

**GENERAL NOTES - FIRE PROTECTION:**

- 1. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED TO CONVEY SCOPE AND GENERAL ARRANGEMENT THAT A COMPLETE FIRE PROTECTION SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES AND CONTROLS, COMPLETELY COORDINATED WITH ALL DISCIPLINES.
2. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED TO. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE FIRE PROTECTION SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, LOCAL AUTHORITIES AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE OWNER. THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING THEIR WORKING KNOWLEDGE TO AUGMENT THE SCOPE DOCUMENTS. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
3. DO NOT SCALE DRAWINGS. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONED LOCATION OF ALL WALLS, PORTIONS, CEILING, ETC. LOCATE ALL PIPING WITHIN WALLS OR ABOVE CEILING. AS SHOWN OR NOTED ON DRAWINGS, COORDINATE WITH ALL OTHER TRADES.
4. COORDINATE ALL WORK WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, ELECTRICAL AND PLUMBING TRADES. PIPE ROUTING SHOWN IS DIAGRAMMATIC. PROVIDE ALL OFFSETS, FITTINGS AND HANGERS TO AVOID INTERFERENCE WITH EQUIPMENT, PIPING, DUCTWORK, LIGHTS, CONDUIT, STRUCTURAL MEMBERS, AND ALL OTHER BUILDING COMPONENTS.
5. COORDINATE ALL FLOOR PENETRATIONS WITH STRUCTURAL DRAWINGS. SET SLEEVES IN FLOORS AND WALLS AS CONSTRUCTION PROGRESSES. COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES WITH STRUCTURAL ENGINEER. ALL PENETRATIONS MUST BE SEALED AND HELD AS TIGHT TO COLUMNS OR WALLS AS POSSIBLE.
6. PROVIDE 12" X 12" ACCESS PANELS FOR ALL VALVES LOCATED ABOVE NON-ACCESSIBLE CEILING AND INSIDE PIPE CHASES. EXACT LOCATION MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION. ALL ACCESS PANELS SHALL BE LOCATED SO THAT THEY ARE NOT VISIBLE TO PUBLIC VIEW. ALL VALVES AND ACCESSORIES SHALL BE LOCATED WITHIN 12" OF POINT OF ACCESS THROUGH EITHER WALLS OR CEILING. ALL CONTROL VALVES AND DRAIN VALVES LOCATED ABOVE CEILING SHALL HAVE IDENTIFICATION PANEL INSTALLED ON CEILING INDICATING FUNCTION OF VALVE LOCATED ABOVE.
7. DO NOT ROUTE FIRE PROTECTION PIPING THROUGH ELECTRICAL CLOSETS, COMPUTER ROOMS, OR TELEPHONE ROOMS. ONLY PIPING SERVING SPRINKLER HEADS LOCATED IN THESE SPACES IS PERMITTED.
8. ALL STRUCTURAL PENETRATIONS (SLEEVES, BLOCKOUTS, AND ANCHORS) ARE TO BE LOCATED AND COORDINATED IN THE FIELD BY THE CONTRACTOR IN RELATION TO THE REQUIREMENTS OF FINAL EQUIPMENT AND FIXTURES SELECTED.
9. SPRINKLERS INSTALLED IN CEILING OF FINISHED AREAS SHALL BE SYMMETRICAL IN RELATION TO CEILING SYSTEM COMPONENTS AND CENTERED IN THE CEILING TILE.
10. PROVIDE AUXILIARY DRAINS WHERE REQUIRED FOR TRAPPED SECTIONS OF PIPING BASED ON SPRINKLER PIPE ROUTING.
11. FIRE PROTECTION INSTALLATION AND DESIGN SHALL BE A DRY, PER NFPA 13.
12. ALL FIRE SPRINKLERS LOCATED IN LIGHT HAZARD OCCUPANCY AREAS SHALL BE QUICK RESPONSE TYPE.
13. PROVIDE ALL MATERIALS AND EQUIPMENT AND PERFORM ALL LABOR REQUIRED TO INSTALL COMPLETE AND OPERABLE FIRE PROTECTION SYSTEMS AS INDICATED ON THE DRAWINGS, AS SPECIFIED AND COMPLYING WITH THE STANDARDS OF THE NATIONAL FIRE PROTECTION ASSOCIATION, INDUSTRIAL RISK INSURERS, FACTORY MUTUAL, AND ALL STATE AND LOCAL REGULATIONS.
14. THE ENTIRE BUILDING SPRINKLER SYSTEM SHALL BE HYDRAULICALLY DESIGNED UNLESS OTHERWISE NOTED ON THE DRAWINGS. HEAD SPACING IN GENERAL AND WATER QUANTITY SHALL BE BASED ON LIGHT & ORDINARY GROUP 1 HAZARD.
15. PROVIDE A SECOND AUTOMATIC DRY PIPE SPRINKLER SYSTEM THROUGHOUT THE ENTIRE BUILDING, COMPLETE IN ALL RESPECTS AND READY FOR OPERATION INCLUDING ALL TEST AND DRAIN LINES, PRESSURE GAUGES, HANGERS AND SUPPORTS, SIGNS, AND OTHER STANDARD APPURTENANCES.
16. SEE ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND SIZES OF FIRE EXTINGUISHERS AND CABINETS.
17. COORDINATE SPRINKLER HEAD LOCATIONS WITH THE ARCHITECTURAL REFLECTED CEILING PLANS, LIGHTING AND OTHER CEILING ITEMS AND MAKE MINOR MODIFICATIONS TO SUIT.
18. PROVIDE ALL PIPE HANGERS AND SUPPORTS IN ACCORDANCE WITH NFPA 13.
19. BACKFLOW PREVENTER FOR FIRE PROTECTION SYSTEM TO BE LOCATED OUTSIDE OF THE BUILDING. REFER TO THE CIVILING DRAWINGS FOR EXACT LOCATION, DETAILS, AND SPECIFICATIONS.

