

PLUMBING GENERAL PROJECT NOTES	
1. ALL WORK AND EQUIPMENT SHALL COMPLY WITH ALL APPLICABLE LAWS, CODES, AND RULINGS OF ALL AUTHORITIES HAVING JURISDICTION INCLUDING BUT NOT LIMITED TO THE INTERNATIONAL PLUMBING CODE, THE LOCAL FIRE MARSHALL, UNDERWRITERS LABORATORY, IRI, FM, OSHA, AND THE NATIONAL ELECTRIC CODE. MODIFICATIONS REQUIRED BY THE ABOVE AUTHORITIES IN ORDER TO BRING THE PROJECT INTO CODE REQUIREMENTS SHALL BE MADE AT NO ADDITIONAL COSR TO THE OWNER. IF CONTRACT DOCUMENTS ARE MORE STRINGENT THAN CODE REQUIREMENTS, THEN THE CONTRACT DOCUMENTS SHALL GOVERN. CONTRACTOR IS RESPONSIBLE FOR ALL ROUGH-IN, FINAL CONNECTIONS, AND PROPER INSTALLATION OF ALL FIXTURES AND EQUIPMENT. ALL NECESSARY PARTS REQUIRED TO MAKE A FULLY OPERATIONAL SYSTEM WITHIN CODE GUIDELINES SHALL BE INSTALLED, INCLUDING, BUT NOT LIMITED TO TRAPS, VALVES, VACUUM BREAKERS, PRESSURE GAUGES, OR PRESSURE REGULATORS.	24. DOMESTIC WATER PRESSURE REDUCING VALVE ASSEMBLIES SHALL BE SELECTED TO PROVIDE STABLE FLOW CONDITIONS WITHOUT CAVITATION OR VALVE CHATTER.
2. ALL SPECIFICATIONS AND DRAWINGS ARE COMPLIMENTARY AND MUST BE USED IN COMBINATION TO OBTAIN COMPLETE CONSTRUCTION INFORMATION. ANY CONFLICTING INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER, AND WORK SHALL CEASE ON THAT PORTION OF THE PROJECT UNTIL CLARIFICATIONS ARE ISSUED.	25. SHOCK ARRESTORS SHALL BE LOCATED DOWNSTREAM OF THE DOMESTIC WATER SERVICE VALVE, AT EACH SERVICE TO A GROUP OF FIXTURES, AND OR AS INDICATED ON THE DRAWINGS. SHOCK ARRESTORS SHALL BE AS MANUFACTURED BY PRECISION PLUMBING PRODUCTS OR APPROVED EQUAL AND CONFORM TO THE REQUIREMENTS OF THE PLUMBING AND DRAINING INSTITUTE.
3. THE BUILDING IN WHICH WORK IS BEING PERFORMED SHALL REMAIN ACCESSIBLE AT ALL TIMES. ALL MATERIAL, WASTE, AND DEBRIS SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY. MAINTAIN THE CONSTRUCTION PREMISES IN A NEAT AND ORDERLY CONDITION AT THE END OF EACH WORKING DAY. MAKE ALL ARRANGEMENTS TO PAY FOR ALL TEMPORARY UTILITIES NEEDED BY THIS TRADE INCLUDING WATER, WASTE, ELECTRIC, HEATING, AND VENTILATION. THE CONTRACTOR SHALL PROVIDE AND MAINTAIN FOR THE ENTIRE LENGTH OF THIS CONTRACT ALL EXITS, EXIT LIGHTING, FIRE PROTECTION DEVICES, AND ALARMS AS REQUIRED BY CODE.	26. PROVIDE STOP VALVES AT ALL FIXTURE AND EQUIPMENT SUPPLIES. ALL EXPOSED FIXTURE CONNECTIONS SHALL BE CHROME PLATED, STAINLESS STEEL OR FITTED WITH CHROME PLATED SLEEVES. PROVIDE VACUUM BREAKERS WHERE REQUIRED BY CODE.
