

H-DRAWINGS-STYLE - THE LEARNING EXPERIENCE-FILE - VIRGINIA-LEV23-034 - FILE WINCHESTERVA 2600 PLEASANT VALLEY WAY-CDSITILEV23-034-GENERAL-MEFPF NOTES.DWG - RSHENDE - PLOTTED: 12/19/2023

MEP-FP GENERAL NOTES

- 1. ATTENTION ALL USERS OF THESE DRAWINGS, GENERAL CONTRACTORS, SUBCONTRACTORS, MANUFACTURERS, AND MATERIAL SUPPLIERS ARE TO CAREFULLY AND THOROUGHLY REVIEW THESE GENERAL NOTES. IT IS YOUR RESPONSIBILITY TO KNOW AND ADHERE TO ALL OF THE REQUIREMENTS.
2. CONTRACTOR SHALL DETERMINE THE APPLICABILITY OF THE GENERAL NOTES BASED UPON THE PROJECT SCOPE CRITERIA AND CONSTRAINTS. QUESTIONS AS TO APPLICABILITY SHOULD BE ADDRESSED TO THE ARCHITECT / ENGINEER PRIOR TO BID SUBMISSION.
3. BIDDERS, PRIOR TO SUBMITTING A PROPOSAL/BID SHALL VISIT AND CAREFULLY EXAMINE THE AREAS AFFECTED BY THIS WORK AND TO BECOME FAMILIAR WITH EXISTING CONDITIONS SITE PARAMETERS AND WITH THE DIFFICULTIES THAT WILL BE ENCOUNTERED DURING THE EXECUTION OF WORK.
4. NO CONSIDERATION OR ALLOWANCE WILL BE GRANTED FOR FAILURE TO VISIT THE SITE. NOR FOR ANY ALLEGED MISUNDERSTANDING OF MATERIALS TO BE FURNISHED OR WORK TO BE PERFORMED.
5. IT IS THE INTENT OF THE CONSTRUCTION DOCUMENTS TO CALL FOR FINISHED WORK, TESTED AND READY FOR OPERATION.
6. IT IS THE INTENT OF THESE SPECIFICATIONS AND ACCOMPANYING DRAWINGS THAT THE CONTRACTOR SHALL, UNLESS OTHERWISE SPECIFIED, FURNISH ALL LABOR, MATERIALS, TOOLS AND EQUIPMENT TO COMPLETE INSTALLATION OF THE SYSTEMS AS SPECIFIED.
7. THE CONTRACTOR UNDERSTANDS AND AGREES THAT THESE CONSTRUCTION DOCUMENTS INCLUDING DRAWINGS AND SPECIFICATIONS SHALL BE FULFILLED IN ACCORDANCE WITH MINOR MATERIALS OR DEVICES ESSENTIAL TO PROPER AND CONVENIENT OPERATION.
8. THESE DRAWINGS ARE INTENDED TO BE USED ONLY BY AN EXPERIENCED CONTRACTOR. FAILURE TO RECOGNIZE THE COMPLEXITIES OF CONSTRUCTION AND SEQUENCING CAN RESULT IN UNSAFE WORK CONDITIONS AND UNACCEPTABLE WORK.
9. READ SPECIFICATIONS AND INDIVIDUAL TRADE NOTES FOR REQUIREMENTS RELATED TO THESE DOCUMENTS.
10. DO NOT PRESUME THAT YOUR SCOPE OF WORK IS SINGULARLY DEFINED. YOUR SCOPE OF WORK IS DEFINED THROUGHOUT THE ENTIRE SET OF DRAWINGS AND SPECIFICATIONS AND IS NOT CONTAINED IN JUST ONE SERIES OF DRAWINGS OR DIVISION OF SPECIFICATIONS.
11. EVERY EFFORT HAS BEEN MADE TO MAKE THESE DOCUMENTS CONCISE AND COORDINATED, TO DEFINE WORK IN THE MOST LOGICAL PLACE AND TO ELIMINATE REDUNDANCY.
12. THE WORK SHALL INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PERMITS HOISTING AND RIGGING, SCAFFOLDING, LOADING AND UNLOADING, CLEAN-UP OF DEBRIS AND OTHER SERVICES.
13. CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, LICENSE, APPROVALS INSPECTIONS, ETC., AS ARE REQUIRED TO PERFORM THE WORK.
14. THESE GENERAL NOTES, CODES, STANDARDS, AND SPECIFICATIONS, INCLUDING ADDENDA AND SUPPLEMENTS, REFERENCED IN THE CONTRACT DOCUMENTS SHALL BE THE LATEST APPROVED ISSUE.
15. THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND OPERATIONS OF CONSTRUCTION ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
16. PROJECT SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
17. DURING CONSTRUCTION OPERATIONS, ALL PERSONS AND PROPERTY SHALL BE PROTECTED.
18. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNMENTAL LAWS, RULES AND REGULATIONS AS IT PERTAINS WITH OPERATIONS AT THE PROJECT SITE.
19. THE CONTRACTOR UPON SIGNING AGREEMENT, ACCEPTS THE CONSTRUCTION DOCUMENTS (INCLUDING THESE DRAWINGS WITH THE INCLUDED NOTES AND DESCRIPTIVE MATERIAL) AND AGREES TO EXECUTE THE NECESSARY WORK IN MANNER DESCRIBED THEREIN.
20. ALL CONSTRUCTION SHALL CONFORM TO THE MINIMUM STANDARDS OF THE PRESIDING APPLICABLE CODES INDICATED IN THE BUILDING SUMMARY COLUMN ON DRAWING T-1 AND ALL LOCAL CODES PRESENTLY IN EFFECT UNLESS MORE STRINGENT REQUIREMENTS ARE INDICATED.
21. ALL NEW CONSTRUCTION SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG) AND CHAPTER 11 OF THE INTERNATIONAL BUILDING CODE (INCLUDES ICC A117.1 AS AMENDED BY IBC).
22. WHERE USED IN THESE DRAWINGS, THE TERM "PROVIDE" SHALL IMPLY "FURNISH AND INSTALL".
23. THE SCOPE OF WORK UNDER THIS SECTION INCLUDES THE FURNISHING OF ALL LABOR, MATERIALS, EQUIPMENT, SERVICES AND INCIDENTALS TO COMPLETE ALL WORK IN ACCORDANCE WITH THE INTENT OF THE SPECIFICATIONS AND THE DRAWINGS.
24. DELIVER PRODUCTS TO PROJECT SITE IDENTIFIED WITH NAMES, MODEL NUMBERS, TYPES, GRADES, COMPLIANCE LABELS, AND OTHER INFORMATION NEEDED FOR DISTINCT IDENTIFICATION.
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING BUILDING AND SITE UTILITIES BETWEEN CIVIL & MEP-FP DRAWINGS.
AND OTHER FACILITIES AS DIRECTED BY THE UTILITY COMPANIES.
26. MECHANICAL, ELECTRICAL, PLUMBING AND FIRE PROTECTION DRAWINGS SHOW INFORMATION IN A DIAGRAMMATIC FASHION WITHOUT DIMENSIONING.
27. DO NOT SCALE THE DRAWINGS. DRAWING SCALES AS INDICATED ARE FOR REFERENCE ONLY AND ARE NOT INTENDED TO ACCURATELY DEPICT ACTUAL OR DESIGNATED CONDITIONS.
28. NOTES AND DETAILS ON DRAWINGS TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS.
29. THE TERM "ALIGN" REFERS TO LOCATING DIFFERENT COMPONENTS OF CONSTRUCTION TO PROVIDE A FLUSH FINISH SURFACE.
30. USE OF THE WORD "VERIFY" POINTS OUT A SITUATION WHICH MUST BE CONFIRMED PRIOR TO PROCEEDING WITH THE WORK, FABRICATION OF EQUIPMENT, OR ORDERING MATERIAL AND EQUIPMENT.
31. THE CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL FIELD CONDITIONS AND DIMENSIONS AS THEY RELATE TO THIS PROJECT.
32. DETERMINE INTERFERENCE BEFORE WORK IS FABRICATED OR INSTALLED.
33. WHERE THE PROJECT CONDITIONS REQUIRE REASONABLE DEVIATIONS FROM CONTRACT DOCUMENTS, MAKE DEVIATIONS WITHOUT ADDITIONAL COST TO OWNER.
34. PROVIDE MAXIMUM PRACTICAL SPACE FOR OPERATION, REPAIR, REMOVAL, AND TESTING OF ALL EQUIPMENT.
35. TEST AND ADJUST EQUIPMENT AND SYSTEMS INSTALLED AND DEMONSTRATE PROPER OPERATION TO OWNERS REPRESENTATIVE.
36. EQUIPMENT MOUNTED ABOVE HUNG CEILING SHALL BE SUPPORTED FROM BUILDING STRUCTURE WITH VIBRATION ISOLATION RODS MEETING LOCAL SEISMIC RESTRAINT REQUIREMENTS.
37. DRAWINGS ARE PREPARED USING DIMENSIONS AND PRODUCT CONFIGURATIONS OR DETAILS OF SPECIFIC MANUFACTURERS.
38. "TYPICAL DETAILS" ARE APPLICABLE THROUGHOUT CONSTRUCTION DOCUMENTS AND MAY NOT BE SPECIFICALLY REFERENCED THEREIN.
39. THE DRAWINGS AND SPECIFICATIONS ARE SEPARATED INTO DISCIPLINES FOR CONVENIENCE.
40. THE DRAWINGS AND SPECIFICATIONS, INCLUDING DRAWINGS PREPARED BY SPECIFIC ENGINEERING DISCIPLINES (SUCH AS CIVIL, STRUCTURAL, MECHANICAL, ELECTRICAL, ETC.) ARE COMPLEMENTARY.
41. ALL MATERIALS SPECIFIED OR NOTED SHALL BE NEW UNLESS OTHERWISE NOTED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
42. ALL MATERIAL USED IN THIS WORK SHALL BE NEW, OF THE BEST QUALITY, AND SHALL MEET THE REQUIREMENTS OF THESE SPECIFICATIONS AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
43. WHENEVER IN THESE DOCUMENTS REFERENCE IS MADE TO THE REQUIREMENTS OF THE NEC (NATIONAL ELECTRICAL CODE), NATIONAL UPC (NATIONAL UNIFORM PLUMBING CODE), ASHRAE (AMERICAN SOCIETY OF HEATING, REFRIGERATING AND AIR-CONDITIONING ENGINEERS) ASTM (AMERICAN SOCIETY FOR TESTING MATERIALS), OR OTHER STANDARD SPECIFICATIONS, IT SHALL BE UNDERSTOOD THAT REFERENCES ARE MADE TO THE LATEST MODIFICATIONS OR REVISIONS OF SUCH SPECIFICATIONS AS ADOPTED BY AHJ.
44. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING COORDINATED SHOP DRAWINGS, PRODUCT DATA, OR SAMPLES FOR MECHANICAL, ELECTRICAL, PLUMBING FIXTURES EQUIPMENT, AND OTHER PERTINENT ITEMS REQUIRING REVIEW FOR CONFORMANCE WITH THE CONTRACT DOCUMENTS.
45. SUBMITTALS MUST BE REVIEWED AND BEAR THE GENERAL CONTRACTOR'S STAMP OF APPROVAL FOR CONFORMANCE AND COORDINATION WITH THE CONTRACT DOCUMENTS.
46. CONTRACTOR SHALL INSTALL EQUIPMENT LOCATED IN MECHANICAL ROOM ONLY AFTER A THOROUGHLY COORDINATION WITH OTHER TRADES AND UTILITY COMPANY REQUIREMENTS.
47. IF MATERIAL OR EQUIPMENT IS INSTALLED BEFORE IT IS APPROVED, OR IF IN THE OPINION OF THE ARCHITECT OR ENGINEER, THE MATERIAL OR EQUIPMENT DOES NOT MEET THE INTENT OF THE DRAWINGS AND SPECIFICATIONS, THE CONTRACTOR SHALL BE LIABLE FOR ITS REMOVAL AND REPLACEMENT AT NO ADDITIONAL COST.
48. ANY DEFECTS IN THE CONSTRUCTION, INCLUDING MATERIALS AND/OR WORKMANSHIP, SHALL BE REPLACED OR CORRECTED BY REMOVAL AND REPLACEMENT OR OTHER APPROVED METHOD WITHOUT ADDITIONAL COST PRIOR TO ACCEPTANCE BY THE OWNER.
49. CONTRACTOR SHALL PROVIDE A WRITTEN WARRANTY FOR THE CONSTRUCTION INCLUDING MATERIALS AND/OR WORKMANSHIP FOR A PERIOD OF NOT LESS THAN ONE (1) YEAR AFTER ACCEPTANCE DATE.
50. CONTRACTOR SHALL RE-EXECUTE ANY WORK THAT FAILS TO CONFORM TO THE DRAWINGS/DETAILS AS SHOWN, AND ANY DEFECTS DUE TO FAULTY MATERIALS OR WORKMANSHIP WHICH APPEAR WITHIN A PERIOD OF ONE (1) YEAR FROM THE DATE OF FINAL ACCEPTANCE, UNLESS OTHERWISE NOTED.
51. THE CONTRACTOR IS TO PROVIDE AS BUILT DRAWINGS IN HARD COPY AND AN ELECTRONIC AUTOCAD FILE TO THE OWNER AT THE CONCLUSION OF THE PROJECT.
52. UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS, NO SLAB OR STRUCTURAL MEMBER SHALL BE CUT, DRILLED, NOTCHED, CORED OR OTHERWISE MODIFIED WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE ARCHITECT/ENGINEER.
53. PERFORMANCE CUTTING AND PATCHING TO INSTALL THE WORK.
54. ALL SLEEVES AND ALL CORE DRILLING OF FLOORS AND WALLS SHALL BE BY THE CONTRACTOR.
55. ALL CUTTING SHALL BE PATCHED AND FINISHED TO MATCH THE SURROUNDING AREA.
56. CONTRACTOR SHALL MAINTAIN FIRE RATINGS AT ALL PENETRATIONS, THROUGH-PENETRATION FIRESTOP SYSTEMS AND SHALL BE TESTED IN ACCORDANCE WITH ASTM E814.
57. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL MATERIALS, INCIDENTAL ITEMS AND DEVICES FOR A COMPLETE AND OPERATIONAL SYSTEM.
58. ALL PIPING, CONDUIT AND EQUIPMENT SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE'S HANGERS AND SUPPORTS AND SHALL BE SPECIFICALLY APPROVED FOR USE IN EACH LOCATION.
59. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL SUPPORT HANGERS AND MISCELLANEOUS METALS.
60. STEEL SUPPORTS SHALL BE PAINTED WITH ONE COAT OF RUST INHIBITING PRIMER OR GALVANIZED.
61. ANY ELEMENT, WHATSOEVER, REQUIRED BY AN AUTHORITY HAVING JURISDICTION (A.H.J.) TO BE INCORPORATED IN CONSTRUCTION, BUT NOT SPECIFIED IN THE CONTRACT DOCUMENTS, SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER FOR REVIEW.
62. ALL MATERIAL, EQUIPMENT, FIXTURES ETC. SHOWN ON THE CONSTRUCTION DRAWINGS SHALL BE NEW AND PROVIDED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE SHOWN OR SPECIFIED.
63. ALL MATERIALS SHALL CONFORM TO LOCAL, STATE AND FEDERAL CODES AND REGULATIONS AS THEY APPLY.
64. ANY WORK NEEDED TO BE ACCOMPLISHED ON AN OVERTIME BASIS SHALL BE PRICED AND PRESENTED AS SUCH IN THE BID.
65. ALL WORKERS AND SUBCONTRACTORS SHALL BE SKILLED IN THEIR TRADES AND HAVE ALL APPLICABLE LICENSES AND CERTIFICATIONS.
66. DELIVERIES, INGRESS AND EGRESS FROM BUILDING SHALL BE OVER ROUTES PRESCRIBED BY THE BUILDING REPRESENTATIVE AND AT TIMES DESIGNATED BY THAT AUTHORITY.
67. THE CONTRACTOR SHALL PERMIT AND FACILITATE OBSERVATION OF WORK BY BUILDING OWNER, ARCHITECT, ENGINEER, THEIR AGENTS AND PUBLIC AUTHORITIES, AT ALL TIMES, AND WHEN REQUESTED.
68. OWNER RETAINS THE RIGHT TO ALLOW OTHER CONTRACTORS IN CONNECTION WITH THE PROJECT WORK.
69. COORDINATE WITH OWNER'S FIELD REPRESENTATIVE AND/OR GENERAL CONTRACTOR FOR ALL PHASING AND SCHEDULING.
70. WHERE MORE THAN ONE REGULATION APPLIES, THE STRICTER ONE SHALL GOVERN.
71. A WRITTEN REQUEST MUST BE SUBMITTED TO THE ARCHITECT/ENGINEER PRIOR TO SUBMISSION OF A PROPOSED SUBSTITUTION.
72. ALL PROPOSED SUBSTITUTIONS MUST BE SUBMITTED TO ARCHITECT/ENGINEER FOR WRITTEN APPROVAL PRIOR TO SUBSTITUTION BEING MADE.
73. WHERE REFERENCED AN APPROVED SUBSTITUTION SUBMISSION SHALL REQUIRE THE CONTRACTOR TO COORDINATE AND PROVIDE INFORMATION BY THE ARCHITECT/ENGINEER TO FULLY EVALUATE THE PROPOSED SUBSTITUTION INCLUDING BUT NOT LIMITED TO A SPREADSHEET OUTLYING THE DIFFERENCE BETWEEN THE SPECIFIED AND PROPOSED ITEM INCLUDING BUT NOT LIMITED TO WEIGHTS, DIMENSIONS, AND ELECTRICAL CHARACTERISTICS.
74. THE CONDITION OF THE PROJECT SITE SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
75. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL LOCAL BUILDING DEPARTMENT APPROVALS, ETC.
76. CONTRACTOR SHALL CARRY AND DOCUMENT LIABILITY, ACCIDENT AND PROPERTY DAMAGE INSURANCE AS REQUIRED BY OWNER.
77. CONTRACTOR SHALL EXERCISE EXTREME CARE IN PROTECTING AREAS ADJACENT TO CONSTRUCTION AREAS, AS WELL AS ALL EXISTING AND NEW BUILDING AND SITE FEATURES.
78. UNLESS SPECIFICALLY STATED OTHERWISE, CONTRACTOR SHALL FOLLOW MANUFACTURERS' DIRECTIONS, INSTRUCTIONS AND RECOMMENDATIONS FOR ALL MATERIALS AND PROCESSES USED IN THIS CONTRACT.
79. BUILDING DEPARTMENT APPROVED DRAWINGS SHALL BE TURNED OVER TO OWNER AT THE COMPLETION OF THE PROJECT.
80. AT THE FINAL COMPLETION OF THE PROJECT, CONTRACTOR SHALL SUBMIT TO THE OWNER AND ARCHITECT/ENGINEER A NOTARIZED AFFIDAVIT STATING COMPLIANCE WITH ALL PROVISIONS OF THIS CONTRACT.
81. MAINTAIN A FIELD REPRESENTATIVE ON THE PREMISES AT ALL TIMES DURING THE COURSE OF THE CONSTRUCTION WORK.

- 1. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION.
2. GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS.
3. VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.

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Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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HVAC GENERAL NOTES

A. GENERAL

- GENERAL NOTES, SYMBOLS AND DETAILS ARE APPLICABLE TO ALL DRAWINGS WITH "FOR" "M".
- IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE ALL WORK WITH ALL NEW AND EXISTING WORK OF ALL OTHER TRADES. THE SHOP DRAWINGS PREPARED BY THIS CONTRACTOR SHALL INDICATE SPACE ALLOWANCES ABOVE CEILING FOR ALL WORK OF ALL OTHER TRADES (CABLE TRAYS, CONDUITS, SPRINKLER PIPES, STORM DRAINS, GLYCOL PIPES, ALL DOMESTIC SERVICES, ETC.) AND SHALL BE COORDINATED AND SIGNED OFF BY ALL OTHER CONTRACTORS.
- THE CONTRACTOR SHALL COORDINATE THE HEIGHTS AND LOCATIONS OF ALL DUCTWORK WITH ALL STRUCTURAL MEMBERS (COLUMNS, BEAMS, JOISTS, ANGLES, ROOF SCREENS, FRAMING, ETC.). ALL DUCTWORK IS TO BE MOUNTED TO HIGHEST POSSIBLE ELEVATION ABOVE THE FINISHED FLOOR AS SHOWN ON THE CONSTRUCTION DOCUMENTS. THE CONTRACTOR MAY BE REQUIRED TO RUN DUCTWORK THROUGH THE WEBS OF THE JOISTS TO MAINTAIN ADEQUATE CLEARANCE FOR CEILING HEIGHTS. BEFORE PROCEEDING WITH ANY WORK, THE CONTRACTOR SHALL REVIEW WITH THE ARCHITECT/ENGINEER THE MOUNTING HEIGHTS OF ALL DUCTWORK LAYOUTS.
- CONTRACTOR SHALL VERIFY IN FIELD ALL HUNG CEILING AND PARTITION HEIGHTS AND LOCATIONS AND CEILING AIR OUTLET LOCATIONS, WHERE WORK BETWEEN THE DRAWINGS AND FIELD DIMENSIONS ARE IN CONFLICT, ADVISE PRIOR TO FABRICATION OF SHEET METAL.
- VERIFY EXACT LOCATION, DIMENSIONS AND CONDITIONS IN THE FIELD FOR ALL EQUIPMENT, DUCTWORK AND PIPING LOCATIONS.
- VERIFY ALL EQUIPMENT CONNECTIONS WITH MANUFACTURERS CERTIFIED APPROVED DRAWINGS, VERIFY AND PROVIDE DUCT TRANSITIONS TO FURNISHED EQUIPMENT. FIELD VERIFY AND COORDINATE ALL DIMENSIONS BEFORE FABRICATION.
- INTERNAL AIR FLOW DIMENSIONS ARE SHOWN FOR DUCTS, ALL DUCT SIZES SHALL BE NET INSIDE DIMENSIONS, INCLUDING ACOUSTIC-LINED DUCTWORK. CONTRACTOR SHALL INCREASE SIZE FOR LINER, IF APPLICABLE. DUCT SIZES ARE ACTUAL SHEET METAL SIZES AND DO NOT INCLUDE 1 INCH DUCT LINER, INCREASE DUCTWORK SIZE ACCORDINGLY.
- CONTRACTOR SHALL NOT PROCEED TO FABRICATE AND INSTALL ANY HVAC EQUIPMENT, DUCTWORK, PIPING AND ACCESSORIES WITHOUT A THOROUGH FIELD COORDINATION WITH ALL TRADES. ALL CONFLICTS RESULTING FROM LACK OF COORDINATION WILL BE RESOLVED BY CONTRACTOR AT NO ADDITIONAL COST.
- ALL WORK INSTALLED BY THIS CONTRACTOR SHALL BE INSTALLED IN SUCH A MANNER AS TO CLEAR ALL LIGHT FIXTURES, CEILING CONSTRUCTION, SPRINKLER PIPES AND HEADS, CONDUITS, PIPING, ETC.
- PROVIDE INFORMATION AND HARDWARE TO COORDINATE HANGING OF EQUIPMENT REQUIRED FOR MECHANICAL WORK.
- PROVIDE ESCUTCHEONS AND SEALING OF ALL PENETRATIONS OF FIRE SEPARATIONS IN ACCORDANCE WITH THE BUILDING CODE.
- ALL EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS TO PERMIT SERVICING AND REMOVAL.
- SUPPORT ALL EQUIPMENT, PIPING AND DUCTWORK FROM THE BUILDING STRUCTURE TO PROVIDE A VIBRATION-FREE INSTALLATION. NOTIFY ARCHITECT AND STRUCTURAL ENGINEER OF ALL WEIGHTS AND METHODS OF SUPPORT FOR APPROVAL.
- PROVIDE ALL NECESSARY SUPPLEMENTARY STEEL FOR SUPPORT OF EQUIPMENT, PIPING, DUCTWORK ATTACHMENT OF HANGERS AND PIPE IN SHAFTS AND BETWEEN BUILDING STRUCTURAL MEMBERS.
- CONTRACTOR SHALL PROVIDE CHANGE OF FILTERS AFTER START-UP AND BALANCING COMPLETION.
- CONTRACTOR TO PROVIDE CONDENSATE DRAIN PIPE SIZED PER MANUFACTURER'S REQUIREMENTS FOR EACH ROOFTOP UNIT WITH CONDENSATE TRAP. CONDENSATE TO BE DISCHARGED TO THE ROOF SLOPE TOWARD ROOF DRAIN, SCUPPER OR GUTTER.
- CONTRACTOR TO PROVIDE INSULATED CONDENSATE DRAIN PIPE SIZED PER MANUFACTURER'S REQUIREMENTS FOR EACH INDOOR-MOUNTED AIR HANDLING UNIT WITH CONDENSATE TRAP. CONDENSATE TO DISCHARGE AS SHOWN ON DRAWINGS.
- DUCT TYPE SMOKE DETECTORS SHALL BE INSTALLED AND FURNISHED BY THE CONTRACTOR, WIRED TO FIRE ALARM. COORDINATE DETECTOR TYPE WITH FIRE ALARM SYSTEM.
- ALL THERMOSTATS SHALL BE LOCATED ON COLUMNS OR WALL 48 INCHES A.F.F. REQUIREMENTS OR AS DIRECTED OTHERWISE BY ARCHITECT/ENGINEER. PROVIDE AND INSTALL THERMOSTAT IN NUMBER AND LOCATION SHOWN ON DRAWINGS.
- PROVIDE AND INSTALL TEMPERATURE SENSORS 60 INCHES A.F.F., UNLESS REQUIRED LOWER BY ADA REQUIREMENTS OR AS DIRECTED OTHERWISE BY ARCHITECT/ENGINEER. ALL TEMPERATURE SENSORS SHALL BE NEW. PROVIDE TEMPERATURE SENSORS IN NUMBER AND LOCATIONS SHOWN ON DRAWINGS AND AS PER DETAIL SHOWN IN HVAC DETAIL DRAWING.
- THERMOSTATS AND SENSORS SHALL BE LOCATED A MINIMUM OF 6 INCHES FROM INSIDE OR OUTSIDE WALL CORNER.
- THERMOSTATS AND SENSORS SHALL BE FULLY COMPATIBLE WITH PERFORMANCE AND CHARACTERISTICS OF INSTALLED HVAC EQUIPMENT AND SHALL BE COMPATIBLE WITH EACH OTHER.
- INSTALL ALL RETURN GRILLES SO THAT DIRECTION OF BLADES OBSTRUCT VISIBILITY.
- IN THE CASE WHERE A CONTRACTOR IS MAKING AN APPROVED BASIS OF DESIGN HVAC EQUIPMENT SUBSTITUTION, IT IS HIS RESPONSIBILITY TO COORDINATE WITH ALL OTHER TRADES AND PROVIDE ALL NECESSARY ADJUSTMENTS WITH NO EXTRA COST TO THE OWNER OR ARCHITECT/ENGINEER. TRUSS SHOP DRAWINGS REFLECTING THE ALTERNATE EQUIPMENT WEIGHTS, ROOF PENETRATIONS, ETC., SHALL BE SUBMITTED TO ARCHITECT/ENGINEER FOR REVIEW AND APPROVAL PRIOR TO ORDERING ALTERNATE HVAC EQUIPMENT.
- CONTRACTOR SHALL TEST, BALANCE, ADJUST AND PUT THE SYSTEM IN FULL OPERATION INCLUDING SUPERVISION OF BUILDING OPERATING PERSONNEL, PER OWNER'S REQUIREMENTS.
- WHERE DUCTS OR PIPE PENETRATE WALLS, SEAL OPENINGS TO PREVENT AIR TRANSFER BETWEEN SPACES.

B. DUCTWORK

- REFER TO THE SPECIFICATIONS FOR DUCTWORK CONSTRUCTION CLASSES, SEAL, AND LEAKAGE CLASSES.
- SEE DRAWINGS FOR DUCT HANGER DETAILS.
- SHEET METAL DUCTWORK SHALL COMPLY WITH THE STANDARDS AS SET FORTH IN THE LATEST EDITION OF THE ASHRAE GUIDE. DUCTS SHALL BE CONSTRUCTED OF GALVANIZED STEEL, AND SHALL BE IN ACCORDANCE WITH THE BUILDING CODE. ALL SHEET METAL DUCT JOINTS SHALL BE SEALED AIR TIGHT WITH APPROVED TYPE CAULKING SEALANT.
- HORIZONTAL DUCTS SHALL BE HUNG AT INTERVALS NOT EXCEEDING 5 FEET ON CENTER IN ACCORDANCE WITH THE DUCT MANUALS OF THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION (SMACNA), SECOND EDITION.
- PROVIDE TURNING VANES ON ALL RECTANGULAR ELBOWS AND/OR WHERE SHOWN ON THE DRAWING. TURNING VANES SHALL BE DOUBLE THICKNESS TYPE CONSTRUCTED IN ACCORDANCE WITH SMACNA MANUAL. SUBMIT DETAIL ON INITIAL DUCT SHOP DRAWINGS.
- INSULATE ALL DUCTWORK AS HEREINAFTER SPECIFIED.
- RUN DUCTS AND PIPING CONCEALED, UNLESS SPECIFIED OTHERWISE, AND CLEAR OF CEILING INSERTS.
- WHERE FIELD CONDITIONS DICTATE, DUCTWORK SHALL BE OFFSET AND DUCTWORK CONFIGURATIONS SHALL BE MADE. AT NO ADDITIONAL COST TO OWNER, ALL SUCH MODIFICATIONS SHALL BE MADE WITH THE APPROVAL OF THE ENGINEER.
- WHERE FIELD CONDITIONS DICTATE MODIFICATIONS TO DUCT ASPECT RATIO, TYPE AND SIZE SHALL BE MADE. AT NO ADDITIONAL COST TO OWNER, ALL SUCH MODIFICATIONS SHALL BE MADE WITH THE APPROVAL OF THE ENGINEER.

C. FLEXIBLE DUCT

- PROVIDE AND INSTALL FLEXIBLE CONNECTIONS ON ALL DUCTS CONNECTING TO FANS AND AIR HANDLING UNITS. ALL DUCTS TO BE GROUNDED ACROSS FLEXIBLE CONNECTION WITH FLEXIBLE COPPER GROUNDING STRAPS. (MAXIMUM LENGTH OF FLEXIBLE DUCTWORK TO FANS AND AIR HANDLING UNITS NOT TO EXCEED 6 INCHES OR AS DIRECTED BY ENGINEER).
- PROVIDE AND INSTALL FLEXIBLE CONNECTIONS ON ALL DUCTS CONNECTING TO AIR OUTLETS. (MAXIMUM LENGTH OF FLEXIBLE DUCTWORK TO AIR OUTLETS NOT TO EXCEED 6 FEET).
- FLEXIBLE DUCT SHALL BE UL 181 CLASS 1 FACTORY-FABRICATED ASSEMBLY WITH HELICALLY WOUND SPRING STEEL WIRE INNER SLEEVE, INSULATION AND OTHER VAPOR BARRIER. EACH CONNECTION SHALL BE SECURED WITH APPROVED TYPE HOSE CLAMPS WITH WORM GEAR DRIVE STAINLESS STEEL BANDS ON SEALER MASTIC BEFORE HOSE CONNECTION IS MADE AT THE JOINTS. SEALING TAPE SHALL BE USED AT CONNECTION BETWEEN RIDGE DUCT AND FLEXIBLE DUCT.
- FLEXIBLE DUCT DIAMETER SHALL MATCH THE NECK SIZE OF THE DIFFUSER TO WHICH IT CONNECTS, UNLESS NOTED OTHERWISE, EXTEND SHEET METAL DUCT TO WITHIN 5 FEET FOR SMACNA COMPLIANCE.
- FLEXIBLE DUCTWORK SHALL NOT PASS THROUGH FIRE-RATED CONSTRUCTION. FLEXIBLE DUCTWORK MUST BE INSTALLED WITH SUPERIOR WORKMANSHIP MAINTAINING FULL CROSS-SECTIONAL AREA THROUGHOUT. SUPPORT FROM STRUCTURE AT 40 INCHES INTERVALS OR CLOSER TO ENSURE THAT THE FLEXIBLE DUCT DOES NOT SAG MORE THAN 1/2 INCH PER LINEAL FOOT BETWEEN THE SUPPORTS. ENSURE FULL CROSS-SECTIONAL AREA FOR MAXIMUM AIRFLOW. PLACE SUPPORTS AT EACH CONNECTION BETWEEN FLEX DUCT AND RIGID METAL DUCT.

D. DAMPERS

- FURNISH AND INSTALL MANUAL VOLUME DAMPERS IN ALL BRANCH AND SUB-BRANCH DUCTS AND ELSEWHERE FOR BALANCING AND CONTROL OF ALL DUCT SYSTEMS, WHETHER OR NOT SHOWN ON THE DRAWINGS.
- ALL DAMPERS WHICH ARE NOISY IN OPERATION ARE TO BE REMOVED, REPAIRED AND REINSTALLED UNTIL QUIET OPERATION IS OBTAINED. REFER TO SMACNA MANUAL, SECTION 1 FOR DETAILS OF CONSTRUCTION.
- EVERY DAMPER SHALL HAVE AN INDICATION DEVICE WHICH SHALL SHOW ITS POSITION AT ALL TIMES. ALL AUTOMATIC AND FIRE DAMPERS SHALL BE FURNISHED WITH DUCT ACCESS DOORS FOR SERVICING.
- PROVIDE VOLUME DAMPERS AND WIRE MESH SCREEN FOR ALL RETURN AND DUCTWORK AND OPENINGS.
- AIR DEVICES IN GYPSUM CEILING SHALL NOT BE UTILIZED AS ACCESS TO VOLUME DAMPERS. PROVIDE CABLE ACTUATED DAMPERS LOCATED AT THE TAKEOFF FROM MAIN DUCT.

E. ACCESS DOORS

- WHERE NECESSARY AND INDICATED HEREIN IN DUCTWORK, SUITABLE ACCESS DOORS AND FRAMES TO PERMIT INSPECTION, OPERATION AND MAINTENANCE OF ALL DAMPERS, FANS, LOUVERS, CONTROLS, FIRE DAMPERS OR OTHER APPARATUS CONCEALED BEHIND THE SHEET METAL WORK SHALL BE PROVIDED. DOUBLE PANEL INSULATION OF NOT LESS THAN 20 GAUGE. ACCESS DOORS IN UNINSULATED DUCTS MAY BE OF SINGLE PANEL CONSTRUCTION OF NOT LESS THAN 18 GAUGE. GALVANIZED. ALL DOORS SHALL HAVE POLYURETHANE GASKETS CEMENTED IN PLACE WITH APPROVED ADHESIVE SO AS TO MAKE THEM AIRTIGHT. CONTRACTOR SHALL INSTALL ADDITIONAL ACCESS DOORS AT LOCATIONS REQUIRED BY THE CONFIGURATION OF THE WORK AT NO ADDITIONAL COST.
- ACCESS DOORS INTO DUCTS SHALL IN GENERAL NOT BE SMALLER THAN 16 INCHES X 16 INCHES EXCEPT FOR ACCESS DOORS TO FIRE DAMPER.

F. HANGERS DUCT

- HANGERS SHALL BE ATTACHED TO THE BUILDING STRUCTURE. HANGERS SHALL BE AS DETAILED ON THE DRAWINGS OR IN SMACNA MANUAL. ALL MATERIALS SHALL BE GALVANIZED.

- CONTROL FREEDOM FROM VIBRATION AND NOISE IS ESSENTIAL. TAKE PARTICULAR CARE IN INSTALLING VIBRATION ISOLATION MOUNT AND HANGERS SO THAT VIBRATION FROM OPERATING EQUIPMENT IS NOT TRANSMITTED TO THE STRUCTURE OR OTHER WORK.

G. INSULATION

- INSULATION SHALL BE COMPLETE TO INCLUDE ALL DUCTWORK, PIPING AND EQUIPMENT AS HEREINAFTER SPECIFIED.
- ALL INSULATION IN A RETURN PLENUM SHALL HAVE A COMPOSITE (JACKETS, FACINGS, ADHESIVES, ETC.), FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM E-84, NFPA 271 AND DL 723 NOT EXCEEDING FLAME SPREAD OF 25 AND SMOKE DEVELOPED OF 50.
- INSULATE ALL SUPPLY DUCTWORK AND HVAC PLENUMS PER APPLICABLE ENERGY CODE.
- INSULATE OUTSIDE AIR DUCTWORK AND PROVIDE AND INSTALL WEATHER PROTECTING JACKET. COORDINATE JACKET COLOR WITH ARCHITECT.
- RETURN DUCTWORK TO BE INSULATED PER THE APPLICABLE ENERGY CODE.
- PROVIDE AND INSTALL PIPING INSULATION PER THE APPLICABLE ENERGY CODE FOR THE FOLLOWING:
 - COOL PIPING SYSTEMS (CHILLED WATER, BRINE, REFRIGERANT), 32°F (0°C) TO 65°F (18°C).
 - DUAL TEMPERATURE SYSTEMS, 32°F (0°C) TO 220°F (104°C).
 - HEATING SYSTEMS (STEAM, STEAM CONDENSATE, HOT WATER), AMBIENT UP TO 450°F (232°C).
 - CONDENSATE PIPING.

H. AIR TESTING, ADJUSTING AND BALANCING (TAB) GENERAL

- PROVIDE QUALIFIED PERSONNEL, EQUIPMENT, APPARATUS AND SERVICES FOR TESTING, INSPECTION, BALANCING AND ADJUSTING OF ALL MECHANICAL SYSTEMS, TO PERFORMANCE DATA SHOWN IN SCHEDULES AND AS SPECIFIED, AND AS REQUIRED BY CODES, STANDARDS, REGULATIONS AND AUTHORITIES HAVING JURISDICTION INCLUDING CITY INSPECTORS, AND ENGINEER. NOTIFY THE ENGINEER AND INVOLVED AUTHORITIES AT LEAST 24 HOURS PRIOR TO TESTING OR INSPECTION. DO NOT COVER WORK PRIOR TO TESTING OR INSPECTION.
- ENGAGE A TAB PROFESSIONAL CERTIFIED BY THE TESTING, ADJUSTING AND BALANCING BUREAU (TABB) FOR ALL TESTING AND BALANCING WORK. ALL AIR BALANCING MUST BE PERFORMED BY AN INDEPENDENT TESTING AND BALANCING AGENCY AS A DIRECT SUB-CONTRACTOR TO THE GENERAL CONTRACTOR. PROVIDE 4 COPIES OF THE CERTIFIED BALANCING REPORT.
- INSTRUMENTS USED FOR TESTING AND BALANCING SHALL HAVE BEEN CALIBRATED WITHIN SIX MONTHS PRIOR TO TESTING OR BALANCING. CALIBRATION SHALL BE CERTIFIED.
- CONTRACTOR TO BALANCE HVAC SYSTEM TO ACHIEVE AIR FLOWS SPECIFIED ON THE HVAC DRAWINGS. CONTRACTOR SHALL SUBMIT A CERTIFIED BALANCING REPORT TO ENGINEER FOR APPROVAL. SYSTEM TO BE BALANCED USING APPROVED ASHRAE METHODS.
- TESTING, INSPECTION, BALANCING AND ADJUSTING SHALL IN NO WAY RELIEVE OR REDUCE GUARANTEE REQUIREMENTS.
- DO NOT COVER OR CONCEAL WORK PRIOR TO TESTING AND INSPECTION AND OBTAINING APPROVAL.
- PRIOR TO DATE OF ACCEPTANCE, FURNISH ENGINEER WITH CERTIFIED CERTIFICATES OF TEST PERFORMED FOR HVAC SYSTEMS INDICATING APPROVAL OF AUTHORITIES HAVING JURISDICTION AND CONFORMANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS.
- THE ARCHITECT/ENGINEER RESERVES THE RIGHT TO REQUEST ADDITIONAL TESTING TO DETERMINE CONFORMANCE WITH THE CONTRACT DOCUMENTS. THE COST OF ADDITIONAL TESTING SHALL BE BORNE BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION.

I. AIR BALANCING AND ADJUSTING

- BALANCING SHALL NOT BEGIN UNTIL SYSTEMS HAVE BEEN INSTALLED COMPLETE. PUT HVAC SYSTEMS AND EQUIPMENT INTO FULL WORKING ORDER AND CONTINUE OPERATION OF SAME DURING EACH DAY OF TESTING AND BALANCING.
- PROCURE SERVICE OF INDEPENDENT BALANCING AND TESTING AGENCY WITH FOLLOWING QUALIFICATIONS:
 - AGENCY IS KNOWN TO SPECIALIZE IN STARTING AND TESTING OF HVAC SYSTEMS.
 - AGENCY-EMPLOYED, PROFESSIONAL AND QUALIFIED HVAC ENGINEER SHALL PERFORM WORK SPECIFIED HEREIN.
 - CERTIFIED BY THE TESTING, ADJUSTING AND BALANCING BUREAU (TABB) FOR ALL TESTING AND BALANCING WORK.
- TEST AND ADJUST EACH DIFFUSER, GRILLE AND REGISTER TO WITHIN 10% OF DESIGN REQUIREMENTS. IDENTIFY LOCATION AND AREA AND INCLUDE IN A REPORT EACH GRILLE, DIFFUSER, AND REGISTER.
- TEST AND ADJUST EACH AIR HANDLING EQUIPMENT UNIT. BALANCE OUTSIDE AIR FLOW FOR EACH AIR HANDLING EQUIPMENT UNIT. PROVIDE STATIC PRESSURE REPORT FOR ALL AIR MOVING SYSTEMS.
- IDENTIFY AND LIST SIZE, TYPE AND MANUFACTURER OF DIFFUSERS, GRILLES, REGISTERS AND ALL TESTED EQUIPMENT. MANUFACTURER'S RATINGS ON ALL EQUIPMENT SHALL BE USED TO MAKE REQUIRED CALCULATIONS.
- READINGS AND TESTS OF DIFFUSERS, GRILLES, AND REGISTERS SHALL INCLUDE REQUIRED FPM VELOCITY AND TEST RESULTANT VELOCITY, REQUIRED CFM AND RESULTANT CFM AFTER ADJUSTMENTS.
- ADJUST ALL DIFFUSERS, GRILLES, AND REGISTERS TO MINIMIZE DRAFTS.
- A DRAWING SHALL BE SUBMITTED AS PART OF THE TESTING AND BALANCING REPORT. THE DRAWING SHALL SHOW CLEARLY THE TEST LOCATIONS IN THE DUCTWORK AND THE DUCT SIZES.

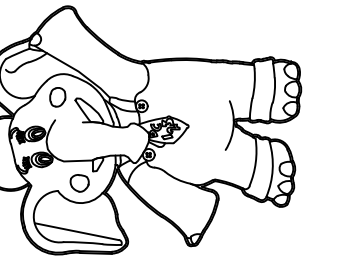
- CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY.
- GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC.
- VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.



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 NAME OF LICENSEE: MATTHEW B. JARMEI
 LICENSE NUMBER: 0401 014089

Project Number: TLEVA23-034 Scale: AS NOTED
 Drawn By: LN Approved By: MBJ

Drawing Name:

HVAC GENERAL NOTES

Drawing Number:

M-100



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GENERAL ABBREVIATIONS

A		I	
A	Air or Compressed Air	ID	Inside Diameter
AC	Air Conditioning	IN	Inches
ACD	Automatic Control Damper	K	Kilowatt
AD	Access Door	KW	Kilowatt
AF	Air Foil	L	
AHU	Air Handling Unit	LAT	Leaving Air Temperature
AMP	Ampere	LB	Pound
AP	Access Panel	LF	Linear Feet
APD	Air Pressure Drop	LD	Linear Diffuser
AS	Air Stream	LP	Low Point
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers	LPS	Low Pressure Steam
ATC	Automatic Temperature Control	LRA	Locked Rotor Amps
ATM	Atmosphere	LUVR	Louver
AHJ	Authority Having Jurisdiction	LVDL	Louvered Door
		LVG	Leaving
		LWT	Leaving Water Temperature
B		M	
BDD	Back-Draft Damper	MAX	Maximum
BHP	Brake Horsepower	MBH	1000 BTUH
BI	Backwards Inclined	MCA	Minimum Circuit Amps
BOD	Bottom of Duct	MD	Motorized Damper
BTU	British Thermal Unit	MECH	Mechanical
BTUH	BTU per Hour	MIN	Minimum
		MJ	Make-Up Water
		MUA	Make-Up Air
C		N	
CEMT	Center or Centrifugal	NC	Noise Criteria or Normally Closed
CF	Cubic Feet	NO	Normally Open
CFM	Cubic Feet per Minute	NCM	Nominal
CH	Chilled or Chiller		
CHW	Chilled Water		
CHWR	Chilled Water Return		
CHWS	Chilled Water Supply		
CO	Carbon Monoxide		
CONN	Connection		
CT	Cooling Tower		
CTBD	Cooling Tower Blow Down		
CUH	Cabinet Unit Heater		
CWR	Condenser Water Return		
CWS	Condenser Water Supply		
D		P	
D	Drain	PCF	Pounds per Cubic Foot
DB	Dry Bulb (Temperature)	PD	Pressure Drop
DEG	Degree	PH	Phase
DDC	Direct Digital Control	PRV	Pressure Reducing Valve
DIA	Diameter	PSI	Pounds per Square Inch
DM	Dimension	PSIA	Pounds per Square Inch - Absolute
DP	Differential Pressure	PSID	Pounds per Square Inch - Differential
		PSIG	Pounds per Square Inch - Gauge
		PVC	Polyvinyl Chloride
E		R	
EA	Each or Exhaust Air	R	Radius
EAHU	Exhaust Air Handling Unit	RA	Return Air
EAT	Entering Air Temperature	RET	Return
EF	Exhaust Fan	RH	Relative Humidity
EMER	Emergency	RLA	Running Load Amps
EMS	Energy Management System	RLF	Relief
ESP	External Static Pressure	RPM	Revolutions per Minute
ET	Expansion Tank	RTU	Roof-Top Unit
EUH	Electrical Unit Heater		
EWT	Entering Water Temperature		
EXH	Exhaust		
EXT	External		
EXP	Expansion		
F		S	
F	Fahrenheit	SA	Supply Air
FA	Free Area or Fire Alarm	SCR	Screen
FC	Flexible Connection	SDT	Saturated Condensing Temperature
FCU	Fan Coil Unit	SD	Smoke Detector or Smoke Damper
FD	Fire Damper, or Fire Department	SE	Smoke Exhaust
FLA	Full Load Amps	SEN	Sensible
FLEX	Flexible	SFD	Combination Smoke / Fire Damper
FLRDR	Floor Drain	SHC	Sensible Heat Capacity
FFM	Feet per Minute	SMACNA	Sheet metal and Air Conditioning Contractor's National Association
FPS	Feet per Second	SP	Static Pressure
FRP	Fiberglass Reinforced Plastic	SF	Square Feet
FS	Flow Switch	SS	Stainless Steel
FT	Feet	SUP	Supply
FTR	Fin Tube Radiation		
G		T	
G	Gas	T	Temperature
GA	Gauge	TEFC	Totally Enclosed Fan Cooled
GAL	Gallons	TEMP	Temperature
GALV	Galvanized	TON	12,000 BTUH (Cooling Capacity)
GFU	Glycol Feed Unit	TSP	Total Static Pressure
GPH	Gallons per Hour	TSTAT	Thermostat
GPM	Gallons per Minute	TYP	Typical
GR	Grade		
H		U	
HB	Hose Bib (Connection)	UC	Undercut (Door)
HD	Head		
HP	Horsepower or High Point		
HR	Hour		
HRRU	Heat Recovery Unit		
HTG	Heating		
HTHW	High Temperature Hot Water		
HWR	Hot Water Return		
HWS	Hot Water Supply		
HZ	Hertz (Cycles per Second)		
		V	
		V	Volts
		VAV	Variable Air Volume
		VD	Volume Damper
		VEL	Velocity
		VFD	Variable Frequency Drive
		W	
		WB	Wet Bulb Temperature
		WC	Water Column
		WG	Water Gauge
		WPD	Water Pressure Drop
		WTD	Water Temperature Difference

HVAC SPECIFICATIONS

THE FOLLOWING STANDARDS SHALL GOVERN THE CHARACTER OF THE WORK TO BE PERFORMED: ASTM, NFPA, SMACNA, UL, AND LOCAL AGENCIES HAVING JURISDICTION.

- LOW PRESSURE - RECTANGULAR DUCTWORK GALVANIZED SHEET METAL GAUGE (ALL FOUR SIDES),

DIMENSION LONGEST SIDE, INCHES	GALV STEEL GAUGE	ALUMINUM THICKNESS INCHES	COPPER OZ. PER SQ. FT.	TRANSVERSE REINFORCING AT JOINTS AND BETWEEN JOINTS
UP THRU 12	26	0.020	16	1" POCKET LOCK 24 GAUGE, STANDING SEAM JOINT 24 GAUGE, 1" STANDING S SLIP 24 GAUGE, JOINT MAX ON 8 FT. CENTERS.
13 THRU 18	24	0.025	24	SAME AS FOR UP THRU 12.
19 THRU 54	24	0.025	24	1" POCKET LOCK 22 GAUGE, JOINTS MAX. ON 8 FT. CENTERS.

- FLAT AREAS OF DUCT OVER 18 IN. WIDE SHALL BE STIFFENED BY CROSS BREAKING (R = W) OF BEADING.
 - ALL JOINTS TO HAVE CORNER CLOSURES.
 - ALL JOINTS SHALL BE SEALED WITH 3M EC-800 MASTIC.
- DUCT INSTALLATION:
DUCTS SHALL BE SUPPORTED WITH APPROVED HANGERS AT INTERVALS NOT EXCEEDING 5 FEET.

- DUCTWORK INSULATION QUALITY ASSURANCE:
 - FLAME SPREAD/SMOKE DEVELOPED RATING OF 25/50 IN ACCORDANCE WITH ASTM E84

PRODUCT: GLASS FIBER, FLEXIBLE

- MANUFACTURERS:
 - SCHULLER
 - OWENS CORNING
 - KNAUF

- INSULATION: ASTM C553 C612, FLEXIBLE, NONCOMBUSTIBLE
 - "K" (KSI) VALUE: ASTM C518, 0.29 AT 75 DEGREES F.
 - MAXIMUM SERVICE TEMPERATURE: 250 DEGREES F.
 - SECURE WITH PRESSURE SENSITIVE TAPE.

- VAPOR BARRIER JACKET
 - KRAFT PAPER REINFORCED WITH GLASS FIBER YARN AND BONDED TO
 - MOISTURE VAPOR TRANSMISSION: ASTM E96, 0.04 PERM.
 - SECURE WITH PRESSURE SENSITIVE TAPE.

- VAPOR BARRIER TAPE
 - KRAFT PAPER REINFORCED WITH GLASS FIBER YARN AND BONDED TO ALUMINIZED FILM, WITH PRESSURE SENSITIVE RUBBER BASED ADHESIVE.

E. TIE WIRE: ANNEALED STEEL, 16 GAGE.

DUCTWORK INSULATION NOTES:
ALL SUPPLY AND RETURN DUCTS AND PLENUM INSTALLED AS PART OF AN HVAC AIR DISTRIBUTION SYSTEM MUST BE THERMALLY INSULATED WITH MINIMUM REQUIREMENTS AS FOLLOWS:

R-6 SUPPLY AND RETURN AIR DUCT INSULATION IN UNCONDITIONED SPACES

R-8 SUPPLY AND RETURN AIR DUCT INSULATION OUTSIDE THE BUILDING

R-8 INSULATION BETWEEN DUCTS AND THE BUILDING EXTERIOR WHEN DUCTS ARE PART OF A BUILDING ASSEMBLY

ALL ABOVE MENTIONED INSULATION VALUES SHALL BE CHECKED BY CONTRACTOR AND ADAPTED TO REFLECT REQUIREMENTS OF APPLICABLE ENERGY CODE

EQUIPMENT SYMBOLS AND CALL OUTS

	MANUAL BALANCING VOLUME DAMPER
	WIRED WALL ROOM THERMOSTAT
	WIRED REMOTE WALL MOUNTED AVERAGING TEMPERATURE SENSOR CAPABILITY
	RETURN DUCT MOUNTED HUMIDISTAT
	NEW RETURN/EXHAUST DIFFUSER
	NEW SUPPLY DIFFUSER
	ELECTRIC CEILING HEATER
	EXHAUST FAN ROOF MOUNTED, MUSHROOM DOWNBLAST TYPE
	AIR OUTLET TAG
	CONDENSATE DRAIN PIPE
	NEW RIGID DUCT
	NEW FLEXIBLE DUCT
	PACKAGED ROOFTOP UNIT
	SMOKE DETECTOR - DUCT MOUNTED

DUCTWORK SYMBOLS

DESCRIPTION	DOUBLE LINE DUCT
SUPPLY DUCT UP	
SUPPLY DUCT DOWN	
ROUND DUCT UP SUPPLY/RETURN/EXHAUST	
ROUND DUCT DOWN SUPPLY/RETURN/EXHAUST	
STANDARD RADIUS ELBOW (R = W) SUPPLY/RETURN/EXHAUST	
MITERED ELBOWS W/ VANES	
BULLHEAD SPLIT SUPPLY	
TAKEOFF TO DIFF/GRILLE	
RETURN DUCT UP	
RETURN DUCT DN	
EXHAUST DUCT UP	
EXHAUST DUCT DN	
HORIZONTAL OFFSET SUPPLY/RETURN/EXHAUST	
RISE OR DROP SUPPLY/RETURN/EXHAUST	
45° TAP TAKE-OFF RECTANGULAR / ROUND (Ø) - OVAL ()	
90° TAP TAKE-OFF RECTANGULAR / ROUND (Ø) - OVAL ()	
BULLHEAD CONVERGE RETURN/EXHAUST RECTANGULAR / ROUND (Ø) - OVAL ()	

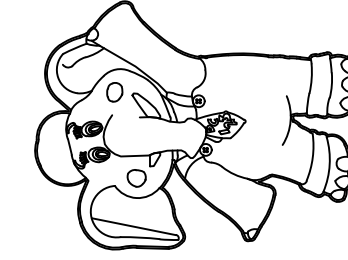
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LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MBJ

Drawing Name:
HVAC ABBREVIATIONS SPECIFICATIONS AND SYMBOL LIST

Drawing Number:
M-101

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

MATTHEW B. JARMEL
0401 014089
ARCHITECT

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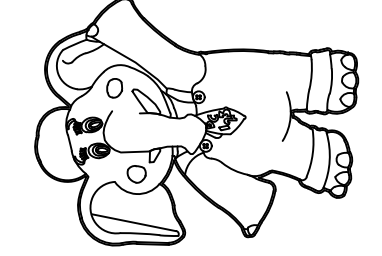
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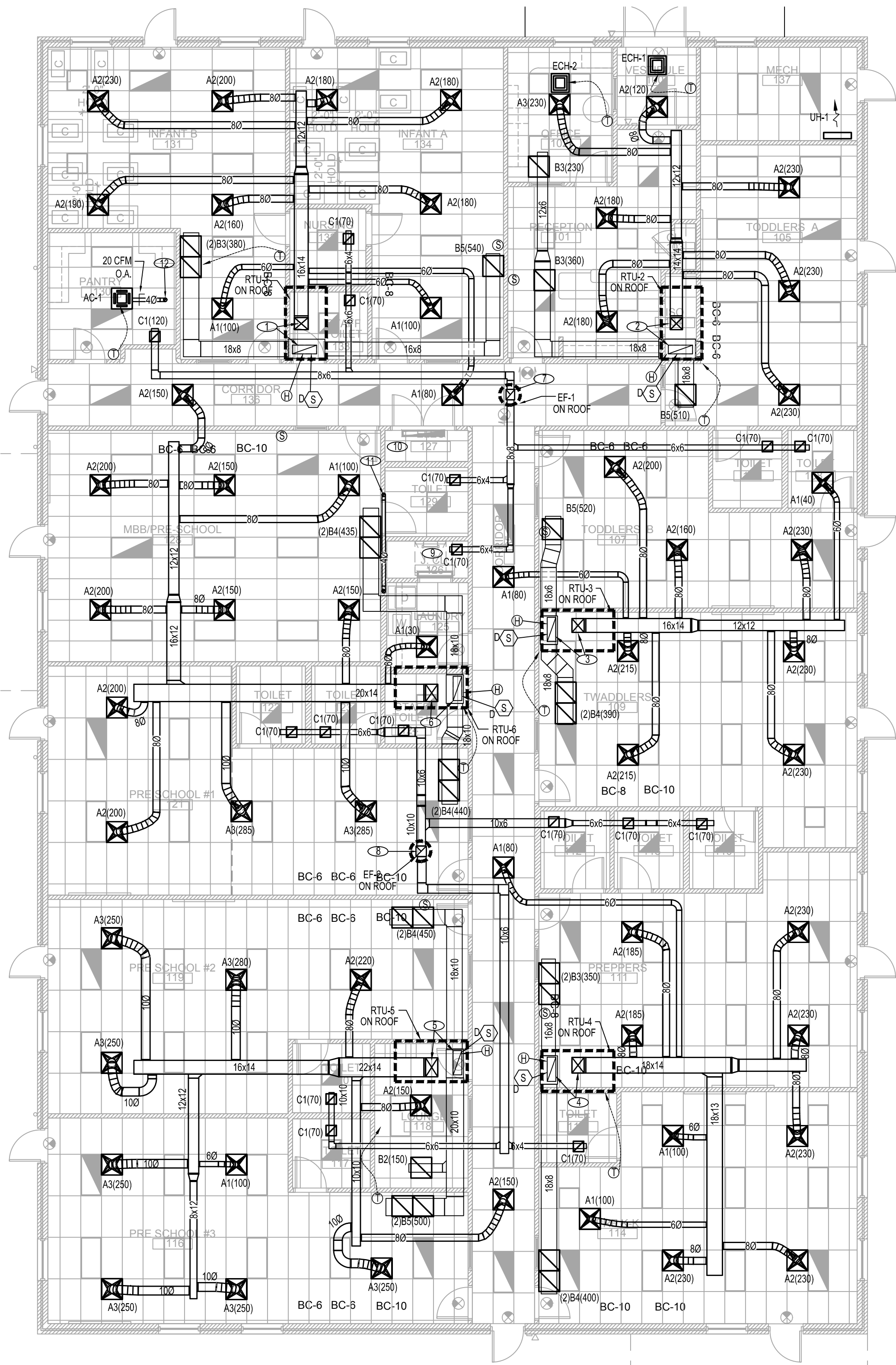
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- SHEET NOTES:**
1. ALL SUPPLY, RETURN AND EXHAUST DUCTWORK SHALL HAVE EXTERIOR DUCT WRAP INSULATION WITH VAPOR BARRIER, MINIMUM R-6. SEE HVAC SPECIFICATIONS IN DWG M-101 FOR ACCEPTABLE MATERIAL.
 2. PROVIDE 1" ACOUSTICAL LINER FOR THE FIRST 15' FEET OF RUN OF SUPPLY AND RETURN DUCT FROM EACH RTU OUTLET.
 3. EACH RTU THERMOSTAT SHALL BE HONEYWELL MODEL TC-500. WHERE SHOWN ON THIS PLAN, CONTRACTOR SHALL INSTALL AN AVERAGE SENSOR MODEL HONEYWELL MODEL TR-40. ALL THERMOSTATS AND SENSORS SHALL BE MOUNTED 4 FEET ABOVE FINISHED FLOOR. VERIFY THEIR FINAL LOCATION AGAINST CONFLICT WITH WALL MOUNTED ITEMS / MILLWORK.
 4. INSTALL BALANCING VOLUME DAMPER ON EACH INDIVIDUAL SUPPLY/RETURN/EXHAUST TAKEOFF AS PER DETAIL IN DWG M-500
 5. CONTRACTOR SHALL INSTALL A PLASMA TUBE IN EACH ROOFTOP UNIT CABINET AS PER SCHEDULE IN DWG M-400
 6. FOR DETAILED INFORMATION OF SPACE ALLOCATION IN MECHANICAL ROOM SEE ELECTRICAL DRAWING E-201.

- KEY NOTES:**
- 1 16x14 SUPPLY AND 28x10 RETURN DUCT UP TO RTU-1 ON ROOF ABOVE. CONTRACTOR TO PROVIDE THE TRANSITION BETWEEN THE SUPPLY DUCT AND UNIT OPENING
 - 2 14x14 SUPPLY AND 28x10 RETURN DUCT UP TO RTU-2 ON ROOF ABOVE. CONTRACTOR TO PROVIDE THE TRANSITION BETWEEN THE SUPPLY DUCT AND UNIT OPENINGS
 - 3 16x14 SUPPLY AND 28x10 RETURN DUCT UP TO RTU-3 ON ROOF ABOVE. CONTRACTOR TO PROVIDE THE TRANSITION BETWEEN THE SUPPLY DUCT AND UNIT OPENINGS
 - 4 18x14 SUPPLY AND 28x10 RETURN DUCT UP TO RTU-4 ON ROOF ABOVE. CONTRACTOR TO PROVIDE THE TRANSITION BETWEEN THE SUPPLY DUCT AND UNIT OPENINGS
 - 5 22x14 SUPPLY AND 28x10 RETURN DUCT UP TO RTU-5 ON ROOF ABOVE. CONTRACTOR TO PROVIDE THE TRANSITION BETWEEN THE SUPPLY DUCT AND UNIT OPENING.
 - 6 20x14 SUPPLY AND 28x10 RETURN DUCT UP TO RTU-6 ON ROOF ABOVE. CONTRACTOR TO PROVIDE THE TRANSITION BETWEEN THE SUPPLY DUCT AND UNIT OPENING.
 - 7 12x10 EXHAUST DUCT UP TO EF-1 ON ROOF ABOVE.
 - 8 12x12 EXHAUST DUCT UP TO EF-2 ON ROOF ABOVE.
 - 9 ROOF ACCESS / MAINTENANCE DOOR SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, CONDUITS OR OTHER FIXED ITEMS
 - 10 CENTRAL EXHAUST FAN FOR TOILET EXHAUST TO OPERATE ON A TIMER LOCATED IN ELEC CLOSET. THE TIMER HAS EXHAUST FAN RUNNING FROM 6:00 AM TO 8:00 PM, SEVEN DAYS A WEEK. THEY SHOULD NOT BE CONNECTED TO THE LIGHT SWITCH OR BE INDIVIDUAL FAN UNITS.
 - 11 RUN 4" DRYER EXHAUST DUCT UP TO ROOF. TERMINATE WITH GOOSENECK MIN. 3 FEET ABOVE ROOF LINE. PROVIDE CLEAN OUT AT EVERY ELBOW. TOTAL EXHAUST DUCT DEVELOPED LENGTH 16' WITH ONE 90° ELBOW. MAXIMUM ACCEPTABLE LENGTH WITH ONE 90° ELBOW BY MANUFACTURER IS 60'. THEREFORE NO BOOSTER FAN REQUIRED. SEE DETAIL ON DWG H-500.
 - 12 4" Ø OUTSIDE AIR DUCT UP TO ROOF ABOVE. INSTALL A BALANCING DAMPER AND BALANCE TO ACHIEVE 20 CFM.



