U.S, DEPARTMENT OF COMMERCE
NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY

NIST STANDARD BUILDING PLUMBING SYSTEM MODELS

PLUMBING CD SUBMISSION 100%
08-15-2022

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REVISION	DESCRIPTION	BY	DATE

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U.S. DEPARTMENT OF COMMERCE

OFFICE OF FACILITIES & PROPERTY MANAGEMENT

NIST

COVERSHEET

P001

SH. NO. ___ OF ___ DWG. P001

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

PLUMBING GENERAL CONDITIONS

1. THE INTENT OF THESE DRAWINGS IS TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. PROVIDE ALL LABOR AND MATERIAL NECESSARY TO ACHIEVE SUCH ENDS. CONTRACTOR IS OBLIGATED TO EXAMINE PLANS. ANY OBSERVED FAULTS OR AMBIGUITY IN THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY, SO THAT THE MATTER MAY BE RESOLVED PRIOR TO SUBMISSION OF BIDS. BY SUBMISSION OF BID, THE CONTRACTOR SHALL ACKNOWLEDGE ACCEPTANCE OF THESE PLANS AS AN ADEQUATE DEFINITION OF THE SCOPE OF WORK AND EXTRA COST CLAIMS BASED ON INADEQUACY OF PLANS WILL NOT BE CONSIDERED.
2. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
3. THE PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING WORK WITH OTHER TRADES. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE APPARENT, THE ENGINEER SHALL BE ADVISED IMMEDIATELY, AND AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED.
4. CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AND ARRANGE FOR INSPECTIONS BY LOCAL AUTHORITIES HAVING JURISDICTION.
5. PROVIDE OPENINGS IN BUILDING CONSTRUCTION FOR PASSAGE OF PIPING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER. VERIFY SLAB PENETRATION LOCATIONS PRIOR TO PROCEEDING WITH WORK IN ORDER TO LOCATE OBSTRUCTIONS EMBEDDED IN SLAB.
6. ALL NECESSARY ALLOWANCES AND PROVISIONS SHALL BE MADE BY THIS CONTRACTOR FOR BEAMS, COLUMNS OR OTHER OBSTRUCTIONS OF THE BUILDING OR THE WORK OF OTHER CONTRACTORS, WHETHER OR NOT SAME IS INDICATED. WHERE NECESSARY TO AVOID OBSTRUCTIONS THE DUCTS SHALL BE TRANSFORMED, DIVIDED, OFFSET, RAISED OR LOWERED WITH THE REQUIRED FREE AREA BEING MAINTAINED WHILE MAINTAINING DESIGNED CEILING HEIGHTS.
7. ALL ROTATING PLUMBING EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. CONTROLS AND ACCESSORIES FOR EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.
10. PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN HIS WORK AREA DAILY AND SHALL ALSO REMOVE ALL TRASH AFTER WORK COMPLETION.
11. THE WORK DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY PREPARED BASE BUILDING DRAWINGS. IF EXISTING FIELD CONDITIONS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF DISCREPANCIES WHICH WILL AFFECT THE PROPOSED WORK PRIOR TO BEGINNING WORK.
12. SYMBOLS SHOWN ON SCHEDULES DEFINE TYPE OF EQUIPMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR RESEARCHING DRAWINGS FOR EXACT QUANTITIES REQUIRED OF EACH TYPE.
13. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, PIPING, ETC., SHALL BE FREE FROM INTERFERENCE WITH OTHER DISCIPLINES. WHERE CONFLICTS OCCUR, CONTRACTOR SHALL IMMEDIATELY CONTACT THE CONSTRUCTION MANAGER. WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER, OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.
14. THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, DRAIN POINTS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE. ALLOW FOR BETTER ACCESSIBILITY, AND ANY CHANGE FOR THAT PURPOSE SHALL BE APPROVED.
15. ALL EQUIPMENT WHICH REQUIRES INTERFACE WITH THE ELECTRICAL TRADE, SUCH AS CONTROLLING DEVICES, DISCONNECT SWITCHES, MOTORS, ETC., SHALL BE FULLY COORDINATED BETWEEN ALL TRADES.
16. ALL WORK TO BE GUARANTEED FOR ONE YEAR AGAINST LABOR AND MATERIALS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACE OR REPAIRED AS DIRECTED FOR THE DURATION OF THE GUARANTEE PERIOD. TIME FOR THIS GUARANTEE SHALL BEGIN FROM THE DATE OF ACCEPTANCE OF THE COMPLETE WORK BY THE OWNER OR HIS APPOINTED REPRESENTATIVE. NOTE: THESE GUARANTEES SHALL BE SUBMITTED TO THE CO FOR RECORD PURPOSES.
17. AS USED IN THE DRAWINGS FOR PLUMBING WORK, CERTAIN NON-TECHNICAL WORDS SHALL BE UNDERSTOOD TO HAVE SPECIFIC MEANINGS AS FOLLOWS REGARDLESS OF INDICATIONS TO THE CONTRARY IN THE GENERAL CONDITION OR OTHER DOCUMENTS GOVERNING THE MECHANICAL WORK.
    - A. "FURNISH" - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS OR ENCUMBRANCES.
    - B. "INSTALL" - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
    - C. "PROVIDE" - "FURNISH" AND "INSTALL".
    - D. "NEW" - MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

PLUMBING GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
2. THE ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE POWER FOR ALL PLUMBING EQUIPMENT. DURING BID PERIOD AND AGAIN PRIOR TO EQUIPMENT ORDERING, THE (GENERAL CONTRACTOR AND THE) PLUMBING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR TO VERIFY THAT ALL EQUIPMENT ARE POWERED, AND PROPER VOLTAGE/WIRING/CAPACITY IS PROVIDED. IN THE EVENT OF REQUIREMENTS AMBIGUITY OR CONFLICT BETWEEN TRADES, THE CONTRACTOR IS REQUIRED TO GENERATE AN RFI ADDRESSING THE ISSUE AND REQUESTING CLARIFICATION. FAILURE TO DO SO WILL NEGATE HIS RIGHT FOR A CHANGE ORDER OR REQUEST FOR ADDITIONAL FUNDS DURING CONSTRUCTION RELATING TO THIS ISSUE.
3. DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE OF WORK, AND TO INDICATE THE GENERAL LOCATIONS OF EQUIPMENT, PIPING, ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT HIS WORK ACCORDING TO THE FOLLOWING GUIDELINES:
    - A. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS FOR EQUIPMENT AND ROUGH INS AND THE EXACT ROUTING OF PIPING PRIOR TO CONSTRUCTION AS TO BEST FIT THE LAYOUT OF THE WORK. COORDINATE FINAL LAYOUT WITH ALL TRADES.
    - B. WHERE OFFSETS IN PIPING ARE REQUIRED TO COORDINATE WORK OF OTHER TRADES, STRUCTURE, PIPING, CONDUITS, DUCTWORK, ETC. OR TO MAINTAIN CEILING HEIGHTS, THEY SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
    - C. UNLESS OTHERWISE NOTED, ALL PIPING TO BE ROUTED CONCEALED IN WALLS, CHASES OR ABOVE CEILING. WATER PIPING SHALL NOT BE ROUTED IN EXTERIOR WALLS. ROUTE ALL PIPING AS HIGH AS POSSIBLE AND ALONG WALLS TO MAXIMIZE SPACE AVAILABLE FOR OTHER TRADES.
    - D. COORDINATE ROUTING OF PIPING TO MAINTAIN ACCESS TO FILTERS, MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS. IN NO CASE SHALL PIPING PASS DIRECTLY OVER ELECTRICAL PANELS OR DISCONNECTS OR RESTRICT ACCESS TO ANY ELECTRICAL EQUIPMENT INCLUDING JUNCTION BOXES.
    - E. ALL EXISTING PIPING SHOWN IS INTENDED TO INDICATE APPROXIMATE SIZE, NUMBER AND LOCATION OF PIPING BRANCHES FOR BIDDING PURPOSES ONLY. CONTRACTOR TO VERIFY EXACT SIZE AND CONFIGURATION PRIOR TO CONSTRUCTION.
    - F. VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SYSTEMS REQUIRING CONNECTION TO NEW PIPING PRIOR TO COMMENCING WORK.
4. UNLESS OTHERWISE NOTED, SANITARY WASTE PIPING SHOWN IS BELOW FLOOR AND ALL OTHER PIPING IS OVERHEAD, ABOVE CEILING. DOMESTIC HOT, COLD AND RE-CIRC. WATER PIPING SHALL BE INSTALLED ON WARM SIDE OF INSULATION.
5. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 2018 INTERNATIONAL PLUMBING CODE (IPC) & ALL LOCAL AMENDMENTS, CODES AND REGULATIONS.
6. DURING THE PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND NAMES). MATERIALS, SIZES, LOCATING AND HOOK-UP POINTS. AS-BUILTS SHALL BE GIVEN TO [OWNER] AT COMPLETION OF JOB.
7. UPON COMPLETION OF JOB, THIS CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKING AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW TO REMAIN.
8. ALL INSTALLATION OF ACCESSIBLE PLUMBING FIXTURES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE ACCESSIBILITY STANDARDS. REFER TO ARCHITECTURAL PLANS FOR SPECIFIC INSTALLATION REQUIREMENTS. LOCATE WATER CLOSET FLUSH VALVE LEVER BETWEEN TOILET AND LAVATORY. COORDINATE LOCATION OF FLUSH VALVE LEVER HANDLE WITH GRAB BAR. COORDINATE WITH ARCHITECTURAL DRAWINGS.
9. ALL VENT AND FLUE OUTLETS SHALL BE 10'-0" MINIMUM HORIZONTALLY AND 3'-0" MINIMUM VERTICALLY FROM ANY FRESH AIR INTAKES.
10. PROVIDE WATER HAMMER ARRESTORS AT ALL PLUMBING FIXTURES OR BATTERY OF FIXTURES WITH QUICK-CLOSING VALVES. WATER HAMMER ARRESTORS SHALL BE SIZED & INSTALLED PER PDI STANDARDS. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED.
11. PROVIDE BALANCING VALVES WITH THREADED CONNECTIONS IN HOT WATER RETURN PIPING, AND BALANCE SYSTEM FOR PROPER OPERATION.
12. COORDINATE WITH ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN PLUMBING.
13. ALL OPENINGS IN CEILINGS AND PLENUM WALLS FOR PLUMBING SHALL BE SEALED AIR TIGHT AND PROTECTED WITH FIRESTOP.
14. SEE SITE PLAN FOR EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.
15. ALL HOSE BIBS SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE SPECIFIED.
16. ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
17. MAKE PROPER HW, CW, RE-CIRC., WASTE, AND VENT CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAIN, ELBOWS AND CONNECTIONS ARE NOT SHOWN.
18. CLEANOUTS SHALL BE PROVIDED NEAR BASE OF EACH VERTICAL WASTE OR SOLID STACK. PROVIDE 18" MINIMUM CLEARANCE FOR ACCESS.
19. PROVIDE VALVES AND UNIONS WHEN CONNECTING PIPING TO EQUIPMENT. LOCATE VALVES FOR EASY ACCESS AND SERVICING OF EQUIPMENT. PROVIDE ACCESS PANELS TO ALL SHUT-OFF VALVES.
20. PRESSURE TEST ALL NEW WATER PIPES, MINIMUM OF 4 HOURS BEFORE APPLYING PIPE INSULATION. ALL TESTS SHALL BE IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL WATER AUTHORITY.
21. IN THE EVENT OF CONFLICT BETWEEN VARIOUS SECTIONS OF CONSTRUCTION DOCUMENTS, THE MOST STRINGENT OF THE OPTIONS SHALL APPLY FOR BIDDING PURPOSE. AFTER AWARD OF CONTRACT BUT BEFORE STARTING DESIGN/CONSTRUCTION, CONTRACTOR SHALL REQUEST CLARIFICATIONS WITH BID ON ANY CONFLICTING INFORMATION FROM THE OWNER.
22. PROVIDE DIELECTRIC FITTINGS OTHER THAN DIELECTRIC UNIONS WHEN CONNECTING DISSIMILAR MATERIAL PIPING. DIELECTRIC UNIONS NOT PERMITTED.
23. ALL CONCRETE FLOORS, SLABS, BRICK AND BLOCK WALL PENETRATIONS SHALL BE SLEEVED AND FIRE STOPPED.
24. PROVIDE BALL VALVE FOR ALL CW AND HW BRANCH TAKE-OFFS.
25. ALL EXTERIOR ROOF PENETRATIONS SHALL BE SEALED WEATHERTIGHT.
26. SLOPES AND INVERT ELEVATIONS OF ALL INTERIOR PIPING SHALL BE ESTABLISHED BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. ALL PIPING SHALL BE LOCATED AND DETERMINED WHERE TO BE RUN TO AVOID CONFLICT WITH OTHER TRADES.
27. ALL PIPING SHALL BE PROVIDED WITH SECTIONAL SHUT-OFF VALVES AND ACCESS PANELS FOR ALL HIDDEN VALVES. PROVIDE ISOLATION VALVES FOR ALL PLUMBING FIXTURES.
28. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS, LEAKS, LACK OF PROPER SYSTEM PERFORMANCE OR NON-OPERATION FOR A PERIOD OF ONE YEAR AFTER DATED OF FINAL ACCEPTANCE OF WORK BY OWNER.
29. ALL WORK SHALL BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.
30. ALL EXPOSED PIPING TO FIXTURES SHALL BE HEAVILY CHROME-PLATED.
31. MAKE FINAL CONNECTIONS AFTER FIXTURES AND EQUIPMENT ARE SET IN PLACE. ALLREQUIRED TRIM, FAUCETS AND MINOR ITEMS NECESSARY FOR A COMPLETE FUNCTIONING INSTALLATION, SUCH AS STRAINERS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC., SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH EQUIPMENT REQUIREMENTS. ALL FAUCETS TO BE HEAVILY CHROME-PLATED.
32. SLEEVES THROUGH CMU BLOCKS WALLS AND/OR MASONRY FLOORS SHALL BE SCHEDULE 40 BLACK STEEL PIPE. SLEEVES THRU FLOORS SHALL STAND PROUD OF FLOOR SLAB BY 1/2". SLEEVES THROUGH SHEET ROCK WALL SHALL BE 18" GAUGE GALVANIZED SHEET METAL. THE SPACE BETWEEN THE PIPE AND SLEEVE SHALL BE PACKED WITH "3M" EXPANDABLE FOAM FIRE-STOP MATERIAL, TO ASSURE A RATING EQUAL TO THE PENETRATED WALL OR FLOOR.
33. HANGERS SHALL BE OF SIMILAR MATERIAL AS PIPING TO AVOID GALVANIC ACTION IN ACCORDANCE WITH MSS-SP-69, AND LOCATED AT INTERVALS NOT TO EXCEED 6'-0" O.C. WHERE "HUBLESS" PIPE IS BEING USED, PROVIDE HANGERS ON ETHER SIDE OF THE JOINTS AS RECOMMENDED BY CISPI BULLETIN 310. FOR INSULATED PIPING, INSULATION SHALL EXTEND CONTINUOUSLY THRU HANGER WITH OUT INTERRUPTION. PROVIDE SADDLE TO PROTECT INSULATION FROM COMPRESSION.
34. SOIL, WASTE AND VENT PIPING SHALL BE INSTALLED IN ACCORDANCE WITH CODE. HORIZONTAL DRAINAGE PIPING SHALL SLOPE PER 2018 IPC CODE, UNLESS OTHERWISE INDICATED. DOMESTIC WATER SHALL BE SLOPED TO DRAIN POINTS.
35. SUBMIT OPERATING AND MAINTENANCE MANUALS AND WARRANTY CERTIFICATES TO OWNER.
36. THE CONTRACTOR SHALL NOT CORE DRILL CONCRETE SLABS OR PRE-CAST CONCRETE PANELS OR DECK WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE BUILDING OWNER AND SHALL X-RAY PRIOR TO ANY CORE DRILLING. X-RAYING AND CORE DRILLING SLABS SHALL BE SCHEDULED WITH THE BUILDING OWNER, INCLUDE COSTS OF X-RAYING IN BID.
37. FINAL ACCEPTANCE OF PLUMPING SYSTEMS BY THE USER/OWNER, SHALL BE CONTINGENT TO COMPLIANCE WITH ALL COMMISSIONING REQUIREMENTS AND TESTS PRESCRIBED IN THE PROJECT DESIGN DOCUMENTS/SPECIFICATIONS AND APPROVAL BY THE CxA AGENT OF THE PROJECT.
38. UPON COMPLETION OF THE PROJECT, ALL DOMESTIC WATER PIPING SHALL BE SANITIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
39. WHEN NATURAL GAS IS AVAILABLE, USE NATURAL GAS RANGES/OVENS & FURNACES IN SINGLE FAMILY & MULTI-FAMILY BUILDINGS AS AN OPTION, IN-LIEU OF ELECTRIC.

ABBREVIATIONS

ABV	ABOVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AP	ACCESS PANEL
APPROX	APPROXIMATE
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISH FLOOR
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BT	BATHTUB
CA	COMPRESSED AIR
CD	CONDENSATE
CLG	CEILING
CO	COMPANY, CLEANOUT
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
CW	COLD WATER
DISP	DISPOSER
DWV	DRAINAGE WASTE & VENT
EA	EACH
ECO	EXTERIOR CLEANOUT
ETR	EXISTING TO REMAIN
EW	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FIXT	FIXTURE
FLR	FLOOR
FM	FORCED MAIN
FS	FLOOR SINK
G	NATURAL GAS
GCO	GRADE CLEANOUT
GD	GROUNDWATER DRAIN TILE
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RECIRCULATING
I.E.	INVERT ELEVATION
IW	INDIRECT WASTE
IPC	INTERNATIONAL PLUMBING CODE
LAV	LAVATORY
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	BRITISH THERMAL UNITS (x1000)
MIN	MINIMUM
MISC	MISCELLANEOUS
NFWH	NON-FREEZE WALL HYDRANT
NIC	NOT IN CONTRACT
OD	OVERFLOW ROOF DRAIN
OSD	OPEN SITE DRAIN
PD	PUMPED DISCHARGE
PDI	PLUMBING & DRAINAGE INSTITUTE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RM	ROOM
RTU	ROOF TOP UNIT
SAN	SANITARY
SFU	SUPPLY FIXTURE UNIT
ST	STORMWATER
TP	TRAP PRIMER VALVE
TPS	TRAP PRIMING STATION
TW	TEMPERED WATER
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
XR	EXISTING RELOCATED
LAB/MEDICAL PROJECTS	
O	OXYGEN
MA	MEDICAL AIR
LA	LAB AIR
N	NITROGEN
LN	LIQUID NITROGEN
AR	ARGON
HE	HELIUM
SG	SPECIAL GAS
LV	LAB VACUUM
MV	MEDICAL VACUUM
CO2	CARBON DIOXIDE
DI	DEIONIZED WATER
ROS	REVERSE OSMOSIS SUPPLY
ROR	REVERSE OSMOSIS RETURN
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LHWR	LAB HOT WATER RECIRCULATING
VCW	VIVARIUM COLD WATER
VHW	VIVARIUM HOT WATER
NP	NON-POTABLE

SHEET NUMBERING LEGEND

P111A

- DISCIPLINE: "PD" DEMO, "P" NEW WORK
- PLAN TYPE: "1" FLOOR PLAN, "2" ENLARGED FLOOR ETC.
- SYSTEM TYPE: "0" FOR UNDERGROUND, "1" WATER & GAS, "2" DWV & STORM, "3" FIRE PROTECTION
- FLOOR LEVEL: "0" LOWEST FLOOR, "1" NEXT FLOOR LEVEL ETC.
- SECTOR

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	DEMOLISH AND REMOVE
	SOIL OR WASTE PIPING
ST	STORM PIPING
OD	OVERFLOW STORM PIPING
NP	NON-POTABLE WATER PIPING
ST	STORM PIPING BELOW SLAB
	VENT PIPING
CW	COLD WATER PIPING
	COLD WATER PIPING (SINGLE LINE)
HW	HOT WATER PIPING
	HOT WATER PIPING (SINGLE LINE)
HWR	HOT WATER RECRCULATING PIPING
	HOT WATER RECRCULATING PIPING (SINGLE LINE)
G	GAS PIPING
F	FIRE PROTECTION PIPING
	PIPE DOWN OR DROP
	PIPE UP OR RISE/FLOOR CLEANOUT
	CAPPED OR PLUGGED PIPE
	UNION
	WALL CLEANOUT
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	GAS COCK
	SHUTOFF VALVE IN RISE OR DROP
	DOUBLE CHECK BACKFLOW PREVENTER
	RPZ BACKFLOW PREVENTER
	CHECK VALVE
	BALANCING VALVE
	OUTSIDE STEM & YOKE VALVE
	PRESSURE GAGE W/ NEEDLE VALVE
	THERMOMETER
VB	TEMPERATURE & PRESSURE RELIEF VALVE
"A"	VACUUM BREAKER
	WATER HAMMER ARRESTER, LETTER INDICATES PDI
	HOSE BIBB
	WALL HYDRANT
	SOLENOID VALVE
	STRAINER
	PIPE GUIDE/SLEEVE
	PIPE ANCHOR
	RISER/DETAIL DESIGNATION
	FLOW DIRECTION
	CALL OUT DESIGNATION FLOOR DRAIN
X X	METER (GAS/WATER/FIRE)
X XXX	PUMP
	PUMP
M	KEYNOTE TAG
	LIMIT OF DEMOLITION
#	

DOUBLE SYMBOLS

- GATE VALVE
- BUTTERFLY VALVE
- 3-WAY VALVE
- GAS COCK VALVE
- BALL VALVE
- BALANCE VALVE
- SHUT-OFF VALVE
- BACKFLOW PREVENNTER VALVE

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OFFICE OF FACILITIES & PROPERTY MANAGEMENT

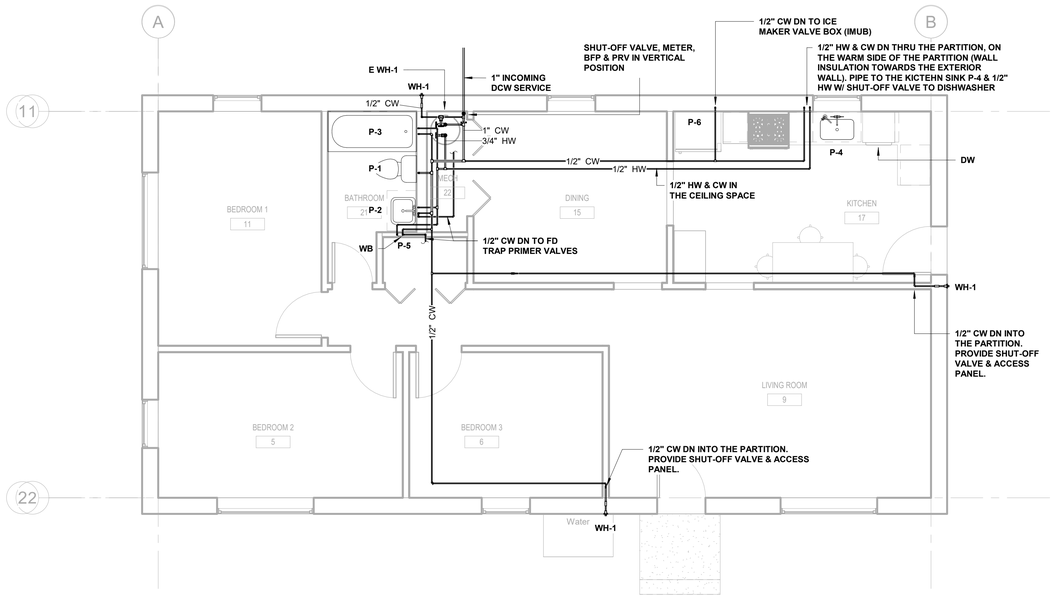
NIST – SINGLE FAMILY DETACHED HOME SINGLE STORY

PLUMBING COVERSHEET

P002

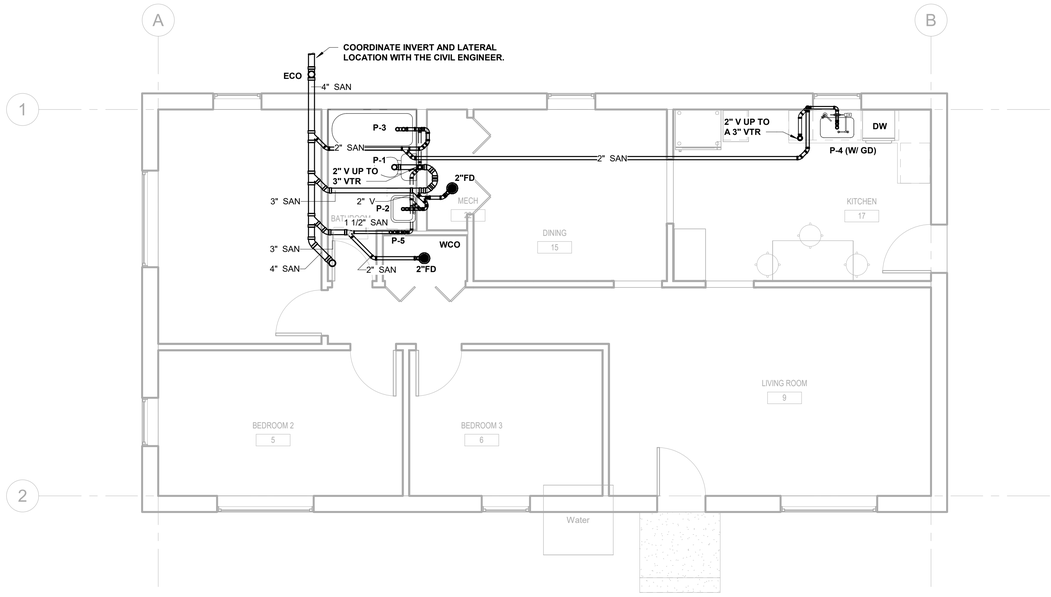
SH. NO. ___ OF ___ DWG. P002

APPROVED BY	SPONSOR	MAINTENANCE ENG. OFF.	ENVIRONMENTAL MANAGEMENT	SAFETY	SHED – NIST FIRE MARSHAL/AHJ	FACILITIES ENGR. OFF.	PROJECT LEADER	DRAWN BY	PROJECT/ W.O. #
DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	
							VAY	AA	08/15/2022 Project Number



1 PLUMBING FLOOR PLAN - WATER SUPPLY

1/4" = 1'-0"



2 PLUMBING FLOOR PLAN - SANITARY

1/4" = 1'-0"

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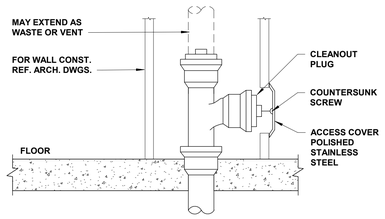
PLUMBING FLOOR PLAN

P101

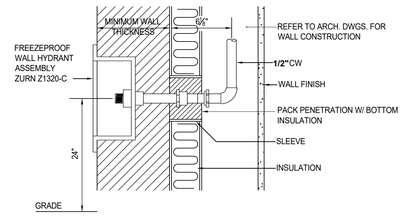
SH. NO. ___ OF ___ DWG. P101

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



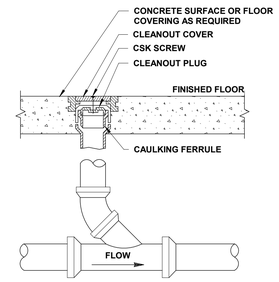
7 WALL CLEANOUT

SCALE: NOT TO SCALE



4 FREEZEPROOF WALL HYDRANT

SCALE: NOT TO SCALE



1 FLOOR CLEANOUT

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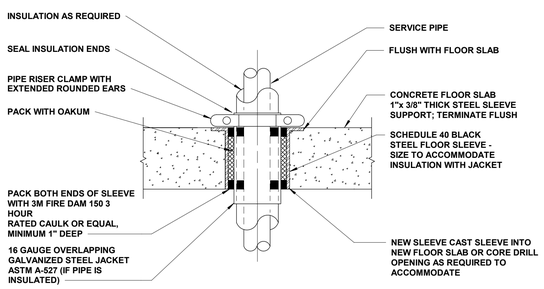
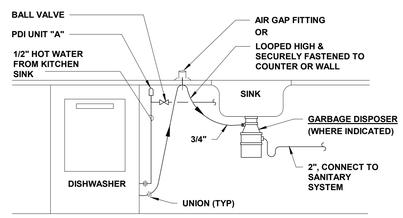


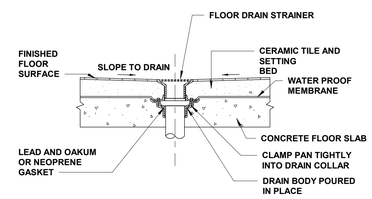
8 PIPE THRU FLOOR PENETRATION

SCALE: NOT TO SCALE



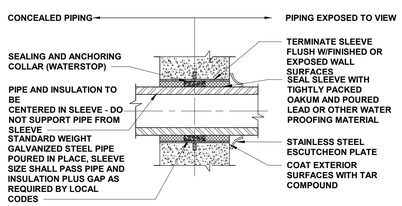
5 RESIDENTIAL DISHWASHER PIPING

SCALE: NOT TO SCALE



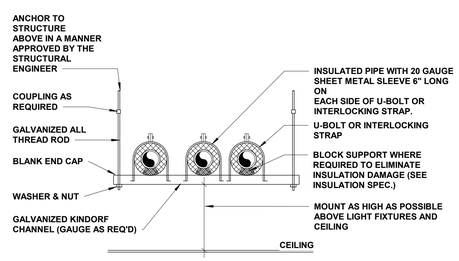
2 FLOOR DRAIN

SCALE: NOT TO SCALE



9 SLEEVE THRU EXTERIOR WALL

SCALE: NOT TO SCALE

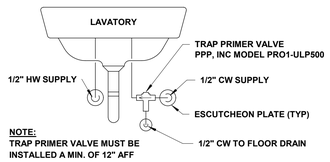


NOTE:

1. ALL PIPING SUPPORT SYSTEM COMPONENTS SHALL HAVE A NON-CORROSIVE METAL FINISH, GALV-KROM OR EQUAL
2. COORDINATE CROSS PIPING WITH MECHANICAL PIPING ROUTED IN CORRIDORS & SPRINKLER PIPING MAINS CROSSING IN CORRIDORS.