4. CONTRACTOR SHALL CONFIRM THE REQUIREMENTS FOR PREMIUM TIME OR SPECIAL PROCEDURES WITH THE OWNER AND INCLUDE COST IN THIS PROPOSAL. THE CONTRACTOR, BY SUBMITTING HIS PROPOSAL AGREES TO ACCEPT ALL EXISTING SITE CONDITIONS NOT SPECIFICALLY EXCEPTED. ALL EXCEPTIONS SHALL BE PROVIDED IN WRITING TO THE ARCHITECT AND ENGINEER.	27. ALL DOMESTIC WATER PIPING SYSTEMS SHALL BE DISINFECTED IN ACCORDANCE WITH THE APPLICABLE CODES AND AWWA C651
5. CONTRACTOR SHALL COORDINATE, PREPARE AND SUBMIT SHOP DRAWINGS TO THE ARCHITECT AND ENGINEER FOR THEIR APPROVAL. SHOP DRAWINGS TO BE SUBMITTED INCLUDE: FIXTURES, VALVES, PUMPS, WATER HEATERS, PIPING, AND ALL EQUIPMENT.	28. HYDRAULICALLY PRESSURE TEST ALL PIPING AT THE FULL WORKING PRESSURE FOR A MINIMUM PERIOD OF 24-HOURS. STOP-LEAK COMPOUNDS WILL NOT BE ALLOWED. ALL PRESSURIZED WATER PIPING SYSTEMS SHALL BE RATED FOR 150 PSI WORKING PRESSURE. REPAIR ANY LEAKS AND RETEST TO DEMONSTRATE TIGHTNESS.
6. A SET OF MEP RECORD/COORDINATION DRAWINGS SHALL BE MAINTAINED IN THE GENERAL CONTRACTORS OFFICE AT THE JOB SITE. ACTUAL LOCATIONS OF ALL EQUIPMENT, PIPING, DUCTWORK, ETC., AND ALL DEVIATIONS OF THE WORK FROM THAT SHOWN ON THE CONTRACT DOCUMENTS SHALL BE MARKED ON THE RECORD/COORDINATION DRAWINGS. EACH TRADE SHALL REVIEW THE COORDINATION DRAWINGS AND RESOLVE ANY POTENTIAL CONFLICTS WITH OTHER TRADES PRIOR TO INSTALLING ANY PORTION OF THEIR WORK. CONTRACTOR SHALL NOT CORE DRILL, OR CUT CONCRETE SLABS FOR ANY REASON WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE OWNER.	29. ALL NEW SANITARY, SOIL, WASTE, VENT, AND STORM WATER PIPING SHALL BE SERVICE WEIGHT CAST IRON, BELL AND SPIGOT, PIPE AND FITTINGS, ANSI A 112.5, 1 AS MANUFACTURED BY TYLER PIPE AND FOUNDRY CO., U.S. PIPE AND FOUNDRY CO., CENTRAL FOUNDRY OR APPROVED EQUAL. TYLER 'TY-SEAL' OR APPROVED EQUAL, NEOPRENE POSITIVE SEAL ELASTOMERIC COMPRESSION TYPE GASKETS SHALL BE USED AT ALL JOINTS. AS AN OPTION, ALL NEW SANITARY, SOIL, WASTE, VENT AND STORM WATER PIPING 4 INCHES AND SMALLER MAY USE HUBLESS SERVICE WEIGHT CAST IRON PIPE, FITTINGS AND JOINTS WITH TYLER NO-HUB® STAINLESS STEEL CONNECTORS. IN ADDITION, ALL VENT PIPING MAY BE DWV COPPER PIPE AND FITTINGS WITH SOLDERED JOINTS. GASKETS, JOINTS, CONNECTORS, SPECIALTIES AND PIPE SHALL BE MANUFACTURED AND APPROVED BY THE SAME MANUFACTURER. ALL STORM PIPING AND WASTE LINES FROM DRINKING WATER FOUNTAINS SHALL BE INSULATED WITH 1/2 INCH THICK HEAVY DUTY FIBERGLASS MATERIAL WITH ALL PURPOSE NONCOMBUSTIBLE VAPOR BARRIER JACKET. INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY (K) OF 0.23 BTU INHR FT ^ 2 ° F AT 75°F. ADHESIVE SYSTEMS THAT EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE. ALL DRAINAGE PIPE SHALL BE SUPPORTED DIRECTLY ON EACH SIDE OF A JOINT. ALL PIPING SUPPORTS AND RESTRAINTS SHALL BE IN STRICT ACCORDANCE WITH THE DRAINAGE PIPE MANUFACTURERS RECOMMENDATIONS AND INSTALLATION GUIDES. CONTRACTOR MAY USE PVC DWV PIPING WHERE THE CODE PERMITS. PVC MAY NOT BE INSTALLED IN PLENUM AREAS. CONFIRM WITH MC OR ENGINEER THAT AREAS ARE NOT PLENUM TYPE PRIOR TO INSTALLATION.