**GENERAL NOTES - PLUMBING:**

- 1. THESE DRAWINGS ARE SCHEMATIC IN NATURE AND ARE NOT INTENDED TO SHOW ALL POSSIBLE CONDITIONS. IT IS INTENDED THAT A COMPLETE PLUMBING SYSTEM BE PROVIDED WITH ALL NECESSARY EQUIPMENT, APPURTENANCES AND CONTROLS COMPLETELY CO-ORDINATED WITH ALL DISCIPLINES. ALL PARAMETERS GIVEN IN THESE DOCUMENTS SHALL BE STRICTLY CONFORMED TO. ANY ITEMS AND LABOR REQUIRED FOR A COMPLETE PLUMBING SYSTEM IN ACCORDANCE WITH ALL APPLICABLE CODES, STANDARDS, LOCAL AUTHORITIES AND THESE CONTRACT DOCUMENTS SHALL BE FURNISHED WITHOUT INCURRING ANY ADDITIONAL COST TO THE OWNER. CAREFULLY REVIEW ALL CONTRACT DOCUMENTS AND THE DESIGN OF OTHER TRADES BEFORE PREPARING SHOP DRAWINGS.
2. COORDINATE ALL WORK WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL, FIRE PROTECTION, AND ELECTRICAL TRADES. PIPE ROUTING SHOWN IS DIAGRAMMATIC. PROVIDE ALL OFFSETS, FITTINGS AND HANGERS TO AVOID INTERFERENCES WITH EQUIPMENT, PIPING, DUCT WORK, LIGHTS, CONDUIT, STRUCTURAL MEMBERS, AND ALL OTHER BUILDING COMPONENTS.
3. COORDINATE ALL FLOOR PENETRATIONS WITH STRUCTURAL DRAWINGS. SET SLEEVES IN FLOORS AND WALLS AND ATTACHMENTS FOR HANGERS AS CONSTRUCTION PROGRESSES. COORDINATE THE EXACT SIZE AND LOCATION OF ALL SLEEVES WITH STRUCTURAL ENGINEER. ALL PENETRATIONS MUST BE SEALED AND HELD AS TIGHT TO COLUMNS OR WALLS AS POSSIBLE.
4. PROVIDE 12"X12" ACCESS PANELS FOR SHOCK ABSORBERS, WATER HAMMER ARRESTORS & ALL VALVES LOCATED ABOVE NON-ACCESSIBLE CEILING AND INSIDE PIPE CHASES. EXACT LOCATION MUST BE COORDINATED WITH ARCHITECTURAL DRAWINGS AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION. ALL ACCESS PANELS SHALL BE LOCATED SO THAT THEY ARE NOT VISIBLE TO PUBLIC VIEW. ALL VALVES AND ACCESSORIES SHALL BE LOCATED WITHIN 12" OF POINT OF ACCESS THROUGH EITHER WALLS OR CEILING.
5. ALL DRAINAGE PIPING AND POTABLE WATER PIPING SHALL BE CONCEALED INSIDE WALLS AND PIPE CHASES OR ABOVE CEILING. HOLD ALL PIPING ABOVE CEILING AS HIGH AS POSSIBLE.
6. ALL DRAINAGE PIPING SHALL SLOPE AT 1/8" INCH PER FOOT UNLESS OTHERWISE NOTED.
7. CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL DOMESTIC WATER AND SANITARY SEWERS AT APPROXIMATELY 5'-0" FROM BUILDING STRUCTURE UNLESS OTHERWISE NOTED.
8. WALL HYDRANTS AND HOSE BIBBS SHALL BE MOUNTED 1'-6" ABOVE GRADE OR FLOOR LEVELS.
9. BOLT WATER HEATERS, PUMPS AND TANKS TO FLOOR SLAB OR CONCRETE PADS.
10. COORDINATE ALL UNDERGROUND PIPING WITH GRADE BEAMS, WALL FOOTINGS, COLUMN FOUNDATIONS AND OTHER STRUCTURAL CONDITIONS.
11. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR LOCATION OF ALL PLUMBING FIXTURES. EXACT LOCATION OF ALL PLUMBING FIXTURES MUST BE VERIFIED IN FIELD PRIOR TO INSTALLATION. FINAL LOCATION SHALL BE AS DIRECTED BY ARCHITECT.
12. FLOORS WHERE INDICATED ON ARCHITECTURAL AND/OR STRUCTURAL DRAWINGS SHALL SLOPE TO FLOOR DRAINS. MAXIMUM SLOPE IN ANY DIRECTION SHALL NOT EXCEED 1/8" INCH PER FOOT. EXACT LOCATION OF ALL FLOOR DRAINS AND HUB DRAINS FOR EQUIPMENT MUST BE VERIFIED IN FIELD PRIOR TO INSTALLATION. FINAL LOCATION SHALL BE AS DIRECTED BY ARCHITECT.
13. PLUMBING CONTRACTOR SHALL MAKE FINAL CONNECTION TO ALL EQUIPMENT INDICATED ON DRAWINGS INCLUDING KITCHEN EQUIPMENT. FINAL CONNECTION SHALL INCLUDE ANY ADAPTERS, NIPPLES, SHUTOFF VALVES, PRESSURE REGULATING VALVES, WATER HAMMER ARRESTORS, BACKFLOW PREVENTION DEVICES AND ALL OTHER ACCESSORIES.
14. DO NOT RUN PLUMBING PIPING THROUGH ELECTRICAL CLOSETS, COMPUTER ROOMS OR TELEPHONE ROOMS.
15. EXACT LOCATION OF ALL CLEANOUTS MUST BE COORDINATED AND APPROVED BY ARCHITECT PRIOR TO INSTALLATION.
16. PROVIDE REDUCED PRESSURE BACKFLOW PREVENTER AT ALL CONNECTIONS TO MECHANICAL EQUIPMENT, KIT, AND EQUIPMENT, ETC. AS REQUIRED BY CODE AND LOCAL AUTHORITIES. CONTRACTOR IS TO COORDINATE WITH THE LOCAL AUTHORITY THE TYPE OF BACKFLOW PREVENTION DEVICE REQUIRED FOR ALL APPLICATIONS PRIOR TO INSTALLATION.
17. ALL STRUCTURAL PENETRATIONS, SLEEVES, BLOCKOUTS AND ANCHORS ARE TO BE LOCATED AND COORDINATED IN THE FIELD BY THE CONTRACTOR IN RELATION TO THE REQUIREMENTS OF FINAL EQUIPMENT AND FIXTURES SELECTED.
18. FLUSH HANDLES FOR WATER CLOSETS WILL BE PROVIDED ON THE SIDE OF WATER CLOSET COMPARTMENT.
19. ALL TOILET TANK LIDS TO BE SECURED WITH VELCRO.
20. PROVIDE SHUTOFF VALVES AT EACH BRANCH FROM THE CW/HW MAINS. PROVIDE A BALANCING VALVE AT EACH BRANCH FOR THE HW MAIN.