1 HVAC PLAN
 SCALE: 1/8" = 1'-0"
 NORTH

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Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIA\TILEVA23-034 - TILE WINCHESTERYA 2600 PLEASANT VALLEY WAY\CD\STILEVA23-034-HVAC.DWG LNICOLAE PLOTTED: 12/20/2023

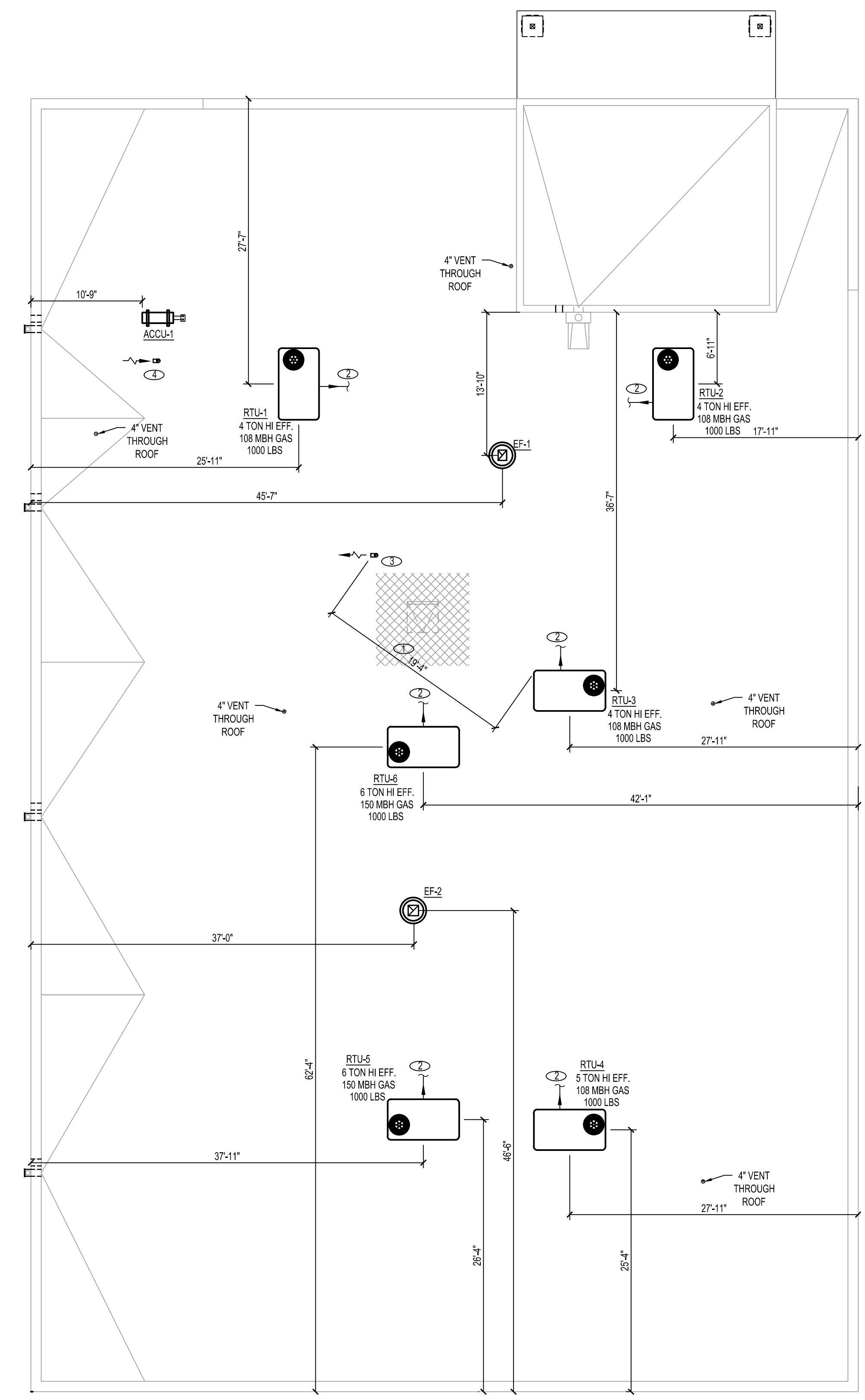
- ① THE HORIZONTAL DISTANCE FROM DRYER EXHAUST OUTLET TO CLOSEST ROOFTOP UNIT OUTSIDE AIR INTAKE SHALL BE MORE THAN 10 FEET
- ② PROVIDE CONDENSATE DRAIN PIPE SIZED PER MANUFACTURER'S REQUIREMENTS FOR EACH ROOFTOP UNIT WITH CONDENSATE TRAP. CONDENSATE TO BE DISCHARGED TO THE ROOF TOWARD ROOF DRAIN. MINIMUM PIPE LENGTH FIVE (5) FEET AWAY FROM RTU INLET TO PROVIDE POSITIVE DRAINAGE. PROVIDE P-TRAP WITH MINIMUM 2" DIFFERENCE BETWEEN INLET AND DISCHARGE. ALLOW PVC PIPE (SIZE TO MATCH THE RTU CONDENSATE DISCHARGE) FROM P-TRAP TO ROOF DRAIN WITH VENT. THE PVC DRAIN LINE SHALL BE INSTALLED THAT NO AIR BLOCK WILL OCCUR.
- ③ 4" DRYER EXHAUST DUCT, TERMINATE WITH GOOSENECK MIN. 3' ABOVE ROOF LINE
- ④ 4" O.A. DUCT FOR PANTRY CASSETTE, TERMINATE WITH MIN. 3' ABOVE ROOF LINE

- SHEET NOTES:**
1. FOR GAS PIPE LAYOUT REFER TO PLUMBING DRAWINGS
 2. CENTRAL EXHAUST FANS FOR TOILET EXHAUST TO OPERATE ON A TIMER. THE TIMER HAS TWO (2) EXHAUST FANS RUNNING FROM 6:00 AM TO 8:00 PM. SEVEN DAYS A WEEK. THEY SHOULD NOT BE CONNECTED TO THE LIGHT SWITCH OR BE INDIVIDUAL FAN UNITS.
 3. CONTRACTOR SHALL COORDINATE EXACT LOCATION OF ALL EQUIPMENT ON ROOF WITH STRUCTURAL DWGS. ALL SERVICEABLE EQUIPMENT MUST BE LOCATED A MINIMUM OF 10 FEET FROM ROOF EDGE OR OPENINGS. CONTRACTOR TO COORDINATE AND PROVIDE SAFETY RAILS IF UNITS ARE WITHIN 10 FEET OF ROOF EDGE OR OPENINGS.

ROOF EXHAUST SYSTEM NOTES

ALL EXHAUST DISCHARGE AND VENTS TO BE LOCATED AT A MINIMUM DISTANCE OF 10 FT. FROM ANY RTU'S O/A INTAKES

1. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY
2. GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC.
3. VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.



1 HVAC ROOF PLAN
SCALE: 1/8" = 1'-0"
NORTH

Jarmel Kizel
ARCHITECTS AND ENGINEERS INC.
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WINCHESTER, VIRGINIA 22601

ISSUE

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2	12-19-23	FOR PERMIT	MBJ

REVISION

NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034 Scale: AS NOTED
Drawn By: LN Approved By: MBJ

Drawing Name:

HVAC ROOF PLAN

Drawing Number: **M-300**

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DRAWINGS TITLE - THE LEARNING EXPERIENCE TITLE - VIRGINIA TLEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY CDS DISTYLEVA23-034-HVAC-DWG LNCOLIAE PLOTTED: 12/20/2023

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TAG	LOCATION	MANUF	MANUF MODEL	TOTAL CFM	MAX. O.A. CFM	COOLING TONS	DX COOLING COIL DATA					HEATING COIL DATA					MOTORELECTRICAL DATA					REMARKS						
							NET TOTAL CAPACITY MBH	NET SENSIBLE CAPACITY MBH	LATENT CAPACITY MBH	COIL EAT DB °F	COIL EAT WB °F	UNIT LAT DB °F	UNIT LAT WB °F	COOLING DESIGN OUTDOOR AMBIENT TEMP DB/WB °F	INPUT CAPACITY MBH	OUTPUT CAPACITY MBH	COIL EAT DB °F	UNIT LAT DB °F	HEATING DESIGN OUTDOOR AMBIENT TEMP DB °F	UNIT VOLTAGE	EXT. SP IN W.C.		SUPPLY FAN MOTOR HP	SUPPLY FAN MOTOR TYPE	EER	MCA	MOP	MAX OPERATING UNIT WEIGHT LBS
RTU-1	ROOF	LENNOX	LGT048H4E	1600	300	4 TON	46.23	35.34	10.89	76.19	63.36	55.0	53.1	9074	108	87	61.19	111.0	10	2083	0.6	1	MSAV	17.6 SEER	25	35	1000	SEE NOTES
RTU-2	ROOF	LENNOX	LGT048H4E	1400	300	4 TON	45.69	33.34	12.35	76.64	63.71	53.8	52.1	9074	108	87	59.50	116.4	10	2083	0.6	1	MSAV	17.6 SEER	25	35	1000	SEE NOTES
RTU-3	ROOF	LENNOX	LGT048H4E	1800	300	4 TON	46.23	35.34	10.89	76.19	63.36	55.0	53.1	9074	108	87	61.19	111.0	10	2083	0.6	1	MSAV	17.6 SEER	25	35	1000	SEE NOTES
RTU-4	ROOF	LENNOX	LGT060H4E	1800	300	5 TON	56.54	42.46	14.06	75.83	63.08	53.2	51.7	9074	108	87	62.50	106.7	10	2083	0.6	1	MSAV	17.1 SEER	28	40	1000	SEE NOTES
RTU-5	ROOF	LENNOX	LGT072H4E	2400	350	6 TON	67.70	54.25	13.45	75.48	62.61	53.8	52.7	9074	150	121	63.61	110.1	10	2083	0.6	1.5	MSAV	12.2	30	45	1000	SEE NOTES
RTU-6	ROOF	LENNOX	LGT072H4E	2100	350	6 TON	66.74	50.64	16.10	75.83	63.08	52.7	51.6	9074	150	121	62.50	115.4	10	2083	0.6	1.5	MSAV	12.2	30	45	1000	SEE NOTES

- NOTES:
1. ALL UNITS SHALL HAVE DOWNFLOW DUCTS ARRANGEMENT
2. PROVIDE ECONOMIZER WITH COMPARATIVE ENTHALPY FOR ALL RTUS. PROVIDE RETURN DUCT SMOKE DETECTOR FOR ALL RTUS
3. PROVIDE FACTORY INSTALLED BAROMETRIC RELIEF DAMPERS WITH HOOD
4. PROVIDE FACTORY INSTALLED 2 IN MERV8 FILTER
5. PROVIDE FACTORY INSTALLED UNPOWERED GFCI
6. PROVIDE FACTORY INSTALLED WINGED ACCESS DOORS
7. PROVIDE MINIMUM 14" TALL MANUFACTURER'S ROOFCURBS FOR EACH UNIT.
8. PROVIDE FACTORY INSTALLED HOT GAS REHEAT (DEHUMIDIFICATION) FOR ALL RTUS
9. PROVIDE FACTORY INSTALLED WEATHERPROOF DISCONNECT
10. PROVIDE CONDENSATE DRAIN OVERFLOW SWITCH, DIRTY FILTER SWITCH AN FAN FAILURE SWITCH
11. THE CONTRACTOR SHALL VERIFY AND COORDINATE REQUIRED ROOF ASSEMBLY OPENING LOCATIONS AND EQUIPMENT WEIGHT(S) WITH THE ARCHITECTS PRIOR TO ORDERING HVAC EQUIPMENT AND REVIEW OF FRAMING SHOP DRAWINGS.
12. FOR EACH UNIT PROVIDE THERMOSTAT HONEYWELL T500 AND WHEN THE UNIT SUPPLIES MORE THAN (1) ROOM, PROVIDE AVERAGING SENSORS HONEYWELL MODEL TR40 FOR LOCATIONS AND QUANTITIES SEE DWG M-200

TAG	LOCATION	MANUF	MANUF MODEL	CFM	DRIVE	RPM	ESP. IN. W.C.	SONES	ROOF OPENING	WEIGHT LBS	HP	VOLTS	MOTOR TYPE	REMARKS
EF-1	ROOF	CARNES	VEBK08	540	BELT	1413	0.4	6.5	11x11	30	1/6	120/1	K4	SEE NOTES 1& 2
EF-2	ROOF	CARNES	VEBK10	630	BELT	1010	0.4	4.4	13x13	35	1/6	120/1	K2	SEE NOTES 1& 2

- NOTES:
1. PROVIDE DISCONNECT SWITCH, BACKDRAFT DAMPER ALUMINUM INSECT SCREEN AND PREFABRICATED FLAT ROOF CURB BY FAN MANUFACTURER
2. FANS TO RUN ON TIMECLOCK PARAGON MODEL 7000 SERIES AS SHOWN IN ELECTRICAL DWGS
TIMER SETTINGS: FAN ON FROM 6:00 AM TO 8:00 PM, SEVEN DAYS PER WEEK

TAG	MODEL NO.	REMARKS
IF-1	FAITECH DBF-4XL INLINE FAN FOR DRYER EXHAUST	DRYERBOOSTER FAN SCHEDULE 160 CFM- TO ROOF PROVIDE BACKDRAFT DAMPER. DO NOT INSTALL BIRDSCREEN. IF FAN IS NOT INSTALLED ON THE SAME ROOM THAN CLOTHES DRYER IS, A PERMANENT LABEL ON THE WALL WHERE THE DUCT ENTERS SHALL BEAR THE WORDS: "THIS DRYER EXHAUST SYSTEM IS EQUIPPED WITH A REMOTELY LOCATED BOOSTER FAN" FAN TO BE INTERLOCKED WITH DRYER ON/OFF SWITCH. PROVIDE FIVE MINUTES DELAY AFTER DRYER IS TURNED OFF. CHECK MECHANICAL NOTE BELOW.

CONTRACTOR TO FIELD VERIFY THE TOTAL LENGTH OF CLOTHES DRYER EXHAUST DUCT BEFORE INSTALLING BOOSTER FAN. MAXIMUM EQUIVALENT LENGTH SHALL NOT EXCEED 90 FT. FOR DRYER EXHAUST DUCT WITH ONE (1) 90 DEGREE BEND MAXIMUM EQUIVALENT LENGTH SHALL NOT EXCEED 80 FT. FOR DUCT WITH TWO (2) 90 DEGREE BENDS MAXIMUM EQUIVALENT LENGTH SHALL NOT EXCEED 48 FT. FOR DUCT WITH THREE (3) 90 DEGREE BENDS MAXIMUM EQUIVALENT LENGTH SHALL NOT EXCEED 35 FT. FOR DUCT WITH FOUR (4) 90 DEGREE BENDS MAXIMUM EQUIVALENT LENGTH SHALL NOT EXCEED 25 FT. IF CONTRACTOR VERIFIES THESE CODE REQUIREMENTS ARE MET, OR THE DRYER INSTALLED INSTALLATION MANUAL SPECIFIES THE ALLOWABLE DEVELOPED LENGTH, NO BOOSTER FAN SHALL BE NECESSARY AND A CREDIT SHALL BE PROVIDED

TAG	MANUF	MANUF MODEL	CFM RANGE	SERVICE	NECK SIZE Ø IN.	FACE PANEL SIZE IN.	REMARKS
A1	CARNES	SJTB	0-100	SUPPLY	6	24x24	SEE NOTES
A2	CARNES	SJTB	101-230	SUPPLY	8	24x24	SEE NOTES
A3	CARNES	SJTB	231-380	SUPPLY	10	24x24	SEE NOTES
A4	CARNES	SJTB	381-460	SUPPLY	12	24x24	SEE NOTES
A5	CARNES	SJTB	461-600	SUPPLY	14	24x24	SEE NOTES
B1	CARNES	SPRB	0-100	RETURN	6	24x24	SEE NOTES
B2	CARNES	SPRB	101-230	RETURN	8	24x24	SEE NOTES
B3	CARNES	SPRB	231-380	RETURN	10	24x24	SEE NOTES
B4	CARNES	SPRB	381-450	RETURN	12	24x24	SEE NOTES
B5	CARNES	SPRB	451-600	RETURN	14	24x24	SEE NOTES
B6	CARNES	SPRB	601-1000	RETURN	16	24x24	SEE NOTES
C1	CARNES	SPRB	0-120	EXHAUST	6	12x12	SEE NOTES

- NOTES:
CFM SHALL BE AS INDICATED IN DRAWINGS.
C1 EXHAUST GRILLES SHALL BE FACE MOUNTED ON THE 24x24 CEILING TILE

SUBMITTALS FOR HVAC EQUIPMENT AND COMPONENTS SHALL BE PROVIDED TO THE ARCHITECT AND TO THE LEARNING EXPERIENCE PRIOR TO ORDERING EQUIPMENT. ALL SUBSTITUTION OF EQUIPMENT SHALL BE SUBMITTED FOR REVIEW AND APPROVAL BY TLE

START UP OF UNITS
MECHANICAL CONTRACTOR SHALL BE RESPONSIBLE FOR STARTUP OF ALL UNITS. CONTRACTOR SHALL COORDINATE WITH LENNOX REP. TO SCHEDULE SITE VISIT(S) TO VERIFY INSTALLATION IS AS PER MANUFACTURER'S SPECIFICATIONS. THE STARTUP ACTIVITIES MUST BE DOCUMENTED AND MADE PART OF THE CLOSE-OUT PACKAGE PROVIDED BY THE GENERAL CONTRACTOR TO THE OWNER AND TENANT ON THE PROJECT.

LENNOX NATIONAL ACCOUNTS EQUIPMENT PACKAGE
FOR MORE INFORMATION OF EQUIPMENT CONTACT LENNOX NATIONAL ACCOUNTS:
TERRY BUCHANAN NATIONAL ACCOUNTS MANAGER LENNOX INDUSTRIES
LENNOX.NATIONAL.ACCOUNTS@LENNOXIND.COM
THE INSTALLING CONTRACTOR ACCEPTS ALL COSTS RELATED TO EQUIPMENT SUBSTITUTIONS, CONDENSER STANDS PROVIDED BY OTHERS ORDERING PROCEDURES.
LENNOX NATIONAL ACCOUNTS DEPARTMENT WILL ORDER EQUIPMENT AND COORDINATE SHIPMENT WITH THE SUCCESSFUL HVAC CONTRACTOR. THE HVAC CONTRACTOR WILL BE RESPONSIBLE FOR EQUIPMENT WARRANTY, DELIVERY COORDINATION, RECEIVING AND INSTALLATION AS DESCRIBED IN THE SPECIFICATIONS.
START UP AND COMMISSIONING REQUIREMENTS:
INSTALLING CONTRACTOR IS RESPONSIBLE FOR INITIAL STARTUP, CERTIFIED TEST & BALANCE, RUNNING THE UNITS & MAINTAINING THE AIR FILTERS DURING THE CONSTRUCTION PHASE. TWO WEEKS PRIOR TO THE BUILDING TRAINING, THE CONTRACTOR WILL COORDINATE THE EQUIPMENT UNIT VERIFICATION WITH MANUFACTURER. UPON COMPLETION, CONTRACTOR SHALL FURNISH A WRITTEN REPORT TO THE LEARNING EXPERIENCE AND AHJ AS REQUIRED BY AHJ.

TAG	LOCATION	MANUF	MANUF MODEL	KW	BTUH	CFM	THROW FT.	MIN. MOUNTING HEIGHT FT.	MCA	CONTROL CIRCUIT & FAN MOTOR VOLTS	WEIGHT LBS	REMARKS
UH-1	MECH. RM.	QMARK	MVUH5004	1.87	6396	270	16	6	11.3	208/160	24	SEE NOTE 1

- NOTES:
1. HEATER TO BE WALL MOUNTED. PROVIDE DISCONNECT SWITCH. BUILT IN THERMOSTAT TO BE SET AT 65° F

TAG	MANUFACTURER	MODEL	SERVING	ELEC. VOLTAGE	WEIGHT	QUANTITY PER UNIT
GP-1	GLOBAL PLASMA SOLUTIONS	FC48-AC	ONE FOR EACH RTU	24 VOLTS	4 LBS	1

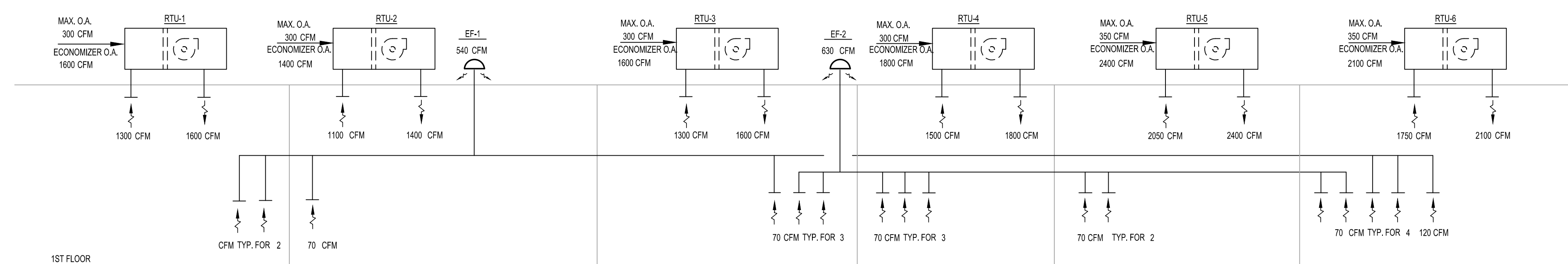
ALL TUBES SHALL BE MOUNTED INSIDE CORRESPONDING ROOFTOP UNIT CABINET

TAG	MANUFACTURER	MODEL	KW	ELEC. VOLTAGE	WEIGHT	REMARKS
ECH-1	QMARK	EFF SERIES 1500	1.5	120/160	22	SEE NOTE 1
ECH-2	QMARK	EFF SERIES 1500	1.5	120/160	22	SEE NOTE 1

- NOTES:
1. HEATER TO BE CEILING MOUNTED. PROVIDE T-BAR MOUNTING KIT, DISCONNECT SWITCH, PROVIDE WALL REMOTE THERMOSTAT (120V WITH CONTACTS RATED AT 20AMPS OR GREATER). THERMOSTAT TO BE SET AT 74° F.

INDOOR UNIT										OUTDOOR UNIT								
TAG	LOCATION	MANUF	MANUF MODEL	CFM	COOLING CAPACITY AT 95° F (BTUH)	HEATING CAPACITY AT 47° F / 17° F (BTUH)	MCA	UNIT WEIGHT (LBS)	TAG	LOCATION	MANUF	MANUF MODEL	CFM	VOLTAGE	MCA	MOCP	REFRIGERANT TYPE	UNIT WEIGHT (LBS)
AC-1	PANTRY CEILING	MITSUBISHI	TPLA0A0241EA70A	530-640-710-810	24,000	28,000 / 28,000	1.0	56	ACCU-1	ROOF	MITSUBISHI	TRUZH0241HA10NA	1340	208/1	17.0	27	R410A	190

- NOTES:
1. UNIT SHALL BE CONTROLLED BY A MITSUBISHI WIRED THERMOSTAT MODEL TAR-40MAU, LOCATED IN PANTRY AS PER PLAN.
2. PROVIDE BLUE DIAMOND (MEGABLU ADVANCED) CONDENSATE PUMP W/ RESERVOIR & SENSOR, OUTSIDE AIR KIT, DISCONNECT SWITCH CONDENSATE TO DISCHARGE INDIRECTLY TO UNITS OR SINK. ROUTING SHALL BE COORDINATED IN FIELD.



AIR FLOW DIAGRAM
N.T.S.

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ACADEMY OF EARLY EDUCATION
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WINCHESTER, VIRGINIA 22601

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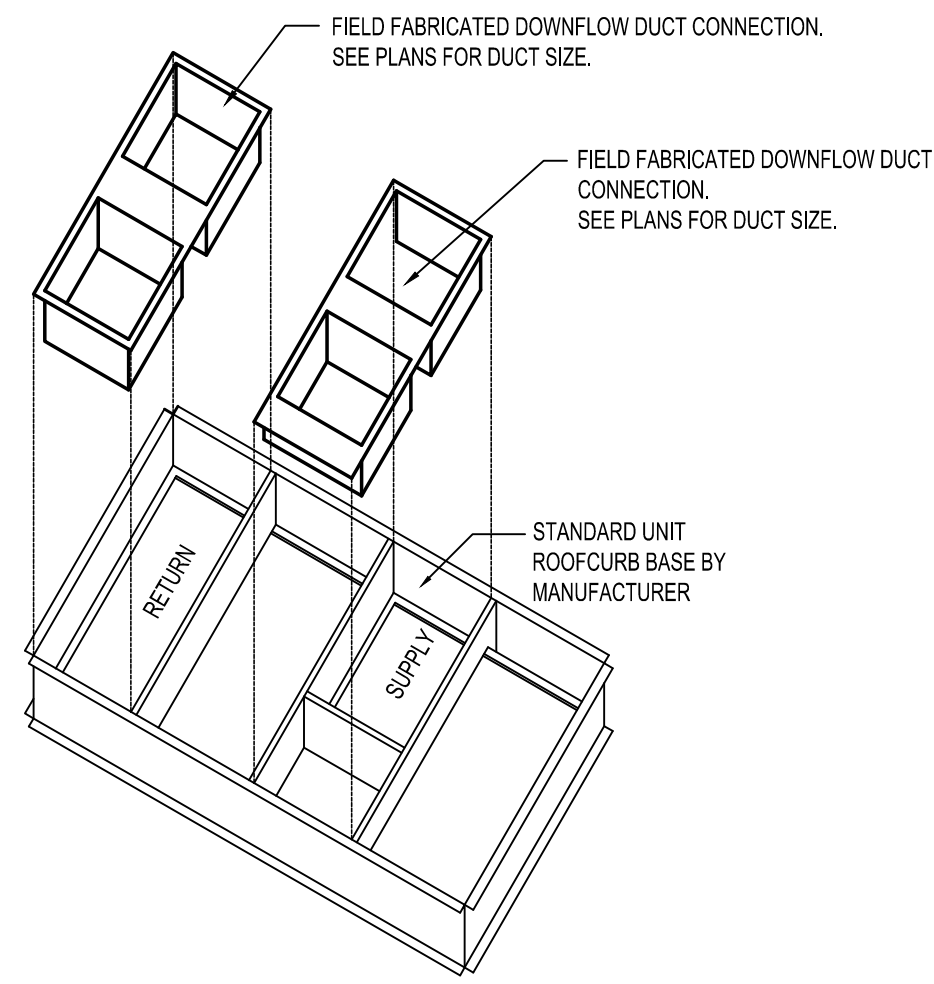
PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MBJ

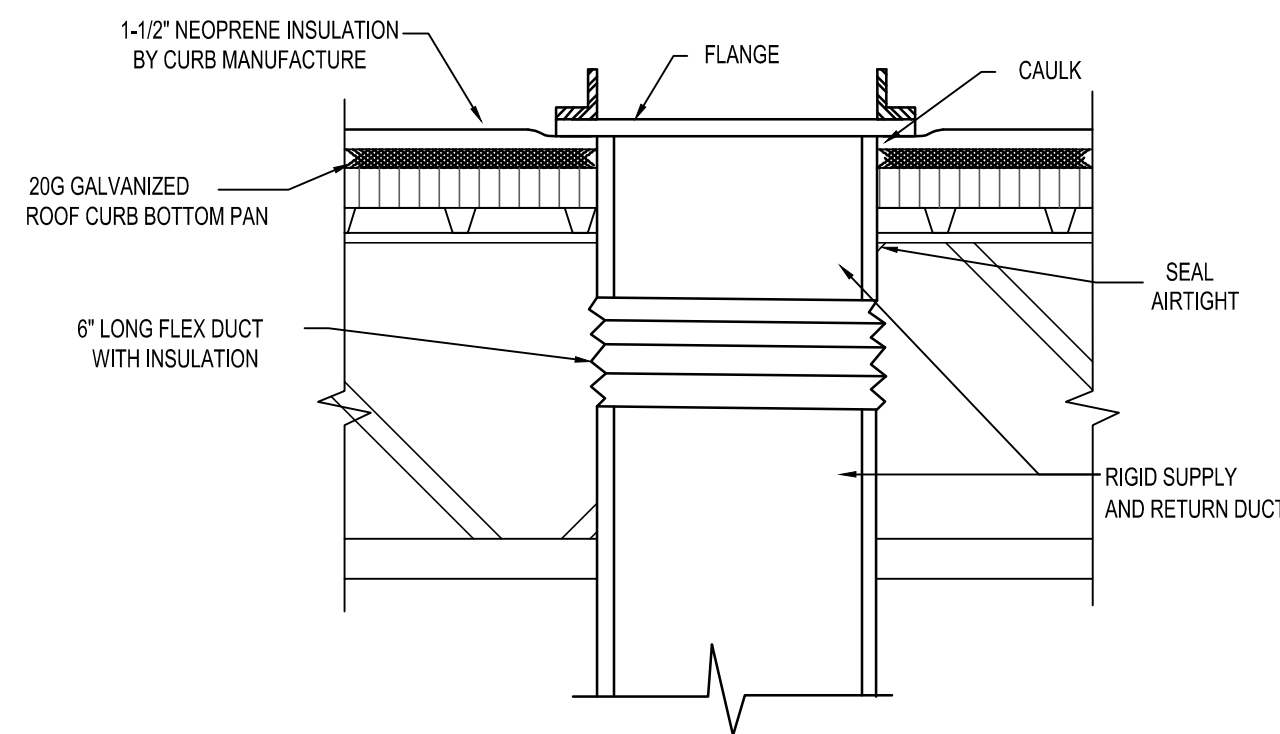
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HVAC SCHEDULES & AIR RISER DIAGRAM

Drawing Number:
M-400

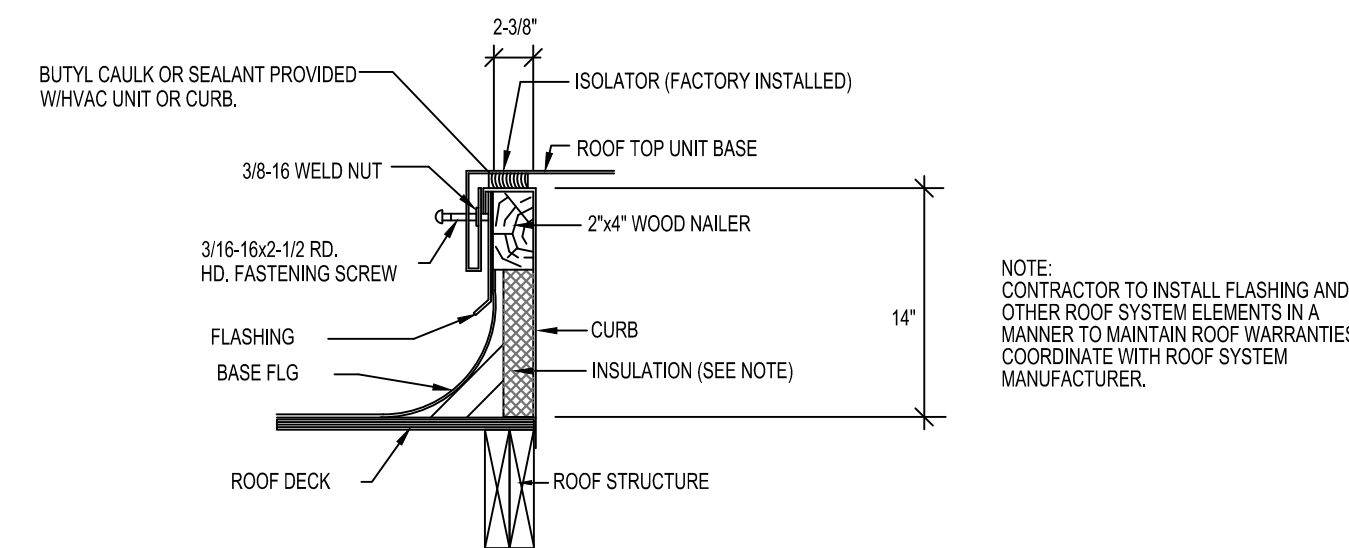
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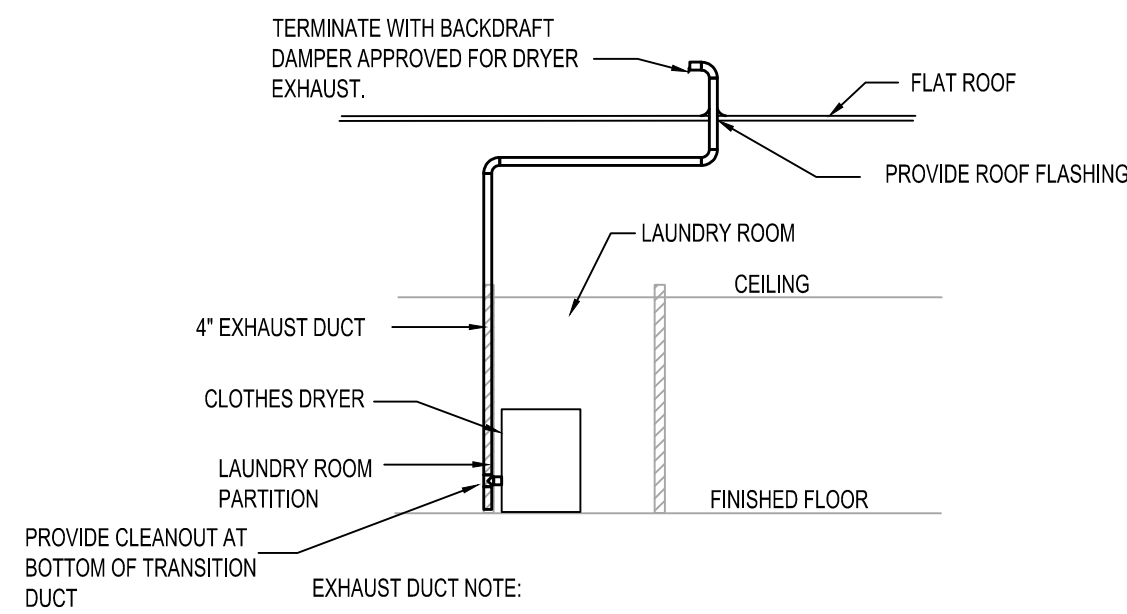
12 DUCTWORK CONNECTION TO ROOFCURB
SCALE: N.T.S.



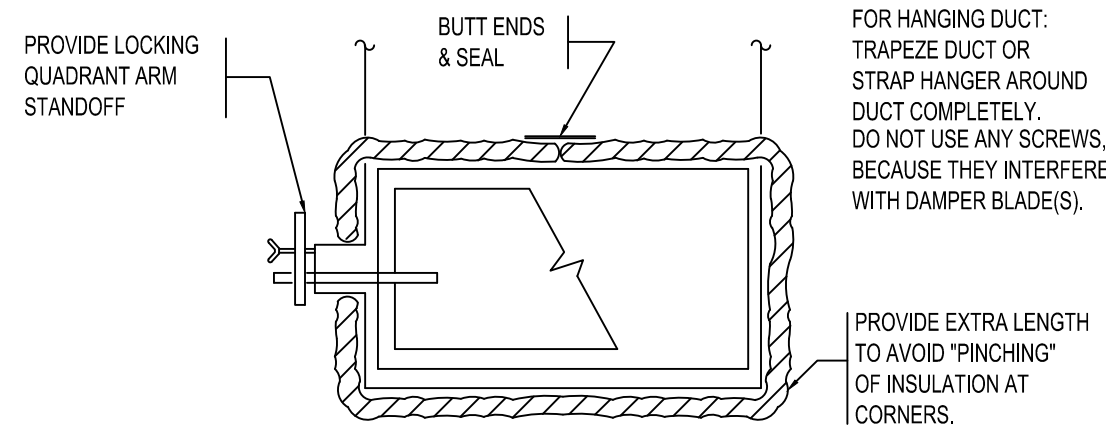
11 DUCT PENETRATION THROUGH ROOF
SCALE: N.T.S.



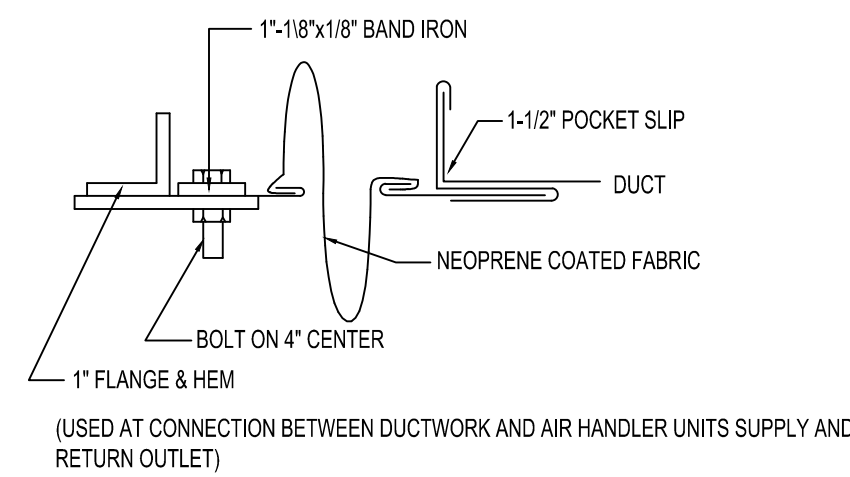
10 TYPICAL HVAC UNIT ROOFTOP CURB
SCALE: 1" = 1'-0"



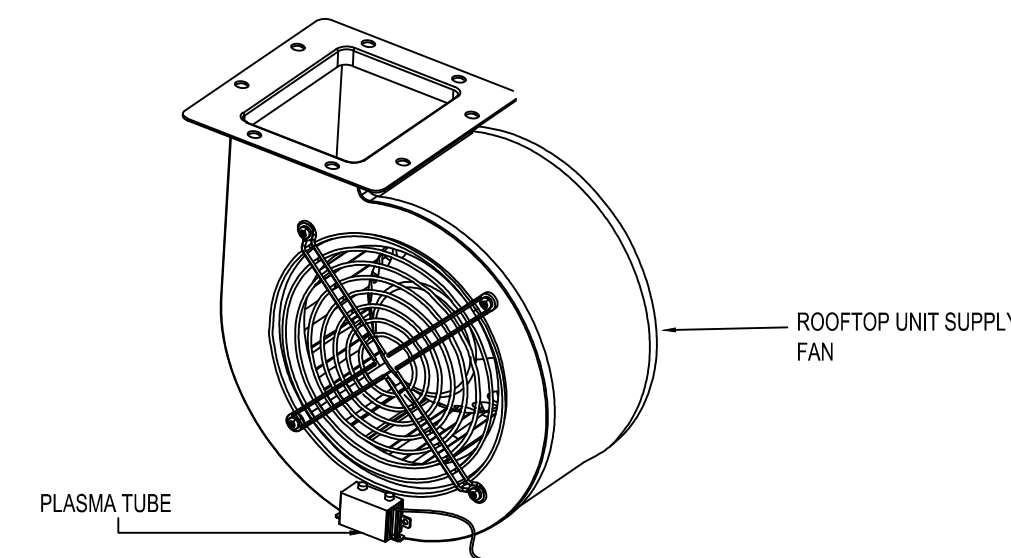
9 CLOTHES DRYER EXHAUST DIAGRAM
SCALE: N.T.S.



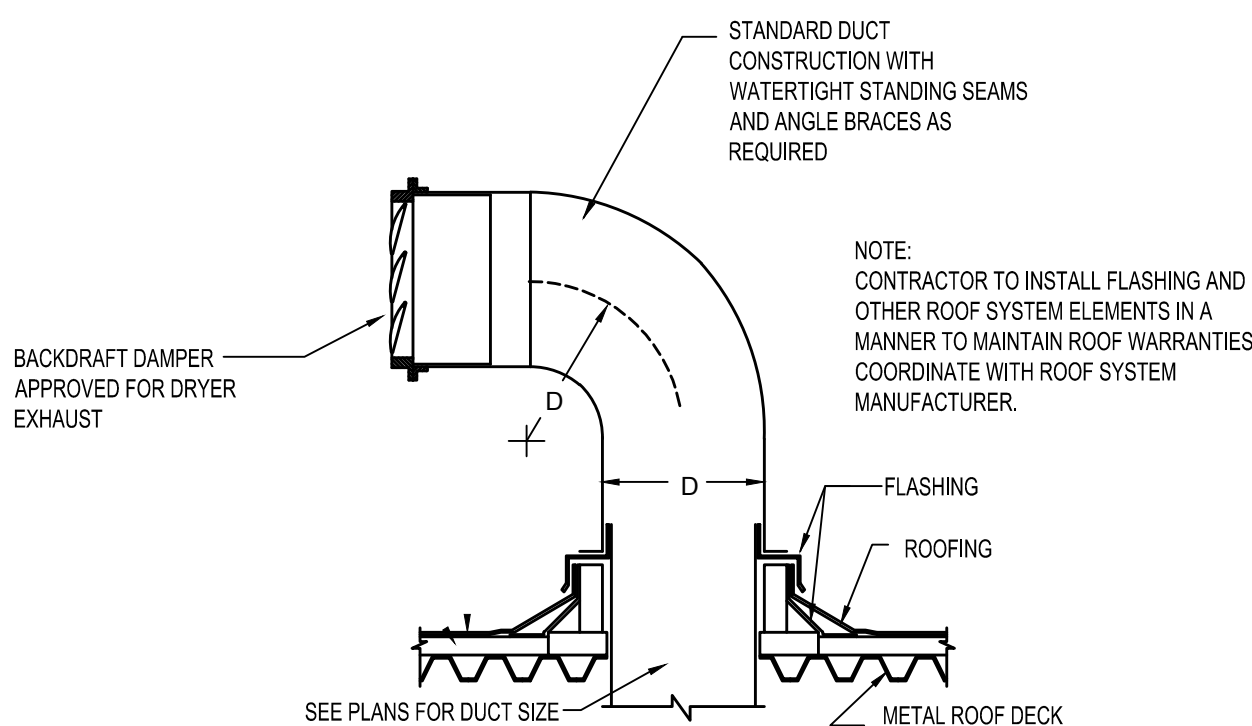
5 DUCT INSULATION DIAGRAM
SCALE: N.T.S.



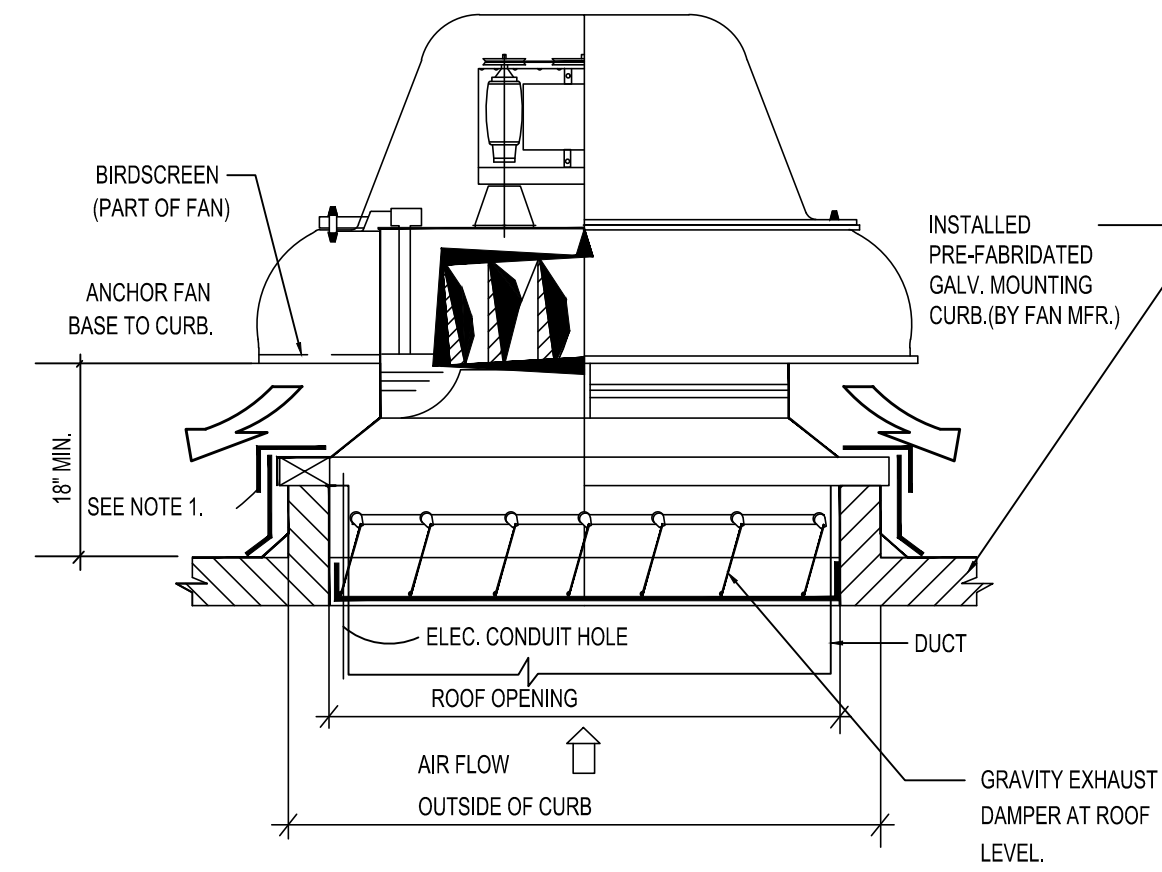
6 FLEX CONNECTOR DIAGRAM
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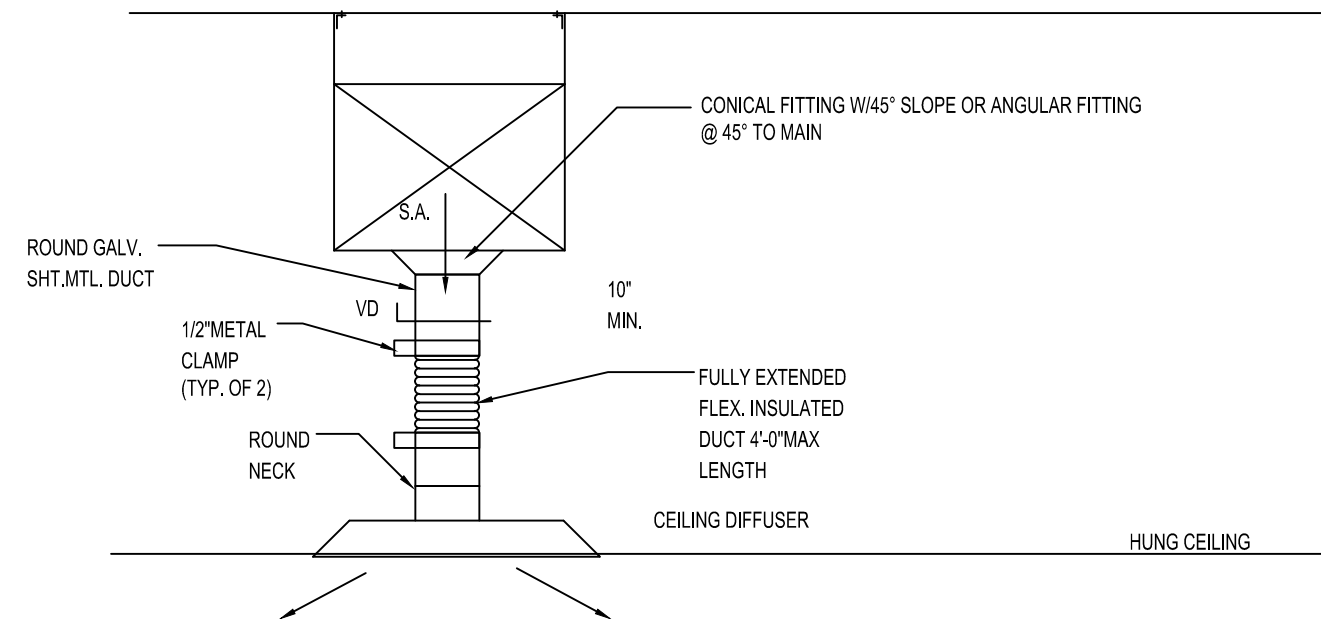
7 GPS-FC-48-AC MOUNTING DIAGRAM
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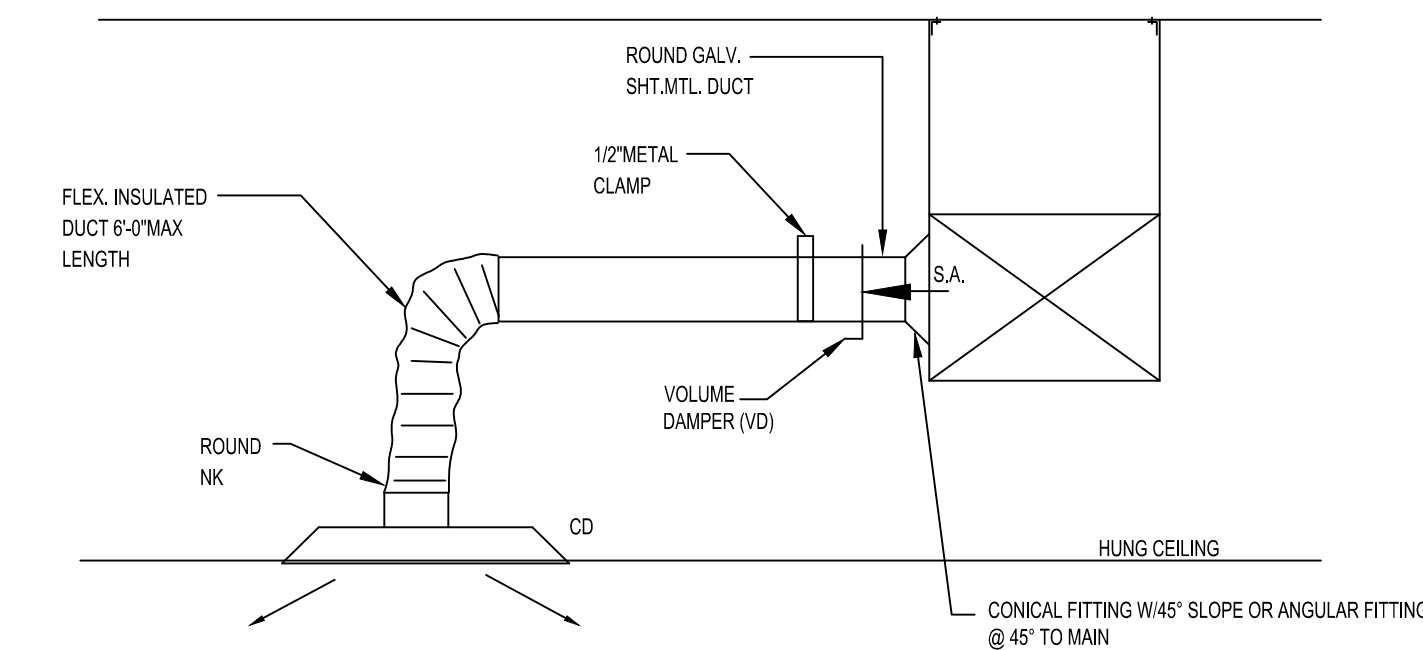
8 DRYER GOOSENECK DIAGRAM
SCALE: N.T.S.



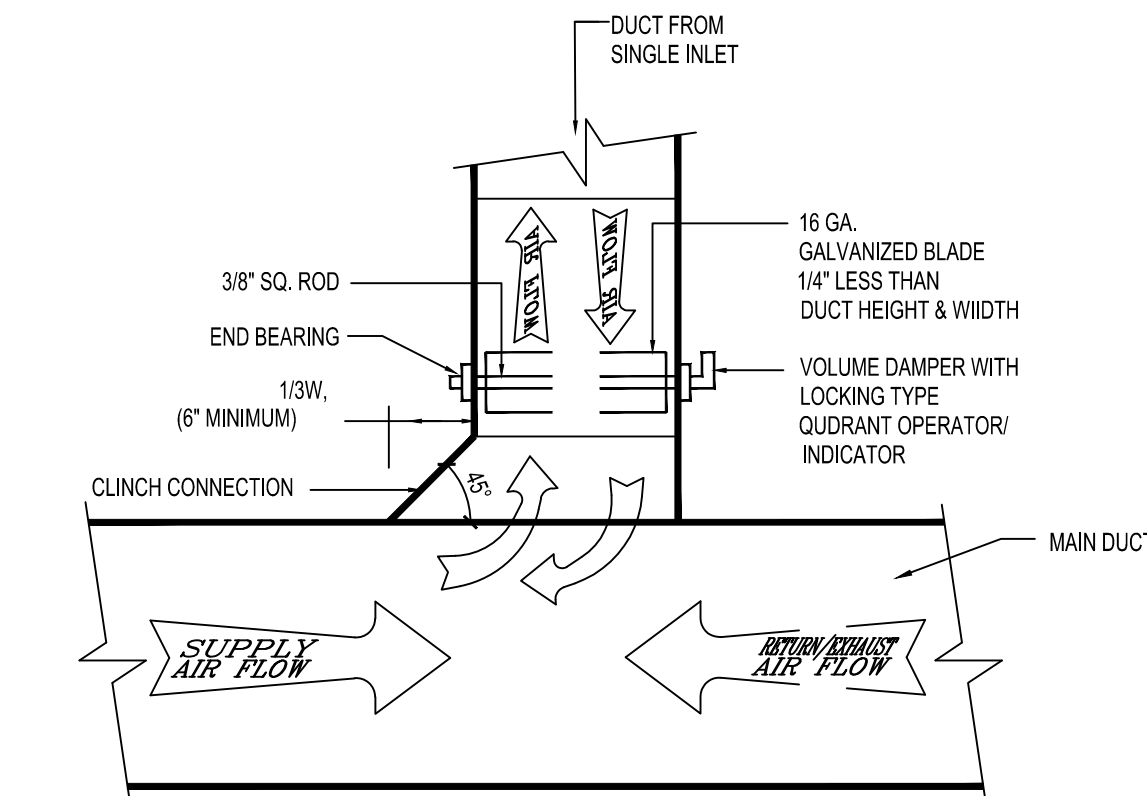
4 ROOF EXHAUST FAN DIAGRAM
SCALE: N.T.S.



3 BOTTOM DUCT DIFFUSER CONNECTION
SCALE: 1/2" = 1'-0"



2 SUPPLY DIFFUSER CONNECTION
SCALE: 1/2" = 1'-0"



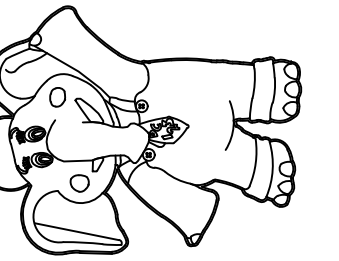
1 SUPPLY/RETURN (EXHAUST) DUCT TAP
SCALE: N.T.S.

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Drawn By: LN Approved By: MBJ

Drawing Name:

HVAC
DETAILS/DIAGRAMS

Drawing Number:

M-500
MATTHEW B. JARMELE
0401 014089
ARCHITECT

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Charlotte, NC 28208
www.gps-air.com
VERSION 2.2 running ASHRAE 62.1-2016

Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft)	Zone Max Occupancy	Table 5.1 OA per Occupant (cfm)	Table 6.1 Pz/Rp	Az/Ra	Table 6.2 Ventilation Effectiveness (E _v)	Outdoor Air to Zone (CFM) with Ex. Contribution (CFM)
RTU-1	Educational Facilities	Classrooms (through age 4)	1,240.0	20.0	10.0	0.18	300	0.8	407
Zone Height (feet)									
Clear Height (feet)	0.0								
Clearance Above Top Occupant (ft)	30.0								
Supply Air Flow (CFM)	1,000								
Return Air Flow (CFM)	1,000								
Supply Air Fan static pressure (in. H ₂ O)	0.0								
Return Air Fan static pressure (in. H ₂ O)	0.0								
Level of Physical Activity	Sedentary								
Filter location	Constant								
Outdoor Air Filter type	Constant								

Indoor Contaminants Generated by People & From Outdoors	Maximum Threshold Value Based on OSHA or NIOSH (ppm)	Using the VSP (Prescribed OA) (ft ³ /person-hr)	Using the IAQ Method (Reduced OA) (ft ³ /person-hr)	Acceptable at Reduced OA Levels?	Generation Rate (ft ³ /person-hr)	Filtration Effectiveness	Concentration (ppm)	Authority
Acetaldehyde	0.1	1.03E-07	1.03E-07	Yes	0.0000E+00	100%	0.0000E+00	OSHA
Acetone	250.0	8.327E-09	3.356E-09	Yes	3.562E-07	50%	1.781E-09	NIOSH
Ammonia	250.0	7.950E-07	2.716E-07	Yes	3.292E-07	50%	1.646E-07	NIOSH
Benzene	0.1	1.477E-07	4.488E-08	Yes	4.488E-08	50%	2.244E-08	NIOSH
Carbon dioxide	1000	2.119E-07	7.063E-08	Yes	4.238E-07	50%	2.119E-07	NIOSH
Chloroform	2.0	1.896E-08	6.320E-09	Yes	2.743E-07	50%	1.371E-07	NIOSH
Chlorobenzene	0.5	3.021E-08	1.007E-08	Yes	1.007E-07	50%	5.035E-08	NIOSH
Hydrogen Sulfide	10.0	3.000E-09	1.000E-09	Yes	1.000E-09	50%	5.000E-10	NIOSH
Methane	100.0	3.794E-09	1.265E-09	Yes	1.265E-09	50%	6.325E-10	NIOSH
Methanol	100.0	1.744E-08	5.812E-09	Yes	5.812E-09	50%	2.906E-09	NIOSH
Methylene Chloride	100.0	1.124E-08	3.742E-09	Yes	3.742E-09	50%	1.871E-09	NIOSH
Propane	100.0	1.262E-08	4.207E-09	Yes	4.207E-09	50%	2.103E-09	NIOSH
Trans-1,2-Dichloroethane	100.0	4.300E-07	1.433E-07	Yes	1.433E-07	50%	7.165E-08	NIOSH
Trichloroethylene	100.0	1.705E-07	5.681E-08	Yes	5.681E-08	50%	2.840E-08	NIOSH
T.T.T. Trichloroethane	300.0	1.830E-07	6.100E-08	Yes	6.100E-08	50%	3.050E-08	NIOSH
Carbon dioxide	1000	2.119E-07	7.063E-08	Yes	4.238E-07	50%	2.119E-07	NIOSH

Building materials and furnishings assumed to have no VOCs and off-gassing is complete. All pollutant levels shown are per hour averages.

CO₂ Steady State (PPM)

Indoor CO₂ Steady State (PPM)

Date: 8/25/2023
 Job Name: TLE Woodchuck VA
 Representative: Jarmel Kizel Architects and Engineers
 Engineer: Jarmel Kizel Architects and Engineers
 Contractor: Jarmel Kizel Architects and Engineers

BASED ON VENTILATION RATES PRESCRIBED BY THE 2018 VIRGINIA MECHANICAL CODE, RTU-1 WILL NEED TO PROVIDE 529 CFM OF OUTSIDE AIR AS PER EXCEPTIONS OF PARAGRAPH 403.2. THIS RATE OF CFM HAS BEEN REDUCED TO 300 CFM DUE TO AN ENGINEERED VENTILATION SYSTEM WHICH CONSIST OF A PLASMA TUBE ADDED INTO SUPPLY AIRFLOW



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Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft)	Zone Max Occupancy	Table 5.1 OA per Occupant (cfm)	Table 6.1 Pz/Rp	Az/Ra	Table 6.2 Ventilation Effectiveness (E _v)	Outdoor Air to Zone (CFM) with Ex. Contribution (CFM)
RTU-2	Educational Facilities	Classrooms (through age 4)	620.0	10.0	10.0	0.18	300	0.8	407
Zone Height (feet)									
Clear Height (feet)	0.0								
Clearance Above Top Occupant (ft)	30.0								
Supply Air Flow (CFM)	1,000								
Return Air Flow (CFM)	1,000								
Supply Air Fan static pressure (in. H ₂ O)	0.0								
Return Air Fan static pressure (in. H ₂ O)	0.0								
Level of Physical Activity	Sedentary								
Filter location	Constant								
Outdoor Air Filter type	Constant								

Indoor Contaminants Generated by People & From Outdoors	Maximum Threshold Value Based on OSHA or NIOSH (ppm)	Using the VSP (Prescribed OA) (ft ³ /person-hr)	Using the IAQ Method (Reduced OA) (ft ³ /person-hr)	Acceptable at Reduced OA Levels?	Generation Rate (ft ³ /person-hr)	Filtration Effectiveness	Concentration (ppm)	Authority
Acetaldehyde	0.1	1.03E-07	1.03E-07	Yes	0.0000E+00	100%	0.0000E+00	OSHA
Acetone	250.0	8.327E-09	3.356E-09	Yes	3.562E-07	50%	1.781E-09	NIOSH
Ammonia	250.0	7.950E-07	2.716E-07	Yes	3.292E-07	50%	1.646E-07	NIOSH
Benzene	0.1	1.477E-07	4.488E-08	Yes	4.488E-08	50%	2.244E-08	NIOSH
Carbon dioxide	1000	2.119E-07	7.063E-08	Yes	4.238E-07	50%	2.119E-07	NIOSH
Chloroform	2.0	1.896E-08	6.320E-09	Yes	2.743E-07	50%	1.371E-07	NIOSH
Chlorobenzene	0.5	3.021E-08	1.007E-08	Yes	1.007E-07	50%	5.035E-08	NIOSH
Hydrogen Sulfide	10.0	3.000E-09	1.000E-09	Yes	1.000E-09	50%	5.000E-10	NIOSH
Methane	100.0	3.794E-09	1.265E-09	Yes	1.265E-09	50%	6.325E-10	NIOSH
Methanol	100.0	1.744E-08	5.812E-09	Yes	5.812E-09	50%	2.906E-09	NIOSH
Methylene Chloride	100.0	1.124E-08	3.742E-09	Yes	3.742E-09	50%	1.871E-09	NIOSH
Propane	100.0	1.262E-08	4.207E-09	Yes	4.207E-09	50%	2.103E-09	NIOSH
Trans-1,2-Dichloroethane	100.0	4.300E-07	1.433E-07	Yes	1.433E-07	50%	7.165E-08	NIOSH
Trichloroethylene	100.0	1.705E-07	5.681E-08	Yes	5.681E-08	50%	2.840E-08	NIOSH
T.T.T. Trichloroethane	300.0	1.830E-07	6.100E-08	Yes	6.100E-08	50%	3.050E-08	NIOSH
Carbon dioxide	1000	2.119E-07	7.063E-08	Yes	4.238E-07	50%	2.119E-07	NIOSH

Building materials and furnishings assumed to have no VOCs and off-gassing is complete. All pollutant levels shown are per hour averages.