7. WORK SHALL BE EXECUTED IN A GOOD WORKMANLIKE MANNER USING MECHANICS IN THEIR RESPECTIVE TRADES. THE CONTRACTOR IS SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES FOR COORDINATING THE WORK UNDER THIS CONTRACT. UPON COMPLETION OF CONSTRUCTION, CONTRACTOR SHALL DELIVER COMPLETE AND FUNCTIONAL SYSTEMS AS ENCOMPASSED BY THE CONTRACT.	30. EXCEPT WHERE OTHERWISE INDICATED, HORIZONTAL SANITARY, SEWAGE AND WASTE VENT PIPING SHALL SLOPE AT 1/4 INCH PER FOOT PER PIPES 2 1/2 INCHES AND SMALLER, PIPES 3 INCHES AND LARGER SHALL SLOPE AT 1/8 PER FOOT. ALL VERTICAL SANITARY SEWER AND STORM WATER PIPING, WHICH TURN 90° AFTER PASSING THROUGH A FLOOR, SHALL BE INSTALLED AS TIGHT AS POSSIBLE TO THE UNDERSIDE OF THE STRUCTURE.
8. IN CASES OF DOUBT AS TO THE WORK INTENDED, OR IN THE EVENT OF NEED FOR EXPLANATION THEREOF, THE CONTRACTOR SHALL REQUEST SUPPLEMENTARY INSTRUCTIONS FROM THE ENGINEER. NO CHANGES ARE TO BE MADE TO THE WORK OF THIS CONTRACT WITHOUT PRIOR KNOWLEDGE AND APPROVAL OF THE ENGINEER. THE CONTRACTOR SHALL HOLD THE OWNER AND ITS CONSULTANTS HARMLESS AGAINST ALL CLAIMS AND JUDGMENTS ARISING OUT OF THE CONTRACTORS PERFORMANCE OF THE WORK OF THIS CONTRACT THE CONTRACTOR SHALL NOT PROCEED WITH ANY WORK, WHICH HE EXPECTS ADDITIONAL COMPENSATION BEYOND THE CONTRACT AMOUNT, WITHOUT WRITTEN AUTHORIZATION FROM THE APPROPRIATE AUTHORITY. FAILURE TO OBTAIN SUCH AUTHORIZATION SHALL INVALIDATE ANY CLAIM FOR EXTRA COMPENSATION.	31. CLEANOUTS SHALL BE PROVIDED IN PIPING AT EACH CHANGE IN DIRECTION, IN ALL HORIZONTAL STRAIGHT RUNS MORE THAN 50 FEET LONG, AND AT ALL OTHER LOCATIONS AS NOTED ON DRAWINGS. ALL CLEANOUTS SHALL BE THE SAME SIZE AS THE PIPE DIAMETER UP TO AND INCLUDING PIPE 4 INCHES IN DIAMETER. FOUR-INCH CLEANOUTS SHALL BE USED FOR ALL PIPE LARGER THAN 4 INCHES, UNLESS NOTED OTHERWISE. ALL CLEAN-OUT LOCATIONS SHALL BE NO MORE THAN 5 FEET ABOVE BASE OF THE HORIZONTAL OFFSET AND BE APPROVED BY THE ARCHITECT. FOR CARPETED AREAS, PROVIDE A PERMANENT IDENTIFYING MARK IN THE CARPET DIRECTLY ABOVE CLEAN-OUT. THE CLEAN-OUT SHALL HAVE A SMOOTH POLISHED BRONZE FINISH WITH THE LETTERS 'C.O.' CAST IN THE COVER. FOR WALLS, PROVIDE AN ACCESS PANEL WITH CLEARANCE FOR ROODING. THE FLOOR CLEANOUTS SHALL BE ZURN MODEL ZN-1400-T OR APPROVED EQUAL WITH BRONZE PLUG, SQUARE NICKEL BRONZE FRAME AND COVER. THE WALL CLEANOUTS SHALL BE ZURN MODEL ZN-1443-BP OR APPROVED EQUAL WITH BRONZE PLUG AND 7 INCHES X 7 INCHES NICKEL BRONZE COVER. NO SANITARY, SOIL OR WASTE PIPE SHALL EXTEND GREATER THAN 2'-0" TO A DEAD-END.