6 TRAPEZE PIPING SUPPORT

SCALE: NOT TO SCALE



NOTE:
TRAP PRIMER VALVE MUST BE INSTALLED A MIN. OF 12" AFF

3 BELOW LAVATORY TRAP PRIMER

SCALE: NOT TO SCALE

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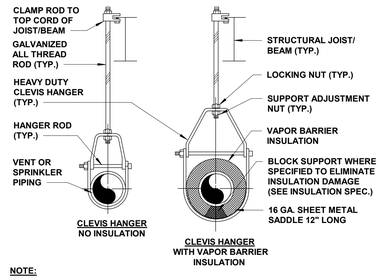
PLUMBING DETAILS

P301

SH. NO. ___ OF ___ DWG. P301

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

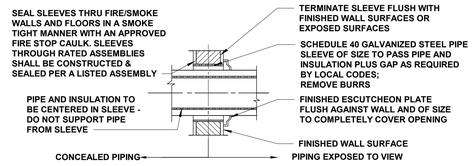


NOTE:

1. ALL PIPE HANGERS SHALL BE PAINTED WITH RUST INHIBITING PAINT AS SPECIFIED.

4 INDIVIDUAL PIPE SUPPORT

SCALE: NOT TO SCALE

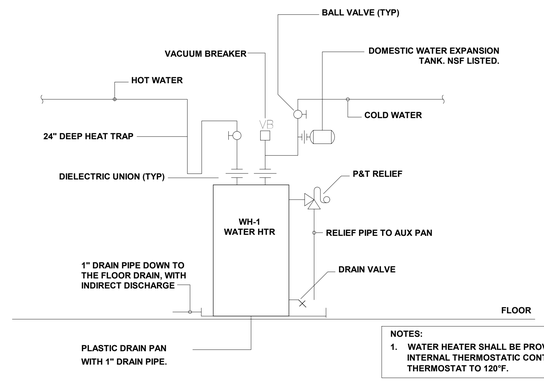


NOTE:

FOR INTERIOR FRAME PARTITIONS-PIPE SLEEVES MAY BE FABRICATED FROM GALVANIZED SHEET METAL; ROUND TUBE CLOSED WITH SNAPLOCK JOINT, WELDED SPIRAL SEAMS, OR WELDED LONGITUDINAL JOINT. FABRICATE FROM THE FOLLOWING GAUGES: 3" AND SMALLER, 20 GAUGE; 4" TO 6", 16 GAUGE; OVER 6", 14 GAUGE.

1 SLEEVE THRU INTERIOR WALL

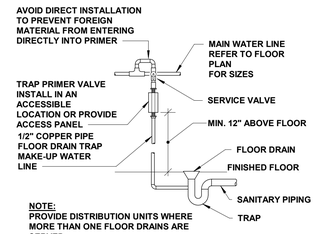
SCALE: NOT TO SCALE



NOTES:
1. WATER HEATER SHALL BE PROVIDED WITH INTERNAL THERMOSTATIC CONTROL. SET THERMOSTAT TO 120°F.

5 ELECTRIC WATER HEATER

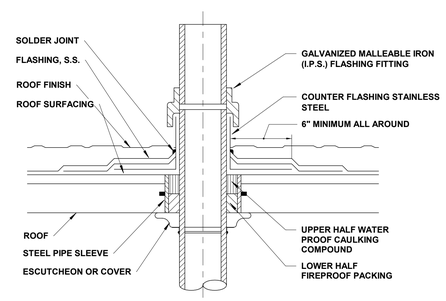
SCALE: NOT TO SCALE



NOTE:
PROVIDE DISTRIBUTION UNITS WHERE MORE THAN ONE FLOOR DRAINS ARE SERVED

2 TRAP PRIMER

SCALE: NOT TO SCALE



3 VENT THRU ROOF

SCALE: NOT TO SCALE

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PLUMBING DETAILS

P302

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
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SH. NO.____OF ____ DWG. P302

ELECTRIC WATER HEATER SCHEDULE

ID	LOCATION	STORAGE CAPACITY (GALLONS)	FUEL TYPE	CAPACITY KW	MIN. UNIFORM ENERGY FACTOR	GPH @ 70 DELTA T	INLET TEMP (°F)	OUTLET TEMP (°F)	ELECTRICAL CHARACTERISTICS			BASIS OF DESIGN (OR EQUAL)	REMARKS
									VOLTS	PHASE	HZ		
EWH-1	MECHANICAL CLOSET	40	ELECTRIC	4.5	0.92	26	70	120	240	1	60	A.O. SMITH ENJ-40	

NOTES:

SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (INCHES)	MINUMUM SLOPE (INCH PER FOOT)
2-1/2 OR LESS	1/4
3 TO 6	1/8
8 OR LARGER	1/16

TABLE 704.1 OF THE INTERNATIONAL PLUMBING CODE 2018

PIPING MATERIAL SCHEDULE

PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION
SANITARY DRAIN PIPING (BELOW SLAB)	SOLID CORE SCHEDULE 40 PVC AND FITTINGS
SANITARY DRAIN PIPING (ABOVE SLAB)	SOLID CORE SCHEDULE 40 PVC AND FITTINGS
VENT PIPING	SOLID CORE SCHEDULE 40 PVC AND FITTINGS
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L" COPPER PIPING
DOMESTIC WATER PIPING (BELOW SALB)	TYPE "K" COPPER PIPING W/ NO JOINTS

DOMESTIC WATER EXPANSION TANK SCHEDULE

ID	WATER HEATER VOLUME (GALLONS)	MAX TEMP. (°F)	MAX OPERATING PRESSURE (PSIG)	DESIGN FILL PRESSURE (PSIG)	TOTAL TANK VOLUME (GALLONS)	ACCEPTANCE VOLUME (GALLONS)	TANK DIMENSIONS		APPROX. OPERATING WEIGHT (LBS.)	BASIS OF DESIGN (OR EQUAL)	REMARKS
							HEIGHT	DIAMETER			
ET-1	40	140	80	-	4.5	2.9	13.5"	10.5"	10	WATTS PLT-12	

CLEANOUT SCHEDULE

ID	APPLICATION	BASIC OF DESIGN (OR EQUAL)
CO	FINISHED FLOORS	ZURN Z1400
	CERAMIC & TERRAZO	ZURN Z1400-Z
	UNFINISHED FLOORS	ZURN Z1400-HD
WCO	LINE CLEANOUT	ZURN Z1468
	STACK CLEANOUT	ZURN Z1446
ECO	OUTSIDE AREAS	ZURN Z1400-HD

NOTES
1. INSTALL ECO IN 24x24x4 THICK CONCRETE PAD. TOP OF PAD ELEVATION TO BE 2" ABOVE FINISHED GRADE.
2. PROVIDE ALL CLEANOUTS WITH WIDE ANCHOR FLANGE & CLAMPS DEVICE. ATTACH CLEANOUTS TO MEMBRANE IN FLOOR. WHEN CLEANOUTS ATE LOCATED IN NONOMEMBRANE FLOORS, THEY SHALL BE FLASHED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. PROVIDE LINE & STACK TYPE WALL CLEANOUTS WITH ACCESS COVERS.

PLUMBING FIXTURE SCHEDULE

ID	DESCRIPTION	BASIS OF DESIGN (OR EQUAL)	CONNECTION SIZE				REMARKS
			WASTE	VENT	CW	HW	
P-1	WATER CLOSET	FLOOR MOUNTED, FLUSH TANK, TWO PIECE ELONGATED BOWL, AMERICAN STANDARD 270FA001.020 WITH ELONGATED SOLID PLASTIC SEAT, CLOSED FRONT. 3/8" CHROME PLATED SUPPLY & STOP WAX BOWL RING & WATER CLOSET BOLTS TRIP LEVER TO BE ON THE OPENSIDE, WHITE COLOR	3"	2"	1/2"	---	1.6 GPF MAX OR AS REQUIRED BY THE GOVERNING CODES
P-2	LAVATORY	WHITE VITREOUS CHINA, UNDERMOUNT BOWL 17"X14"X15.5", AMERICAN STANDARD OVAL 0496.221.020 WITH DELTA FAUCET LAHARA COLLECTION, MODEL 528-55MPU-DST DIAMOND COATED CERAMIC CARTRIDGE SINGLE LEVER WITH METALLIC POP-UP DRAIN, 2.2 GPM AT 60PSI, STAINLESS STEEL FINISH, PROVIDE CAST BRASS TRAP & SUPPLIES & STOPS, STAINLESS STEEL FINISH	1-1/2"	1-1/2"	1/2"	1/2"	2.2 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES
P-3	TUB & SHOWER	WHITE CAST IRON, 60"X30"X14", WITH ENAMEL FINISH, KOHLER VILLAGER MODEL K-715 WITH DELTA THERMOSTATICALLY CONTROLLED SHOWER VALVE, STAINLESS STEEL FINISH, SCALD-GUARD, METAL LEVER HANDLE, SHOWER ARM, SHOWER HEAT, DIVERTER VALVE	2"	1-1/2"	1/2"	1/2"	2.5 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES
P-4	SINK	SINGLE BASIN, STAINLESS STEEL SINK, 25"X21"X6" DROP 18 GAUGE WITH SOUND DAMPENING, ELKAY DSESR127221 WITH SINGLE HOLE FOR FAUCET & SOAP DISPENSER. KRAUS KPF-161055 FAUCET WITH DUAL FUNCTION PULL-DOWN SPRAYHEAD, BRASS TRAP & SUPPLIES & STOPS WITH STAINLESS STELL FINISH	2"	1-1/2"	1/2"	1/2"	2.2 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES. PROVIDE A 1/2 HP GARBAGE DISPOSAL
P-5	WASH BOX	WASH BOX OATEY MODEL 38569 OR EQUAL	2"	1-1/2"	1/2"	1/2"	WITH 1/4 TURN VALVES & WATER HAMMER ARRESTOR
P-6	ICE MAKER VALVE BOX	WATER-TITE MODEL #87978 OR EQUAL	-	-	1/2"	-	WITH WATER HAMMER ARRESTOR

FLOOR DRAIN SCHEDULE

ID	TYPE	LOCATION/AREA	SIZE	BASIS OF DESIGN (OR EQUAL)	REMARKS
FD-1	FLOOR DRAIN	GENERAL	12X12	ZURN #Z556	W/ 1/2" TRAP PRIMING LINE

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PLUMBING SCHEDULES

P401

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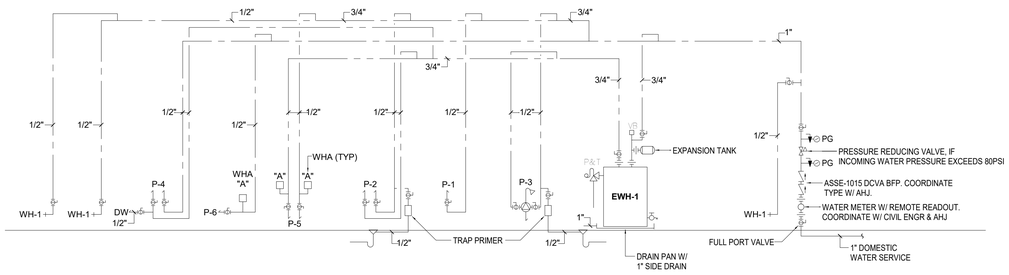
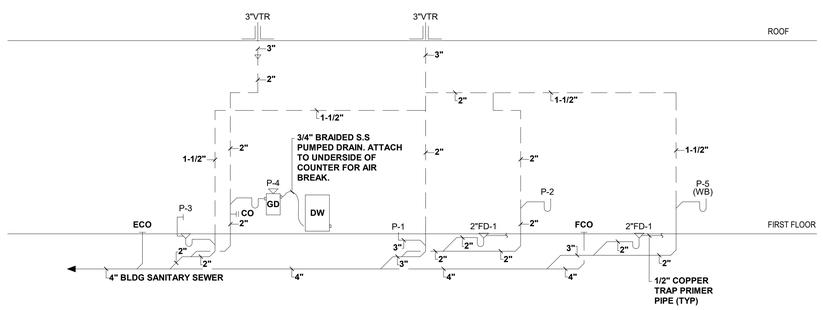


1 WATER RISER DIAGRAM
NTS



2 SANITARY RISER DIAGRAM
NTS

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PLUMBING RISER DIAGRAMS

P501

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

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PLUMBING GENERAL CONDITIONS

1. THE INTENT OF THESE DRAWINGS IS TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. PROVIDE ALL LABOR AND MATERIAL NECESSARY TO ACHIEVE SUCH ENDS. CONTRACTOR IS OBLIGATED TO EXAMINE PLANS. ANY OBSERVED FAULTS OR AMBIGUITY IN THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY, SO THAT THE MATTER MAY BE RESOLVED PRIOR TO SUBMISSION OF BIDS. BY SUBMISSION OF BID, THE CONTRACTOR SHALL ACKNOWLEDGE ACCEPTANCE OF THESE PLANS AS AN ADEQUATE DEFINITION OF THE SCOPE OF WORK AND EXTRA COST CLAIMS BASED ON INADEQUACY OF PLANS WILL NOT BE CONSIDERED.
2. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
3. THE PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING WORK WITH OTHER TRADES. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE APPARENT, THE ENGINEER SHALL BE ADVISED IMMEDIATELY, AND AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED.
4. CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AND ARRANGE FOR INSPECTIONS BY LOCAL AUTHORITIES HAVING JURISDICTION.
5. PROVIDE OPENINGS IN BUILDING CONSTRUCTION FOR PASSAGE OF PIPING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER. VERIFY SLAB PENETRATION LOCATIONS PRIOR TO PROCEEDING WITH WORK IN ORDER TO LOCATE OBSTRUCTIONS EMBEDDED IN SLAB.
6. ALL NECESSARY ALLOWANCES AND PROVISIONS SHALL BE MADE BY THIS CONTRACTOR FOR BEAMS, COLUMNS OR OTHER OBSTRUCTIONS OF THE BUILDING OR THE WORK OF OTHER CONTRACTORS, WHETHER OR NOT SAME IS INDICATED. WHERE NECESSARY TO AVOID OBSTRUCTIONS THE DUCTS SHALL BE TRANSFORMED, DIVIDED, OFFSET, RAISED OR LOWERED WITH THE REQUIRED FREE AREA BEING MAINTAINED WHILE MAINTAINING DESIGNED CEILING HEIGHTS.
7. ALL ROTATING PLUMBING EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. CONTROLS AND ACCESSORIES FOR EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.
10. PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN HIS WORK AREA DAILY AND SHALL ALSO REMOVE ALL TRASH AFTER WORK COMPLETION.
11. THE WORK DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY PREPARED BASE BUILDING DRAWINGS. IF EXISTING FIELD CONDITIONS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF DISCREPANCIES WHICH WILL AFFECT THE PROPOSED WORK PRIOR TO BEGINNING WORK.
12. SYMBOLS SHOWN ON SCHEDULES DEFINE TYPE OF EQUIPMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR RESEARCHING DRAWINGS FOR EXACT QUANTITIES REQUIRED OF EACH TYPE.
13. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, PIPING, ETC., SHALL BE FREE FROM INTERFERENCE WITH OTHER DISCIPLINES. WHERE CONFLICTS OCCUR, CONTRACTOR SHALL IMMEDIATELY CONTACT THE CONSTRUCTION MANAGER. WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER, OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.
14. THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, DRAIN POINTS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE. ALLOW FOR BETTER ACCESSIBILITY, AND ANY CHANGE FOR THAT PURPOSE SHALL BE APPROVED.
15. ALL EQUIPMENT WHICH REQUIRES INTERFACE WITH THE ELECTRICAL TRADE, SUCH AS CONTROLLING DEVICES, DISCONNECT SWITCHES, MOTORS, ETC., SHALL BE FULLY COORDINATED BETWEEN ALL TRADES.
16. ALL WORK TO BE GUARANTEED FOR ONE YEAR AGAINST LABOR AND MATERIALS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACE OR REPAIRED AS DIRECTED FOR THE DURATION OF THE GUARANTEE PERIOD. TIME FOR THIS GUARANTEE SHALL BEGIN FROM THE DATE OF ACCEPTANCE OF THE COMPLETE WORK BY THE OWNER OR HIS APPOINTED REPRESENTATIVE. NOTE: THESE GUARANTEES SHALL BE SUBMITTED TO THE CO FOR RECORD PURPOSES.
17. AS USED IN THE DRAWINGS FOR PLUMBING WORK, CERTAIN NON-TECHNICAL WORDS SHALL BE UNDERSTOOD TO HAVE SPECIFIC MEANINGS AS FOLLOWS REGARDLESS OF INDICATIONS TO THE CONTRARY IN THE GENERAL CONDITION OR OTHER DOCUMENTS GOVERNING THE MECHANICAL WORK.
    - A. "FURNISH" - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT. ALL AS PART OF THE MECHANICAL WORK. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS OR ENCUMBRANCES.
    - B. "INSTALL" - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
    - C. "PROVIDE" - "FURNISH" AND "INSTALL"
    - D. "NEW" - MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