**PLUMBING SYSTEM:**

**PART 1 - GENERAL**

- 1. SCOPE OF WORK: PLUMBING CONTRACTOR SHALL FURNISH AND INSTALL ALL PLUMBING PIPING WHERE REQUIRED, COMPLETE AS CALLED FOR OR INDICATED ON THE PLANS AND SPECIFICATIONS ACCORDING TO ALL LOCAL CODES, WITH THESE PLANS AS A MINIMUM REQUIREMENT.
2. PLUMBING CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING SANITARY, WATER AND STORM LINES PRIOR TO STARTING WORK.
3. LISTED PRODUCT MANUFACTURERS AND MODEL NUMBERS ARE BASIS OF DESIGN. APPROVED EQUAL MANUFACTURERS/MODEL NUMBERS WILL BE ACCEPTABLE.

**PART 2 - PRODUCTS**

- 1. ALL PLUMBING FIXTURES ANTICIPATED FOR HUMAN WATER CONSUMPTION SHALL BE LEAD-FREE.
2. WATER PIPING: CONNECT TO THE CITY WATER MAIN AS REQUIRED BY THE CITY. METER TO BE ADEQUATE SIZE FOR DEMAND INDICATED ON THE DRAWINGS. PIPING SHALL BE TYPE "K" COPPER BELOW SLAB OR GRADE AND TYPE "L" COPPER ABOVE SLAB. MAKE UP JOINTS WITH SWEAT FITTINGS AND SOLDER PER CODE. NO JOINTS UNDER SLAB. PIPES AND PIPE FITTINGS, INCLUDING VALVES AND FAUCETS, SHALL HAVE A MAXIMUM 8 PERCENT LEAD CONTENT. WATER PIPING BELOW GRADE 3" AND LARGER SHALL BE CLASS 150 MILD DUCTILE IRON PIPE AND FITTINGS WITH MECHANICAL COMPRESSION JOINTS.
a. SOLDERED JOINTS SHALL BE DONE IN ACCORDANCE WITH ASTM B 828 WITH A LEAD FREE SOLDER THAT CONFORMS WITH ASTM B 32 AND FLUX THAT CONFORMS WITH ASTM B 813. LEAD FREE SHALL MEAN A CHEMICAL COMPOSITION EQUAL TO OR LESS THAN 0.2 PERCENT LEAD.
b. PIPES PASSING THROUGH CONCRETE OR OTHER CORROSIVE MATERIALS SHALL BE PROTECTED FROM EXTERNAL CORROSION BY A PROTECTIVE SHEATING OR WRAPPING OR OTHER MEANS THAT WILL WITHSTAND ANY REACTION FROM LIME OR ACID OF CONCRETE OR OTHER CORROSIVE MATERIAL. SHEATING OR WRAPPING SHALL ALLOW FOR EXPANSION AND CONTRACTION OF PIPING TO PREVENT ANY RUBBING ACTION. MINIMUM WALL THICKNESS OF MATERIAL SHALL BE 0.025 INCHES.
CLORINATED POLYVINYL CHLORIDE (CPVC) SCHEDULE 40 PIPING, TYPE 1, GRADE 1 IN ACCORDANCE WITH ASTM F 441 AND F 441M, WITH SCHEDULE 40 SOCKET TYPE FITTINGS IN ACCORDANCE W/ ASTM F 438 & PVC TYPE 40 SOLVENT CEMENT & PRIMER COMPLYING WITH ASTM D-2564 OR SCHEDULE 40 THREADED TYPE FITTINGS IN ACCORDANCE W/ ASTM F 437. PEX-A PIPING MAY BE USED AS AN ALTERNATE FOR PIPING 1" AND SMALLER FOR HOT AND COLD WATER SYSTEMS WITHIN THE BUILDING. CROSS-LINKED POLYETHYLENE (PEX) PLASTIC TUBING, PEX-A GRADE, ASTM F-876; ASTM F-877 (100 PSI AT 180 DEGREES F); BRASS, COPPER OR ENGINEERED PLASTIC (EP) FITTINGS, ASTM F-1960. PIPING, FITTINGS, AND JOINTS TO COMPLY WITH NSF 61-G, NSF 61, AND NSF 372. FITTINGS/JOINTS: COLD EXPANSION FITTING WITH PEX REINFORCING RINGS, ASTM F-1960 OR COLD EXPANSION FITTING WITH METAL COMPRESSION SLEEVE, ASTM 2080.
a. ACCEPTABLE PEX MANUFACTURERS/SYSTEMS:
1. UPONOR WIRSBO AQUAPEX TUBING WITH PROPEX FITTINGS
2. REHAU PEX TUBING AND FITTINGS
b. ALL PEX TUBING AND FITTINGS SHALL BE FROM THE SAME MANUFACTURER
c. GALVANIZED PIPE AND NIPPLES ARE NOT ACCEPTABLE FOR ANY PORTIONS OF THE DOMESTIC WATER SYSTEM.
3. WASTE AND VENT PIPING: SHALL BE SCHEDULE 40 TO 40 PVC PLASTIC WITH FITTING INSTALLED AS RECOMMENDED BY THE MANUFACTURER. CONNECT TO THE CITY SEWER AS REQUIRED BY THE CITY.
4. VACUUM BREAKERS: WHERE SHOWN ON THE DRAWINGS, OR AS REQUIRED, SHALL BE ANGLE PATTERN WITH BUILT-IN LIFT TYPE CHECK VALVE.
5. VALVES: PLUMBING CONTRACTORS SHALL FURNISH ALL VALVES OF ONE MANUFACTURER, FIGURE NUMBER AND TYPE THROUGHOUT THE ENTIRE INSTALLATION OF THE WORK, UNLESS OTHERWISE SPECIFIED. THE FOLLOWING MANUFACTURERS, SUCH AS CRANE, WATTS, REGULATOR CO., AND WALWORTH CO. WILL BE ACCEPTABLE ALTERNATIVES, WHERE SHOWN TO EQUAL TO THOSE SPECIFIED. INSTALL GATE VALVES AT EACH EQUIPMENT CONNECTION