9. ALL PIPING SHALL BE CONCEALED EITHER ABOVE THE CEILING, OR IN WALLS, OR CHASES UNLESS OTHERWISE NOTED.	32. PROVIDE ONE TRAP PRIMER VALVE FOR EACH FLOOR DRAIN WITHOUT A CONSTANT SOURCE OF WATER SUPPLY TO MAINTAIN TRAP SEAL. PRIMER VALVE SHALL BE LOCATED IN AN ACCESSIBLE AREA AND CONNECTED TO THE NEAREST 3/4 INCH COLD WATER LINE SERVING A FIXTURE. PROVIDE FLOAT TYPE BACKWATER VALVE (SIZED FOR ANTICIPATED FLOW RATE) IN ALL OPEN SITE DRAINS AND FLOOR RECEPTORS RECEIVING A/C UNIT CONDENSATE, AND/OR CLEAR WATER WASTE, SUCH AS SPRINKLER FLOW TESTING. ALL HORIZONTAL DRAINAGE PIPING AND TRAPS FROM AN OPEN SITE DRAINER
10. CONTRACTOR SHALL VERIFY ALL EXISTING CONDITIONS INCLUDING POINTS OF CONNECTION PRIOR TO COMMENCEMENT OF WORK. CONTRACTOR IS REQUIRED TO COORDINATE WITH OTHER TRADES AND EXISTING CONDITIONS.	33. ALL GAS PIPING 1/2 INCH AND LARGER SHALL BE A-53 SCHEDULE 40 BLACK STEEL. FOR PIPING 4 INCHES AND LARGER PROVIDE FACTORY MADE IN FULL LINE SIZE ALL WELDED FITTINGS. FOR PIPING 3 INCHES AND SMALLER PROVIDE A CLASS 150 MALLEABLE IRON SCREW JOINT FITTINGS WITH AMERICAN PIPE THREAD STANDARD SCREW THREADS FOR PIPING 3 INCHES AND SMALLER. SCREW JOINTS SHALL BE MADE UP WITH GRAPHITE AND OIL OR APPROVED EQUAL PIPE JOINT COMPOUND. PIPING SMALLER THAN 1/2 INCH SHALL BE TYPE K SOFT DRAWN COPPER ASTM-B88 WITHOUT FITTINGS. GAS PIPING AND VENTS SHALL SLOPE AT 1/4 INCH IN 15 FEET TOWARDS A DRIPL LEG. GAS PIPING SHALL BE INSTALLED TO THE REQUIREMENTS OF THE AGA PAMPHLET "INSTALLATION OS GAS PIPING" AND NFPA STANDARDS NO. 54. ANY OTHER TESTS, AS REQUIRED BY LOCAL GAS INSPECTION DEPARTMENT OR GAS COMPANY, SHALL BE PERFORMED.
11. EXISTING EQUIPMENT TO REMAIN, BE REUSED OR RELOCATED WITHIN THE BUILDING SPACE WHICH BECOMES DAMAGED OR DOES NOT COMPLY WITH THE SPECIFICATIONS, SHALL BE RESTORED TO LIKE NEW CONDITION AS DETERMINED BY THE ARCHITECT OR ENGINEER. IF EQUIPMENT IS BEYOND RESTORATION, IT SHALL BE REPLACED WITH NEW EQUIPMENT MEETING THE SPECIFICATION REQUIREMENTS.	34. PROVIDE AN AGA APPROVED UL LISTED GAS VALVE REGULATOR AND QUICK-DISCONNECT UNION AT EACH PIECE OF GAS FUEL EQUIPMENT AND AS INDICATED ON THE DRAWINGS. PROVIDE ATMOSPHERIC VENTS FOR GAS REGULATORS IN ACCORDANCE WITH LOCAL CODE AND SUPPLIERS REQUIREMENTS. VALVES SHALL BE INSTALLED AT AN ACCESSIBLE LOCATION, GAS VALVES 2 INCHES AND SMALLER SHALL BE AGA OR UL APPROVED. VALVES 2 1/2 INCHES AND LARGER SHALL BE CERTIFIED BY THE MANUFACTURER TO BE SUITABLE FOR GAS SERVICE AND SHALL BE A MINIMUM 125 PSI RATED.