CO₂ Steady State (PPM)

Indoor CO₂ Steady State (PPM)

Date: 8/25/2023
 Job Name: TLE Woodchuck VA
 Representative: Jarmel Kizel Architects and Engineers
 Engineer: Jarmel Kizel Architects and Engineers
 Contractor: Jarmel Kizel Architects and Engineers

BASED ON VENTILATION RATES PRESCRIBED BY THE 2018 VIRGINIA MECHANICAL CODE, RTU-2 WILL NEED TO PROVIDE 407 CFM OF OUTSIDE AIR AS PER EXCEPTIONS OF PARAGRAPH 403.2. THIS RATE OF CFM HAS BEEN REDUCED TO 300 CFM DUE TO AN ENGINEERED VENTILATION SYSTEM WHICH CONSIST OF A PLASMA TUBE ADDED INTO SUPPLY AIRFLOW



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Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft)	Zone Max Occupancy	Table 5.1 OA per Occupant (cfm)	Table 6.1 Pz/Rp	Az/Ra	Table 6.2 Ventilation Effectiveness (E _v)	Outdoor Air to Zone (CFM) with Ex. Contribution (CFM)
RTU-3	Educational Facilities	Classrooms (through age 4)	1,195.0	20.0	10.0	0.18	300	0.8	644
Zone Height (feet)									
Clear Height (feet)	0.0								
Clearance Above Top Occupant (ft)	30.0								
Supply Air Flow (CFM)	1,000								
Return Air Flow (CFM)	1,000								
Supply Air Fan static pressure (in. H ₂ O)	0.0								
Return Air Fan static pressure (in. H ₂ O)	0.0								
Level of Physical Activity	Sedentary								
Filter location	Constant								
Outdoor Air Filter type	Constant								

Indoor Contaminants Generated by People & From Outdoors	Maximum Threshold Value Based on OSHA or NIOSH (ppm)	Using the VSP (Prescribed OA) (ft ³ /person-hr)	Using the IAQ Method (Reduced OA) (ft ³ /person-hr)	Acceptable at Reduced OA Levels?	Generation Rate (ft ³ /person-hr)	Filtration Effectiveness	Concentration (ppm)	Authority
Acetaldehyde	0.1	1.03E-07	1.03E-07	Yes	0.0000E+00	100%	0.0000E+00	OSHA
Acetone	250.0	8.327E-09	3.356E-09	Yes	3.562E-07	50%	1.781E-09	NIOSH
Ammonia	250.0	7.950E-07	2.716E-07	Yes	3.292E-07	50%	1.646E-07	NIOSH
Benzene	0.1	1.477E-07	4.488E-08	Yes	4.488E-08	50%	2.244E-08	NIOSH
Carbon dioxide	1000	2.119E-07	7.063E-08	Yes	4.238E-07	50%	2.119E-07	NIOSH
Chloroform	2.0	1.896E-08	6.320E-09	Yes	2.743E-07	50%	1.371E-07	NIOSH
Chlorobenzene	0.5	3.021E-08	1.007E-08	Yes	1.007E-07	50%	5.035E-08	NIOSH
Hydrogen Sulfide	10.0	3.000E-09	1.000E-09	Yes	1.000E-09	50%	5.000E-10	NIOSH
Methane	100.0	3.794E-09	1.265E-09	Yes	1.265E-09	50%	6.325E-10	NIOSH
Methanol	100.0	1.744E-08	5.812E-09	Yes	5.812E-09	50%	2.906E-09	NIOSH
Methylene Chloride	100.0	1.124E-08	3.742E-09	Yes	3.742E-09	50%	1.871E-09	NIOSH
Propane	100.0	1.262E-08	4.207E-09	Yes	4.207E-09	50%	2.103E-09	NIOSH
Trans-1,2-Dichloroethane	100.0	4.300E-07	1.433E-07	Yes	1.433E-07	50%	7.165E-08	NIOSH
Trichloroethylene	100.0	1.705E-07	5.681E-08	Yes	5.681E-08	50%	2.840E-08	NIOSH
T.T.T. Trichloroethane	300.0	1.830E-07	6.100E-08	Yes	6.100E-08	50%	3.050E-08	NIOSH
Carbon dioxide	1000	2.119E-07	7.063E-08	Yes	4.238E-07	50%	2.119E-07	NIOSH

Building materials and furnishings assumed to have no VOCs and off-gassing is complete. All pollutant levels shown are per hour averages.

CO₂ Steady State (PPM)

Indoor CO₂ Steady State (PPM)

Date: 8/25/2023
 Job Name: TLE Woodchuck VA
 Representative: Jarmel Kizel Architects and Engineers
 Engineer: Jarmel Kizel Architects and Engineers
 Contractor: Jarmel Kizel Architects and Engineers

BASED ON VENTILATION RATES PRESCRIBED BY THE 2018 VIRGINIA MECHANICAL CODE, RTU-3 WILL NEED TO PROVIDE 644 CFM OF OUTSIDE AIR AS PER EXCEPTIONS OF PARAGRAPH 403.2. THIS RATE OF CFM HAS BEEN REDUCED TO 300 CFM DUE TO AN ENGINEERED VENTILATION SYSTEM WHICH CONSIST OF A PLASMA TUBE ADDED INTO SUPPLY AIRFLOW



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Zone Tag	Facility Type	Zone Use	Zone Floor Area (square ft)	Zone Max Occupancy	Table 5.1 OA per Occupant (cfm)	Table 6.1 Pz/Rp	Az/Ra	Table 6.2 Ventilation Effectiveness (E _v)	Outdoor Air to Zone (CFM) with Ex. Contribution (CFM)
RTU-4	Educational Facilities	Classrooms (through age 4)	1,471.0	25.0	10.0	0.18	300	0.8	767
Zone Height (feet)									
Clear Height (feet)	0.0								
Clearance Above Top Occupant (ft)	30.0								
Supply Air Flow (CFM)	1,000								
Return Air Flow (CFM)	1,000								
Supply Air Fan static pressure (in. H ₂ O)	0.0								
Return Air Fan static pressure (in. H ₂ O)	0.0								
Level of Physical Activity	Sedentary								
Filter location	Constant								
Outdoor Air Filter type	Constant								

Indoor Contaminants Generated by People & From Outdoors	Maximum Threshold Value Based on OSHA or NIOSH (ppm)	Using the VSP (Prescribed OA) (ft ³ /person-hr)	Using the IAQ Method (Reduced OA) (ft ³ /person-hr)	Acceptable at Reduced OA Levels?	Generation Rate (ft ³ /person-hr)	Filtration Effectiveness	Concentration (ppm)	Authority
Acetaldehyde	0.1	1.03E-07	1.03E-07	Yes	0.0000E+00	100%	0.0000E+00	OSHA
Acetone	250.0	8.327E-09	3.356E-09	Yes	3.562E-07	50%	1.781E-09	NIOSH
Ammonia	250.0	7.950E-07	2.716E-07	Yes	3.292E-07	50%	1.646E-07	NIOSH
Benzene	0.1	1.477E-07	4.488E-08	Yes	4.488E-08	50%	2.244E-08	NIOSH
Carbon dioxide	1000	2.119E-07	7.063E-08	Yes	4.238E-07	50%	2.119E-07	NIOSH
Chloroform	2.0	1.896E-08	6.320E-09	Yes	2.743E-07	50%	1.371E-07	NIOSH
Chlorobenzene	0.5	3.021E-08	1.007E-08	Yes	1.007E-07	50%	5.035E-08	NIOSH
Hydrogen Sulfide	10.0	3.000E-09	1.000E-09	Yes	1.000E-09	50%	5.000E-10	NIOSH
Methane	100.0	3.794E-09	1.265E-09	Yes	1.265E-09	50%	6.325E-10	NIOSH
Methanol	100.0	1.744E-08	5.812E-09	Yes	5.812E-09	50%	2.906E-09	NIOSH
Methylene Chloride	100.0	1.124E-08	3.742E-09	Yes	3.742E-09	50%	1.871E-09	NIOSH
Propane	100.0	1.262E-08	4.207E-09	Yes	4.207E-09	50%	2.103E-09	NIOSH
Trans-1,2-Dichloroethane	100.0	4.300E-07	1.433E-07	Yes	1.433E-07	50%	7.165E-08	NIOSH
Trichloroethylene	100.0	1.705E-07	5.681E-08	Yes	5.681E-08	50%	2.840E-08	NIOSH
T.T.T. Trichloroethane	300.0	1.830E-07	6.100E-08	Yes	6.100E-08	50%	3.050E-08	NIOSH
Carbon dioxide	1000	2.119E-07	7.063E-08	Yes	4.238E-07	50%	2.119E-07	NIOSH

Building materials and furnishings assumed to have no VOCs and off-gassing is complete. All pollutant levels shown are per hour averages.

CO₂ Steady State (PPM)

Indoor CO₂ Steady State (PPM)

Date: 8/25/2023
 Job Name: TLE Woodchuck VA
 Representative: Jarmel Kizel Architects and Engineers
 Engineer: Jarmel Kizel Architects and Engineers
 Contractor: Jarmel Kizel Architects and Engineers

BASED ON VENTILATION RATES PRESCRIBED BY THE 2018 VIRGINIA MECHANICAL CODE, RTU-4 WILL NEED TO PROVIDE 767 CFM OF OUTSIDE AIR AS PER EXCEPTIONS OF PARAGRAPH 403.2. THIS RATE OF CFM HAS BEEN REDUCED TO 300 CFM DUE TO AN ENGINEERED VENTILATION SYSTEM WHICH CONSIST OF A PLASMA TUBE ADDED INTO SUPPLY AIRFLOW



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H:\DRAWINGS\TITLE - THE LEARNING EXPERIENCE\TITLE - VIRGINIA\TITLEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY\CD\STL\ELECTRICAL - FIRE ALARM\DWG - ADIBI - PLOTTED: 12/16/2023

ABBREVIATIONS			
A	A AMPERE	I	ICC INTERMEDIATE CROSS CONNECT
AC	ARMOR CLAD CABLE	ID	INSIDE DIAMETER
AFCI	ARC-FAULT CIRCUIT INTERRUPTING	IDF	INTERMEDIATE DISTRIBUTION FRAME
AFB	ABOVE FINISHED FLOOR	IMC	INTERMEDIATE METAL CONDUIT
AFG	ABOVE FINISHED GRADE	INF	INFANTS
AHJ	AUTHORITY HAVING JURISDICTION	IP	INTERNET PROTOCOL
AHU	AIR HANDLING UNIT	IPS	IMAGES PER SECOND
AIC	AMPERE INTERRUPTING CAPACITY	ISCSI	INTERNET SMALL COMPUTER SYSTEM INTERFACE
AL	ALUMINUM	IR	INFRARED
AM	AMMETER	J	JB JUNCTION BOX
ANN	ANNUNCIATOR	K	KO KNOCK OUT
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE	KV	KILOVOLT
ATS	AUTOMATIC TRANSFER SWITCH	KVA	KILOVOLT AMPERE
AV	AUDIO VISUAL	KW	KILOWATT
AWG	AMERICAN WIRE GAUGE	KWH	KILOWATT HOUR
B	BAS BUILDING AUTOMATION SYSTEM	L	LA LIGHTNING ARRESTOR
BDF	BUILDING DISTRIBUTION FRAME	LAN	LOCAL AREA NETWORK
BFC	BELOW FINISHED CEILING	LCD	LIQUID CRYSTAL DISPLAY
BFG	BELOW FINISHED GRADE	LED	LIGHT EMITTING DIODE
BKBD	BACKBOARD	LS	LIFE SAFETY
BKR	BREAKER	LTD	LONG TIME DELAY
BPS	BOLTED PRESSURE SWITCH	LTG	LIGHTING
C	CAT CONDUIT	LV	LOW VOLTAGE
CATV	CABLE ANTENNA TELEVISION	M	MAG MAGNETIC
CB	CIRCUIT BREAKER	MAN	MANUAL
CCTV	CLOSED CIRCUIT TELEVISION	MAX	MAXIMUM
CKT	CIRCUIT	MATV	MASTER ANTENNA TELEVISION
CLG	CEILING	Mb	MEGABIT
CM	CONSTRUCTION MANAGER	MBB	MAKE BELIEVE BOULEVARD
CO	COMPANY	MC	METAL CLAD CABLE
COAX	COAXIAL	MCA	MINIMUM CIRCUIT AMPERES
CT	CURRENT TRANSFORMER	MCB	MAIN CIRCUIT BREAKER
CTTS	CLOSE TRANSITION TRANSFER SWITCH	MCC	MOTOR CONTROL CENTER
CU	COPPER	MCS	MOLDED CASE SWITCH
D	DC DIRECT CURRENT	MCM	THOUSANDS OF CIRCULAR MILS
DD	DUCT DETECTOR	MCP	MOTOR CIRCUIT PROTECTOR
DHCP	DYNAMIC HOST CONFIGURATION PROTOCOL	MDF	MAIN DISTRIBUTION FRAME
DIA	DIAMETER	MDP	MAIN DISTRIBUTION PANELBOARD
DIV	DIVISION	MECH	MECHANICAL
DN	DOWN	MER	MAIN EQUIPMENT ROOM
DPO	DRAWOUT	MFR	MANUFACTURER
DPDT	DOUBLE POLE DOUBLE THROW	MFS	MAIN FUSED SWITCH SUPPLY
DPST	DOUBLE POLE SINGLE THROW	MGP	MEDICAL GAS PANEL
DS	DISCONNECT SWITCH	MH	MANHOLE
DSP	DIGITAL SIGNAL PROCESSOR	MI	MINERAL INSULATED CABLE
DVD	DIGITAL VERSATILE DISC	MIC	MICROPHONE
DVR	DIGITAL VIDEO RECORDER	MIN	MINIMUM
DVS	DIGITAL VIDEO SURVEILLANCE	MLO	MAIN LUGS ONLY
DWG	DRAWING	MM	MULTIMODE
E	EA EACH	MOC	MAXIMUM OVERCURRENT PROTECTION
EF	EXHAUST FAN	MOC	MAXIMUM OVERCURRENT PROTECTION
EGS	ENGINE-GENERATOR SET	MTO	MANUAL TRANSFER SWITCH
EL	ELEVATION	MTS	MEDIUM TENSION
ELEC	ELECTRIC	MV	MEDIUM VOLTAGE
ELEV	ELEVATOR	N	N NEUTRAL
EMT	ELECTRICAL METALLIC TUBING	NA	NOT APPLICABLE
EO	EQUIPMENT BY OWNER	NC	NORMALLY CLOSED
EOL	END OF LINE DEVICE	NEC	NATIONAL ELECTRICAL CODE
EQUIP	EQUIPMENT	NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
EWC	ELECTRIC WATER COOLER	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
EWH	ELECTRICAL WATER HEATER	NIC	NOT IN CONTRACT
EXH	EXHAUST	NO	NORMALLY OPEN
EXP	EXPLOSION PROOF	NOC	NETWORK OPERATIONS CENTER
ECH	ELECTRIC CEILING HEATER	NTS	NOT TO SCALE
F	FA FIRE ALARM	OA	OUTSIDE AIR ON CENTER
FAA	FIRE ALARM ANNUNCIATION PANEL	OC	OVERCURRENT PROTECTIVE DEVICE
FACP	FIRE ALARM CONTROL PANEL	OD	OUTSIDE DIAMETER
FBO	FURNISHED BY OWNER	OH	OVERHEAD
FI	FILM ILLUMINATOR	P	P POLE
FLR	FLOOR	PA	PUBLIC ANNOUNCEMENT
FLUOR	FLUORESCENT	PB	PULLBOX/PUSHBUTTON
FPS	FRAMES PER SECOND	PC	PERSONAL COMPUTER
FFU	FIELD PROCESSING UNIT	PCU	PACKAGED CONTROL UNIT
FS	FUSED SWITCH	PE	PNEUMATIC-ELECTRIC
FTL	FEED THRU LUGS	PH	PHASE
G	GA GAUGE	PNL	PANELBOARD
Gb	GIGABIT	PLC	PROGRAMMABLE LOGIC CONTROLLER
GE	GROUNDING EQUALIZER CONDUCTOR	PoE	POWER OVER ETHERNET
GEN	GENERATOR	PREP	PREPPERS
GFCI	GROUND FAULT CIRCUIT INTERRUPTING	PR	PRIMARY
GFI	GROUND FAULT INTERRUPTING	PSBK	PRE-SCHOOL
GFR	GROUND FAULT RELAY	PSU	PATIENT SERVING UNIT
GFR	GROUND FAULT RELAY TEST PANEL	PT	POTENTIAL TRANSFORMER
GPS	GLOBAL PLASMA TUBE	PTZ	PAN TILT ZOOM
GRD	GROUND	PVC	POLYVINYL CHLORIDE
H	HCT HARMONIC CONDITIONING TRANSFORMER	PWR	POWER
HF	HARMONIC FILTER	R	RAID REDUNDANT ARRAY OF INDEPENDENT DISKS
HFT	HARMONIC FILTER WITH INTEGRAL TRANSFORMER	RCP	REFLECTED CEILING PLANS
HID	HIGH INTENSITY DISCHARGE	RCPT	RECEPTACLE
HOA	HAND OFF AUTO	RE	REFER TO
HP	HORSEPOWER	REF	REFRIGERATOR
HST	HARMONIC SUPPRESSION TRANSFORMER	RF	RADIO FREQUENCY
HSKPG	HOUSEKEEPING	RFN	RETURN FAN
HTR	HEATER	RFID	RADIO FREQUENCY IDENTIFICATION DEVICE
HV	HIGH VOLTAGE	RGS	RIGID GALVANIZED STEEL
HZ	HERTZ (CYCLES/SECOND)	RM	ROOM
HWRP	HOT WATER RECIRCULATION PUMP	RP	RECIRCULATION PUMP
		RTL	REAL TIME LOCATION SYSTEM
		RUPS	ROTARY HYBRID UNINTERRUPTIBLE POWER SUPPLY
		RTU	ROOF TOP UNIT

ELECTRICAL SYMBOLS	
	WALL MOUNTED DUPLEX CHILDPROOF OUTLETS SHALL BE (PASS & SEYMOUR 'LEGRAND' MODEL #885TRW(15A), #TR2632RW(20A)) TAMPER RESISTANT UL RECEPTACLE OR EQUAL. (H) INDICATES HORIZONTAL MOUNTED; (GF) INDICATES GROUND FAULT INTERRUPTER.
	WALL MOUNTED DEDICATED 2-POLE DRYER OUTLET TO 30A GFI CIRCUIT BREAKER.
	WALL MOUNTED CHILDPROOF QUAD GFI RECEPTACLES, DOUBLE DUPLEX.
	WALL MOUNTED CHILDPROOF QUAD GFI RECEPTACLES, DOUBLE DUPLEX - WITH A DEDICATED MICROWAVE CIRCUIT AND COUNTER TOP GFI RECEPTACLE.
	WALL MOUNTED TELEPHONE OUTLET. PROVIDE 3/4" CONDUIT FOR CABLE.
	WALL MOUNTED DUPLEX OUTLET AND CAT 5E JACK WITH SURGE PROTECTIVE. PROVIDE 3/4" CONDUIT FOR CABLE.
	DATA OUTLET FOR WIRELESS INTERNET (VERIFY HEIGHT & LOCATION IN THE FIELD).
	WALL MOUNTED DATA OUTLET. PROVIDE 3/4" CONDUIT FOR CABLE. NUMBER 2 INDICATES DUPLEX DATA.
	WALL MOUNTED COMBO DATA & TELE OUTLET. PROVIDE 3/4" CONDUIT FOR CABLE, 1" IF USED FOR RECEPTION AREA.
	WALL MOUNTED CALLBOX. PROVIDE 3/4" CONDUIT FOR VOICE CABLE.
	WALL MOUNTED TRIPLE JACK FOR RJ PLUGS
	WALL MOUNTED TRIPLE PHONE
	HANDS FREE EMERGENCY PHONES WITH BUILT IN DIGITAL VOICE ANNOUNCER. ELECTRICAL PANEL.
	JUNCTION BOX.
	JUNCTION BOX W/ THERMAL DISCONNECT SWITCH.
	NEW DISCONNECT SWITCH.
	NEW FUSED DISCONNECT SWITCH.
	HOMERUN TO PANEL "RP" CIRCUIT #3. FOR CIRCUIT BREAKER SIZE & NUMBER OF CONDUCTORS, REFER TO PANELBOARD SCHEDULES IN SHEET E-110.
	GLOBAL PLASMA TUBE. REFER TO MECHANICAL DRAWINGS.
	ELECTRIC CEILING HEATER
	ROOFTOP UNIT
	EXHAUST FAN
	UNIT HEATER IN THE WARMER CLIMATES. DETERMINED BY THE PROJECT ARCHITECT
	FIRE ALARM ANNUNCIATOR PANEL
	FIRE ALARM CONTROL PANEL
	BURGLAR ALARM KEYPAD
	EXHAUST FAN CONTROL PANEL
	FIRE SMOKE DAMPERS / SMOKE DAMPERS WITH ACCESS DOOR
	THERMOSTAT WITH BACK BOX & PULL STRING
	TIME CLOCK
	HOT WATER RECIRCULATION PUMP
CHILD CARE FACILITY DEVICES SHALL BE CHILDPROOF, WHITE (PASS & SEYMOUR 'LEGRAND') TAMPER RESISTANT UL RECEPTACLE OR EQUAL. NOTE: REFER TO ARCHITECTURAL DRAWINGS FOR FINAL LOCATION, MOUNTING HEIGHTS AND FINISHES.	
BID PRICE NOTES	
1. CONTRACTOR'S BID PRICE SHALL INCLUDE THE COST OF PURCHASING AND INSTALLING ALL INCOMING ELECTRICAL SERVICE EQUIPMENT AS APPROVED BY THE SUPPLYING UTILITY COMPANY.	
2. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER AND THE ARCHITECT/ENGINEER OF ANY QUESTIONS BETWEEN THE WORK PROPOSED IN THESE DRAWINGS AND THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION (AHJ), AND ELECTRICAL UTILITY COMPANY. IF THE CONTRACTOR DOES NOT MAKE NOTIFICATION OF THESE DIFFERENCES DURING THE BIDDING PROCESS, OWNERSHIP WILL NOT CONSIDER A CHANGE ORDER ASSOCIATED WITH DESIGN CHANGES NEEDED TO MEET THE UTILITY COMPANY REQUIREMENTS.	
METER SPECIFICATIONS AND INCOMING ELECTRICAL SERVICE	
1. PRIOR TO PURCHASE, INSTALLATION AND CONSTRUCTION, THE ELECTRICAL CONTRACTOR SHALL CONTACT THE LOCAL UTILITY COMPANY AND IDENTIFY AND CONFIRM ALL UTILITY COMPANY METERING AND INCOMING ELECTRICAL SERVICE REQUIREMENTS. THIS SHALL INCLUDE THE TYPE AND CONFIGURATION OF ALL METERS AND RELATED EQUIPMENT, INCLUDING METER SOCKETS, CT CABINETS, MAIN DISCONNECTS, ETC.	
2. METERS AND METER SOCKETS SHALL BE APPROVED BY THE UTILITY COMPANY PRIOR TO PURCHASE AND INSTALLATION.	
3. CONTRACTOR SHALL GENERATE AND SUBMIT THE PROPOSED INCOMING ELECTRICAL SERVICE EQUIPMENT CONFIGURATION TO THE LOCAL UTILITY COMPANY FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION OF ANY EQUIPMENT.	
4. CONTRACTOR SHALL FURNISH THE ARCHITECT/ENGINEER WITH SHOP DRAWINGS (FOR ALL METERING AND INCOMING ELECTRICAL EQUIPMENT) FOR REVIEW AND COMMENTS.	
5. ALL METERS AND OTHER EQUIPMENT THAT WILL BE INSTALLED OUTDOORS, SHALL BE TYPE NEMA 3R, AND SHALL COMPLY WITH THE LATEST VERSION OF THE NEC.	
ELECTRICAL UTILITY PERFORMANCE NOTES	
1. ALL WORK SHALL CONFORM TO SUPPLYING UTILITY REQUIREMENTS FOR NONRESIDENTIAL SERVICE INSTALLATIONS.	
2. THE ELECTRICAL SERVICE EQUIPMENT AND ITS INSTALLATION SHALL BE IN ACCORDANCE WITH THE UTILITY COMPANY'S LATEST STANDARDS FOR THE INSTALLATION, THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE (N.E.C.), NATIONAL ELECTRICAL SAFETY CODE (N.E.S.C.), AND ALL APPLICABLE ORDINANCES AND CODES. WHEN DIFFERENCES IN UTILITY SPECIFICATIONS OR STANDARDS OCCUR, OR DIFFERENCES IN GOVERNMENTAL ORDINANCES OR CODES OCCUR, THE MOST STRINGENT REQUIREMENTS SHALL GOVERN THE INSTALLATION.	
3. THE CONTRACTOR SHALL SUBMIT DRAWING(S) TO SUPPLYING UTILITY FOR APPROVAL BEFORE ORDERING EQUIPMENT OR STARTING WORK TO INSURE THAT THE PROPOSED DESIGN CONFORMS TO THE UTILITY COMPANY REQUIREMENTS. THE CONTRACTOR MUST FURNISH, FOR REVIEW BY UTILITY COMPANY THE FOLLOWING:	
a. MANUFACTURER'S EQUIPMENT DRAWINGS FOR THE INSTALLATION INCLUDING ELECTRICAL ONE-LINE DIAGRAMS AND CHARACTERISTICS OF PROTECTIVE EQUIPMENT WHEN APPLICABLE. PHYSICAL ARRANGEMENT AND CLEARANCES, AND INSTALLATION DETAILS FOR METERS AND RELATED METERING EQUIPMENT.	
b. A FINAL APPROVED SITE PLAN DRAWING DEPICTING ALL UNDERGROUND UTILITIES, (INCLUDING DRAINS, SEWER, GAS, ELECTRIC LINES, ETC.), ROADS AND REQUESTED SERVICE LOCATION. FABRICATION OF EQUIPMENT OR PROJECT CONSTRUCTION SHOULD NOT PROCEED WITHOUT APPROVALS FROM THE UTILITY COMPANY AND OTHER AGENCIES HAVING JURISDICTION.	
c. A 48 HOUR ADVANCE NOTICE IS REQUIRED FOR SCHEDULING INSPECTIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR INSPECTION BY THE LOCAL AUTHORITY HAVING JURISDICTION. BEFORE THE SERVICE CAN BE ENERGIZED, THE CONTRACTOR SHALL FURNISH A CERTIFICATE OF SATISFACTORY INSPECTION AS EVIDENCE OF THE SAFE CONDITION OF THE WIRING.	
d. PRIOR TO CONSTRUCTION THE ELECTRICAL CONTRACTOR SHALL CONTACT THE SUPPLYING UTILITY COMPANY'S WIRING INSPECTOR, ARRANGE FOR AN INSPECTION, AND IDENTIFY AND CONFIRM ALL THE DETAILS OF THE INSTALLATION.	

POWER MISCELLANEOUS NOTES:	
CABLING FOR NETWORKING	
THE COMPUTER NETWORK SHALL REQUIRE THE FOLLOWING SPECIAL WIRING. SEE REQUIRED PHONE/DATA VENDOR NOTED ON DRAWING T-200. MUST USE REQUIRED VENDOR / NO SUBSTITUTIONS ALLOWED	
NETWORK CABLING	
1. INSTALL TELEPHONE AND NETWORK CABLING FOR A COMPLETE INSTALLATION. CABLING TO BE PLENUM RATED.	
2. CABLE INSTALLATION SHALL INCLUDE ALL CAT-5E AND CAT-3 CABLE AND WALL PLATES. USE RJ11 AND RJ45 CONNECTORS.	
3. VOICE AND DATA CABLES TO INCLUDE THE FOLLOWING INSTALLATION:	
A. INSTALL CAT-5E DATA CABLES PER PRINT AT WORK STATIONS INDICATING VOICE AND DATA. INSTALL (1) CAT-5 AND (1) 4PR, CAT-3 CABLE TO EACH.	
B. USE TRIPLE LEVITON FLUSH MOUNT JACKS WHERE NEEDED.	
C. CUT IN (1) RJ45 AND (2) RJ11C CONNECTORS TO EACH TRIPLE FLUSH MOUNT.	
D. CLEARLY MARK EACH VOICE AND DATA CABLE AT JACK AND PATCH PANEL IN MECHANICAL ROOM.	
4. INTERCOM/DOOR CHIMES:	
A. PROVIDE (1) IN EACH PLAY GROUND AND (1) INSTALLED IN FRONT VESTIBULE TO TIE INTO TELEPHONE SYSTEM. ALL THE ABOVE TO BE INSTALLED, PER CUSTOMER PLANS. FRONT VESTIBULE IS TO TIE INTO DOOR STRIKER FOR DOOR RELEASE.	
5. ACCESS POINT CABLES:	
PROVIDE (4) CEILING ACCESS POINT CABLES USING CAT-5E CABLE TO AREAS MARKED ON E-200 FLOOR PLAN AP1-AP4. TERMINATE ON PATCH PANEL IN MECHANICAL ROOM.	
6. SMART BOARD CABLES:	
PROVIDE (4) CAT-5E CABLES AS PER E-200 FLOOR PLAN IN CLASSROOMS. TERMINATE ON PATCH PANEL.	
NOTE: IF THE CENTER IS TO HAVE TWO ENTRANCES WITH TWO RECEPTION COUNTERS, THIS INSTALLATION SHOULD BE DUPLICATED FOR EACH ENTRANCE.	
FAX - PHONE CONNECTION	
1. A DEDICATED SINGLE PHONE LINE WILL BE PROVIDED FOR THE FAX MACHINE WHICH SHOULD BE DUPLICATED ON A TRIPLE FLUSH MOUNT JACK (SEE ABOVE) IN OFFICE, BEHIND RECEPTION AREA AND AT COPIER STATION.	
RECEPTACLES:	
1. RECEPTACLE IN AREAS WHICH ARE ACCESSIBLE TO CHILDREN, INCLUDING THE RECEPTION AREA, SHALL BE TAMPER RESISTANT UL DUPLEX TYPE WITH SPECIAL PROTECTIVE COVERS AS MANUFACTURED BY 'PASS & SEYMOUR'. CHILD PROOF GFCI RECEPTACLE.	
2. CIRCUIT BREAKERS SHALL HAVE A COMMON TRIP ON ALL MULTI-POLE BREAKERS.	
3. BUS AND HARDWARE SHALL BE BRACED FOR INTERRUPTING CAPACITY AS SHOWN ON PANELBOARD SCHEDULE. BREAKERS SHALL MATCH AIC RATING OF PANEL AT PANEL VOLTAGE. ALL BUSSING SHALL BE COPPER.	
4. PROVIDE EACH PANEL BOARD WITH GREEN CODED GROUND BAR, FOR GREEN EQUIPMENT GROUND WIRES. EACH BAR TO HAVE A MINIMUM CAPACITY FOR THE NUMBER OF POLES IN PANEL, WITH SOLDERLESS, BOX LUGS FOR WIRE SIZE NO. 12 MINIMUM TO NO. 4 MAXIMUM. ONE WIRE PER LUG. LOCATE BAR ADJACENT TO NEUTRAL BAR BOLT OR WELD TO BACK BOX.	
5. PROVIDE 120/208 AND 480/277 PANELBOARDS WITH AN ISOLATED NEUTRAL BAR. THERE SHALL BE AS MANY TERMINALS AS THERE ARE CIRCUIT POLES. THE TERMINAL FOR THE FEEDER NEUTRAL SHALL MATCH THE SIZE OF THE FEEDER PHASE TERMINATION(S).	
6. ACCEPTABLE MANUFACTURERS SUBJECT TO COMPLIANCE WITH REQUIREMENTS, MANUFACTURERS OFFERING PRODUCTS WHICH MAY BE INCORPORATED IN THE WORK INCLUDE THE FOLLOWING:	
GENERAL ELECTRIC SQUARE D ELECTRIC DIV. (SQUARED) SIEMENS-ALLIS, INC. (ITE)	
OUTLET BOXES	
1. GALVANIZED STAMPED STEEL FOR ALL INTERIOR LOCATIONS. MOUNT ALL BOXES SO THAT COVERS AND PLATES WILL MOUNT FLUSH WITH THE WALL AND CEILING FINISH SURFACE. PROVIDE OUTLETS AND COVERS WITH WHITE FINISHES. PROVIDE PLASTER RINGS AS NECESSARY. GOOF RINGS ARE ACCEPTABLE.	
2. THE ENGINEER RESERVES THE RIGHT TO MAKE MINOR CHANGES.	
3. SUITABLE GALVANIZED BARS, ROD HANGERS OR CADDY CLIPS SHALL BE USED THROUGHOUT THE WORK. WOODEN SUPPORTS, STRIPES, TIE WIRES, OR MAKESHIFT DEVICES SHALL NOT BE USED.	
4. BOXES SHALL NOT BE LESS THAN 1 1/2" DEEP. IN GENERAL, OUTLET BOXES SHALL BE OF SUFFICIENT DEPTH SO THAT CONDUIT ENTERING WITHIN TILE WALLS NEED NOT BE OFFSET SO THAT TILES HAVE TO BE CHIPPED OR ALTERED. ALL BOXES SHALL BE SET LEVEL AND PLUMB.	
5. PROVIDE RAIN TIGHT CAST METAL BOXES WITH THREADED CONDUIT HOLES AND CAST METAL FACE PLATES. COVERS SHALL MAINTAIN RATINGS WHILE IN USE.	
6. REFER TO THE POWER PLANS FOR ALL FOR RECEPTACLE HEIGHTS, E-200.	
ALL SWITCHES, RECEPTACLES AND PLATE MUST BE WHITE HD SMOOTH PLASTIC.	
1. WHEN INSTALLED (IN MASONRY WALLS), LOCATE BOTTOM OF BOX AT NEAREST MASONRY JOINT TO DIMENSION INDICATED. WHERE OUTLETS OCCUR ABOVE COUNTERS, OR CABINETS, CORRELATE HEIGHT OF OUTLET WITH EQUIPMENT SO DEVICE WILL CLEAR ALL TRIM.	
MAIN CIRCUIT BREAKERS & SWITCH BOARDS	
1. WHERE REQUIRED, AS SPECIFIED: MANUFACTURER: GE, ITE, SQUARE D	
2. MUST BE APPROVED BY LOCAL UTILITY.	
SAFETY SWITCHES:	
1. SAFETY SWITCHES, FUSIBLE HEAVY DUTY, GE, ITE OR SQUARE D RATINGS AS SHOWN. MANUFACTURERS: GE, ITE OR SQUARE D	
METER CENTER:	
1. WHERE REQUIRED, AS SPECIFIED: MANUFACTURER: GE, ITE, SQUARE D	
2. METER MUST BE APPROVED BY LOCAL UTILITY.	
WIRING DEVICES:	
1. PROVIDE SPECIFICATION GRADE WIRING DEVICES OF 20 AMP RATING MINIMUM. AS REQUIRED ON THE PLANS AND MANUFACTURED BY PASS & SEYMOUR, GE OR HUBBELL. SWITCHES SHALL BE QUIET TYPE.	
2. SWITCHES, WHERE REQUIRED, SHALL BE MOUNTED ON THE STRIKE SIDE OF DOORS AS FINALLY HUNG.	
3. DEVICES SHALL HAVE SMOOTH WHITE PLATES-FIT & TYPE AS REQUIRED BY DEVICE. OUTLETS WITHOUT DEVICES, EXCEPT TELEPHONE, TO HAVE BLANK WHITE PLATES. FASTEN PLATES IN PLACE BY OVAL, HEAD, SCREWS MATCHING WHITE PLATE.	
VOICE/DATA, TELEPHONE, CCTV, SECURITY:	
1. SEE SPECIFICATIONS DRAWINGS FOR ADDITIONAL INFORMATION.	

1. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY

2. GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC

3. VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.

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ISSUE			
NO.	DATE	DESCRIPTION	INT.
1	09-29-23	FOR TLE REVIEW	MBJ
2	12-19-23	FOR PERMIT	MBJ

REVISION			
NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 014089

Project Number: TLEVA23-034	Scale: AS NOTED
Drawn By: LN	Approved By: MBJ

Drawing Name:
ELECTRICAL NOTES, LEGEND, SYMBOLS, & ABBREVIATIONS

Drawing Number:
E-100

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date:
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ELECTRICAL NOTES

GENERAL

- 1. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARKED 'E'
2. PRIOR TO BEGINNING ANY WORK, SECURE NECESSARY PERMITS OR CLEARANCES FROM THE AUTHORITIES HAVING JURISDICTION...
3. ELECTRICAL DRAWINGS ARE DIAGRAMMATIC, SIZES AND LOCATION OF EQUIPMENT AND WIRING ARE SHOWN TO SCALE...
4. CONTRACTOR SHALL INCLUDE THE COST OF ALL SMALL DETAILS, INCIDENTAL WORK, AND ACCESSORIES NOT SHOWN OR SPECIFIED...
5. BASE ELECTRICAL BID SHALL INCLUDE ALL CABLE MANAGEMENT HARDWARE AS SPECIFIED AND REQUIRED BY CODE.
6. THE ELECTRICAL CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES AND STANDARDS INCLUDING THE FOLLOWING:
a) UNDERWRITERS LABORATORIES, INC. (UL)
b) BUILDING CODE - NATIONAL
c) ELECTRICAL CODE WITH LOCAL AMENDMENTS
d) LOCAL ENERGY CONSERVATION CONSTRUCTION CODE
e) AMERICAN DISABILITIES ACT (ADA)
f) ALL FEDERAL AND LOCAL JURISDICTION DIRECTIVES AND REQUIREMENTS OF NFPA 70
7. THE TERM "WIRING" AS USED HEREIN SHALL INCLUDE FURNISHING AND INSTALLING CONDUIT, WIRES, JUNCTION/OUTLET BOXES, DISCONNECTS, OVERCURRENT PROTECTION AND FINAL CONNECTIONS...
8. ALL WORK INSTALLED BY THIS CONTRACTOR SHALL BE INSTALLED IN SUCH A MANNER AS TO CLEAR ALL LIGHT FIXTURES, CEILING CONSTRUCTION, SPRINKLER PIPES AND HEADS, DUCTWORK CONDUITS, CABLES WIRING ETC.
9. INSTALLATION OF ELECTRICAL CONDUIT, EQUIPMENT AND DEVICES SHALL BE FULLY COORDINATED WITH STRUCTURAL, ARCHITECTURAL, ELECTRICAL, FIRE PROTECTION, FIRE ALARM, LOW VOLTAGE, CIVIL AND HVAC DRAWINGS TO AVOID CONFLICT.
10. CONTRACTOR SHALL COORDINATE ALL NEW WORK WITH NEW WORK OF OTHER TRADES AND EXISTING CONDITIONS AND PARTICIPATE IN THE PREPARATION OF COORDINATED SHOP DRAWINGS, IN ORDER TO AVOID CONFLICTS OF ANY TYPE.
11. COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS.
12. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL FINAL CONNECTIONS.
13. ALL OUTLETS SHALL BE OF ADEQUATE RATING AND TYPE FOR THE PARTICULAR LOCATION AND SERVICE INTENDED.
14. OUTLET BOXES IN THE DRYWALL PARTITION OR COLUMN SHALL BE 4" SQUARE AND NOT LESS THAN 1-1/2" DEEP, GALVANIZED SHEET STEEL WITH PLASTIC COVERS.
15. NUMBERS AT DEVICES CORRESPOND TO PANELBOARD CIRCUIT BREAKERS (SEE PANELBOARD SCHEDULE), BRANCH CIRCUITS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING AND VOLTAGE DROP REQUIREMENTS, UNLESS INDICATED OTHERWISE ON THE ELECTRICAL EQUIPMENT SCHEDULE.
16. CIRCUIT NUMBERS NOTED ON PLANS ARE INTENDED AS A GUIDE, FINAL NUMBERING SYSTEM TO BE NOTED ON AS-BUILT DRAWINGS AND ON TYPED PANELBOARD DIRECTORY CARDS.
17. CIRCUIT BREAKERS SHALL NOT BE LOADED MORE THAN 80% OF THEIR RATED AMPERE CAPACITY.
18. PROVIDE AND INSTALL ALL AUXILIARY STEEL MEMBERS FOR THE SUPPORT OF ELECTRICAL WORK TO THE BUILDING STRUCTURE, SECURE ALL SUPPORTS TO BUILDING STRUCTURE.
19. PROVIDE AND INSTALL ALL SUPPORT HANGERS AND MISCELLANEOUS METALS SUCH AS GALVANIZED IRON PIPE STANCHIONS, RACKS, FITTINGS, ETC. FOR PROPER INSTALLATION OF WORK. ALL MISCELLANEOUS RACKS AND FITTINGS SHALL BE GALVANIZED AND SHALL BE EITHER KINDORF CHANNEL, POWER STRUT OR UNISTRUT, UNLESS OTHERWISE NOTED.
20. ALL ITEMS INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND FIRE RATING.
21. ALL ELECTRICAL SERVICES GOING INTO THE BUILDING AND LEAVING THE BUILDING SHALL BE CONNECTED TO THE SITE UTILITIES, COORDINATED WITH THE SITE UTILITIES COMPANY AND CIVIL DRAWINGS, COORDINATE ALL EXTERIOR UNDERGROUND WORK WITH THE SITE UTILITIES BEFORE COMMENCING WORK. COORDINATE ALL UNDERGROUND CONDUIT WITH FOUNDATION DRAWINGS.
22. PROVIDE AND INSTALL ALL LUGS, BUS BAR EXTENSIONS, ENCLOSURE MODIFICATIONS ETC. TO MAKE ALL CONNECTIONS (BUS TAPS, FEEDER TAPS, ETC.).
23. BOLT ON TYPE LUGS SHALL BE FASTENED WITH TWO BOLTS MINIMUM.
24. INTERCONNECT DEVICES/FIXTURES WITH SAME CIRCUIT NUMBER WITH APPROPRIATELY SIZED WIRE AND CONDUIT AND ENERGIZE FROM CIRCUIT IN ASSOCIATED PANEL.
25. CONTRACTOR SHALL PROVIDE AND INSTALL TROUGHS, PULL AND JUNCTION BOXES WHERE SHOWN ON DRAWINGS AND ANY ADDITIONAL BOXES, TO FACILITATE PULLING WIRE AND CABLE OR TO PREVENT DAMAGE TO INSULATION OF WIRING.
26. LOCATE TROUGHS, JUNCTION AND PULL BOXES TO BE ACCESSIBLE AND CONCEALED IN FINISH SPACES, WHERE NECESSARY, REROUTE RACEWAYS OR MAKE OTHER ARRANGEMENTS FOR CONCEALMENT. PROVIDE AND INSTALL PULL BOXES WHERE NECESSARY FOR WIRE PULLING. COORDINATE ALL BOX LOCATIONS WITH OTHER TRADES. COVERS OF TROUGHS, JUNCTION AND PULL BOXES SHALL BE ACCESSIBLE.
27. PROVIDE ACCESS PANELS IN ALL INACCESSIBLE JUNCTION BOX LOCATIONS AS PER THE NEC.
28. ALL BACK BOXES INSTALLED ON OPPOSITE SIDES OF THE SAME PARTITION SHALL BE STAGGERED, DO NOT MOUNT THE BACK BOXES BACK TO BACK.
29. IN COMMON PULL BOXES, PROVIDE METAL PARTITIONS TO SEPARATE THE FOLLOWING WIRE TYPES FROM EACH OTHER:
a) POWER
b) CONTROL AND INDICATING
c) COMMUNICATION
30. PROVIDE AND INSTALL BLANK COVER PLATES OVER ALL UNUSED OPENINGS IN PANELBOARDS, PULL AND JUNCTION BOXES AND TROUGHS.
31. RATING OF DISCONNECT SWITCHES TO MATCH OVERCURRENT PROTECTIVE DEVICE UNLESS OTHERWISE NOTED.
32. PROVIDE AND INSTALL ALL NECESSARY TEMPORARY AND INTERIM ELECTRICAL POWER WORK (PANELS, DISCONNECT SWITCHES, WIRE, CONDUITS, BREAKERS, CONNECTIONS, FUSES, GENERATORS, FUEL, ETC.) REQUIRED TO INSTALL THE PERMANENT WORK FOR ALL TRADES.
33. CONTRACTOR SHALL PROVIDE AND INSTALL THE SOURCE OF POWER, METERS, INSTRUMENTS, TEMPORARY WIRING AND LABOR, FOR PERMANENT POWER.
34. UPON COMPLETION OF ALL ELECTRICAL WORK, ELECTRICAL CONTRACTOR SHALL ADJUST AND TEST

- ALL CIRCUITS, OUTLETS, SWITCHES, LIGHTS, MOTORS AND ANY OTHER ELECTRICAL ITEMS INSTALLED. ANY DEFECTIVE ITEMS SHALL BE IMMEDIATELY REPAIRED OR REPLACED WITH NEW EQUIPMENT OR MATERIALS AND THAT PORTION OF THE SYSTEM SHALL BE RETESTED. ALL SUCH REMEDIAL WORK SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER, SHOW, BY DEMONSTRATION IN SERVICE, THAT ALL CIRCUITS AND DEVICES ARE IN GOOD OPERATING CONDITION. EACH PIECE OF EQUIPMENT AND COMPONENT OF THE ELECTRICAL SYSTEM SHALL FUNCTION NOT LESS THAN FIVE TIMES IN COURSE OF THE ACCEPTANCE TESTS.
26. AFTER COMPLETION OF WORK, CLEAN UP ALL RESULTANT DEBRIS AND REMOVE FROM THE SITE.
27. THE OPERATION OF ELECTRICAL SYSTEM DOES NOT CONSTITUTE AN ACCEPTANCE OF WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND INSURANCE UNDERWRITERS.
28. ALL PANELS, SWITCHBOARDS, SWITCHGEAR AND DISCONNECT SWITCH BUSES SHALL BE COPPER ALL WIRING AND TRANSFORMER WINDINGS SHALL BE COPPER. ALUMINUM BUSES AND WIRING ARE NOT PERMITTED.
29. ALL ELECTRICAL BOXES TO BE 4"x4".
30. ALL MOTOR LOADS ARE TO BE PROVIDED WITH HMCP TYPE BREAKERS.
31. MISCELLANEOUS LOW VOLTAGE SYSTEMS
1. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING AND INSTALLING EMPTY CONDUITS, PLASTIC BUSHINGS RACEWAYS, BACK BOXES, PULL STRING (DRAG LINE), ETC. FOR VARIOUS LOW VOLTAGE SYSTEMS SUCH AS:
a) TELECOMMUNICATION
b) CABLE TV
c) SECURITY
d) AUDIOVISUAL
e) OTHER SYSTEMS AS NOTED.
2. SPECIFIC REQUIREMENTS OF EACH SYSTEM SHALL BE AS OUTLINED IN RELEVANT LOW VOLTAGE SYSTEM CONTRACT DOCUMENTS. COORDINATE WITH TENANT AND SYSTEMS VENDORS FOR REQUIREMENTS.
3. ALL THE ABOVE SYSTEMS CENTRAL EQUIPMENT, DEVICES AND VARIOUS COMPONENTS, WIRING AND CONNECTIONS ARE FURNISHED AND INSTALLED SEPARATE FROM ELECTRICAL WORK.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL ALL POWER CIRCUITRY FOR LOW VOLTAGE SYSTEMS, CENTRAL EQUIPMENT AND DEVICES. FINAL LOCATIONS AND POWER REQUIREMENTS FOR THESE ITEMS SHALL BE COORDINATED WITH RESPECTIVE CONSULTANTS.
5. FOR EXACT LOCATIONS AND MOUNTING HEIGHTS OF ALL POWER AND VOICEDATA OUTLETS AND JUNCTION BOXES, SEE ARCHITECTURAL DRAWINGS.
6. PROVIDE 3/4" EMPTY CONDUIT AND PULL STRING TERMINATED 6" ABOVE SUSPENDED CEILING
C. POWER NOTES
1. GENERAL
a. SERVICE ENTRANCE CONDUCTORS MORE THAN THREE FEET (3) IN LENGTH, REQUIRE A DISCONNECT TO BE PROVIDED AND INSTALLED AT THE OUTSIDE OF THE STRUCTURE AND NEXT TO THE ELECTRICAL METER.
b. DO NOT PENETRATE WALL FOOTINGS WITH CONDUIT. COORDINATE TO DROP FOOTINGS TO CLEAR SERVICES WHERE ABSOLUTELY NECESSARY.
c. PIPE SLEEVES SHALL BE PROVIDED AND INSTALLED WHERE CONDUITS ARE ROUTED THROUGH FOUNDATION WALLS. PIPE SLEEVES SHALL BE GROUDED IN WALLS. SEALANT SHALL BE APPLIED AROUND THE CONDUIT IN THE SLEEVE IN ORDER TO PREVENT INGRESS OF MOISTURE. THE WALL PENETRATION SHALL BE COMPLETELY WATERPROOFED.
d. ALL CONDUIT PENETRATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND LOCATION APPROVED BY STRUCTURAL ENGINEER
e. PULL BOXES TO BE COORDINATED WITH ARCHITECTS AND FURNITURE VENDOR.
f. ALL BRANCH WIRING SHALL BE RUN CONCEALED IN WALLS AND ABOVE HUNG CEILING.
g. PROVIDE AND INSTALL ALL GROUNDING, ELECTRICAL SYSTEMS SHALL BE GROUNDED PER ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. ALL GROUND WIRE SHALL BE ENCLOSED IN CONDUIT
h. CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH RECEPTACLE, JUNCTION BOX OR OTHER ELECTRICAL DEVICE. PROVIDE CONDUITS, WIRES, METAL-CLAD CABLE, AND BOXES TO ENERGIZE THE EQUIPMENT AS SHOWN.
i. VERIFY MILLWORK POWER REQUIREMENTS WITH MILLWORK CONTRACTOR PRIOR TO INSTALLATION, ALL COVER PLATE COVERS TO MATCH WALL COLOR AND SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS
j. CIRCUIT BREAKER SHALL NOT BE LOADED MORE THAN 80% OF THEIR RATED AMPERE CAPACITY.
k. ALL CIRCUITING SHALL ORIGINATE FROM A PANEL LOCATED ON THE SAME FLOOR AS THE WIRED DEVICE UNLESS OTHERWISE NOTED
l. RECEPTACLES SHALL PROVIDE CONTINUOUS UN-SWITCHED POWER UNLESS OTHERWISE NOTED, 24 HOURS PER DAY 7 DAYS PER WEEK.
m. RECEPTACLES SHALL NOT BE RATED LESS THAN 20 AMPS.
n. PROVIDE AND INSTALL GFI TYPE PROTECTION FOR ANY DEVICE WITHIN 6' OF WATER OR LIQUIDS.
o. RECEPTACLES THAT FEED APPLIANCES SUCH AS REFRIGERATORS, DISHWASHERS, OVENS, ETC. SHALL BE LOCATED BEHIND THE APPLIANCE UNDER-CABINET MICROWAVES SHALL HAVE THE RECEPTACLE MOUNTED IN THE CABINET ABOVE THE APPLIANCES.
p. COORDINATE LOCATION OF ALL CEILING RECEPTACLES WITH OTHER TRADES (I.E. DUCTWORK, SPRINKLERS, ETC.).
q. RECEPTACLES AND LIGHTING NEUTRALS ARE PERMITTED TO BE SHARED FOR MAXIMUM OF THREE (3) CIRCUITS. ALL OTHER NEUTRALS SHALL BE DEDICATED.
2. CONDUCTORS
a. WIRING SHALL CONSIST OF INSULATED CONDUCTORS INSTALLED IN RIGID-STEEL CONDUIT (RGS), ELECTRICAL METALLIC TUBING (EMT), AND INTERMEDIATE METAL CONDUIT (IMC). RACEWAY SYSTEMS SHALL BE INSTALLED AS INDICATED ON DRAWINGS. CONDUCTOR SIZES SHOWN ARE BASED ON CONDUCTOR INSULATION TYPES.
b. TYPE MC CABLE MAY BE USED IN LIEU OF EMT FOR BRANCH CIRCUITS, IN DRYWALL PARTITION AND IN CEILING PLENUM WHERE IS ALLOWED BY NEC AND THE BUILDING OWNER. (MC CABLE FOR ISOLATED CIRCUIT SHALL HAVE TWO (2) SEPARATE GROUNDING CONDUCTORS).
c. ALL CONDUCTORS SHALL BE COPPER
d. WIRING TO AND FROM AN ITEM SHALL BE SIZED THE SAME UNLESS OTHERWISE REQUIRED BY NEC
e. ALL WIRING USED IN RETURN HVAC RETURN AIR PLENUM SHALL BE PLENUM RATED.
f. QUANTITY AND SIZE OF WIRE (CABLE) AND SIZE OF CONDUIT SHALL BE AS REQUIRED BY CODE IF NOT SPECIFICALLY INDICATED. NOTED SIZES ARE FOR REFERENCE AND ARE MINIMUMS. INCREASE WIRE SIZE FOR VOLTAGE DROP. MINIMUM CONDUIT SIZE SHALL BE

- (3/4") UNLESS NOTED OTHERWISE.
g. CONDUCTORS MINIMUM SIZE SHALL BE #12 AWG. CONDUCTOR #10 AWG AND SMALLER SHALL BE SOLID. CONDUCTORS #6 AWG AND LARGER SHALL BE STRANDED. CONDUCTOR SHALL HAVE THINWALL INSULATION OR AS NOTED.
h. MINIMUM CONDUCTOR SIZE, UNLESS OTHERWISE NOTED, SHALL BE #12 AWG FOR ALL BRANCH CIRCUIT RUNS UP TO THE FIRST OUTLET. OVER 100 FEET, #10 AWG, OVER 150 FEET, #8 AWG. CONTRACTOR SHALL INCREASE CONDUIT SIZE TO SUIT, QUANTITY AND SIZE OF CONDUCTORS PER NEC.
i. NUMBER OF WIRES MAY NOT BE INDICATED FOR ALL CIRCUITS, ONLY THOSE WHERE CLARIFICATION IS NECESSARY. FURNISH AND INSTALL ALL WIRE NECESSARY FOR THE PROPER FUNCTION OF THE SYSTEM WHETHER INDICATED ON PLAN OR NOT.
j. CONTRACTOR SHALL COLOR CODE THE CONDUCTORS OF EACH PHASE AS FOLLOWS: 120-208 VOLT: A - BLACK, B - RED, C - BLUE. 277-480 VOLT: A - BROWN, B - ORANGE, C - YELLOW. NEUTRAL CONDUCTORS - 120/208 WHITE, 480/277V GRAY, GROUND WIRES SHALL BE BARE COPPER OR CODED GREEN IF INSULATED.
k. CURRENT CARRYING NEUTRALS SHALL HAVE INSULATION RATED FOR 600V.
3. CONDUIT
a. RUN EXPOSED CONDUIT PARALLEL TO OR AT RIGHT ANGLES TO WALLS.
b. ALL EXPOSED CONDUITS SHALL BE RUN AT OR CLOSE TO CEILING LEVEL UNLESS OTHERWISE NOTED.
c. DO NOT PENETRATE WALL FOOTINGS WITH CONDUIT. COORDINATE TO DROP FOOTINGS TO CLEAR PLUMBING SERVICES WHERE ABSOLUTELY NECESSARY.
d. PIPE SLEEVES SHALL BE PROVIDED AND INSTALLED WHERE CONDUITS ARE ROUTED THROUGH FOUNDATION WALLS. PIPE SLEEVES SHALL BE GROUDED IN WALLS. SEALANT SHALL BE APPLIED AROUND THE CONDUIT IN THE SLEEVE IN ORDER TO PREVENT INGRESS OF MOISTURE. THE WALL PENETRATION SHALL BE COMPLETELY WATERPROOFED.
e. ALL CONDUIT PENETRATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND LOCATION APPROVED BY STRUCTURAL ENGINEER
f. ALL WIRING TO BE IN CONDUIT AND ALL CONDUIT TO BE SUPPORTED BY STANDOFF CONNECTED TO STRUCTURAL ELEMENTS, INDEPENDENT OF CEILING SUPPORTS, PIPES AND OTHER ITEMS.
4. RACEWAYS
a. ALL CONDUCTORS OPERATING AT 50 VOLTS OR GREATER SHALL BE IN RACEWAY.
b. ALL RACEWAY WITHIN THE STRUCTURE ABOVE THE FLOOR SLAB SHALL BE METAL. RACEWAY BELOW THE FLOOR SLAB AND UNDERGROUND RACEWAY OUTSIDE THE STRUCTURE SHALL BE PVC
c. PVC RACEWAYS SHALL BE DIRECT BURIAL OR CONCRETE ENCASED TYPE AS SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM F512 AND NEMA TC 61 8 JOINED WITH SOLVENT-WELD
d. A MINIMUM OF 18" OF COVER IS REQUIRED ABOVE BURIED RACEWAYS
e. UNDER SLAB PVC RACEWAYS SHALL BE LAID ON A FIRM BED THROUGHOUT ITS ENTIRE LENGTH.
f. PRIOR TO BACKFILL PVC CONDUIT SHALL BE WEIGHTED DOWN WITH CONCRETE BLOCKS TO PREVENT FLOTATION
g. TRENCHES SHALL REMAIN OPEN FOR INSPECTION
h. TRENCHES SHALL BE BACKFILLED AND COMPACTED IN 4" LIFTS TO 12" ABOVE THE TOP OF THE PVC RACEWAY WITH CLEAN SOIL OR SAND WHICH SHALL NOT CONTAIN STONES, BOULDERS, CONSTRUCTION DEBRIS OR MATERIALS THAT WOULD BREAK OR DAMAGE PIPING OR CAUSE CORROSIVE ACTION, UNLESS OTHERWISE NOTED.
i. ALL WIRING SHALL BE RUN IN ELECTRICAL RACEWAY PER APPLICABLE CODES. COMBINING OF CIRCUITS WITHIN A SINGLE RACEWAY IS PERMITTED, WITH A MAXIMUM OF SIX (6) CURRENT CARRYING CONDUCTORS PER HOMERUN.
j. RACEWAY ROUTING SHOWN IS DIAGRAMMATIC AND INDICATES GENERAL INTENT, ACTUAL ROUTING MUST BE COORDINATED WITH FIELD CONDITIONS AND ADJUSTED CONTRACTOR TO PROVIDE ALL OFFSETS AT NO ADDITIONAL COST.
k. UNLESS OTHERWISE INDICATED ALL RACEWAYS SHALL BE INSTALLED CONCEALED IN FINISHED AREAS.
l. RUN EXPOSED RACEWAYS PARALLEL TO OR AT RIGHT ANGLES TO WALLS.
m. FURNISH FISH/PULL WIRE IN EACH RACEWAY RUN IN WHICH WIRING IS NOT INSTALLED.
5. EQUIPMENT
a. REFER TO MECHANICAL DRAWINGS FOR EXACT QUANTITIES AND LOCATIONS OF VAV BOXES, CONTROL VOLUME BOXES, DAMPERS, FIRE SMOKE DAMPERS, ETC. COORDINATE EXACT CONNECTION POINTS WITH HVAC CONTRACTOR.
b. REFER TO PLUMBING AND ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES AND LOCATIONS OF ELECTRONIC FAUCETS, HAND DYERS ETC.
c. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT QUANTITIES AND LOCATIONS OF ELECTRONIC DOOR HARDWARE.
d. SEE ARCHITECTURAL MECHANICAL AND PLUMBING CONTRACT DOCUMENTS FOR EXACT QUANTITY, LOCATION AND ELECTRICAL CHARACTERISTICS OF EQUIPMENT.
e. ALL ELECTRICAL EQUIPMENT SHALL BE 'UL LISTED AND APPROVED'.
f. INSTALLATION OF EQUIPMENT, COMPONENTS AND WIRING FOR ELECTRICAL SYSTEMS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF EQUIPMENT MANUFACTURER
g. INSTALL AND CONNECT EVERY STARTER AND VARIABLE FREQUENCY DRIVE FURNISHED BY OTHER TRADES/VENDORS ON THIS PROJECT.
h. FURNISH AND INSTALL WIRING FOR EQUIPMENT FURNISHED BY OTHERS, AS SHOWN ON ARCHITECTURAL, HVAC, PLUMBING, FIRE ALARM, LOW VOLTAGE, CIVIL AND OTHER ELECTRICAL DRAWINGS. COORDINATE WITH OTHER TRADES FOR DETAILS OF INSTALLATION AND WIRING REQUIREMENTS.
i. VERIFY LOCATIONS AND QUANTITY OF ALL ELECTRICAL EQUIPMENT WITH ARCHITECTURAL DRAWINGS ELEVATIONS OR INTERIOR DETAILS. IN CENTERING OUTLETS AND LOCATING BOXES OR OUTLETS. ALLOW FOR OVERHEAD PIPES, DUCTS, MECHANICAL EQUIPMENT, VARIATIONS IN FIREPROOFING AND PLASTERING, WINDOW AND DOOR TRIM, PANELING, HUNG CEILING, ETC., AND CORRECT ANY INACCURACY RESULTING FROM FAILURE TO DO SO WITHOUT ADDITIONAL EXPENSE.
j. MINIMUM REQUIREMENT FOR EQUIPMENT GROUNDING SHALL BE GOVERNED BY THE NEC. ALL GROUNDS, BONDING, ETC. SHALL MEET THESE REQUIREMENTS. THE CONTRACTOR SHALL PROVIDE AND INSTALL ANY AND ALL ITEMS TO MEET THESE REQUIREMENTS AT NO ADDITIONAL COST.
k. ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR ALL CONNECTION TO EQUIPMENT TERMINALS, IF NOT AN INTEGRAL PART OF THE EQUIPMENT, AND SPLICES SHALL BE BY MEANS OF APPROVED COMPRESSION TYPE COPPER CONNECTORS.
l. WHEREVER A CIRCUIT OR HOMERUN IS NOTED (I.E. AT EACH LOCATION WHERE A JUNCTION/PULL BOX WITH A HOMERUN NOTATION IS INDICATED FOR AN ITEM OF EQUIPMENT, AT EACH LOCATION WHERE A DISCONNECT SWITCH FOR A MOTOR IS INDICATED WITH THE FEEDER SIZING PER SCHEDULE, ETC.) CONNECT THE ITEM WITH THE REQUIRED CONDUIT AND WIRE FROM SOURCE TO LOAD.
m. EXCEPT WHERE SPECIFICALLY INDICATED, ALL EXPOSED NON-CURRENT CARRYING METALLIC PARTS OF ELECTRICAL EQUIPMENT, METALLIC RACEWAY SYSTEMS, GROUND BUS, METALLIC CABLE ARMOR, AND NEUTRAL CONDUIT OF THE SERVICE ENTRANCE

- SYSTEM SHALL BE BONDED TO GROUND. THE GROUND CONNECTION SHALL BE PERMANENTLY AND CONTINUOUSLY BONDED TO THE NON-CURRENT CARRYING PARTS OF THE ELECTRICAL SYSTEM.
n. PROVIDE DISCONNECT SWITCHES FOR ALL EQUIPMENT
o. CIRCUIT NUMBERS AT EQUIPMENT CORRESPOND TO PANELBOARD BREAKERS (SEE PANELBOARD SCHEDULE). BRANCH CIRCUITS SHALL BE SIZED ACCORDING TO THE CIRCUIT BREAKER RATING AND VOLTAGE DROP REQUIREMENTS, UNLESS INDICATED OTHERWISE ON THE ELECTRICAL EQUIPMENT SCHEDULE.
p. CONTRACTOR SHALL PERFORM TEST AND ADJUSTMENTS OF EQUIPMENT AND WIRING INSTALLED AND OR CONNECTED INCLUDING ELECTRICAL FURNISHED BY OTHERS TO DETERMINE PROPER PHASING, POLARITY, FREEDOM FROM GROUNDS AND OPERATION OF EQUIPMENT
q. PROVIDE ACCESS TO AND CLEARANCES AROUND EQUIPMENT IN ACCORDANCE WITH THE NEC.
r. ELECTRICAL CONNECTIONS TO ALL VIBRATION-ISOLATED EQUIPMENT INCLUDING PUMPS, FANS SHOULD BE MADE WITH FLEXIBLE CONDUIT, NOT LESS THAN 2 IN LENGTH AND INSTALLED IN A COMPLETE 360° LOOP.
s. THE CONTRACTOR SHALL VERIFY ALL ROUGH-IN REQUIREMENTS FOR ELECTRICALLY OPERATED EQUIPMENT WITH THE EQUIPMENT SUPPLIERS.
6. IDENTIFICATION
a. THE CONTRACTOR SHALL LABEL EACH AND EVERY PANELBOARD, SWITCH, RECEPTACLE OUTLET, JUNCTION BOX INSTALLED OR WIRED UNDER THIS CONTRACT. LABEL ALL RECEPTACLES, JUNCTION BOXES, LIGHTS, SWITCHES, OUTLETS WITH CIRCUIT NUMBERS AND PANEL DESIGNATION.
b. ALL EQUIPMENT SUCH AS RELAYS, MOTOR STARTER DISCONNECT SWITCHES, PANELBOARDS, CONTROLLER, CONTROL DEVICE AND OTHER APPURTENANCES SHALL HAVE IDENTIFICATION PLATES OF BLACK LAMINATED PLASTIC WITH 1/2" ENGRAVED WHITE LETTERS.
c. PROVIDE AND INSTALL TYPEWRITTEN PANEL SCHEDULES FOR EACH PANELBOARD, INDICATING THE FINAL ROOM NUMBER AND THE EQUIPMENT OR DEVICES SERVED BY THE CIRCUIT.
d. THE CONTRACTOR SHALL LABEL WITH BLACK PERMANENT MARKER EACH RECEPTACLE, JUNCTION BOX, PULL BOX AND LIGHT SWITCH ON THE INSIDE OF EACH FACE PLATE WITH PANEL AND CIRCUIT NUMBER DESIGNATION. JUNCTION AND PULL BOXES IN UNFINISHED SPACE SHALL BE MARKED ON COVER PLATES
e. THE CONTRACTOR SHALL LABEL ALL CONDUITS AND ARMORED CABLE PER ANSI A13.1. LABELS SHALL CONTAIN VOLTAGE, CIRCUIT NUMBER, SOURCE LOCATION (PANEL NUMBER), LABEL SHALL BE WHITE WITH BLACK PRINTED LETTERING. LABELS SHALL BE INSTALLED AT BOTH ENDS OF A CONDUIT OR CABLE AND JUNCTION BOX.
f. CONTROL WIRING SHALL BE TAGGED AT EACH END AND TERMINATED WHERE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS SPECIFICATIONS.
7. LIGHTING NOTES:
a. SEE ARCHITECTURAL DRAWINGS AND APPROVED SUBMITTALS AND SHOP'S DRAWINGS FOR EXACT LOCATION AND MOUNTING HEIGHTS OF ALL LIGHTING FIXTURES, SWITCHES, JUNCTION BOXES AND FOR LIGHTING FIXTURE SCHEDULE. LIGHTING FIXTURE CUTS SHALL BE APPROVED BY ARCHITECT PRIOR TO INSTALLATION.
b. REFER TO ARCHITECTURAL DRAWINGS, ELEVATIONS, AND DETAILS FOR FIXTURE SCHEDULES, SYMBOL LIST, AND EXACT FIXTURE LOCATION QUANTITY, AND MOUNTING HEIGHTS. ALL RECEPTACLE LOCATIONS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL DRAWINGS.
c. ALL LIGHTING FIXTURES SHALL BE AS SPECIFIED BY THE ARCHITECT. FOR EXACT LIGHTING FIXTURES LOCATIONS AND LIGHT FIXTURES SCHEDULE REFER TO ARCHITECTURAL DOCUMENTATION.
d. ALL LIGHTING FIXTURES MOUNTED IN A SUSPENDED CEILING SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING'S STRUCTURE ABOVE, UNLESS NOTED OTHERWISE. SEISMIC RESTRAINT SHALL BE PROVIDED AND INSTALLED FOR LIGHTING FIXTURE. COORDINATE WITH AUTHORITIES HAVING JURISDICTION.
e. SUSPENDED LIGHTING FIXTURES SHALL BE INDIVIDUALLY SUPPORTED FROM THE BUILDING'S STRUCTURE ABOVE, UNLESS NOTED OTHERWISE. SEISMIC RESTRAINT SHALL BE PROVIDED AND INSTALLED FOR LIGHTING FIXTURE. COORDINATE WITH AUTHORITIES HAVING JURISDICTION.
f. THE ELECTRICAL CONTRACTOR SHALL INSTALL ALL NEW LIGHTING FIXTURES COMPLETE WITH MOUNTING ACCESSORIES TO MEET JOB CONDITIONS.
g. CIRCUITS ARE DESIGNATED BY THE NUMBER SHOWN ADJACENT TO EACH LIGHTING FIXTURE OR JUNCTION BOX. WIRING IS SHOWN ONLY UNDER SPECIAL CIRCUMSTANCES. PROVIDE ALL CONDUIT, WIRE AND BOXES AS WELL AS CEILING OUTLETS AND WHIPS REQUIRED TO ENERGIZE LIGHTING FIXTURES AS SHOWN.
h. CIRCUIT NUMBERS ARE FOR GROUPING PURPOSES AND REFERENCE ONLY.
i. PROVIDE AND INSTALL NEW LIGHTING IN ACCORDANCE WITH CIRCUIT DESIGNATIONS AND LIGHTING CONTROL LEVEL. (SEE NOTE FOR LOADING REQUIREMENTS).
j. WIRING FOR LIGHTING BRANCH CIRCUIT HOMERUNS SHALL BE:
a) #12 WIRE IF THE LENGTH DOESN'T EXCEED 80 FT.
b) #10 WIRE IF MORE THAN 80 FT.
k. ALL LIGHT FIXTURE MUST BE CONTROLLED VIA BASE BUILDING SYSTEM.
l. ALL LIGHTING FIXTURES SHALL BE INSTALLED IN SUCH WAY TO AVOID INTERFERENCE WITH MECHANICAL DIFFUSERS, HVAC DUCT WORK, SPRINKLERS, PUBLIC ACCESS SPEAKERS AND OTHER SYSTEMS' COMPONENTS.
m. ELECTRICAL CONTRACTOR TO PROVIDE ALL CONNECTIONS FROM THE WALL AND FLOOR TO THE FIXTURES LOCATED AT MILLWORK. COORDINATE WITH MILLWORK CONTRACTOR.
n. EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS NOT EQUIPPED WITH BATTERY SHALL BE CONNECTED TO EXISTING EMERGENCY PANEL, AND ARE NOT TO BE SWITCHED. COORDINATE EXACT LOCATION WITH BASE BUILDING.
o. EXIT LIGHTS, EMERGENCY BATTERY PACKS & NIGHT LIGHTS SHALL NOT BE SWITCHED UNLESS OTHERWISE NOTED. CONNECT TO UNSWITCHED LEG OF ASSOCIATED CIRCUIT. PROVIDE AND INSTALL CODE COMPLIANT EMERGENCY BATTERY PACKS.
p. SWITCHES THAT ARE SHOWN AT ROOM ENTRANCES AND ARE NOT SPECIFICALLY IDENTIFIED BY KEY NOTES OR SWITCH-LEG INDICATORS ARE INTENDED TO OPERATE ALL OF THE GENERAL LIGHTING IN THAT ROOM ONLY. COORDINATE AND CONFIRM ALL DOOR SWINGS WITH THE ARCHITECTURAL DRAWINGS PRIOR TO ROUGH-IN OF ANY LIGHT SWITCHES.
q. COORDINATE LOCATION OF ALL CEILING DEVICES (I.E. DETECTORS, FIXTURES, AND ALL OTHER CEILING MOUNTED DEVICES) WITH OTHER TRADES (I.E. DUCTWORK, SPRINKLERS, ETC.).
r. UNLESS OTHERWISE SPECIFIED ALL LAMPS SHALL HAVE A COLOR TEMPERATURE OF 3500K.
s. UNLESS OTHERWISE SPECIFIED EXIT SIGNS SHALL HAVE RED LETTERING WITH A WHITE BACKGROUND WITH KNOCK OUT ARROWS.

1. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY
2. GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC.
3. VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.

Jarmel Kizel ARCHITECTS AND ENGINEERS INC. 42 OKNER PARKWAY LIVINGSTON, NEW JERSEY 07039 TEL: 973-994-9669 FAX: 973-994-4069 www.jarmelkizel.com Architecture Engineering Interior Design Implementation Services

THE LEARNING EXPERIENCE ACADEMY OF EARLY EDUCATION 2600 PLEASANT VALLEY ROAD WINCHESTER, VIRGINIA 22601

ISSUE table with columns: NO., DATE, DESCRIPTION, INT.

REVISION table with columns: NO., DATE, DESCRIPTION, INT.

PROFESSIONAL CERTIFICATION NAME OF LICENSEE: MATTHEW B. JARMEL LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034 Scale: AS NOTED Drawn By: LN Approved By: MBJ

Drawing Name:

ELECTRICAL NOTES

Drawing Number: E-101 Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

DRAWINGS TITLE - THE LEARNING EXPERIENCE TITLE - VIRGINIA TITLE - VA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY CDSITESTILEVA23-034-ELECTRICAL - FIRE ALARM DWG - ADIBI - PLOTTED: 12/18/2023

DRAWINGS TITLE - THE LEARNING EXPERIENCE TITLE - VIRGINIA TLEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY CDSITILEVA23-034-ELECTRICAL - FIRE ALARM DWG ADIBI PLOTTED: 12/19/2023

DEMAND LOAD INDICATED CALCULATED LOAD.
ALL CIRCUIT NUMBERS ARE SHOWN FOR DESIGN INTENT ONLY.
CONTRACTOR TO VERIFY ACTUAL CIRCUIT AVAILABILITY PRIOR TO START OF THE WORK. CONTRACTOR TO SUBMIT PANEL SCHEDULE AFTER COMPLETION OF THE WORK

PANEL MDP											
VOLTAGE (L-N): 120					ENCLOSURE TYPE: -----						
VOLTAGE (L-L): 208					MOUNTING: SURFACE						
PHASES, WIRES: 3 φ 4 W					AIC RATING (A): 65000						
MINIMUM BUS CAPACITY (A): 600 A					NOTES: NEW - MCB -						
MAIN O.C. DEVICE (A): 600 A					FED FROM: -----						
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (VA)			POLE	TRIP AMPS	DESCRIPTION	CKT NO	
				A	B	C					
1,3,5	ROOF TOP UNIT (RTU-1)	35	3	2400	2400		3	35	ROOF TOP UNIT (RTU-2)	2,4,6	
1,3,5	ROOF TOP UNIT (RTU-1)	35	3		2400	2400	3	35	ROOF TOP UNIT (RTU-2)	2,4,6	
1,3,5	ROOF TOP UNIT (RTU-1)	35	3			2400	2400	3	35	ROOF TOP UNIT (RTU-2)	2,4,6
7,9,11	ROOF TOP UNIT (RTU-3)	35	3	2400	2689		3	40	ROOF TOP UNIT (RTU-4)	8,10,12	
7,9,11	ROOF TOP UNIT (RTU-3)	35	3		2400	2689	3	40	ROOF TOP UNIT (RTU-4)	8,10,12	
13,15,17	ROOF TOP UNIT (RTU-5)	45	3	2882	2882		3	45	ROOF TOP UNIT (RTU-6)	14,16,18	
13,15,17	ROOF TOP UNIT (RTU-5)	45	3		2882	2882	3	45	ROOF TOP UNIT (RTU-6)	14,16,18	
13,15,17	ROOF TOP UNIT (RTU-5)	45	3			2882	2882	3	45	ROOF TOP UNIT (RTU-6)	14,16,18
19	SPARE	20	1	0	0		1	20	SPARE	20	
21	SPARE	20	1	0	0		1	20	SPARE	22	
23	SPARE	20	1			0	0	1	20	SPARE	24
25	SPARE	20	1	0	0		1	20	SPARE	26	
27	SPARE	20	1			0	0	1	20	SPARE	28
29	SPARE	20	1			0	0	1	20	SPARE	30
31	SPARE	20	1	0	22871		3	400	PANEL M	32,34,36	
33	SPARE	20	1			0	21595	3	400	PANEL M	32,34,36
35	ROOF SERVICE GFI WP RECEPTACLE	20	1			720	18536	3	400	PANEL M	32,34,36
37,39,41	ELECTRIC WATER HEATER (EWH-1)	60	3	5000	8000		3	90	ELECTRIC WATER HEATER (EWH-2)	38,40,42	
37,39,41	ELECTRIC WATER HEATER (EWH-1)	60	3		5000	8000	3	90	ELECTRIC WATER HEATER (EWH-2)	38,40,42	
37,39,41	ELECTRIC WATER HEATER (EWH-1)	60	3			5000	8000	3	90	ELECTRIC WATER HEATER (EWH-2)	38,40,42
				CONNECTED LOAD PHASE TOTALS (VA)							
				51524	50248	47909					
				CONNECTED LOAD (KVA)			DEMAND LOAD			145.4 KVA	
				18.2	1.00	18.2	SPARE CAPACITY			70.7 KVA	
				2.1	1.25	2.7	SPARE CAPACITY			196.3 AMPS	
				0.0	1.00	0.0	PHASE BALANCE				
				1.8	1.25	2.3	A TO B			96%	
				10.0	1.00	10.0	B TO C			97%	
				12.8	0.50	6.4	C TO A			98%	
				53.5	1.00	53.5					
				4.4	1.00	4.4					
				1.5	1.00	1.5					
				1.6	1.00	1.6					
				4.7	1.25	5.9					
				39.0	1.00	39.0					
TOTAL:				149.7		145.4					
LOAD (AMPS):				415.5		403.7					

PANEL P												
VOLTAGE (L-N): 120					ENCLOSURE TYPE: -----							
VOLTAGE (L-L): 208					MOUNTING: SURFACE							
PHASES, WIRES: 3 φ 4 W					AIC RATING (A): 65000							
MINIMUM BUS CAPACITY (A): 125 A					NOTES: NEW - MLO -							
MAIN O.C. DEVICE (A): 125 A					FED FROM: M							
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (VA)			POLE	TRIP AMPS	DESCRIPTION	CKT NO		
				A	B	C						
1	RCPTS ROOM 113	20	1	900	900		1	20	RCPTS ROOM 118	2		
3	RCPTS ROOM 124	20	1		900	1080	1	20	RCPTS ROOM 121	4		
5	RCPTS ROOM 125	20	1			900	900	1	20	RCPTS ROOM 127	6	
7	RCPTS ROOM 130	20	1	360	1800		1	20	RCPTS ROOM 132	8		
9	RCPTS ROOM 134	20	1		900	900	1	20	RCPTS ROOM 105	10		
11	RCPTS ROOM 110	20	1			900	0	1	20	SPARE	12	
13	SPARE	20	1	0	360		1	20	RCPTS GFI ROOM 113, 118	14		
15	RCPTS GFI ROOM 113, 118	20	1		360	720		1	20	RCPTS GFI ROOM 124, 121	16	
17	RCPTS GFI ROOM 125	20	1			360	360	1	20	RCPTS GFI ROOM 132, 134	18	
19	RCPTS HOUSEKEEPING	20	1	1620	540		1	20	RCPTS NURSING RM	20		
21	RCPTS GFI ROOM 130,128,129	20	1			360	0	1	20	SPARE	22	
23	RCPTS GFI PANTRY	20	1			360	360	1	20	RCPTS GFI PANTRY	24	
25	RCPTS OFFICE	20	1	720	180		1	20	RCPT COPY/ PRINTER RECEPTION	26		
27	RCPTS RECEPTION	20	1			1260	360	1	20	RCPTS OFFICE CCTV	28	
29	RCPT PRINTER/FAX OFFICE	20	1				360	800	1	20	RCPT DEDICATED GFI FRIDGE ROOM 121	30
31	SPARE	20	1	0	360		1	20	RCPT DEDICATED GFI FRIDGE ROOM 125	32		
33	SPARE	20	1			0	800	1	20	RCPT DEDICATED GFI FRIDGE ROOM 132	34	
35	RCPT DEDICATED GFI MICROWAVE ROOM 132	20	1				1800	800	1	20	RCPT DEDICATED GFI FRIDGE ROOM 134	36
37	RCPT DEDICATED GFI MICROWAVE ROOM 134	20	1	1800	800			1	20	RCPT DEDICATED GFI FRIDGE LOUNGE	38	
39	RCPT DEDICATED GFI MICROWAVE LOUNGE	20	1			1800	360	1	20	RCPT LAMINATOR	40	
41	TV RECEPTION	20	1				500	0	1	20	SPARE	42
				CONNECTED LOAD PHASE TOTALS (VA)								
				10340	9800	8400						
				CONNECTED LOAD (KVA)			DEMAND LOAD			24.1 KVA		
				9.6	1.00	9.6	SPARE CAPACITY			20.9 KVA		
				10.0	1.00	10.0	SPARE CAPACITY			58.1 AMPS		
				8.9	0.50	4.5	PHASE BALANCE			47%		
				A TO B			96%					
				B TO C			97%					
				C TO A			98%					
TOTAL:				28.5		24.1						
LOAD (AMPS):				79.2		66.9						

*PROVIDE LOCKABLE BREAKERS
CIRCUIT LOCK-ON DEVICES SHALL BE INSTALLED ON ALL CIRCUITS PROVIDING POWER TO EMERGENCY LIGHTING, EXIT SIGNS, FIRE ALARMS AND SMOKE DETECTORS. AS PER NEC CODE REQUIREMENTS, SECTION 700.20(C).

IF NSF MICROWAVES ARE REQUIRED, OUTLET WILL NEED TO BE 220 VOLT SINGLE PHASE.

PANEL M												
VOLTAGE (L-N): 120					ENCLOSURE TYPE: -----							
VOLTAGE (L-L): 208					MOUNTING: SURFACE							
PHASES, WIRES: 3 φ 4 W					AIC RATING (A): 65000							
MINIMUM BUS CAPACITY (A): 400 A					NOTES: NEW - MLO -							
MAIN O.C. DEVICE (A): 400 A					FED FROM: MDP							
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (VA)			POLE	TRIP AMPS	DESCRIPTION	CKT NO		
				A	B	C						
1,3,5	PANEL P	125	3	10340	5663		3	125	PANEL L	2,4,6		
1,3,5	PANEL P	125	3		9800	4507	3	125	PANEL L	2,4,6		
1,3,5	PANEL P	125	3			8400	5236	3	125	PANEL L	2,4,6	
7,9	ACCU-1/AC-1 PANTRY UNIT	30	2	1768	0		1	20	SPARE	8		
7,9	ACCU-1/AC-1 PANTRY UNIT	30	2		1768	500	1	20	EXHAUST FAN (EF - 1)	10		
11	FIRE ALARM CONTROL PANEL (FACP)	20	1			500	0	1	20	EXHAUST FAN (EF - 2)	12	
13	SPARE	20	1	0	0		1	20	SPARE	14		
15	SPARE	20	1			0	0	1	20	SPARE	16	
17	WATER FEATURE	20	1				0	2200	2	30	RCPT DRYER	18,20
19	SPARE	20	1	0	2200		2	30	RCPT DRYER	18,20		
21,23	UNIT HEATER (UH-1)	20	2			800	360	1	20	TELEPHONE BOARD	22	
21,23	UNIT HEATER (UH-1)	20	2				800	360	1	20	INTERNET BOARD	24
25	EXHAUST CONTROLLER	20	1	0	1800		1	20	RCPT WASHING MACHINE	26		
27	ELECTRIC CEILING HEATER (ECH-2)	20	1			1500	360	1	20	SECURITY PANEL	28	
29	EXIT DEVICE	20	1				360	180	1	20	FIRE ALARM ANNUNCIATOR PANEL (FAAP)	30
31	IRRIGATION PUMP	20	1	0	20		1	20	GLOBAL PLASMA SYSTEM PURIFIER (GPS)	32		
33	ELECTRIC CEILING HEATER (ECH-1)	20	1			1500	500	1	20	TIME CLOCK (TC-1)	34	
35	RE-CIRCULATOR PUMP FOR WATER HEATER (P-1)	20	1				500	0	1	20	SPRINKLER PUMP	36
37	RCPT GFI WP EXTERIOR	20	1	1080	0		1	20	SPACE	38		
39	SPACE	20	1			0	0	1	20	SPACE	40	
41	SPACE	20	1			0	0	1	20	SPACE	42	
				CONNECTED LOAD PHASE TOTALS (VA)								
				22871	21595	18536						
				CONNECTED LOAD (KVA)			DEMAND LOAD			59.1 KVA		
				18.2	1.00	18.2	SPARE CAPACITY			85.0 KVA		
				2.1	1.25	2.7	SPARE CAPACITY			235.9 AMPS		
				0.0	1.00	0.0	PHASE BALANCE			59%		
				1.8	1.25	2.3	A TO B			96%		
				10.0	1.00	10.0	B TO C			97%		
				12.1	0.50	6.0	C TO A			98%		
				6.6	1.00	6.6						
				4.4	1.00	4.4						
				1.5	1.00	1.5						
				1.6	1.00	1.6						
				4.7	1.25	5.9						
TOTAL:				63.0		59.1						
LOAD (AMPS):				174.9		164.1						

PANEL L											
VOLTAGE (L-N): 120					ENCLOSURE TYPE: -----						
VOLTAGE (L-L): 208					MOUNTING: SURFACE						
PHASES, WIRES: 3 φ 4 W					AIC RATING (A): 65000						
MINIMUM BUS CAPACITY (A): 125 A					NOTES: NEW - MLO -						
MAIN O.C. DEVICE (A): 125 A					FED FROM: M						
CKT NO	DESCRIPTION	TRIP AMPS	POLE	PHASE LOADS (VA)			POLE	TRIP AMPS	DESCRIPTION	CKT NO	
				A	B	C					
1	LIGHTING ROOM 113	20	1	418	317		1	20	LIGHTING ROOM 110	2	
3	LIGHTING ROOM 118	20	1		346	339	1	20	LIGHTING ROOM 105	4	
5	LIGHTING ROOM 124	20	1			353	232	1	20	LIGHTING ROOM 101 RECEPTION	6
7	LIGHTING ROOM 121	20	1	353	216		1	20	LIGHTING ROOM 134	8	
9	LIGHTING ROOM 125	20	1		317	317	1	20	LIGHTING ROOM 132	10	
11	LIGHTING ROOM 127	20	1			245	411	1	20	LIGHTING ROOM 130 & MECHANICAL ROOM	12
13	LIGHTING CORRIDOR 135,PANTRY,LAUNDRY, LOUNGE	20	1	669	180		1	20	SMARTBOARD ROOM 113	14	
15	SMARTBOARD ROOM 118	20	1		180	180	1	20	SMARTBOARD ROOM 124	16	
17	SMARTBOARD ROOM 121	20	1			180	180	1	20	SMARTBOARD ROOM 125	18
19	SMARTBOARD ROOM 127	20	1	180	180		1	20	SMARTBOARD ROOM 130	20	
21	SMARTBOARD ROOM 105	20	1		180	180	1	20	SMARTBOARD ROOM 110	22	
23	RCPT REFRIGERATOR PANTRY	20	1			635	900	1	20	RCPT FREEZER PANTRY	24
25,27	RCPT MICROWAVE PANTRY	20	2	900	0		1	20	SPARE	26	
25,27	RCPT MICROWAVE PANTRY	20	2		900	0	1	20	SPARE	28	
29,31	RCPT MICROWAVE PANTRY	20	2			900	0	1	20	SPARE	30
29,31	RCPT MICROWAVE PANTRY	20	2	900	900		2	20	RCPT MICROWAVE PANTRY	32,34	
33	LIGHTING CANOPY	20	1		168	900	2	20	RCPT MICROWAVE PANTRY	32,34	
35	SPARE	20	1			0	1200	1	20	PARKING LOT LIGHTING	36
37	MAIN ENTRANCE SIGNAGE	20	1	450	0		1	20	SPARE	38	
39	MONUMENT SIGN LIGHTS	20	1			500	0	1	20	LIGHTING EXTERIOR WALL PACKS	40
41	SPARE	20	1			0	0	1	20	SPARE	42
				CONNECTED LOAD PHASE TOTALS (VA)							
				5663	4507	5236					

H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIA\TILEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY\CDISTILEVA23-034-ELECTRICAL - FIRE ALARM.DWG ADIBI PLOTTED: 12/18/2023

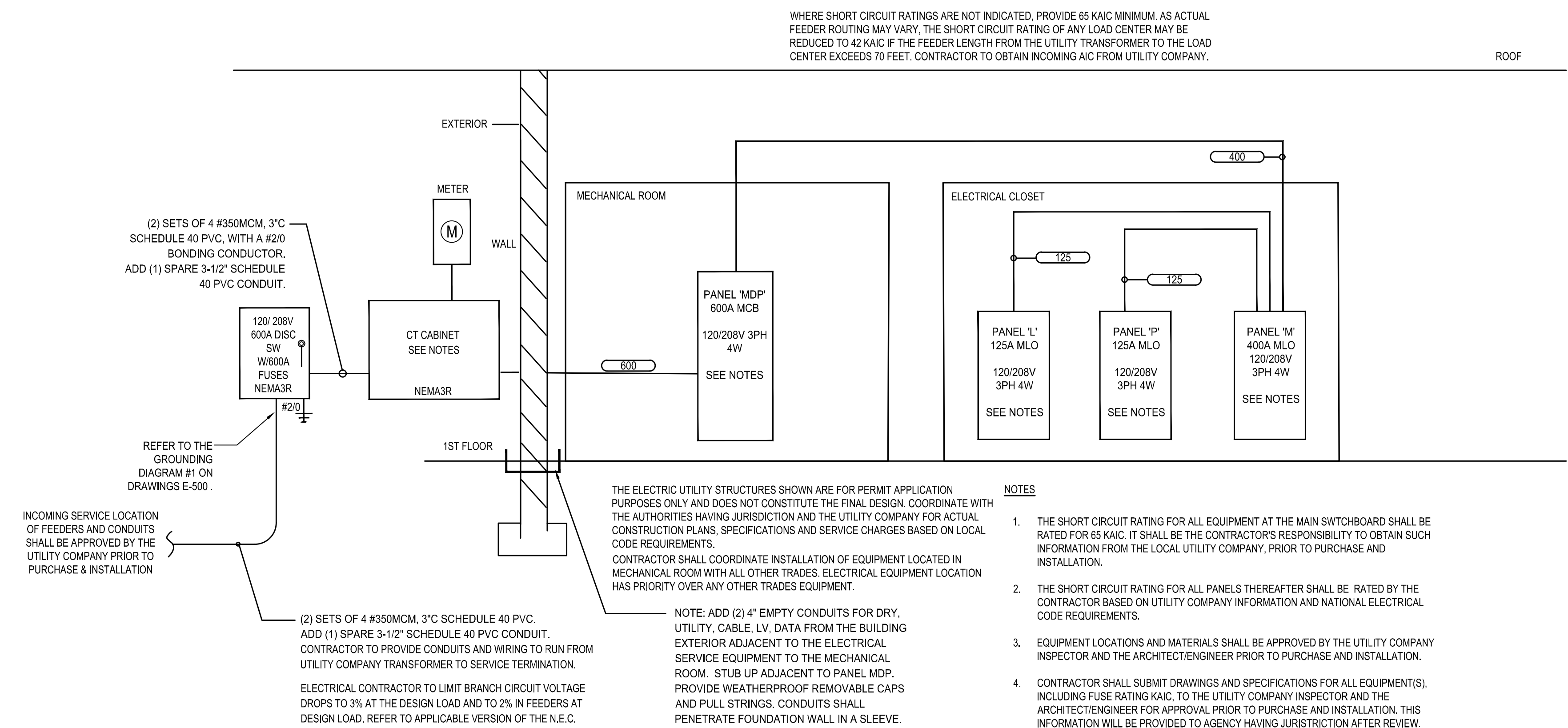
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3. VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.



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 WINCHESTER, VIRGINIA 22601

- NOTES**
1. THE SHORT CIRCUIT RATING FOR ALL EQUIPMENT AT THE MAIN SWITCHBOARD SHALL BE RATED FOR 65 KAIC. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN SUCH INFORMATION FROM THE LOCAL UTILITY COMPANY, PRIOR TO PURCHASE AND INSTALLATION.
 2. THE SHORT CIRCUIT RATING FOR ALL PANELS THEREAFTER SHALL BE RATED BY THE CONTRACTOR BASED ON UTILITY COMPANY INFORMATION AND NATIONAL ELECTRICAL CODE REQUIREMENTS.
 3. EQUIPMENT LOCATIONS AND MATERIALS SHALL BE APPROVED BY THE UTILITY COMPANY INSPECTOR AND THE ARCHITECT/ENGINEER PRIOR TO PURCHASE AND INSTALLATION.
 4. CONTRACTOR SHALL SUBMIT DRAWINGS AND SPECIFICATIONS FOR ALL EQUIPMENT(S), INCLUDING FUSE RATING KAIC, TO THE UTILITY COMPANY INSPECTOR AND THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. THIS INFORMATION WILL BE PROVIDED TO AGENCY HAVING JURISDICTION AFTER REVIEW.
 5. INCOMING SERVICE EQUIPMENT SHOWN IS BASED ON THE SIEMENS CT CABINET LINE, AND SIEMENS TYPE 'P' PANELBOARDS. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEVIATIONS, AND ANY ADDITIONAL WORK THAT MAY BE NECESSARY DUE TO SUBSTITUTE EQUIPMENT. SEE DRAWING E-100 FOR ADDITIONAL NOTES.

TYPE NUMBER	COPPER WIRE			SERVICE GROUND
	WIRE SIZE & QUANTITIES	CONDUIT w/ NEUTRAL	CONDUIT w/o NEUTRAL	
15	4#12, #12 GND	3/4"	3/4"	#8
20	4#12, #12 GND	3/4"	3/4"	#8
25	4#10, #10 GND	3/4"	3/4"	#8
30	4#10, #10 GND	3/4"	3/4"	#8
35	4#8, #10 GND	1"	1"	#8
40	4#8, #10 GND	1"	1"	#8
45	4#8, #10 GND	1"	1"	#8
50	4#8, #10 GND	1"	1"	#8
60	4#6, #10 GND	1"	1"	#8
70	4#4, #8 GND	1-1/4"	1"	#8
80	4#4, #8 GND	1-1/4"	1"	#8
90	4#3, #8 GND	1-1/4"	1"	#8
100	4#3, #8 GND	1-1/4"	1"	#8
110	4#2, #6 GND	1-1/2"	1-1/4"	#8
125	4#1, #6 GND	2"	1-1/2"	#6
150	4#1/0, #6 GND	2"	1-1/2"	#6
175	4#2/0, #6 GND	2"	2"	#4
200	4#3/0, #6 GND	2"	2"	#4
225	4#4/0, #4 GND	2-1/2"	2"	#2
250	4#250MCM, #4 GND	2-1/2"	2-1/2"	#2
300	4#350MCM, #4 GND	3"	2-1/2"	#2
350	4#500MCM, #3 GND	3"	3"	#10
400	4#600MCM, #3 GND	3-1/2"	3"	#10
450	(2 SETS) 4#4/0, #2 GND	2-1/2"	2"	#10
500	(2 SETS) 4#250MCM, #2 GND	2-1/2"	2-1/2"	#10
600	(2 SETS) 4#350MCM, #1 GND	3"	2-1/2"	#2/0
700	(2 SETS) 4#500MCM, #1/0 GND	3"	3"	#2/0
800	(2 SETS) 4#600MCM, #1/0 GND	3-1/2"	3-1/2"	#2/0

ALL FEEDERS ARE ASSUMED TO BE FOUR (4) CURRENT CARRYING CONDUCTORS (3 PHASE CONDUCTORS AND 1 NEUTRAL) UNLESS OTHERWISE NOTED.

1 INCOMING ELECTRICAL SERVICE & DISTRIBUTION
 SCALE: N.T.S.

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

ISSUE

NO.	DATE	DESCRIPTION	INT.
1	09-29-23	FOR TLE REVIEW	MBJ
2	12-19-23	FOR PERMIT	MBJ

REVISION


NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
 NAME OF LICENSEE: MATTHEW B. JARMEL
 LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034 Scale: AS NOTED
 Drawn By: LN Approved By: MBJ

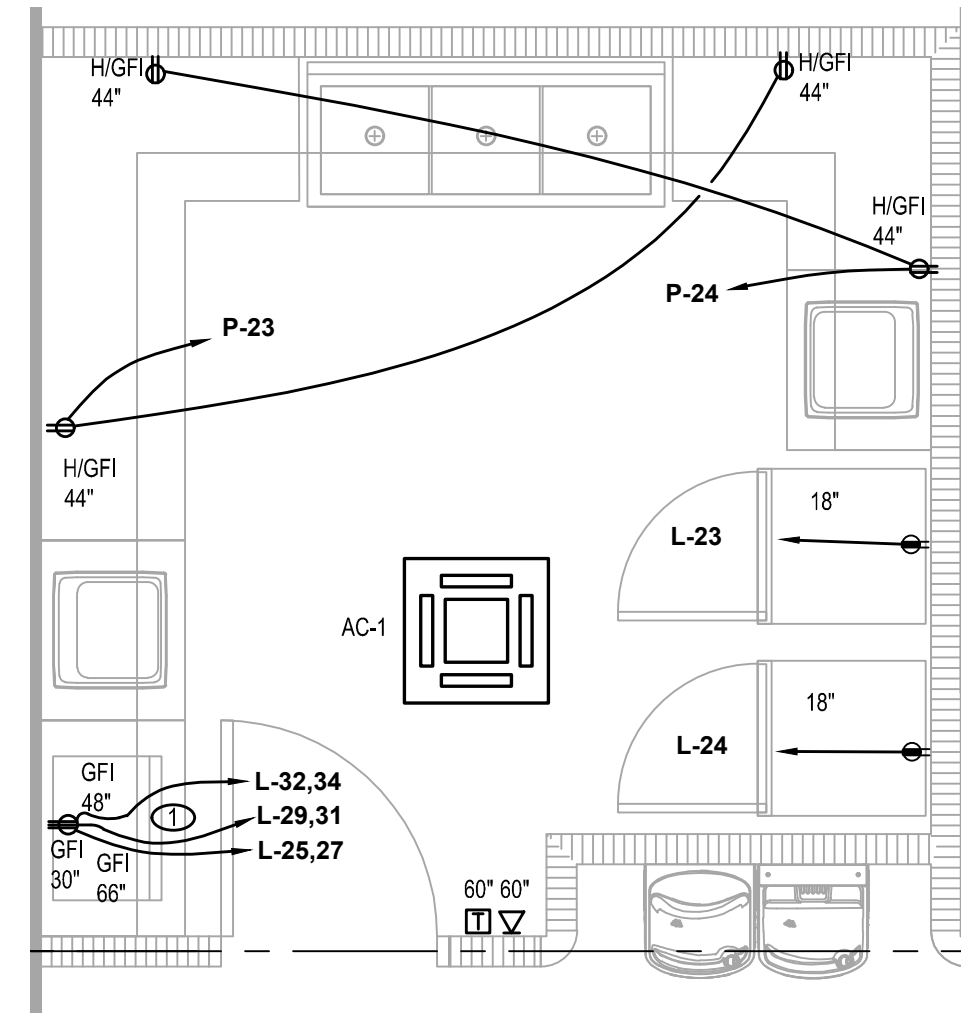
ELECTRICAL SERVICE RISER DIAGRAM

Drawing Number: **E-111**

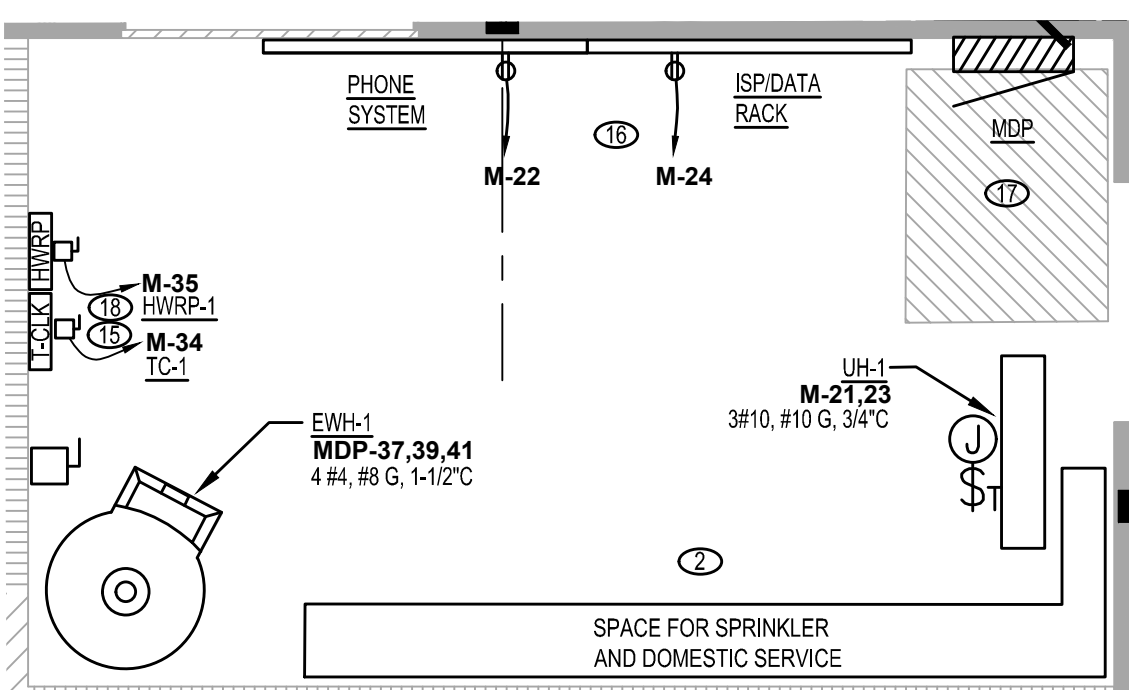


POWER PLAN SHEET NOTES:

- MOUNTING HEIGHTS AND LOCATIONS FOR WALL OUTLETS AS LISTED BELOW:
 - A. 44" FOR GENERAL ELECTRICAL RECEPTACLES @
 - PANTRY STATIONS
 - ART COUNTERS
 - B. 18" PANTRY STATIONS FOR REFRIGERATORS.
 - C. 76" PANTRY STATIONS FOR MICROWAVES.
 - D. 27" FOR INFANT ROOM PANTRY STATION.
 - E. 44" FOR STAFF LOUNGE PANTRY STATION.
 - F. VARIOUS HEIGHTS FOR PANTRY ROOM MICROWAVES. REFER TO THE DETAIL 2 ON DRAWING E-200 & DETAIL 4 ON DRAWING A-133.
- NOTE: OUTLETS ABOVE COUNTERS IN THESE LOCATIONS, PANTRY, DIAPER CHANGING TABLE AND ART COUNTER, TO BE INSTALLED HORIZONTALLY. REFER TO ARCHITECTURAL DRAWINGS 'A-43' FOR EXACT LOCATIONS.
- CONTRACTOR SHALL COORDINATE INSTALLATION OF EQUIPMENT LOCATED IN MECHANICAL ROOM WITH ALL OTHER TRADES. ELECTRICAL EQUIPMENT LOCATION HAS PRIORITY OVER ANY OTHER TRADES EQUIPMENT. CONTRACTOR TO SEE REQUIRED PHONE/DATA VENDOR FOR INSTALLATION AND LOCATIONS OF EQUIPMENT.
- SPECIAL PROTECTIVE COVERS FOR ELECTRICAL TAMPER RESISTANT UL RECEPTACLES SHALL BE INSTALLED IN ALL AREAS OCCUPIED BY CHILDREN.
- PROVIDE GFI RECEPTACLES WHERE SHOWN AND AS REQUIRED BY CODE. ALL RECEPTACLES SHALL BE UL TAMPER RESISTANT. IF DISTANCE FROM THE SINK IS WITHIN 6" PROVIDE GFI RECEPTACLES AS PER NEC REQUIREMENTS.
- SECURITY CAMERA SHOULD BE MOUNTED 6" BELOW AWNING LINE AND AT THE EXTREMITIES OF THE BUILDING SO THAT CAMERAS ON THE PLAYGROUND HAVE AN UNOBSTRUCTED VIEW. GENERAL CONTRACTOR TO COORDINATE WITH THE SECURITY VENDORS TO ENSURE VIEW IS UNOBSTRUCTED.



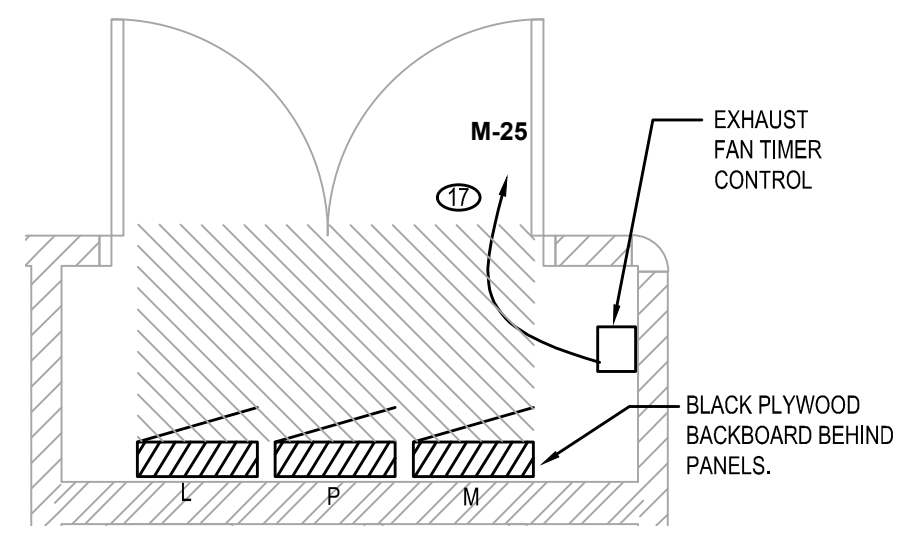
2 ENLARGED PANTRY DETAIL
SCALE: 3/8" = 1'-0"



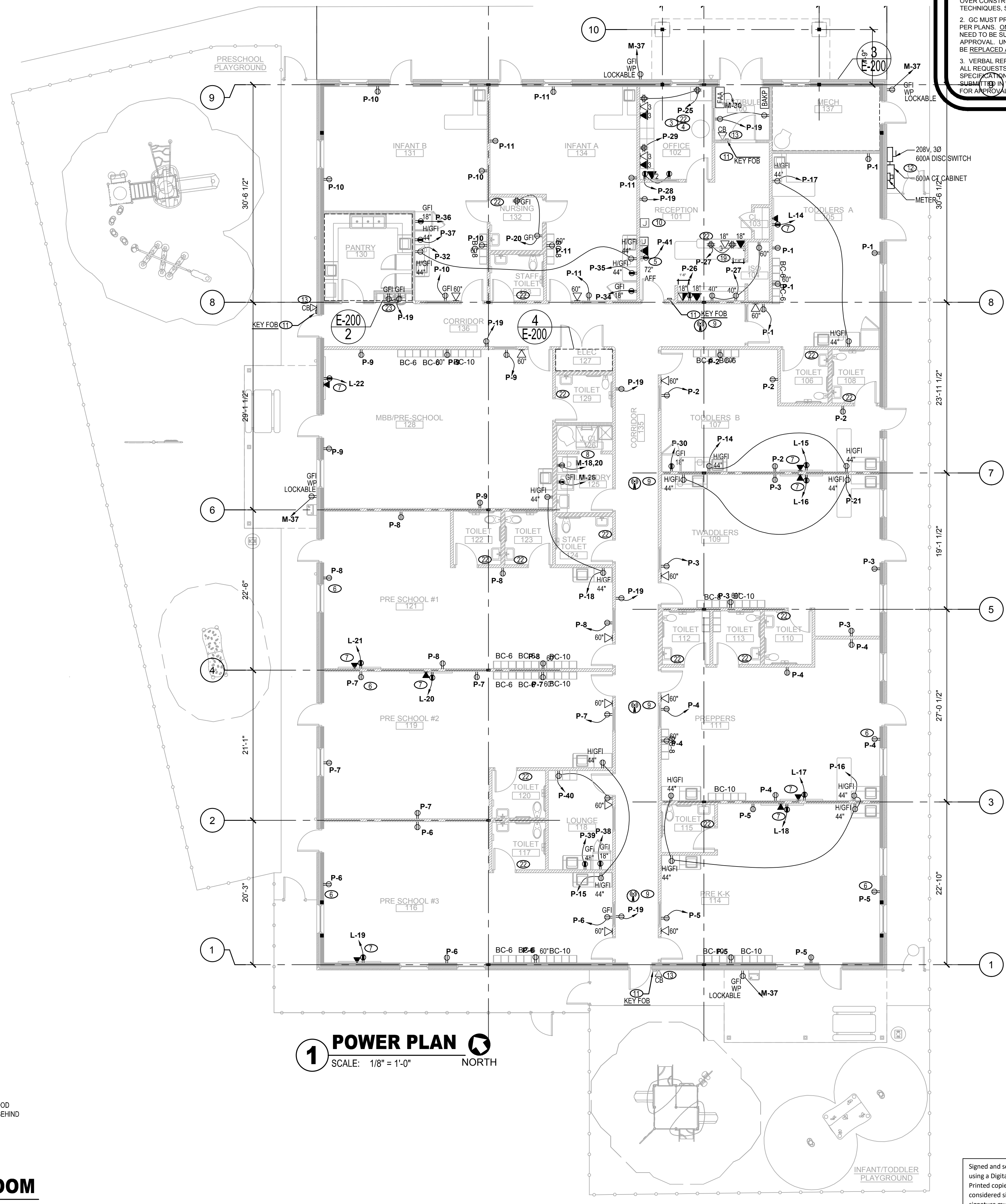
3 ENLARGED HVAC MECH ROOM PLAN
SCALE: 3/8" = 1'-0"

POWER PLAN KEY NOTES:

- 220V SINGLE PHASE GFI DEDICATED RECEPTACLES FOR MAIN PANTRY MICROWAVES. THE DEDICATED OUTLETS SHALL HAVE DEDICATED NEUTRALS. THE RECEPTACLES SHALL BE STACKED AT 30" 48" & 66" ABOVE FINISHED FLOOR ALL 32" AWAY FROM THE SIDE WALL. REFER TO THE ARCHITECTURAL DRAWING A-133 FOR DETAILS.
- CONTRACTOR SHALL FIELD COORDINATE CLEARANCES IN THIS AREA PRIOR TO EQUIPMENT LAYOUT AND INSTALLATION. AVOID DEDICATED SPACES ABOVE. REFER TO E-210 FOR ADDITIONAL INFORMATION.
- CONTRACTOR SHALL COORDINATE EXACT LOCATION & INSTALLATION OF CLOSED CIRCUIT TV SYSTEM WITH REQUIRED VENDOR. SEE DETAIL #7 & 8 ON A-135.
- PROVIDE TWO DUPLEX RECEPTACLE, ONE (2) PORT DATA JACK RECEPTACLE AND EMPTY BOX WITH PULL CORD FOR CABLE (BY OTHERS) @96" AFF. SEE DETAIL #7 & 8 ON A-135.
- PROVIDE (1) DUPLEX RECEPTACLE, (1) DATA JACK @72" AFF AND EMPTY BOX FOR FLAT SCREEN TV WITH DRAG LINE FOR CABLE (BY REQUIRED VENDOR). VERIFY LOCATION WITH ARCHITECTURAL DRAWING.
- COMPUTER TABLE (CT) DUPLEX RECEPTACLE AT 24" A.F.F.
- PROVIDE DATA AND DUPLEX OUTLETS @ 36" AFF FOR SMART BOARD. COORDINATE LOCATION IN FIELD. REFER TO ELECTRICAL SYMBOLS ON E100 FOR MODEL NUMBER AND ARCHITECTURAL DRAWINGS TO CONFIRM MOUNTING HEIGHTS.
- ROOF ACCESS/MAINTENANCE DOOR SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, WIRES, CONDUITS OR OTHER FIXED ITEMS.
- PROVIDE DATA LINES THROUGHOUT TILE IN CEILING LOCATIONS FOR WIRELESS INTERNET. VERIFY LOCATIONS AND HEIGHTS PRIOR TO PURCHASING AND INSTALLATION IN THE FIELD. PROVIDE 25' EXTRA LENGTH TO ENSURE SUFFICIENT COVERAGE. SEE REQUIRED PHONE/DATA VENDOR.
- PROVIDE JUNCTION BOX IN THE RECEPTION AREA AND ALL PANELS AND EQUIPMENT NEEDED TO POWER ELECTRONIC EXIT DEVICES THROUGHOUT THE SCHOOL ABOVE THE CEILING. TIE INTO SECURITY SYSTEM FOR DOOR RELEASE UPON ALARM ACTIVATION. VERIFY LOCATIONS AND ELECTRICAL REQUIREMENTS PRIOR TO PURCHASING AND INSTALLATION IN THE FIELD. USE CIRCUIT FOR EXIT DEVICE INDICATED ON PANEL SCHEDULES.
- PROVIDE KEY FOB DEVICE. COORDINATE W/ SECURITY SYSTEM VENDOR FOR INTEGRATION AND PROPER OPERATION OF KEY FOB.
- REFER TO RISER DIAGRAM ON E-111 FOR ADDITIONAL INFORMATION.
- PROVIDE VOICE CABLE FOR ALL CALL BOXES. FOR EXTERIOR CALL BOXES PROVIDE CONDUIT THROUGH EXTERIOR WALL. ALL SHALL BE MOUNTED AT 48" A.F.F.
- NOT USED
- CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH AND/OR THERMAL CUT OFF SWITCH AS PER NATIONAL ELECTRICAL CODE FOR ALL EXHAUST FANS, UNIT HEATERS, SPACE HEATERS, WATER HEATERS, PUMPS, ETC. CONTRACTOR SHALL PROVIDE A STEP DOWN TRANSFORMER TO POWER 12V GLOBAL PLASMA TUBES. REFER TO PANEL SCHEDULES AND MECHANICAL DRAWINGS FOR CIRCUIT NUMBER FOR TRANSFORMER AND LOCATION OF PLASMA TUBES.
- PROVIDE TWO 3/4"x3/3" PLYWOOD BACKBOARD AROUND THE WALL. INSTALL BACKBOARD 3" ABOVE THE FINISHED FLOOR, ONE IS FOR SECURITY/FIRE PANELS AND THE OTHER FOR PHONE SYSTEM. PROVIDE ALL PANELS AND EQUIPMENT NEEDED TO POWER ELECTRONIC EXIT DEVICES AS PER DWG T500. TIE INTO SECURITY SYSTEM FOR DOOR RELEASE UPON ALARM ACTIVATION. VERIFY LOCATIONS AND ELECTRICAL REQUIREMENTS PRIOR TO PURCHASING AND INSTALLATION IN THE FIELD. REFER TO PANEL SCHEDULES FOR CIRCUIT # FOR EXIT DEVICES. PLYWOOD SHALL BE TREATED WITH FIRE RESISTANT PAINT. INSTALLATION MUST COMPLY WITH ALL LOCAL CODE REQUIREMENTS.
- 30"W X 36" DEEP ELECTRICAL WORKSPACE (TYP).
- CONTROLLER & DISCONNECT FOR HWRP-1 (CIRCULATOR PUMP FOR EWH-1) SHALL BE BELL & GOSSET TIMER MODEL# 'NBF-85LW'. POWER CIRCULATOR PUMP HWRP-1 AND TIMECLOCK TC-1 FROM PANEL M AS SHOWN ON DRAWINGS.
- FEED OUTLET AND DATAPHONE THROUGH CABINETRY FROM SIDE WALL. REFER TO ARCHITECTURAL DRAWING A-134 FOR DETAILS.
- NOT USED
- NOT USED
- EMERGENCY BUTTON: HONEYWELL 269R - HARDWIRED HOLD UP SWITCH WITH PLASTIC COVER (TO BE PLACED AT RECEPTION DESK, OFFICE DESK AND EVERY CLASSROOM BATHROOM AT INTERIOR DOOR FRAME).
- PROVIDE (2) GFI OUTLETS. COORDINATE WITH DRINKING FOUNTAIN SPECIFICATIONS. FOR HEIGHT AND QUANTITY REQUIRED.



4 ENLARGED ELEC. ROOM
SCALE: 3/8" = 1'-0"



1 POWER PLAN
SCALE: 1/8" = 1'-0" NORTH

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2	12-19-23	FOR PERMIT	MBJ
REVISION			
NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MJB

Drawing Name:
ELECTRICAL POWER PLAN

Drawing Number:
E-200

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

DRAWINGS/TITLE - THE LEARNING EXPERIENCE/TLE - VIRGINIA/TLEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY/CDS/TLEVA23-034-ELECTRICAL + FIRE ALARM/DWG ADIBI PLOTTED: 12/19/2023

H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIA\TILEVA23-034 - TILE WINCHESTERVA 2600 PLEASANT VALLEY WAY\CDSTILEVA23-034-ELECTRICAL + FIRE ALARM.DWG ADIBI PLOTTED: 12/18/2023

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SHEET NOTES:

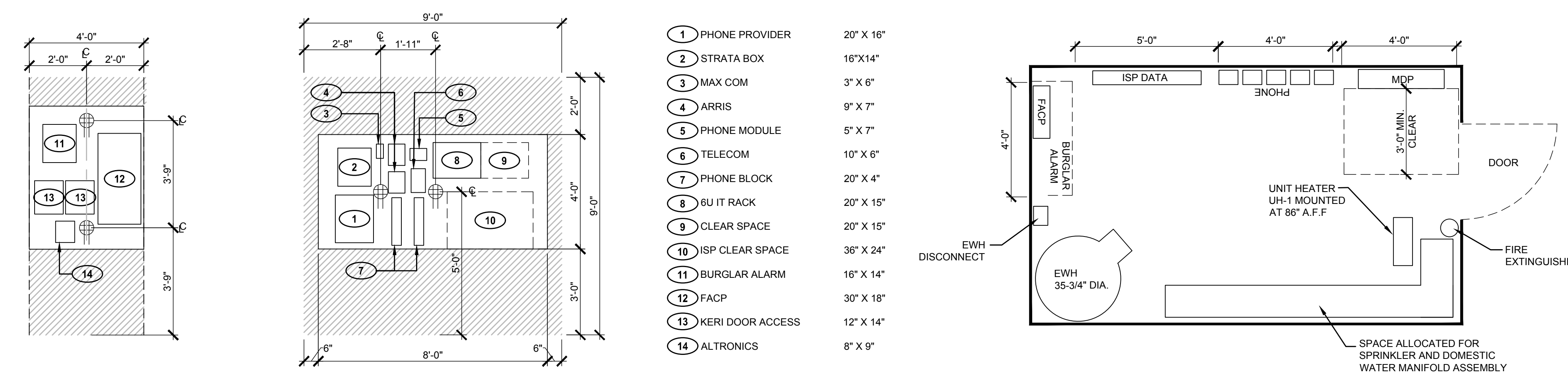
1. PROVIDE LIGHTING OUTLET AND 20A GFI RECEPTACLE AT 120V 1PH FOR SPACE THAT CONTAINS EQUIPMENT THAT MAY REQUIRE SERVICING, AS PER THE NATIONAL ELECTRICAL CODE 210.70(A)(3).
2. PROVIDE TWO 3/4" PLYWOOD BACKBOARD AROUND THE WALL. INSTALL BACKBOARD 3" ABOVE THE FINISHED FLOOR. ONE IS FOR SECURITY/FIRE PANELS AND THE OTHER FOR PHONE SYSTEM/ISP. PROVIDE ALL PANELS AND EQUIPMENT NEEDED TO POWER ELECTRONIC EXIT DEVICES AS PER DWG T-500. TIE INTO SECURITY SYSTEM FOR DOOR RELEASE UPON ALARM ACTIVATION. VERIFY LOCATIONS AND ELECTRICAL REQUIREMENTS PRIOR TO PURCHASING AND INSTALLATION IN THE FIELD. REFER TO PANEL SCHEDULES FOR CIRCUIT # FOR EXIT DEVICES.
3. 30"W X 36" DEEP ELECTRICAL WORKSPACE (TYP).
4. CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH AND/OR THERMAL CUT OFF SWITCH AS PER NATIONAL ELECTRICAL CODE FOR ALL EXHAUST FANS, UNIT HEATERS, SPACE HEATERS, HOT WATER HEATERS, PUMPS, ETC.

THE LEARNING EXPERIENCE
ACADEMY OF
EARLY EDUCATION

2600 PLEASANT VALLEY ROAD
WINCHESTER, VIRGINIA 22601



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2	12-19-23	FOR PERMIT	MBJ
REVISION			
NO.	DATE	DESCRIPTION	INT.



NOTES:
1. THE LAYOUT ABOVE IS INTENDED TO DEMONSTRATE REQUIRED CLEARANCES ONLY. THE GC IS RESPONSIBLE FOR COORDINATING ALL TRADES TO ENSURE THAT REQUIRED CLEARANCES ARE MAINTAINED WITHIN THE MECHANICAL ROOM AS DIMENSIONED IN THE PROJECT-SPECIFIC FLOOR PLAN.

1 TYPICAL MECHANICAL ROOM LAYOUT
SCALE: 3/8" = 1'-0" NORTH

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 01 4089

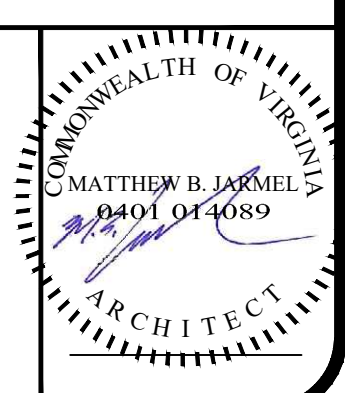
Project Number: TLEVA23-034 Scale: AS NOTED
Drawn By: LN Approved By: MBJ

Drawing Name:

MECHANICAL ROOM LAYOUT

Drawing Number:

E-210



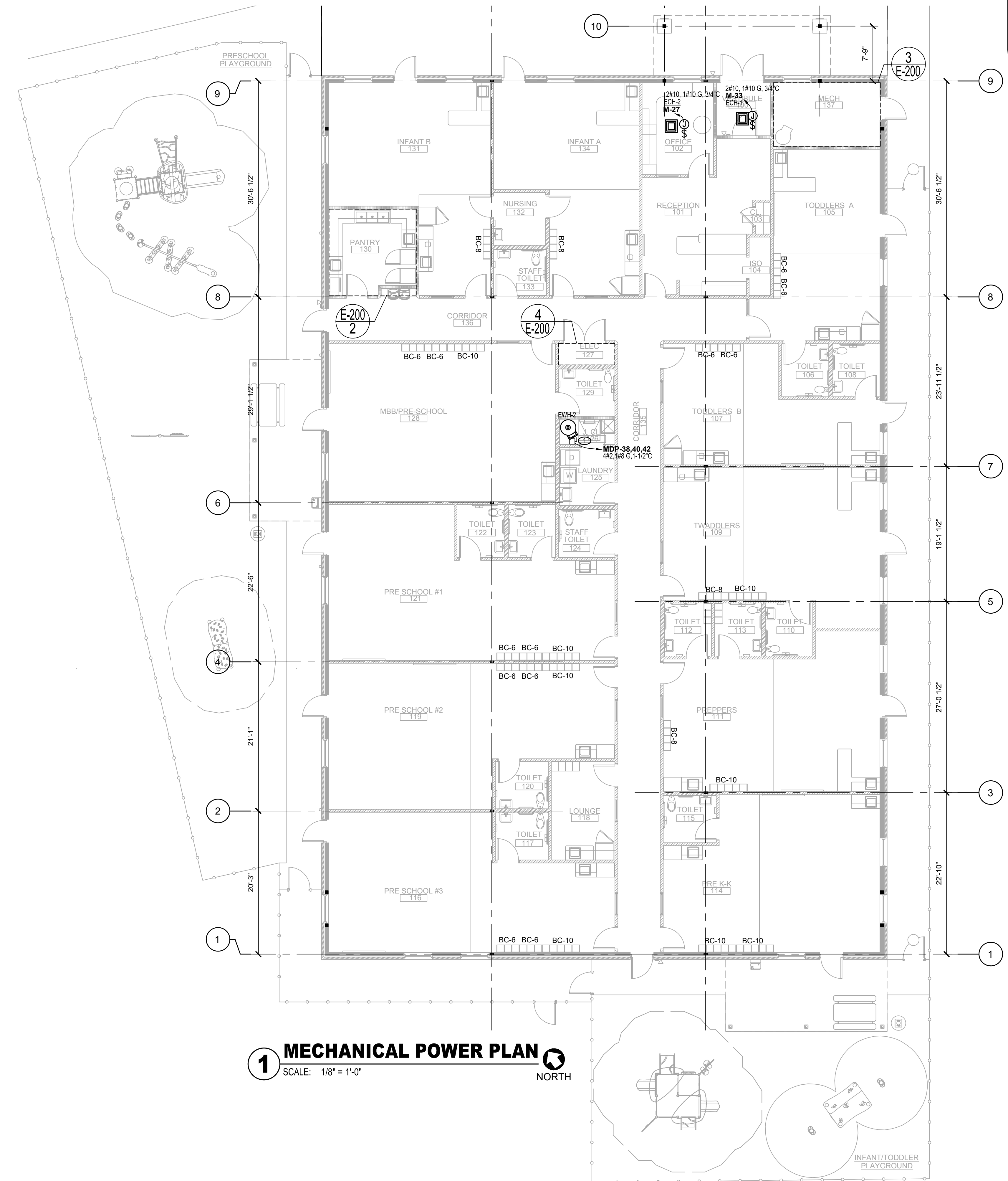
DRAWINGS: TLE - THE LEARNING EXPERIENCE TLE - VIRGINIA TLEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY CDIST TLEVA23-034-ELECTRICAL + FIRE ALARM DWG ADIBI PLOTTED: 12/18/2023

SHEET NOTES:

1. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR EXACT LOCATION OF MECHANICAL FIXTURES.
2. CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH OR THERMAL SWITCHES AS PER NATIONAL ELECTRICAL CODE FOR ALL EXHAUST FANS, UNIT HEATERS, SPACE HEATERS, WATER HEATERS, PUMPS, ETC.
3. CONTROLLER & DISCONNECT FOR HWHP-1 (CIRCULATOR PUMP FOR EWH-1) SHALL BE BELL & GOSSET TIMER MODEL# 'TC-1'.

KEY NOTES:

- ① ROOF ACCESS/MAINTENANCE DOOR SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, WIRES, CONDUITS OR OTHER FIXED ITEMS.



1 MECHANICAL POWER PLAN
SCALE: 1/8" = 1'-0" NORTH

1. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY.

2. GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC.

3. VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.



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WINCHESTER, VIRGINIA 22601

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NO.	DATE	DESCRIPTION	INT.
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2	12-19-23	FOR PERMIT	MBJ
REVISION			
NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034 Scale: AS NOTED
Drawn By: LN Approved By: MBJ

MECHANICAL POWER PLAN

Drawing Number: **E-220**

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MATTHEW B. JARMEL
0401 01 4089
ARCHITECT

H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIA\TILEVA23-034 - TILE WINCHESTERYA 2600 PLEASANT VALLEY WAY\CDSTILEVA23-034-ELECTRICAL - FIRE ALARM\DWG - ADIBI - PLOTTED: 12/18/2023

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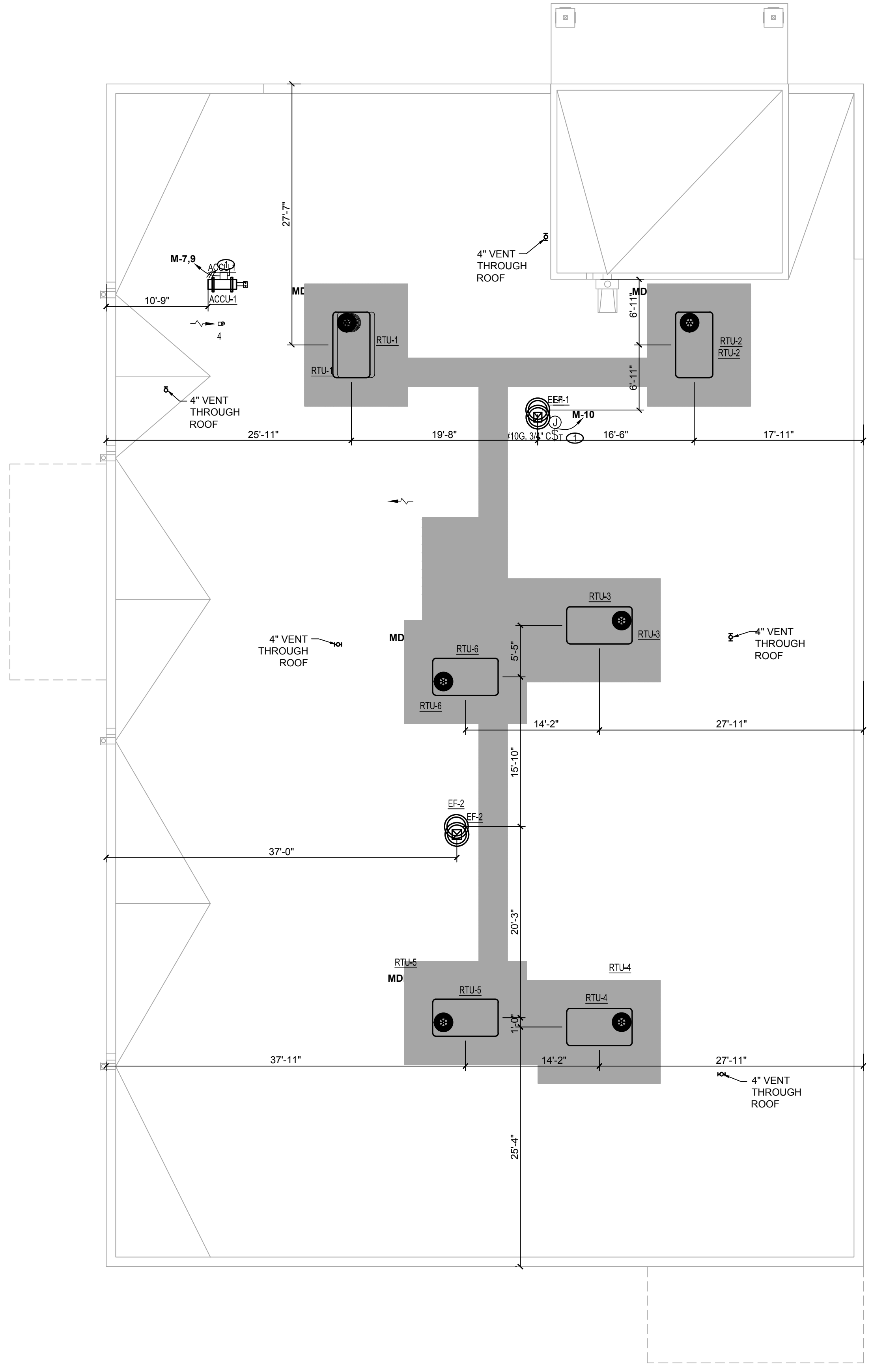
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 WINCHESTER, VIRGINIA 22601



- SHEET NOTES:**
1. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR EXACT LOCATION OF MECHANICAL FIXTURES.
 2. ROOF ACCESS/MAINTENANCE DOOR SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, WIRES, CONDUITS OR OTHER FIXED ITEMS.
- KEY NOTES:**
- ① CONTRACTOR SHALL PROVIDE DISCONNECT SWITCH AS PER CODE FOR ALL RTUS, AIR HANDLING UNITS, ACCUS, ETC. AS PER NATIONAL ELECTRICAL CODE.
 - ② PROVIDE 120V 1PH POWER TO FACTORY INSTALLED WEATHER-PROOF GFI RECEPTACLE ON THE ROOF TOP UNITS FROM FROM PANEL "MDP" REFER TO THE PANEL SCHEDULE FOR CIRCUIT DETAILS. ILLUMINATION IS PROVIDED WITH A PLUG IN LIGHT BY THE HVAC TECHNICIAN AT THE TIME OF SERVICING POWERED FROM THE WEATHER-PROOF GFI RECEPTACLE. REFER TO THE PANEL SCHEDULE FOR DETAILS.