a. GATE VALVES: TWO (2) INCH AND SMALLER SHALL BE BRASS OR BRONZE BODY, BRASS TRIP, UNION BONNET. BUILT FOR A MINIMUM 125 LBS. WORKING PRESSURE. NIBCO #S-135 OR AN APPROVED EQUAL.
b. GLOBE VALVES: TWO (2) INCH AND SMALLER SHALL BE BRASS OR BRONZE BODY, BRASS TRIP, SCREWED BONNET, BUILT 125 LBS. WORKING PRESSURE NIBCO #S-211 OR AN APPROVED EQUAL.
c. CHECK VALVES: TWO (2) INCH AND SMALLER SHALL BE BRASS OR BRONZE BODY, VERTICAL LIFT, TEFLON DISC, BUILT FOR 125LBS. WORKING PRESSURE, NIBCO #S-480-Y OR AN APPROVED EQUAL.
d. BALL VALVES: TWO (2) INCH AND SMALLER SHALL BE BRASS OR BRONZE BODY, VERTICAL LIFT, CHROME-PLATED BRASS BALL, BUILT FOR 125LBS. WORKING PRESSURE, NIBCO PC-FP600A-LF OR AN APPROVED EQUAL.
e. BALANCING VALVES: TWO (2) INCH AND SMALLER SHALL BE BRASS OR BRONZE BODY, NON-LUBRICATED, ECCENTRIC PLUG TYPE WITH ADJUSTABLE STOP AND BUNA-NUT G O G COATING BUILT FOR 125LBS. WORKING PRESSURE, NIBCO MTPC-1805 OR AN APPROVED EQUAL.
6. UNIONS: PROVIDE UNIONS AT EACH EQUIPMENT CONNECTION, PROVIDE PROPER DIELECTRIC UNIONS WHERE CONNECTIONS ARE MADE BETWEEN MATERIALS OF DISSIMILAR METALS.
7. FREEZELESS WALL HYDRANTS(FWH): WOODFORD MODEL B67 OR AN APPROVED EQUAL.
8. PRESSURE REDUCING VALVE: PROVIDE IF THE CITY WATER PRESSURE IS OVER SEVENTY (70) PSI. SIZE AS SHOWN IN DETAIL.
9. RELIEF VALVE: TEMPERATURE AND PRESSURE RELIEF VALVE OF REQUIRED SIZE AND ADEQUATE CAPACITY SHALL BE INSTALLED AT HOT WATER HEATER AND/OR ON HOT WATER SUPPLY LINE TO DISHWASHER. IF DISHWASHER IS NOTED ON PLANS).
10. AIR CHAMBERS: EQUAL TO HUDRA-RESTER PDJ MANUFACTURED BY SIOUX CHIEF.
11. THERMOMETER: FURNISH AND INSTALL A WEKSLER AF04 WITH A S3B4 WELL. THERMOMETER SHALL HAVE A FIVE (5) INCH DIA. ADJUSTABLE CENTER. MOUNT IN A STAINLESS STEEL CASE, 360 DEGREES ADJUSTABLE HEAD WITH BRASS WELLS. TEMPERATURE RANGE AS REQUIRED. APPROVED EQUALS BY ASHCROFT OR PALMER ARE ACCEPTABLE.
12. EXPANSION TANK: AMTROL ST-12.
13. BACKFLOW PREVENTER: PROVIDE BACKFLOW PREVENTERS AS REQUIRED BY LOCAL AND/OR STATE AUTHORITIES. PROVIDE ZURN MODEL 970-1/2 REDUCE PRESSURE BACKFLOW PREVENTER. PROVIDE AT BUILDING SERVICE ENTRANCE AS SPECIFIED BY AUTHORITIES.
14. INSULATION: WATER PIPING TO BE RUN ON WARM SIDE OF EXTERIOR WALLS, WHEN NOT IN SLAB. INSULATE ALL HOT WATER PIPE. INSULATE ALL COLD WATER PIPE IN EXTERIOR WALLS. INSULATION SHALL BE ONE (1) INCH THICK ARMAFLEX FLEXIBLE CELLULAR INSULATION. FIBERGLASS INSULATION IS NOT ACCEPTABLE. CONCEALED LAVATORY INSULATION SHALL BE TCI PRODUCTS SKAL GARD MODEL SG-100B OR TRUEBRO PRODUCTS HANDI LAVGUARD MODEL #102.
a. INSULATION THICKNESS IN INCHES FOR PIPE SIZES

| PIPE SIZE | UP TO 3/4" | 1" UP TO 1 1/4" | 1 1/2" UP TO 3 1/2" | 4" AND OVER |
|-----------|------------|-----------------|---------------------|-------------|
| CW        | 1/2"       | 1/2"            | 1"                  | 1"          |
| HW        | 1"         | 1"              | 1 1/2"              | 1 1/2"      |

16. ROOF FLASHING: SIX POUND LEAD SHEET EXTENDING IN 12" IN ALL DIRECTIONS FROM PIPE, CARRIED OVER AND TURNED INSIDE PIPE. ALL SEAMS SHALL BE SOLDERED AND WATER TIGHT. EXTEND TENTS MIN OF 12" ABOVE ROOF AND 30" FROM WELL WALL.
17. WATER HAMMER ARRESTORS: PRECISION PLUMBING PRODUCTS MODEL #SC-500A, SC-550B, SC-1000C, SC-12500, SC-1500E, SC-2000F.