12. WHEREVER FIRE RATED PARTITIONS ARE PENETRATED FOR WIRE, DUCT OR PIPE PASSAGE, SEAL PASSAGES WITH CODE APPROVED, LABORATORY TESTED AND LABELED SEALANT OF FIRE RESISTANCE RATING NOT LESS THAN THAT OF PENETRATED ASSEMBLY THAT WILL PREVENT PASSAGE OF FIRE AND SMOKE.	35. ALL PIPING SYSTEMS, VALVES, AND EQUIPMENT SHALL BE PROPERLY IDENTIFIED. ALL VALVES SHALL HAVE THEIR NORMAL (IN OPERATION) POSITION IDENTIFIED, SUCH AS "NORMALLY OPEN" OR "NORMALLY CLOSED".
13. ALL CUTTING, DRILLING, AND PATCHING OF WALLS, FLOORS AND/OR STRUCTURAL MEMBERS FOR THE INSTALLATION OF PLUMBING SYSTEMS SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR. STRUCTURAL MEMBERS SHALL NOT BE MODIFIED IN ANY WAY WITHOUT THE PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.	36. ALL PACKAGED EQUIPMENT SHALL BE INDEPENDENTLY THIRD PARTY LABELED AS A SYSTEM FOR ITS INTENDED USE BY A NATIONALLY RECOGNIZED TESTING LABORATORY (NRTL) IN ACCORDANCE WITH OSHA FEDERAL REGULATIONS 29CFR 1910.303 AND .309, AS WELL AS NFPA PAMPHLET NO. 70, NATIONAL ELECTRIC CODE (NEC), ARTICLE 90-7.
14. SUPPORT ALL PIPING FROM STRUCTURE WITH UL LISTED HANGERS AND SUPPORTS SUITABLE FOR THE INTENDED INSTALLATION. DESIGN, SELECTION, SPACING, AND APPLICATION OF SUPPORTS AND HANGERS SHALL COMPLY WITH ANSI B31.1 AND MSS SP-69.	37. THE CONTRACTOR SHALL MAKE ALL FINAL EQUIPMENT AND FIXTURE CONNECTIONS AND PROVIDE THE NECESSARY ADAPTERS, FITTINGS, VALVES, DEVICES, ETC. FOR A COMPLETE AND OPERABLE SYSTEM. PROVIDE VALVES AND UNIONS WHERE NEEDED TO PERMIT DISCONNECTIONS OF EACH PIECE OF EQUIPMENT FOR REPAIRS. PLUMBING CONNECTIONS SHOWN ARE NOMINAL. VERIFY EXACT CONNECTION SIZE WITH EACH PIECE OF EQUIPMENT SUPPLIED. FOLLOW FIXTURE MANUFACTURERS RECOMMENDED INSTALLATION INSTRUCTIONS, AND ROUGH-IN DIMENSIONS. REFER TO CONSULTANT AND ARCHITECTURAL DOCUMENTS FOR ADDITIONAL INFORMATION. COORDINATE WITH THE EQUIPMENT SUPPLIER FOR ADDITIONAL INFORMATION.