1 ELECTRICAL ROOF POWER PLAN
 SCALE: 1/8" = 1'-0" 

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

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PROFESSIONAL CERTIFICATION
 NAME OF LICENSEE: MATTHEW B. JARMEL
 LICENSE NUMBER: 0401 014089

Project Number: TLEVA23-034 Scale: AS NOTED
 Drawn By: LN Approved By: MBJ

ELECTRICAL ROOF POWER PLAN

Drawing Number: **E-230**



SHEET NOTES:

- CONTRACTOR SHALL COORDINATE WITH OTHER TRADES FOR EXACT LOCATION OF MECHANICAL FIXTURES.
- SEE APPROVED CIVIL PLAN FOR LOCATION OF PARKING LOT LIGHTING.
- EACH SPACE THAT IS ENCLOSED BY CEILING-HEIGHT PARTITIONS MUST HAVE AT LEAST ONE CONTROL DEVICE THAT INDEPENDENTLY CONTROLS THE GENERAL LIGHTING IN THE SPACE.
- ALL EMERGENCY LIGHTING FIXTURES AND EXIT SIGNS SHALL BE WIRED TO THE UNSWITCHED LEG OF THE LOCAL LIGHTING CIRCUIT. EXTERIOR WALL PACK SHALL HAVE 90 MINUTE BATTERY BACKUP AND BE ABLE TO TURN ON AND OFF PER TLE SPECIFIED HOURS PER REQUIREMENTS OF LOCAL CODES.
- BUILDING WALL LIGHTING AND CANOPY LIGHTING SHALL BE ON A LIGHT CONTROLLER. SEE DETAIL 3 ON SHEET E-500.
- LOCATE OCCUPANCY SENSOR WITH OVERRIDE WALL SWITCH AND OCCUPANCY SENSOR SWITCHES FOR OPTIMUM PERFORMANCE PER TLE INSTRUCTIONS. ADJUST SETTINGS FOR THE SWITCH TO BE SET FOR (SLEEPING MODE) IN THE CLASSROOMS. CONTRACTOR SHALL COORDINATE WITH VENDOR REPRESENTATIVE PRIOR TO PURCHASING AND INSTALLATION IN ORDER TO AVOID THE CONFLICT IN THE OPERATION OF THE MOTION SENSOR DEVICES.
- THE LIGHTING IN THE BATHROOM MUST BE CONTROLLED AUTOMATICALLY. THE LIGHTS CAN COME ON WHEN SOMEONE ENTERS THE BATHROOM. THEN TURN OFF WHEN THAT PERSON LEAVES. HOWEVER, MOST IMPORTANTLY, WHEN THE POWER GOES OFF, THE EMERGENCY LIGHTS MUST COME ON AUTOMATICALLY. THESE LIGHTS SHALL NOT BE WIRED AS NIGHT LIGHTS.
- LIGHTING TEMPERATURES IN THE ENTIRE BUILDING TO BE SET AT 4000K, BY MEANS OF AN INTEGRAL SLIDER ON THE LIGHTING FIXTURES. SETTING "NW" REFERS TO 4000K.
- LIGHTING PACKAGE TO BE SOURCED FROM CED NATIONAL AND INCLUDES EXTERIOR SITE LIGHTING AND LIGHTING GEAR.

LIGHTING CONTROL TIMER NOTES:

- INTERIOR LIGHTING TIMER SHOULD BE SET TO MONDAY - FRIDAY FROM 5:00 AM UNTIL 7:00 PM.
- EXTERIOR LIGHTING TIMER SHOULD BE SET TO MONDAY - FRIDAY FROM 5:00 PM UNTIL 8:00 AM.

LIGHTING CONTROL NOTES:

- ALL SENSOR LOCATIONS ARE APPROXIMATE. REFER TO THE MANUFACTURER'S INSTALLATION INSTRUCTIONS PRIOR TO INSTALLATION.
- IF ANY QUESTIONS ARISE REGARDING SENSOR PLACEMENT, CONTACT LIGHTING CONTRACTOR PRIOR TO INSTALLATION TO SCHEDULE A FIELD VISIT.
- IF PENDANT MOUNTED FIXTURES ARE PRESENT, LOCATION AND COVERAGE OF SENSORS SHOULD BE REVIEWED.
- CEILING MOUNTED SENSORS REQUIRE TO BE LOCATED NO CLOSER THAN 6-8" FROM AIR SUPPLY/RETURN REGISTERS.
- MAXIMUM NUMBER OF SENSORS THAT CAN BE WIRED IN PARALLEL TO A SINGLE ROOM CONTROLLER OR POWER PACK, DEPENDS ON SENSOR MODEL. (SEE INDIVIDUAL SHEETS FOR MA CONSUMPTION).
- CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFICATION OF REQUIRED NUMBER OF POWER PACKS.
- ONE POWER PACK IS REQUIRED FOR EACH CIRCUIT THAT IS TO BE CONTROLLED.
- POWER PACKS ARE SHOWN FOR ZONING PURPOSES ONLY. CONTRACTOR IS RESPONSIBLE FOR DETERMINING ACTUAL LOCATION AND CIRCUITING.
- POWER PACKS SHOULD BE MOUNTED AT LEAST 6-12 INCHES FROM ANY SENSOR.
- LOCATIONS OF PHOTOCELLS (IF SHOWN) ARE DIAGRAMMATIC AND FOR QUANTITATIVE PURPOSES ONLY. ACTUAL MOUNTING LOCATIONS OF PHOTOCELLS SHOULD BE DETERMINED IN AN ON-SITE PRE-INSTALLATION MEETING PRIOR TO ROUGHING IN EQUIPMENT.
- PER THE REQUIREMENTS OF THE ELECTRICAL CODE, AREAS LABELED AS "MECHANICAL" OR "ELECTRICAL" WHERE WORK MAY OCCUR ARE NOT TO BE CONTROLLED BY AUTOMATED LIGHTING CONTROLS ALONE.
- TURN OFF ANY POWER AT THE CIRCUIT BREAKER BEFORE WIRING ANY PRODUCT.

DESIGN BASED ON IECC-2018

STAND ALONE ROOM - SEQUENCE OF OPERATION	NOTES - CONT
TOILET/FILE SERVER AUTO-ON/OFF THROUGH WALL/SENSOR SWITCH.	WHERE REQUIRED LIGHTS SHALL BE CONTROLLED BY THE DAYLIGHT SENSORS AND AUTOMATICALLY BRIGHTEN AND DIM TO MAINTAIN THE REQUIRED LIGHT LEVEL IN THE SPACE. WHERE REQUIRED LIGHTS SHALL BE CONTROLLED BY THE DAYLIGHT SENSORS AND AUTOMATICALLY BRIGHTEN AND DIM TO MAINTAIN THE REQUIRED LIGHT LEVEL IN THE SPACE. ALL ENGRAVING OF SWITCHES SHALL BE COORDINATED WITH THE OWNER PRIOR TO ORDERING.
LOUNGE/CONFERENCE/OFFICE AUTO-ON/OFF THROUGH 0-10 DIMMING WALL/SENSOR SWITCH.	AUTOMATIC RECEPTION CONTROLS: WHERE REQUIRED AT LEAST 50% OF RECEPTACLES AND 25% OF FEEDERS TO MODULAR FURNITURE SHALL AUTO OFF BY EITHER: TIME SCHEDULE, OCCUPANCY SENSOR WITH 20 MIN. OFF DELAY OR AUTOMATED SIGNAL THAT SHALL AUTO OFF RECEPTACLES WITHIN 20 MIN.
CLASSROOMS/RECEPTION/STORAGE MANUAL-ON/AUTO-OFF THROUGH DIGITAL SWITCHES, ROOM CONTROLLERS AND VACANCY SENSORS. DAYLIGHTING AS SHOWN.	EMERGENCY NOTES ALL FIXTURES INDICATED WITH "EM" SHALL HAVE AN INTEGRAL EMERGENCY BATTERY AND BE INTERNALLY WIRED TO BYPASS LOCAL CONTROL, BRINGING FIXTURE TO FULL BRIGHTNESS DURING EMERGENCY OPERATION. ALL FIXTURES INDICATED WITH "NL" SHALL HAVE AN INTEGRAL EMERGENCY BATTERY AND BE UNSWITCHED NIGHT LIGHT.
CORRIDOR/LOBBY AUTO-ON/OFF THROUGH CEILING SENSOR, ROOM CONTROLLER, AND LOCAL DIGITAL OVERRIDE SWITCH. ALL FIXTURES INDICATED WITH "NL" ARE UNSWITCHED AND SHALL OPERATE 24/7.	
NOTES ALL OCCUPANCY/VACANCY SENSORS SHALL TURN OFF RESPECTIVE LIGHTING FIXTURES 20 MIN AFTER VACANCY. AFTERHOUR OVERRIDE CONTROL SHALL HAVE A MAXIMUM OVERRIDE OF NO MORE THAN TWO HOURS PER ACTIVATION DURING SCHEDULED OFF PERIODS. CONFIRM THE EXACT DIMMING REQUIREMENTS OF EACH PURCHASED LIGHTING FIXTURE, PRIOR TO ORDERING THE CORRESPONDING DIMMING ROOM CONTROLLER. COMPATIBILITY MUST BE VERIFIED. LOWER CASE LETTER (EXAMPLE "A") LOCATED NEXT TO LIGHTING FIXTURE INDICATES THE LOCAL SWITCH ZONE.	

KEY NOTES:

- MAIN ENTRANCE SIGNAGE AND ADDITIONAL SIGNAGE SHALL BE ON A LIGHT CONTROLLER. SEE DETAIL 3 ON SHEET E-500.
- ROOF ACCESS/MAINTENANCE DOOR SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, WIRES, CONDUITS OR OTHER FIXED ITEMS.
- OVERRIDE SWITCH TO CONTROL CORRIDOR LIGHTS.
- EXTEND POWER TO MONUMENT SIGN AND PARKING LOT LIGHTS. PROVIDE ASTRONOMICAL TIME CLOCK FOR CONTROLS. FIELD VERIFY DISTANCES AND COORDINATE EXACT LOCATION. USE CIRCUIT #'S INDICATED ON THE PANEL SCHEDULES.



1 ELECTRICAL LIGHTING PLAN
SCALE: 1/8" = 1'-0"
NORTH

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PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MBJ

ELECTRICAL LIGHTING PLAN

Drawing Number: **E-300**

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

DRAWINGS: TLE - THE LEARNING EXPERIENCE; TLE - VIRGINIA; TLEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY; CD: STLEVA23-034-ELECTRICAL + FIRE ALARM; DWG: ADBI - PLOTTED: 12/19/2023

H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIA\TILEVA23-034 - TILE WINCHESTERYA 2600 PLEASANT VALLEY WAY\CDSTILEVA23-034-ELECTRICAL - FIRE ALARM.DWG ADIBI PLOTTED: 12/18/2023

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****CONTRACTOR'S LIGHTING PROCUREMENT NOTES****

-ALL LIGHTING FIXTURES & CONTROL DEVICES TO BE PURCHASED AND INSTALLED BY CONTRACTOR
-ALL FIXTURES HAVE BEEN PRE-SELECTED BY THE TENANT.
-FIXTURE AND/OR CONTROLS SUBSTITUTIONS ARE NOT ALLOWED AT THE REQUEST OF THE TENANT.

REQUIRED TLE LIGHTING VENDOR:
CED NATIONAL
RAY SEFCIK, JR.
RAY.SEFCIK@CED.COM
817-929-8191

NO SUBSTITUTIONS ALLOWED. ANY SUBSTITUTIONS WILL BE REJECTED.

ELECTRICAL LIGHTING FIXTURE SCHEDULE (AS STANDARD)				
FIXTURE TYPE	FIXTURE SYMBOL	DESCRIPTION	MANUFACTURER & CATALOG NUMBER	VOLTS
A		2'X4' RECESSED LED LIGHT FIXTURE. TYPICAL FOR ALL 2'X4' FIXTURES THROUGHOUT THE BUILDING, UNLESS OTHERWISE NOTED.	"SIGNIFY" 2SBP3550L8CS-4-UNV-DIM	120
A EMNL		2'X4' RECESSED LED LIGHT FIXTURE, WITH INTEGRAL EMERGENCY BATTERY BACKUP.	"SIGNIFY" 2SBP3550L8CS-4-UNV-DIM-EM	120
B		2'X2' RECESSED LED LIGHT FIXTURE. TYPICAL FOR ALL 2'X2' FIXTURES THROUGHOUT THE BUILDING, UNLESS OTHERWISE NOTED.	"SIGNIFY" 2SBP3040L8CS-2-UNV-DIM	120
BBMNL		2'X2' RECESSED LED LIGHT FIXTURE, WITH INTEGRAL EMERGENCY BATTERY BACKUP.	"SIGNIFY" 2SBP3040L8CS-2-UNV-DIM-EM	120
G		8"Ø RECESSED DOWNLIGHT. SUITABLE FOR WET LOCATIONS. ORDER MOUNTING HARDWARE AS REQUIRED.	"WILLIAMS" 6DR-TL-L30-8-35-DIM-UNV-O-W-OF-WH-N-F1	120
HE		EXTERIOR WALL PACK EGRESS LED FIXTURE WITH INTEGRATED BATTERY PACK. BATTERY SHALL PROVIDE A MINIMUM OF 90 MINUTES BACKUP POWER.	"WILLIAMS" WVP-V-L30-T-40-T3-FINISH-CGL-EM4W-DIM-UNV	120
K-48		1'X4' LED LIGHT FIXTURE WITH PROTECTIVE WIRE CAGE. MOUNTED ABOVE THE DOOR FRAME. WB = WALL BRACKET.	"BEGHELLI" BS101LED-ECO-E-4-HT-HO-WT40-120/277	120
K-48 EM		1'X4' LED LIGHT FIXTURE WITH PROTECTIVE WIRE CAGE. MOUNTED ABOVE THE DOOR FRAME. WB = WALL BRACKET - EMERGENCY BATTERY SHALL PROVIDE A MINIMUM OF 90 MINUTES STANDBY POWER. WIRE NIGHT LIGHTS AS PER DWG. E-300.	"BEGHELLI" BS101LED-ECO-E-4-SA-HO-WT40-120/277	120
J		EXTERIOR GOOSENECK LIGHT FIXTURE.	"ANP" LEMM016D-D-W-40K-RTC-UNV-E6-SWL-41	120
P		WATERPROOF SPOT LIGHT FOR MONUMENT SIGN	"WINONA" LEM711-700KNL1-LSS1A-40K-MVOLT-DBT	120
X		BUILDING STANDARD CEILING MOUNTED ILLUMINATED EXIT SIGN WITH BATTERY BACKUP. USE OVERSIZED BATTERY IN LOCATIONS THAT SHALL HAVE REMOTE EMERGENCY LIGHTS CONNECTED. SHADING INDICATES ILLUMINATED FACE & ARROW INDICATES DIRECTION OF EGRESS. MOUNT ON UNDERSIDE OF SOFFIT WHERE REQUIRED FOR INTENDED VISIBILITY. BATTERY BACKUP SHALL PROVIDE A MINIMUM OF 90 MINUTES STANDBY POWER. ORDER MOUNTING HARDWARE.	"BEGHELLI" CRV-LG-1/2-MS-W	120
		LUTRON VIVE HUB	LUTRON CAT. NO. HJS-1-FM	
		POWER PACK. SMALL LETTER DENOTES LIGHT ZONE.	LUTRON CAT. NO. RMJS-5R-DV-B	
		CORRIDOR POWER PACK. SMALL LETTER DENOTES LIGHT ZONE.	LUTRON CAT. NO. RMJS-16R-DV-B	
		CEILING MOUNTED WIRELESS OCCUPANCY/VACANCY CEILING SENSOR	LUTRON CAT. NO. LRF2-OCR2B-P-WH	
		LIGHTING SWITCH 4-BUTTON DUAL GROUP. SMALL CASE LETTERING INDICATES LIGHT ZONE.	LUTRON CAT. NO. PJ2-4B-GWH-L21	
		WALL MOUNTED DIMMABLE PASSIVE INFRARED SENSOR SWITCH SMALL CASE LETTERING INDICATES LIGHT ZONE.	LUTRON CAT. NO. MS-OPS6-DDV-WH	
		WALL MOUNTED PASSIVE INFRARED SENSOR SWITCH.	LUTRON CAT. NO. MS-OPS2-WH	
		WALL MOUNTED PASSIVE INFRARED SENSOR SWITCH.	LUTRON CAT. NO. MRF2S-8SS-WH	
		LIGHTING SWITCH 2-BUTTON	LUTRON CAT. NO. PJ2-2B-GWH-L01	
		CONTROL PANEL OVERRIDE SWITCH FOR RECEPTION AND CORRIDOR AREA. FOR AFTER HOURS USE.	VENDOR TO PROVIDE PART NUMBER OF THE SWITCH COMPATIBLE WITH THE LIGHTING PANEL.	
		CEILING MOUNTED PHOTOSENSOR DAYLIGHT HARVESTING ZONE	LUTRON CAT. NO. LRF2-DCRB-WH	
		MANUAL LIGHT SWITCH	"LUTRON" - COMMERCIAL GRADE SWITCH-WHITE	

NOTE: 1) WHITE TRIM FOR ALL FIXTURES. ALL LIGHTING FIXTURES SHALL HAVE LENS. BACK OF SWITCH PLATE SHOULD INDICATE CIRCUIT NUMBER.
2) MVOLT OR 120V ONLY. REFER TO E-111.
3) NL / NIGHT LIGHT SHALL BE WIRED AHEAD OF THE SWITCH. THE LIGHT SHALL BE ON AT ALL TIMES.
4) ALL EMERGENCY FIXTURES SHALL HAVE A MINIMUM 90 MINUTE BATTERY BACKUP
5) SMALL CASE LETTER DENOTES LIGHT ZONE.

----- DASHED LINE INDICATES LIGHT ZONE FOR POWERING FIXTURES.

SITE LUMINAIRE SCHEDULE		
FIXTURE TYPE	FIXTURE DESCRIPTION	FINAL SELECTIONS, POLE HEIGHTS AND QUANTITIES SHALL BE VERIFIED WITH APPROVED SITE LIGHTING SHOP DRAWINGS.
S1	POLE MOUNTED LED SITE LIGHT	"LSI" - PXSLM-3-24L-1-UNIVERSAL-40-45Q20-AB

THE LEARNING EXPERIENCE ACADEMY OF EARLY EDUCATION



2600 PLEASANT VALLEY ROAD WINCHESTER, VIRGINIA 22601

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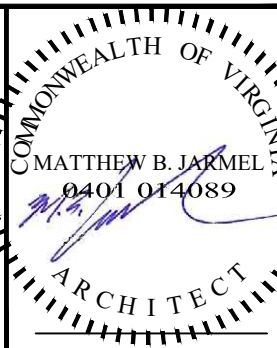
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PROFESSIONAL CERTIFICATION
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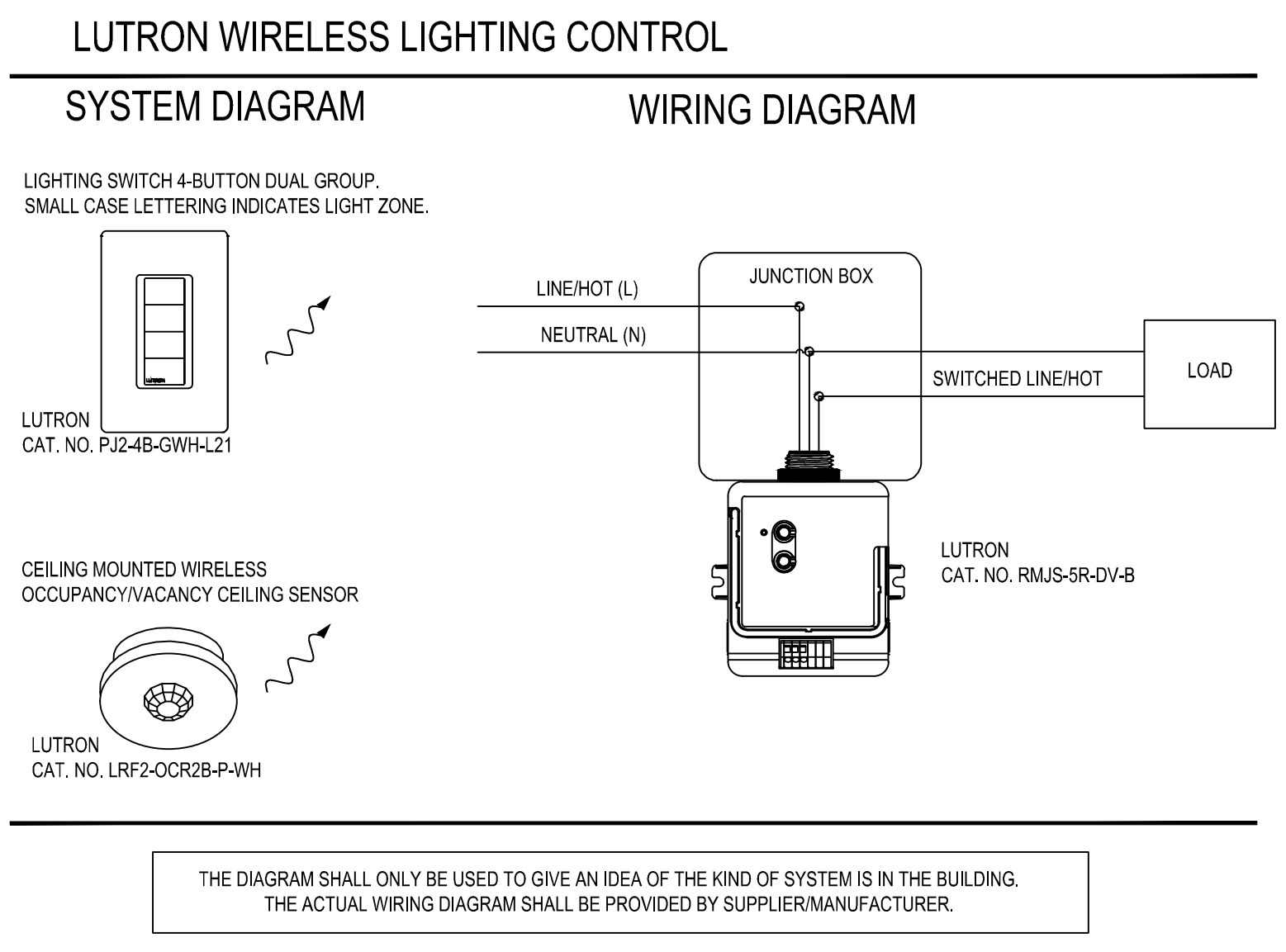
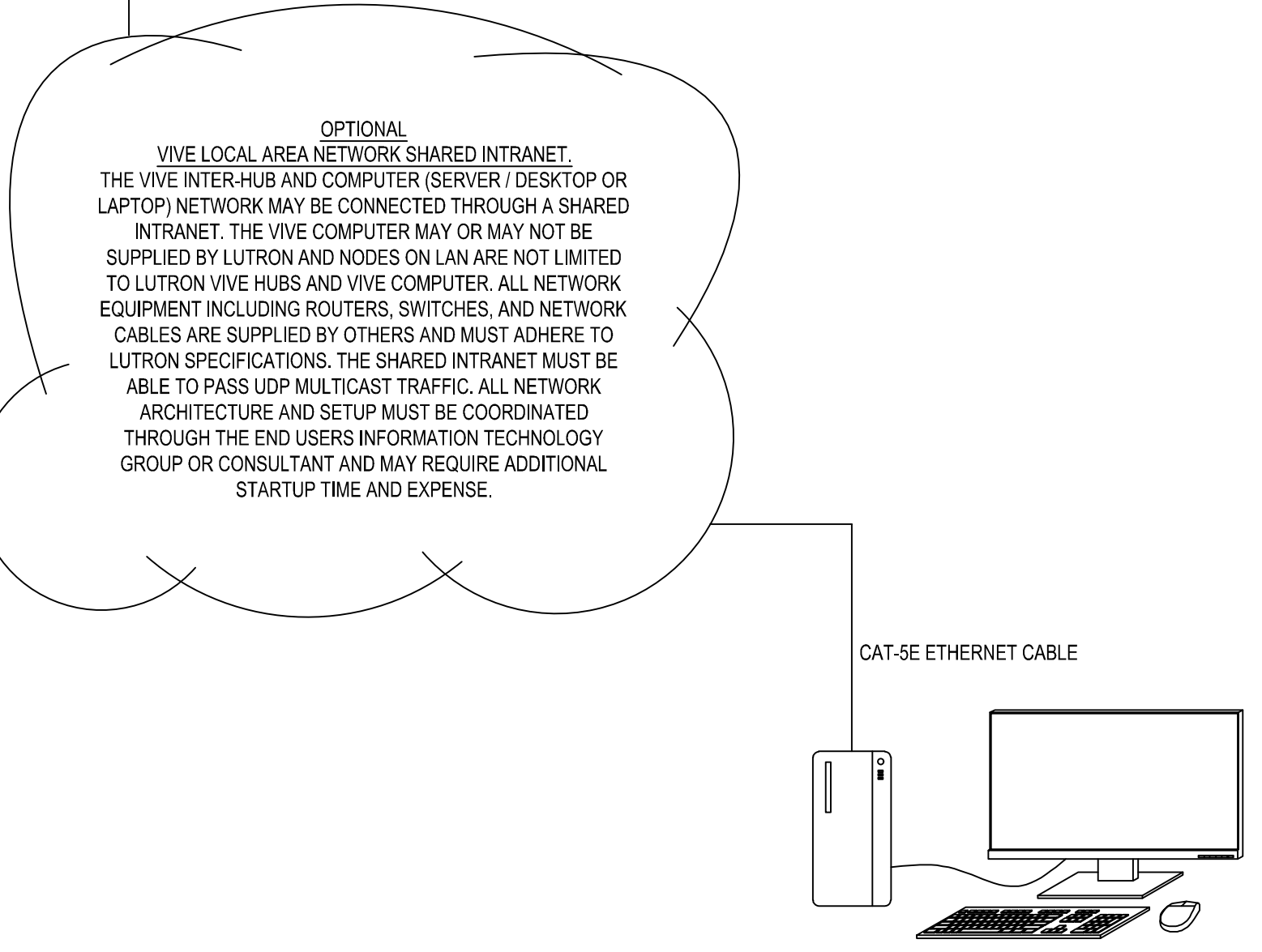
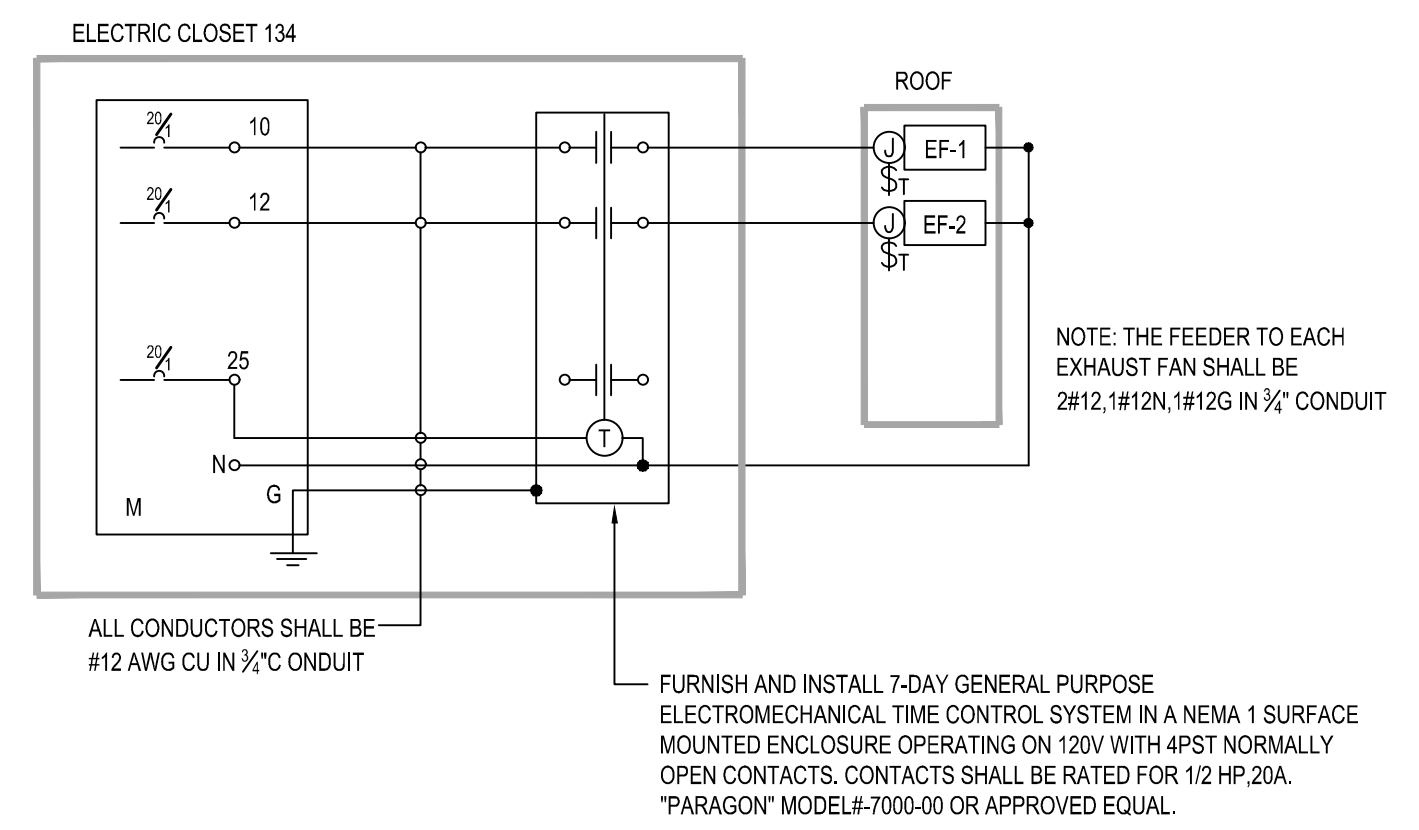
ELECTRICAL LIGHTING SCHEDULE

Drawing Number: **E-301**



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DRAWINGS TITLE - THE LEARNING EXPERIENCE TITLE - WINCHESTERVA 2600 PLEASANT VALLEY WAY CD SITE ELECTRICAL - FIRE ALARM DWG ADIBI PLOTTED: 12/18/2023



2 TYPICAL CLASSROOM LIGHTING CONTROL DIAGRAM
SCALE: NTS

NOTES:

CONTRACTOR TO COORDINATE EXACT CONTROLLER DETAILS AND REQUIREMENTS WITH LIGHTING MANUFACTURER'S REPRESENTATIVE.

CONTRACTOR TO PROVIDE AND INSTALL ALL LUTRON VIVE SYSTEMS DEVICES, WIRING, AND ASSOCIATED COMPONENTS/ACCESSORIES.

WIRING NOTES:

LUTRON LIGHTING MANAGEMENT NETWORK

WHEN A LIGHTING MANAGEMENT NETWORK (LMN) IS REQUIRED TO ENABLE COMMUNICATIONS BETWEEN INDIVIDUAL LIGHT MANAGEMENT HUBS (LMH) AND BETWEEN LMH AND THE SYSTEM SERVER/DESKTOP/LAPTOP. THE LMN REQUIRES A DEDICATED LAN OR VLAN. IT IS THE RESPONSIBILITY OF THE NETWORK PROVIDER TO ENSURE THE RELIABILITY AND SECURITY OF THE LMN.

CAT5E OR BETTER ETHERNET CABLE TO BE RUN FOR DEDICATED LMN TERMINATED WITH RJ45 CONNECTORS (PROVIDED BY OTHERS). THE NUMBER OF ETHERNET HOPS/SEGMENTS BETWEEN THE SERVER/DESKTOP/LAPTOP AND ANY LMN NODE SHALL NOT EXCEED 6. TOTAL LENGTH OF ETHERNET CABLE SHALL NOT EXCEED 328 FT (100M) POINT-TO-POINT.

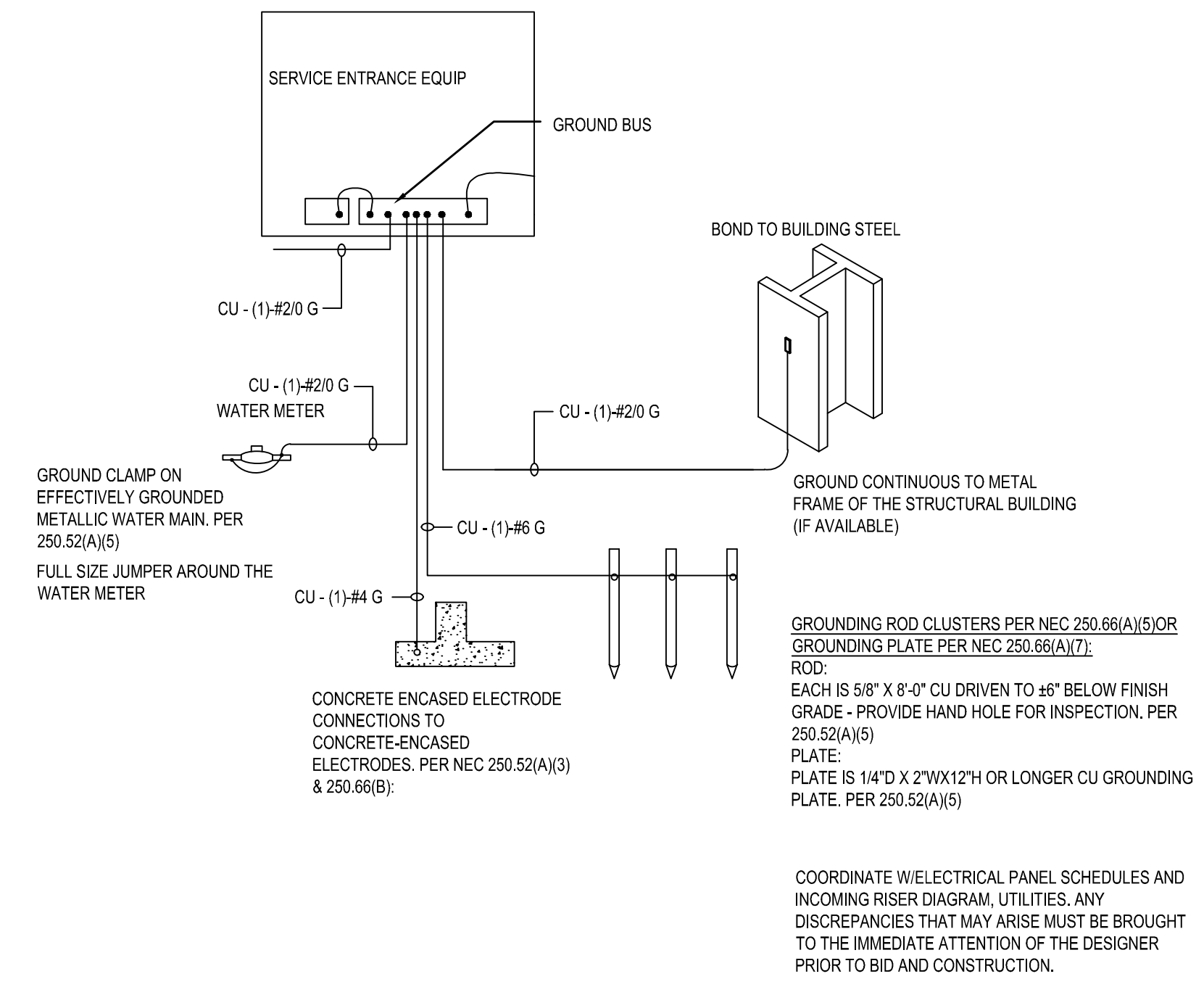
IF LONGER RUNS ARE REQUIRED, MULTIMODE FIBER OPTIC CABLE CAN BE USED INSTEAD WITH APPROPRIATE FIBER OPTIC CONNECTORS (PROVIDED BY OTHERS). CONSULT WITH NETWORK PROVIDER FOR STANDARD ETHERNET AND FIBER OPTIC WIRING RULES FOR DISTANCE AND SEPARATION AS WELL AS FOR PLACEMENT OF SWITCHES, ROUTERS, HUBS ETC.

CONCEPT DRAWINGS NOTES:

CONTROL SYSTEM DRAWING IS PROVIDED FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. EXACT EQUIPMENT REQUIREMENTS, INCLUDING LOCATIONS AND QUANTITIES, SHOULD BE VERIFIED IN ACCORDANCE WITH THE MOST UP-TO-DATE LIGHTING/ELECTRICAL REFLECTED CEILING PLANS, LIGHTING FIXTURE SCHEDULES, PANEL SCHEDULES, CONTROL INTENT AND SPECIFICATIONS.

LIGHTING CONTROL TIMER NOTES:

- INTERIOR LIGHTING TIMER SHOULD BE SET TO MONDAY - FRIDAY FROM 5:00 AM UNTIL 7:00 PM.
- EXTERIOR LIGHTING TIMER SHOULD BE SET TO MONDAY - FRIDAY FROM 5:00 PM UNTIL 8:00 AM.



NOTE: ALL GROUNDING ELECTRODES SHALL BE CONNECTED AS PER LOCAL CODE REQUIREMENTS OR THESE ELECTRODES SHALL BE BONDED TOGETHER TO FORM THE GROUNDING ELECTRODE SYSTEM AND CONNECTED TO GROUND BUS AS PER NEC 250.50. GROUNDING ELECTRODE CONDUCTORS SHALL BE SIZED IN ACCORDANCE WITH 18-27-250.66.

TABLE 250.66 GROUNDING ELECTRODE CONDUCTOR FOR AC SYSTEMS			
SIZE OF LARGEST UNGROUNDED SERVICE ENTRANCE CONDUCTOR OR EQUIVALENT AREA FOR PARALLEL CONDUCTORS		SIZE OF GROUNDING ELECTRODE CONDUCTOR (AWG/KCMIL)	
COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM	COPPER	ALUMINUM OR COPPER-CLAD ALUMINUM SEE 250.64(A)
2 OR SMALLER	1/0 OR SMALLER	8	6
1 OR 1/0	2/0 OR 3/0	6	4
2/0 OR 3/0	4/0 OR 250	4	2
OVER 3/0 THROUGH 350	OVER 250 THROUGH 500	2	1/0
OVER 350 THROUGH 600	OVER 500 THROUGH 900	1/0	3/0
OVER 600 THROUGH 1100	OVER 900 THROUGH 1750	2/0	4/0
OVER 1100	OVER 1750	3/0	250

NOTES:

- IF MULTIPLE SETS OF SERVICE ENTRANCE CONDUCTORS CONNECT DIRECTLY TO A SERVICE DROP, SET OF OVERHEAD SERVICE CONDUCTORS, SET OF UNDERGROUND SERVICE CONDUCTORS, OR SERVICE LATERAL, THE EQUIVALENT SIZE OF THE LARGEST SERVICE-ENTRANCE CONDUCTOR SHALL BE DETERMINED BY THE LARGEST SUM OF THE AREAS OF THE CORRESPONDING CONDUCTORS OF EACH SET.

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

- CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY
- GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC.
- VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.

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ISSUE

NO.	DATE	DESCRIPTION	INT.
1	09-29-23	FOR TLE REVIEW	MBJ
2	12-19-23	FOR PERMIT	MBJ

REVISION

NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION

NAME OF LICENSEE: MATTHEW B. JARME
LICENSE NUMBER: 0401 014089

Project Number: TLEVA23-034 Scale: AS NOTED

Drawn By: LN Approved By: MJB

Drawing Name: ELECTRICAL DIAGRAMS

Drawing Number: E-400

H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIAN\TLEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY\CDIST\TILEVA23-034-PLUMBING P-100 200 300 600.DWG L NICOLAIE PLOTTED: 12/20/2023

PLUMBING GENERAL NOTES

A. GENERAL

1. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARKED "P".
2. THE CONTRACTOR SHALL FURNISH AND INSTALL THE PLUMBING SYSTEM IN A MANNER WHICH PROVIDES A COMPLETE AND OPERATIONAL PLUMBING SYSTEM, WITH ALL EQUIPMENT, PERMITS PIPING, VALVES, INSULATION, CONTROLS HANGERS, TRIM, ACCESSORIES AND ASSOCIATED INCIDENTAL WORK, IN ACCORDANCE WITH THE APPLICABLE CODES. ALL AUTHORITIES HAVING JURISDICTION, AND PER THE CONSTRUCTION DOCUMENTS.
3. CONTRACTOR SHALL INCLUDE THE COST OF ALL SMALL DETAILS, INCIDENTAL WORK, AND ACCESSORIES NOT SHOWN OR SPECIFIED, BUT WHICH CAN BE INFERRER FOR COMPLETE AND SATISFACTORY CODE COMPLIANT SYSTEM. PROVIDE OFFSETS, FITTINGS AND SIMILAR ITEMS TO ACCOMPLISH REQUIREMENTS OF COORDINATION WITHOUT ADDITIONAL EXPENSE.
4. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW ONLY THE GENERAL ARRANGEMENTS/ROUTING OF ALL PIPING AND EQUIPMENT. BECAUSE OF THE SMALL SCALE OF THE DRAWINGS, IT IS NOT POSSIBLE TO SHOW OR INDICATE ALL OFFSETS, FITTINGS, AND ACCESSORIES WHICH MAY BE REQUIRED TO AVOID STRUCTURAL FEATURES AND OTHER OBSTRUCTIONS. DO NOT SCALE DRAWINGS FOR THE EXACT LOCATION OF FIXTURES, PIPING, EQUIPMENT, ETC. DETERMINE EXACT LOCATIONS OF SYSTEMS AND COMPONENTS IN FIELD.
5. ALL PLUMBING SYSTEMS ARE REQUIRED TO BE EXPOSED FOR INSPECTION.
6. PRIOR TO BEGINNING ANY WORK, SECURE PERMITS OR CLEARANCES FROM THE AUTHORITIES HAVING JURISDICTION. PROVIDE ALL LABOR AND MATERIALS FOR A COMPLETE INSTALLATION. WORK SHALL BE EXECUTED BY EXPERIENCED PLUMBERS WHO ARE LICENSED IN THE JURISDICTION WHERE THE PROJECT IS LOCATED.
7. CONTRACTOR SHALL COORDINATE ELECTRICAL CHARACTERISTICS AND REQUIREMENTS OF ALL PLUMBING EQUIPMENT WITH THE ELECTRICAL DRAWINGS, AND APPROVED SUBMITTALS AND SHALL FURNISH EQUIPMENT WIRED FOR THE APPROPRIATE VOLTAGES.
8. CONTRACTOR SHALL COORDINATE ALL NEW WORK WITH NEW WORK OF OTHER TRADES AND EXISTING CONDITIONS AND PARTICIPATE IN THE PREPARATION OF COORDINATED SHOP DRAWINGS, IN ORDER TO AVOID CONFLICTS OF ANY TYPE.
9. MANUFACTURER'S MODEL NUMBERS ARE SPECIFIED SOLELY TO ESTABLISH THE STANDARDS OF QUALITY FOR PERFORMANCE PRODUCT AND INSTALLATION. THE CONTRACTOR SHALL ADHERE TO MANUFACTURER'S RECOMMENDATIONS AND MATERIALS, UNLESS OTHERWISE NOTED.
10. ALL WORK SHALL BE COORDINATED AND INSTALLED BY THIS CONTRACTOR AND SHALL BE INSTALLED IN SUCH A MANNER AS TO CLEAR ALL LIGHT FIXTURES, CEILING CONSTRUCTION, SPRINKLER PIPES AND HEADS, DUCTWORK CONDUITS, CABLES, WIRING, ETC.
11. ALL PLUMBING SERVICES GOING INTO THE BUILDING AND LEAVING THE BUILDING SHALL BE CONNECTED TO THE SITE UTILITIES. COORDINATE WITH SITE UTILITIES' COMPANY AND CIVIL DRAWINGS. COORDINATE ALL EXTERIOR UNDERGROUND PLUMBING WORK WITH THE SITE UTILITIES, BEFORE COMMENCING WORK. COORDINATE ALL UNDERGROUND PIPING LOCATIONS AND INVERTS WITH FOUNDATION DRAWINGS.
12. PIPE SLEEVES SHALL BE PROVIDED AND INSTALLED WHERE PIPES ARE ROUTED THROUGH FOUNDATION WALLS. PIPE SLEEVES SHALL BE GROUTED IN WALLS. SEALANT SHALL BE APPLIED AROUND THE PIPE IN THE SLEEVE IN ORDER TO PREVENT INGRESS OF MOISTURE. THE WALL PENETRATION SHALL BE COMPLETELY WATERPROOFED.
13. DO NOT PENETRATE WALL FOOTINGS WITH PIPING. COORDINATE TO DROP FOOTINGS TO CLEAR PLUMBING SERVICES WHERE ABSOLUTELY NECESSARY.
14. ALL PIPING PENETRATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND LOCATION APPROVED BY STRUCTURAL ENGINEER.
15. ELEVATIONS LISTED FOR ALL PLUMBING SYSTEM PIPING IN THE CONTRACT DOCUMENTS ARE TO BE VERIFIED PRIOR TO CONSTRUCTION AGAINST EXISTING CONDITIONS, UTILITIES AND NEW CONSTRUCTION. CONTRACTOR SHALL COORDINATE ALL SLOPED PLUMBING SYSTEMS WITH OTHER BUILDING SYSTEM COMPONENTS.

16. PROVIDE ESCUTCHEONS AND SEALING OF ALL PENETRATIONS OF FIRE SEPARATIONS IN ACCORDANCE WITH THE APPLICABLE CODES.
17. INSTALLATION OF PLUMBING FIXTURES AND ACCESSORIES, INCLUDING FLUSH CONTROL VALVES INTENDED FOR PEOPLE WITH DISABILITIES, SHALL BE IN ACCORDANCE WITH ADA REQUIREMENTS.
18. ACCESS DOORS AND/OR PANELS SHALL BE PROVIDED AND INSTALLED AT ALL MAINTENANCE AND SERVICE LOCATIONS FOR CONCEALED CONTROL DEVICES, VALVES, TRAPS, CLEANOUTS, DRAIN POINT OR SIMILAR ITEMS AND PLUMBING EQUIPMENT/DEVICES. UNLESS A SIZE IS SPECIFICALLY NOTED, PANELS SHALL BE SIZED TO SERVICE EQUIPMENT/DEVICE. DOORS AND PANELS SHALL HAVE THE SAME FIRE RATING AS THE WALL OR CEILING IN WHICH THEY ARE INSTALLED. ACCESS DOORS AND/OR PANELS ARE NOT REQUIRED WHERE ADJUSTMENT, MAINTENANCE AND REPLACEMENT ARE POSSIBLE THROUGH LAY IN SUSPENDED CEILING.
19. ALL PIPING AND EQUIPMENT SHALL BE INDEPENDENTLY SUPPORTED FROM BUILDING STRUCTURE NOT FROM OTHER TRADES SUPPORT HANGERS.
20. NO PLUMBING (WATER, DRAINS, VENT, OR GAS PIPING) SHALL BE INSTALLED DIRECTLY ABOVE ANY ELECTRICAL PANELS. COORDINATE WITH OTHER DIVISIONS BEFORE PROCEEDING WITH INSTALLATION.
21. ALL PLUMBING EQUIPMENT, PIPING, INSULATION, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND FIRE RATING.
22. ALL INSULATION SHALL HAVE A COMPOSITE (JACKET, FACINGS, ADHESIVES, ETC.), FIRE AND SMOKE HAZARD RATINGS AS TESTED BY PROCEDURE ASTM E-84, AND NFPA NOT EXCEEDING FLAME SPREAD OF 25 AND SMOKE DEVELOPED OF 50.
23. INSULATION SHALL NOT BE CRUSHED OR COMPRESSED THROUGH INTERFERENCE WITH SYSTEMS INSTALLED BY OTHER TRADES OR BUILDING CONSTRUCTION.
24. ALL PIPING SHALL BE INSTALLED AS HIGH AS POSSIBLE UNLESS NOTED OTHERWISE.
25. INSTALL SLOPED PLUMBING AND PIPING HIGH POINTS AS TIGHT AS POSSIBLE TO THE BUILDING STRUCTURE TO ALLOW PROPER PITCH AND MAXIMIZE CEILING HEIGHT.
26. ALL PIPING ABOVE GRADE SHALL BE PROPERLY SUPPORTED BY THE BUILDING STRUCTURE AND SHALL NOT REST ON CEILING TILES OR CEILING STRUCTURE.
27. ALL PIPING SHALL BE RUN PARALLEL TO BUILDING LINES AND COORDINATED WITH OTHER CONTRACT DOCUMENTS. PIPE IS TO BE SUPPORTED AND ANCHORED TO FACILITATE EXPANSION AND CONTRACTION.
28. ALL PIPING SHALL BE CONCEALED IN FURRED CHASES OR ABOVE SUSPENDED CEILING (CLEAR OF CEILING INSERTS) EXCEPT IN UNFINISHED SPACES. INSTALL REQUIRED PIPING TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK INCLUDING BUT NOT LIMITED TO HVAC PIPING, DUCTWORK, HVAC EQUIPMENT, ELECTRICAL CONDUIT AND ELECTRICAL EQUIPMENT THAT IS TO BE INSTALLED WITH THE OTHER CONTRACTORS.
29. EXPOSED PIPING IN FINISHED AREAS SHALL BE CHROME-PLATED WITH A CHROME-PLATED ESCUTCHEON AT EACH FINISHED ENTRY/EXIT UNLESS OTHERWISE NOTED.
30. PROVIDE AND INSTALL CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES TO PREVENT STRESS ON PIPING AS PER CODE REQUIREMENTS.
31. DIELECTRIC UNIONS AND FLANGES SHALL BE USED ON ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
32. COORDINATE ROOF PENETRATIONS WITH WORK OF OTHER SECTIONS AND WITH FLASHING REQUIREMENTS.
33. ALL VALVES SHALL BE CLEARLY IDENTIFIED WITH METAL OR PLASTIC VALVE TAGS LETTERING SHALL BE ENGRAVED OR PERMANENT MARKER. PROVIDE AND INSTALL METAL HANG CHAIN VALVE NUMBER WHICH SHALL BE KEVED TO THE AS-BUILT DRAWING SHOWING VALVE TYPE, SIZE AND LOCATION.
34. ALL PIPES FOR ANY SERVICE SHALL BE IDENTIFIED AS TO THEIR SERVICE BY COMMERCIALY AVAILABLE, COLOR-CODED SELF-STICKING VINYL PIPE MARKERS. MARKING SHALL INCLUDE PIPE CONTENT AND DIRECTION OF FLUID FLOW IN ACCORDANCE WITH ANSI/ASME A13.1. PIPES SHALL BE MARKED ADJACENT TO ALL TO VALVES AND FLANGES, BOTH SIDES OF A FLOOR, CHANGE IN DIRECTION AND AT 25' INTERVALS ON STRAIGHT RUNS.
35. THE VERTICAL DEFLECTION OF PVC PIPE SHALL NOT EXCEED 5%. NO DEFLECTION IS PERMITTED FOR IRON PIPE.
36. ALL PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID FREEZING. ALL WATER PIPING SHALL BE INSTALLED BELOW ATTIC INSULATION AND NO PIPING SHALL BE INSTALLED WITHIN EXTERIOR WALLS UNLESS OTHERWISE NOTED. THE INSTALLATION OF PLUMBING SYSTEMS SHALL IN NO WAY CRUSH OR COMPROMISE BUILDING INSULATION AND ALL BELOW-GRADE WATER PIPING SHALL BE INSTALLED BELOW FROST DEPTH AS PER APPLICABLE CODE REQUIREMENTS.

37. AT THE COMPLETION OF THE WORK AND PRIOR TO THE FINAL ACCEPTANCE, ALL PARTS OF THE WORK SHALL BE THOROUGHLY CLEANED.
38. THE OPERATION OF THE PLUMBING SYSTEM DOES NOT CONSTITUTE AN ACCEPTANCE OF WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND INSURANCE UNDERWRITERS.

B. DOMESTIC HOT AND COLD-WATER GENERAL NOTES

1. CONTRACTOR SHALL REFER TO ARCHITECTURAL DRAWINGS FOR ROOM LAYOUTS.
2. CONTRACTOR SHALL FURNISH AND INSTALL PLUMBING FIXTURES COMPLETE WITH APPROPRIATE TRAPS, CARRIERS, FITTINGS, LOCAL STOPS AND ANCILARY ITEMS.
3. WATER DISTRIBUTION PIPE THAT HAS BEEN TERMINATED OR IS AN UNUSED SEGMENT SHALL HAVE NO DEAD ENDS. NO SEGMENT OF PIPE WITH A DEVELOPED LENGTH OF MORE THAN TWO (2 - 4) FEET SHALL BE PERMITTED.
4. PROVIDE AND INSTALL WATER HAMMER ARRESTERS AT PLUMBING FIXTURES AND GROUPS OF PLUMBING FIXTURES THAT ARE SUBJECT TO WATER HAMMER. SELECT ARRESTERS IN ACCORDANCE WITH THE PLUMBING AND DRAINAGE INSTITUTE STANDAROD.
5. CONTRACTOR TO INSULATE ALL COLD & HOT WATER PIPING INCLUDING WALL RUN, INSULATION ON COLD AND HOT WATER PIPES SHALL BE PER APPLICABLE ENERGY CODE. ALL WATER LINES IN EXTERIOR WALLS SHALL BE INSULATED AND LOCATED WITHIN THE INSULATION ENVELOPE OF THE BUILDING EXTERIOR WALL.
6. PRESSURE REDUCING VALVES SHALL BE INSTALLED ON BRANCH LINES SERVING FIXTURES AND/OR EQUIPMENT WHEN THE PRESSURE IN THE LINE EXCEEDS 80 P.S.I.
7. PROVIDE AND INSTALL REDUCED PRESSURE BACKFLOW PREVENTERS FOR DOMESTIC WATER SUPPLY CONNECTIONS.
8. ALL BELOW GRADE/SLAB COPPER PIPE SHALL BE PLACED WITHIN COPPER PIPE SLEEVE (10 MIL) POLYETHYLENE PLASTIC SLEEVE. EXTEND ALL SLEEVES ABOVE GRADE/SLAB.
9. WHEN TYPE L COPPER TUBING IS INSTALLED UNDER SLABS OR BELOW GRADE, IT SHALL BE INSTALLED WITHOUT JOINTS, IF POSSIBLE. WHERE JOINTS ARE PERMITTED, THEY SHALL BE BRAZED AND FITTINGS SHALL BE WROUGHT COPPER. TYPE M COPPER IS PROHIBITED.
10. UNIONS ARE NOT ALLOWED IN UNDER-SLAB OR BELOW-GRADE WATER PIPING SYSTEMS.
11. UNDER-SLAB PIPING SHALL BE LAID ON A FIRM BED OF CLEAN SAND THROUGHOUT ITS ENTIRE LENGTH PER CODE REQUIREMENTS.
12. ALL OUTSIDE HOSE BIBS MUST BE PROVIDED WITH ATMOSPHERIC VACUUM BREAKERS.
13. PROVIDE AND INSTALL SHUTOFF VALVES CLOSE TO WATER MAIN IN CORRIDORS AND WHERE INDICATED ON DRAWINGS ON ALL BRANCH PIPING AND ON ALL SUPPLIES TO INDIVIDUAL FIXTURES AND EQUIPMENT. ALL VALVES SHALL BE ACCESSIBLE. LOCATE AND ORIENT VALVE OPERATORS FOR EASE OF ACCESS AND FULL LIMITS OF OPERATION.
14. INSULATION AND VAPOR BARRIER SHALL BE PROVIDED ON ALL PIPING AND/OR EQUIPMENT SUBJECT TO HEAT LOSS, CONDENSATION, OR CONSTITUTING A POTENTIAL BURN HAZARD.
15. PROVIDE AND INSTALL DRAIN VALVES AT LOW POINTS IN MAINS.
16. COORDINATE LOCATION OF WATER METER AND VALVES IN MECHANICAL ROOM WITH OTHER TRADES AND UTILITY COMPANIES.
17. SINK AND LAVATORY WATER SUPPLY PIPING SHALL BE INSULATED TO COMPLY WITH THE AUTHORITY HAVING JURISDICTION AND THE AMERICANS WITH DISABILITIES ACT USING PREFABRICATED INSULATION.
18. ALL PLUMBING FIXTURES SHALL BE CONNECTED TO RIDGED PLUMBING WITH STAINLESS STEEL BRAIDED FLEX TUBES OF THE APPROPRIATE SIZE. FLEXIBLE CONNECTIONS SHALL INCLUDE A SHUTOFF VALVE PRIOR TO THE CONNECTION TO THE BRANCH RIDGED PIPE.
19. TESTING OF WATER PIPING SYSTEMS SHALL CONSIST OF WORKING PRESSURE UNDER WHICH SYSTEM IS TO BE USED OR A SIXTY (60) PSI AIR PRESSURE TEST FOR 30 MINUTES OR PER AUTHORITIES HAVING JURISDICTION STANDARDS.

C. DRAIN WASTE AND VENT PIPING

1. CONTRACTOR SHALL VERIFY INVERT ELEVATIONS OF EXISTING SEWERS IN WHICH NEW SEWER LINES ARE TO BE CONNECTED PRIOR TO INSTALLATION.
2. PROVIDE AND INSTALL VENTS AT HIGH POINTS IN PIPING SYSTEMS.

4. TOPS OF ALL FLOOR DRAINS SHALL BE SET FLUSH WITH FINISHED FLOOR.
5. DEAD ENDS SHALL BE AVOIDED IN DRAINAGE SYSTEM, EXCEPT WHERE NECESSARY TO EXTEND THE SYSTEM TO INSTALL A CLEANOUT IN AN ACCESSIBLE LOCATION. THE DEAD ENDS INTENDED FOR FUTURE CONNECTION OR CREATED BY REMOVAL OR ABANDONMENT OF PIPE, WHICH IS MORE THAN 2 FEET ABOVE A FLOOR OR MORE THAN 10 FEET HORIZONTALLY FROM THE NEAREST VENTED CONNECTION MUST HAVE A VENTED CONNECTION TO THE OUTSIDE ATMOSPHERE.
6. REFER TO PLANS FOR VENT THRU ROOF (VTR) PIPE SIZES AND LOCATIONS. LOCATE VTR A MINIMUM 10 FEET HORIZONTAL FROM ANY BUILDING OPENING OR FRESH AIR INTAKE INCLUDING HVAC EQUIPMENT. EXTEND VTR 12 INCHES ABOVE ROOF SURFACE UNLESS OTHERWISE NOTED. IF 10 FEET DISTANCE CANNOT BE ACHIEVED, LOCATE VTR 2 FEET ABOVE ADJACENT TOP OF FRESH AIR INTAKE OR BUILDING OPENINGS UNLESS OTHERWISE NOTED. PROVIDE 1 INCH FIBERGLASS INSULATION WITH ALL-SERVICE JACKET ON VENT PIPE INSIDE BUILDING WITHIN 6 FEET OF VTR LOCATION. VERIFY SMOKE AND FLAME SPREAD REQUIREMENTS AND COMPLY WITH SAME. VERIFY FLASHING AND COUNTERFLASHING AND COORDINATE INSTALLATION WITH ROOFING CONTRACTOR.
7. ALL INTERIOR SANITARY PIPING, 4 INCHES AND LARGER, SHALL BE SLOPED AT 1/8" PER FOOT, UNLESS NOTED OTHERWISE. ALL INTERIOR SANITARY PIPING, 3 INCHES AND SMALLER, SHALL BE SLOPED AT 1/4" PER FOOT, UNLESS NOTED OTHERWISE.
8. 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. I.E.: USE OF SANITARY TEE IN A HORIZONTAL CONNECTION, USE OF A DOUBLE SANITARY TEE IN A VERTICAL STACK, USE OF SHORT RADIUS FITTINGS FOR BRANCH TO HOUSE DRAIN OR STACK CONNECTION.
9. SANITARY PIPING SHALL HAVE NO DEAD ENDS.
10. PROVIDE AND INSTALL CLEANOUTS IN SANITARY PIPING SYSTEMS AT ENDS OF RUNS, AT CHANGES IN DIRECTION, AT BASE OF STACKS AND AT 50-FOOT INTERVALS IN HORIZONTAL PIPING, AND ELSEWHERE AS INDICATED. CLEANOUTS SHALL BE INSTALLED IN NONPUBLIC PLACES WHENEVER POSSIBLE.
11. EXTEND ALL CLEANOUTS ON SANITARY SEWER AND KITCHEN WASTE BELOW SLAB-ON-GRADE TO FINISHED FLOOR LEVEL.
12. SINK AND LAVATORY WASTE PIPING SHALL BE INSULATED TO COMPLY WITH THE AUTHORITY HAVING JURISDICTION AND THE AMERICANS WITH DISABILITIES ACT USING PREFABRICATED INSULATION.
13. ALL PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID FREEZING.
14. INSTALL SLOPED PLUMBING AND PIPING HIGH POINTS AS TIGHT AS POSSIBLE TO THE BUILDING STRUCTURE TO ALLOW PROPER PITCH AND MAXIMIZE CEILING HEIGHT.
15. UNDER SLAB SANITARY PIPING SHALL BE LAID ON A FIRM BED THROUGHOUT ITS ENTIRE LENGTH. TRENCH SHALL BE SLOPED IN COMPLIANCE WITH APPLICABLE CODES.
16. DRAIN, WASTE, AND VENT (DWV) SYSTEM SHALL BE TESTED WITH NO LESS THAN 10' OF HEAD WATER ABOVE THE SYSTEM FOR 15 MINUTES OR 5 PSI AIR TEST FOR 15 MINUTES OR PER AUTHORITIES HAVING JURISDICTION STANDARDS.
17. PRIOR TO BACKFILL, PIPES SHALL BE WEIGHTED DOWN WITH CONCRETE BLOCKS TO PREVENT FLOTATION.
18. CLEANOUTS SHALL BE APPROVED TYPE WYE, COMBO FITTINGS.
19. CLEANOUTS SHALL BE INSTALLED WITHIN 2 FEET OF THE BUILDING TERMINATING AT GRADE LEVEL.
20. CONTRACTOR SHALL INSTALL ADDITIONAL CLEANOUTS AT PROPERTY LINES, END OF LINE, HORIZONTAL CHANGE OF DIRECTION AND RUNS EXCEEDING 50 FEET IN LENGTH.
21. CLEANOUTS SHALL BE INSTALLED SO THAT IT OPENS TO ALLOW CLEANING IN THE DIRECTION OF FLOW.
22. TRENCHES SHALL BE BACKFILLED AND COMPACTED IN 4 INCH LIFTS TO 12 INCHES ABOVE THE TOP OF THE PIPING WITH CLEAN SOIL OR SAND WHICH SHALL NOT CONTAIN STONES, BOULDERS, CONSTRUCTION DEBRIS OR DELETERIOUS MATERIALS THAT MAY BREAK OR DAMAGE PIPING OR CAUSE CORROSIIVE ACTION.