**PART 3 - EQUIPMENT**

- 1. FIXTURE TRIM: EXPOSED METAL PARTS TO BE OF HEAVY WEIGHT POLISHED BRASS, OR AVAIL. CHROMIUM PLATED OR BEST QUALITY, AS REGULARLY FINISHED BY THE PLUMBING FIXTURE MANUFACTURER. PROVIDE APPROVAL FIXTURES, WHERE REQUIRED, TO COMPLY WITH ALL STATE AND LOCAL HANDICAP CODES.
2. FIXTURES:
A. WC-1: JUNIOR 10" WATER CLOSET: AMERICAN STANDARD #2135 2280 WITH TANK #4019 613-020 WITH LOCKING DEVICE COMPLETE WITH COUPLING COMPONENTS AND TANK TRIM. ROUND FRONT SIPHON ACTION. 1 1/2 GALLONS PER FLUSH. SEAT: AMERICAN STANDARD #5001 G85 BABY DEVORO SEAT OPEN FRONT WITH EVERCLEAN LESS COVER IN WHITE, 2 BOLT CAPS, WHEEL HANDLE ANGLE 175/24 WITH OVAL HANDLE. 1/2" NOM. COMP INLET X 3/8" OD COMP OUTLET POLISHED CHROME WITH 12" RISER. AND ONE PIECE CHROME PLATED BRASS ESCUTCHEON.
B. WC-2: ADA COMPLIANT BARRIER FREE WATER CLOSET: AMERICAN STANDARD #215FA 104-020 COMPACT RIGHT HEIGHT, ELONGATED TOILET BOWL, 1.28 GALLONS PER FLUSH, SEAT: AMERICAN STANDARD #21110 EVER-CLEAN ELONGATED SEAT W/ SLOW CLOSE SNAP-OFF HINGE, WHEEL HANDLE ANGLE VALVE, BRASS CRAFT #524 W/ OVAL HANDLE. 1/2" NOM. COMP INLET X 3/8" OD COMP OUTLET POLISHED CHROME W/ 12" RISER, AND ONE PIECE CHROME PLATED BRASS ESCUTCHEON.
C. L-1: LAVATORY - KINSON KINERSON #130 WALL HUNG VITREOUS CHINA 4" CENTER LAVATORY. FAUCET CHICAGO BRASS 1802-A-1000-E2605 4" CENTERSET WITH STAINL. HANDLES AND PERFORATED STRAINER AND 0.5GPM AERATOR. SUPPLIES - MCGUIRE #LF2165LK LOOSE KEY ANGLE SUPPLIES. TRAP - MCGUIRE #8902C 1.25 X 1.5 17 GA. P-TRAP. PROVIDE JAY R. SMITH #0700 CHAIR CARRIER TO SUITE - MOUNT RIM @21" AFF.
D. SINK AND SINK - EACH GRAB BAR MODEL NO. HSA-10-F WALL MOUNT HAND SINK WITH WRIST BLADE HANDLES AND PERFORATED STRAINER AND 0.5GPM AERATOR. SUPPLIES - MCGUIRE #LF2165LK LOOSE KEY ANGLE SUPPLIES. TRAP - MCGUIRE #8902C 1.25 X 1.5 17 GAL P-TRAP. PROVIDE JAY R. SMITH #0700 CHAIR CARRIER TO SUIT LAV GUARD #10255 CHROME AND LAV GUARD #10505 CHROME PROTECTION.
E. HS-3: COMP. SINK - ADVANCE TABCO 93-23-60-24RL REGALINE SINK W/ LR DRAINBOARDS, T&S BRASS. 8-0231-C.C SINK MIXING FAUCET, PROVIDE 2.0 GPM AERATOR ON FAUCET. 1/2" NOM. COMP INLET X 1/2" OD COMP OUTLET WITH 20" RISER, ONE PIECE CHROME PLATED BRASS TRAP WITH CLEANOUT PLOG, AND (3)-RLK-35 DRAINS.
F. CL-1: CLASSROOM SINK - ELKAY. DAYTON D11515 14"X14"X5-1/2" D SS WITH 2 HOLES AT 4" CENTERS. CHICAGO FAUCETS #895-317-FC 4 CENTERSET WITH 317 WRIST BLADE HANDLES. 2.0 GPM AERATOR AND PERFORATED STRAINER. SUPPLIES - MCGUIRE #2165LK LOOSE KEY ANGLE SUPPLIES. TRAP-MCGUIRE #8902C 1.25 X 1.5 17 GA P-TRAP.
F. MR-1: MOP SERVICE SINK - FLAT MODEL MSB-2424 MOULDED STONE, CORNER TYPE RECEPTOR WITH A STAINLESS STEEL CAP ON THRESHOLD AND NO. 830-AA SERVICE SINK FAUCET #832-11 HOSE AND HOSE BRACKET AND NO. 889-C MOP HANGER. VINYL BUMPERGUARD #87-AA AND WALL GUARD MSG 2424.