PLUMBING GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
2. THE ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE POWER FOR ALL PLUMBING EQUIPMENT. DURING BID PERIOD AND AGAIN PRIOR TO EQUIPMENT ORDERING, THE (GENERAL CONTRACTOR AND THE) PLUMBING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR TO VERIFY THAT ALL EQUIPMENT ARE POWERED, AND PROPER VOLTAGE/WIRING/CAPACITY IS PROVIDED. IN THE EVENT OF REQUIREMENTS AMBIGUITY OR CONFLICT BETWEEN TRADES, THE CONTRACTOR IS REQUIRED TO GENERATE AN RFI ADDRESSING THE ISSUE AND REQUESTING CLARIFICATION. FAILURE TO DO SO WILL NEGATE HIS RIGHT FOR A CHANGE ORDER OR REQUEST FOR ADDITIONAL FUNDS DURING CONSTRUCTION RELATING TO THIS ISSUE.
3. DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE OF WORK, AND TO INDICATE THE GENERAL LOCATIONS OF EQUIPMENT, PIPING, ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT HIS WORK ACCORDING TO THE FOLLOWING GUIDELINES:
    - A. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS FOR EQUIPMENT AND ROUGH INS AND THE EXACT ROUTING OF PIPING PRIOR TO CONSTRUCTION AS TO BEST FIT THE LAYOUT OF THE WORK. COORDINATE FINAL LAYOUT WITH ALL TRADES.
    - B. WHERE OFFSETS IN PIPING ARE REQUIRED TO COORDINATE WORK OF OTHER TRADES, STRUCTURE, PIPING, CONDUITS, DUCTWORK, ETC. OR TO MAINTAIN CEILING HEIGHTS, THEY SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
    - C. UNLESS OTHERWISE NOTED, ALL PIPING TO BE ROUTED CONCEALED IN WALLS, CHASES OR ABOVE CEILING. WATER PIPING SHALL NOT BE ROUTED IN EXTERIOR WALLS. ROUTE ALL PIPING AS HIGH AS POSSIBLE AND ALONG WALLS TO MAXIMIZE SPACE AVAILABLE FOR OTHER TRADES.
    - D. COORDINATE ROUTING OF PIPING TO MAINTAIN ACCESS TO FILTERS, MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS. IN NO CASE SHALL PIPING PASS DIRECTLY OVER ELECTRICAL PANELS OR DISCONNECTS OR RESTRICT ACCESS TO ANY ELECTRICAL EQUIPMENT INCLUDING JUNCTION BOXES.
    - E. ALL EXISTING PIPING SHOWN IS INTENDED TO INDICATE APPROXIMATE SIZE, NUMBER AND LOCATION OF PIPING BRANCHES FOR BIDDING PURPOSES ONLY. CONTRACTOR TO VERIFY EXACT SIZE AND CONFIGURATION PRIOR TO CONSTRUCTION.
    - F. VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SYSTEMS REQUIRING CONNECTION TO NEW PIPING PRIOR TO COMMENCING WORK.
4. UNLESS OTHERWISE NOTED, SANITARY WASTE PIPING SHOWN IS BELOW FLOOR AND ALL OTHER PIPING IS OVERHEAD, ABOVE CEILING. DOMESTIC HOT, COLD AND RE-CIRC. WATER PIPING SHALL BE INSTALLED ON WARM SIDE OF INSULATION.
5. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 2018 INTERNATIONAL PLUMBING CODE (IPC) & ALL LOCAL AMENDMENTS, CODES AND REGULATIONS.
6. DURING THE PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND NAMES). MATERIALS, SIZES, LOCATING AND HOOK-UP POINTS. AS-BUILTS SHALL BE GIVEN TO [OWNER] AT COMPLETION OF JOB.
7. UPON COMPLETION OF JOB, THIS CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKING AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW TO REMAIN.
8. ALL INSTALLATION OF ACCESSIBLE PLUMBING FIXTURES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE ACCESSIBILITY STANDARDS. REFER TO ARCHITECTURAL PLANS FOR SPECIFIC INSTALLATION REQUIREMENTS. LOCATE WATER CLOSET FLUSH VALVE LEVER BETWEEN TOILET AND LAVATORY. COORDINATE LOCATION OF FLUSH VALVE LEVER HANDLE WITH GRAB BAR. COORDINATE WITH ARCHITECTURAL DRAWINGS.
9. ALL VENT AND FLUE OUTLETS SHALL BE 10'-0" MINIMUM HORIZONTALLY AND 3'-0" MINIMUM VERTICALLY FROM ANY FRESH AIR INTAKES.
10. PROVIDE WATER HAMMER ARRESTORS AT ALL PLUMBING FIXTURES OR BATTERY OF FIXTURES WITH QUICK-CLOSING VALVES. WATER HAMMER ARRESTORS SHALL BE SIZED & INSTALLED PER PDI STANDARDS. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED.
11. PROVIDE BALANCING VALVES WITH THREADED CONNECTIONS IN HOT WATER RETURN PIPING, AND BALANCE SYSTEM FOR PROPER OPERATION.
12. COORDINATE WITH ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN PLUMBING.
13. ALL OPENINGS IN CEILINGS AND PLENUM WALLS FOR PLUMBING SHALL BE SEALED AIR TIGHT AND PROTECTED WITH FIRESTOP.
14. SEE SITE PLAN FOR EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.
15. ALL HOSE BIBS SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE SPECIFIED.
16. ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
17. MAKE PROPER HW, CW, RE-CIRC., WASTE, AND VENT CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAIN, ELBOWS AND CONNECTIONS ARE NOT SHOWN.
18. CLEANOUTS SHALL BE PROVIDED NEAR BASE OF EACH VERTICAL WASTE OR SOLID STACK. PROVIDE 18" MINIMUM CLEARANCE FOR ACCESS.
19. PROVIDE VALVES AND UNIONS WHEN CONNECTING PIPING TO EQUIPMENT. LOCATE VALVES FOR EASY ACCESS AND SERVICING OF EQUIPMENT. PROVIDE ACCESS PANELS TO ALL SHUT-OFF VALVES.
20. PRESSURE TEST ALL NEW WATER PIPES, MINIMUM OF 4 HOURS BEFORE APPLYING PIPE INSULATION. ALL TESTS SHALL BE IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL WATER AUTHORITY.
21. IN THE EVENT OF CONFLICT BETWEEN VARIOUS SECTIONS OF CONSTRUCTION DOCUMENTS, THE MOST STRINGENT OF THE OPTIONS SHALL APPLY FOR BIDDING PURPOSE. AFTER AWARD OF CONTRACT BUT BEFORE STARTING DESIGN/CONSTRUCTION, CONTRACTOR SHALL REQUEST CLARIFICATIONS WITH BID ON ANY CONFLICTING INFORMATION FROM THE OWNER.
22. PROVIDE DIELECTRIC FITTINGS OTHER THAN DIELECTRIC UNIONS WHEN CONNECTING DISSIMILAR MATERIAL PIPING. DIELECTRIC UNIONS NOT PERMITTED.
23. ALL CONCRETE FLOORS, SLABS, BRICK AND BLOCK WALL PENETRATIONS SHALL BE SLEEVED AND FIRE STOPPED.
24. PROVIDE BALL VALVE FOR ALL CW AND HW BRANCH TAKE-OFFS.
25. ALL EXTERIOR ROOF PENETRATIONS SHALL BE SEALED WEATHERTIGHT.
26. SLOPES AND INVERT ELEVATIONS OF ALL INTERIOR PIPING SHALL BE ESTABLISHED BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. ALL PIPING SHALL BE LOCATED AND DETERMINED WHERE TO BE RUN TO AVOID CONFLICT WITH OTHER TRADES.
27. ALL PIPING SHALL BE PROVIDED WITH SECTIONAL SHUT-OFF VALVES AND ACCESS PANELS FOR ALL HIDDEN VALVES. PROVIDE ISOLATION VALVES FOR ALL PLUMBING FIXTURES.
28. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS, LEAKS, LACK OF PROPER SYSTEM PERFORMANCE OR NON-OPERATION FOR A PERIOD OF ONE YEAR AFTER DATED OF FINAL ACCEPTANCE OF WORK BY OWNER.
29. ALL WORK SHALL BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.
30. ALL EXPOSED PIPING TO FIXTURES SHALL BE HEAVILY CHROME-PLATED.
31. MAKE FINAL CONNECTIONS AFTER FIXTURES AND EQUIPMENT ARE SET IN PLACE. ALLREQUIRED TRIM, FAUCETS AND MINOR ITEMS NECESSARY FOR A COMPLETE FUNCTIONING INSTALLATION, SUCH AS STRAINERS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC., SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH EQUIPMENT REQUIREMENTS. ALL FAUCETS TO BE HEAVILY CHROME-PLATED.
32. SLEEVES THROUGH CMU BLOCKS WALLS AND/OR MASONRY FLOORS SHALL BE SCHEDULE 40 BLACK STEEL PIPE. SLEEVES THRU FLOORS SHALL STAND PROUD OF FLOOR SLAB BY 1/2". SLEEVES THROUGH SHEET ROCK WALL SHALL BE 18" GAUGE GALVANIZED SHEET METAL. THE SPACE BETWEEN THE PIPE AND SLEEVE SHALL BE PACKED WITH "3M" EXPANDABLE FOAM FIRE-STOP MATERIAL, TO ASSURE A RATING EQUAL TO THE PENETRATED WALL OR FLOOR.
33. HANGERS SHALL BE OF SIMILAR MATERIAL AS PIPING TO AVOID GALVANIC ACTION IN ACCORDANCE WITH MSS-SP-69, AND LOCATED AT INTERVALS NOT TO EXCEED 6'-0" O.C. WHERE "HUBLESS" PIPE IS BEING USED, PROVIDE HANGERS ON ETHER SIDE OF THE JOINTS AS RECOMMENDED BY CISPI BULLETIN 310. FOR INSULATED PIPING, INSULATION SHALL EXTEND CONTINUOUSLY THRU HANGER WITH OUT INTERRUPTION. PROVIDE SADDLE TO PROTECT INSULATION FROM COMPRESSION.
34. SOIL, WASTE AND VENT PIPING SHALL BE INSTALLED IN ACCORDANCE WITH CODE. HORIZONTAL DRAINAGE PIPING SHALL SLOPE PER 2018 IPC CODE, UNLESS OTHERWISE INDICATED. DOMESTIC WATER SHALL BE SLOPED TO DRAIN POINTS.
35. SUBMIT OPERATING AND MAINTENANCE MANUALS AND WARRANTY CERTIFICATES TO OWNER.
36. THE CONTRACTOR SHALL NOT CORE DRILL CONCRETE SLABS OR PRE-CAST CONCRETE PANELS OR DECK WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE BUILDING OWNER AND SHALL X-RAY PRIOR TO ANY CORE DRILLING. X-RAYING AND CORE DRILLING SLABS SHALL BE SCHEDULED WITH THE BUILDING OWNER, INCLUDE COSTS OF X-RAYING IN BID.
37. FINAL ACCEPTANCE OF PLUMPING SYSTEMS BY THE USER/OWNER, SHALL BE CONTINGENT TO COMPLIANCE WITH ALL COMMISSIONING REQUIREMENTS AND TESTS PRESCRIBED IN THE PROJECT DESIGN DOCUMENTS/SPECIFICATIONS AND APPROVAL BY THE CxA AGENT OF THE PROJECT.
38. UPON COMPLETION OF THE PROJECT, ALL DOMESTIC WATER PIPING SHALL BE SANITIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.
39. WHEN NATURAL GAS IS AVAILABLE, USE NATURAL GAS RANGES/OVENS & FURNACES IN SINGLE FAMILY & MULTI-FAMILY BUILDINGS AS AN OPTION, IN-LIEU OF ELECTRIC.

ABBREVIATIONS

ABV	ABOVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AP	ACCESS PANEL
APPROX	APPROXIMATE
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISH FLOOR
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BT	BATHTUB
CA	COMPRESSED AIR
CD	CONDENSATE
CLG	CEILING
CO	COMPANY, CLEANOUT
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
CW	COLD WATER
DISP	DISPOSER
DWV	DRAINAGE WASTE & VENT
EA	EACH
ECO	EXTERIOR CLEANOUT
ETR	EXISTING TO REMAIN
EW	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FIXT	FIXTURE
FLR	FLOOR
FM	FORCED MAIN
FS	FLOOR SINK
G	NATURAL GAS
GCO	GRADE CLEANOUT
GD	GROUNDWATER DRAIN TILE
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RECIRCULATING
I.E.	INVERT ELEVATION
IW	INDIRECT WASTE
IPC	INTERNATIONAL PLUMBING CODE
LAV	LAVATORY
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	BRITISH THERMAL UNITS (x1000)
MIN	MINIMUM
MISC	MISCELLANEOUS
NFWH	NON-FREEZE WALL HYDRANT
NIC	NOT IN CONTRACT
OD	OVERFLOW ROOF DRAIN
OSD	OPEN SITE DRAIN
PD	PUMPED DISCHARGE
PDI	PLUMBING & DRAINAGE INSTITUTE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RM	ROOM
RTU	ROOF TOP UNIT
SAN	SANITARY
SFU	SUPPLY FIXTURE UNIT
ST	STORMWATER
TP	TRAP PRIMER VALVE
TPS	TRAP PRIMING STATION
TW	TEMPERED WATER
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
XR	EXISTING RELOCATED

LAB/MEDICAL PROJECTS

O	OXYGEN
MA	MEDICAL AIR
LA	LAB AIR
N	NITROGEN
LN	LIQUID NITROGEN
AR	ARGON
HE	HELIUM
SG	SPECIAL GAS
LV	LAB VACUUM
MV	MEDICAL VACUUM
CO2	CARBON DIOXIDE
DI	DEIONIZED WATER
ROS	REVERSE OSMOSIS SUPPLY
ROR	REVERSE OSMOSIS RETURN
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LHWR	LAB HOT WATER RECIRCULATING
VCW	VIVARIUM COLD WATER
VHW	VIVARIUM HOT WATER
NP	NON-POTABLE

SHEET NUMBERING LEGEND

P111A

- DISCIPLINE: "PD" DEMO, "P" NEW WORK
- PLAN TYPE: "1" FLOOR PLAN, "2" ENLARGED FLOOR ETC.
- SYSTEM TYPE: "0" FOR UNDERGROUND, "1" WATER & GAS, "2" DWV & STORM, "3" FIRE PROTECTION
- FLOOR LEVEL: "0" LOWEST FLOOR, "1" NEXT FLOOR LEVEL ETC.
- SECTOR

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	DEMOLISH AND REMOVE
	SOIL OR WASTE PIPING
ST	STORM PIPING
OD	OVERFLOW STORM PIPING
NP	NON-POTABLE WATER PIPING
ST	STORM PIPING BELOW SLAB
	VENT PIPING
CW	COLD WATER PIPING
	COLD WATER PIPING (SINGLE LINE)
HW	HOT WATER PIPING
	HOT WATER PIPING (SINGLE LINE)
HWR	HOT WATER RECRCULATING PIPING
	HOT WATER RECRCULATING PIPING (SINGLE LINE)
G	GAS PIPING
F	FIRE PROTECTION PIPING
	PIPE DOWN OR DROP
	PIPE UP OR RISE/FLOOR CLEANOUT
	CAPPED OR PLUGGED PIPE
	UNION
	WALL CLEANOUT
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	GAS COCK
	SHUTOFF VALVE IN RISE OR DROP
	DOUBLE CHECK BACKFLOW PREVENTER
	RPZ BACKFLOW PREVENTER
	CHECK VALVE
	BALANCING VALVE
	OUTSIDE STEM & YOKE VALVE
	PRESSURE GAGE W/ NEEDLE VALVE
	THERMOMETER
	TEMPERATURE & PRESSURE RELIEF VALVE
VB	VACUUM BREAKER
"A"	WATER HAMMER ARRESTER, LETTER INDICATES PDI
	HOSE BIBB
	WALL HYDRANT
	SOLENOID VALVE
	STRAINER
	PIPE GUIDE/SLEEVE
	PIPE ANCHOR
	FLEXIBLE CONNECTION
	FLOW DIRECTION
	RISER/DETAIL DESIGNATION
	FLOOR DRAIN
	CALL OUT DESIGNATION
X X	METER (GAS/WATER/FIRE)
X XXX	PUMP
	PUMP
M	KEYNOTE TAG
	LIMIT OF DEMOLITION
#	

DOUBLE SYMBOLS

	GATE VALVE
	BUTTERFLY VALVE
	3-WAY VALVE
	GAS COCK VALVE
	BALL VALVE
	BALANCE VALVE
	SHUT-OFF VALVE
	BACKFLOW PREVENNTER VALVE

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

MEP. ENG.

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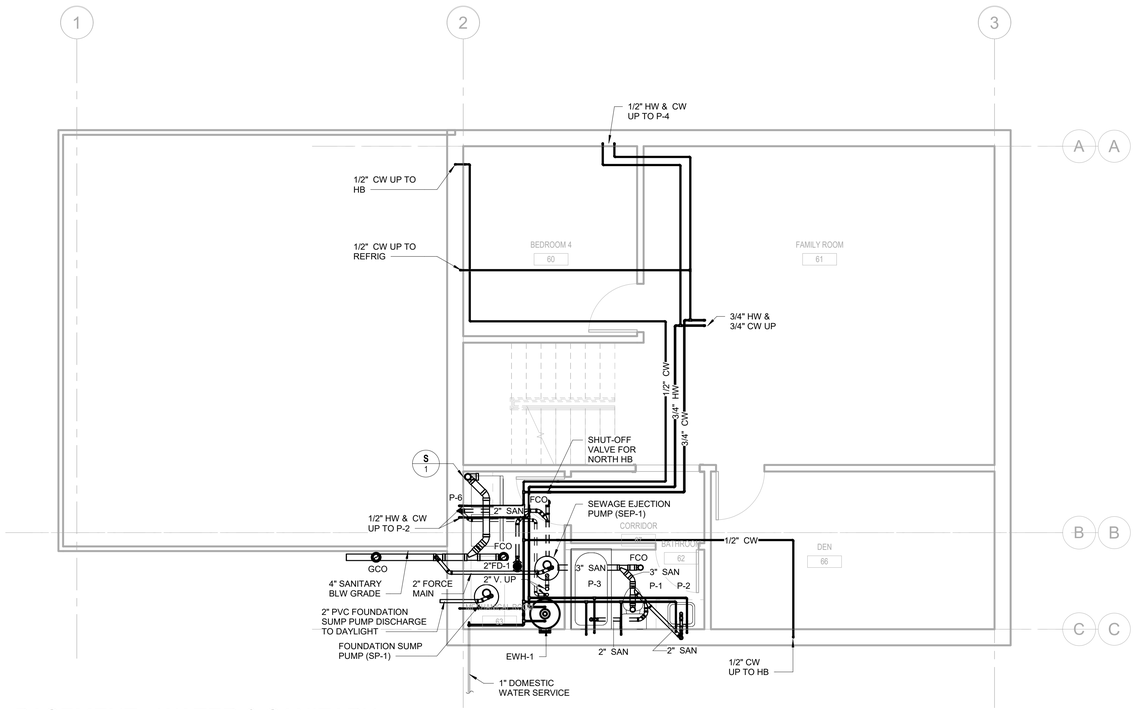
NIST – SINGLE FAMILY DETACHED HOME MULTI STORY

PLUMBING COVERSHEET

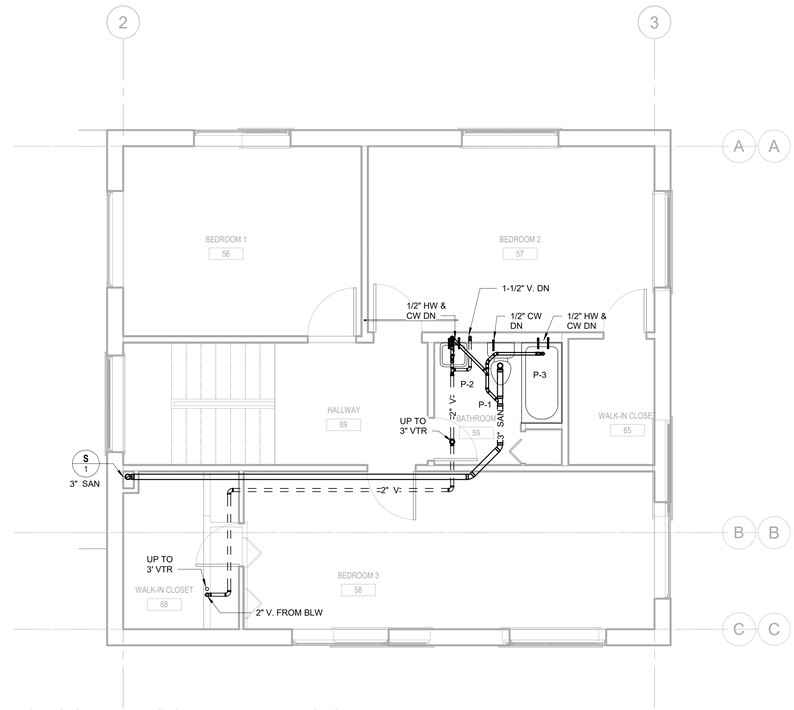
P002

SH. NO. ____ OF ____ DWG. P002

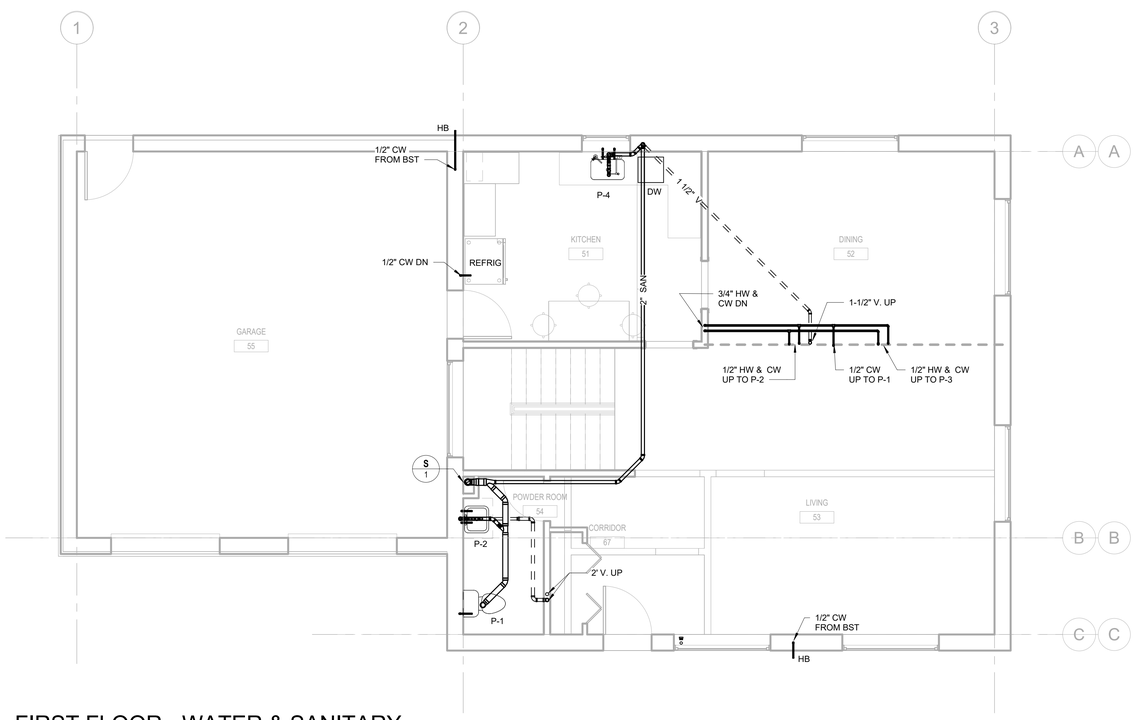
APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER (VAY)	DATE	DRAWN BY (AA)	DATE (08/15/2022)	PROJECT/ W.O. # (Project Number)



1 BASEMENT - WATER & SANITARY
1/4" = 1'-0"



3 SECOND FLOOR - WATER & SANITARY
1/4" = 1'-0"



2 FIRST FLOOR - WATER & SANITARY
1/4" = 1'-0"

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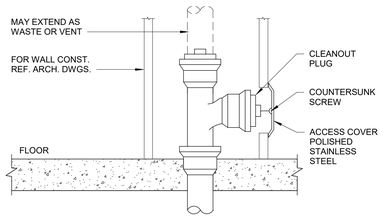
PLUMBING FLOOR PLANS

P101

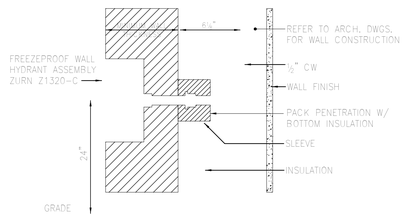
SH. NO. ___ OF ___ DWG. P101

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



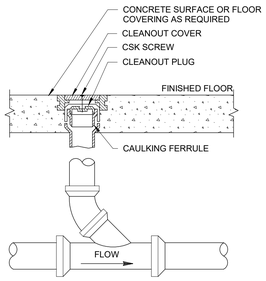
7 WALL CLEANOUT

SCALE: NOT TO SCALE



4 **FREEZEPROOF WALL HYDRANT DETAIL**

SCALE: NOT TO SCALE



1 FLOOR CLEANOUT

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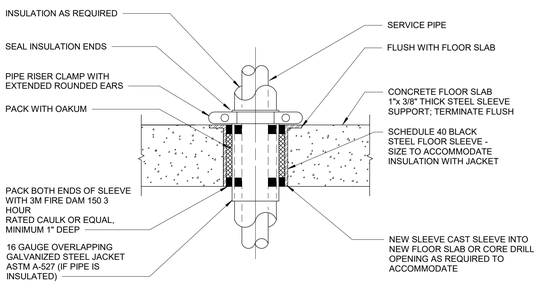
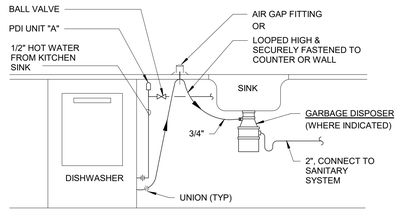


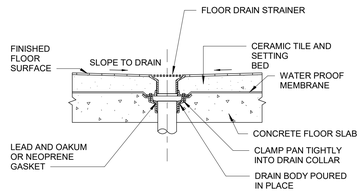
8 PIPE THRU FLOOR PENETRATION

SCALE: NOT TO SCALE



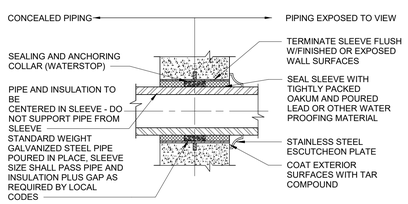
5 RESIDENTIAL DISHWASHER PIPING

SCALE: NOT TO SCALE



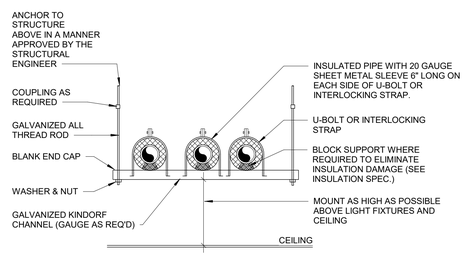
2 FLOOR DRAIN

SCALE: NOT TO SCALE



9 SLEEVE THRU EXTERIOR WALL

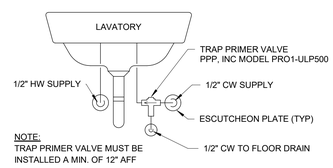
SCALE: NOT TO SCALE



NOTE:
1. ALL PIPING SUPPORT SYSTEM COMPONENTS SHALL HAVE A NON-CORROSIVE METAL FINISH, GALV-KROM OR EQUAL
2. COORDINATE CROSS PIPING WITH MECHANICAL PIPING ROUTED IN CORRIDORS & SPRINKLER PIPING MAINS CROSSING IN CORRIDORS.

6 TRAPEZE PIPING SUPPORT

SCALE: NOT TO SCALE



NOTE:
TRAP PRIMER VALVE MUST BE INSTALLED A MIN. OF 12" AFF

3 BELOW LAVATORY TRAP PRIMER

SCALE: NOT TO SCALE

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

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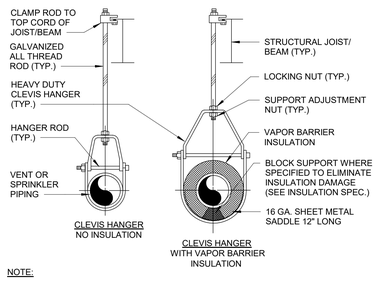
PLUMBING DETAILS

P301

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ___ OF ___ DWG. P301

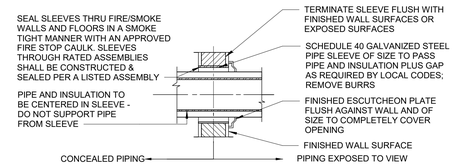


NOTE:

1. ALL PIPE HANGERS SHALL BE PAINTED WITH RUST INHIBITING PAINT AS SPECIFIED.

4 INDIVIDUAL PIPE SUPPORT

SCALE: NOT TO SCALE

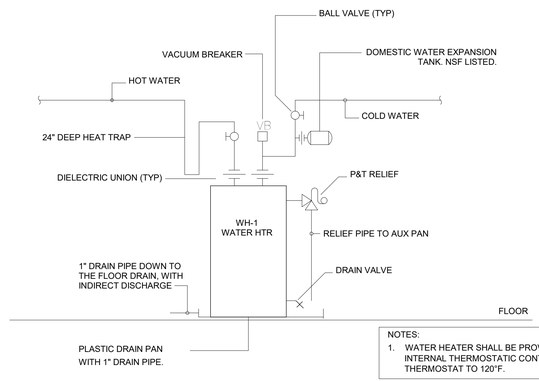


NOTE:

FOR INTERIOR FRAME PARTITIONS-PIPE SLEEVES MAY BE FABRICATED FROM GALVANIZED SHEET METAL; ROUND TUBE CLOSED WITH SNAPLOCK JOINT, WELDED SPIRAL SEAMS, OR WELDED LONGITUDINAL JOINT. FABRICATE FROM THE FOLLOWING GAUGES: 3" AND SMALLER, 20 GAUGE; 4" TO 6", 16 GAUGE; OVER 6", 14 GAUGE.

1 SLEEVE THRU INTERIOR WALL

SCALE: NOT TO SCALE

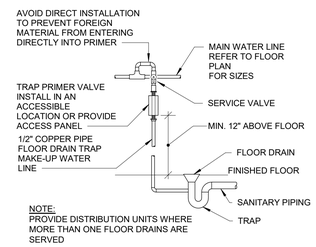


NOTES:

1. WATER HEATER SHALL BE PROVIDED WITH INTERNAL THERMOSTATIC CONTROL. SET THERMOSTAT TO 120°F.

5 ELECTRIC WATER HEATER

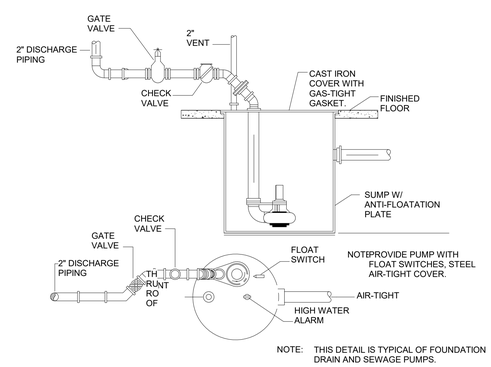
SCALE: NOT TO SCALE



NOTE:
PROVIDE DISTRIBUTION UNITS WHERE MORE THAN ONE FLOOR DRAINS ARE SERVED

2 TRAP PRIMER

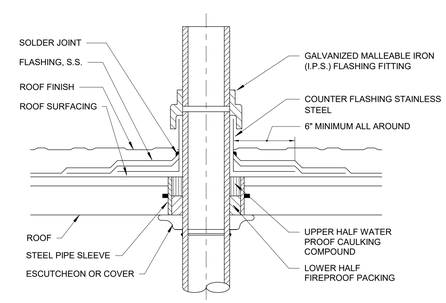
SCALE: NOT TO SCALE



NOTE: THIS DETAIL IS TYPICAL OF FOUNDATION DRAIN AND SEWAGE PUMPS.