15. DISSIMILAR PIPING MATERIALS SHALL BE CONNECTED BY SUITABLE DIELECTRIC INSULATING UNIONS. ISOLATE COPPER PIPE FROM DISSIMILAR METALS SUCH AS STEEL STUDS.	38. VERIFY IN THE FIELD, EXACT SIZES AND LOCATIONS OF ALL EXISTING PLUMBING PRIOR TO INSTALLATION OF ANY NEW PLUMBING WORK. PLUMBING CONTRACTOR SHALL VERIFY EXISTING CONDITIONS TO ASSURE PROPER INSTALLATION. PLUMBING CONTRACTOR SHALL VERIFY EXISTING INVERTS AND VERIFY THAT ALL FINAL CONNECTIONS CAN BE MADE BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL, REPAIR, REPLACEMENT, AND MODIFICATIONS OF EXISTING PIPING WITHIN THE BUILDING AS REQUIRED FOR THE INSTALLATION OF NEW PIPING AND WORK OF OTHER DIVISIONS. PIPING WHICH MUST REMAIN AS PART OF AN ACTIVE SYSTEM AND IS IN CONFLICT WITH THE NEW LAYOUT SHALL BE RELOCATED AT NO ADDITIONAL COST OVER THE CONTRACT AMOUNT. EXISTING PIPING, WHICH IS TO REMAIN AS A PART OF THE NEW ACTIVE SYSTEM SHALL BE PURIFIED, AND PRESSURE TESTED IN THE SAME MANNER AS THE NEW PIPING. THE CONTRACTOR SHALL REPLACE ANY DEFECTIVE PIPING AND REPAIR ANY LEAKS.
16. ALL PRODUCTS LOCATED WITHIN PLENUM AREAS, INCLUDING BUT NOT LIMITED TO INSULATION AND ADHESIVE SYSTEMS, SHALL HAVE A COMPOSITE FIRE HAZARD RATING NOT TO EXCEED 25 FLAME SPREAD AND 50 SMOKE DEVELOPED AS DETERMINED BY THE APPLICABLE UL OR ASTM STANDARDS	39. EXISTING FOUNDATION SHALL NOT BE DISTURBED OR DAMAGED WITHOUT OBTAINING PERMISSION FROM THE ARCHITECT OR STRUCTURAL ENGINEER AND PROPER UNDERPINNING METHODS USED TO PROTECT AFFECTED FOUNDATION COMPONENTS.
17. ALL NEW DOMESTIC WATER PIPING SHALL BE TYPE L HARD DRAWN SEAMLESS COPPER WATER TUBE. COPPER TUBE FITTINGS SHALL BE WROUGHT COPPER JOINT FITTINGS CONFORMING TO ANSI 315.22. SOLDERED COPPER JOINTS SHALL BE SOLDERED WITH LEAD FREE ASTM B32 GRADE 95T TIN-ANTIMONY SOLDER. PVC, CPVC, AND PEX TUBING SHALL BE ACCEPTABLE IN LOCATIONS PERMITTED BY THE CODE.	
18. PIPING SYSTEM SHALL BE INSULATED WITH HEAVY-DUTY FIBERGLASS MATERIAL WITH ALL PURPOSE NONCOMBUSTIBLE VAPOR BARRIER JACKET. INSULATION SHALL HAVE MAXIMUM THERMAL CONDUCTIVITY FACTOR (K) OF 0.23 BTU INHR FT ^ 2 ° F AT 75°F. ADHESIVE SYSTEMS THAT EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE. AS AN ACCEPTABLE ALTERNATE TO THE ABOVE INSULATION, THE CONTRACTOR MAY PROVIDE OWENS-CORNING "55L-II" DOUBLE SURE PIPE INSULATION. THICKNESS SHALL BE AS SCHEDULED ON PG. 1.	
19. ALL NEW DOMESTIC WATER PIPING SHALL HAVE THE OPTION TO BE INSULATED WITH ARMSTRONG FLEXIBLE ELASTOMERIC CLOSED CELL PIPE INSULATION OR APPROVED EQUAL. THE INSULATION SHALL HAVE A MAXIMUM THERMAL CONDUCTIVITY FACTOR (K) OF 0.28 BTU INHR FT ^ 2 ° F AT 75°F AND A MAXIMUM WATER PERMEABILITY OF 0.15 PERM-INCH. THE PIPE INSULATION BUTT JOINTS AND LONGITUDINAL JOINTS SHALL BE SEALED WITH ARMSTRONG 520 ADHESIVE AND THE ENTIRE INSULATION INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS. ADHESIVE SYSTEMS THAT EMPLOY RELEASE PAPER WILL NOT BE ACCEPTABLE.	