G. DF-1: DRINKING FOUNTAIN: TWO LEVEL ELKAY #EDFP217C MOUNTED SO THAT THE LOWER FOUNTAIN SPOUT IS AT 30" AFF. HIGH FOUNTAIN WILL SERVE ADULTS AT A MAXIMUM SPOUT HEIGHT OF 36".
H. WB-1: CONNECTION BOX - GUY GRAY #WB-200 WITH DUO-CLOZ BALL VALVES 1/2" MPT BRASS SWEAT CONNECTION AND 2" PVC DRAIN.
I. HD-1: HUB DRAIN - JAY R. SMITH 3812, TWO (2) INCH DUO COATED CAST IRON CONDENSATE DRIP AND FUNNEL.
K. FD-G: FLOOR DRAINS - JAY R. SMITH SERIES 2005L "SPEEDI-SET" SQUARE CAST IRON FLOOR WITH BRONZE STRAINER. FLOOR DRAINS SHALL BE FORMED AROUND TO PREVENT CONCRETE FROM TOUCHING AT POURING OF SLAB. FLOOR DRAINS SHALL BE GROUDED AFTER ADJUSTMENT FOR ELEVATION FOR FINISH FLOOR AND TO RECEIVE FINISH FLOOR MATERIALS. APPROVED EQUALS BY ZURN, WADE, OR JOSAM ARE ACCEPTABLE.
L. FD-MB: FLOOR DRAINS - JAY R. SMITH SERIES 2233 MEDIUM DUTY ROUND CAST IRON FLOOR WITH SAFE SET BUCKET CAST IRON STRAINER. FLOOR DRAINS SHALL BE FORMED AROUND TO PREVENT CONCRETE FROM TOUCHING AT POURING OF SLAB. FLOOR DRAINS SHALL BE GROUDED AFTER ADJUSTMENT FOR ELEVATION FOR FINISH FLOOR AND TO RECEIVE FINISH FLOOR MATERIALS. APPROVED EQUALS BY ZURN, WADE, OR JOSAM ARE ACCEPTABLE.
3. TRAP GUARD: PROVIDE PRO-SET TRAP GUARD IN ALL FLOOR DRAINS, HUB DRAINS, AND FLOOR SINKS OR APPROVED EQUAL.
4. FS FLOOR SINK: J.R. SMITH NO. 3101 CAST IRON RECEPTOR WITH ACID RESISTING PORCELAIN ENAMELED INTERIOR, NICKEL, BRONZE RIM AND GRATE FLASHING FLANGE AND SEDIMENT BUCKET. PROVIDE A REDUCER ON THE PIPE ENTERING THE FLOOR SINK TO PREVENT OVERFLOWS AND SPLASHING. FOR A TYPICAL 3 PROVIDE A 1-1/2" REDUCER.
5. PRESSURE REDUCING VALVE: LEAD FREE ZURN WILKINS 500 XL SERIES W/ STRAINER OR APPROVED EQUAL.
6. CLEAN-OUTS: SHALL BE FLUSH WITH FINISH FLOOR, FINISH WALL OR FINISH GRADE. CLEAN-OUT IN WALL SHALL BE SMITH 4530. IN TILE FLOOR, SMITH 4025. IN CARPET AREAS, SMITH 4025. IN CONCRETE FLOOR, SMITH 4245 WITH SCORATED COVER AND IN OUTDOOR LINES, SMITH 4280 SET IN 18" PREVENT CONCRETE FROM TOUCHING AT POURING OF SLAB. CLEAN-OUTS SHALL BE GROUDED AFTER ADJUSTMENT FOR ELEVATION FOR FINISH FLOOR AND TO RECEIVE FINISH FLOOR MATERIALS. APPROVED EQUALS BY ZURN, WADE, OR JOSAM ARE ACCEPTABLE.
7. EWH-01: WATER HEATER: ELECTRIC TYPE. UL LISTED, VERTICAL STORAGE TYPE. TANK SHALL BE GLASS LINED BOD. AO SMITH DVE-120-36, 208 V / 3 PH OR APPROVED EQUAL.
8. HWRP-01: HOT WATER RECIRCULATING PUMP. TACO MODEL 008 W/ 00 SERIES AQUASTAT & DIGITAL TIMER OR APPROVED EQUAL.
9. MV-1 MIXING VALVE: POWERS MODEL LFSH1432 SERIES OR APPROVED EQUAL.
10. MV-A MIXING VALVE: ASSE 1070 MIXING VALVE POWERS MODEL LFA480 SERIES OR APPROVED EQUAL.