6 SUMP PUMP AND SEWAGE PUMP

SCALE: NOT TO SCALE



3 VENT THRU ROOF

SCALE: NOT TO SCALE

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PLUMBING DETAILS

P302

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO.____OF ____ DWG. P302

SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (INCHES)	MINUMUM SLOPE (INCH PER FOOT)
2-1/2 OR LESS	1/4
3 TO 6	1/8
8 OR LARGER	1/16

TABLE 704.1 OF THE INTERNATIONAL PLUMBING CODE 2018

PIPING MATERIAL SCHEDULE

PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION
SANITARY DRAIN PIPING (BELOW SLAB)	SOLID CORE SCHEDULE 40 PVC AND FITTINGS
SANITARY DRAIN PIPING (ABOVE SLAB)	SOLID CORE SCHEDULE 40 PVC AND FITTINGS
VENT PIPING	SOLID CORE SCHEDULE 40 PVC AND FITTINGS
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L" COPPER PIPING
DOMESTIC WATER PIPING (BELOW SALB)	TYPE "K" COPPER PIPING W/ NO JOINTS

CLEANOUT SCHEDULE

ID	APPLICATION	BASIC OF DESIGN (OR EQUAL)
CO	FINISHED FLOORS	ZURN Z1400
	CERAMIC & TERRAZO	ZURN Z1400-Z
	UNFINISHED FLOORS	ZURN Z1400-HD
WCO	LINE CLEANOUT	ZURN Z1468
	STACK CLEANOUT	ZURN Z1446
ECO	OUTSIDE AREAS	ZURN Z1400-HD

NOTES
1. INSTALL ECO IN 24x24x4 THICK CONCRETE PAD. TOP OF PAD ELEVATION TO BE 2" ABOVE FINISHED GRADE.
2. PROVIDE ALL CLEANOUTS WITH WIDE ANCHOR FLANGE & CLAMPS DEVICE. ATTACH CLEANOUTS TO MEMBRANE IN FLOOR. WHEN CLEANOUTS ATE LOCATED IN NONOMEMBRANE FLOORS, THEY SHALL BE FLASHED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. PROVIDE LINE & STACK TYPE WALL CLEANOUTS WITH ACCESS COVERS.

PLUMBING FIXTURE SCHEDULE

ID	DESCRIPTION	BASIS OF DESIGN (OR EQUAL)	CONNECTION SIZE				REMARKS
			WASTE	VENT	CW	HW	
P-1	WATER CLOSET	FLOOR MOUNTED, FLUSH TANK, TWO PIECE ELONGATED BOWL, AMERICAN STANDARD 270FA001.020 WITH ELONGATED SOLID PLASTIC SEAT, CLOSED FRONT. 3/8" CHROME PLATED SUPPLY & STOP WAX BOWL RING & WATER CLOSET BOLTS TRIP LEVER TO BE ON THE OPENSIDE, WHITE COLOR	3"	2"	1/2"	---	1.6 GPF MAX OR AS REQUIRED BY THE GOVERNING CODES
P-2	LAVATORY	WHITE VITREOUS CHINA, UNDERMOUNT BOWL 17"X14"X15.5", AMERICAN STANDARD OVAL 0496.221.020 WITH DELTA FAUCET LAHARA COLLECTION, MODEL 528-55MPU-DST DIAMOND COATED CERAMIC CARTRIDGE SINGLE LEVER WITH METALLIC POP-UP DRAIN. 2.2 GPM AT 60PSI. STAINLESS STEEL FINISH, PROVIDE CAST BRASS TRAP & SUPPLIES & STOPS, STAINLESS STEEL FINISH	1-1/2"	1-1/2"	1/2"	1/2"	2.2 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES
P-3	TUB & SHOWER	WHITE CAST IRON, 60"X30"X14", WITH ENAMEL FINISH, KOHLER VILLAGER MODEL K-715 WITH DELTA THERMOSTATICALLY CONTROLLED SHOWER VALVE, STAINLESS STEEL FINISH, SCALD-GUARD, METAL LEVER HANDLE, SHOWER ARM, SHOWER HEAT, DIVERTER VALVE	2"	1-1/2"	1/2"	1/2"	2.5 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES
P-4	SINK	SINGLE BASIN, STAINLESS STEEL SINK, 25"X21"X6" DROP 18 GAUGE WITH SOUND DAMPENING, ELKAY DSESR127221 WITH SINGLE HOLE FOR FAUCET & SOAP DISPENSER. KRAUS KPF-161055 FAUCET WITH DUAL FUNCTION PULL-DOWN SPRAYHEAD, BRASS TRAP & SUPPLIES & STOPS WITH STAINLESS STELL FINISH	2"	1-1/2"	1/2"	1/2"	2.2 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES. PROVIDE A 1/2 HP GARBAGE DISPOSAL
P-5	WASH BOX	WASH BOX OATEY MODEL #38569 OR EQUAL	2"	1-1/2"	1/2"	1/2"	WITH 1/4 TURN VALVES & WATER HAMMER ARRESTOR

ELECTRIC WATER HEATER SCHEDULE

ID	LOCATION	STORAGE CAPACITY (GALLONS)	FUEL TYPE	CAPACITY KW	MIN. UNIFORM ENERGY FACTOR	GPH @ 70 DELTA T	INLET TEMP (°F)	OUTLET TEMP (°F)	ELECTRICAL CHARACTERISTICS			BASIS OF DESIGN (OR EQUAL)	REMARKS
									VOLTS	PHASE	HZ		
EWH-1	MECHANICAL CLOSET	50	ELECTRIC	4.5	0.92	26	70	120	240	1	60	A.O. SMITH ENJ-50	

NOTES:

SEWAGE EJECTOR AND SUMP PUMP SCHEDULE

ID	SERVICE	GPM	HEAD (FT.)	MOTOR HP	ELECTRICAL CHARACTERISTICS			BASIS OF DESIGN (OR EQUAL)	REMARKS
					VOLTAGE	PHASE	RPM		
SEP-1	BASEMENT BATHROOM	20	17	1/2	120	1	1750	ZOELLER MODEL 226	SIMPLEX SUBMERSIBLE SEWAGE EJECTION PUMP, FIBERGLASS BASIN, BASIN DIMENSION: 2'-0" DIAM., 36" DEEP. PROVIDE AUTOMATIC CONTROLS & HIGH LEVEL ALARM.
SP-1	FOUNDATION DRAIN PUMP	30	17	1/2	120	1	3450	ZOELLER MODELL M98	SIMPLEX SUMBERSIBLE SUMP PUMP. FIBERGLASS, BASIN DIMENSION: 24" DIAMETER., 36" DEEP, PROVIDE AUTOMATIC CONTROLS & HIGH LEVEL ALARM.

DOMESTIC WATER EXPANSION TANK SCHEDULE

ID	WATER HEATER VOLUME (GALLONS)	MAX TEMP. (°F)	MAX OPERATING PRESSURE (PSIG)	DESIGN FILL PRESSURE (PSIG)	TOTAL TANK VOLUME (GALLONS)	ACCEPTANCE VOLUME (GALLONS)	TANK DIMENSIONS		APPROX. OPERATING WEIGHT (LBS.)	BASIS OF DESIGN (OR EQUAL)	REMARKS
							HEIGHT	DIAMETER			
ET-1	50	140	80	-	4.5	2.9	13.5"	10.5"	10	WATTS PLT-12	

FLOOR DRAIN SCHEDULE

ID	TYPE	LOCATION/AREA	SIZE	BASIS OF DESIGN (OR EQUAL)	REMARKS
FD-1	FLOOR DRAIN	GENERAL	12X12	ZURN #Z566	W/ 1/2" TRAP PRIMING LINE

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PLUMBING SCHEDULES

P401

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														VAY		AA	08/15/2022	Project Number

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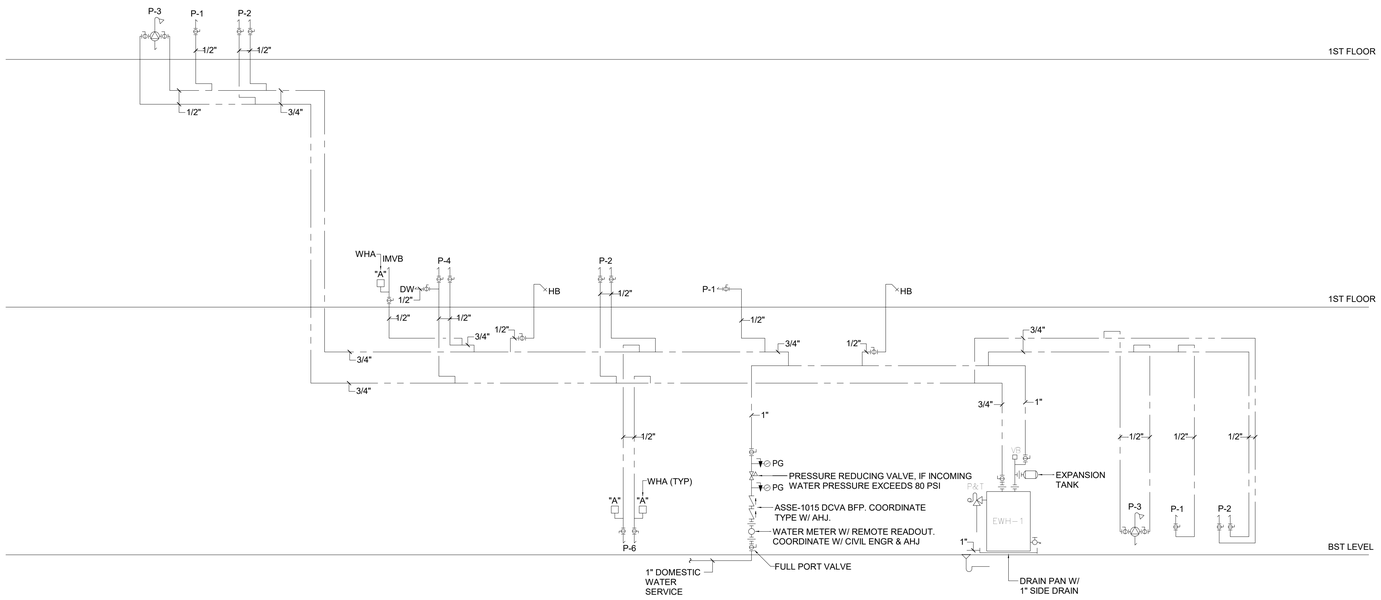
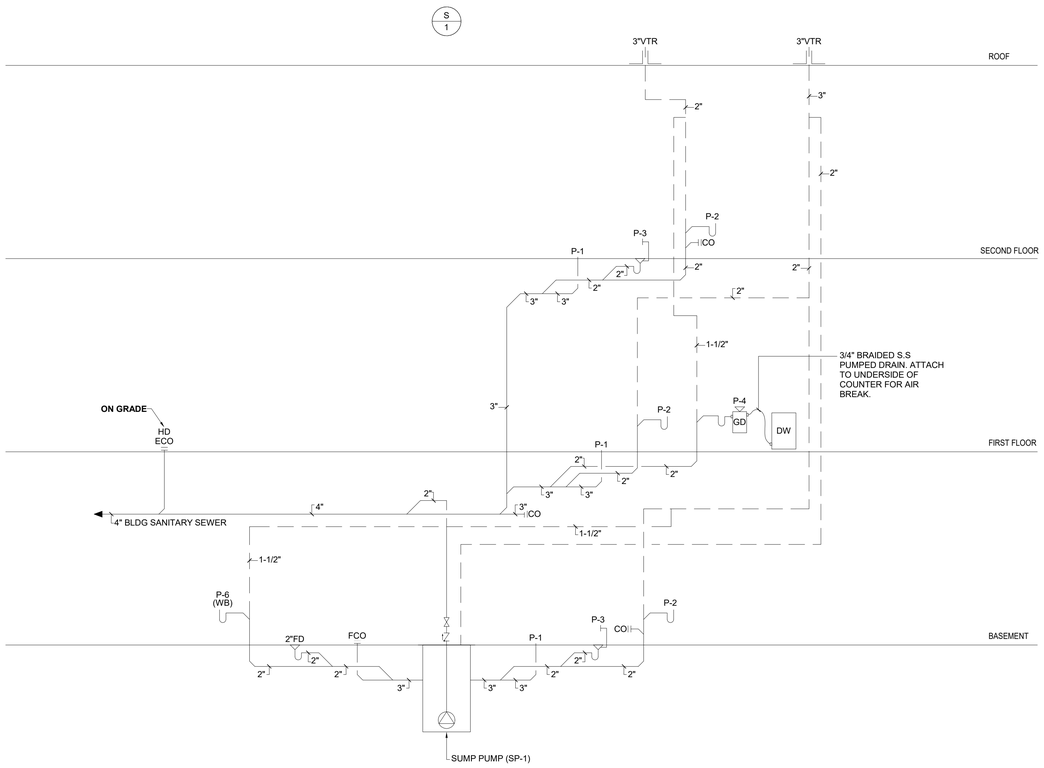


1 WATER RISER DIAGRAM
NTS



2 SANITARY RISER DIAGRAM
NTS

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PLUMBING RISER DIAGRAMS

P501

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APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

PLUMBING GENERAL CONDITIONS

1. THE INTENT OF THESE DRAWINGS IS TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. PROVIDE ALL LABOR AND MATERIAL NECESSARY TO ACHIEVE SUCH ENDS. CONTRACTOR IS OBLIGATED TO EXAMINE PLANS. ANY OBSERVED FAULTS OR AMBIGUITY IN THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY, SO THAT THE MATTER MAY BE RESOLVED PRIOR TO SUBMISSION OF BIDS. BY SUBMISSION OF BID, THE CONTRACTOR SHALL ACKNOWLEDGE ACCEPTANCE OF THESE PLANS AS AN ADEQUATE DEFINITION OF THE SCOPE OF WORK AND EXTRA COST CLAIMS BASED ON INADEQUACY OF PLANS WILL NOT BE CONSIDERED.

2. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.

3. THE PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING WORK WITH OTHER TRADES. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE APPARENT, THE ENGINEER SHALL BE ADVISED IMMEDIATELY, AND AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED.

4. CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AND ARRANGE FOR INSPECTIONS BY LOCAL AUTHORITIES HAVING JURISDICTION.

5. PROVIDE OPENINGS IN BUILDING CONSTRUCTION FOR PASSAGE OF PIPING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER. VERIFY SLAB PENETRATION LOCATIONS PRIOR TO PROCEEDING WITH WORK IN ORDER TO LOCATE OBSTRUCTIONS EMBEDDED IN SLAB.

6. ALL NECESSARY ALLOWANCES AND PROVISIONS SHALL BE MADE BY THIS CONTRACTOR FOR BEAMS, COLUMNS OR OTHER OBSTRUCTIONS OF THE BUILDING OR THE WORK OF OTHER CONTRACTORS, WHETHER OR NOT SAME IS INDICATED. WHERE NECESSARY TO AVOID OBSTRUCTIONS THE DUCTS SHALL BE TRANSFORMED, DIVIDED, OFFSET, RAISED OR LOWERED WITH THE REQUIRED FREE AREA BEING MAINTAINED WHILE MAINTAINING DESIGNED CEILING HEIGHTS.

7. ALL ROTATING PLUMBING EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

8. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

9. CONTROLS AND ACCESSORIES FOR EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.

10. PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN HIS WORK AREA DAILY AND SHALL ALSO REMOVE ALL TRASH AFTER WORK COMPLETION.

11. THE WORK DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY PREPARED BASE BUILDING DRAWINGS. IF EXISTING FIELD CONDITIONS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF DISCREPANCIES WHICH WILL AFFECT THE PROPOSED WORK PRIOR TO BEGINNING WORK.

12. SYMBOLS SHOWN ON SCHEDULES DEFINE TYPE OF EQUIPMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR RESEARCHING DRAWINGS FOR EXACT QUANTITIES REQUIRED OF EACH TYPE.

13. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, PIPING, ETC., SHALL BE FREE FROM INTERFERENCE WITH OTHER DISCIPLINES. WHERE CONFLICTS OCCUR, CONTRACTOR SHALL IMMEDIATELY CONTACT THE CONSTRUCTION MANAGER. WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER, OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.

14. THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, DRAIN POINTS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE. ALLOW FOR BETTER ACCESSIBILITY, AND ANY CHANGE FOR THAT PURPOSE SHALL BE APPROVED.

15. ALL EQUIPMENT WHICH REQUIRES INTERFACE WITH THE ELECTRICAL TRADE, SUCH AS CONTROLLING DEVICES, DISCONNECT SWITCHES, MOTORS, ETC., SHALL BE FULLY COORDINATED BETWEEN ALL TRADES.

16. ALL WORK TO BE GUARANTEED FOR ONE YEAR AGAINST LABOR AND MATERIALS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACE OR REPAIRED AS DIRECTED FOR THE DURATION OF THE GUARANTEE PERIOD. TIME FOR THIS GUARANTEE SHALL BEGIN FROM THE DATE OF ACCEPTANCE OF THE COMPLETE WORK BY THE OWNER OR HIS APPOINTED REPRESENTATIVE. NOTE: THESE GUARANTEES SHALL BE SUBMITTED TO THE CO FOR RECORD PURPOSES.

17. AS USED IN THE DRAWINGS FOR PLUMBING WORK, CERTAIN NON-TECHNICAL WORDS SHALL BE UNDERSTOOD TO HAVE SPECIFIC MEANINGS AS FOLLOWS REGARDLESS OF INDICATIONS TO THE CONTRARY IN THE GENERAL CONDITION OR OTHER DOCUMENTS GOVERNING THE MECHANICAL WORK.
    A. "FURNISH" - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS OR ENCUMBRANCES.
    B. "INSTALL" - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
    C. "PROVIDE" - "FURNISH" AND "INSTALL"
    D. "NEW" - MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

PLUMBING GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

2. THE ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE POWER FOR ALL PLUMBING EQUIPMENT. DURING BID PERIOD AND AGAIN PRIOR TO EQUIPMENT ORDERING, THE (GENERAL CONTRACTOR AND THE) PLUMBING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR TO VERIFY THAT ALL EQUIPMENT ARE POWERED, AND PROPER VOLTAGE/WIRING/CAPACITY IS PROVIDED. IN THE EVENT OF REQUIREMENTS AMBIGUITY OR CONFLICT BETWEEN TRADES, THE CONTRACTOR IS REQUIRED TO GENERATE AN RFI ADDRESSING THE ISSUE AND REQUESTING CLARIFICATION. FAILURE TO DO SO WILL NEGATE HIS RIGHT FOR A CHANGE ORDER OR REQUEST FOR ADDITIONAL FUNDS DURING CONSTRUCTION RELATING TO THIS ISSUE.

3. DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE OF WORK, AND TO INDICATE THE GENERAL LOCATIONS OF EQUIPMENT, PIPING, ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT HIS WORK ACCORDING TO THE FOLLOWING GUIDELINES:
    A. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS FOR EQUIPMENT AND ROUGH INS AND THE EXACT ROUTING OF PIPING PRIOR TO CONSTRUCTION AS TO BEST FIT THE LAYOUT OF THE WORK. COORDINATE FINAL LAYOUT WITH ALL TRADES.
    B. WHERE OFFSETS IN PIPING ARE REQUIRED TO COORDINATE WORK OF OTHER TRADES, STRUCTURE, PIPING, CONDUITS, DUCTWORK, ETC. OR TO MAINTAIN CEILING HEIGHTS, THEY SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
    C. UNLESS OTHERWISE NOTED, ALL PIPING TO BE ROUTED CONCEALED IN WALLS, CHASES OR ABOVE CEILING. WATER PIPING SHALL NOT BE ROUTED IN EXTERIOR WALLS. ROUTE ALL PIPING AS HIGH AS POSSIBLE AND ALONG WALLS TO MAXIMIZE SPACE AVAILABLE FOR OTHER TRADES.
    D. COORDINATE ROUTING OF PIPING TO MAINTAIN ACCESS TO FILTERS, MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS. IN NO CASE SHALL PIPING PASS DIRECTLY OVER ELECTRICAL PANELS OR DISCONNECTS OR RESTRICT ACCESS TO ANY ELECTRICAL EQUIPMENT INCLUDING JUNCTION BOXES.
    E. ALL EXISTING PIPING SHOWN IS INTENDED TO INDICATE APPROXIMATE SIZE, NUMBER AND LOCATION OF PIPING BRANCHES FOR BIDDING PURPOSES ONLY. CONTRACTOR TO VERIFY EXACT SIZE AND CONFIGURATION PRIOR TO CONSTRUCTION.
    F. VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SYSTEMS REQUIRING CONNECTION TO NEW PIPING PRIOR TO COMMENCING WORK.

4. UNLESS OTHERWISE NOTED, SANITARY WASTE PIPING SHOWN IS BELOW FLOOR AND ALL OTHER PIPING IS OVERHEAD, ABOVE CEILING. DOMESTIC HOT, COLD AND RE-CIRC. WATER PIPING SHALL BE INSTALLED ON WARM SIDE OF INSULATION.

5. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 2018 INTERNATIONAL PLUMBING CODE (IPC) & ALL LOCAL AMENDMENTS, CODES AND REGULATIONS.

6. DURING THE PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND NAMES). MATERIALS, SIZES, LOCATING AND HOOK-UP POINTS. AS-BUILTS SHALL BE GIVEN TO [OWNER] AT COMPLETION OF JOB.

7. UPON COMPLETION OF JOB, THIS CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKING AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW TO REMAIN.

8. ALL INSTALLATION OF ACCESSIBLE PLUMBING FIXTURES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE ACCESSIBILITY STANDARDS. REFER TO ARCHITECTURAL PLANS FOR SPECIFIC INSTALLATION REQUIREMENTS. LOCATE WATER CLOSET FLUSH VALVE LEVER BETWEEN TOILET AND LAVATORY. COORDINATE LOCATION OF FLUSH VALVE LEVER HANDLE WITH GRAB BAR. COORDINATE WITH ARCHITECTURAL DRAWINGS.

9. ALL VENT AND FLUE OUTLETS SHALL BE 10'-0" MINIMUM HORIZONTALLY AND 3'-0" MINIMUM VERTICALLY FROM ANY FRESH AIR INTAKES.

10. PROVIDE WATER HAMMER ARRESTORS AT ALL PLUMBING FIXTURES OR BATTERY OF FIXTURES WITH QUICK-CLOSING VALVES. WATER HAMMER ARRESTORS SHALL BE SIZED & INSTALLED PER PDI STANDARDS. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED.

11. PROVIDE BALANCING VALVES WITH THREADED CONNECTIONS IN HOT WATER RETURN PIPING, AND BALANCE SYSTEM FOR PROPER OPERATION.

12. COORDINATE WITH ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN PLUMBING.

13. ALL OPENINGS IN CEILINGS AND PLENUM WALLS FOR PLUMBING SHALL BE SEALED AIR TIGHT AND PROTECTED WITH FIRESTOP.

14. SEE SITE PLAN FOR EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.

15. ALL HOSE BIBS SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE SPECIFIED.

16. ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.

17. MAKE PROPER HW, CW, RE-CIRC., WASTE, AND VENT CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAIN, ELBOWS AND CONNECTIONS ARE NOT SHOWN.

18. CLEANOUTS SHALL BE PROVIDED NEAR BASE OF EACH VERTICAL WASTE OR SOLID STACK. PROVIDE 18" MINIMUM CLEARANCE FOR ACCESS.

19. PROVIDE VALVES AND UNIONS WHEN CONNECTING PIPING TO EQUIPMENT. LOCATE VALVES FOR EASY ACCESS AND SERVICING OF EQUIPMENT. PROVIDE ACCESS PANELS TO ALL SHUT-OFF VALVES.

20. PRESSURE TEST ALL NEW WATER PIPES, MINIMUM OF 4 HOURS BEFORE APPLYING PIPE INSULATION. ALL TESTS SHALL BE IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL WATER AUTHORITY.

21. IN THE EVENT OF CONFLICT BETWEEN VARIOUS SECTIONS OF CONSTRUCTION DOCUMENTS, THE MOST STRINGENT OF THE OPTIONS SHALL APPLY FOR BIDDING PURPOSE. AFTER AWARD OF CONTRACT BUT BEFORE STARTING DESIGN/CONSTRUCTION, CONTRACTOR SHALL REQUEST CLARIFICATIONS WITH BID ON ANY CONFLICTING INFORMATION FROM THE OWNER.

22. PROVIDE DIELECTRIC FITTINGS OTHER THAN DIELECTRIC UNIONS WHEN CONNECTING DISSIMILAR MATERIAL PIPING. DIELECTRIC UNIONS NOT PERMITTED.

23. ALL CONCRETE FLOORS, SLABS, BRICK AND BLOCK WALL PENETRATIONS SHALL BE SLEEVED AND FIRE STOPPED.

24. PROVIDE BALL VALVE FOR ALL CW AND HW BRANCH TAKE-OFFS.

25. ALL EXTERIOR ROOF PENETRATIONS SHALL BE SEALED WEATHERTIGHT.

26. SLOPES AND INVERT ELEVATIONS OF ALL INTERIOR PIPING SHALL BE ESTABLISHED BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. ALL PIPING SHALL BE LOCATED AND DETERMINED WHERE TO BE RUN TO AVOID CONFLICT WITH OTHER TRADES.

27. ALL PIPING SHALL BE PROVIDED WITH SECTIONAL SHUT-OFF VALVES AND ACCESS PANELS FOR ALL HIDDEN VALVES. PROVIDE ISOLATION VALVES FOR ALL PLUMBING FIXTURES.

28. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS, LEAKS, LACK OF PROPER SYSTEM PERFORMANCE OR NON-OPERATION FOR A PERIOD OF ONE YEAR AFTER DATED OF FINAL ACCEPTANCE OF WORK BY OWNER.

29. ALL WORK SHALL BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.

30. ALL EXPOSED PIPING TO FIXTURES SHALL BE HEAVILY CHROME-PLATED.

31. MAKE FINAL CONNECTIONS AFTER FIXTURES AND EQUIPMENT ARE SET IN PLACE. ALLREQUIRED TRIM, FAUCETS AND MINOR ITEMS NECESSARY FOR A COMPLETE FUNCTIONING INSTALLATION, SUCH AS STRAINERS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC., SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH EQUIPMENT REQUIREMENTS. ALL FAUCETS TO BE HEAVILY CHROME-PLATED.