D. STORM CONDUCTOR GENERAL NOTES

1. PROVIDE AND INSTALL CLEANOUTS IN STORM CONDUCTOR SYSTEMS AT ENDS OF RUNS, AT CHANGES IN DIRECTION, AT BASE OF STACKS AND AT 50-FOOT INTERVALS IN HORIZONTAL PIPING, AND ELSEWHERE AS INDICATED. CLEANOUTS SHALL BE INSTALLED IN NONPUBLIC PLACES WHENEVER POSSIBLE.
2. CHANGES IN THE DIRECTION OF STORM CONDUCTOR PIPING SHALL NOT BE MADE WITH FITTINGS WHICH WILL CAUSE EXCESSIVE REDUCTION IN THE VELOCITY OF FLOW OR CREATE ANY OTHER ADVERSE EFFECT. I.E.: USE OF SANITARY TEE IN A HORIZONTAL CONNECTION, USE OF A DOUBLE SANITARY TEE IN A VERTICAL STACK, USE OF SHORT RADIUS FITTINGS FOR BRANCH TO HOUSE DRAIN OR STACK CONNECTION.

3. EXTEND ALL CLEANOUTS ON RAIN WATER CONDUCTOR LINES BELOW SLAB-ON-GRADE TO FINISHED FLOOR LEVEL.
4. CLEANOUTS SHALL BE INSTALLED SO THAT IT OPENS TO ALLOW CLEANING IN THE DIRECTION OF FLOW.
5. CLEANOUTS SHALL BE APPROVED TYPE WYE, COMBO FITTINGS.
6. FOOTING DRAINS, ROOF DOWN SPOUTS AND CURTAIN DRAINS ARE TO BE CONNECTED TO THE STORM DRAINAGE SYSTEM OR SWALES AS SHOWN ON THE CONSTRUCTION PLANS, UNLESS OTHERWISE NOTED.
7. DEAD ENDS SHALL BE AVOIDED IN DRAINAGE SYSTEM, EXCEPT WHERE NECESSARY TO EXTEND THE SYSTEM TO INSTALL A CLEANOUTS IN AN ACCESSIBLE LOCATION.
8. INSULATION AND VAPOR BARRIER SHALL BE PROVIDED ON ALL INTERIOR ABOVE-GROUND HORIZONTAL STORM CONDUCTOR SYSTEMS SUBJECT TO CONDENSATION.
9. INSULATION SHALL NOT BE CRUSHED OR COMPRESSED THROUGH INTERFERENCE WITH SYSTEMS INSTALLED BY OTHER TRADES OR BUILDING CONSTRUCTION.
10. ALL PIPING SHALL BE INSTALLED IN SUCH A MANNER AS TO AVOID FREEZING.
11. INSTALL SLOPED PLUMBING AND PIPING HIGH POINTS AS TIGHT AS POSSIBLE TO THE BUILDING STRUCTURE TO ALLOW PROPER PITCH AND MAXIMIZE CEILING HEIGHT.
12. UNDER SLAB AND BURIED STORM WATER PIPING SHALL BE LAID ON A FIRM BED OF CLEAN SAND THROUGHOUT ITS ENTIRE LENGTH. TRENCH SHALL BE SLOPED AS PER APPLICABLE CODES.
13. PRIOR TO BACKFILL PIPES SHALL BE WEIGHTED DOWN WITH CONCRETE BLOCKS TO PREVENT FLOTATION.
14. TRENCHES SHALL BE BACKFILLED AND COMPACTED IN 4 INCHES LIFTS TO 12 INCHES ABOVE THE TOP OF THE PIPING WITH CLEAN EARTH OR SAND WHICH SHALL NOT CONTAIN STONES, BOULDERS, CONSTRUCTION DEBRIS OR MATERIALS THAT WOULD BREAK OR DAMAGE PIPING OR CAUSE CORROSIIVE ACTION.

E. GAS PIPING SYSTEM GENERAL NOTES

1. CONNECTION AT EACH GAS APPLIANCE SHALL INCLUDE AN INVERTED TRAP, GAS SHUT-OFF COOK, UNION, AND DIRT LEG.
2. PROVIDE AND INSTALL DIRT LEG AT BOTTOM OF ALL VERTICAL RISERS AND DROPS IN GAS LINES.
3. THE CONTRACTOR SHALL PROVIDE GAS PIPING TO ROOFTOP EQUIPMENT. THE RTU AND MUA EQUIPMENT SUPPLIER SHALL FURNISH INTEGRAL GAS REGULATORS AND RESTRAINING DEVICES FOR EACH GAS CONSUMING APPLIANCE. CONTRACTOR SHALL INSTALL ALL GAS CONSUMING EQUIPMENT PER MANUFACTURER'S INSTALLATION REQUIREMENTS.
4. GAS REGULATING VALVES, AS DEPICTED ON DRAWINGS, SHALL BE SUPPLIED AND INSTALLED BY THIS CONTRACTOR.
5. THE CONTRACTOR SHALL PROVIDE GAS PIPING TO PLUMBING EQUIPMENT, THE WATER HEATER AND SIMILAR GAS EQUIPMENT CONTRACTOR SHALL FURNISH AND INSTALL GAS REGULATORS AND RESTRAINING DEVICES FOR EACH GAS CONSUMING APPLIANCE. CONTRACTOR SHALL INSTALL ALL GAS CONSUMING EQUIPMENT PER MANUFACTURER'S INSTALLATION REQUIREMENT.
6. GAS PIPING SHALL BE PROVIDED IN ACCORDANCE WITH THE CURRENT CODES.
7. FUEL GAS SERVICES SHALL BE SIZED TO SUPPLY THE REQUIRED BTUH INDICATED TO THE EQUIPMENT AT PRESSURES AS SHOWN ON THE DRAWINGS. PROVIDE AND INSTALL PRESSURE REGULATORS.
8. GAS PIPING SHALL BE SCHEDULE 40, ASME B36.10. PIPING JOINTS SHALL BE THREADED (4-INCH PIPE OR LESS) OR WELDED FITTINGS SHALL BE STEEL OR MALLEABLE IRON UNLESS OTHERWISE NOTED. FLEXIBLE GAS PIPING MAY BE USED IF APPROVED BY ENGINEER AND AUTHORITIES HAVING JURISDICTION.
9. REFER TO EQUIPMENT PRODUCT DATA FOR EXACT LOCATIONS OF FIXTURES, REQUIRED BTUH, PIPE ROUGH-IN HEIGHTS AND ADDITIONAL INFORMATION.
10. GAS PIPING SHALL BE INSPECTED, TESTED AND PURGED IN ACCORDANCE WITH THE BUILDING CODES AND GAS UTILITY REQUIREMENTS.
11. ALL GAS EQUIPMENT SHALL BE LISTED.
12. GAS PIPING OUTSIDE OF BUILDING SHALL BE PAINTED WITH YELLOW ZINC-RICH PAINT, IF AGAINST THE BUILDING, PAINT TO MATCH SURFACE.
13. GAS PIPING SHALL BE HUNG TIGHT TO THE STRUCTURE, AND SUPPORTED WITH HANGERS AS PER CODE REQUIREMENTS.
14. BRANCH TAPS SHALL BE MADE OFF THE TOP OF THE PIPING.

1. CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY.
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WINCHESTER, VIRGINIA 22601

ISSUE			
NO.	DATE	DESCRIPTION	INT.
1	09-29-23	FOR TLE REVIEW	MBJ
2	12-19-23	FOR PERMIT	MBJ

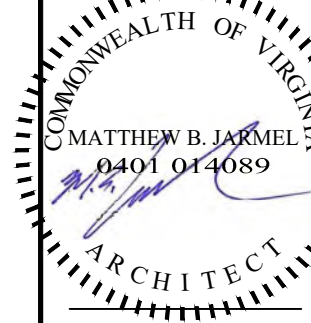
REVISION			
NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MBJ

Drawing Name:
PLUMBING GENERAL NOTES

Drawing Number:
P-100



Signed and sealed by Matthew Jarmel AIA using a digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	FIXTURE				FIXTURE CONNECTION				SUPPLY FIXTURE UNITS				SANITARY WASTE DFU	REMARKS
		MANUFACTURER No.	TRIM No.	SUPPORT No.	TYPE	SOIL OR WASTE	VENT	CW	HW	CW	HW	CW	HW		
WC-1	WATER CLOSET	AMERICAN STANDARD MADERA FLOWISE 16-1/2" ELONGATED MODEL 3043.001 (ELONGATED BOWL; 16.5" RIM; TOP SPUD) OPEN SEAT 12x18 ROUGH	FLUSH VALVE SLOAN ROYAL #111	FLOOR MTD 18" FROM SIDE WALL TO CENTER	NO TANK	4"	2"	1"	--	5.0	--	3.0	--	4.0	1.1 GPF/ 4.2 LPF LEVER HANDLE TO BE OPEN SIDE OF ROOM
WC-2	WATER CLOSET	AMERICAN STANDARD MADERA FLOWISE 14" ELONGATED MODEL 2999.001 (ELONGATED BOWL; 14" RIM; TOP SPUD) OPEN SEAT 12x18 ROUGH	FLUSH VALVE SLOAN ROYAL #111	FLOOR MTD 14" FROM SIDE WALL TO CENTER	NO TANK	4"	2"	1"	--	5.0	--	3.0	--	4.0	1.1 GPF/ 4.2 LPF LEVER HANDLE TO BE OPEN SIDE OF ROOM
WC-3	WATER CLOSET	AMERICAN STANDARD 10" BABY DEVORO PRESSURE ASSISTED TOILET 2282.001, OPEN FRONT SEAT LESS COVER	FLUSH VALVE SLOAN ROYAL #111	FLOOR MTD 12" FROM SIDE WALL TO CENTER	NO TANK	4"	2"	1"	--	5.0	--	2.5	--	4.0	COORDINATE WATER SUPPLY WITH GRAB BAR HEIGHT 1.28GPF/ 4.8 LPF LEVER HANDLE TO BE OPEN SIDE OF ROOM
L-1	LAVATORY	AMERICAN STANDARD LUCERNE WALL HUNG LAV MODEL 0355.012	FAUCET: MOEN 8938 (4")	WALL HUNG	--	1-1/2"	1-1/2"	1/2"	1/2"	1.0	1.0	2.0	2.0	1.0	REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT
DF-1	EXTERIOR DRINKING FOUNTAIN	ELKAY NO LEAD SWIRFLO EDPF214C (NO WALL PLATE & NO FROST PROTECTION) FOR SOUTHERN STATES. EDPF214FPK (FROST-PROOF) FOR NORTHERN STATES.		WALL MOUNTED		1-1/2"	1-1/2"	1/2"	--	0.5	--	0.75	--	0.5	REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT
DF-2	INTERIOR DRINKING FOUNTAIN	FOR INTERIOR LOC. ELKAY LZSTLDDWSLK ELKAY EZ2400 BOTTLE FILLING STATION & VERSATILE B/L-LEVEL ADA COOLER, FILTERED NON-REFRIGERATED, LIGHT GRAY		WALL MOUNTED		1-1/2"	1-1/2"	1/2"	--	0.5	--	0.75	--	0.5	REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHT
S-1	PANTRY HAND/ PREP SINK/ CLASSROOM SINK	ELKAY SINGLE BOWL SINK MODEL PSRADO 1919-95 L/R	FAUCET MOEN TWO HANDLE BAR MODEL 4903 2 HOLES 4" CENTERS	COUNTERTOP	--	2"	1-1/2"	1/2"	1/2"	1.5	1.5	3.0	3.0	2.0	INDIRECT WASTE FOR PANTRY PREP SINK ONLY. SAME MODEL SERVES AS THE CLASSROOM SINK.
S-2	3 BAY SINK	AERO MANUFACTURING CO.	AERO NSF F3 SERIES TRIPLE SINK MF3-1818	FAUCET AERO S6 14" ONE SET	FLOOR MOUNTED WITH LEGS	2"	1-1/2"	1/2"	1/2"	1.5	1.5	3.0	3.0	2.0	INDIRECT WASTE FOR PANTRY PREP SINK ONLY. SAME MODEL SERVES AS THE CLASSROOM SINK. PROVIDE W/ AERO LEVERWASTE MODEL S-87. PROVIDE DRAINBOARDS W/ STAINLESS STEEL FEET SO THAT THEY WILL ANGLE INTO SINK AND HAVE PROTECTIVE BOTTOM. SO COUNTER DOESN'T SCRATCH. PROVIDE ONE ON EACH SIDE. PROVIDE INDIRECT WASTE AT EACH BASIN (REF. DTL. 7 / P-600). PROVIDE (2) COUNTERTOP DRAIN BOARDS (AERO 4D-1830). PROVIDE INDIVIDUAL DRAIN LEVERS.
S-3	LAUNDRY SINK	FIAT	FL-1 W/LEGS	MOEN FAUCET 4903	FLOOR MOUNTED WITH LEGS	2"	1-1/2"	1/2"	1/2"	2.0	2.0	3.0	3.0	2.0	
S-4	JANITOR SINK	FIAT	MSB2424	FAUCET 830-AA	FLOOR MOUNTED	2"	1-1/2"	1/2"	1/2"	2.0	2.0	3.0	3.0	2.0	PROVIDE HOSE AND HOSE BRACKET 832-AA PROVIDE MOP HANGER 889-CC
FD-1	FLOOR DRAIN	J.R. SMITH	MODEL NO. 2010 A	--	WITH 4" DEEP TRAP (WITH PRIMER)	3"	1-1/2"	--	--	--	--	--	--	--	
HB-1	HOSE BIB	ZURN	MODEL Z1321 ECOLOOTROL CERAMIC DISC WALL HYDRANT	--	WALL MOUNTED	--	--	--	--	--	--	--	--	--	ANNUAL WINTERIZATION SHALL BE PART OF TLE OPERATIONAL MAINTENANCE. VANDAL RESISTANT.
FS-1	FLOOR SINK	ZURN	MODEL NO. Z1751	--	WITH 8" DEEP SUMP DEPTH	3"	1-1/2"	--	--	--	--	--	--	--	

GREASE TRAP SCHEDULE

TAG	TYPE	MFG	MODEL	OUTLET	INLET	GPM	CAP.	REMARKS
GT-1	RECESSED	SCHIER	GB-25	3"	3"	25	50	LIFTOUT SEDIMENT BUCKET WITH ACCESS HOUSING PROVIDE VENTED FLOW CONTROL DEVICE PROVIDE H-20 RATED CAST IRON

NOTE: CONTRACTOR SHALL VERIFY WITH LOCAL CODE OFFICIAL IF THE GREASE TRAP IS REQUIRED AND IF SO, IT SHALL BE INSTALLED BELOW SLAB, FLUSH TO FLOOR IN CENTER OF THE ROOM AND MUST NOT BLOCK ANY CABINETS OR SINKS. IF NOT REQUIRED BY CODE, GREASE TRAP CAN BE OMITTED

H. W. RECIRCULATING PUMP

TAG	LOCATION	MAKE & MODEL	STATIC HD FT.	GPM	RPM	WATTS	ELEC DATA	REMARKS
HWRP-1	MECH. ROOM	BELLGOSSETT NBF-8SLW	5 FT	5	2800	39	115V-1PH-60HZ	

NOTE: PUMP SHALL BE CONTROLLED BY A DEDICATED TIME CLOCK LOCATED IN THE MECHANICAL ROOM. SEE ELECTRICAL DWGS FOR DETAILS.

EXPANSION TANK SCHEDULE

TAG	TOTAL CAPACITY	MANU. & MODEL	LOCATION
ET-1	8.5	WATTS PLT-20	MOUNTED IN THE CEILING OF MECHANICAL ROOM
ET-2	2.1	WATTS PLT-20	MOUNTED IN THE CEILING OF THE JANITOR ROOM

ELECTRIC WATER HEATER SCHEDULE

TAG	STORAGE GALS	RECOVERY GPH	DEG RISE	NUMBER ELEMENTS	ELECTRICAL TOTAL KW	V	PH	HZ	TEMP SETTING	LOCATION	MANUFACTURER & MODEL	REMARKS
EWH-1	120	102	60° F	3	15.0	208	3	60	110 F	ON FLOOR OF MECH. ROOM	RHEEM ES-120	PROVIDE EXPANSION TANK & RECIRCULATION PUMP HWRP-1
EWH-2	50	109	90° F	2	24.0	208	3	60	140 F	ON FLOOR OF JANITOR'S CL	RHEEM ES-50	PROVIDE EXPANSION TANK

GREASE TRAP SELECTION

DETERMINE THE CUBIC CONTENT OF THE FIXTURE	3 BAY SINK - 18" X 18" X 14" = 4,536 IN ³ X 3 (BAY) = 13,608 IN ³ PREP SINK - 16" X 13 1/2" X 9 1/2" = 1,161 IN ³
DETERMINE THE CAPACITY IN GALLON 1 GAL = 231 CUBIC INCHES	CONTENTS IN GALLONS 14,769 IN ³ /231 = 63.94 GALLONS.
DETERMINE ACTUAL DRAINAGE LOAD ACTUAL DRAINAGE LOAD = 75% OF FIXTURE CAPACITY	ACTUAL DRAINAGE LOAD 0.75 x 63.94 = 47.95 GALLONS
DETERMINE THE FLOW RATE AND THE DRAINAGE PERIOD FLOW RATE = ACTUAL DRAINAGE LOAD/DRAINAGE PERIOD	CALCULATE FLOW RATE FOR 2 MINUTE PERIOD 47.952 MIN = 23.97 GPM
SIZE OF GREASE TRAP	23.97 GPM REQUIRES A GREASE TRAP SIZE OF 50 LB/25 GPM SEE GREASE TRAP SCHEDULE FOR SELECTION

WATER HAMMER ARRESTOR SCHEDULE

TAG	PIPE SIZE	J.R. SMITH	JOSAM	ZURN	REMARKS
WHA-A	1/2"	5005	EQUAL	EQUAL	STAINLESS STEEL
WHA-B	1"	5007	EQUAL	EQUAL	STAINLESS STEEL

THERMOSTATIC MIXING VALVE SCHEDULE

MARK	TMV-1
MANUFACTURER	SYMMONS
MODEL NO.	7-1000NW
INLET & OUTLET SIZE	1 1/2" & 2"
SERVICE	EWH-1
MAX FLOW RATE (GPM)	140
PRESSURE DROP (PSI)	20 @ 100 GPM
INLET TEMP. (COLD WATER)	40
OUTLET TEMP. (HOT WATER)	110

BACKFLOW PREVENTER SCHEDULE

MARK	BFP-1
MANUFACTURER	WATTS
MODEL NO.	957 (FOR 2" OR HIGHER CW SERVICE) 009 (FOR 2" OR LESS CW SERVICE)
SERVICE	BUILDING
TYPE	RED. PRESSURE
REMARKS	1

1. SEE SPECIFICATIONS FOR APPROVED EQUALS.

PLUMBING ABBREVIATIONS

A AFF AP	Above Finish Floor Access Panel	I ID IN INV IW	Inside Diameter Inch Invert Elevation Indirect Waste
B BLDG BOB BOP BT BWV	Building Bottom Of The Beam Bottom Of Pipe Bath Tub Back Water Valve	J JS	Janitor Sink
C CFH CFM CFS CI CLG CLDI CO CONC CONN CONT COTG CP CPE CV CW CWR CWS	Cubic Feet per Hour Cubic Feet per Minute Cubic Feet Per Second Cast Iron Ceiling Cement Lined Ductile Iron Cleanout Concrete Connection Continuation Cleanout To Grade Chrome Plated Connect to Existing Check Valve Cold Water Cold Water Return Cold Water Supply	M MAX MECH MH MIN MSB	Maximum Mechanical Manhole Minimum Mop Service Basin
D DCVA DF DIA DN DROP DWG DWV	Double Check Valve Assembly Drinking Fountain Diameter Down Drop (Within Floor) Drawing DRAIN WASTE AND VENT	N (N) NC NIC NO	New Normally Closed Not In This Contract Normally Open
E (E) EL ET EWC	Existing Elevation Expansion Tank Electrical Water Cooler (Drinking Fountain)	O OD OED	Outside Diameter Open End Drain
F FCO FD FEC FHC FHR FHV FHV FL FP FPWH FS FSK FT FV	Floor Cleanout Floor Drain Fire Extinguisher Cabinet Fire Hose Cabinet Fire Hose Rack Fire Hose Valve Fire Hose Valve Cabinet Floor Fire Protection Freeze Proof Wall Hydrant Flow Switch Floor Sink Feet Flush Valve	P P/FT PIV PLBG POC PRV PSI	Pitch Per Foot Post Indicator Valve Plumbing Point Of Connection Pressure Reducing Valve Pounds per Square Inch
G GAL GALV GCO GI GPF GPM GT GV	Gallons Galvanized Ground Clean Out Grease Interceptor Gallons per Flush Gallons per Minute Grease Trap Gate Valve	R RC RD RISE RPBP	Roof Receptor Roof Drain Rise (With In Floor) Reduced Pressure Backflow Preventer
H HB HC HW HWR HWRP HWS	Hose Bib Handicapped Hot Water Hot Water Return Hot Water Recirculating Pump Hot Water Supply	S SA SAN SD SHWR SE SF SK SPK SS ST	Shock Absorber Sanitary Sanitary Drain Shower Sewage Ejector Square Feet Sink Sump pump Sprinkler Soil Stack or Stainless Steel Storm Piping
T TLT TOP TOS TS TW TYP	Toilet Top Of Pipe Top Of Slab Tamper Switch Tempered Water Typical	U U UON UP	Urinal Unless Otherwise Noted Up (Penetrates Floor Slab)
V V VB VFD VS VTR	Vent Vacuum Breaker Variable Frequency Drive Vent Stack Vent through Roof	W W WC WH WS	Washer Water Closet (Toilet) Wall Hydrant Waste Stack

PLUMBING LEGEND

SYMBOL	ABBREVIATION	DESCRIPTION
	BV	BALL VALVE
	GATE	SHUT OFF VALVE
	RV	RELIEF VALVE
		GAS VALVE
	DN	PIPE ELBOW DOWN OR DROP
	UP	PIPE ELBOW UP OR RISE
	CW	COLD WATER
	HW	HOT WATER
	HWR	HOT WATER RETURN (SET@110F)
	GP	GREASE PIPING
	SAN	SANITARY
	SANV	SANITARY VENT
	STM	STORM PIPING
		AMERICAN DISABILITIES ACT
	EWH	ELECTRIC WATER HEATER
	VTR	VENT THRU ROOF
	C.O.	CLEANOUT
	C.O.D.P.	CLEANOUT DECK PLATE
	W.C.O.	WALL CLEANOUT
	C.O.W.P.	CLEANOUT WALL PLATE
	WHA	WATER HAMMER ARRESTOR
	F.D.	FLOOR DRAIN
	CV	CHECK VALVE
	CV	CONTROL VALVE
	HB	HOSE BIBB
		PUMP
		STRAINER
	VB	VACUUM BREAKER
	L-1	LAVATORY SINK
	WC-1 / WC-2 / WC-3	WATER CLOSET
	S-3	LAUNDRY SINK
	W-1	WASHER
	S-1	PANTRY HAND/ PREP AND CLASSROOM SINK
	S-2	3-BAY SINK
	DF-1	DRINKING FOUNTAIN
	S-4	JANITOR SINK
	SP-1	ELEVATOR SUMP PUMP
	SE-1	SEWAGE EJECTOR PUMP
	GT-1	GREASE TRAP

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REVISION

NO.	DATE	DESCRIPTION	INT.

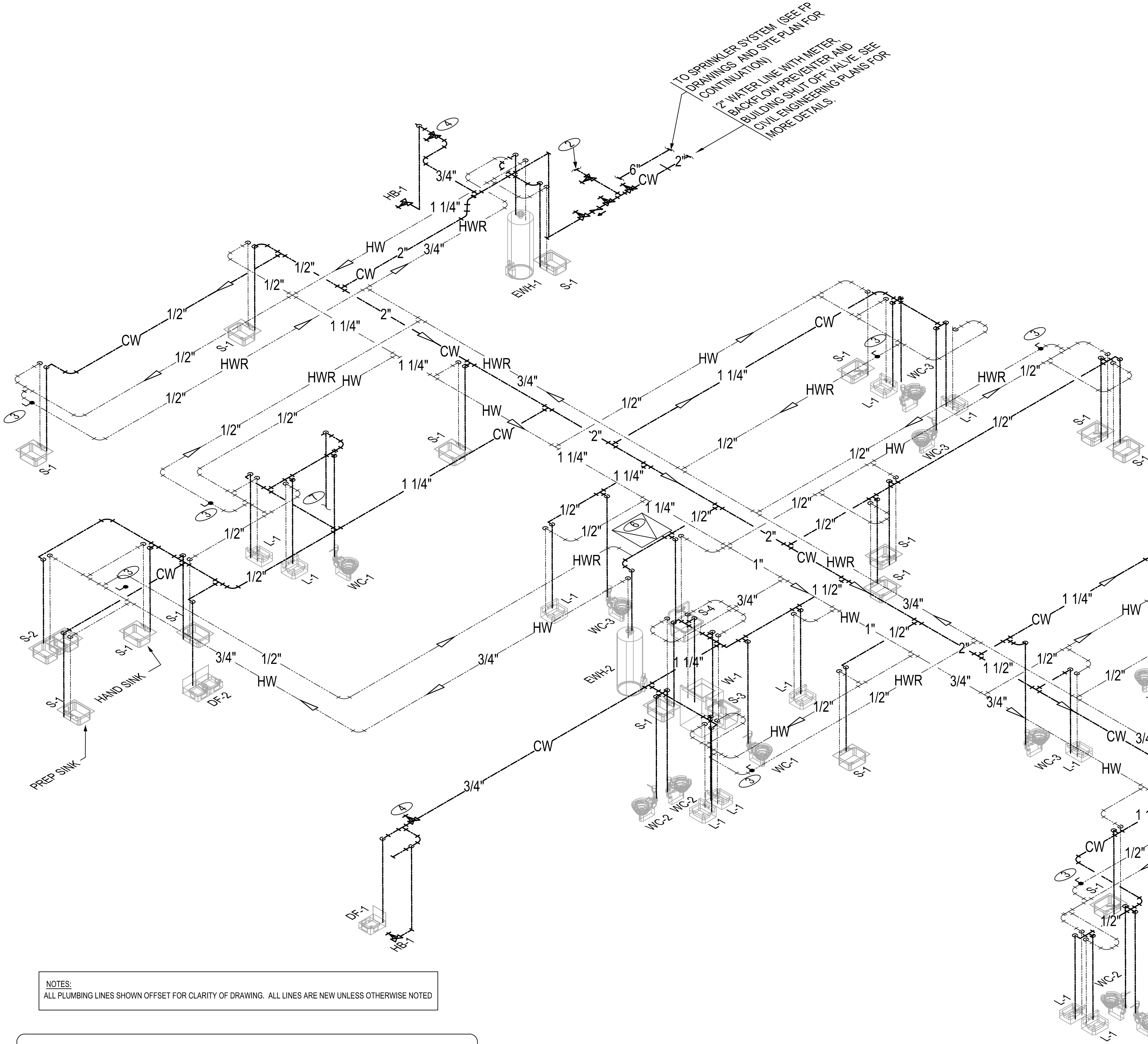
PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 014089

Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MJB

Drawing Name:
PLUMBING ABBREVIATIONS, SCHEDULES, SPECIFICATIONS AND LEGEND

Drawing Number:
P-101
Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIA\TILEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY\CD\STILEVA23-034-PLUMBING P-100 200 300 500 600.DWG LINGCOLAE PLOTTED: 12/20/2023



NOTES:
ALL PLUMBING LINES SHOWN OFFSET FOR CLARITY OF DRAWING. ALL LINES ARE NEW UNLESS OTHERWISE NOTED

SHEET NOTES

- CONTRACTOR TO PROVIDE MIXING VALVES AT EACH LAVATORY, SINKS AND HAND SINK SET AT 110° F. ALL FIXTURES CONNECTED TO EWH-2 SHALL HAVE MIXING VALVES SET AT 140° F. COORDINATE WITH AUTHORITY HAVING JURISDICTION.
- REFER TO COUNTER HEIGHTS IN ARCHITECTURAL MILLWORK DETAILS FOR COUNTER-MOUNTED SINK ROUGH-INS
- FOR DETAILED INFORMATION OF SPACE ALLOCATION IN MECHANICAL ROOM SEE ELECTRICAL DRAWING E-201.

KEY NOTES

- ⊘ NOT USED
- ① 1" CW BRANCH FOR IRRIGATION SYSTEM. CONTRACTOR SHALL SUPPLY A DESIGN DRAWING OF THE IRRIGATION SYSTEM FOR REVIEW AND APPROVAL BY THE LEARNING EXPERIENCE PRIOR TO INSTALLATION. PROVIDE SEPARATE WATER METER AND BACKFLOW PREVENTER IF REQUIRED BY WATER COMPANY. IRRIGATION CONTROL PANEL SHALL BE INSTALLED IN MECH. ROOM, LOCATION SHALL BE FIELD VERIFIED.
- ⊘ BALANCING VALVE.
- ⊘ PROVIDE TEE AND SHUTOFF VALVE. OUTDOOR PIPING SHALL DRAINED PRIOR TO WINTER SEASON.
- ⊘ 1/4" WATER LINE UP TO ICE MAKER IN REFRIGERATOR.
- ⊘ ROOF ACCESS HATCH. IT SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, WIRES, CONDUITS OR OTHER FIXED ITEMS.
- ⊘ PROVIDE PLUMBING ROUGH-IN FOR WATER CLOSET. CAP 1" CW.

1 COLD & HOT WATER PLUMBING RISER DIAGRAM

SCALE: N.T.S.

Project name: The Learning Experience - Winchester, VA
Project number: TLEVA23-034
Project address: 2600 Pleasant Valley Road, Winchester VA 22601
Date: 9/22/2023
As per Virginia Plumbing Code 2018 Table E 103.3(2)

QTY.	SPECIFY USE:	FIXTURES	USE:		3		FIXTURE UNITS			
			MINIMUM BRANCH PIPE SIZE	IN OTHER THAN DWELLING UNITS	COLD	HOT	TOTAL	COLD	HOT	
0	3	BAR SINK	3/8"	3/8"	-	-	-	0.0	0.0	0.0
0	3	BATH/COMBO TUB/SHOWER	1/2"	1/2"	-	-	-	0.0	0.0	0.0
0	3	BIDET	1/2"	1/2"	-	-	-	0.0	0.0	0.0
1	3	CLOTHES WASHER, DOMESTIC (W-1)	1/2"	1/2"	4.0	3.0	3.0	4.0	3.0	3.0
0	3	DISHWASHER, DOMESTIC	-	1/2"	1.5	-	1.5	0.0	0.0	0.0
3	3	DRINKING FOUNTAIN/WATER COOLER (DF-1/DF-2)	3/8"	-	0.5	0.5	-	1.5	1.5	0.0
1	3	HOSE BIBB (FIRST)	1/2"	-	2.5	2.5	-	2.5	2.5	0.0
2	3	HOSE BIBB (EACH ADDITIONAL)	1/2"	-	1.0	1.0	-	2.0	2.0	0.0
1	3	KITCHEN SINK, DOMESTIC (S-2)	1/2"	1/2"	1.4	1.0	1.0	1.4	1.0	1.0
1	3	LAUNDRY SINK (S-3)	1/2"	1/2"	1.4	1.0	1.0	1.4	1.0	1.0
14	3	LAVATORY (L-1)	3/8"	3/8"	0.7	0.5	0.5	9.8	7.0	7.0
21	3	REGULAR SINK (S-1)	3/8"	3/8"	0.7	0.5	0.5	14.7	10.5	10.5
1	3	SERVICE/MOP SINK (S-4)	1/2"	1/2"	3.0	2.3	2.3	3.0	2.3	2.3
0	3	SHOWER	1/2"	1/2"	1.4	1.0	1.0	0.0	0.0	0.0
0	3	SHOWER, CONTINUOUS USE	1/2"	1/2"	5.0	3.8	3.8	0.0	0.0	0.0
0	3	URINAL, >1.0 GPF	3/4"	-	4.0	4.0	-	0.0	0.0	0.0
0	3	URINAL, >1.0 GPF	3/4"	-	5.0	5.0	-	0.0	0.0	0.0
0	3	WATER CLOSET, 1.6 GPF GRAVITY TANK	1/2"	-	2.0	2.0	-	0.0	0.0	0.0
0	3	WATER CLOSET, 1.6 GPF FLUSHOMETER TANK	1/2"	-	2.2	2.2	-	0.0	0.0	0.0
13	3	WATER CLOSET, 1.6 GPF FLUSHOMETER VALVE	1"	-	6.0	6.0	-	78.0	78.0	0.0
0	3	WATER CLOSET, >3.5 GPF GRAVITY TANK	1/2"	-	5.0	5.0	-	0.0	0.0	0.0
0	3	WATER CLOSET, >3.5 GPF FLUSHOMETER VALVE	1"	-	10.0	10.0	-	0.0	0.0	0.0
0	3	WHIRLPOOL BATH	1/2"	1/2"	-	-	-	0.0	0.0	0.0
					116.3	103.8	24.8			
					COPPER PIPE TYPE L					
					8 FPS					
					2"	2"	1"			

2 DOMESTIC WATER CALCULATION

SCALE: N.T.S.

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THE LEARNING EXPERIENCE
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2600 PLEASANT VALLEY ROAD
WINCHESTER, VIRGINIA 22601

ISSUE			
NO.	DATE	DESCRIPTION	INT.
1	08-29-23	FOR TLE REVIEW	MBJ
2	12-19-23	FOR PERMIT	MBJ

REVISION			
NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARME
LICENSE NUMBER: 0401 014089

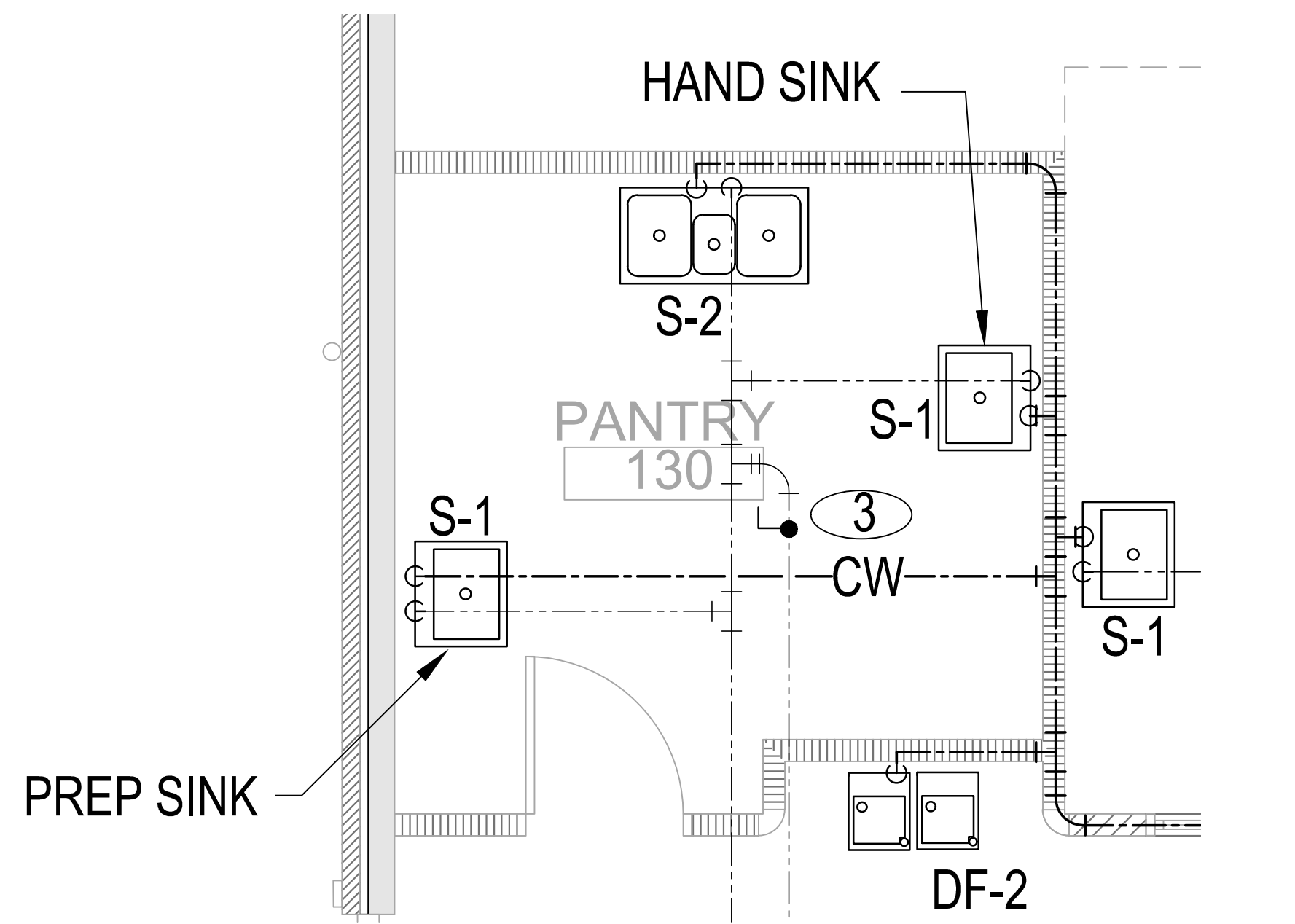
Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MBJ

COLD & HOT WATER PLUMBING RISER DIAGRAM

Drawing Number: P-200

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIA\TILEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY\CD\STILEVA23-034-PLUMBING P-100 200 300 500 600.DWG LNICOLAIE PLOTTED: 12/20/2023



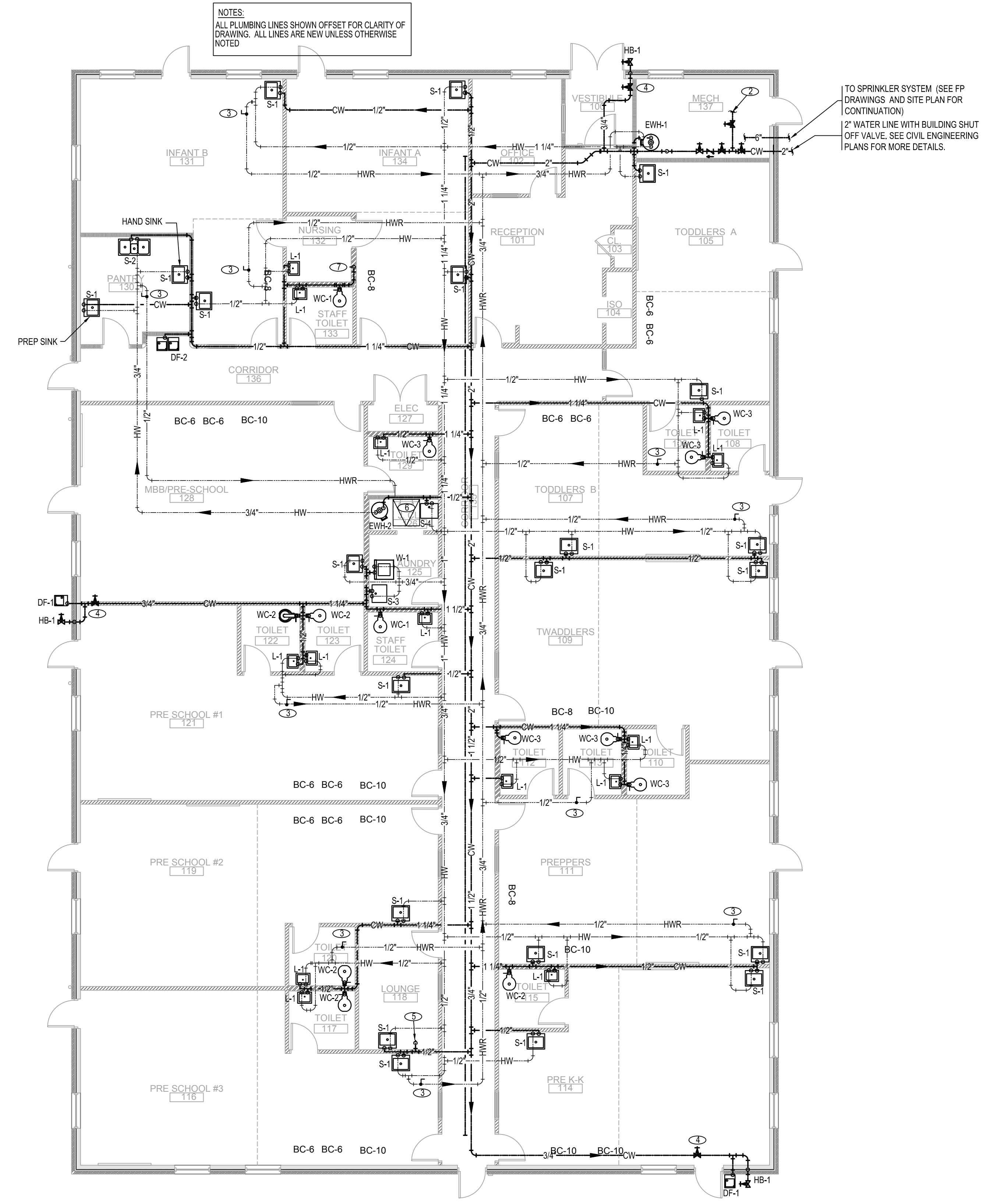
2 ENLARGED PANTRY AREA WATER PLUMBING PLAN
SCALE: 3/8" = 1'-0"

SHEET NOTES

- CONTRACTOR TO PROVIDE MIXING VALVES AT EACH LAVATORY SINKS AND HAND SINK SET AT 110° F. ALL FIXTURES CONNECTED TO EWH-2 SHALL HAVE MIXING VALVES SET AT 140° F. COORDINATE WITH AUTHORITY HAVING JURISDICTION.
- REFER TO COUNTER HEIGHTS IN ARCHITECTURAL MILLWORK DETAILS FOR COUNTER-MOUNTED SINK ROUGH-INS
- FOR DETAILED INFORMATION OF SPACE ALLOCATION IN MECHANICAL ROOM SEE ELECTRICAL DRAWING E-201.

KEY NOTES

- ⊘ NOT USED
- ① 1" CW BRANCH FOR IRRIGATION SYSTEM. CONTRACTOR SHALL SUPPLY A DESIGN DRAWING OF THE IRRIGATION SYSTEM FOR REVIEW AND APPROVAL BY THE LEARNING EXPERIENCE PRIOR TO INSTALLATION. PROVIDE SEPARATE WATER METER AND BACKFLOW PREVENTER IF REQUIRED BY WATER COMPANY. IRRIGATION CONTROL PANEL SHALL BE INSTALLED IN MECH. ROOM, LOCATION SHALL BE FIELD VERIFIED.
- ⊘ BALANCING VALVE.
- ⊘ PROVIDE TEE AND SHUTOFF VALVE. OUTDOOR PIPING SHALL DRAINED PRIOR TO WINTER SEASON.
- ⊘ 1/4" WATER LINE UP TO ICE MAKER IN REFRIGERATOR.
- ⊘ ROOF ACCESS HATCH. IT SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, WIRES, CONDUITS OR OTHER FIXED ITEMS.
- ⊘ PROVIDE PLUMBING ROUGHIN FOR WATER CLOSET. CAP 1" CW.



1 COLD & HOT WATER PLUMBING PLAN
SCALE: 1/8" = 1'-0"



- CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY
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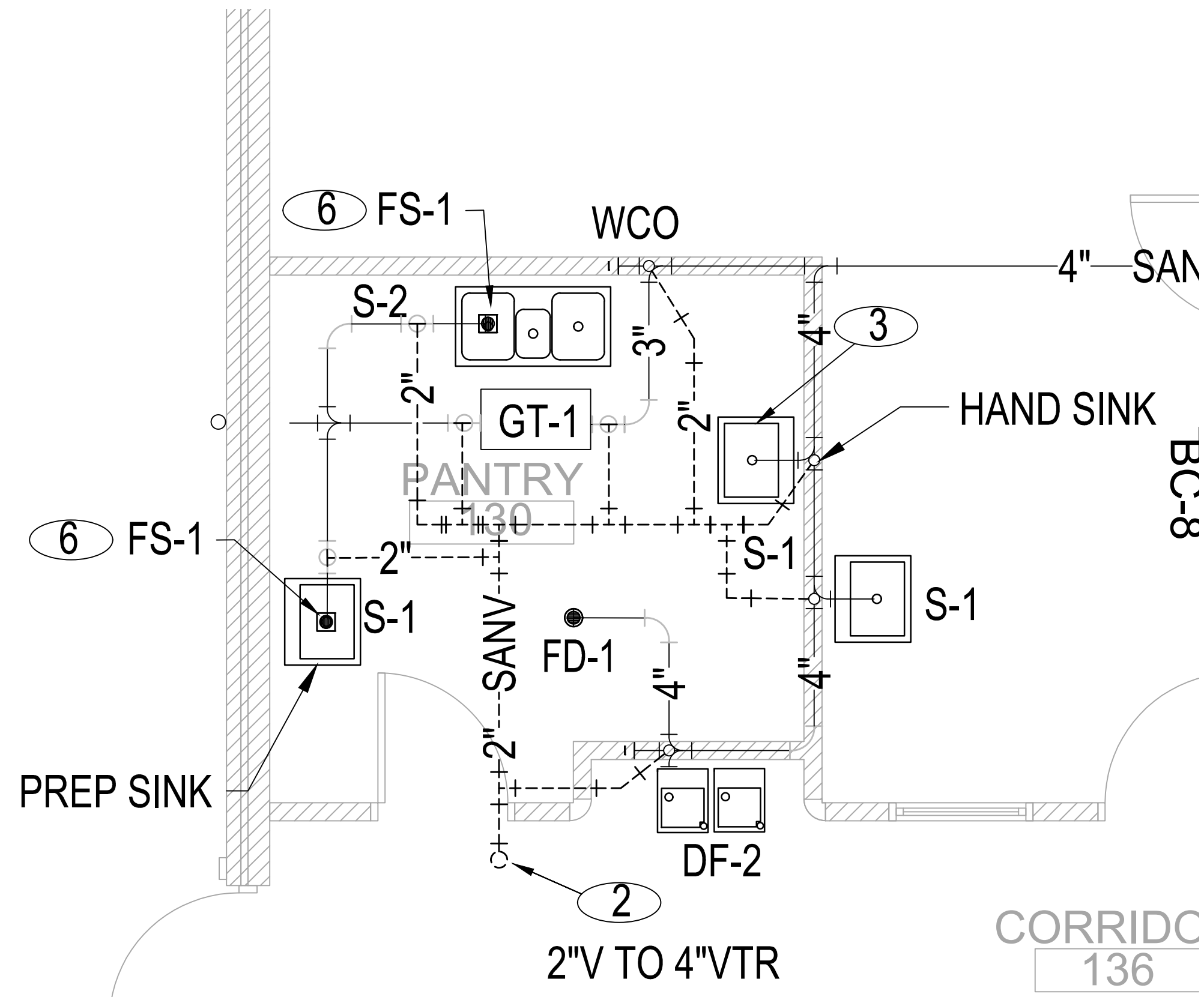
Project Number: TLEVA23-034 Scale: AS NOTED
Drawn By: LN Approved By: MBJ

COLD & HOT WATER PLUMBING PLAN

Drawing Number: P-300

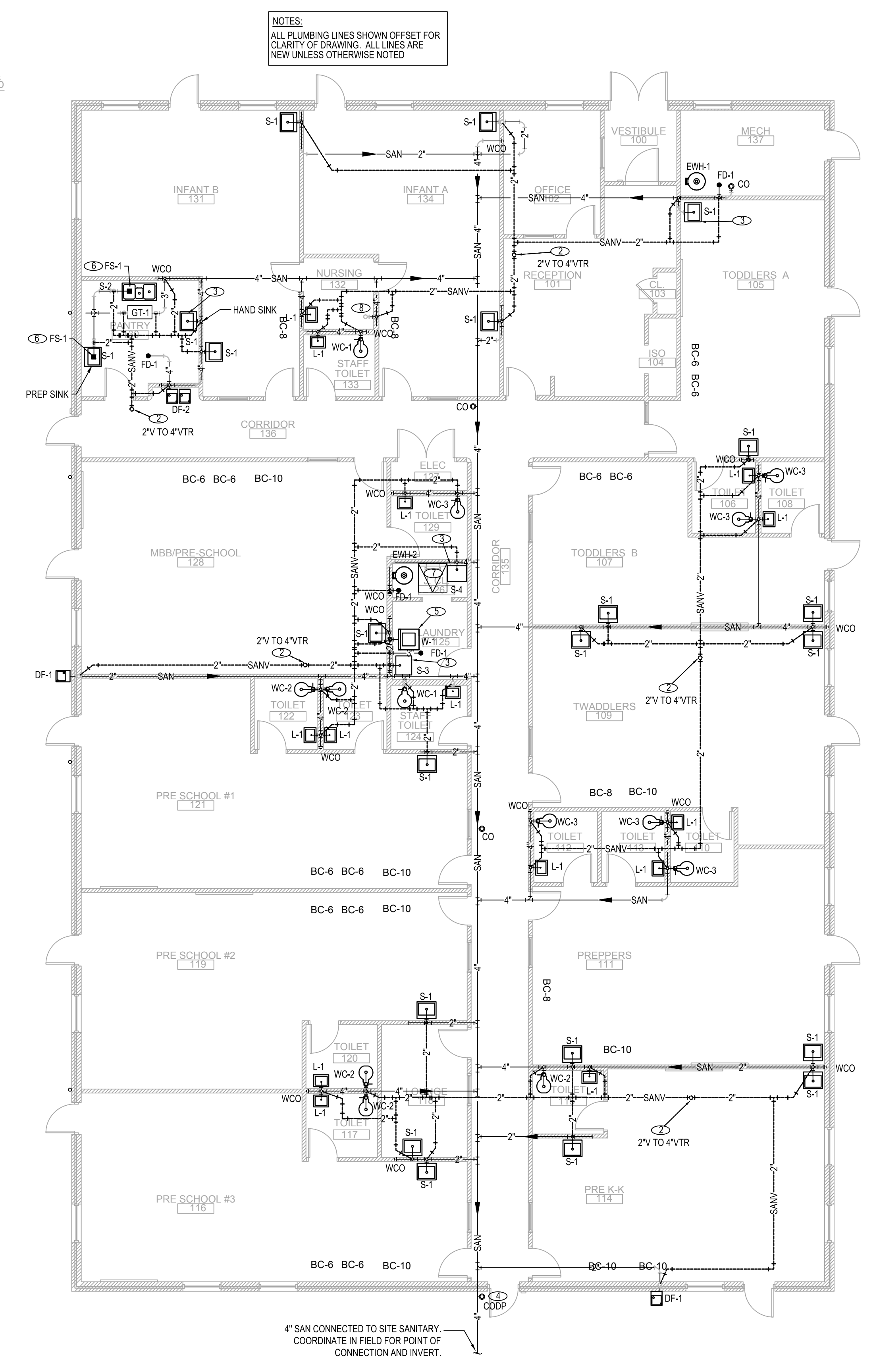
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H:\DRAWINGS\TILE - THE LEARNING EXPERIENCE\TILE - VIRGINIA\TILEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY\CD\STILEVA23-034-PLUMBING SAN P-210 P-400.DWG RSHENDE PLOTTED: 12/19/2023



2 ENLARGED PANTRY AREA SANITARY PLUMBING PLAN
SCALE: 3/8" = 1'-0"

SANITARY SEWER KEY NOTES	
KEY NOTES:	
① 4" SANITARY SEWER DRAIN LINE BELOW GRADE. SEE CIVIL UTILITIES PLAN FOR CONTINUATION.	
② SANITARY VENT UP THRU FLAT ROOF DECK. INSTALL WITH ROOF FLASHING PER LOCAL CODE.	
③ P-TRAP ON LAVATORY/SINK WITH WATER SAVER TRAP PRIMER CONNECTION TO CONNECT TO FLOOR DRAIN PER MANUFACTURER'S SPECIFICATIONS AND LOCAL CODE REGULATIONS.	
④ SANITARY CLEAN-OUT FLUSH WITH TOP OF GRADE. IN CASE OF SANITARY PIPE BELOW CONCRETE, PROVIDE CLEAN-OUT WITH DECK PLATE.	
⑤ CLOTHES WASHING MACHINE CONNECTION BOX RECESSED IN WALL W/2 INCH DIAMETER P-TRAP AS REQUIRED BY BUILDING CODE.	
⑥ PROVIDE INDIRECT WASTE CONNECTION AT PANTRY PREP SINK (S-1) AND PANTRY 3-COMPARTMENT SINK (S-2). REF. DTL. 7 ON P-600. COORDINATE LOCATION OF FLOOR SINK WITH SINK LEGS.	
⑦ ROOF ACCESS HATCH. IT SHALL NOT BE BLOCKED BY ANY DUCT, PIPES, WIRES, CONDUITS OR OTHER FIXED ITEMS.	
⑧ PROVIDE ROUGH IN (4" SAN, 2" VENT CONNECTIONS) FOR TOILET IN NURSING ROOM.	
NOTE: SANITARY CLEAN-OUTS BELOW LAVATORIES & SINKS MAY BE P-TRAPS WITH CLEAN-OUTS PER LOCAL CODE REGULATIONS REFER TO COUNTER HEIGHTS IN ARCHITECTURAL MILLWORK DETAILS FOR COUNTER-MOUNTED SINK ROUGH-INS	2" MIN. SIZE UNDER SLAB DRAIN. 2" OR LESS DRAIN @ 1/2" DROP 3" @ 1/2" 4" @ 1/4" ALL FLOOR DRAINS W/ TRAP-PRIMERS ALL VTRS 10'-0" MIN. FROM ANY FRESH AIR INTAKE



1 SANITARY PLUMBING PLAN
SCALE: 1/8" = 1'-0"

- CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY.
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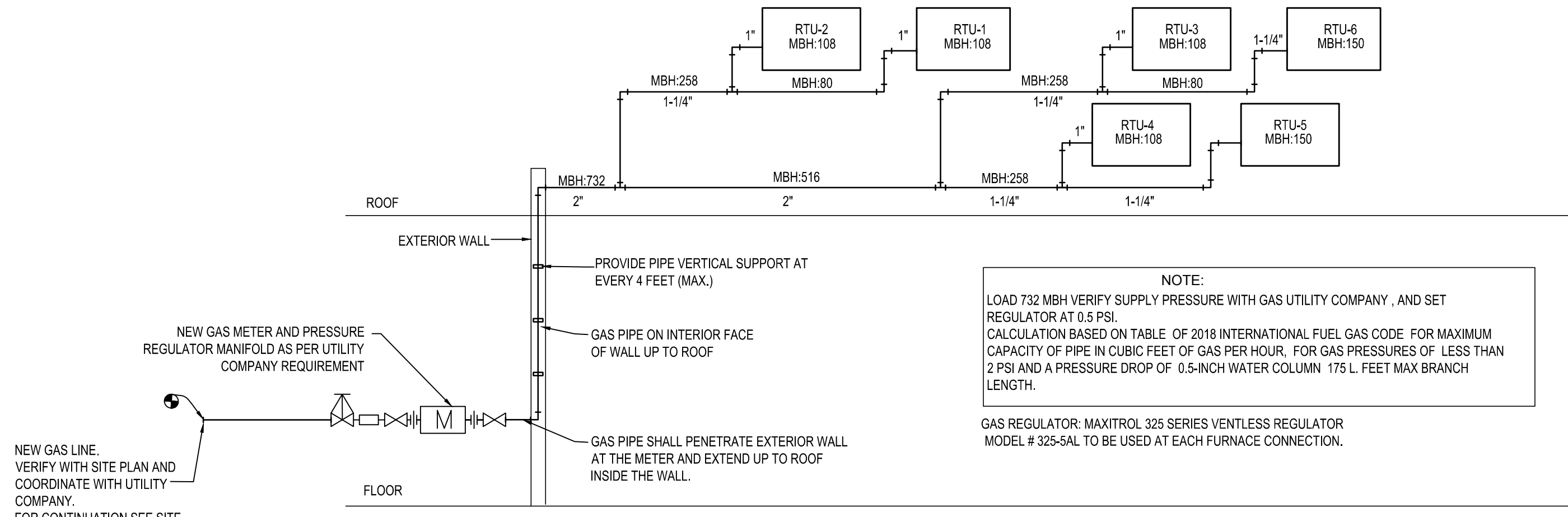
Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MBJ

SANITARY PLUMBING PLAN

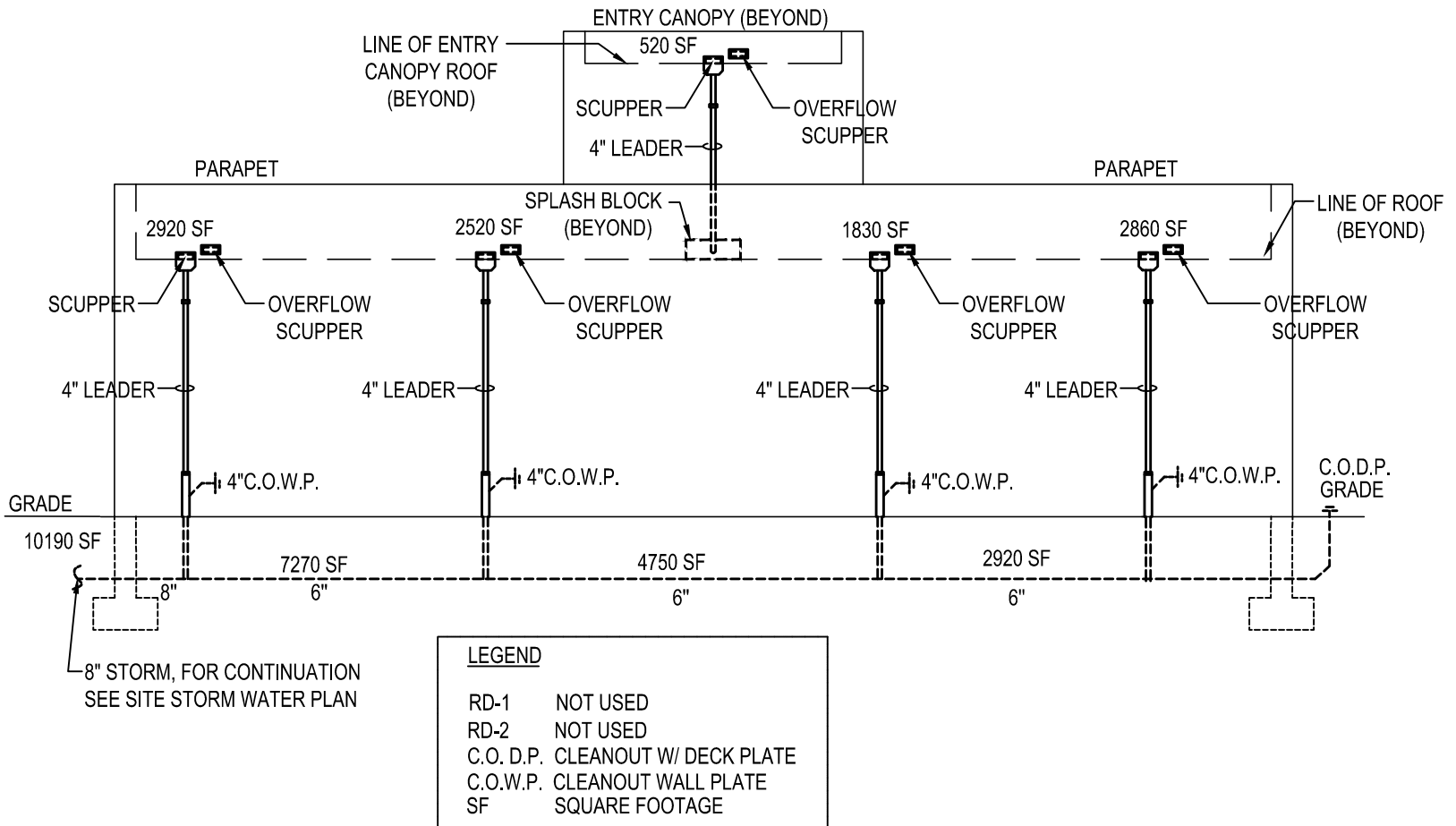
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DRAWINGS TITLE: THE LEARNING EXPERIENCE - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY CDSITLVEVA23-034-PLUMBING P-100 200 300 500 600.DWG LINCOLAIE PLOTTED: 12/20/2023



2 GAS RISER DIAGRAM
SCALE: N.T.S.

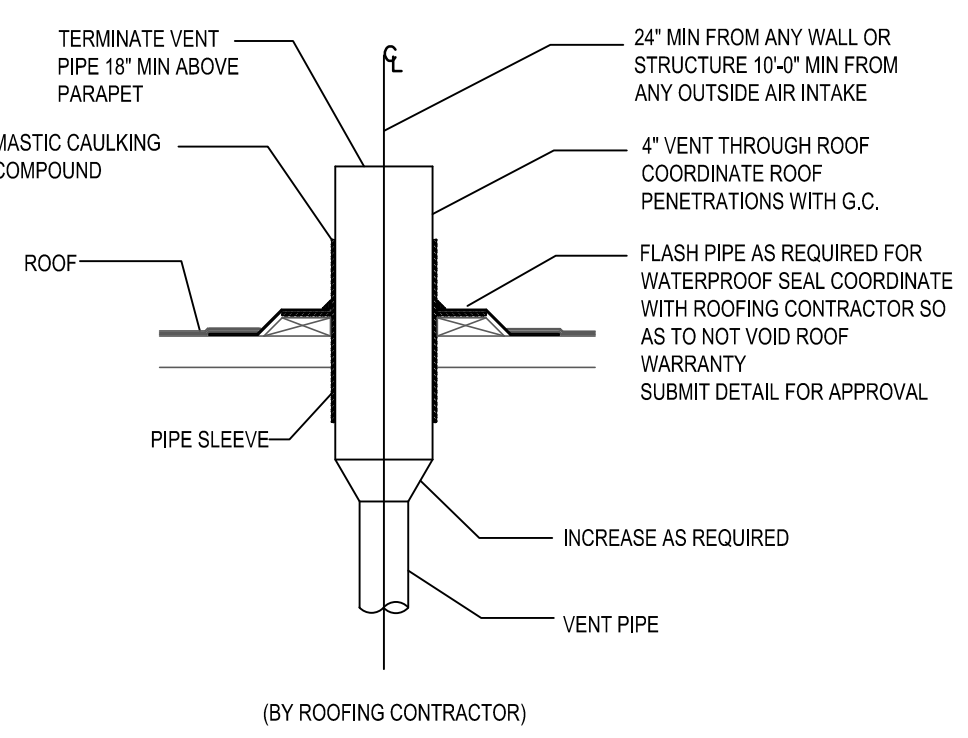


3 STORM RISER DIAGRAM
SCALE: N.T.S.

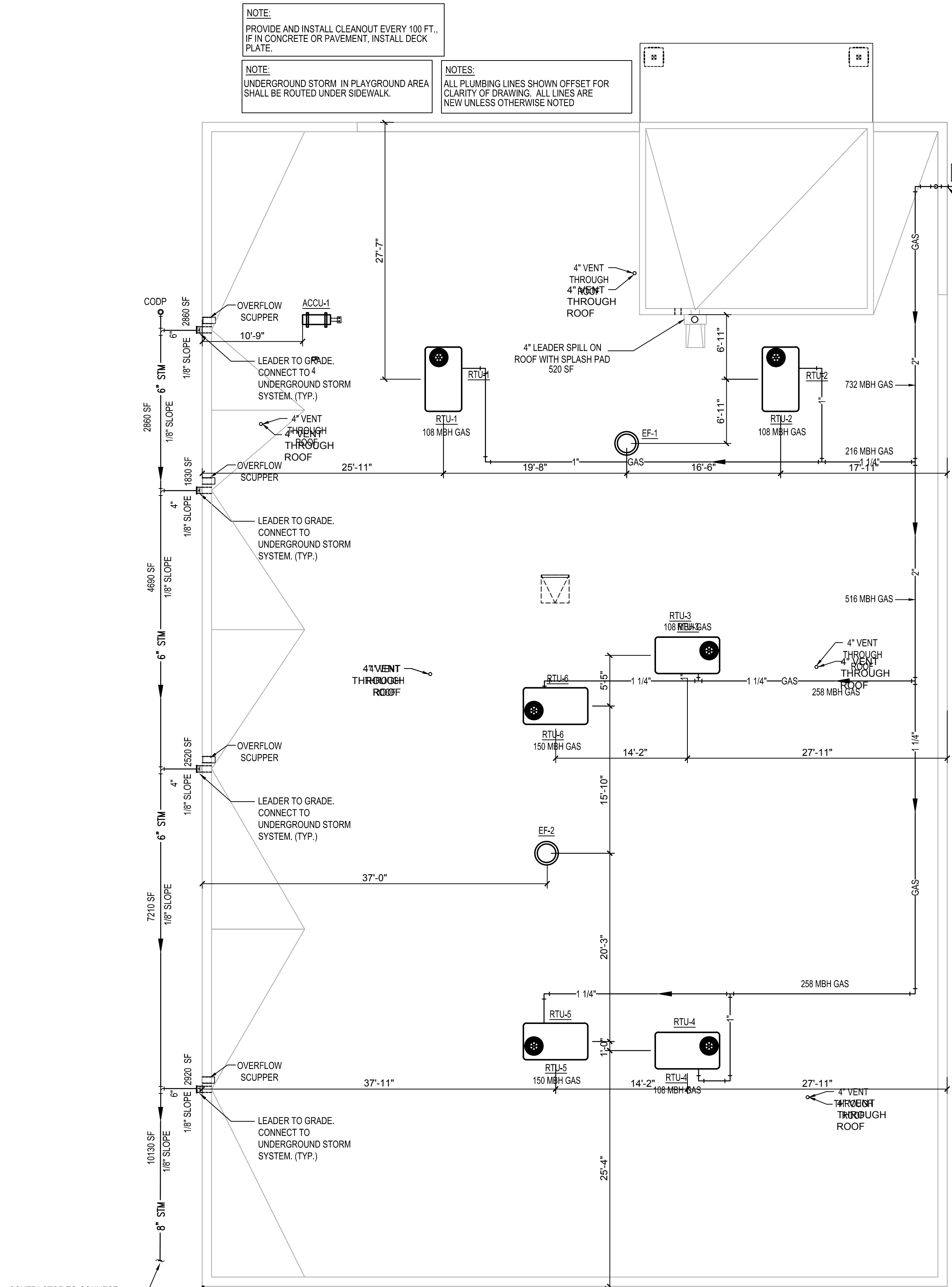
STORM CALCULATIONS

GUTTERS & DOWNSPOUTS

- ROOF TOTAL AREA IS 10190 FT²
- RATE OF RAINFALL FOR THE AREA IS 4.0 INCH/HR = 0.33 FT/HR.
- 10190 FT² X 0.33 FT/HR = 3362.7 FT³/HR
- 3362.7 FT³/HR X 7.48052 GALLON/FT³ = 25154.75 GALLON/HR
- 25154.75 GALLON/HR ÷ 160 HR/MIN = 419.25 GALLON/MIN
- 419.25 GALLON/MIN ÷ 4 LEADERS = 104.8 GALLON/MIN FOR EACH LEADER (AVG)
- PER CHAPTER 11 OF THE 2018 VIRGINIA PLUMBING CODE, TABLE 1106.2
- 4" STORM LEADERS ARE USED.