**AUTOMATIC SPRINKLER SYSTEM:**

**PART 1 - GENERAL**

- 1. GENERAL REQUIREMENTS - THE NOTICE TO BIDDERS, GENERAL CONDITIONS, SPECIAL CONDITIONS AND ALL SUBSEQUENT ADDENDA OR BULLETINS SHALL BE CONSIDERED A PART OF THIS DIVISION OF THE SPECIFICATIONS AND SHALL APPLY TO THE CONTRACTOR FOR THE WORK UNDER THIS DIVISION INSOFAR AS THEY APPLY TO HIM OR HIS WORK.
2. THE SYSTEM SHALL BE WET TYPE TYP FOR DAY CARE AREAS, OFFICE AREAS, AND COMMON SPACE.
3. THE CONTRACTOR FOR THE WORK UNDER THIS DIVISION SHALL CAREFULLY READ THE ABOVE MENTIONED DOCUMENTS AND STUDY THE DRAWINGS OF ALL TRADES. HE SHALL BE RESPONSIBLE FOR NEGLECT TO READ OR ATTEND TO ANY PARAGRAPH OR ITEMS CONTAINED HEREIN.
4. THE TERM "PROVIDE" SHALL BE DEFINED AS "TO FURNISH AND INSTALL COMPLETE AND IN WORKING ORDER". THE TERMS "THIS CONTRACTOR" OR THE CONTRACTOR" SHALL REFER TO THE SPRINKLER CONTRACTOR.
5. SCOPE OF WORK:
a. THE WORK SHALL INCLUDE BUT IS NOT NECESSARILY LIMITED TO THE SPRINKLER SYSTEMS AND ANY APPURTENANCES COMMON TO THE SYSTEMS, GENERALLY CONSISTING OF PIPE FITTINGS, VALVES, HANGERS, COVERING, PAINTING, CLEANING, TESTING AND SUCH OTHER WORK AS IS NECESSARY AND SPECIFIED. THIS CONTRACTOR SHALL SCHEDULE DELIVERY OF EQUIPMENT AND PIPING AND COMPLETE HIS WORK SO THAT THERE IS NO INTERRUPTION IN THE PROJECT WORK SCHEDULE.
b. THE CONTRACTOR IS RESPONSIBLE FOR COMPLETE PIPING DRAWINGS, ANY PIPING LAYOUT ON PLANS IS FOR EFFECT ONLY.
6. SHOP DRAWINGS:
a. THIS CONTRACTOR SHALL SUBMIT TO THE CONSTRUCTION MANAGER SHOP DRAWINGS OR CATALOG CUTS IN ACCORDANCE WITH THE GENERAL CONDITIONS AND SPECIAL CONDITIONS. SHOP DRAWINGS AND/OR CATALOG CUTS SHALL BE FURNISHED FOR REVIEW AND APPROVAL. NECESSARILY LIMITED TO THE FOLLOWING:
i. ALARM VALVES
ii. SPRINKLER HEADS
iii. WALL MOUNTED INDICATOR VALVES
iv. VALVES
v. WATER MOTOR GONGS
vi. SIAMESE CONNECTIONS
vii. COMPLETE SPRINKLER SYSTEM LAYOUT
7. APPROVAL: LAYOUT DRAWINGS SHALL BE APPROVED BY THE FIRE MARSHAL OR APPROPRIATE AUTHORITY PRIOR TO COMMENCING FABRICATION OR INSTALLATION.
8. REGULATIONS AND PERMITS: ALL WORK UNDER THIS SECTION OF THE SPECIFICATIONS SHALL COMPLY WITH ALL LAWS, ORDINANCES, RULES AND REGULATIONS OF THE LOCAL AUTHORITIES HAVING JURISDICTION ACCORDING TO IFPPA PAMPHLET NO. 13 AND THE ASSOCIATED FACTORY MUTUAL APPROVAL AND SHALL BE SUBJECT TO THE INSPECTION AND APPROVAL OF THE AUTHORITIES HAVING JURISDICTION, NOTWITHSTANDING ANYTHING IN THIS SPECIFICATION TO THE CONTRARY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST UNDER THIS DIVISION OF THE SPECIFICATIONS, SHALL OBTAIN AND PAY FOR ALL PERMITS REQUIRED TO INITIATE AND COMPLETE THE WORK UNDER THIS CONTRACT.
9. TESTS:
a. UPON COMPLETION AND PRIOR TO ACCEPTANCE OF THE SPRINKLER INSTALLATION, THE CONTRACTOR SHALL SUBJECT THE SYSTEM TO THE TESTS REQUIRED BY THE APPROPRIATE GOVERNING AGENCY AND NFPA NO. 13.
b. CONTRACTOR SHALL FURNISH AND INSTALL IN ACCORDANCE TO THE SPRINKLER RISER MAIN, A PRINTED SHEET, PROTECTED BY TRANSPARENT COVER, SHOWING THE CONNECTIONS, RESAULT CONTROL, EMERGENCY PROCEDURE AND OTHER MATTERS NECESSARY FOR FULL UTILIZATION OF THE SYSTEM.
10. FIRE PROTECTION EQUIPMENT GUARANTEE: ALL EQUIPMENT AND COMPONENTS FURNISHED UNDER THIS SPECIFICATION SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF ACCEPTANCE. FAILURES OF ANY PART OF THE GUARANTEED EQUIPMENT DURING THE GUARANTEE PERIOD SHALL BE PROMPTLY REPLACED WITH NEW PARTS BY AND AT THE EXPENSE OF THE CONTRACTOR.
11. UNDERGROUND AND PIPING: UNDERGROUND PIPING SHALL BE DUCTILE IRON. MECHANICAL TEES NOT ALLOWED.
PART 3 - EXECUTION
1. GENERAL NOTES (APPLICABLE WHERE REQUIRED.)
a. SPRINKLER PIPING SHALL BE PITCHED TO DRAIN. PITCH SHALL BE ONE QUARTER (1/4) INCH TO ONE-HALF (1/2) INCH FALL PER EACH TEN (10) FEET OF RUN.
b. OCCUPIED AREAS SHALL HAVE CHROME WET PENDANT SPRINKLER (165 DEGREES F).
c. ALL SPRINKLER PIPING SHALL BE RUN CONCEALED. SIAMESE CONNECTION SHALL BE BRASS 4X2-1/2 X 2-1/2, LETTERED "AUTOMATIC SPRINKLER".
d. PROVIDE PIPING FROM MAIN SERVICE TO SIAMESE CONNECTION. PROVIDED BALL DRIP. RUN ALL PIPING CONCEALED. LOCATE PER SITE PLAN FOR ACCESS BY FIRE DEPARTMENT TRUCK.
e. MAIN PIPING RUNS AND BRANCHING TEES MAY BE GROOVED PIPING. ALL BRANCHY AND RUN OUT PIPING SHALL BE THREADED AND SCREWED FITTINGS.