32. SLEEVES THROUGH CMU BLOCKS WALLS AND/OR MASONRY FLOORS SHALL BE SCHEDULE 40 BLACK STEEL PIPE. SLEEVES THRU FLOORS SHALL STAND PROUD OF FLOOR SLAB BY 1/2". SLEEVES THROUGH SHEET ROCK WALL SHALL BE 18" GAUGE GALVANIZED SHEET METAL. THE SPACE BETWEEN THE PIPE AND SLEEVE SHALL BE PACKED WITH "3M" EXPANDABLE FOAM FIRE-STOP MATERIAL, TO ASSURE A RATING EQUAL TO THE PENETRATED WALL OR FLOOR.

33. HANGERS SHALL BE OF SIMILAR MATERIAL AS PIPING TO AVOID GALVANIC ACTION IN ACCORDANCE WITH MSS-SP-69, AND LOCATED AT INTERVALS NOT TO EXCEED 6'-0" O.C. WHERE "HUBLESS" PIPE IS BEING USED, PROVIDE HANGERS ON ETHER SIDE OF THE JOINTS AS RECOMMENDED BY CISPI BULLETIN 310. FOR INSULATED PIPING, INSULATION SHALL EXTEND CONTINUOUSLY THRU HANGER WITH OUT INTERRUPTION. PROVIDE SADDLE TO PROTECT INSULATION FROM COMPRESSION.

34. SOIL, WASTE AND VENT PIPING SHALL BE INSTALLED IN ACCORDANCE WITH CODE. HORIZONTAL DRAINAGE PIPING SHALL SLOPE PER 2018 IPC CODE, UNLESS OTHERWISE INDICATED. DOMESTIC WATER SHALL BE SLOPED TO DRAIN POINTS.

35. SUBMIT OPERATING AND MAINTENANCE MANUALS AND WARRANTY CERTIFICATES TO OWNER.

36. THE CONTRACTOR SHALL NOT CORE DRILL CONCRETE SLABS OR PRE-CAST CONCRETE PANELS OR DECK WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE BUILDING OWNER AND SHALL X-RAY PRIOR TO ANY CORE DRILLING. X-RAYING AND CORE DRILLING SLABS SHALL BE SCHEDULED WITH THE BUILDING OWNER, INCLUDE COSTS OF X-RAYING IN BID.

37. FINAL ACCEPTANCE OF PLUMPING SYSTEMS BY THE USER/OWNER, SHALL BE CONTINGENT TO COMPLIANCE WITH ALL COMMISSIONING REQUIREMENTS AND TESTS PRESCRIBED IN THE PROJECT DESIGN DOCUMENTS/SPECIFICATIONS AND APPROVAL BY THE CxA AGENT OF THE PROJECT.

38. UPON COMPLETION OF THE PROJECT, ALL DOMESTIC WATER PIPING SHALL BE SANITIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

39. WHEN NATURAL GAS IS AVAILABLE, USE NATURAL GAS RANGES/OVENS & FURNACES IN SINGLE FAMILY & MULTI-FAMILY BUILDINGS AS AN OPTION, IN-LIEU OF ELECTRIC.

ABBREVIATIONS

ABV	ABOVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AP	ACCESS PANEL
APPROX	APPROXIMATE
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISH FLOOR
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BT	BATHTUB
CA	COMPRESSED AIR
CD	CONDENSATE
CLG	CEILING
CO	COMPANY, CLEANOUT
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
CW	COLD WATER
DISP	DISPOSER
DWV	DRAINAGE WASTE & VENT
EA	EACH
ECO	EXTERIOR CLEANOUT
ETR	EXISTING TO REMAIN
EW	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FIXT	FIXTURE
FLR	FLOOR
FM	FORCED MAIN
FS	FLOOR SINK
G	NATURAL GAS
GCO	GRADE CLEANOUT
GD	GROUNDWATER DRAIN TILE
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RECIRCULATING
I.E.	INVERT ELEVATION
IW	INDIRECT WASTE
IPC	INTERNATIONAL PLUMBING CODE
LAV	LAVATORY
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	BRITISH THERMAL UNITS (x1000)
MIN	MINIMUM
MISC	MISCELLANEOUS
NFWH	NON-FREEZE WALL HYDRANT
NIC	NOT IN CONTRACT
OD	OVERFLOW ROOF DRAIN
OSD	OPEN SITE DRAIN
PD	PUMPED DISCHARGE
PDI	PLUMBING & DRAINAGE INSTITUTE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RM	ROOM
RTU	ROOF TOP UNIT
SAN	SANITARY
SFU	SUPPLY FIXTURE UNIT
ST	STORMWATER
TP	TRAP PRIMER VALVE
TPS	TRAP PRIMING STATION
TW	TEMPERED WATER
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
XR	EXISTING RELOCATED

LAB/MEDICAL PROJECTS

O	OXYGEN
MA	MEDICAL AIR
LA	LAB AIR
N	NITROGEN
LN	LIQUID NITROGEN
AR	ARGON
HE	HELIUM
SG	SPECIAL GAS
LV	LAB VACUUM
MV	MEDICAL VACUUM
CO2	CARBON DIOXIDE
DI	DEIONIZED WATER
ROS	REVERSE OSMOSIS SUPPLY
ROR	REVERSE OSMOSIS RETURN
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LHWR	LAB HOT WATER RECIRCULATING
VCW	VIVARIUM COLD WATER
VHW	VIVARIUM HOT WATER
NP	NON-POTABLE

SHEET NUMBERING LEGEND

P111A

- DISCIPLINE: "P" NEW WORK; "PD" DEMO
- SECTOR
- PLAN TYPE: "1" FLOOR PLAN; "2" ENLARGED FLOOR ETC.
- FLOOR LEVEL: "0" LOWEST FLOOR; "1" NEXT FLOOR LEVEL ETC.
- SYSTEM TYPE: "0" FOR UNDERGROUND; "1" WATER & GAS; "2" DWV & STORM; "3" FIRE PROTECTION

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	DEMOLISH AND REMOVE
	SOIL OR WASTE PIPING
ST	STORM PIPING
OD	OVERFLOW STORM PIPING
NP	NON-POTABLE WATER PIPING
ST	STORM PIPING BELOW SLAB
	VENT PIPING
CW	COLD WATER PIPING
	COLD WATER PIPING (SINGLE LINE)
HW	HOT WATER PIPING
	HOT WATER PIPING (SINGLE LINE)
HWR	HOT WATER RECRCULATING PIPING
	HOT WATER RECRCULATING PIPING (SINGLE LINE)
G	GAS PIPING
F	FIRE PROTECTION PIPING
	PIPE DOWN OR DROP
	PIPE UP OR RISE/FLOOR CLEANOUT
	CAPPED OR PLUGGED PIPE
	UNION
	WALL CLEANOUT
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	GAS COCK
	SHUTOFF VALVE IN RISE OR DROP
	DOUBLE CHECK BACKFLOW PREVENTER
	RPZ BACKFLOW PREVENTER
	CHECK VALVE
	BALANCING VALVE
	OUTSIDE STEM & YOKE VALVE
	PRESSURE GAGE W/ NEEDLE VALVE
	THERMOMETER
	TEMPERATURE & PRESSURE RELIEF VALVE
VB	VACUUM BREAKER
"A"	WATER HAMMER ARRESTER, LETTER INDICATES PDI
	HOSE BIBB
	WALL HYDRANT
	SOLENOID VALVE
	STRAINER
	PIPE GUIDE/SLEEVE
	PIPE ANCHOR
	FLEXIBLE CONNECTION
	FLOW DIRECTION
	RISER/DETAIL DESIGNATION
	FLOOR DRAIN
	CALL OUT DESIGNATION
X X	METER (GAS/WATER/FIRE)
X	PUMP
XXX	PUMP
M	KEYNOTE TAG
	LIMIT OF DEMOLITION
#	

DOUBLE SYMBOLS

	GATE VALVE
	BUTTERFLY VALVE
	3-WAY VALVE
	GAS COCK VALVE
	BALL VALVE
	BALANCE VALVE
	SHUT-OFF VALVE
	BACKFLOW PREVENNTER VALVE

REVISION	DESCRIPTION	BY	DATE

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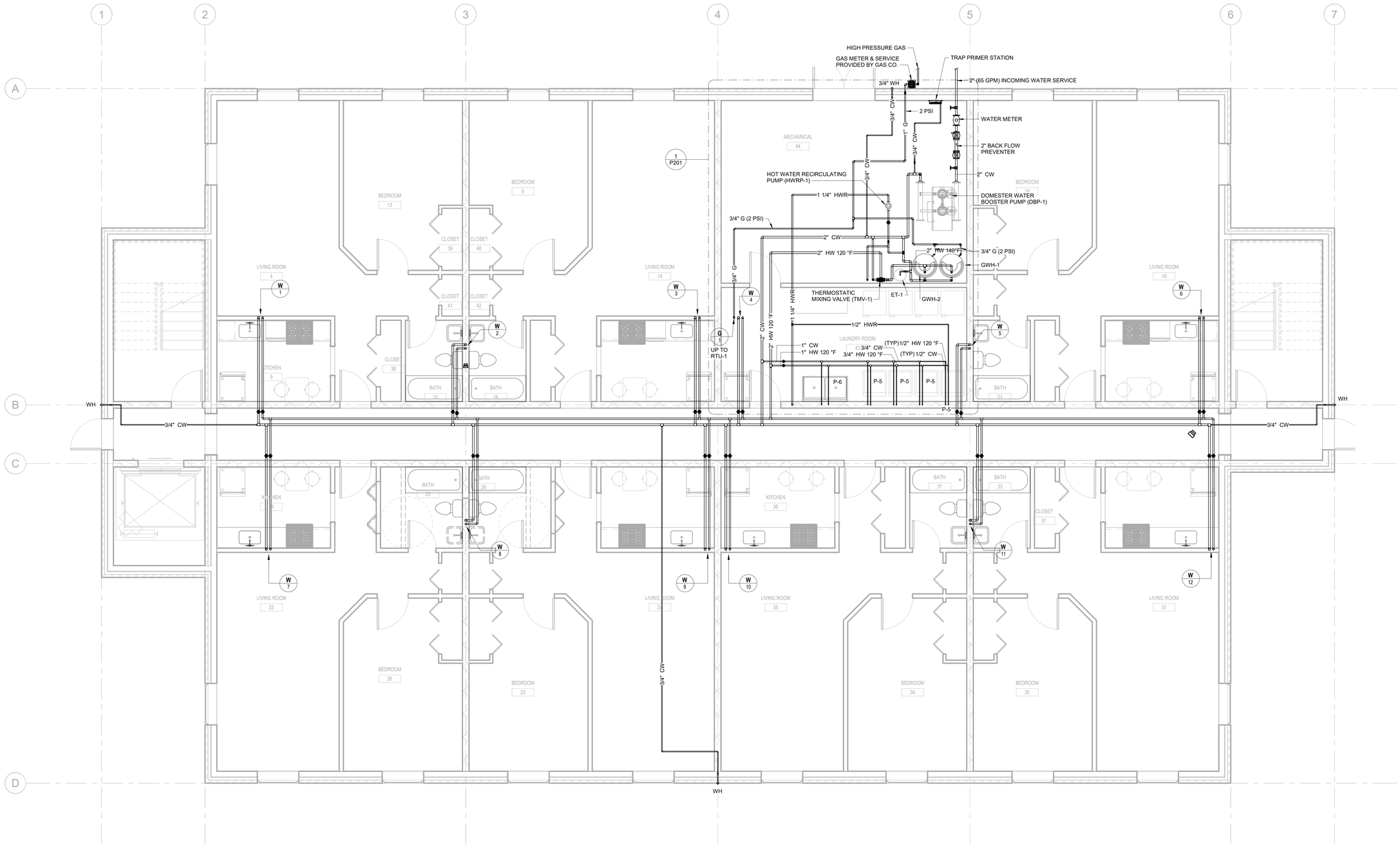
NIST – MID RISE APARTMENT

PLUMBING COVERSHEET

P002

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO. ____ OF ____ DWG. P002



1 FIRST FLOOR PLAN - WATER & GAS

1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

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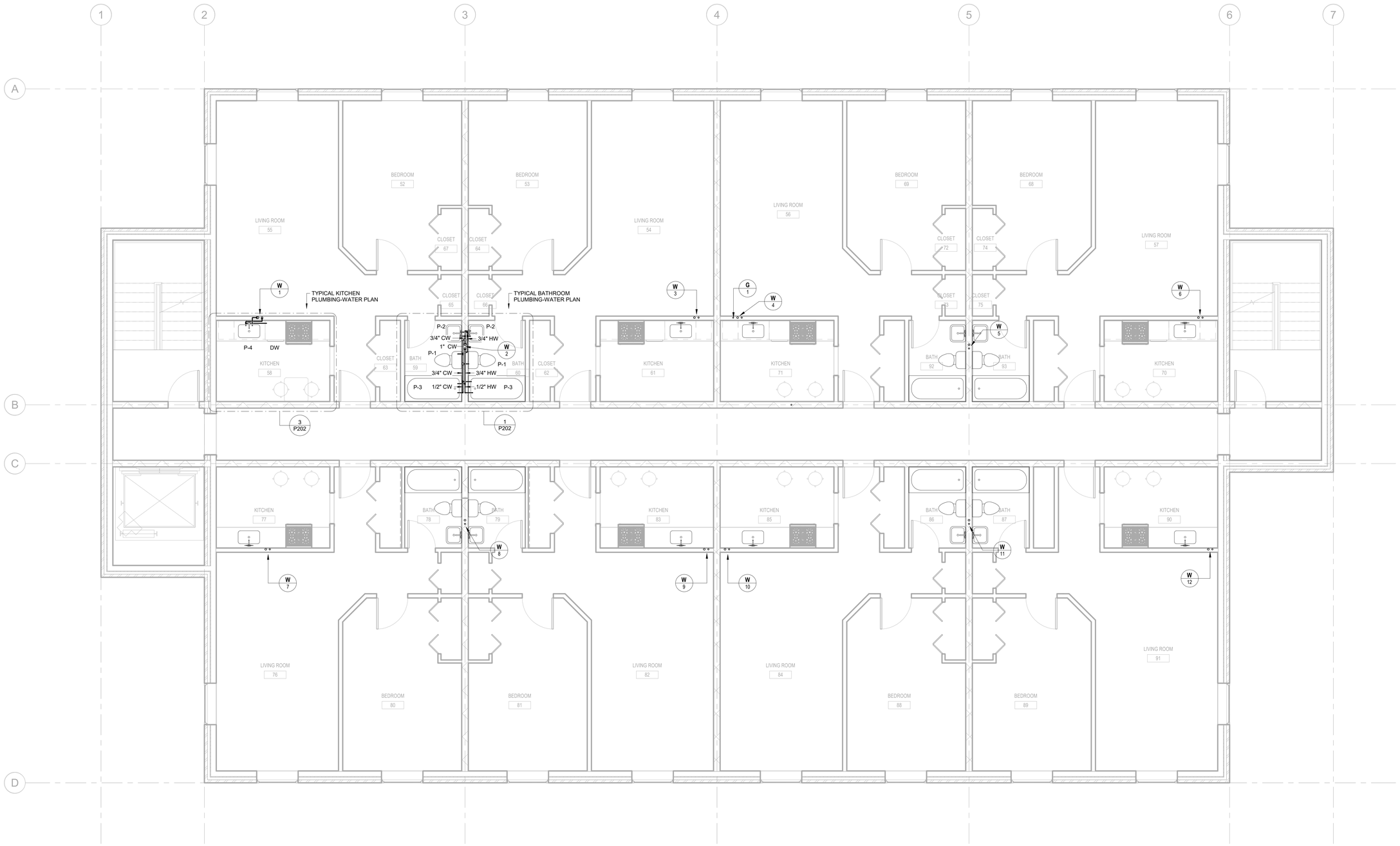
PLUMBING FIRST FLOOR PLAN – WATER & GAS

P101

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ___ OF ___ DWG. P101



1 SECOND FLOOR - WATER & GAS
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

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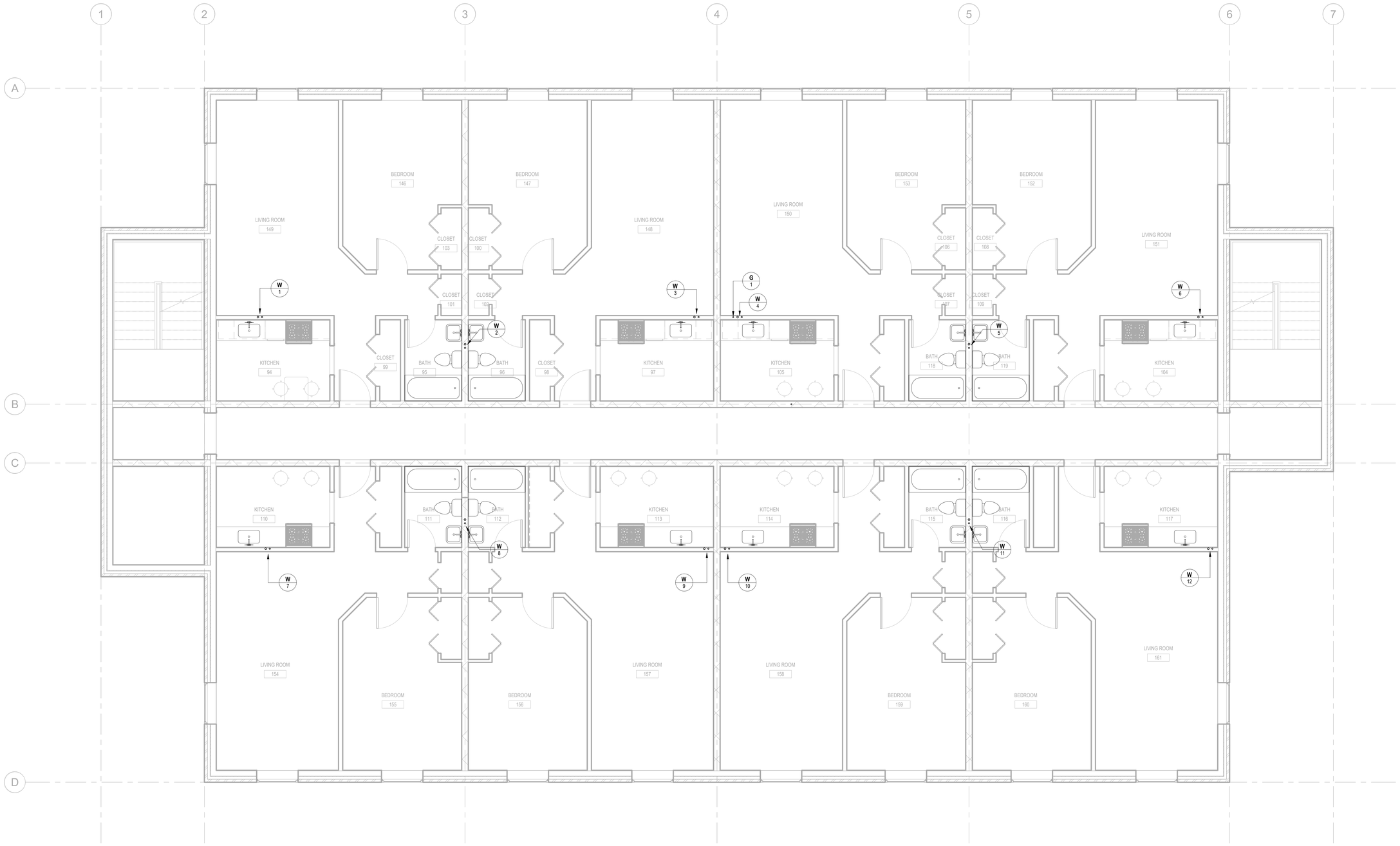
NIST – MID RISE APARTMENT

PLUMBING SECOND FLOOR PLAN – WATER & GAS

P102

SH. NO.___OF___ DWG. P102

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



1 THIRD FLOOR - WATER & GAS

1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

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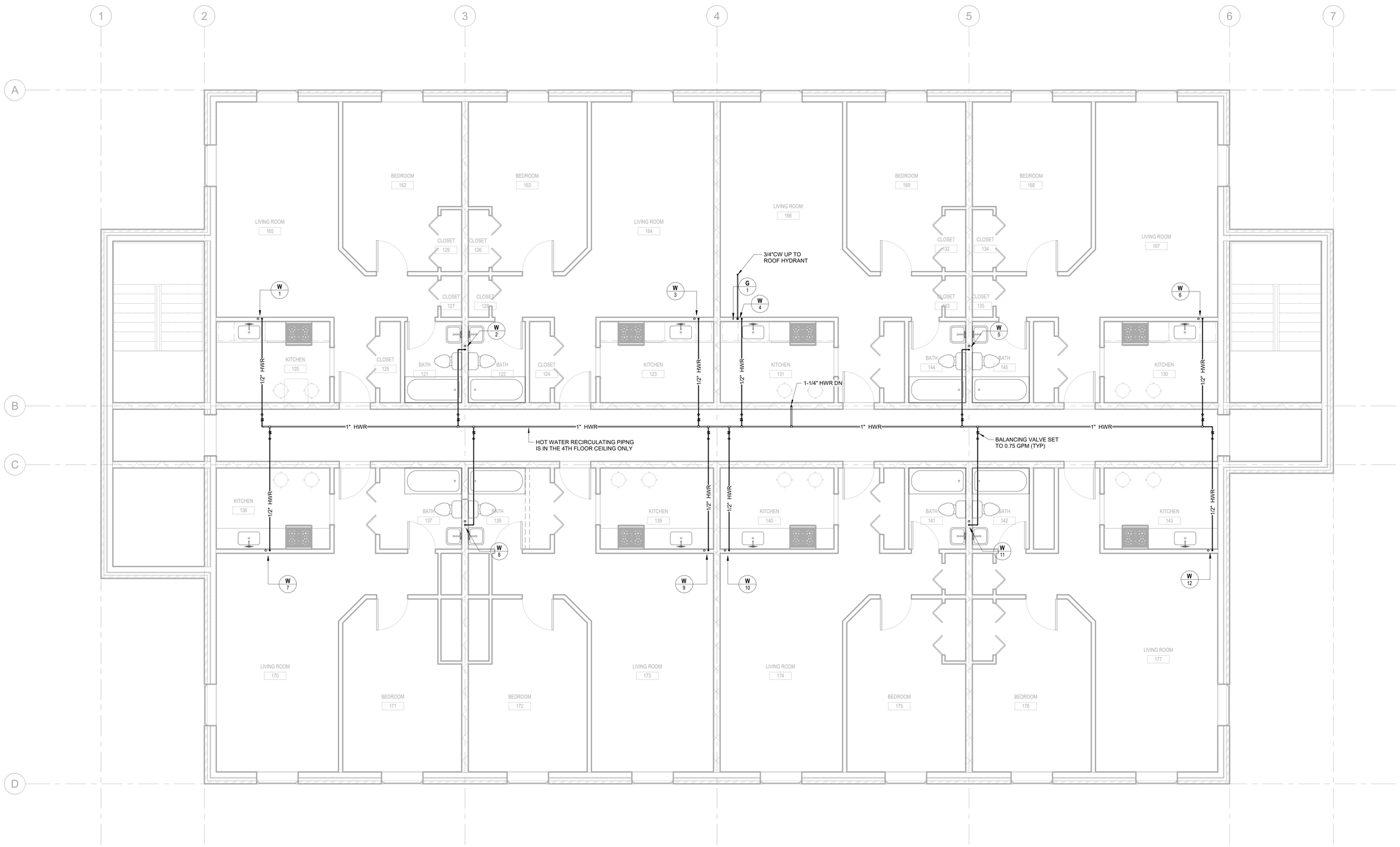
PLUMBING THIRD FLOOR PLAN – WATER & GAS

P103

SH. NO. ___ OF ___ DWG. P103

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



1 FOURTH FLOOR - WATER & GAS
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

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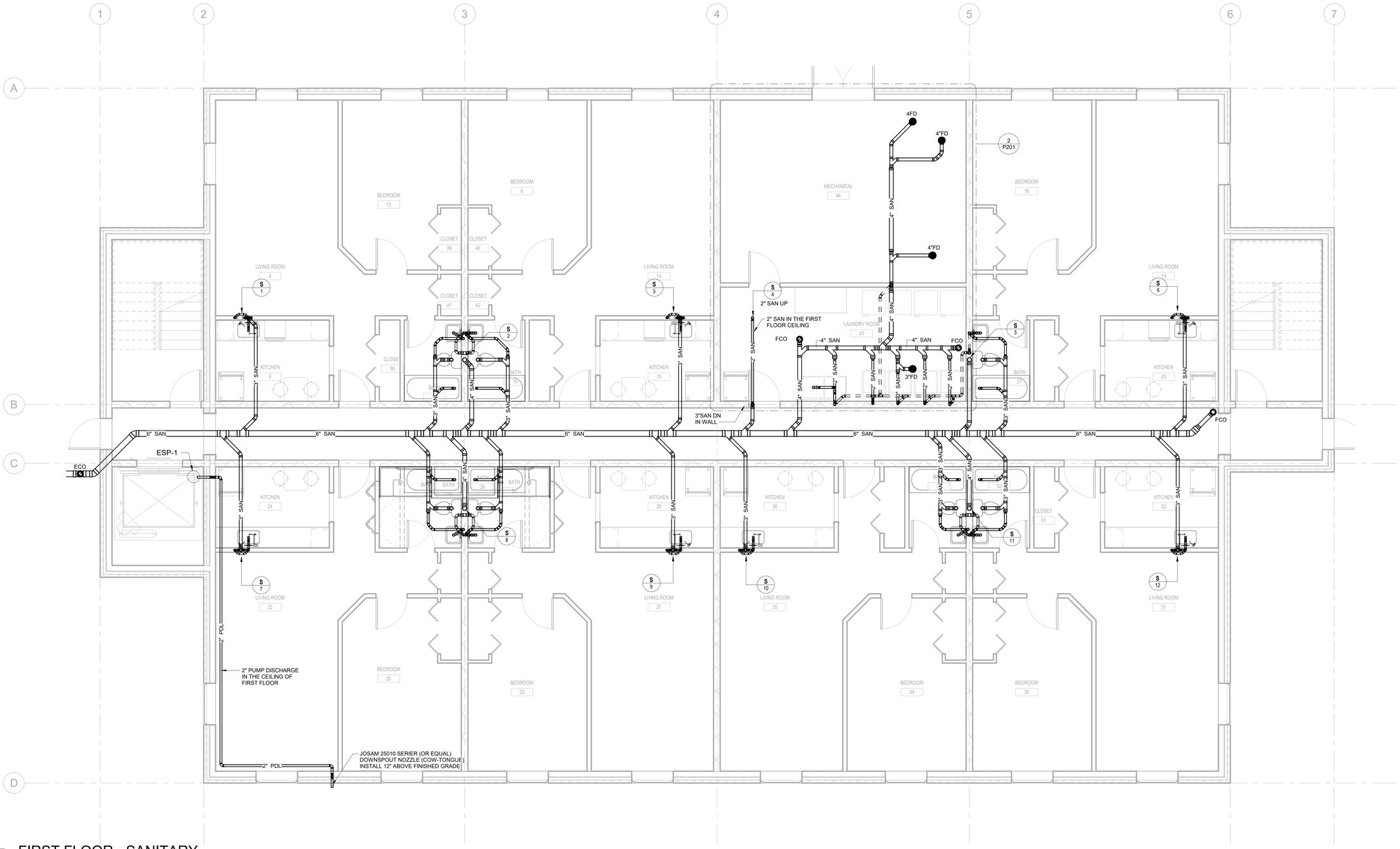
PLUMBING FOURTH FLOOR PLAN – WATER & GAS