4 VENT PIPE AT ROOF PENETRATION
SCALE: 1-1/2" = 1'-0"



1 GAS & STORM PLUMBING PLAN
SCALE: 1/8" = 1'-0"

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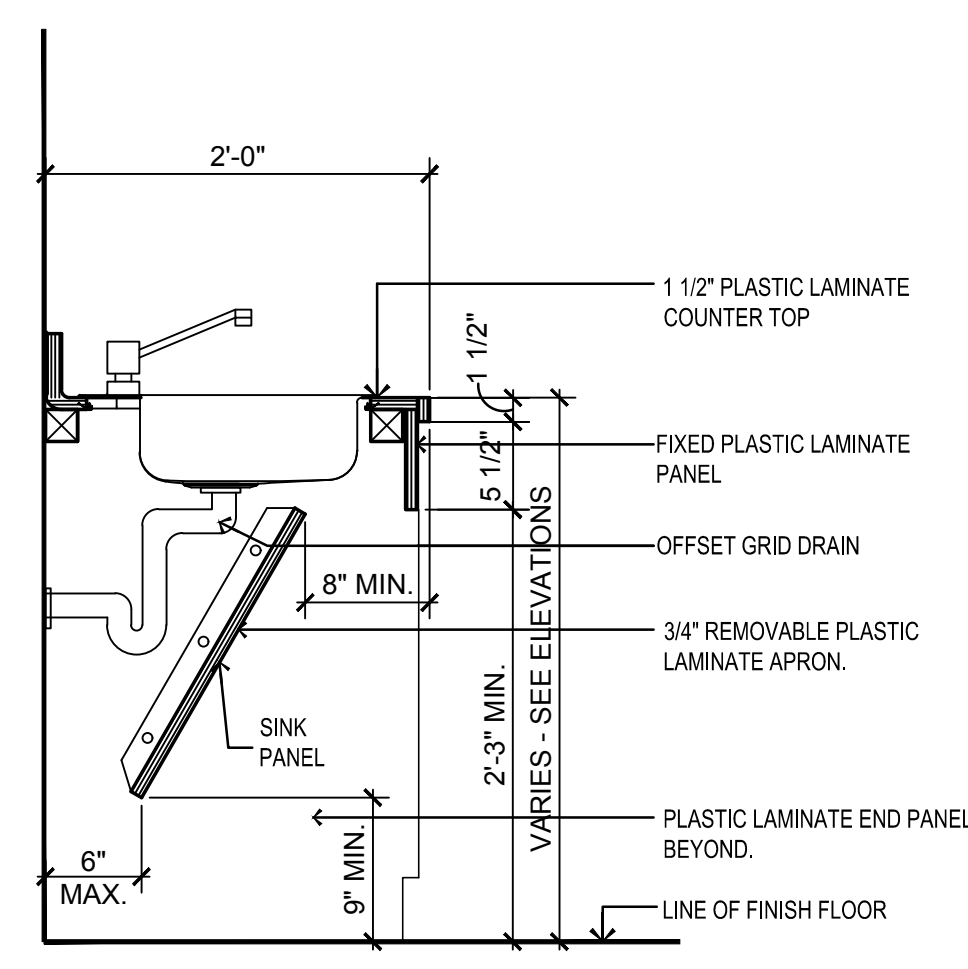
Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
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GAS & STORM PLUMBING PLANS

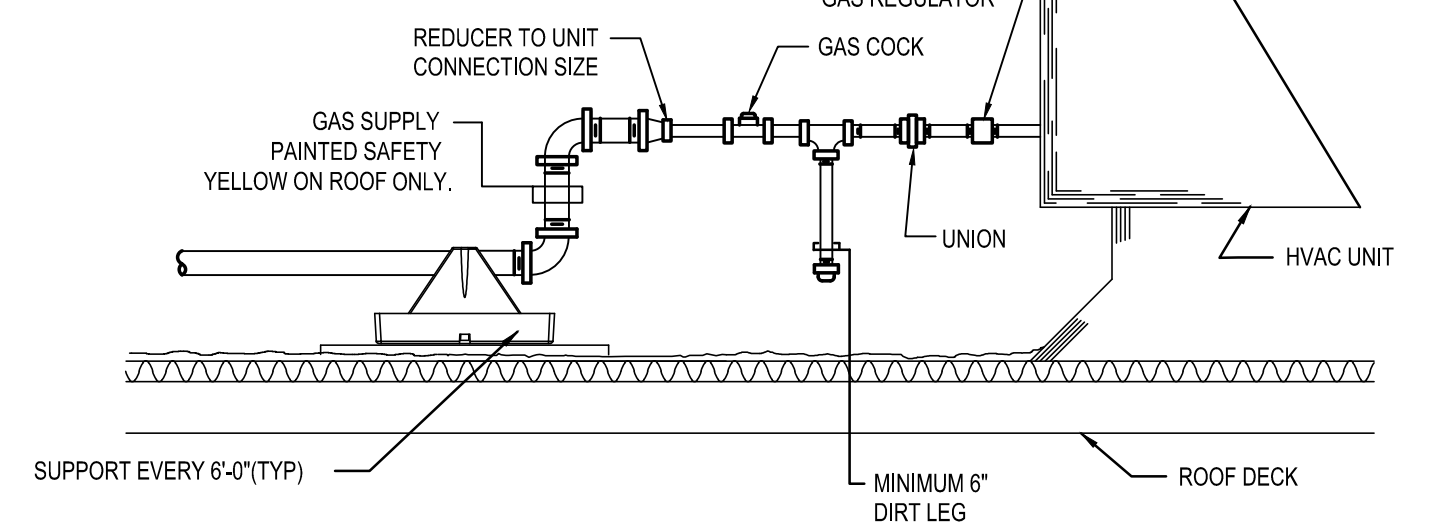
Drawing Number: P-500

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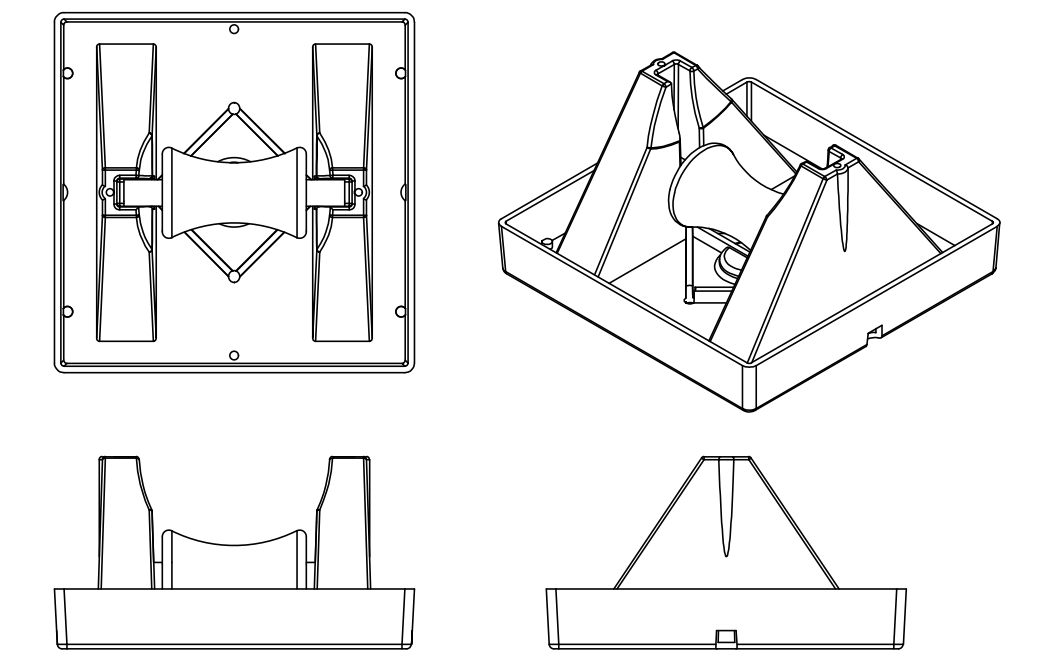
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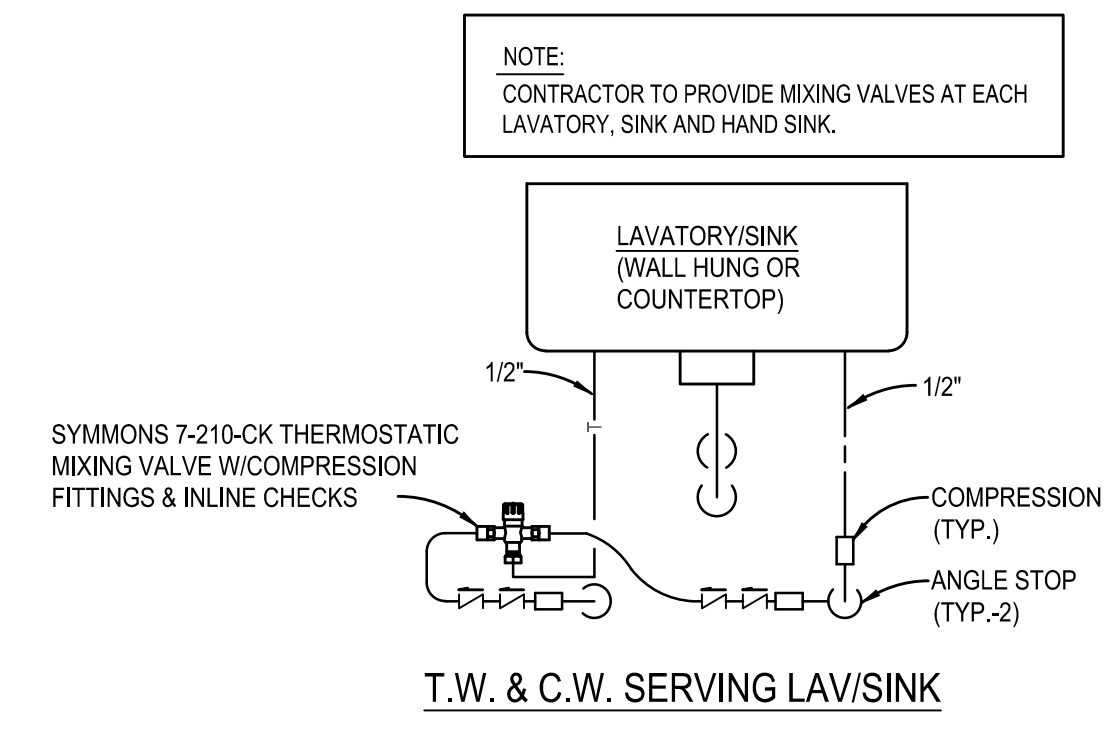
11 SECTION @ CLASSROOM ADA SINK
SCALE: 1" = 1'-0"



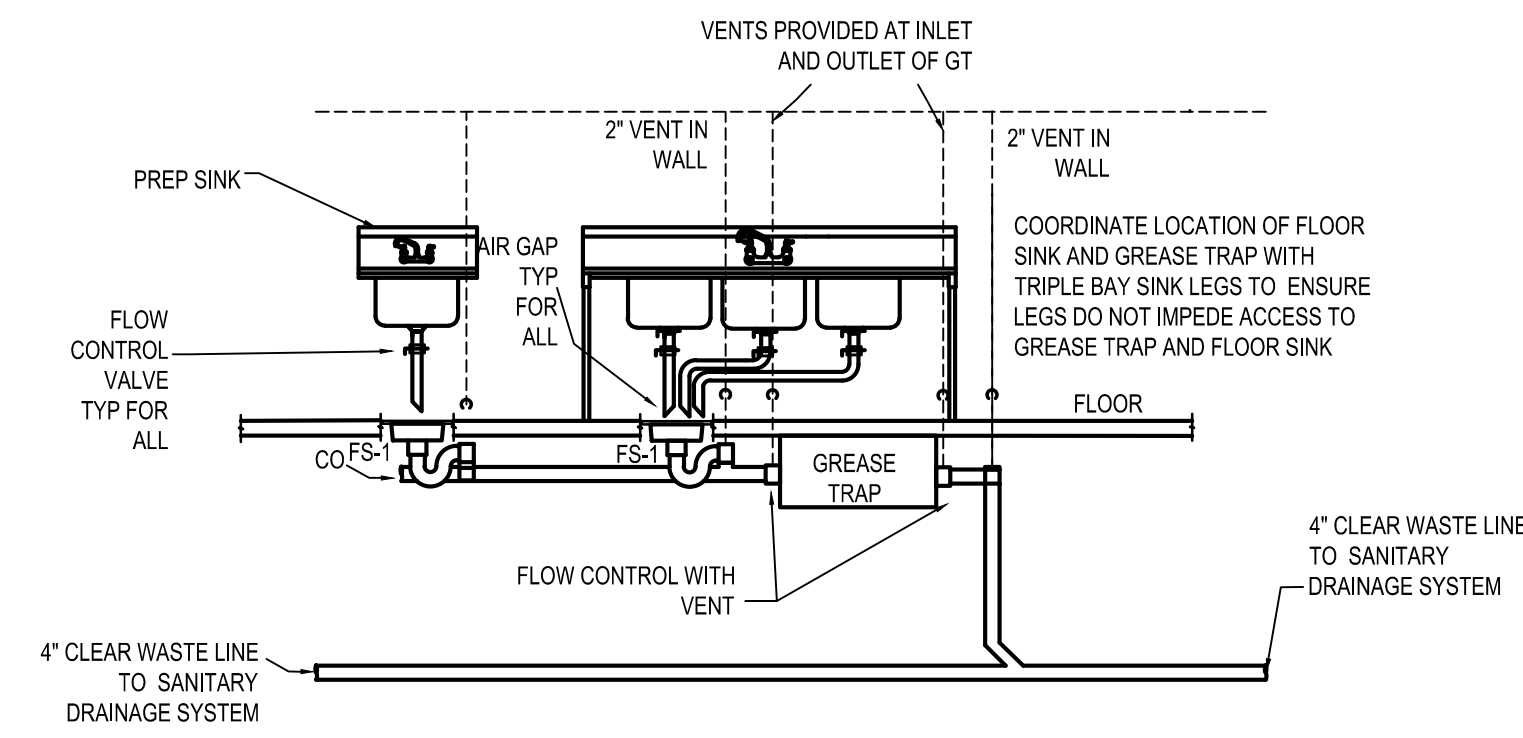
5 GAS PIPE ON ROOF DIAGRAM
SCALE: N.T.S.



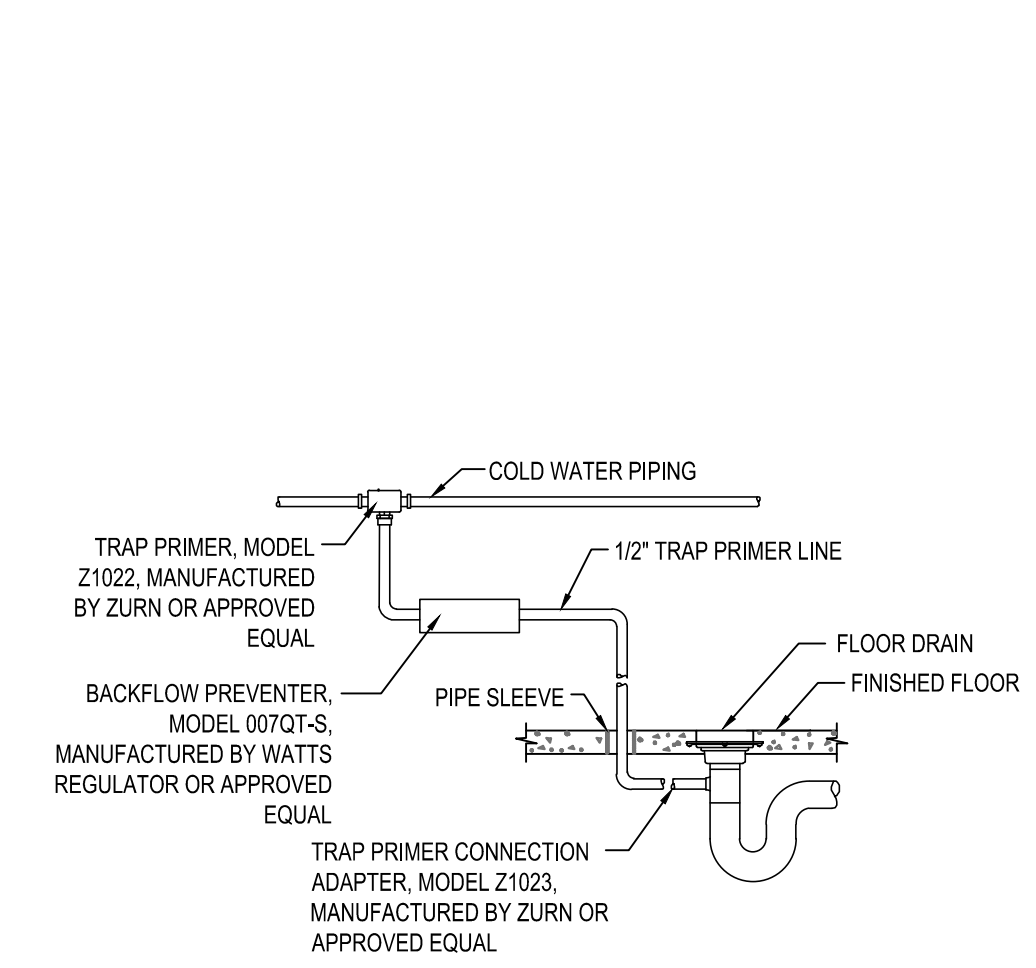
6 GAS PIPE SUPPORT DIAGRAM
SCALE: N.T.S.



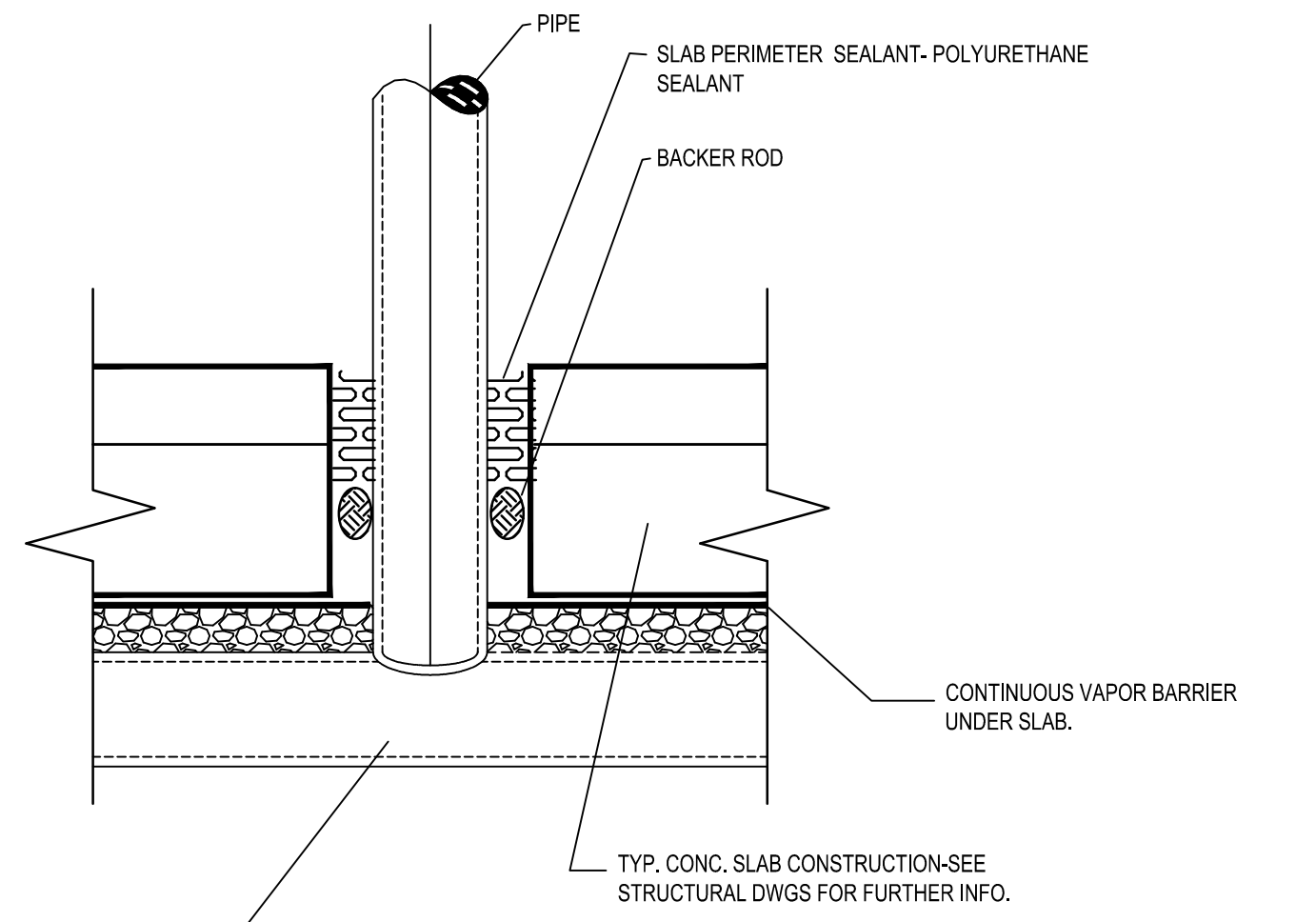
10 MIXING VALVE DIAGRAM
SCALE: N.T.S.



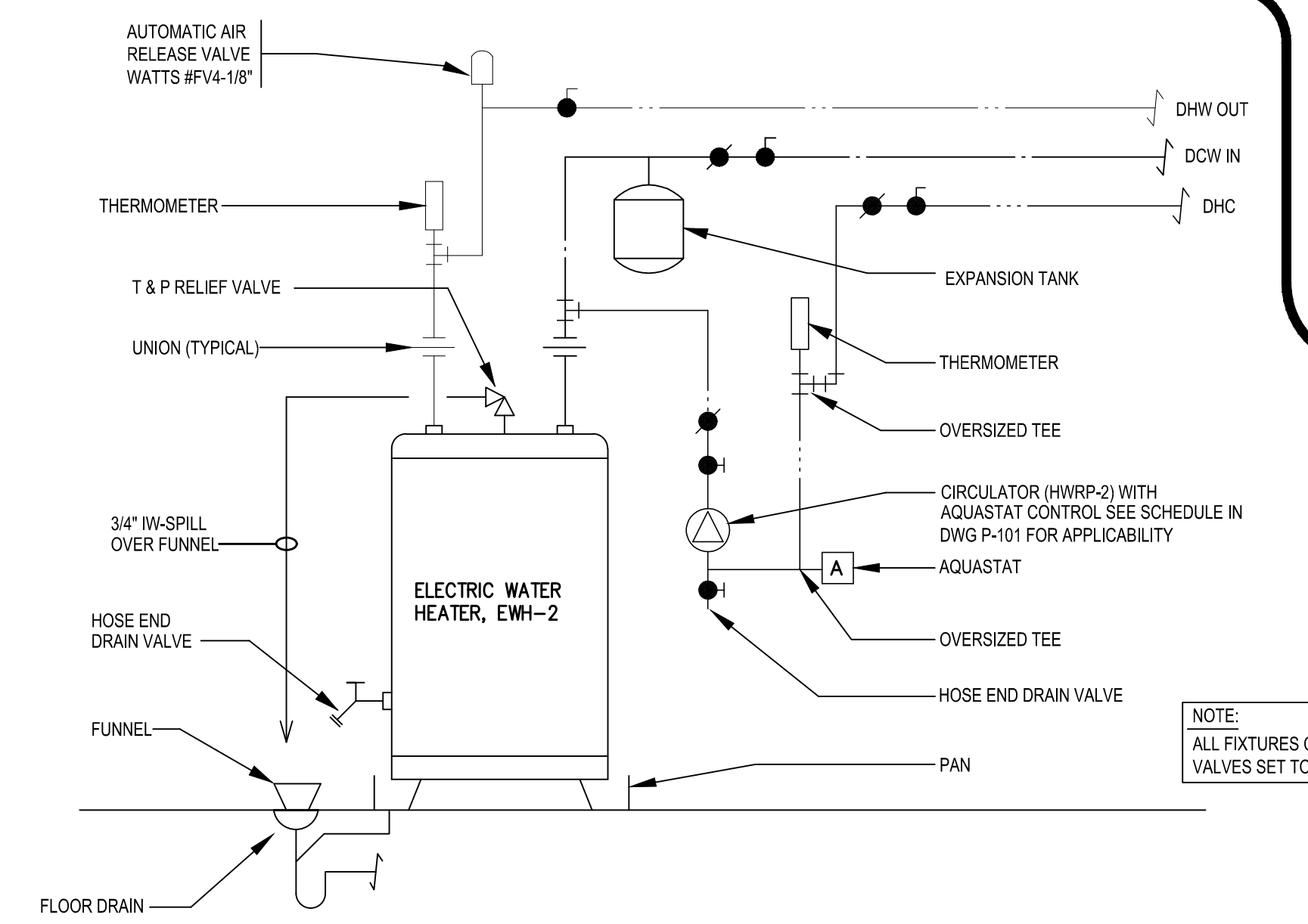
7 GREASE TRAP PIPING DIAGRAM
SCALE: N.T.S.



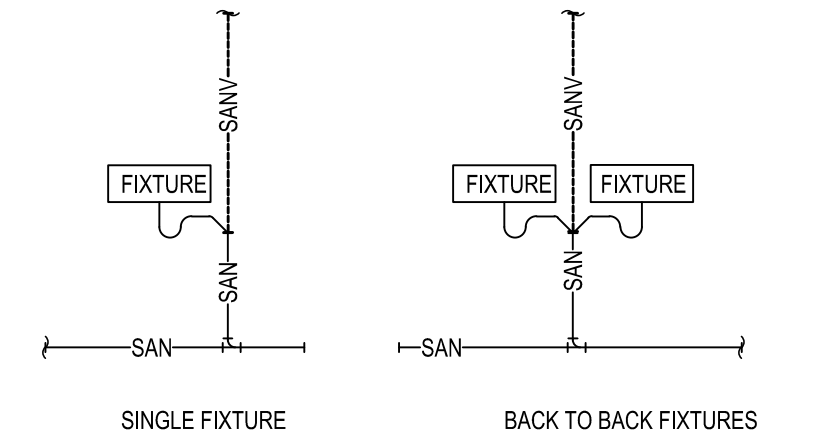
9 TRAP PRIMER DIAGRAM
SCALE: N.T.S.



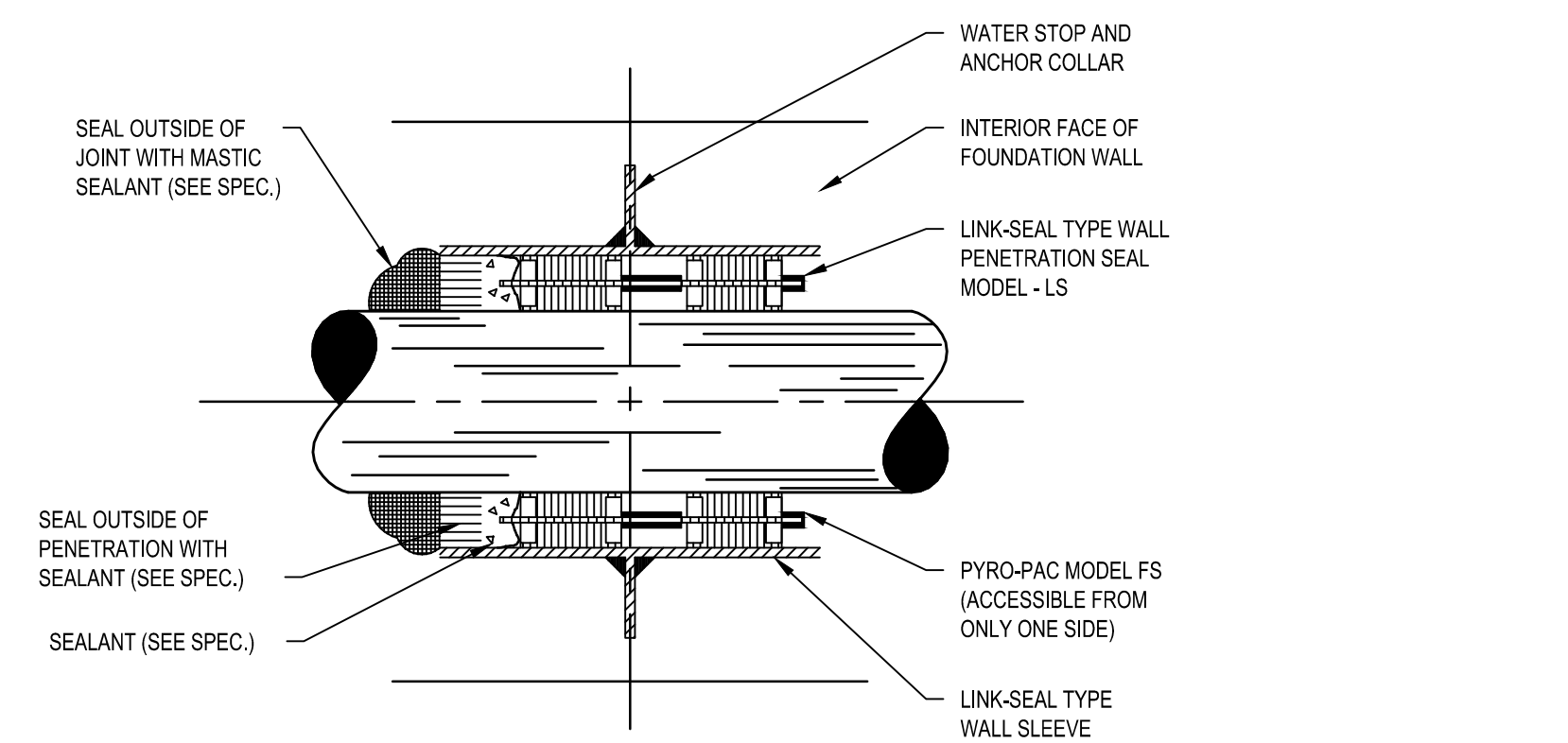
8 PIPE @ SLAB PENETRATION DIAGRAM
SCALE: N.T.S.



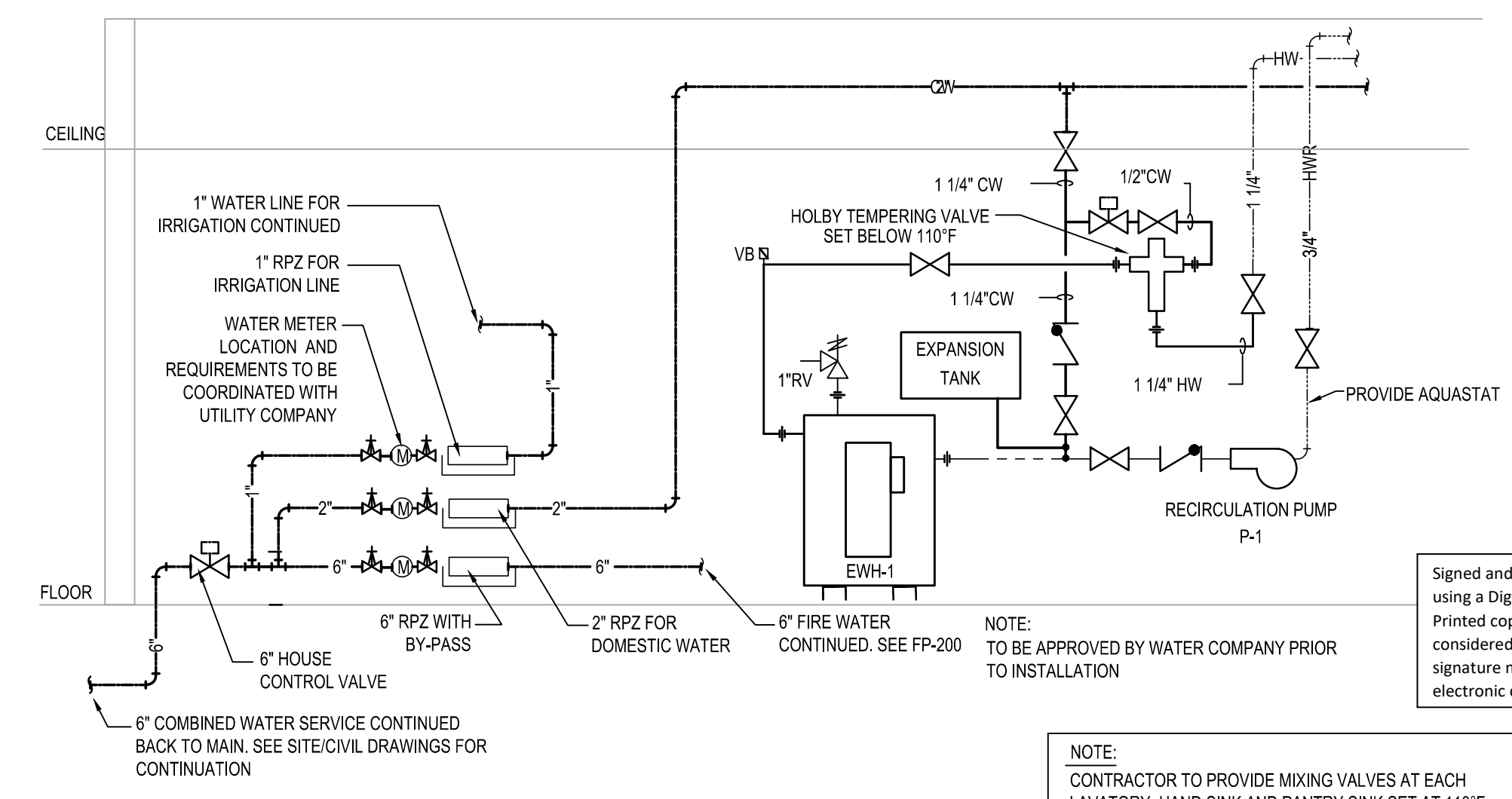
4 JANITOR CLOSET EWH-2 WATER HEATER DIAGRAM
SCALE: N.T.S.



3 PLUMBING FIXTURES SANITARY CONNECTION DIAGRAM
SCALE: N.T.S.



2 FOUNDATION WALL PIPE PENETRATION DIAGRAM
SCALE: N.T.S.



1 MECHANICAL ROOM DIAGRAM
SCALE: N.T.S.

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NOTE: ALL FIXTURES CONNECTED TO EWH-2 SHALL HAVE MIXING VALVES SET TO 140° F.

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Approved By: MBJ

Drawing Name:
PLUMBING DIAGRAMS

Drawing Number:
P-600

MATTHEW B. JARMEL
0401 014089
ARCHITECT

DRAWINGS TITLE - THE LEARNING EXPERIENCE TITLE - VIRGINIA TLEVA23-034 - TLE WINCHESTERVA 2600 PLEASANT VALLEY WAY DISTRICT LEVA23-034-FIRE PROTECTION.DWG LINCOLN PLOTTED - 12/20/2023

FIRE PROTECTION GENERAL NOTES

A. GENERAL

- GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARKED "FP".
- FURNISH ALL LABOR AND MATERIALS REQUIRED FOR THE INSTALLATION OF THE FIRE PROTECTION SPRINKLER SYSTEM UNLESS OTHERWISE NOTED. IT IS THE INTENT OF THESE DOCUMENTS TO PROVIDE AN APPROVED AUTOMATIC SPRINKLER SYSTEM THROUGHOUT THE ENTIRE PROJECT.
- ALL NEW SPRINKLER WORK SHALL CONFORM TO THE REQUIREMENTS ALL APPLICABLE CODES AND LOCAL AUTHORITIES HAVING JURISDICTION INCLUDING BUT NOT LIMITED TO BUILDING DEPARTMENT AND FIRE DEPARTMENT.
- ALL FIRE PROTECTION SPRINKLER WORK INCLUDING DESIGN AND CONSTRUCTION SHALL CONFORM TO THE REQUIREMENTS OF APPLICABLE SECTIONS OF NFPA #13 AND #24.
- THE CONTRACTOR SHALL FURNISH AND INSTALL THE FIRE PROTECTION SPRINKLER SYSTEM IN A MANNER WHICH PROVIDES A COMPLETE AND OPERATIONAL SYSTEM, WITH ALL EQUIPMENT, PERMITS, PIPING, VALVES, INSULATION, CONTROLS, HANGERS, TRIM, ACCESSORIES AND ASSOCIATED INCIDENTAL WORK, IN ACCORDANCE WITH THE APPLICABLE CODES, ALL AUTHORITIES HAVING JURISDICTION, AND PER THE CONSTRUCTION DOCUMENTS.
- CONTRACTOR SHALL INCLUDE THE COST OF ALL SMALL DETAILS, INCIDENTAL WORK, AND ACCESSORIES NOT SHOWN OR SPECIFIED, BUT WHICH CAN BE REASONABLY INFERRED FOR COMPLETE AND SATISFACTORY CODE COMPLIANT SYSTEM. PROVIDE OFFSETS, FITTINGS AND SIMILAR ITEMS NECESSARY TO ACCOMPLISH REQUIREMENTS OF COORDINATION WITHOUT ADDITIONAL EXPENSE.
- ALL EQUIPMENT PIPING INSULATION ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND FIRE RATING.
- THE INSTALLATION OF THE FIRE PROTECTION SPRINKLER SYSTEM SHALL PERMIT SAFE PERSONNEL ACCESSIBILITY FOR REQUIRED INSPECTION, TESTING, AND MAINTENANCE.
- THE OPERATION OF FIRE PROTECTION SPRINKLER INSTALLATION DOES NOT CONSTITUTE AN ACCEPTANCE OF WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND INSURANCE UNDERWRITERS.

B. DRAWINGS/DESIGN

- REFER TO ARCHITECTURAL DRAWINGS FOR ALL CEILING HEIGHTS.
- THESE DOCUMENTS DEPICT A PERFORMANCE LEVEL ENGINEERING DESIGN LAYOUT TO BE UTILIZED AS GUIDANCE FOR THE PLANNING OF THE FIRE SPRINKLER SYSTEM BY THE CONTRACTOR. THE INTENT OF THE FIRE PROTECTION DRAWINGS PRESENTED IS TO PROVIDE A QUALIFIED FIRE PROTECTION CONTRACTOR WITH CONCEPTUAL INFORMATION TO DIAGRAMMATICALLY SHOW POTENTIAL SYSTEM ARRANGEMENT, ONLY. PROVIDE COMPLETE DOCUMENTS FOR REVIEW AND APPROVAL FROM THE ENGINEER OF RECORD, THE AUTHORITY HAVING JURISDICTION AND PRIOR TO INSTALLATION, INCLUDE IN THE SHOP DRAWINGS AND CALCULATIONS ANY ADDITIONAL EQUIPMENT NECESSARY, TO PROVIDE A COMPLETE CODE COMPLIANT SYSTEM INSTALLATION.
- THE CONTRACTOR SHALL PREPARE PIPING PLANS AND HYDRAULIC CALCULATIONS SEALED BY A LICENSED PROFESSIONAL ENGINEER HAVING A CURRENT LICENSE IN THE PROJECT'S JURISDICTION ENGAGED BY THE CONTRACTOR. PLANS INDICATING CALCULATION REFERENCE POINTS SHALL BE INCLUDED. IF REQUIRED CONTRACTOR SHALL PROVIDE A FIRE HYDRANT FLOW TEST. CALCULATIONS AND DRAWINGS SHALL BE SUBMITTED AND FILED WITH LOCAL FIRE AND BUILDING DEPARTMENT AUTHORITIES AND SUBMITTED TO THE ARCHITECT/ENGINEER FOR RECORD. APPROVALS OF SHOP DRAWINGS SHALL NOT RELEASE CONTRACTOR OF RESPONSIBILITY FOR WORK SPECIFIED.
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE FIRE PROTECTION SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS, INCLUDING BUT NOT LIMITED TO APPLICABLE NFPA CODES AND STANDARDS, LOCAL AUTHORITIES HAVING JURISDICTION, OWNER'S PROPERTY INSURANCE CARRIER GUIDELINES, AND OWNER-SPECIFIED DIRECTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND VERIFYING FLOW TEST DATA IN THE PREPARATION OF HYDRAULIC CALCULATIONS. COORDINATE THE TIME AND DATE OF THE TEST WITH THE APPLICABLE WATER UTILITY OFFICIAL AND ARCHITECT/ENGINEER AT LEAST FIVE (5) WORKING DAYS PRIOR TO CONDUCTING THE TEST.
- THE CONTRACTOR SHALL FILE ALL DRAWINGS PER STATE AND LOCAL APPLICABLE CODES, OBTAIN AND PAY FOR ALL NECESSARY PERMITS, PROVIDE HYDRAULIC CALCULATIONS, AND FINAL INSPECTIONS.

- THE ROUTE OF FIRE PROTECTION MAINS IS INTENDED TO UTILIZE THE MOST EFFICIENT SPACE AVAILABLE AND TO AVOID INTERFERENCE WITH OTHER BUILDING EQUIPMENT AND SYSTEMS. FIELD VERIFY ACTUAL ROUTING OF MAINS PRIOR TO BEGINNING FABRICATION AND INSTALLATION.
- SPRINKLER HEAD LOCATIONS SHOWN ARE INTENDED TO SHOW COORDINATION BETWEEN OTHER TRADES. OMISSION OF HEADS REQUIRED BY CODE SHALL NOT RELIEVE THE FIRE PROTECTION CONTRACTOR FROM PROVIDING THEM UNDER THIS CONTRACT.
- CONTRACTOR SHALL COORDINATE ALL WORK WITH WORK OF OTHER TRADES, EXISTING CONDITIONS, THE BUILDING STRUCTURE AND PARTICIPATE IN THE PREPARATION OF COORDINATED SHOP DRAWINGS, IN ORDER TO AVOID CONFLICTS OF ANY TYPE.
- THE CONTRACTOR SHALL CONFIRM ALL STRUCTURAL AND EQUIPMENT INTERFERENCES PRIOR TO SYSTEM FABRICATION AND INSTALLATION. THE CONTRACTOR SHALL PROVIDE ANY ADDITIONAL PIPING, VALVES, SPECIALTIES, ALARM HORNS/BELLS, INDICATING STROBES, TAMPER SWITCHES, ACCESSORIES, SPRINKLERS, MATERIALS, LABOR, ENGINEERING, OR COMPONENTS REQUIRED FOR A COMPLETE AND CODE COMPLIANT FIRE PROTECTION SYSTEM AT NO EXTRA COST, WHETHER OR NOT SHOWN ON BID DRAWINGS.
- ALL SPRINKLER HEADS SHALL BE CONCEALED TYPE UNLESS OTHERWISE NOTED.
- DO NOT PENETRATE WALL FOOTINGS WITH PIPING. COORDINATE TO DROP FOOTINGS TO CLEAR SERVICES WHERE ABSOLUTELY NECESSARY.
- PIPE SLEEVES SHALL BE PROVIDED AND INSTALLED WHERE PIPES ARE ROUTED THROUGH FOUNDATION WALLS. PIPE SLEEVES SHALL BE GROUTED IN WALLS. SEALANT SHALL BE APPLIED AROUND THE CONDUIT IN THE SLEEVE IN ORDER TO PREVENT INGRESS OF MOISTURE. THE WALL PENETRATION SHALL BE COMPLETELY WATERPROOFED.
- ALL PIPING PENETRATING A BEARING WALL OR FOOTING MUST BE SLEEVED AND LOCATION APPROVED BY STRUCTURAL ENGINEER.
- CONTRACTOR SHALL PROCURE AND PAY FOR ALL PERMITS, INSPECTIONS, ETC., TO PERFORM HIS WORK.
- VALVES AND FITTINGS SHALL BE OF SAME SIZE OF LINE ON WHICH THEY ARE LOCATED, UNLESS OTHERWISE INDICATED ON DRAWING.
- ALL SPRINKLER PIPING SHALL BE 1" INCH MINIMUM SIZE UNLESS OTHERWISE SHOWN ON THE DRAWINGS. PIPE SIZES SHALL BE DETERMINED BY CONTRACTOR'S HYDRAULIC CALCULATIONS BASED ON THEIR INSTALLATION DRAWINGS. CONTRACTOR SHALL ALLOW FOR THIS AND INCLUDE THIS IN THEIR CONTRACT PRICE.
- PROVIDE DRAIN VALVES PER NFPA #13 AND #24.
- SUPERVISORY VALVE TAMPER SWITCHES SHALL BE PROVIDED ON ALL CONTROL VALVES AND COORDINATED WITH THE FIRE ALARM CONTRACTOR FOR ELECTRONIC SUPERVISION.
- PROVIDE AND INSTALL WATER FLOW SWITCHES AND COORDINATE WITH THE FIRE ALARM CONTRACTOR FOR ELECTRONIC SUPERVISION.
- INSTALL SPRINKLERS BELOW DUCTS AND/OR COMBINATIONS OF DUCTS, CONDUIT, PIPING, AND EQUIPMENT MORE THAN 4 FEET WIDE IN ACCORDANCE WITH THE OBSTRUCTION REQUIREMENTS OF NFPA 13.
- DO NOT ROUTE FIRE PROTECTION PIPING NEAR ROOF-MOUNTED RELIEF HOOD DUCTWORK, COMBUSTION AIR INTAKE LOUVERS, OR ANY INTAKE OR RELIEF AIR DUCTWORK THAT MAY SUBJECT THE PIPING TO FREEZING CONDITIONS.
- AREAS WITH COMBUSTIBLE CONCEALED SPACES SHALL BE PROVIDED WITH ADDITIONAL AUTOMATIC SPRINKLER PROTECTION FOR THE INTERSTITIAL AREA, UNLESS CONFIGURED IN ACCORDANCE WITH THE ACCEPTATIONS PROVIDED BY NFPA 13, WHERE SUCH EXCEPTIONS ARE APPLIED, THEY SHALL BE REFERRED TO THE ARCHITECT/ENGINEER FOR APPROVAL AND DOCUMENTATION.

C. INSTALLATION NOTES

- NO CAPPING OR ISOLATING OF SPRINKLER PIPING ALLOWED. SPRINKLER PROTECTION SHALL REMAIN OPERATIONAL THROUGHOUT ALL PHASES OF CONSTRUCTION, EXCEPT AS OTHERWISE NOTED.
- SPRINKLER SHUTDOWNS ON A DAILY BASIS ONLY. SYSTEMS TO BE RESTORED AT THE END OF EACH WORK DAY. ALL SHUTDOWNS SHALL BE COORDINATED WITH THE GENERAL CONTRACTOR, BUILDING'S SECURITY, FIRE CONSOLE FIRE DEPARTMENT AND ALARM COMPANY AS APPLICABLE. RESTORATION OF SPRINKLER SYSTEM SHALL BE IN ACCORDANCE WITH BUILDING'S PROCEDURE AND ALL FIRE PROTECTION SYSTEMS (SPRINKLER AND ALARM) SHALL BE OPERATIONAL. SPRINKLER SYSTEM SHALL BE FILLED AFTER EACH WORK DAY AND SHALL NOT BE LEFT UNPROTECTED AT ANY TIME. WORK REQUIRING THE CLOSING OF ONE OR MORE CONTROL VALVES MUST BE CLOSELY COORDINATED WITH THE OWNER'S REPRESENTATIVE AND THE LOCAL FIRE DEPARTMENT, INSURANCE COMPANY, ETC., IF APPLICABLE. CONTRACTOR IS TO GIVE AT LEAST 24 HOURS NOTICE BEFORE PERFORMING ANY SPRINKLER WORK.

- PROVIDE AND INSTALL CLAMPS, OFFSETS, EXPANSION JOINTS, ANCHORS AND GUIDES AS NECESSARY TO PREVENT STRESS ON PIPING.
- CONTRACTOR SHALL COORDINATE ALL FIRE SPRINKLER WORK WITH THE HVAC, PLUMBING AND ELECTRICAL CONTRACTORS AND PROVIDE AND INSTALL REQUIRED PIPE OFFSETS, NEW PIPES AND DRAINS AS PART OF THE BASE CONTRACT WORK.
- TEFLON TAPE SHALL BE USED ON ALL SPRINKLER PIPING. NO PIPE DOPE ALLOWED.
- PROVIDE A MINIMUM OF SIX(6) SPARE HEADS AND WRENCHES IN A CABINET-MOUNTED ADJACENT TO THE SPRINKLER RISER, PER NFPA 13.
- DI-ELECTRIC UNIONS AND FLANGES SHALL BE USED ON ALL CONNECTIONS BETWEEN DISSIMILAR METALS.
- ALL VALVES SHALL BE CLEARLY IDENTIFIED WITH BRASS VALVE TAGS WITH BLACK STAMPED LETTERING COMPLIANT WITH ANSIA/ASME A13.1 STANDARD OR RED PLASTIC BACKGROUND WITH ENGRAVED WHITE LETTERING. PROVIDE AND INSTALL HANG METAL CHAIN. VALVE NUMBER SHALL BE KEYED TO THE AS-BUILT DRAWING SHOWING VALVE TYPE, SIZE AND LOCATION.
- PROVIDE AND INSTALL A METAL HYDRAULIC DESIGNED SYSTEM SIGN COMPLIANT WITH NFPA 13 2018 - 25.5 AND MOUNTING HARDWARE.
- ALL PIPES FOR ANY SERVICE SHALL BE IDENTIFIED AS TO THEIR SERVICE BY COMMERCIALY AVAILABLE, COLOR-CODED SELF-STICKING VINYL PIPE MARKERS. MARKING SHALL INCLUDE PIPE CONTENT AND DIRECTION OF FLUID FLOW IN ACCORDANCE WITH ANSIA/ASME A13.1. PIPES SHALL BE MARKED ADJACENT TO ALL VALVES AND FLANGES, BOTH SIDES OF A FLOOR, CHANGE IN DIRECTION AND AT 25' INTERVALS ON STRAIGHT RUNS.
- ALL PIPING SHALL BE RUN PARALLEL TO BUILDING LINES AND COORDINATED WITH OTHER CONTRACT DOCUMENTS. PIPE IS TO BE SUPPORTED AND ANCHORED AS REQUIRED TO FACILITATE EXPANSION AND CONTRACTION.
- ALL FIRE PROTECTION SPRINKLER SERVICES GOING INTO THE BUILDING AND LEAVING THE BUILDING SHALL BE CONNECTED TO THE SITE UTILITIES, COORDINATED WITH SITE UTILITIES COMPANY AND CIVIL DRAWINGS, COORDINATE ALL EXTERIOR UNDERGROUND PIPING WORK WITH THE SITE UTILITIES BEFORE COMMENCING WORK. COORDINATE ALL UNDERGROUND PIPING WITH FOUNDATION DRAWINGS.
- ALL PIPING SHALL BE SUPPORTED FROM THE STRUCTURE AND SHALL NOT BE SUPPORTED FROM THE ROOF DECK OR OTHER PIPING/EQUIPMENT/DUCTS. THERE SHALL BE NO EXCEPTIONS TO THIS.
- DO NOT USE SPRINKLER PIPING OR HANGERS TO SUPPORT NON-SYSTEM COMPONENTS.
- INSPECTOR'S TEST CONNECTIONS, DRAIN VALVES, AND CONTROL VALVES SHALL BE READILY ACCESSIBLE AND INSTALLED NOT OVER 7 FEET - 0 INCHES ABOVE THE FINISHED FLOOR.
- ALL PIPING SHALL BE CONCEALED IN FURRED CHASES OR ABOVE SUSPENDED CEILING (CLEAR OF CEILING INSERTS) EXCEPT IN UNFINISHED SPACES. INSTALL PIPING TO MEET ALL CONSTRUCTION CONDITIONS AND TO ALLOW FOR INSTALLATION OF OTHER WORK INCLUDING BUT NOT LIMITED TO HVAC PIPING, DUCTWORK, HVAC EQUIPMENT, ELECTRICAL CONDUIT AND ELECTRICAL EQUIPMENT THAT IS TO BE INSTALLED WITH THE OTHER CONTRACTORS.
- ALL SPRINKLER LINES PASSING THROUGH FIRE-RATED WALLS (SEE ARCHITECTURAL DRAWINGS FOR EXACT EXTENT OF NEW RATED WALLS) SHALL BE SLEEVED AND SHALL HAVE THEIR PENETRATIONS THROUGH SUCH WALLS FIRE-STOPPED WITH A PENETRATION SEALING SYSTEM MEETING THE RESPECTIVE UL RATING OF THE WALL.
- ACCESS DOORS AND/OR PANELS SHALL BE PROVIDED AT ALL MAINTENANCE AND SERVICE LOCATIONS FOR CONCEALED CONTROL DEVICES, VALVES, DRAIN POINT OR SIMILAR ITEMS AND FIRE PROTECTION SPRINKLER EQUIPMENT/DEVICES. UNLESS A SIZE IS SPECIFICALLY NOTED, PANELS SHALL BE SIZED TO SERVICE EQUIPMENT/DEVICE. DOORS AND PANELS SHALL HAVE THE SAME FIRE RATING AS THE WALL OR CEILING IN WHICH THEY ARE INSTALLED. ACCESS DOORS AND/OR PANELS ARE NOT REQUIRED WHERE ADJUSTMENT, MAINTENANCE AND REPLACEMENT ARE POSSIBLE THROUGH LAY IN SUSPENDED CEILING.
- ALL WORK INSTALLED BY THIS CONTRACTOR SHALL BE INSTALLED IN SUCH A MANNER AS TO CLEAR ALL LIGHT FIXTURES, CEILING CONSTRUCTION, PLUMBING PIPES AND CONDUITS, ETC.
- ALIGN SPRINKLER HEADS WITH LIGHT FIXTURES. COORDINATE SPRINKLER HEADS WITH DIMENSIONS ON ARCHITECTURAL DRAWINGS.
- SPRINKLER HEADS SHALL BE INSTALLED IN THE CENTER LINE OF TILES UNLESS OTHERWISE NOTED. CONTRACTOR SHALL ALLOW FOR ALL REQUIRED FITTINGS TO ACHIEVE THIS AND INCLUDE THIS IN THEIR CONTRACT PRICE.
- AT THE COMPLETION OF THE WORK AND PRIOR TO THE FINAL ACCEPTANCE, ALL PARTS OF THE WORK SHALL BE THOROUGHLY CLEANED.
- CONTRACTOR SHALL BE HELD RESPONSIBLE FOR TESTING OF THE SPRINKLER SYSTEM UPON COMPLETION OF HIS/HER WORK. THE SPRINKLER SYSTEM SHALL BE TESTED HYDROSTATICALLY FOR TWO (2) HOURS WITHOUT VISIBLE LEAKAGE AT NOT LESS THAN 200 PSI. CONTRACTOR SHALL VERIFY WITH LOCAL OFFICIAL IF HE/SHE IS REQUIRED TO WITNESS HYDROSTATIC TEST.

FIRE PROTECTION ABBREVIATIONS

A		I	
ABD	Automatic Ball	ID	Inside Diameter
ACV	Alarm Check Valve W/ All Related Appurtenances	IN	Inch
AFF	Above Finished Floor	INV	Invert Elevation
AP	Access Panel	IW	Indirect Waste
ATS	Automatic Transfer Switch		
B		J	
BLDG	Building	JS	Janitor Sink
BOB	Bottom Of The Beam		
BOP	Bottom Of Pipe	M	
		MAX	Maximum
		MH	Manhole
		MIN	Minimum
C		N	
CFH	Cubic Feet Per Hour	(N)	Now
CFM	Cubic Feet Per Minute	NC	Normally Closed
QFS	Cubic Feet Per Second	NFPA	National Fire Protection Association
CI	Cast Iron	NIC	Not In This Contract
CLG	Ceiling	NO	Normally Open
CO	Cleanout		
CONN	Connection	O	
CONT	Continuation	OS&Y	Outside Screw & York Gate Valve
COTG	Cleanout To Grade		
CV	Check Valve	P	
D		P/FT	Pitch Per Foot
DCVA	Double Check Valve Assembly	PIV	Post Indicating Valve
DIA	Diameter	PLBG	Plumbing
DLV	Deluge Valve With All Related Appurtenances	POC	Point Of Connection
DN	Down	PRV	Pressure Reducing Valve
DR	Drain	PSI	Pounds Per Square Inch
DROP	Drop (Within Floor)	PSIG	Pounds Per Square Inch (Gauge)
DSP	Dry Sprinkler		
DFS	Dry Fire Standpipe	R	
DPV	Dry Pipe Valve W/ All Related Appurtenances	RC	Roof Receptor
DWG	Drawing	RD	Roof Drain
		RISE	Rise (With In Floor)
		RW	Reclaimed Water
E		S	
(E)	Existing	SA	Shock Absorber
ET	Expansion Tank	SAN	Sanitary
EL	Elevation	SD	Smoke Detector
		SF	Square Feet
		SK	Sink
		SPKR	Sprinkler
		ST	Storm Piping
F		T	
FCO	Floor Cleanout	TDH	Total Discharge Head
FD	Floor Drain	TOP	Top Of Pipe
FDC	Fire Department Connection	TOS	Top Of Slab
FHC	Fire Hose Cabinet	TS	Tamper Switch
FHR	Fire Hose Rack	TYP	Typical
FHV	Fire Hose Valve		
FHVC	Fire Hose Valve Cabinet	U	
FL	Floor	UON	Unless Otherwise Noted
FP	Fire Protection	UP	Up (Penetrates Floor Slab)
FS	Flow Switch		
FSK	Floor Sink	V	
FSP	Fire Standpipe	VB	Vacuum Breaker
FT	Feet		
G		Z	
GAL	Gallons	Z	Zone
GPM	Gallons Per Minute		
GV	Gate Valve		
H			
HB	Hose Bibb		
HD	Hub Drain		

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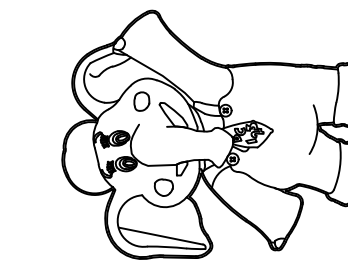
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PROFESSIONAL CERTIFICATION

NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 014089

Project Number: TLEVA23-034 Scale: AS NOTED

Drawn By: LN Approved By: MBJ

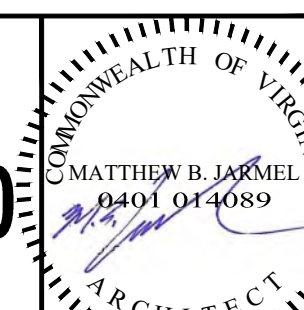
Drawing Name:

FIRE PROTECTION GENERAL NOTES AND SCHEDULES

Drawing Number:

FP-100

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



SPRINKLER SPECIFICATION

- ALL NEW SPRINKLER PIPING SHALL BE THREADED SCHEDULE 40 BLACK STEEL, NO MORE THAN TWO (2) SPRINKLER HEADS SHALL BE SUPPLIED BY A 1" DIA. BRANCH LINE. PROVIDE SEISMIC RESTRAIN.