20. FITTINGS, VALVES, AND FLANGES SHALL BE INSULATED WITH THE SAME MATERIALS AND OF THE SAME THICKNESS AS THE ADJOINING PIPE. INSTALL VALVES WITH EXTENDED STEMS TO PREVENT INSULATION INTERFERENCE WITH ACTUATION.	
21. WATER METER SHALL BE INSTALLED PER AUTHORITY'S SPECIFICATIONS AND DETAILS. REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY SHALL BE WATTS NO 909-S SERIES OR APPROVED EQUAL. IF IT COMPLIES WITH THESE SPECIFICATIONS EQUIPMENT MANUFACTURED BY GLA-VAL COMPANY, FEBCO, HERSHEY PRODUCTS, INC., OR WATTS REGULATION COMPANY WILL BE ACCEPTABLE. ASSEMBLY SHALL BE COMPLETE WITH STRAINER, DRAIN LINES, INLET, AND OUTLET SHUT-OFF VALVES AND WATT SERIES 'AG' AIR GAP. THE PRESSURE LOSS OVER THE ENTIRE ASSEMBLY SHALL NOT EXCEED 10 PSI AT DESIGN FLOW. THE SIZE OF THE ASSEMBLY SHALL NOT BE SMALLER THAN THE LINE SIZE IN WHICH IT IS INSTALLED. BACKFLOW PREVENTOR ASSEMBLY SHALL BE INSTALLED IN AN ACCESSIBLE LOCATION. PIPE RELIEF OUTLET DISCHARGE TO NEAREST FLOOR DRAIN. DO NOT INSTALL ABOVE FINISHED CEILINGS, UNLESS NOTED OR INDICATED OTHERWISE.	
22. DOMESTIC WATER GATE VALVES FOR COPPER PIPING UP TO AND INCLUDING 2 1/2 INCHES SHALL BE NIBCO NO. 5-111 OR APPROVED EQUAL, CLASS 125, 200 PSIG WOG, BRONZE BODY WITH SOLDERED ENDS, RISING STEM, SOLID WEDGE AND SCREWED BONNET. DOMESTIC WATER GATE VALVES FOR COPPER PIPING 3 INCHES AND 4 INCHES SHALL BE CRANE NO. 465-1/2 OR APPROVED EQUAL, 200# WOG CAST IRON OS&Y VALVE WITH CLASS 125 ANSI B16.1 FLAT FACED FLANGED ENDS BRONZE TRIM. STEMS, DISC FACES, SEAT RINGS AND BONNET BUSHINGS CONSTRUCTED OF BRONZE. ALL OF THE ABOVE GATE VALVES SHALL BE USED FOR STOP OR ISOLATION VALVE APPLICATIONS. IN LIEU OF GATE VALVES FOR PIPING 2 1/2 INCHES AND SMALLER, NIBCO 585-70 BALL VALVES MAY BE USED.	
23. GLOBE VALVES FOR COPPER PIPING UP TO AND INCLUDING 2 1/2 INCHES SHALL BE NIBCO NO. 5-235 OR APPROVED EQUAL, CLASS 150 300# WOG, BRONZE BODY, BRONZE RISING STEM, UNION BONNET RENEWABLE SEAT AND SOLDERED ENDS. DOMESTIC WATER GLOBE VALVES FOR COPPER PIPING 3 INCHES AND 4 INCHES SHALL BE CRANE NO. 351 OR APPROVED EQUAL, CLASS 125, 200# WOG CAST IRON OS&Y VALVES WITH ANSI B16.1 FLANGED ENDS, YOKE DOWNET, RENEWABLE SEAT AND BRONZE TRIM. STEMS DISCS, FACES, SEAT FACES AND BUSHINGS CONSTRUCTED OF BRONZE. ALL OF THE ABOVE GLOBE VALVES SHALL BE USED FOR BALANCING OR THROTTLING VALVE APPLICATIONS.	




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PLUMBING - GENERAL NOTES

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DATE : 01/08/2024

SCALE : AS NOTED

JOB NO: 544-23

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