P104

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER VAY	DATE	DRAWN BY AA	DATE 08/15/2022	PROJECT/ W.O. # Project Number

SH. NO. ___ OF ___ DWG. P104



1 FIRST FLOOR - SANITARY

1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

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NIST – MID RISE APARTMENT

PLUMBING FIRST FLOOR PLAN – SANITARY

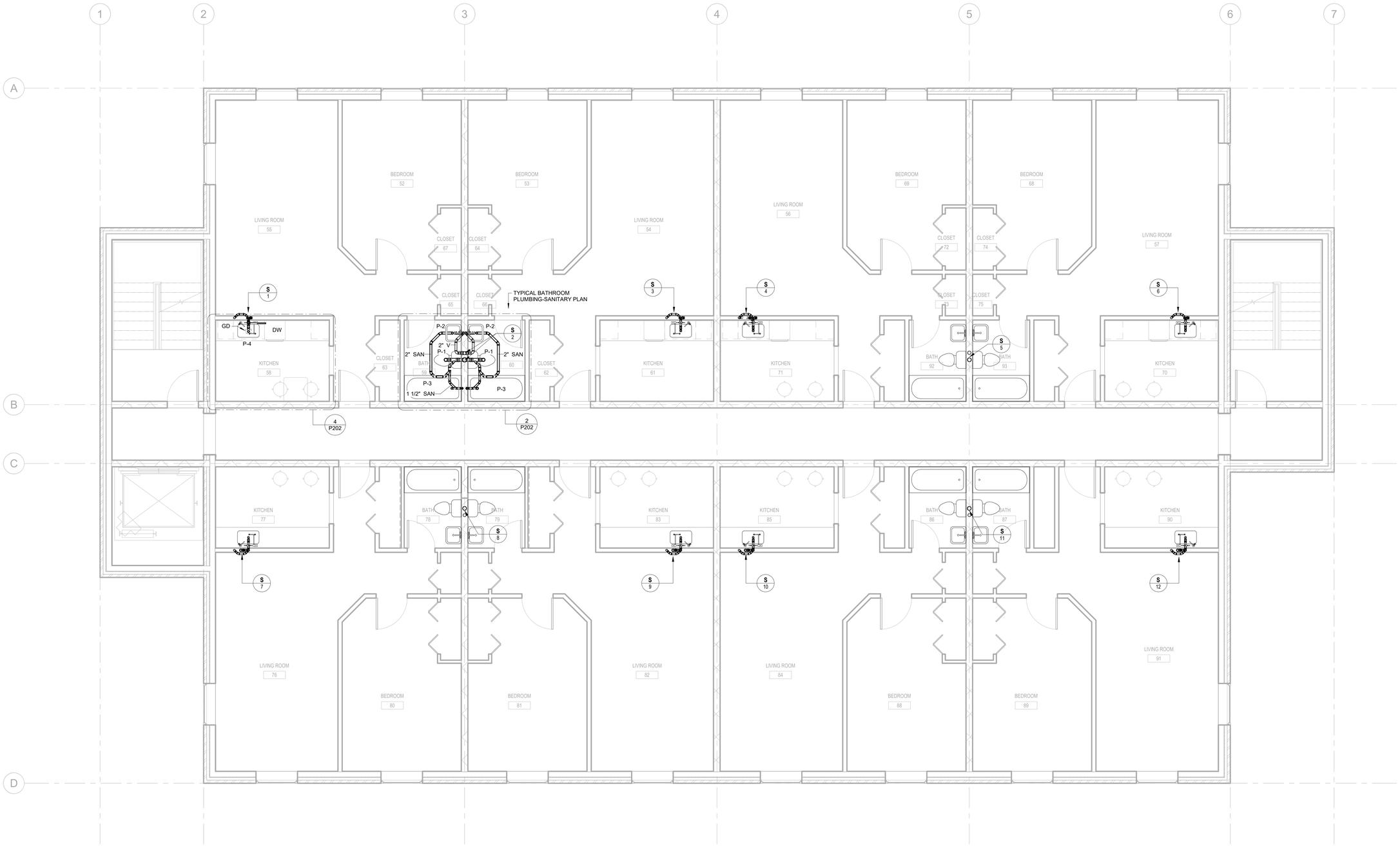
P111

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO. ___ OF ___ DWG. P111

GENERAL NOTES

1. REFER TO DWG P201 FOR TYPICAL BATHROOM AND KITCHEN SANITARY 1/4" SACLE PLANS



1 SECOND FLOOR - SANITARY
1/4" = 1'-0"

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NIST – MID RISE APARTMENT

PLUMBING SECOND FLOOR PLAN – SANITARY

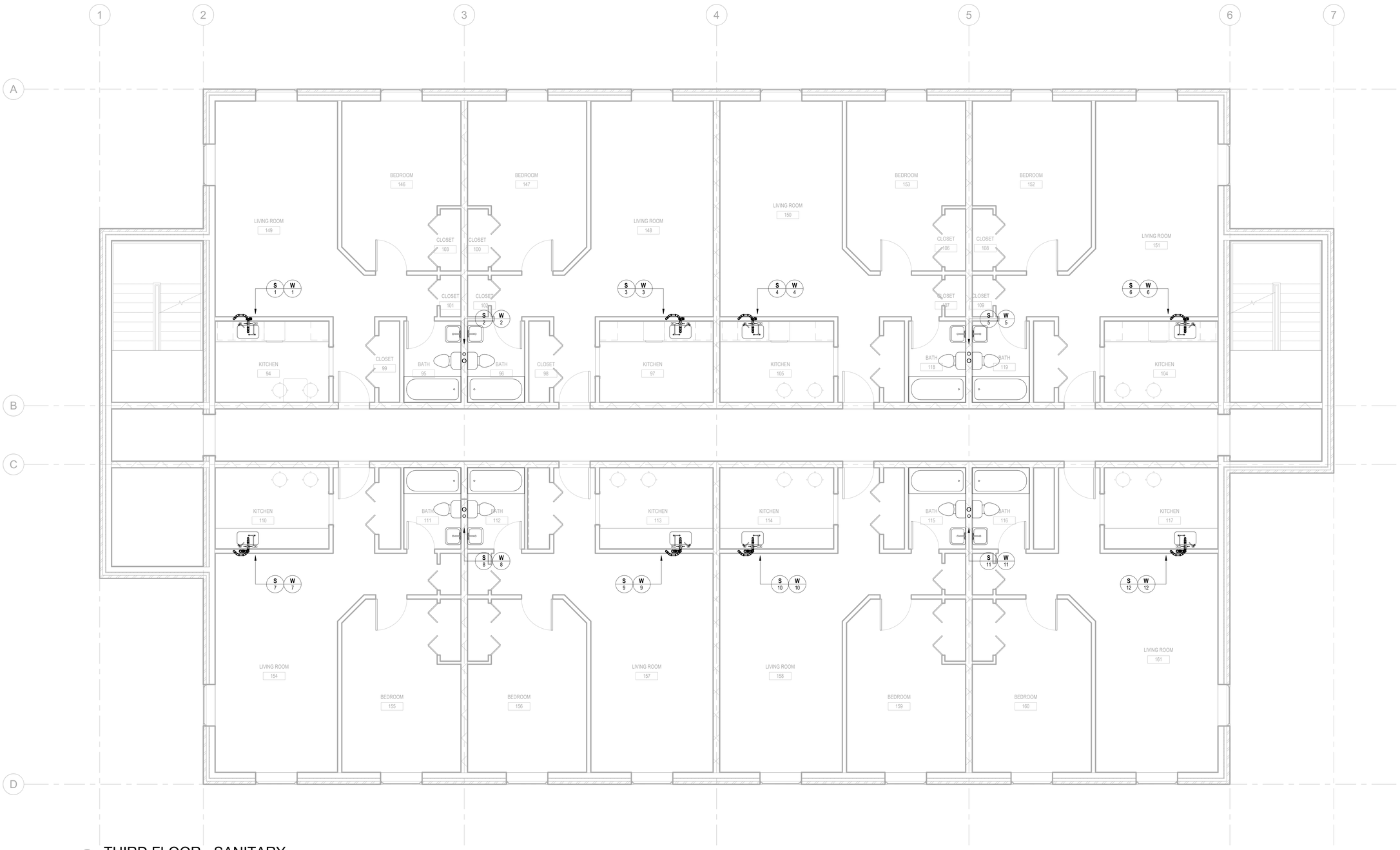
P112

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ___ OF ___ DWG. P112

GENERAL NOTES

1. REFER TO DWG P201 FOR TYPICAL BATHROOM AND KITCHEN SANITARY 1/4" SACLE PLANS



1 THIRD FLOOR - SANITARY
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

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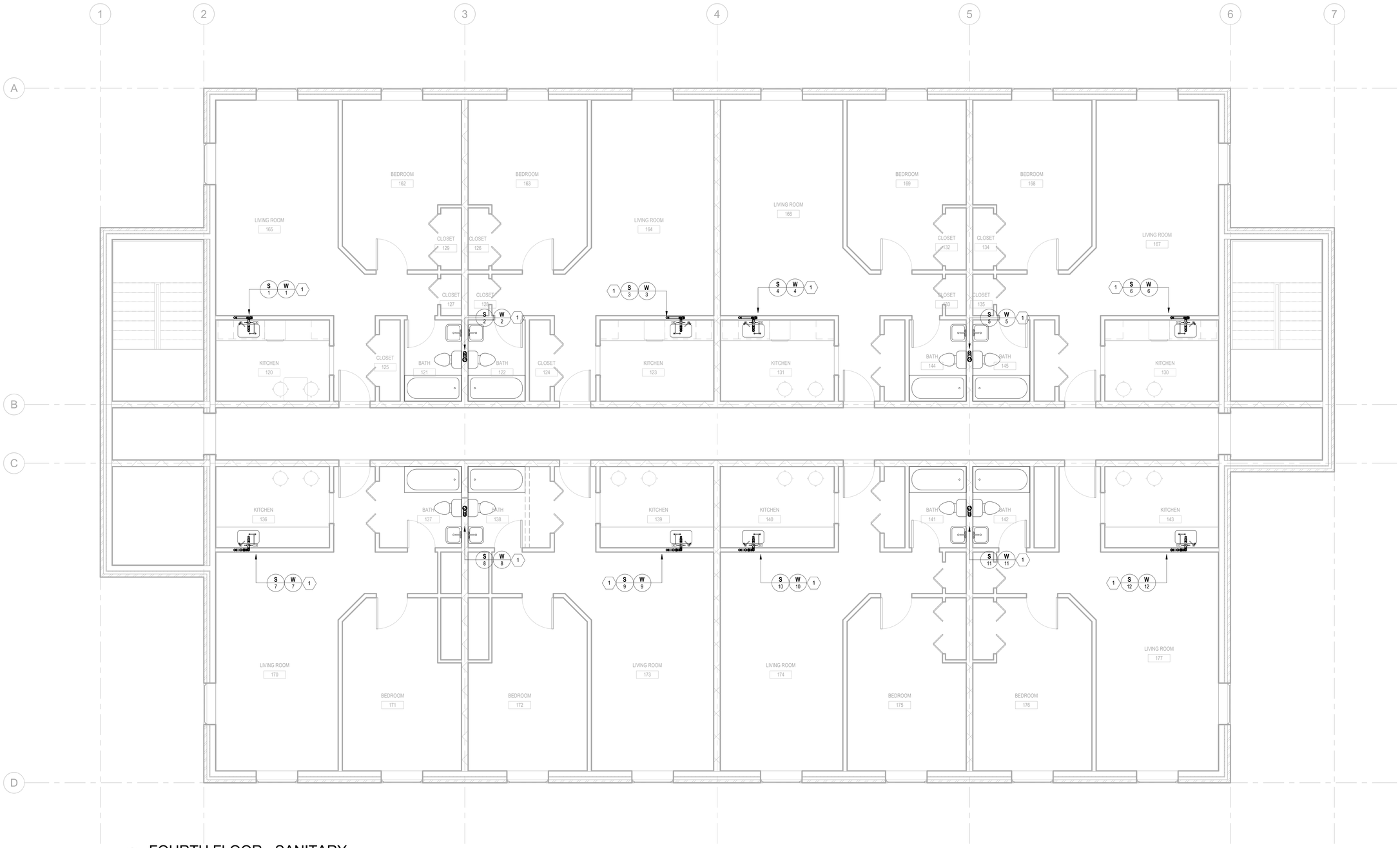
PLUMBING THIRD FLOOR PLAN – SANITARY

P113

SH. NO. ___ OF ___ DWG. P113

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

KEYED NOTES	
1	VENT PIPE UP TO VTR.



1 FOURTH FLOOR - SANITARY
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

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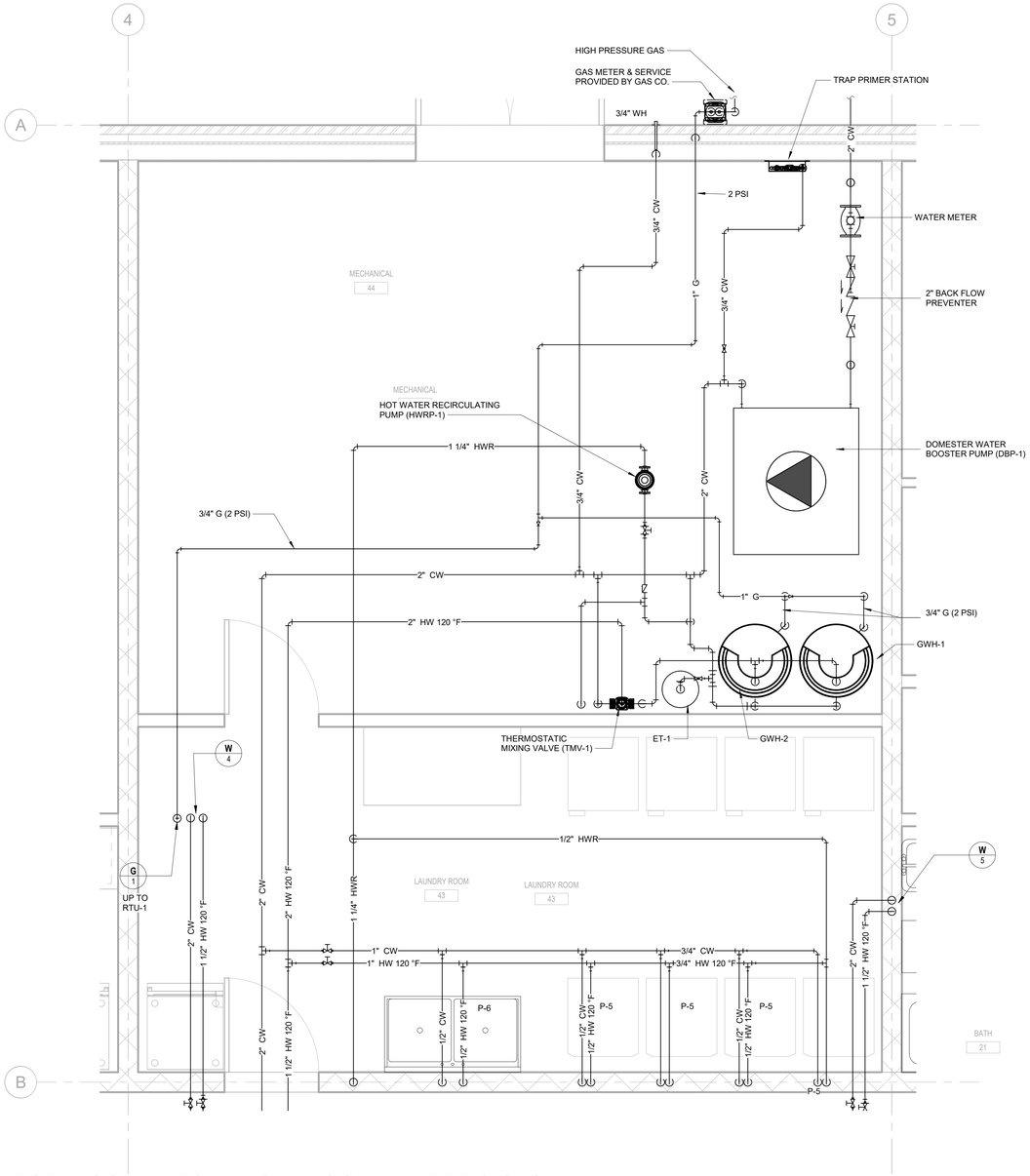
PLUMBING FOURTH FLOOR PLAN – SANITARY

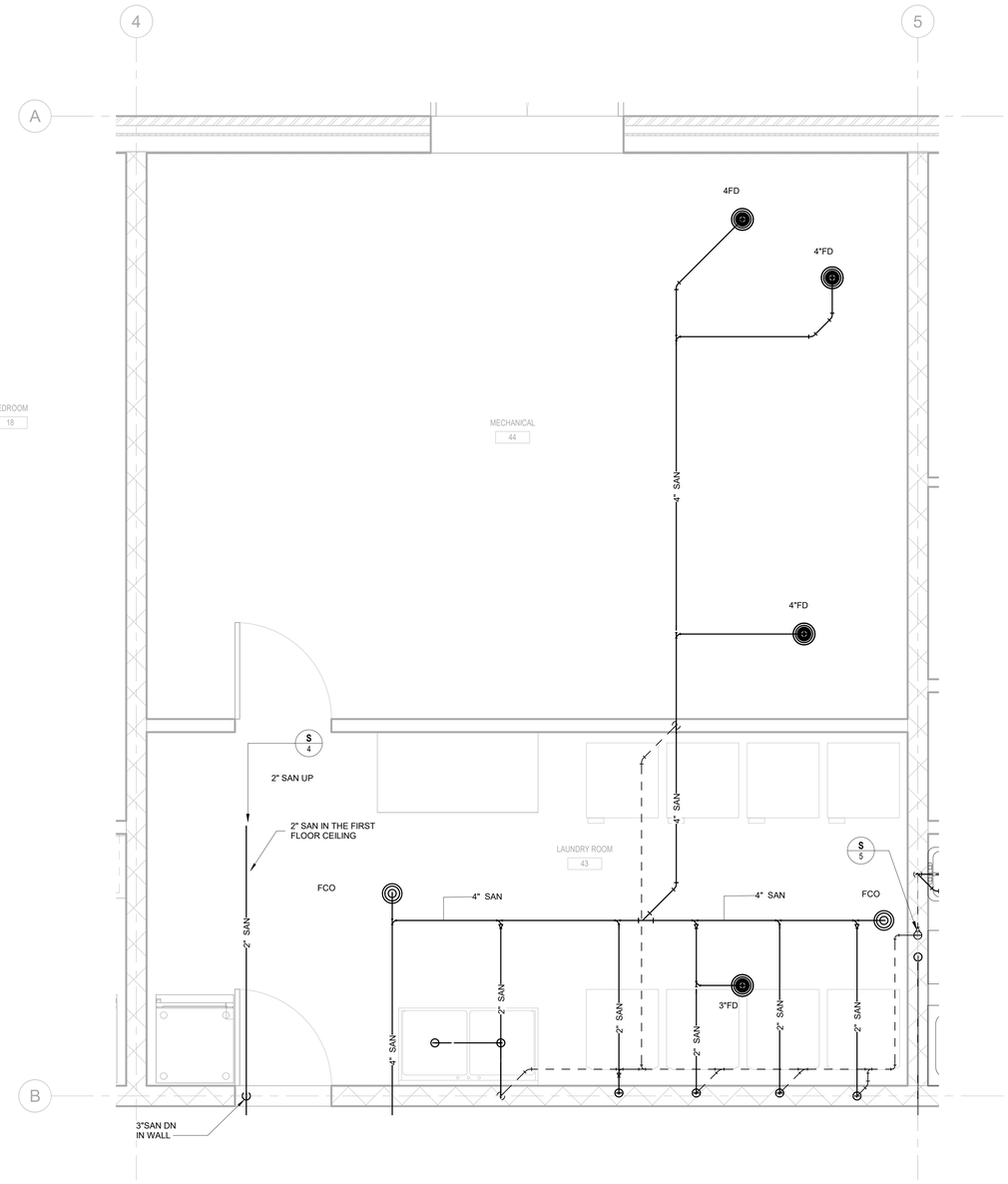
P114

SH. NO.___OF___ DWG. P114

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



1 FIRST FLOOR - MECHANICAL ROOM - WATER & GAS
1/2" = 1'-0"



2 FIRST FLOOR - MECHANICAL ROOM - SANITARY
1/2" = 1'-0"

NOTE: PROVIDE LINT INTERCEPTOR FOR THE WASHERS IF REQUIRED BY THE AUTHORITY HAVING JURISDICTION.

REVISION	DESCRIPTION	BY	DATE

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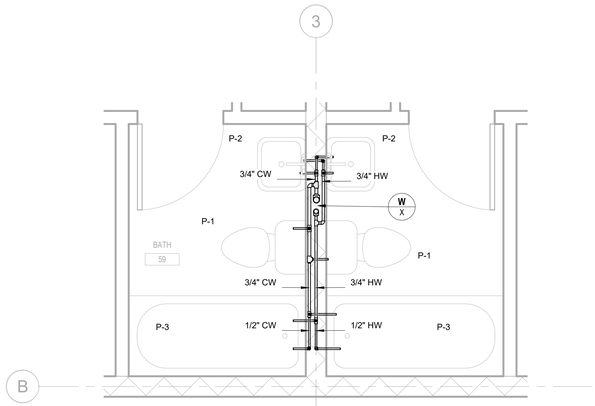
NIST – MID RISE APARTMENT

PLUMBING ENLARGED PLANS

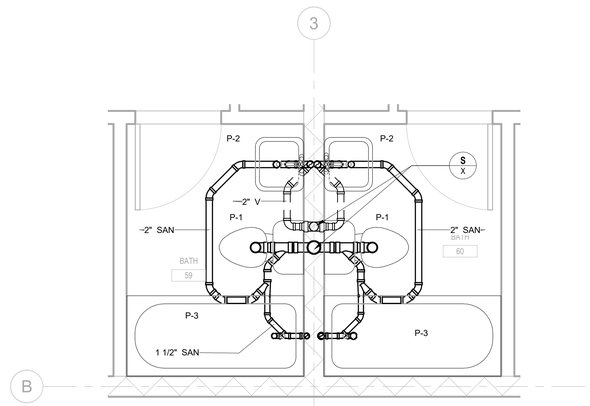
P201

SH. NO. ___ OF ___ DWG. P201

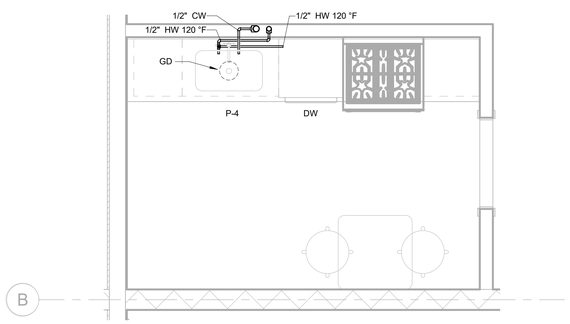
APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



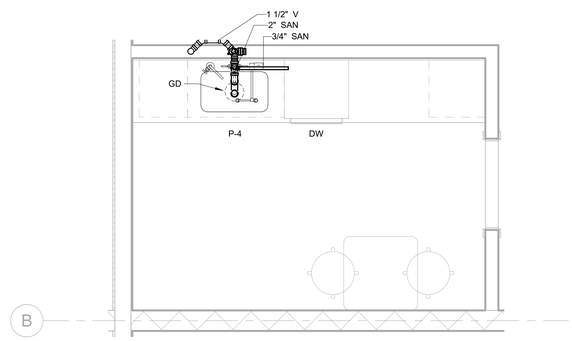
1 SECOND FLOOR - BATHROOM GROUP (TYP.) - WAER & GAS
1/2" = 1'-0"



2 SECOND FLOOR - BATHROOM GROUP (TYP.) - SANITARY
1/2" = 1'-0"



3 SECOND FLOOR - KITCHEN (TYP.) - WATER & GAS
1/2" = 1'-0"



4 SECOND FLOOR - KITCHEN (TYP.) - SANITARY
1/2" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

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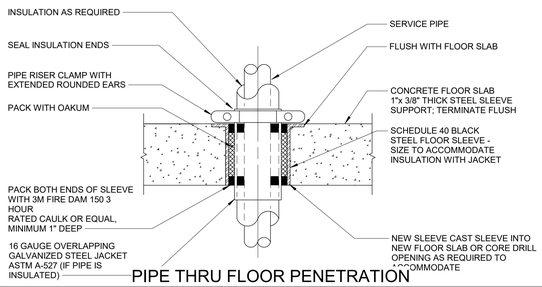
NIST - MID RISE APARTMENT

PLUMBING ENLARGED PLANS

P202

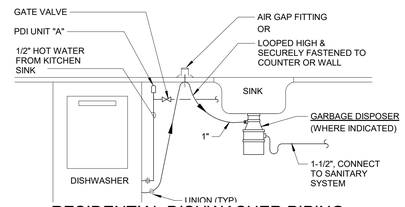
SH. NO. ___ OF ___ DWG. P202

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED - NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



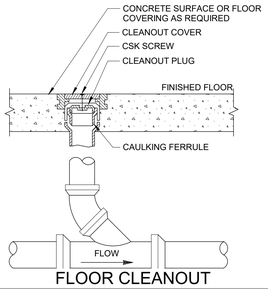
7 PIPE THRU FLOOR PENETRATION

SCALE: NOT TO SCALE



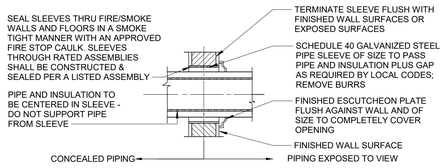
4 RESIDENTIAL DISHWASHER PIPING

SCALE: NOT TO SCALE



1 FLOOR CLEANOUT

SCALE: NOT TO SCALE

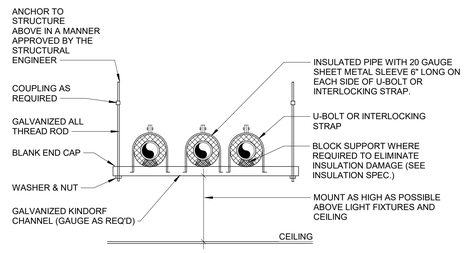


NOTE:

FOR INTERIOR FRAME PARTITIONS-PIPE SLEEVES MAY BE FABRICATED FROM GALVANIZED SHEET METAL; ROUND TUBE CLOSED WITH SNAPLOCK JOINT, WELDED SPIRAL SEAMS, OR WELDED LONGITUDINAL JOINT. FABRICATE FROM THE FOLLOWING GAUGES: 3" AND SMALLER, 20 GAUGE; 4" TO 6", 16 GAUGE; OVER 6", 14 GAUGE.

