH BY TWO INCH GALVANIZED STEEL OUTLET BOX.

26 05 33.16 OUTLET BOXES

- A. GALVANIZED PRESSED STEEL OUTLET BOXES OF PROPER SIZE AND TYPE AS REQUIRED BY THE BUILDING CONDITIONS SHALL BE PROVIDED FOR ALL OUTLETS FOR LIGHTING, SWITCHES, RECEPTACLES, SIGNALS, AND THE LIKE.

26 05 03 IDENTIFICATION AND TAGGING

- A. PANELS, CABINETS, ETC. SHALL BE PROPERLY IDENTIFIED WITH PERMANENT NAMEPLATES SECURELY FASTENED TO THE FRONT OF EQUIPMENT. "STICK-ON" TYPE LETTERS OR PLATES SHALL NOT BE USED.
  1. IDENTIFY EQUIPMENT AND KEY EQUIPMENT COMPONENTS WITH NAMEPLATES OF BLACK LAMINATED PHENOLIC MATERIAL.
  2. COORDINATE NAMEPLATES WITH ACTUAL EQUIPMENT INSTALLED.
  3. SUBMIT CUT SHEET OF NAMEPLATES FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
  4. MINIMUM SIZE NAMEPLATES SHALL BE THREE INCHES LONG WITH 1/4 INCH LETTERING.
- B. CONDUCTORS IN TROUGHS, PULLBOXES, GUTTERS, ETC. SHALL BE IDENTIFIED BY MEANS OF TAGS INDICATING BOTH TERMINATING POINTS.
- C. CIRCUIT BREAKERS IN EXISTING PANELBOARDS WHICH ARE TO BE USED UNDER THIS CONTRACT SHALL HAVE NEW LOADS IDENTIFIED IN UPDATED PANEL DIRECTORIES.
- D. EACH WIRING DEVICE FACE PLATE TO HAVE PANEL AND CIRCUIT DESIGNATION.

26 05 73 OVERCURRENT PROTECTION DEVICE COORDINATION

- A. PROVIDE A COMPLETE SYSTEM ANALYSIS FOR THIS PROJECT SHOWING DEVICE COORDINATION CURVES AND CHARTS SHOWING THAT ARE ALL SELECTIVELY COORDINATED. SET ALL CIRCUIT BREAKERS IN ACCORDANCE WITH THE STUDY.
- B. PROVIDE SHORT CIRCUIT AND COORDINATION STUDY FROM NORMAL AND ALTERNATE POWER SOURCES TO CONFIRM EQUIPMENT IS PROTECTED.
- C. FAULT CURRENT STUDY: CALCULATE THE MAXIMUM AVAILABLE SHORT CIRCUIT CURRENT IN AMPERES RMS SYMMETRICAL AT CIRCUIT BREAKER POSITIONS OF THE ELECTRICAL POWER DISTRIBUTION SYSTEM. THE CALCULATION SHALL BE FOR A CURRENT IMMEDIATELY AFTER INITIATION AND FOR A THREE-PHASE BOLTED SHORT CIRCUIT.
- D. CALCULATE MOMENTARY AND INTERRUPTING DUTIES ON THE BASIS OF MAXIMUM AVAILABLE FAULT CURRENT.
- E. EQUIPMENT EVALUATION REPORT
  1. FOR OVERCURRENT PROTECTIVE DEVICES, ENSURE THAT INTERRUPTING RATINGS ARE EQUAL TO OR HIGHER THAN CALCULATED 1/2-CYCLE SYMMETRICAL FAULT CURRENT.
  2. FOR DEVICES AND EQUIPMENT RATED FOR ASYMMETRICAL FAULT CURRENT, APPLY MULTIPLICATION FACTORS LISTED IN THE STANDARDS TO ½-CYCLE SYMMETRICAL FAULT CURRENT.
  3. VERIFY ADEQUACY OF PHASE CONDUCTORS AT MAXIMUM THREE-PHASE BOLTED FAULT CURRENTS; VERIFY ADEQUACY OF EQUIPMENT GROUNDING CONDUCTORS AND GROUNDING ELECTRODE CONDUCTORS AT MAXIMUM GROUND-FAULT CURRENTS. ENSURE THAT SHORT CIRCUIT WITHSTAND RATINGS ARE EQUAL TO OR HIGHER THAN CALCULATED ½-CYCLE SYMMETRICAL FAULT CURRENT.

LIZARDOS

LONG ISLAND | NEW YORK CITY | CHARLOTTE | DANBURY

200 Old Country Road | Suite 670  
Mineola | NY 11501  
516 484 1020 Lizardos.com

Lizardos Engineering Associates D.P.C.

1	ISSUED FOR BID	03/17/2023
NO.	REVISION	DATE

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CLIENT:
SUNY PURCHASE COLLEGE

PROJECT TITLE:
SUNY PURCHASE APARTMENT REPAIR ALUMNI VILLAGE INTERIOR RENOVATIONS OF THE COMMONS APARTMENTS 10.1 (ADA COMPLIANT) & 10.3

DRAWING TITLE:

ELEC. SPECIFICATIONS  
SHEET 1 OF 2

DRAWN BY:	ET	SCALE:	AS NOTED
DESIGNED BY:	GL	DATE:	11-29-22
CHECKED BY:	ABD	PROJECT NO:	10652

PLOT DATE/TIME:

3/17/2023 3:54:39 PM

DRAWING NO:

E-401.00

SHEET:

6 OF 7