**FIRE PROTECTION SYSTEM DESIGN CRITERIA**

- 1. SCOPE OF WORK: THE SCOPE OF WORK FOR THE PROJECT IS A RENOVATION AND ADDITION TO THE CHILDREN'S EDUCATION CENTER. THE FIRE SYSTEM FOR THIS ADDITION WILL CONSIST OF THE ADDITION OF A SECOND AUTOMATIC DRY SPRINKLER SUPPRESSION SYSTEM FOR THE BUILDING ADDITION AS WELL AS THE SHIFTING OF HEADS IN THE EXISTING BUILDING SYSTEM TO ALIGN WITH THE NEW WALL AND RCP LAYOUTS.
2. CODES AND STANDARDS:
A. INTERNATIONAL FIRE CODE (2018)
INTERNATIONAL BUILDING CODE (2018).
B. NFPA STANDARDS TO BE APPLIED ARE AS FOLLOWS:
NFPA 13, INSTALLATION OF FIRE SPRINKLER SYSTEMS (2016)
NFPA 12, NATIONAL FIRE ALARM CODE (2018)
NFPA 101, LIFE SAFETY CODE (2018)
3. DESIGN CRITERIA
THE FIRE RISER SHALL BE PROVIDED WITH RISER SHUTOFF VALVE WITH TAMPER SWITCH AND WATER FLOW SWITCH. ALL SPRINKLER SYSTEM FLOOR CONTROL VALVES SHALL BE PROVIDED WITH WATER FLOW SWITCHES AND TEST CONNECTION. ALL SYSTEM CONTROL VALVES SHALL BE MONITORED AND PROVIDED WITH TAMPER SWITCHES; ALL ASSOCIATED SYSTEMS SHALL BE PROVIDED WITH FLOW SWITCHES. ALL DEVICES SHALL BE CONNECTED TO A LOCAL AUDIBLE ALARM WITH REMOTE STATION MONITORING.
4. OCCUPANCY HAZARD CLASSIFICATION:
LIGHT HAZARD: CLASSROOMS, CORRIDORS, RESTROOMS, LOBBIES, OFFICES, STAFF BREAKROOM
ORDINARY HAZARD GROUP 1: PANTRY, EXTERIOR COVERED WALKWAYS ATTIC MECHANICAL ROOMS, UTILITY ROOMS, STORAGE ROOMS
5. QUALITY AND PERFORMANCE SPECIFICATIONS:
FIRE PROTECTION EQUIPMENT SHALL BE UL OR FM LISTED FOR THE APPLICATION.
SPRINKLER DESIGN CRITERIA
OCCUPANCY CLASSIFICATION: LIGHT HAZARD
SYSTEM TYPE: DRY PIPE
DESIGN DENSITY: 0.10 GPM/SF
HYDRAULIC REMOTE AREA: 1500 SF
MAXIMUM COVERAGE PER SPRINKLER: 225 SF
HOSE STREAM ALLOWANCE: 100 GPM
SPRINKLER HEAD TYPE: CONCEALED HEAD WITH FACTORY CEILING PAINTED PLATE
OCCUPANCY CLASSIFICATION: ORDINARY HAZARD GROUP 1
SYSTEM TYPE: DRY PIPE
DESIGN DENSITY: 0.15 GPM/SF
HYDRAULIC REMOTE AREA: 1500 SF
MAXIMUM COVERAGE PER SPRINKLER: 130 SF
HOSE STREAM ALLOWANCE: 250 GPM
SPRINKLER HEAD TYPE: ROUGH BRASS UPRIGHT
OCCUPANCY CLASSIFICATION: ORDINARY HAZARD GROUP (ATTIC)
SYSTEM TYPE: DRY PIPE
DESIGN DENSITY: 0.15 GPM/SF
HYDRAULIC REMOTE AREA: 1950 SF
MAXIMUM COVERAGE PER SPRINKLER: 130 SF
HOSE STREAM ALLOWANCE: 250 GPM
SPRINKLER HEAD TYPE: ROUGH BRASS UPRIGHT

FIRE PROTECTION EQUIPMENT SHALL BE UL OR FM LISTED FOR THE APPLICATION.

**SPRINKLER DESIGN CRITERIA**

- OCCUPANCY CLASSIFICATION: LIGHT HAZARD
SYSTEM TYPE: DRY PIPE
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HYDRAULIC REMOTE AREA: 1500 SF
MAXIMUM COVERAGE PER SPRINKLER: 130 SF
HOSE STREAM ALLOWANCE: 250 GPM
SPRINKLER HEAD TYPE: ROUGH BRASS UPRIGHT

**ELECTRICAL ROOMS:**

PROVIDE UPRIGHT ROUGH BRASS SPRINKLER HEADS. DO NOT ROUTE PIPING ABOVE EQUIPMENT. PROVIDE SHIELDS ON SPRINKLER HEADS TO AVOID DISCHARGE ON ELECTRICAL PANELS.

**AUXILIARY SPRINKLER DRAINS:**

ALL TRAPPED SPRINKLER PIPING SHALL BE PROVIDED WITH DRAINS AS DESCRIBED IN NFPA 13. ROUTE ALL DRAIN PIPING ABOVE CEILING TO LOCATION OF HUB DRAINS, FLOOR DRAINS OR MOP SINKS. DISCHARGE LOCATION OF ALL DRAINS SHALL BE APPROVED BY ARCHITECT AND ENGINEER. ALL AUXILIARY DRAIN CONNECTIONS AND DRAIN VALVES SHALL BE TAGGED AND PROVIDED WITH IDENTIFICATION AS TO LOCATION OF TRAPPED PIPING. ALL DRAINS SHALL BE NOTED ON SHOP DRAWINGS.

**CONCEALED SPACES:**

AUTOMATIC SPRINKLER HEADS ARE REQUIRED IN ALL CONCEALED SPACES PER NFPA 13 8.8.7 AND AS SHOWN AND/OR NOTED ON PLANS.

**SPRINKLER FLOOR CONTROL VALVE ASSEMBLY**

ALL FLOOR CONTROL VALVE ASSEMBLIES SHALL CONSIST OF A FLOOR INDICATING SHUTOFF VALVE WITH TAMPER SWITCH, CHECK VALVE, WATER FLOW SWITCH, DRAIN VALVE, PRESSURE GAUGE AND SPRINKLER TEST ASSEMBLY.

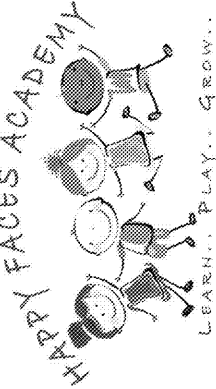


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PLANNING
ARCHITECTURE
INTERIORS

CALBERT
DESIGN GROUP



**PROJECT LOCATION:**

2865 WEBB ROAD
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**REVISIONS**

Table with columns NO, DATE, and DESCRIPTION for revisions.

**GENERAL NOTES - PLUMBING**

P0.1

DATE 06/24/20