8 SLEEVE THRU INTERIOR WALL

SCALE: NOT TO SCALE

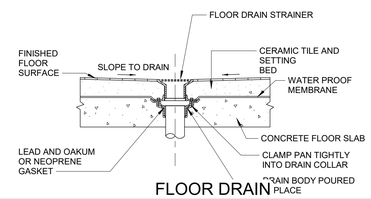


NOTE:

1. ALL PIPING SUPPORT SYSTEM COMPONENTS SHALL HAVE A NON-CORROSIVE METAL FINISH, GAL
2. COORDINATE CROSS PIPING PIPING ROUTED IN CORRIDORS & SPRINKLER PIPING MAINS CROSSING IN CORRIDORS.

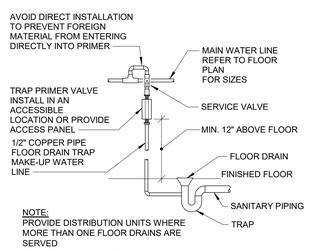
5 TRAPEZE PIPING SUPPORT

SCALE: NOT TO SCALE



2 FLOOR DRAIN

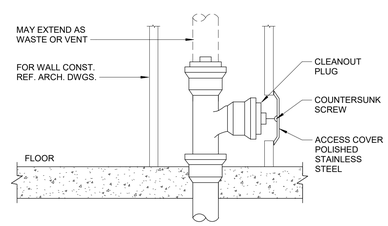
SCALE: NOT TO SCALE



NOTE:
PROVIDE DISTRIBUTION UNITS WHERE MORE THAN ONE FLOOR DRAINS ARE SERVED

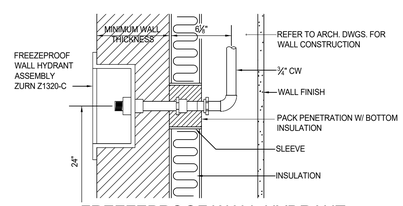
9 TRAP PRIMER

SCALE: NOT TO SCALE



6 WALL CLEANOUT

SCALE: NOT TO SCALE



3 FREEZEPROOF WALL HYDRANT

SCALE: NOT TO SCALE

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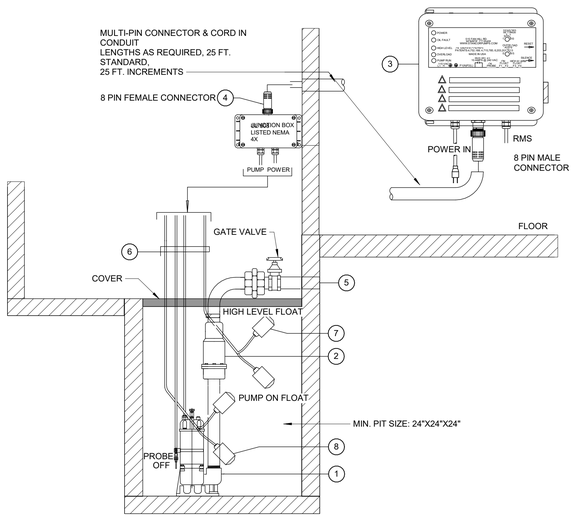
PLUMBING DETAILS

P301

SH. NO. ___ OF ___ DWG. P301

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED - NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

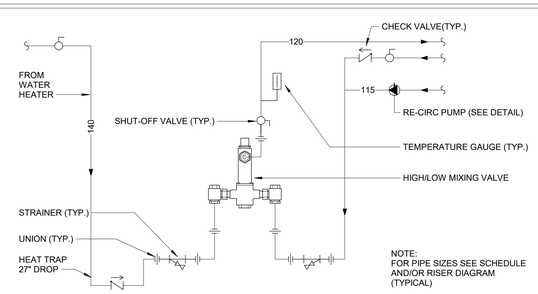


KEYED NOTES:

1. SP-1STANCOR MODELSE-50 SUBMERSIBLE EFFLUENT PUMP 0.50 HP, 115 VOLT, 3600 RPM, 2" DISCHARGE CONNECTION
2. STANCOR CHECK VALVE
3. STANCOR OIL MINDER 115V, 1Ø CONTROL SYSTEM WITH BUILT IN AUDIBLE AND VISUAL ALARM WHEN PUMP DOES NOT RUN DUE TO OIL IN PIT OR HIGH LIQUID ALARM. PROVIDE SILENCING BUTTON FOR AUDIBLE ALARM BUILT INTO PANEL. PANEL SHALL HAVE ADDITIONAL CONTACT FOR A REMOTE ALARM LOCATION. JUNCTION BOX WILL BE PROVIDED WITH MULTI-PIN CONNECTOR & CORD IN LENGTHS AS REQUIRED, 25 FT. IS STANDARD, OPTIONAL 25 FT. INCREMENTS ARE REQUIRED. LIGHTS FOR OIL SPILL, POWER, HIGH LIQUID LEVEL, OVERLOAD & PUMP RUN
4. JUNCTION BOX WILL BE PROVIDED WITH MULTI-PIN CONNECTOR AND CORD IN LENGTHS AS REQUIRED; 25 FT. IS STANDARD, OPTIONAL 25 FT. INCREMENTS AVAILABLE
5. ALL BURIED PUMP PRESSURE DISCHARGE PIPING SHALL BE PROTECTED WITH TAPECOAT CT CORROSION PROTECTION TAPE
6. OIL MINDER CABLE, POWER CABLE, PROBE CABLE, HIGH LIQUID ALARM CABLE & PUMP ON FLOAT CABLE.
7. HIGH LIQUID ALARM FLOAT WITH CLAMP DEVICE TO MOUNT TO PUMP DISCHARGE PIPING.
8. PUMP ON FLOAT.

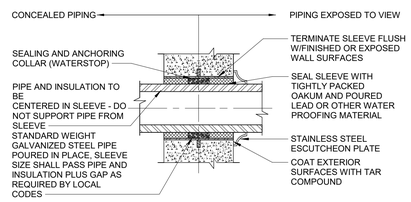
8 ELEVATOR SUMP PUMP

SCALE: NOT TO SCALE



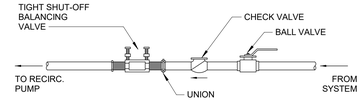
9 THERMOSTATIC MIXING VALVE PIPING

SCALE: NOT TO SCALE



4 SLEEVE THRU EXTERIOR WALL

SCALE: NOT TO SCALE

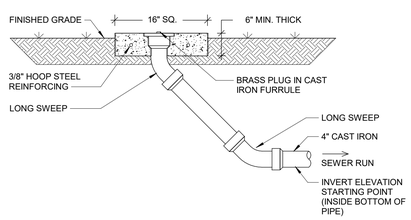


NOTES:

1. INSURE PROPER ACCESS IS PROVIDED TO VALVE AND THAT VALVE CAN BE METERED. DO NOT ORIENT TAPS DOWNWARD.
2. PROVIDE ACCESS PANEL IN HARD CEILING LOCATIONS.
3. PROVIDE TEE HANDLE WHERE LIMITED ACCESS.

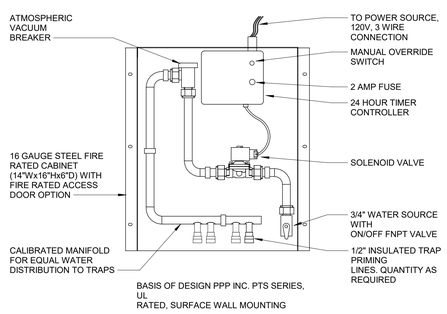
5 HOT WATER CIRCULATION BALANCING VALVE

SCALE: NOT TO SCALE



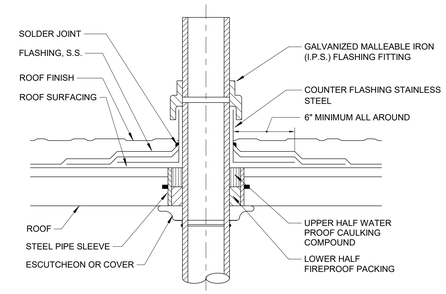
6 EXTERIOR CLEANOUT

SCALE: NOT TO SCALE



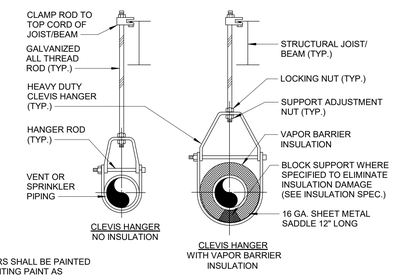
7 ELECTRONIC TRAP PRIMER

SCALE: NOT TO SCALE



1 VENT THRU ROOF

SCALE: NOT TO SCALE

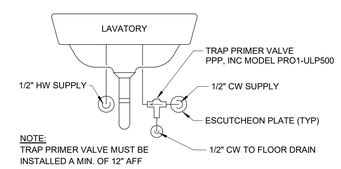


NOTE:

1. ALL PIPE HANGERS SHALL BE PAINTED WITH RUST INHIBITING PAINT AS SPECIFIED.

2 INDIVIDUAL PIPE SUPPORT

SCALE: NOT TO SCALE



NOTE:
TRAP PRIMER VALVE MUST BE INSTALLED A MIN. OF 12" AFF

3 BELOW LAVATORY TRAP PRIMER

SCALE: NOT TO SCALE

9 ELECTRONIC TRAP PRIMER
NTS

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P302

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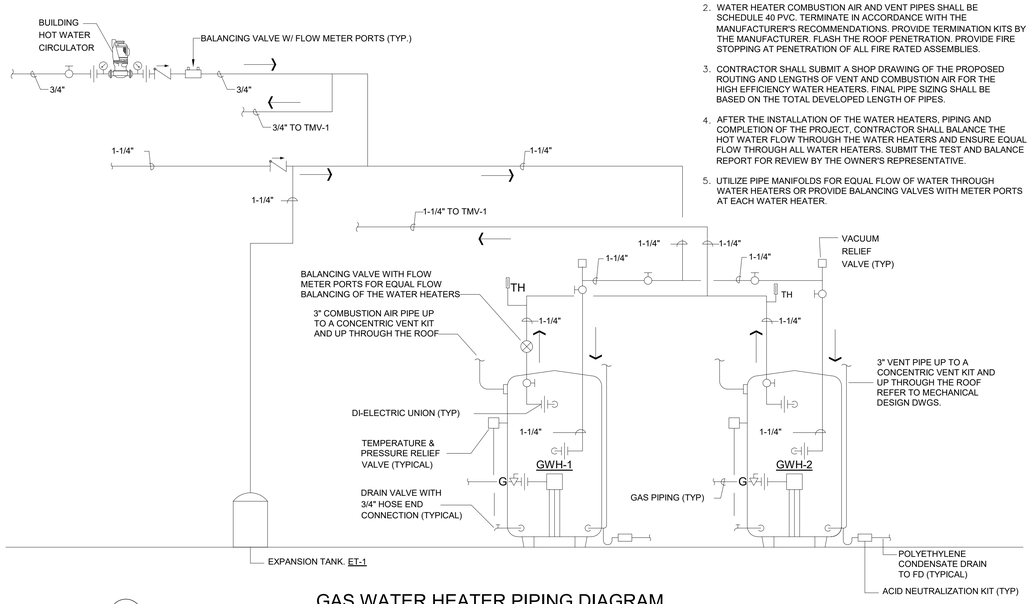
														VAY		AA	08/15/2022	Project Number

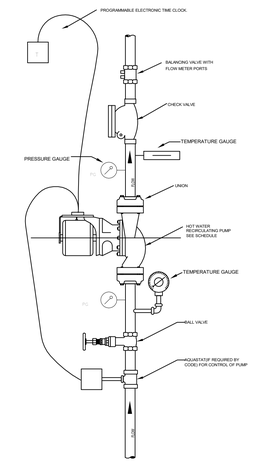
NOTES:

1. SET DISCHARGE TEMPERATURES OF THE WATER HEATERS AT 140°F.
2. WATER HEATER COMBUSTION AIR AND VENT PIPES SHALL BE SCHEDULE 40 PVC. TERMINATE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE TERMINATION KITS BY THE MANUFACTURER. FLASH THE ROOF PENETRATION. PROVIDE FIRE STOPPING AT PENETRATION OF ALL FIRE RATED ASSEMBLIES.
3. CONTRACTOR SHALL SUBMIT A SHOP DRAWING OF THE PROPOSED ROUTING AND LENGTHS OF VENT AND COMBUSTION AIR FOR THE HIGH EFFICIENCY WATER HEATERS. FINAL PIPE SIZING SHALL BE BASED ON THE TOTAL DEVELOPED LENGTH OF PIPES.
4. AFTER THE INSTALLATION OF THE WATER HEATERS, PIPING AND COMPLETION OF THE PROJECT, CONTRACTOR SHALL BALANCE THE HOT WATER FLOW THROUGH THE WATER HEATERS AND ENSURE EQUAL FLOW THROUGH ALL WATER HEATERS. SUBMIT THE TEST AND BALANCE REPORT FOR REVIEW BY THE OWNER'S REPRESENTATIVE.
5. UTILIZE PIPE MANIFOLDS FOR EQUAL FLOW OF WATER THROUGH WATER HEATERS OR PROVIDE BALANCING VALVES WITH METER PORTS AT EACH WATER HEATER.



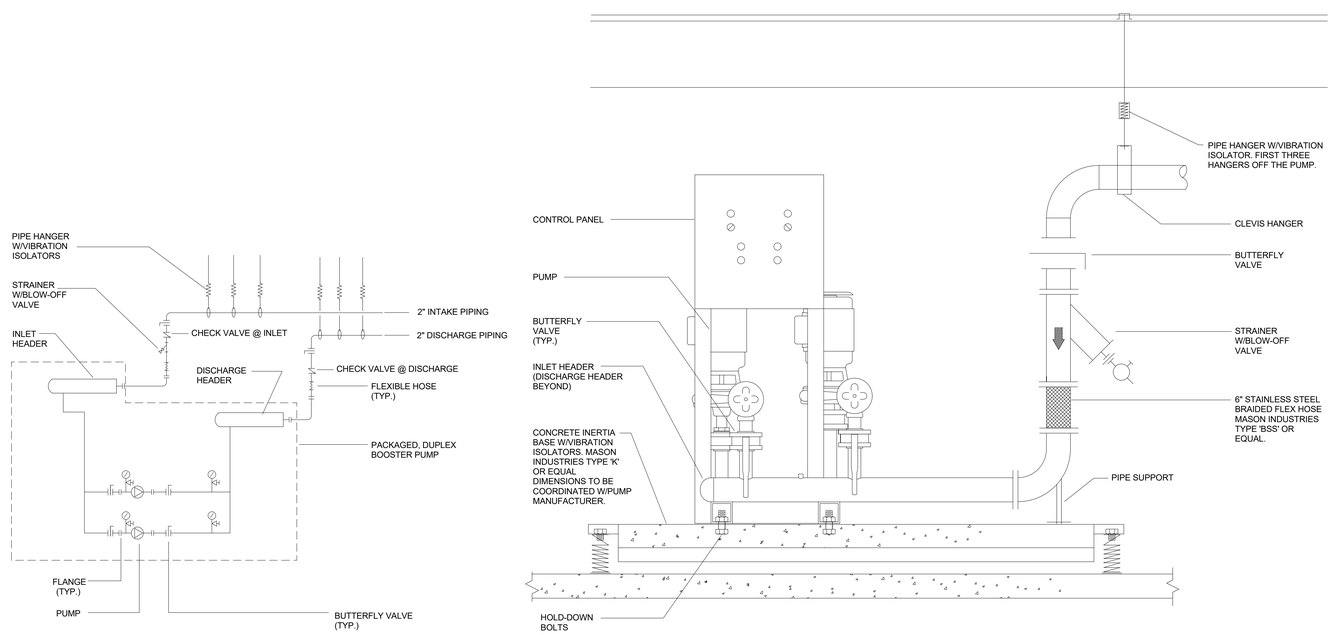
2 GAS WATER HEATER PIPING DIAGRAM

SCALE: NOT TO SCALE



1 DOMESTIC HOT WATER CIRCULATING PUMP

SCALE: NOT TO SCALE



BOOSTER PUMP PIPING DETAIL

NOT TO SCALE

BOOSTER PUMP INSTALLATION DETAIL

NOT TO SCALE

3 DOMESTIC WATER BOOSTER PUMP DETAIL - DUPLEX

SCALE: NOT TO SCALE

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PLUMBING DETAILS

P303

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														VAY		AA	08/15/2022	Project Number

WATER HAMMER ARRESTOR SCHEDULE

PDI #	MIN.-MAX. FIXTURE UNIT CAPACITY	CONNECTION SIZE	MANUFACTURER & MODEL NUMBER (OR EQUAL)
"A"	1-11	1/2"	PPP, INC. MODEL SC-500
"B"	12-32	3/4"	PPP, INC. MODEL SC-750
"C"	33-60	1"	PPP, INC. MODEL SC-1000
"D"	61-113	1-1/4"	PPP, INC. MODEL SC-1250
"E"	114-154	1-1/2"	PPP, INC. MODEL SC-1500
"F"	155-330	2"	PPP, INC. MODEL SC-2000

NOTES:
1. AIR CHAMBERS ARE NOT ACCEPTABLE EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED
2. SIZE PER MANUFACTURER'S RECOMMENDATIONS
3. PROVIDE ACCESS PANELS WHERE REQUIRED TO BE IN CONCEALED LOCATIONS

PIPING MATERIAL SCHEDULE

PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION
SANITARY DRAIN PIPING (BELOW SLAB)	SCHEDULE 40 PVC AND FITTINGS
SANITARY DRAIN PIPING (ABOVE SLAB)	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
VENT PIPING	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L" COPPER PIPING
NATURAL GAS PIPING	SCHEDULE 40 BLACK STEEL PIPE, W/ CAST IRON FITTING

TRAP PRIMING STATION SCHEDULE

ID	ELECTRICAL CHARACTERISTICS			BASIC OF DESIGN (OR EQUAL)
	AMPS	VOLTAGE	PHASE	
TSP-1	5	120	1	PPP INC. PTS SERIES, SURFACE MOUNTED

SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (INCHES)	MINUMUM SLOPE (INCH PER FOOT)
2-1/2 OR LESS	1/4
3 TO 6	1/8
8 OR LARGER	1/16

TABLE 704.1 OF THE INTERNATIONAL PLUMBING CODE 2018

CLEANOUT SCHEDULE

ID	APPLICATION	BASIC OF DESIGN (OR EQUAL)
CO	FINISHED FLOORS	ZURN Z1400
	CERAMIC & TERRAZO	ZURN Z1400-Z
	UNFINISHED FLOORS	ZURN Z1400-HD
WCO	LINE CLEANOUT	ZURN Z1468
	STACK CLEANOUT	ZURN Z1446
ECO	OUTSIDE AREAS	ZURN Z1400-HD

NOTES
1. INSTALL ECO IN 24x24x4 THICK CONCRETE PAD. TOP OF PAD ELEVATION TO BE 2" ABOVE FINISHED GRADE.
2. PROVIDE ALL CLEANOUTS WITH WIDE ANCHOR FLANGE & CLAMPS DEVICE. ATTACH CLEANOUTS TO MEMBRANE IN FLOOR. WHEN CLEANOUTS ATE LOCATED IN NONOMEMBRANE FLOORS, THEY SHALL BE FLASHED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. PROVIDE LINE & STACK TYPE WALL CLEANOUTS WITH ACCESS COVERS.

PLUMBING FIXTURE SCHEDULE

ID	DESCRIPTION	BASIS OF DESIGN (OR EQUAL)	CONNECTION SIZE				REMARKS
			WASTE	VENT	CW	HW	
P-1	WATER CLOSET	FLOOR MOUNTED, FLUSH TANK, TWO PIECE ELONGATED BOWL, AMERICAN STANDARD 270FA001.020 WITH ELONGATED SOLID PLASTIC SEAT, CLOSED FRONT, 3/8" CHROME PLATED SUPPLY & STOP WAX BOWL RING & WATER CLOSET BOLTS TRIP LEVER TO BE ON THE OPENSIDE, WHITE COLOR	3"	2"	1/2"	---	1.6 GPF MAX OR AS REQUIRED BY THE GOVERNING CODES
P-2	LAVATORY	WHITE VITREOUS CHINA, UNDERMOUNT BOWL 17"X14"X15.5", AMERICAN STANDARD OVAL 0496.221.020 WITH DELTA FAUCET LAHARA COLLECTION, MODEL 528-55MPU-DST DIAMOND COATED CERAMIC CARTRIDGE SINGLE LEVER WITH METALLIC POP-UP DRAIN, 2.2 GPM AT 60PSI, STAINLESS STEEL FINISH, PROVIDE CAST BRASS TRAP & SUPPLIES & STOPS, STAINLESS STEEL FINISH	1-1/2"	1-1/2"	1/2"	1/2"	2.2 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES
P-3	TUB & SHOWER	WHITE CAST IRON, 60"X30"X14", WITH ENAMEL FINISH, KOHLER VILLAGER MODEL K-715 WITH DELTA THERMOSTATICALLY CONTROLLED SHOWER VALVE, STAINLESS STEEL FINISH, SCALD-GUARD, METAL LEVER HANDLE, SHOWER ARM, SHOWER HEAT, DIVERTER VALVE	2"	1-1/2"	1/2"	1/2"	2.5 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES
P-4	SINK	SINGLE BASIN, STAINLESS STEEL SINK, 25"X21"X6" DROP 18 GAUGE WITH SOUND DAMPENING, ELKAY DSESR127221 WITH SINGLE HOLE FOR FAUCET & SOAP DISPENSER, KRAUS KPF-161055 FAUCET WITH DUAL FUNCTION PULL-DOWN SPRAYHEAD, BRASS TRAP & SUPPLIES & STOPS WITH STAINLESS STELL FINISH	2"	1-1/2"	1/2"	1/2"	2.2 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES. PROVIDE A 1/2 HP GARBAGE DISPOSAL
P-5	WASH BOX	WASH BOX WITH WATER HAMMER ARRESTORS	2"	1-1/2"	1/2"	1/2"	
P-6	LAUNDRY SINK	FIBERGLASS, TWO-BOWL, FIBERGLASS MIX, 24"X40"X13-3/2 DEEP BOWL, FREESTANDING, FLOOR-FIAT MODEL #FLTDIII100, WITH DECK MOUNTED FAUCET A.1	2"	1-1/2"	1/2"	1/2"	
WH-1	WALL HYDRANT	JOSAM 71300, ENCASED NON-FREEZE WALL HYDRANT WITH INTEGRAL VACUUM BREAKER AND KEY LOCK. INSTALL WALL HYDRANT 18" AFF.	--	--	3/4"	--	
HB-1	HOSE BIBB	ZURN Z1333, INTERIOR RECESSED WALL HYDRANT WITH INTERGRAL VACUUM BREAKER AND 3/4" HOSE CONNECTION	--	--	3/4"	--	
RH-1	ROOF HYDRANT	WOODFORD SRH-MS NON FREEZE ROOF HYDRANT DRAIN-LESS WITH CAST IRON CASING & DUAL CHECK VALVE BACKFLOW PREVENTER	--	--	3/4"	--	

GAS FIRED WATER HEATER SCHEDULE

ID	LOCATION	STORAGE CAPACITY (GALLONS) EACH	GAS INPUT (MBTU/HR) EACH	GAS TYPE	MIN. EFFICIENCY (%)	RECOVERY (GPH) EACH @ 100°F DELTA T	INLET TEMP (°F)	OUTLET TEMP (°F)	FLUE SIZE (INCH) EACH		FLUE SIZE (INCH) EACH			BASIS OF DESIGN (OR EQUAL)	REMARKS
									INTAKE	EXHAUST	VOLTS	PHASE	HZ		
GWH-1 & GWH-2	MECHANICAL ROOM	100	199	NATURAL	97	230	40	140	4	4	120	1	60	A.O. SMITH CYCLONE. BTH-199 Mxi	EXTEND FRESH AIR AND EXHAUST OUT TO ATMOSPHERE

NOTES:
1. GAS BURNER SHALL BE CAPABLE OF OPERATING ON A MIN. GAS PRESSURE OF 3.5 INCHES WATER GAUGE AND A MAX. GAS PRESSURE OF 14 INCHES WATER GAUGE.
2. FLUE SIZES ARE NOT NECESSARILY THE EQUIPMENT CONNECTION SIZE. REFER TO MECHANICAL DRAWINGS FOR FLUE SIZES

DUPLEX DOMESTIC WATER BOOSTER PUMP SCHEDULE

ID	LOCATION	SERVICE	GPM (EACH)	HEAD (FT.)	MOTOR HP (EACH)	ELECTRICAL CHARACTERISTICS			BASIS OF DESIGN (OR EQUAL)	REMARKS
						VOLTAGE	PHASE	RPM		
DWBP-1	MECHANICAL ROOM	CW	50	60	5.0	208	3	3500	GRUNDFOS HYDRO MPC E CRE 10	PROVIDE WITH VARIABLE FREQUENCY DRIVES

NOTES:
1. ACTUAL CAPACITY (FLOW AND HEAD) OF THE DUPLEX PACKAGE IS TO BE VERIFIED UPON PERFORMING A WATER FLOW TEST AFTER CONNECTION OF THE WATER MAIN TO THE TRANSITION MAIN.
2. THE TOTAL DYNAMIC HEAD SPECIFIED ABOVE INCLUDES A 5 PSIG PRESSURE DROP THROUGH THE UNIT AND PRESSURE REDUCING VALVE. SELECT PRV SO AS NOT TO EXCEED SCHEDULED VALUE.
3. PERFORMANCE AND ELECTRICAL CHARACTERISTICS ARE TYPICAL FOR EACH PUMP.
4. BRAKE HORSEPOWER OF SELECTED UNITS SHALL NOT EXCEED VALUE AT DESIGN OPERATING CONDITIONS.
5. NET POSITIVE SUCTION HEAD REQUIRED (NPSHR) SHALL NOT EXCEED NET POSTIVE SUCTION HEAD AVAILABLE (NPSHA).