FIRE PROTECTION LEGEND

- NEW CONCEALED SPRINKLER HEAD: TEMP. RATING-135F", 1/2" NOMINAL ORIFICE WITH 1"NPT(R12), "K" FACTOR-5.62, OR APPROVED BUILDING STANDARD.
- NEW CONCEALED SPRINKLER HEAD (DRY): "TYCO" RAVEN 5.6K, TEMP. RATING (165 F)", 1/2" ORIFICE WITH 1/2" NPT (R12)
- NEW UPRIGHT INTERMEDIATE SPRINKLER HEAD: TEMP. RATING -175 F", 1/2" ORIFICE WITH 1/2"NPT(R12), "K" FACTOR -5.62, OR APPROVED BUILDING STANDARD.
- NEW SIDE WALL SPRINKLER HEAD: TEMP. RATING-165 F", 1/2" ORIFICE WITH 1/2" NPT, "K" FACTOR - 5.6 OR APPROVED BUILDING STANDARD

MAXIMUM DISTANCE BETWEEN HANGERS. (FT-IN.)

NOMINAL PIPE SIZE (IN.)	3/4	1	1 1/4	1 1/2	2	2 1/2	3	4	5	6	7	8
STEEL PIPE	N/A	12-0	12-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0	15-0

SCOPE OF WORK

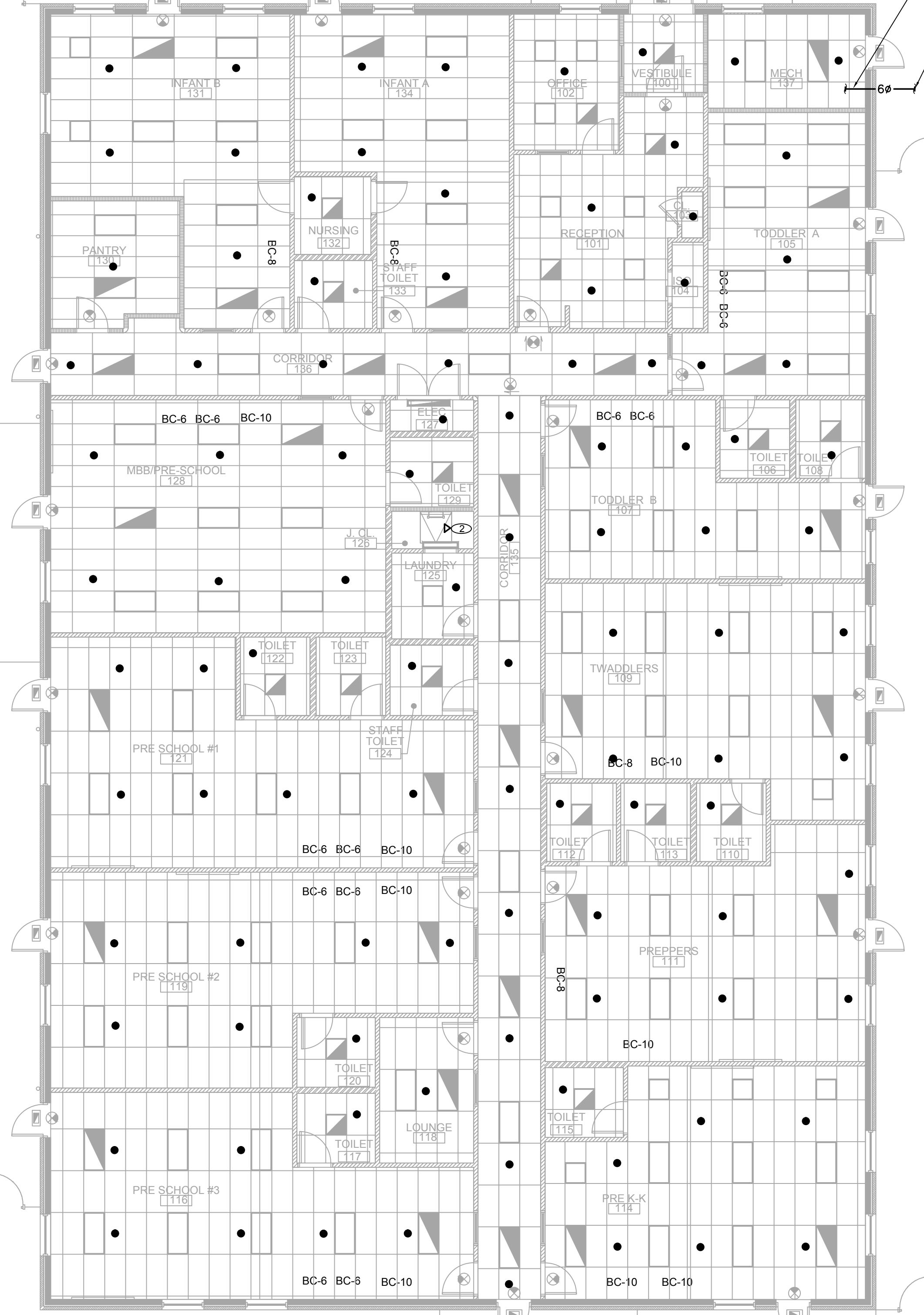
- UNDER THIS CONTRACT, THE CONTRACTOR IS TO INSTALL NEW PIPING AND NEW SPRINKLER HEADS TO ACCOMMODATE THE HEAD LOCATION SHOWN ON FP-200 DRAWING.
- THE SYSTEMS SHALL BE HYDRAULICALLY DESIGNED AND INSTALLED AS FOLLOWS:
 - WET SYSTEM**
 - STORAGE AREA: ORDINARY HAZARD OCCUPANCY BASED UPON MAX. SPRINKLER COVERAGE OF 130 SF WITH 0.15 GPM/SF DENSITY OVER THE MOST REMOTE 1,500 SF.**
 - OFFICE / CLASSROOM AREA: LIGHT HAZARD OCCUPANCY BASED UPON MAX. SPRINKLER COVERAGE OF 225 SF WITH 0.10 GPM/SF DENSITY OVER THE MOST REMOTE 1,500 SF.**
 - DRY SYSTEM**
 - ATTIC AREA / CANOPY: AS PER NFPA REQUIREMENTS.**

PRESCHOOL PLAYGROUND

NOTE:
REFER TO A-011 FOR FIRE EXTINGUISHER LOCATIONS

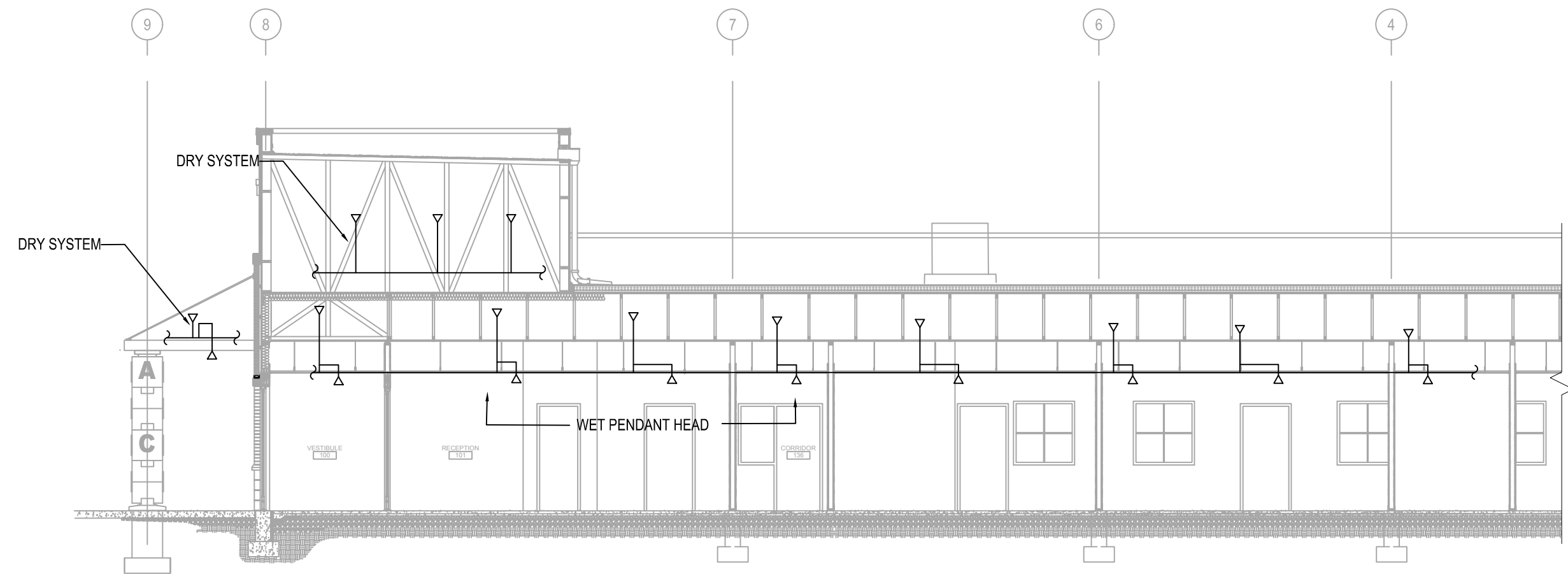
DRY SYSTEM
FOR CANOPY

6" FIRE PROTECTION SERVICE
LINE CONTINUED FROM SITE. SEE
APPROVED CIVIL PLANS FOR
CONTINUATION



1 FIRE PROTECTION PLAN
SCALE: 1/8"=1'-0"

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2 TYPICAL LOCATIONS OF SPRINKLER HEADS
SCALE: 1/8" = 1'-0"

SHEET NOTES:

1. ALL SPRINKLER HEADS SHALL BE CONCEALED.
2. FOR DETAILED INFORMATION OF SPACE ALLOCATION IN MECHANICAL ROOM SEE ELECTRICAL DRAWINGS.

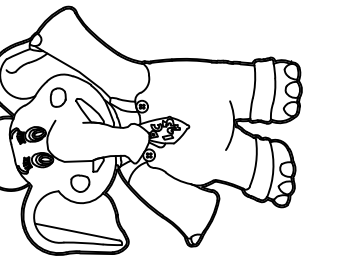
KEY NOTES:

1. 6" FIRE WATER FROM SITE. SEE APPROVED CIVIL DRAWINGS FOR CONTINUATION.
2. ACCESS/MAINTENANCE DOOR IN CEILING SHALL NOT BE BLOCKED BY ANY DUCT, PIPES OR OTHER FIXED OBJECTS.



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PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARME
LICENSE NUMBER: 0401 014089

Project Number: TLEVA23-034 Scale: AS NOTED
Drawn By: LN Approved By: MBJ

Drawing Name:
FIRE PROTECTION PLANS

Drawing Number:
FP-200

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.



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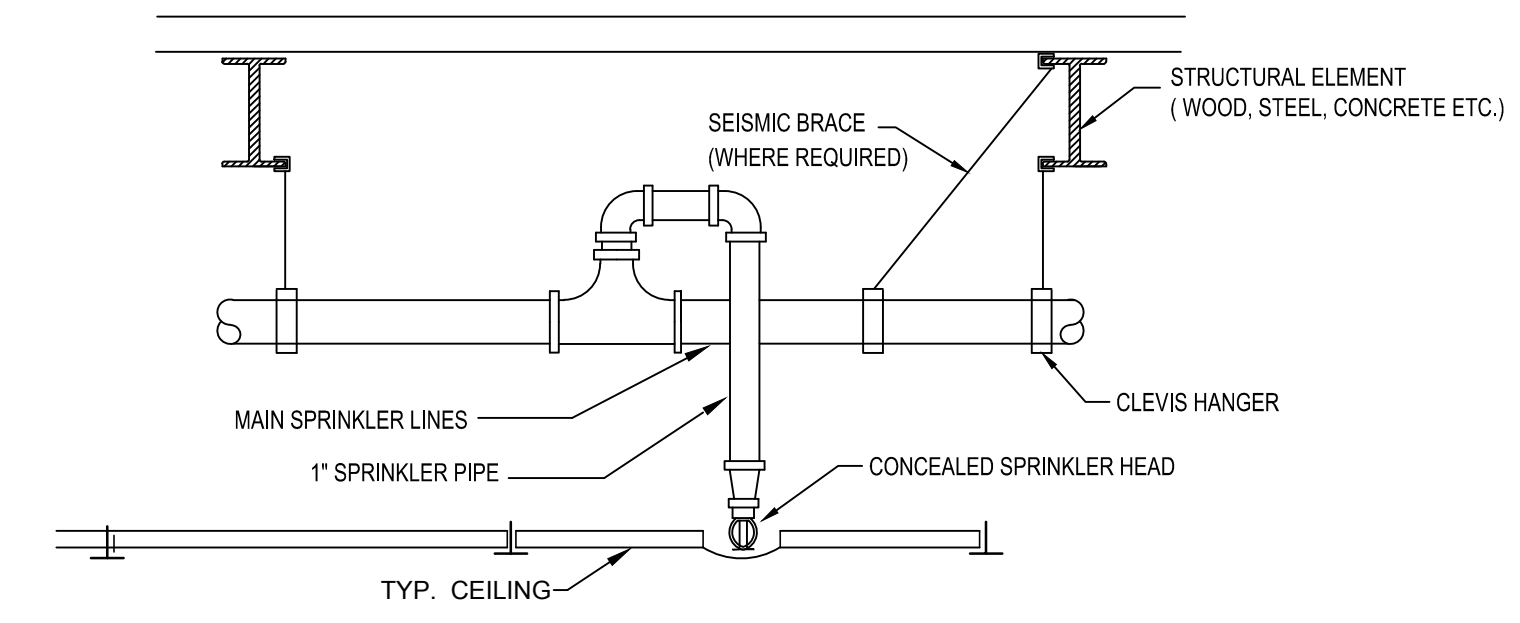


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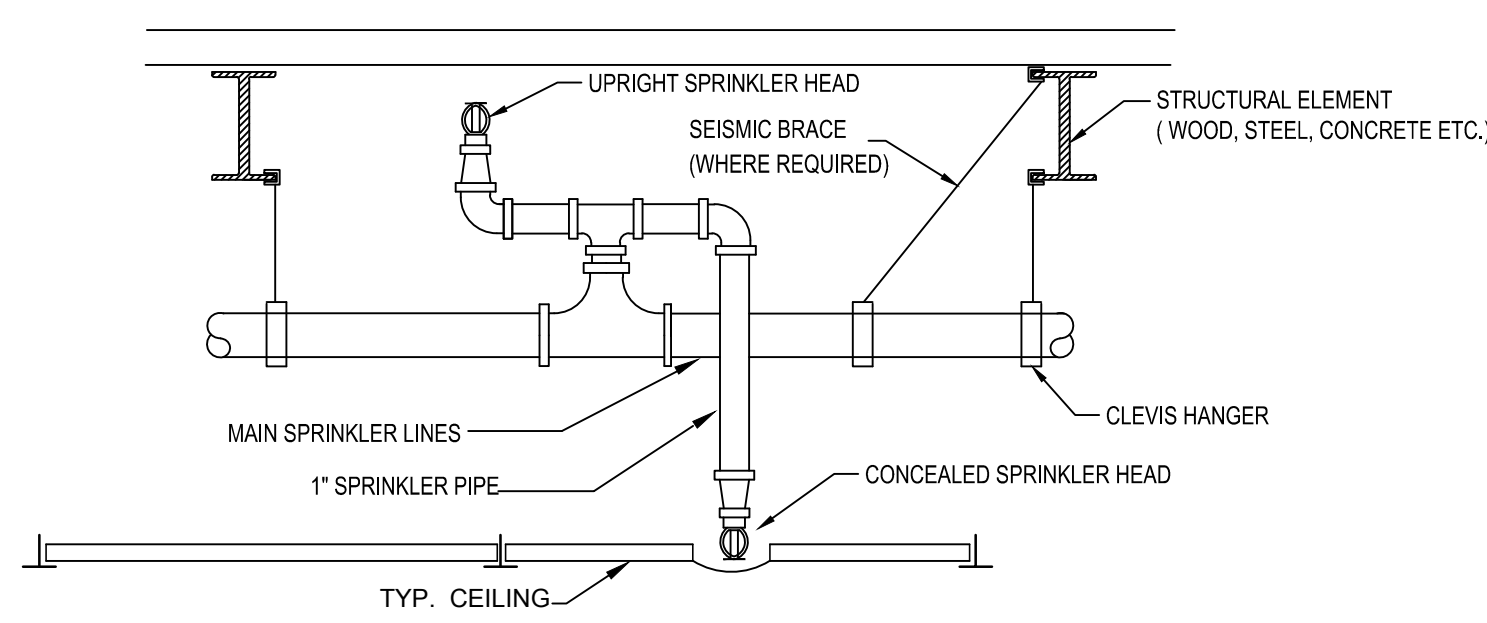
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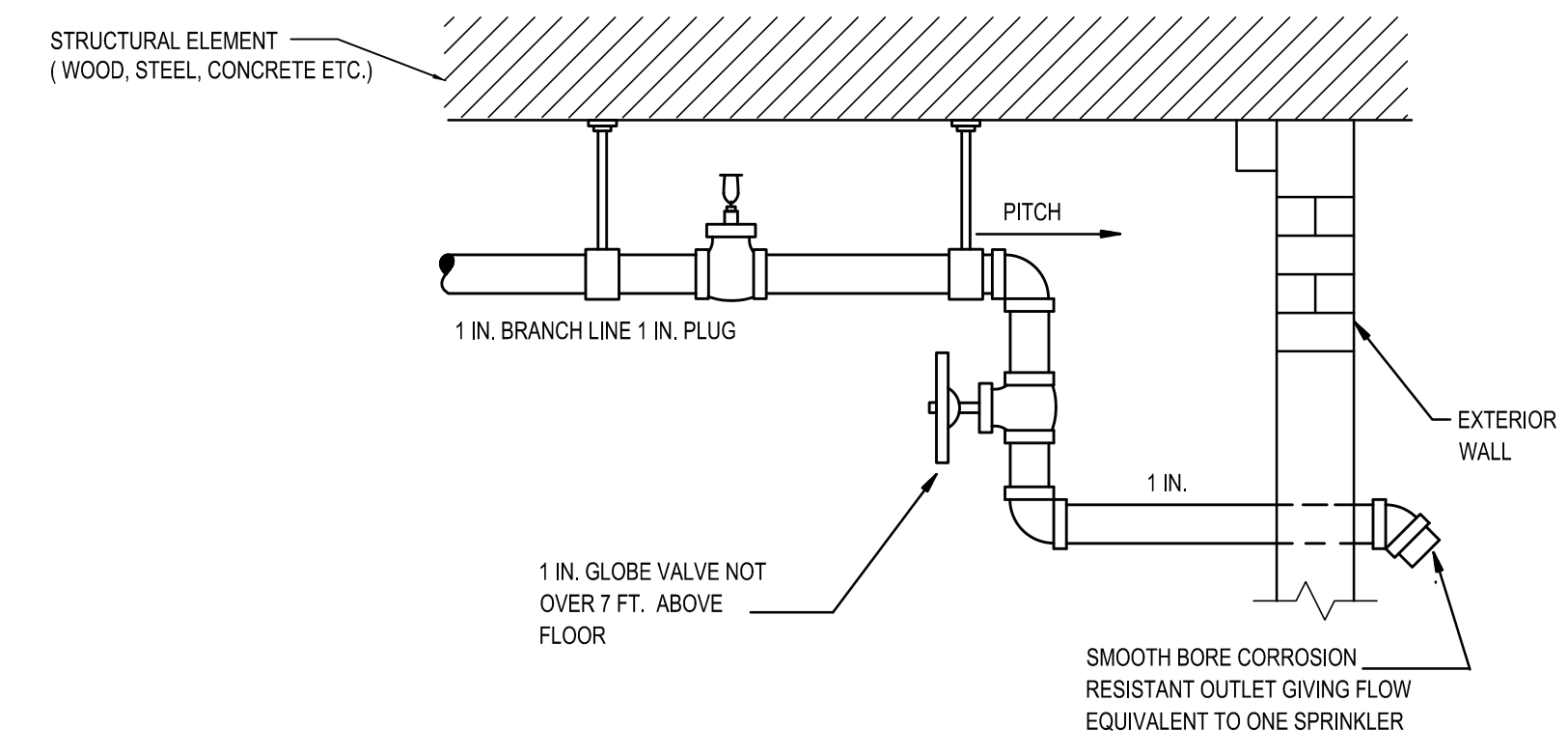
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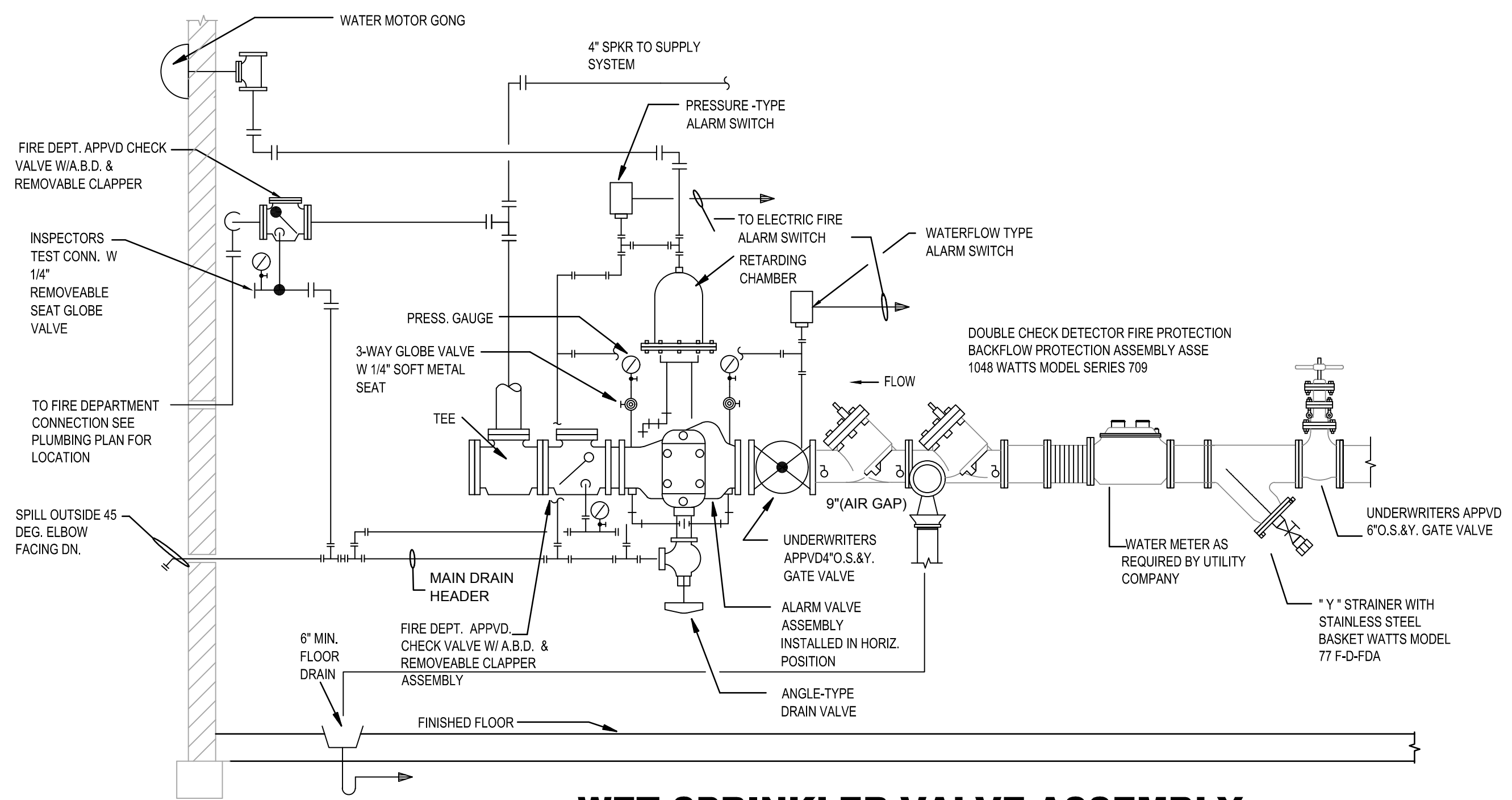
1 SPRINKLER HEAD DIAGRAM
 SCALE: N.T.S.



2 UPRIGHT SPRINKLER HEAD DIAGRAM
 SCALE: N.T.S.



3 INSPECTOR'S TEST CONNECTION WET SYSTEM
 SCALE: N.T.S.



6 WET SPRINKLER VALVE ASSEMBLY
 SCALE: N.T.S.

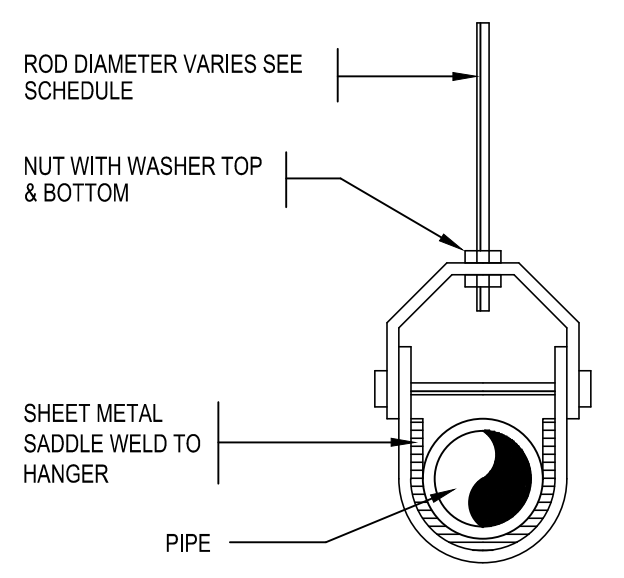
DISTANCE FROM SPRINKLER TO SIDE OF BEAM

LESS THAN 1 FT.	0 INCH
1 FT TO LESS THAN 2 FT.	1 INCH
2 FT TO LESS THAN 2 FT 6 INCH.	2 INCH
2 FT 6 INCH TO LESS THAN 3 FT.	3 INCH
3 FT TO LESS THAN 3 FT 6 INCH.	4 INCH
3 FT 6 INCH TO LESS THAN 4 FT.	6 INCH
4 FT TO LESS THAN 4 FT 6 INCH.	7 INCH
4 FT 6 INCH TO LESS THAN 5 FT.	9 INCH
5 FT TO LESS THAN 5 FT 6 INCH.	11 INCH
5 FT 6 INCH TO LESS THAN 6 FT.	14 INCH

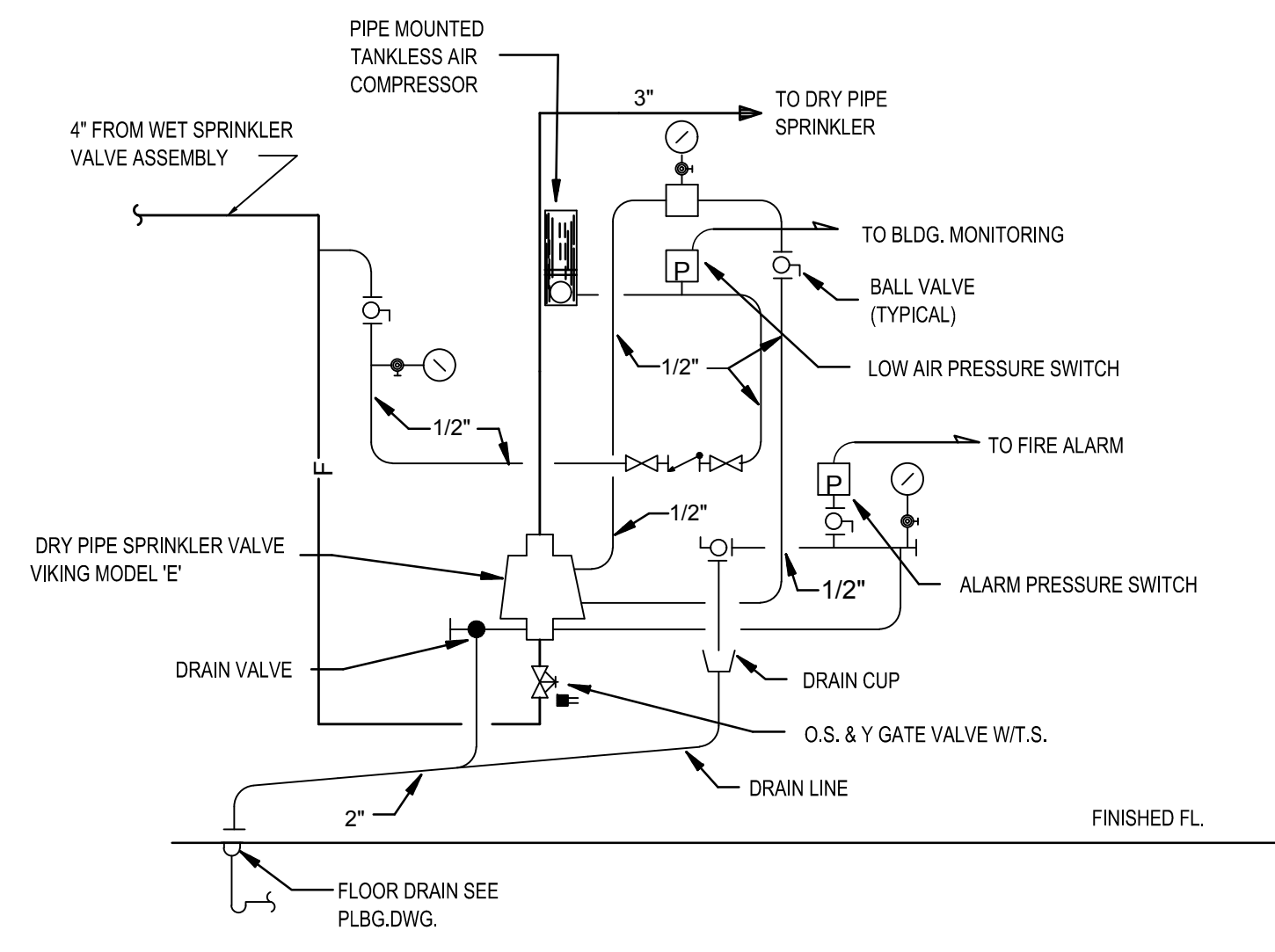
MAXIMUM ALLOWABLE DISTANCE DEFLECTOR ABOVE BOTTOM OF BEAM

ROD SCHEDULE

PIPE SIZE	ROD SIZE	SPACING
1/2"	3/8"	5'-8"
3/4"	3/8"	5'-8"
1"	3/8"	5'-8"
1 1/4"	3/8"	6'-10"
1 1/2"	3/8"	8'-10"
2"	3/8"	10'-12"
2 1/2"	3/8"	10'-12"
3"	3/8"	10'-12"
4"	1/2"	12'-15"
5"	1/2"	12'-15"
6"	1/2"	12'-15"



5 HANGER DIAGRAM
 SCALE: N.T.S.



4 DRY SPRINKLER VALVE ASSEMBLY
 SCALE: N.T.S.

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PROFESSIONAL CERTIFICATION
 NAME OF LICENSEE: MATTHEW B. JARMEL
 LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034
 Scale: AS NOTED
 Drawn By: LN
 Approved By: MBJ

Drawing Name:
FIRE PROTECTION DIAGRAMS

Drawing Number:
FP-300

MATTHEW B. JARMEL
 0401 014089
 ARCHITECT

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

DRAWINGS TITLE - THE LEARNING EXPERIENCE TITLE - WINCHESTERVA 2600 PLEASANT VALLEY WAY CDSITILEV23-034-ELECTRICAL - FIRE ALARM RISER - ADIBI - PLOTTED: 12/19/2023

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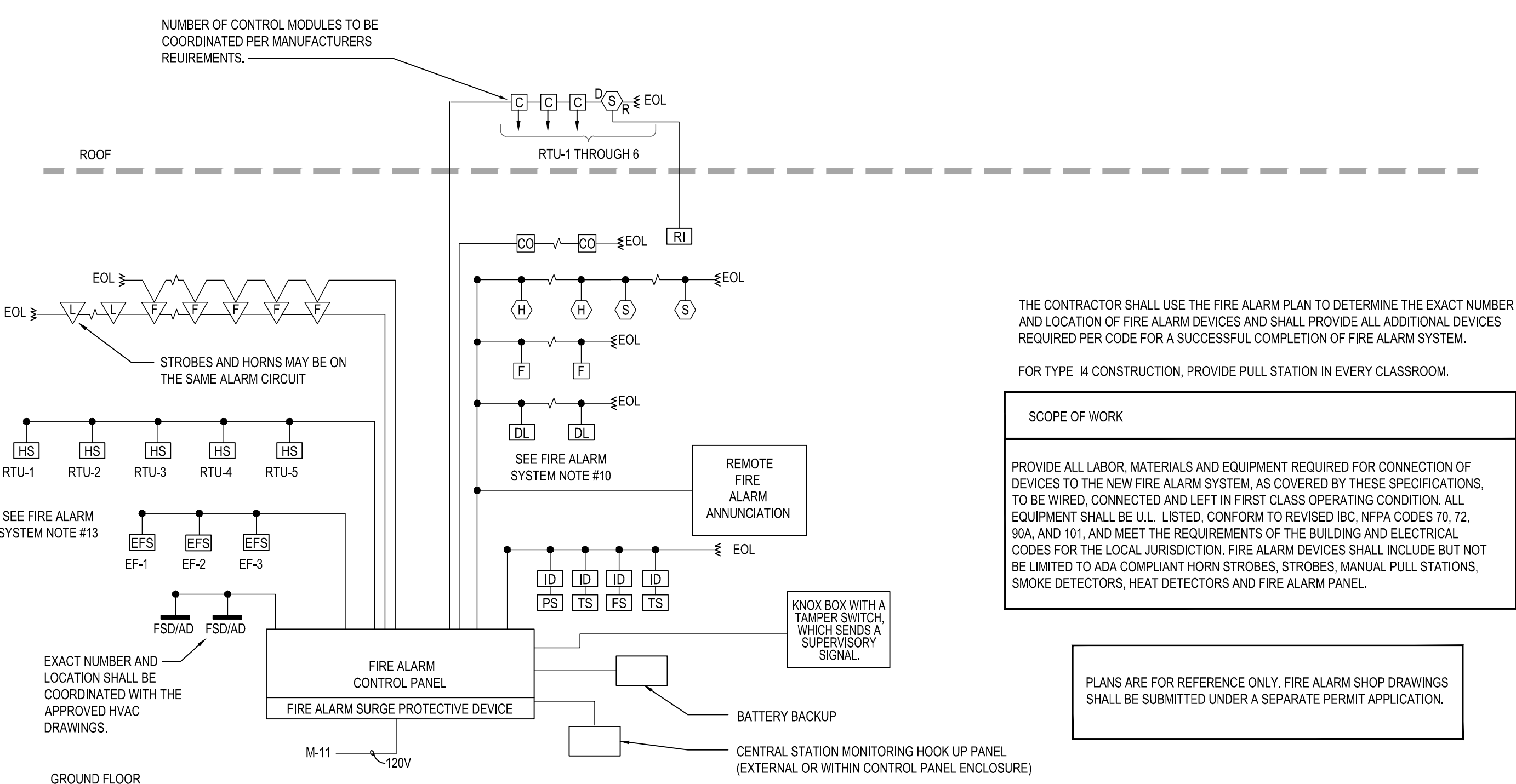
FIRE ALARM SYSTEM LEGEND	
F	NEW MANUAL PULL STATION
CP F	NEW MANUAL PULL STATION WITH CHLD PROOF COVER. NO GLASS COVER ALLOWED.
V	NEW AUDIBLE AND VISUAL ALARM SIGNAL
V	NEW VISUAL ONLY ALARM SIGNAL
S	NEW ADDRESSABLE SMOKE DETECTOR W/ HEAT DETECTOR.
H	NEW HEAT DETECTOR
S	NEW SMOKE DETECTOR ELEVATOR RECALL
D S R S	"D" DENOTES ADDRESSABLE DUCT MOUNTED SMOKE DETECTOR. "R" DENOTES MOUNTED ON RETURN SIDE "S" DENOTES MOUNTED ON SUPPLY SIDE
CO	NEW CARBON MONOXIDE DETECTOR, BATTERY POWERED BACK UP WITH SOUNDER BASE INTEGRATED INTO FACP.
C	ADDRESSABLE CONTROL MODULE
RI	REMOTE INDICATOR
AR	AREA OF REFUSE
FS	FLOW SWITCH ON FIRE PROTECTION PIPING
TS	TAMPER SWITCH ON FIRE PROTECTION VALVE
PS	PRESSURE SWITCH
HS	HVAC UNIT EMERGENCY SHUT-OFF SWITCH
EFS	EXHAUST FAN EMERGENCY SHUT-OFF SWITCH
FACP	FIRE ALARM CONTROL PANEL
FAA	REMOTE FIRE ALARM ANNUNCIATION
BACP	BURGLAR ALARM KEYPAD
ID	ADDRESSABLE INITIATING DEVICE CIRCUIT INTERFACE MODULE
KP	KEY PAD
M	ADDRESSABLE CONTACT MONITOR MODULE
DL	DOOR LOCK
EOL	END OF LINE RESISTOR
FSDAD	FIRE SMOKE DAMPERS / SMOKE DAMPERS WITH ACCESS DOOR
SDIAD	FIRE SMOKE DAMPERS / SMOKE DAMPERS WITH ACCESS DOOR
M	NEW ADDRESSABLE COMBO SMOKE/CO/HEAT/FLAME DETECTOR FIRE LITE ALARMS BY HONEYWELL WITH SOUNDER BASE - SD365CO OR APPROVED EQUAL.

- FIRE ALARM GENERAL NOTES:**
1. THIS DIAGRAM IS GENERALIZED REPRESENTATION INTENDED TO SHOW OVERALL ARRANGEMENT OF THE FIRE ALARM SYSTEM AND RELATIONSHIPS TO OTHER BUILDING SYSTEMS
 2. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS DETAILING, BUT NOT LIMITED TO, ALL OF THE FOLLOWING:
1. BATTERY CALCULATIONS.
2. CONDUCTOR TYPE AND SIZES.
3. VOLTAGE DROP CALCULATIONS.
4. MANUFACTURER'S MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS.
5. THE INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS.
 3. ALL WIRING AND CONDUIT SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, MANUFACTURER WIRING DIAGRAMS AND SHOP DRAWINGS.
 4. THE CONTRACTOR SHALL PROVIDE ALL MATERIALS AND DEVICES AS REQUIRED FOR A COMPLETE AND OPERATIONAL SYSTEM. THE CONTRACTOR SHALL PROVIDE ALL INTERCONNECTING WIRING BETWEEN FIRE ALARM AND HVAC/ATC EQUIPMENT AS INDICATED AND/OR AS REQUIRED.
 5. FOR NUMBER AND LOCATION OF DUCT SMOKE DETECTORS REFER TO HVAC DRAWINGS. DUCT DETECTORS ARE TO BE WIRED TO THE FIRE ALARM CONTROL PANEL.
 6. FOR NUMBER AND LOCATION OF PRESSURE, FLOW AND TAMPER SWITCHES REFER TO FIRE PROTECTION DRAWINGS
 7. FIRE ALARM SYSTEM SHALL COMPLY WITH NFPA 72 "NATIONAL FIRE ALARM CODE"
 8. SYSTEM SHALL BE TESTED AS PER NFPA 13 REQUIREMENTS.
 9. ALL FIRE ALARM WIRING SHALL BE CLASS A.

NOTE:
VOICE EVACUATION IS REQUIRED FOR GROUP I-4 DAY CARE OCCUPANCIES. A MANUAL FIRE ALARM SYSTEM THAT INITIATES THE OCCUPANT NOTIFICATION SIGNAL UTILIZING AN EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM MEETING THE REQUIREMENTS OF SECTION 907.5.2.2 AND INSTALLED IN ACCORDANCE WITH SECTION 907.6 SHALL BE INSTALLED IN GROUP I-4 OCCUPANCIES. WHEN AUTOMATIC SPRINKLER SYSTEMS OR SMOKE DETECTORS ARE INSTALLED, SUCH SYSTEMS OR DETECTORS SHALL BE CONNECTED TO THE BUILDING FIRE ALARM SYSTEM. IBC 907.2.3 EXCEPTIONS:
a. A MANUAL FIRE ALARM SYSTEM IS NOT REQUIRED IN GROUP I-4 OCCUPANCIES WITH AN OCCUPANT LOAD OF 30 OR LESS.
b. MANUAL FIRE ALARM BOXES ARE NOT REQUIRED IN GROUP I-4 OCCUPANCIES WHERE ALL OF THE FOLLOWING APPLY:
(1) INTERIOR CORRIDORS ARE PROTECTED BY SMOKE DETECTORS.
(2) AUDITORIUMS, CAFETERIAS, GYMNASIUMS AND SIMILAR AREAS ARE PROTECTED BY HEAT DETECTORS OR OTHER APPROVED DETECTION DEVICES.
(3) SHOPS AND LABORATORIES INVOLVING DUSTS OR VAPORS ARE PROTECTED BY HEAT DETECTORS OR OTHER APPROVED DETECTION DEVICES.
c. MANUAL FIRE ALARM BOXES SHALL NOT BE REQUIRED IN GROUP I-4 OCCUPANCIES WHERE THE BUILDING IS EQUIPPED THROUGHOUT WITH AN APPROVED AUTOMATIC SPRINKLER SYSTEM INSTALLED IN ACCORDANCE WITH SECTION 903.3.1.1. THE EMERGENCY VOICE/ALARM COMMUNICATION SYSTEM WILL ACTIVATE ON SPRINKLER WATER FLOW AND MANUAL ACTIVATION IS PROVIDED FROM A NORMALLY OCCUPIED LOCATION.

FIRE ALARM SYSTEM NOTES

- A. GENERAL
 1. GENERAL NOTES, SYMBOLS LIST AND DETAILS ARE APPLICABLE TO ALL DRAWINGS MARKED "FA".
 2. THE CONTRACTOR SHALL FILE ALL DRAWINGS PER STATE AND LOCAL CODES, OBTAIN AND PAY FOR ALL PERMITS, PROVIDE CALCULATIONS, AND FINAL INSPECTIONS.
 3. THE CONTRACTOR SHALL FURNISH AND INSTALL THE FIRE ALARM SYSTEM IN A MANNER WHICH PROVIDES A COMPLETE AND OPERATIONAL ALARM SYSTEM, WITH ALL EQUIPMENT, WIRE MANAGEMENT, DEVICES PERMITS HANGERS, TRIM, ACCESSORIES AND ASSOCIATED AND INCIDENTAL WORK IN ACCORDANCE WITH THE APPLICABLE CODES, ALL AUTHORITIES HAVING JURISDICTION, AND PER THE CONSTRUCTION DOCUMENTS. UNLESS OTHERWISE NOTED, IT IS THE INTENT OF THESE DOCUMENTS TO PROVIDE AN APPROVED ADDRESSABLE FIRE ALARM SYSTEM THROUGHOUT THE ENTIRE PROJECT.
 4. CONTRACTOR SHALL INCLUDE THE COST OF ALL SMALL DETAILS, INCIDENTAL WORK, AND ACCESSORIES NOT SHOWN OR SPECIFIED, BUT WHICH CAN BE REASONABLY INFERRED FOR COMPLETE AND SATISFACTORY CODE COMPLIANT SYSTEM. PROVIDE ALL ITEMS TO ACCOMPLISH REQUIREMENTS OF COORDINATION WITHOUT ADDITIONAL EXPENSE.
 5. BASE BID SHALL INCLUDE ALL CABLE MANAGEMENT HARDWARE AS SPECIFIED AND REQUIRED BY CODE.
 6. ALL NEW FIRE ALARM WORK SHALL CONFORM TO THE REQUIREMENTS OF APPLICABLE SECTIONS OF NFPA 72 NATIONAL FIRE ALARM AND SIGNALING CODE BUILDING DEPARTMENT, FIRE DEPARTMENT AND OTHER LOCAL AUTHORITIES HAVING JURISDICTION.
 7. THE OPERATION OF FIRE ALARM INSTALLATION DOES NOT CONSTITUTE AN ACCEPTANCE OF WORK BY THE OWNER. FINAL ACCEPTANCE IS TO BE MADE AFTER THE CONTRACTOR HAS DEMONSTRATED THAT THE WORK FULFILLS THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS AND HAS FURNISHED ALL REQUIRED CERTIFICATES OF APPROVAL FROM THE STATE AUTHORITIES, MUNICIPAL AUTHORITIES AND INSURANCE UNDERWRITERS.
 - B. DRAWINGS/DESIGN
 1. THESE DOCUMENTS DEPICT A PERFORMANCE LEVEL ENGINEERING DESIGN LAYOUT TO BE UTILIZED AS GUIDANCE FOR THE PLANNING OF THE FIRE ALARM SYSTEM BY THE CONTRACTOR. PROVIDE COMPLETE DOCUMENTS FOR REVIEW AND APPROVAL FROM THE ARCHITECT/ENGINEER OF RECORD, AND THE AUTHORITY HAVING JURISDICTION AND PRIOR TO INSTALLATION.
 2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE DESIGN AND INSTALLATION OF THE FIRE ALARM SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES AND REQUIREMENTS, INCLUDING BUT NOT LIMITED TO APPLICABLE NFPA CODES AND STANDARDS, LOCAL AUTHORITIES HAVING JURISDICTION, OWNER'S PROPERTY INSURANCE CARRIER GUIDELINES, AND OWNER-SPECIFIED DIRECTION.
 3. THE CONTRACTOR SHALL PROVIDE ALL INTERCONNECTING WIRING BETWEEN THE FIRE ALARM AND HVAC, AUTOMATED TEMPERATURE CONTROL (ATC) AND ELECTRONIC DROD HARDWARE EQUIPMENT OR SYSTEMS AS INDICATED AND/OR AS REQUIRED PER NFPA 72 OR AUTHORITIES HAVING JURISDICTION.
 4. THE FIRE ALARM SYSTEM SHALL HAVE ALL INITIATING, MONITORING AND CONTROL DEVICES. SYSTEM SHALL BE A FULLY ADDRESSABLE TYPE SYSTEM.
 5. ALL WIRING AND CONDUIT SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS, MANUFACTURER WIRING DIAGRAMS AND SHOP DRAWINGS.
 6. THE FIRE ALARM SYSTEM SHALL BE DIRECTLY CONNECTED TO THE DESIGNATED DISPATCH CENTER OF THE LOCAL FIRE PROTECTION DISTRICT VIA APPROVED RADIO COVERAGE FOR EMERGENCY RESPONDERS AS SPECIFIED BY THE LOCAL FIRE MARSHAL. SYSTEM TO BE VERIFIED IN THE FIELD BY THE LOCAL FIRE MARSHAL.
 7. THE FIRE ALARM SYSTEM SHALL HAVE THE CAPABILITY TO PROVIDE CENTRAL STATION MONITORING USING AN AUTO DIALER VIA PHONE LINE FOR INTERFACE BETWEEN SECURITY SYSTEMS, APPROVED BY THE LOCAL FIRE MARSHAL.
 8. THE FIRE ALARM SYSTEM SHALL NORMALLY BE POWERED BY A UTILITY DISTRIBUTION SYSTEM. THE FIRE ALARM CONTROL PANEL SHALL HAVE AN INTEGRAL STANDBY SEALED RECHARGEABLE BATTERY CAPABLE OF POWERING THE SYSTEM IN ACTIVE MODE FOR AT LEAST 80 HOURS IN THE EVENT OF PRIMARY POWER FAILURE. THE TRANSFER TO STANDBY BATTERY POWER SHALL BE AUTOMATIC AND WITHOUT INTERRUPTION TO OPERATION, UNLESS OTHERWISE NOTED.
 9. THE FIRE ALARM SYSTEM INCLUDING DUCT DETECTORS SHALL BE ELECTRICALLY OR ELECTRONICALLY MONITORED FOR INTEGRITY AND CONTINUITY SO THAT ANY MALFUNCTION OF THE SYSTEM SUCH AS AN ELECTRICAL OPEN, A GROUND FAULT, OR ANY SHORT CIRCUIT FAULT ON THE MAIN POWER SUPPLY SIGNALING LINE, OR ALARM-FIRE SAFETY CONTROL CIRCUIT WILL INDICATE A VISUAL AND AUDIBLE SIGNAL AT THE ALARM PANEL, WHEN PROPER ALARM OPERATION WOULD BE PREVENTED.
 10. CONTRACTOR SHALL COORDINATE ALL NEW WORK WITH NEW WORK OF OTHER TRADES AND EXISTING CONDITIONS AND PARTICIPATE IN THE PREPARATION OF COORDINATED SHOP DRAWINGS, IN ORDER TO AVOID CONFLICTS OF ANY TYPE.
 11. CONTRACTOR SHALL PROVIDE SUBMITTALS AND SHOP DRAWINGS DETAILING, BUT NOT LIMITED TO, ALL OF THE FOLLOWING:
a. BATTERY CALCULATIONS.
b. CONDUCTOR TYPE AND SIZES.
c. VOLTAGE DROP CALCULATIONS.
d. MANUFACTURER'S MODEL NUMBERS AND LISTING INFORMATION FOR EQUIPMENT, DEVICES AND MATERIALS.
e. THE INTERFACE OF FIRE SAFETY CONTROL FUNCTIONS.
f. SHOP DRAWING INCLUDING LOCATION AND HEIGHT OF ALL DEVICES.
 - C. INSTALLATION
 1. REFER TO ARCHITECTURAL DRAWINGS FOR ALL CEILING HEIGHTS.
 2. COORDINATE WITH OWNER'S FIELD REPRESENTATIVE AND OR GENERAL CONTRACTOR FOR ALL PHASING AND PROJECT SCHEDULING.
 3. THE CONTRACTOR SHALL COORDINATE THEIR WORK WITH ALL OTHER TRADES IN ORDER TO AVOID CONFLICTS OF ANY TYPE.
 4. INSTALL SMOKE DETECTORS A MINIMUM OF 5' FROM SUPPLY DIFFUSER, WHERE APPLICABLE IN CONFORMANCE WITH NFPA 72.
 5. LOCATION OF SMOKE DETECTORS: SPOT TYPE SMOKE DETECTORS SHALL BE LOCATED ON THE CEILING NOT LESS THAN 4 INCHES FROM A SIDEWALL TO THE NEAR EDGE OR WHERE ON A SIDEWALL BETWEEN 4 INCHES AND 12 INCHES DOWN FROM THE CEILING TO THE TOP OF THE DETECTOR. THE LOCATION OF ALL SMOKE DETECTORS SHOWN ARE CONSIDERED TO BE SCHEMATIC ONLY. THE ACTUAL LOCATIONS (SPACING TO ADJACENT DETECTORS, WALLS, DIFFUSERS, CEILING FANS, ETC.) MUST MEET NFPA 72 REQUIREMENTS.
 6. LOCATION OF MANUAL FIRE ALARM BOXES: EACH MANUAL FIRE ALARM BOX SHALL BE SECURELY MOUNTED. THE OPERABLE PART OF EACH MANUAL FIRE ALARM BOX SHALL NOT BE LESS THAN 5 FEET-6 INCHES AND NOT MORE THAN 4 FEET -8 INCHES ABOVE FLOOR LEVEL PER NFPA 72 AND ADA REQUIREMENTS. MANUAL FIRE ALARM BOXES SHALL BE DISTRIBUTED THROUGHOUT THE PROTECTED AREA SO THAT THEY ARE UNOBSTRUCTED AND READILY ACCESSIBLE. THEY SHALL BE LOCATED IN THE NORMAL PATH OF EXIT FROM THE AREA WITH A MANUAL FIRE ALARM BOX AT EACH EXIT ON EACH FLOOR. ADDITIONAL MANUAL FIRE ALARM BOXES SHALL BE PROVIDED SO THAT TRAVEL DISTANCE TO THE NEAREST FIRE ALARM BOX WILL NOT BE EXCESS OF 200 FEET MEASURED HORIZONTALLY ON THE SAME FLOOR.
 7. LOCATION OF AUDIBLE/VISIBLE SIGNAL APPLIANCES: INSTALL WALL-MOUNTED NOTIFICATION APPLIANCES WITH THE BOTTOM OF THE STROBE LENS AT 80 INCHES AFF, OR 6 INCHES BELOW THE CEILING, WHICHEVER IS LOWER. ALL STROBES THAT ARE IN ONE VIEWING TO BE SYNCHRONIZED IN ACCORDANCE WITH NFPA 72.
 8. TO THE EXTENT POSSIBLE, FIRE ALARM VISUAL AND AUDIBLE/VISIBLE DEVICES SHALL BE LOCATED NO MORE THAN 9 INCHES AWAY FROM INSIDE OR OUTSIDE WALL CORNERS, OPENINGS, PILASTERS OR COLUMNS.
 9. WHERE DEVICES ARE SHOWN ABOVE OR IN CLOSE PROXIMITY TO LIGHT SWITCHES, THE CENTERLINES OF THE DEVICES SHALL BE ALIGNED VERTICALLY.
 10. LOCATION OF CONTROL PANELS: THE TOP OF NEW CONTROL PANELS SHALL NOT BE INSTALLED HIGHER THAN 60 INCHES ABOVE FINISHED FLOOR LEVEL.
 11. ALL EQUIPMENT, CABLING DEVICES, ETC., INSTALLED IN HVAC PLENUM SPACES SHALL MEET CODE REQUIREMENTS FOR SMOKE AND FIRE RATING.
 12. ALL CABLING SHALL BE PLENUM RATED WHEN A RETURN AIR PLENUM IS UTILIZED.
 13. ALL WORK INSTALLED BY THIS CONTRACTOR SHALL BE INSTALLED IN SUCH A MANNER AS TO CLEAR ALL LIGHT FIXTURES, CEILING CONSTRUCTION, SPRINKLER PIPES AND HEADS, CONDUITS, PIPING ETC.
- AT THE COMPLETION OF THE WORK AND PRIOR TO THE FINAL ACCEPTANCE, ALL PARTS OF THE WORK SHALL BE THOROUGHLY CLEANED.



THE CONTRACTOR SHALL USE THE FIRE ALARM PLAN TO DETERMINE THE EXACT NUMBER AND LOCATION OF FIRE ALARM DEVICES AND SHALL PROVIDE ALL ADDITIONAL DEVICES REQUIRED PER CODE FOR A SUCCESSFUL COMPLETION OF FIRE ALARM SYSTEM.

FOR TYPE I-4 CONSTRUCTION, PROVIDE PULL STATION IN EVERY CLASSROOM.

SCOPE OF WORK

PROVIDE ALL LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR CONNECTION OF DEVICES TO THE NEW FIRE ALARM SYSTEM, AS COVERED BY THESE SPECIFICATIONS, TO BE WIRED, CONNECTED AND LEFT IN FIRST CLASS OPERATING CONDITION. ALL EQUIPMENT SHALL BE U.L. LISTED, CONFORM TO REVISED IBC, NFPA CODES 70, 72, 90A, AND 101, AND MEET THE REQUIREMENTS OF THE BUILDING AND ELECTRICAL CODES FOR THE LOCAL JURISDICTION. FIRE ALARM DEVICES SHALL INCLUDE BUT NOT BE LIMITED TO ADA COMPLIANT HORN STROBES, STROBES, MANUAL PULL STATIONS, SMOKE DETECTORS, HEAT DETECTORS AND FIRE ALARM PANEL.

PLANS ARE FOR REFERENCE ONLY. FIRE ALARM SHOP DRAWINGS SHALL BE SUBMITTED UNDER A SEPARATE PERMIT APPLICATION.

ISSUE

NO.	DATE	DESCRIPTION	INT.
1	09-29-23	FOR TLE REVIEW	MBJ
2	12-19-23	FOR PERMIT	MBJ

REVISION

NO.	DATE	DESCRIPTION	INT.

- NOTES:**
1. ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE ENGINEER, THE EXACT LOCATION OF WALL MOUNTED FIRE ALARM SPEAKER/STROBE LIGHTS AND ALL NEW FIRE ALARM DEVICES.
 2. LETTERS: "A" OR "B" - BESIDE SPEAKER/STROBE OR SPEAKER INDICATE SPEAKER/STROBE CIRCUIT.
 3. FOR TOTAL QUANTITIES OF FIRE ALARM DEVICE, REFER TO FIRE ALARM PLAN.
 4. EXISTING FIRE SMOKE DAMPERS AND DUCT SMOKE DETECTORS TO BE FURNISHED WITH NEW CODE COMPLIANT RED, TEFLOM FA WIRING.
 5. NUMBER IN PARENTHESIS INDICATES NUMBER OF DEVICES ON PLAN OF THAT TYPE.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 01 4089

Project Number: TLEVA23-034	Scale: AS NOTED
Drawn By: LN	Approved By: MBJ

FIRE ALARM RISER, NOTES, SPECIFICATIONS & LEGEND

Drawing Number: **FA-100**

Signed and sealed by Matthew Jarmel AIA using a Digital Signature and date. Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

SHEET NOTES:

- SEE DRAWING FA-100 FOR FIRE ALARM RISER, LEGEND & NOTES.
- DAY CARE CENTERS CARING FOR CHILDREN SHALL HAVE SMOKE DETECTORS INSTALLED IN EACH ROOM USED BY THE CHILDREN AND IN OTHER LOCATIONS AS DEEMED NECESSARY BY THE FIRE INSPECTOR. ALL SMOKE DETECTORS SHALL BE POWERED BY THE BUILDING'S ELECTRICAL SYSTEM AND HAVE A BATTERY BACKUP.
- LOCATE CARBON MONOXIDE DETECTOR/ALARM OR MULTI CRITERIA SMOKE/FIRE/CARBON DETECTOR ON CEILING AS CLOSE AS POSSIBLE TO RETURN GRILL(S) OR PER MANUFACTURER INSTRUCTIONS.
- CONTRACTOR IS RESPONSIBLE FOR ALL WIRING AND CONNECTIONS FOR DUCT SMOKE DETECTORS.
- THE GENERAL CONTRACTOR TO PROVIDE EMERGENCY RESPONDER RADIO COMMUNICATIONS AND RADIO SIGNAL BOOSTER EQUIPMENT REQUIRED TO BRING THE INTERIOR SIGNAL STRENGTH WITHIN THE ACCEPTABLE RANGE.
- ELECTRONIC DOOR LOCKS SHALL RELEASE UPON FIRE ALARM ACTIVATION.

FIRE ALARM PLAN KEY NOTES:

- VERIFY EXACT LOCATION OF FIRE ALARM ANNUNCIATION PANEL WITH FIRE MARSHAL.
- VERIFY EXACT LOCATION OF FIRE ALARM CONTROL PANEL WITH FIRE MARSHAL.
- ROOF ACCESS/MAINTENANCE DOOR SHALL NOT BE BLOCKED BY ANY DUCT, PIPES OR OTHER FIXED OBJECTS.
- PROVIDE RECESSED KNOX BOX WITH TAMPER SWITCH CONNECTED TO THE SECURITY SYSTEM. REFER TO EXTERIOR ELEVATIONS SHEET A-051 FOR KNOX BOX SPECIFICATION AND LOCATION.

PLANS ARE FOR REFERENCE ONLY. FIRE ALARM SHOP DRAWINGS SHALL BE SUBMITTED UNDER A SEPARATE PERMIT APPLICATION.



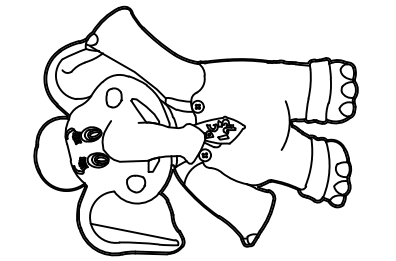
1 FIRE ALARM PLAN
SCALE: 1/8" = 1'-0"
NORTH

- CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK USING THE CONTRACTOR'S BEST SKILL AND ATTENTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE AND HAVE CONTROL OVER CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCE, AND JOB SITE SAFETY.
- GC MUST PROVIDE & INSTALL ALL PRODUCTS PER PLANS. ONLY SUBSTITUTED PRODUCTS NEED TO BE SUBMITTED TO THE ARCHITECT FOR APPROVAL. UNAPPROVED SUBSTITUTIONS WILL BE REPLACED AT THE EXPENSE OF THE GC.
- VERBAL REPRESENTATION HAS NO VALUE AND ALL REQUESTS TO CHANGE ANY PRODUCTS OR SPECIFICATIONS PER PLANS, MUST BE SUBMITTED IN WRITING TO THE ARCHITECT & TLE FOR APPROVAL.



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SEQUENCE OF OPERATIONS

FIRE ALARM SYSTEM MATRIX	BUILDING SYSTEM OUTPUTS														
	ACTIVATE COMMON ALARM SIGNAL INDICATOR - FIRE ALARM CONTROL PANEL AND ANNUNCIATOR	ACTIVATE AUDIBLE ALARM SYSTEM - FIRE ALARM CONTROL PANEL AND ANNUNCIATOR	ACTIVATE COMMON SUPERVISORY SIGNAL INDICATOR - FIRE ALARM CONTROL PANEL AND ANNUNCIATOR	ACTIVATE AUDIBLE SUPERVISORY SIGNAL - FIRE ALARM CONTROL PANEL AND ANNUNCIATOR	ACTIVATE COMMON TROUBLE SIGNAL INDICATOR - FIRE ALARM CONTROL PANEL AND ANNUNCIATOR	ACTIVATE AUDIBLE TROUBLE SIGNAL - FIRE ALARM CONTROL PANEL AND ANNUNCIATOR	ACTIVATE GENERAL EVACUATION SIGNAL FOR TEMPORAL-3 CODE	UNLOCK EXITS AND RELEASE DOOR HOLDERS	DISPLAY CHANGE OF STATUS - FIRE ALARM CONTROL PANEL AND ANNUNCIATOR	ACTIVATE EXTERNAL HORN/STROBE	TRANSMIT FIRE ALARM SIGNAL TO CENTRAL STATION	TRANSMIT SUPERVISORY SIGNAL TO CENTRAL STATION	TRANSMIT TROUBLE SIGNAL TO CENTRAL STATION	LOCAL SOUNDBASE TO SOUND TEMPORAL-4 CODE	SHUT DOWN OF CO PRODUCING EQUIPMENT
MANUAL FIRE ALARM PULL BOXES	X	X					X	X	X	X	X				
SMOKE DETECTORS AND HEAT DETECTORS	X	X					X	X	X	X	X				
CARBON MONOXIDE DETECTORS	X	X					X	X		X				X	X
FIRE ALARM A.C. POWER FAILURE					X	X		X						X	
FIRE ALARM SYSTEM LOW BATTERY					X	X		X						X	
OPEN CIRCUIT					X	X		X						X	
GROUND FAULT					X	X		X						X	
NOTIFICATION APPLIANCE CIRCUIT SHORT					X	X		X						X	
SPRINKLER WATER FLOW	X	X					X	X	X	X					
SPRINKLER TAMPER			X	X				X					X		
KNOX BOX TAMPER SWITCH													X		
SMOKE OR FIRE SMOKE DAMPER WITH ACCESS DOOR (FSD/AD) / (SD/AD)	X	X	X					X					X	X	

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2	12-19-23	FOR PERMIT	MBJ

REVISION

NO.	DATE	DESCRIPTION	INT.

PROFESSIONAL CERTIFICATION
NAME OF LICENSEE: MATTHEW B. JARMEL
LICENSE NUMBER: 0401 014089

Project Number: TLEVA23-034
Scale: AS NOTED
Drawn By: LN
Approved By: MBJ

Drawing Name:

**FIRE ALARM PLAN,
NOTES & SYSTEM MATRIX**

Drawing Number:

FA-200