FLOOR DRAIN SCHEDULE

ID	TYPE	LOCATION/AREA	SIZE	BASIS OF DESIGN (OR EQUAL)	REMARKS
FD-1	FLOOR DRAIN	GENERAL	12X12	ZURN #Z566	W/ 1/2" TRAP PRIMING LINE
HD-1	HUB DRAIN	CUST.	4" STRAINER	ZURN #Z211-S	W/ 1/2" TRAP PRIMING LINE

THERMOSTATIC MIXING VALVE SCHEDULE

ID	AREA/SYSTEM SERVED	THERMOSTATIC CONTROLLERS	RUN OUT PIPE SIZES			BASIS OF DESIGN (OR EQUAL)	REMARKS
		GPM (FLOW @ 10 PSI)	CW INLET	HW INLET	TEMPERED WATER OUTLET		
TMV-1	GENERAL BLDG FIXTURES	39	1	1-1/4"	1-1/4"	LAWLER MODEL 802	HI/ LOW

NOTES:
1. ALL UNITS MUST BE INSTALLED, PIPED, AND ADJUSTED IN STRICT ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS

DOMESTIC WATER EXPANSION TANK SCHEDULE

ID	WATER HEATER VOLUME (GALLONS)	MAX. TEMP. (°F)	MAX. OPERATING PRESSURE (PSIG)	DESIGN FILL PRESSURE (PSIG)	TOTAL TANK VOLUME (GALLONS)	ACCEPTANCE VOLUME (GALLONS)	TANK DIMENSIONS		APPROX. OPERATING WEIGHT (LBS.)	BASIS OF DESIGN (OR EQUAL)	REMARKS
							HEIGHT	DIAMETER			
ET-1	200	140	150	70	16.5	11	25"	15"	50	AMTROL THERM-X-TROL ST-35-CL	

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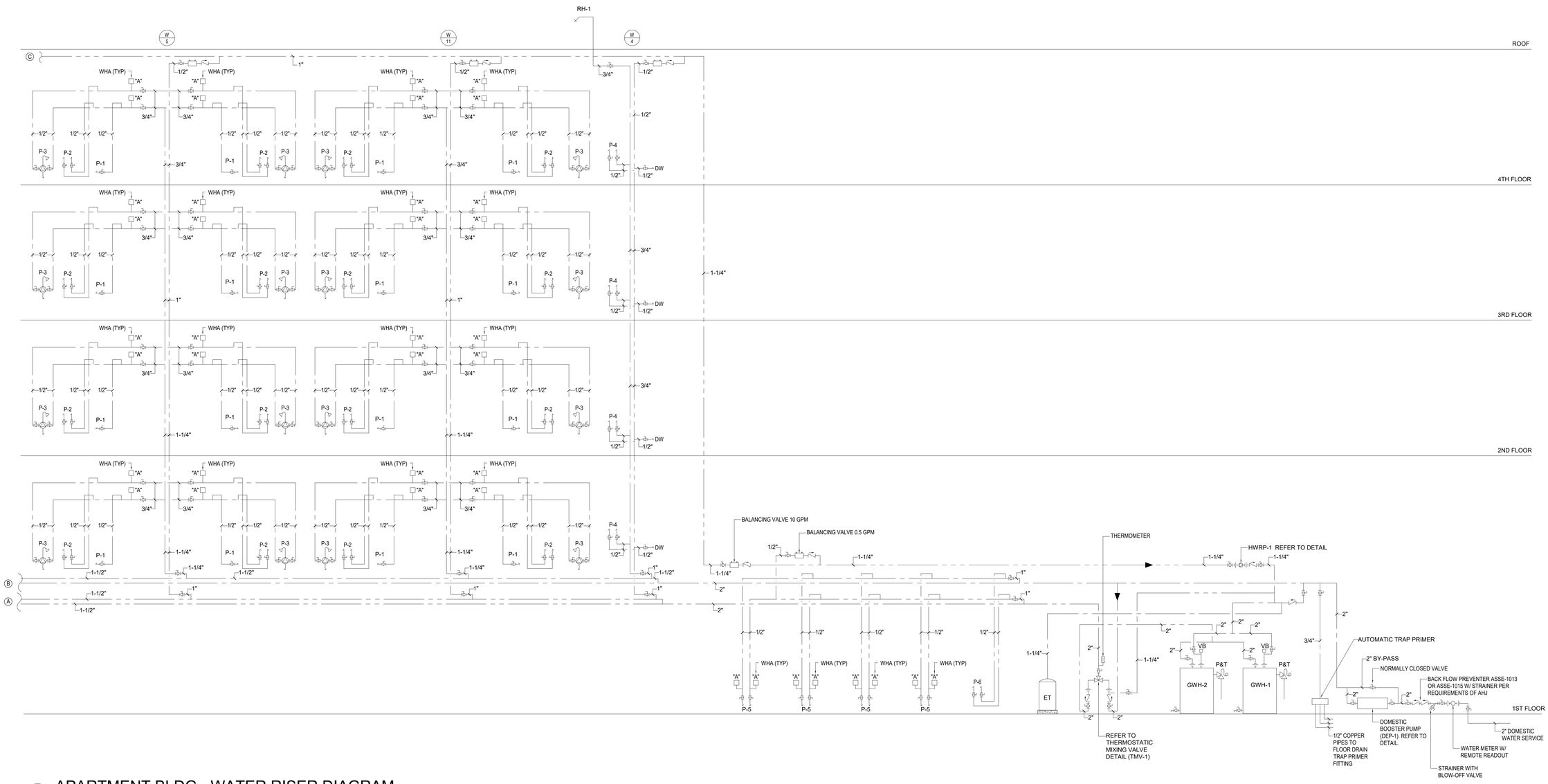
PLUMBING SCHEDULES

P401

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO.____OF____ DWG. P401



1 APARTMENT BLDG - WATER RISER DIAGRAM

NTS

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

MEP. ENG.

NIST

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OFFICE OF FACILITIES & PROPERTY MANAGEMENT

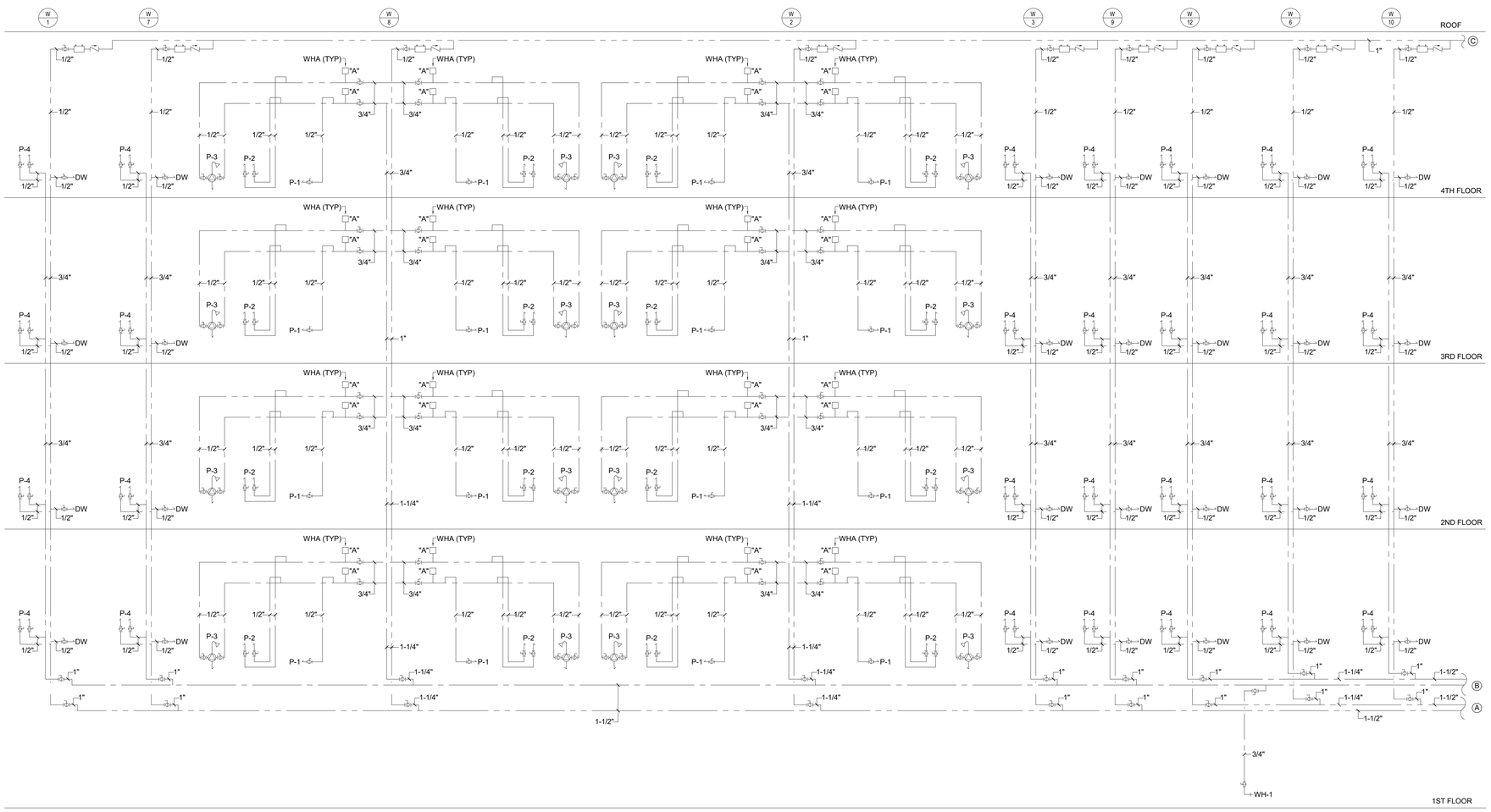
NIST – MID RISE APARTMENT

PLUMBING RISERS

P501

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ___ OF ___ DWG. P501



1 APARTMENT BLDG - WATER RISER DIAGRAM

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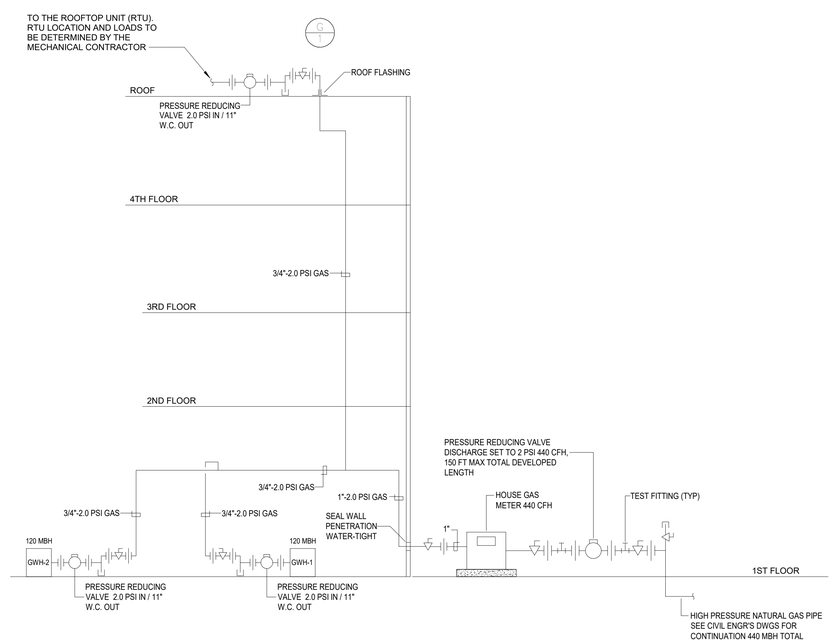

2 APARTMENT BLDG - GAS RISER DIAGRAM

NTS

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

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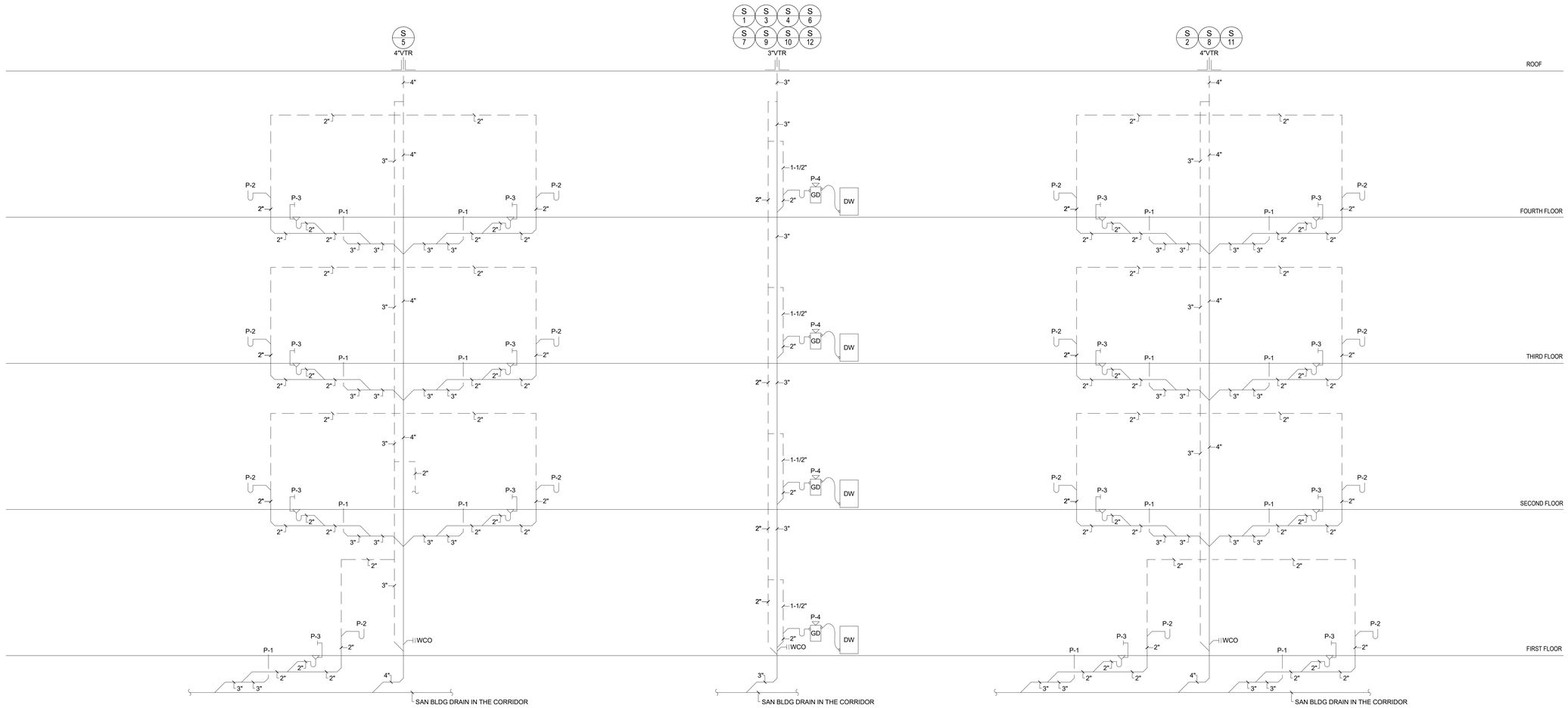
NIST - MID RISE APARTMENT

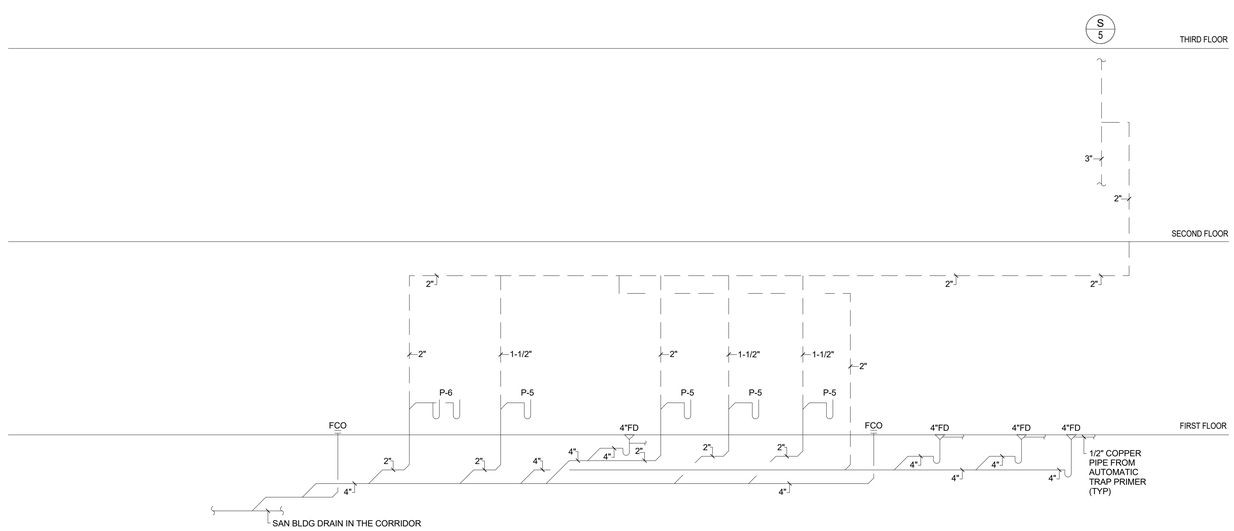
PLUMBING RISERS

P502

SH. NO. ___ OF ___ DWG. P502

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED - NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number





1 APARTMENT BLDG - SANITARY RISER DIAGRAM

NTS

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

MEP. ENG.

NIST

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NIST - MID RISE APARTMENT

PLUMBING RISERS

P503

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED - NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO.___OF___ DWG. P503

PLUMBING GENERAL CONDITIONS

1. THE INTENT OF THESE DRAWINGS IS TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. PROVIDE ALL LABOR AND MATERIAL NECESSARY TO ACHIEVE SUCH ENDS. CONTRACTOR IS OBLIGATED TO EXAMINE PLANS. ANY OBSERVED FAULTS OR AMBIGUITY IN THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY, SO THAT THE MATTER MAY BE RESOLVED PRIOR TO SUBMISSION OF BIDS. BY SUBMISSION OF BID, THE CONTRACTOR SHALL ACKNOWLEDGE ACCEPTANCE OF THESE PLANS AS AN ADEQUATE DEFINITION OF THE SCOPE OF WORK AND EXTRA COST CLAIMS BASED ON INADEQUACY OF PLANS WILL NOT BE CONSIDERED.

2. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.

3. THE PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING WORK WITH OTHER TRADES. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE APPARENT, THE ENGINEER SHALL BE ADVISED IMMEDIATELY, AND AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED.

4. CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AND ARRANGE FOR INSPECTIONS BY LOCAL AUTHORITIES HAVING JURISDICTION.

5. PROVIDE OPENINGS IN BUILDING CONSTRUCTION FOR PASSAGE OF PIPING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER. VERIFY SLAB PENETRATION LOCATIONS PRIOR TO PROCEEDING WITH WORK IN ORDER TO LOCATE OBSTRUCTIONS EMBEDDED IN SLAB.

6. ALL NECESSARY ALLOWANCES AND PROVISIONS SHALL BE MADE BY THIS CONTRACTOR FOR BEAMS, COLUMNS OR OTHER OBSTRUCTIONS OF THE BUILDING OR THE WORK OF OTHER CONTRACTORS, WHETHER OR NOT SAME IS INDICATED. WHERE NECESSARY TO AVOID OBSTRUCTIONS THE DUCTS SHALL BE TRANSFORMED, DIVIDED, OFFSET, RAISED OR LOWERED WITH THE REQUIRED FREE AREA BEING MAINTAINED WHILE MAINTAINING DESIGNED CEILING HEIGHTS.

7. ALL ROTATING PLUMBING EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

8. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

9. CONTROLS AND ACCESSORIES FOR EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.

10. PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN HIS WORK AREA DAILY AND SHALL ALSO REMOVE ALL TRASH AFTER WORK COMPLETION.

11. THE WORK DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY PREPARED BASE BUILDING DRAWINGS. IF EXISTING FIELD CONDITIONS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF DISCREPANCIES WHICH WILL AFFECT THE PROPOSED WORK PRIOR TO BEGINNING WORK.

12. SYMBOLS SHOWN ON SCHEDULES DEFINE TYPE OF EQUIPMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR RESEARCHING DRAWINGS FOR EXACT QUANTITIES REQUIRED OF EACH TYPE.

13. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, PIPING, ETC., SHALL BE FREE FROM INTERFERENCE WITH OTHER DISCIPLINES. WHERE CONFLICTS OCCUR, CONTRACTOR SHALL IMMEDIATELY CONTACT THE CONSTRUCTION MANAGER. WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER, OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.

14. THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, DRAIN POINTS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE. ALLOW FOR BETTER ACCESSIBILITY, AND ANY CHANGE FOR THAT PURPOSE SHALL BE APPROVED.

15. ALL EQUIPMENT WHICH REQUIRES INTERFACE WITH THE ELECTRICAL TRADE, SUCH AS CONTROLLING DEVICES, DISCONNECT SWITCHES, MOTORS, ETC., SHALL BE FULLY COORDINATED BETWEEN ALL TRADES.

16. ALL WORK TO BE GUARANTEED FOR ONE YEAR AGAINST LABOR AND MATERIALS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACE OR REPAIRED AS DIRECTED FOR THE DURATION OF THE GUARANTEE PERIOD. TIME FOR THIS GUARANTEE SHALL BEGIN FROM THE DATE OF ACCEPTANCE OF THE COMPLETE WORK BY THE OWNER OR HIS APPOINTED REPRESENTATIVE. NOTE: THESE GUARANTEES SHALL BE SUBMITTED TO THE CO FOR RECORD PURPOSES.

17. AS USED IN THE DRAWINGS FOR PLUMBING WORK, CERTAIN NON-TECHNICAL WORDS SHALL BE UNDERSTOOD TO HAVE SPECIFIC MEANINGS AS FOLLOWS REGARDLESS OF INDICATIONS TO THE CONTRARY IN THE GENERAL CONDITION OR OTHER DOCUMENTS GOVERNING THE MECHANICAL WORK.
    - A. "FURNISH" - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS OR ENCUMBRANCES.
    - B. "INSTALL" - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
    - C. "PROVIDE" - "FURNISH" AND "INSTALL".
    - D. "NEW" - MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

PLUMBING GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

2. THE ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE POWER FOR ALL PLUMBING EQUIPMENT. DURING BID PERIOD AND AGAIN PRIOR TO EQUIPMENT ORDERING, THE (GENERAL CONTRACTOR AND THE) PLUMBING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR TO VERIFY THAT ALL EQUIPMENT ARE POWERED, AND PROPER VOLTAGE/WIRING/CAPACITY IS PROVIDED. IN THE EVENT OF REQUIREMENTS AMBIGUITY OR CONFLICT BETWEEN TRADES, THE CONTRACTOR IS REQUIRED TO GENERATE AN RFI ADDRESSING THE ISSUE AND REQUESTING CLARIFICATION. FAILURE TO DO SO WILL NEGATE HIS RIGHT FOR A CHANGE ORDER OR REQUEST FOR ADDITIONAL FUNDS DURING CONSTRUCTION RELATING TO THIS ISSUE.

3. DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE OF WORK, AND TO INDICATE THE GENERAL LOCATIONS OF EQUIPMENT, PIPING, ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT HIS WORK ACCORDING TO THE FOLLOWING GUIDELINES:
    - A. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS FOR EQUIPMENT AND ROUGH INS AND THE EXACT ROUTING OF PIPING PRIOR TO CONSTRUCTION AS TO BEST FIT THE LAYOUT OF THE WORK. COORDINATE FINAL LAYOUT WITH ALL TRADES.
    - B. WHERE OFFSETS IN PIPING ARE REQUIRED TO COORDINATE WORK OF OTHER TRADES, STRUCTURE, PIPING, CONDUITS, DUCTWORK, ETC. OR TO MAINTAIN CEILING HEIGHTS, THEY SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
    - C. UNLESS OTHERWISE NOTED, ALL PIPING TO BE ROUTED CONCEALED IN WALLS, CHASES OR ABOVE CEILING. WATER PIPING SHALL NOT BE ROUTED IN EXTERIOR WALLS. ROUTE ALL PIPING AS HIGH AS POSSIBLE AND ALONG WALLS TO MAXIMIZE SPACE AVAILABLE FOR OTHER TRADES.
    - D. COORDINATE ROUTING OF PIPING TO MAINTAIN ACCESS TO FILTERS, MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS. IN NO CASE SHALL PIPING PASS DIRECTLY OVER ELECTRICAL PANELS OR DISCONNECTS OR RESTRICT ACCESS TO ANY ELECTRICAL EQUIPMENT INCLUDING JUNCTION BOXES.
    - E. ALL EXISTING PIPING SHOWN IS INTENDED TO INDICATE APPROXIMATE SIZE, NUMBER AND LOCATION OF PIPING BRANCHES FOR BIDDING PURPOSES ONLY. CONTRACTOR TO VERIFY EXACT SIZE AND CONFIGURATION PRIOR TO CONSTRUCTION.
    - F. VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SYSTEMS REQUIRING CONNECTION TO NEW PIPING PRIOR TO COMMENCING WORK.

4. UNLESS OTHERWISE NOTED, SANITARY WASTE PIPING SHOWN IS BELOW FLOOR AND ALL OTHER PIPING IS OVERHEAD, ABOVE CEILING. DOMESTIC HOT, COLD AND RE-CIRC. WATER PIPING SHALL BE INSTALLED ON WARM SIDE OF INSULATION.

5. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 2018 INTERNATIONAL PLUMBING CODE (IPC) & ALL LOCAL AMENDMENTS, CODES AND REGULATIONS.

6. DURING THE PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND NAMES). MATERIALS, SIZES, LOCATING AND HOOK-UP POINTS. AS-BUILTS SHALL BE GIVEN TO [OWNER] AT COMPLETION OF JOB.

7. UPON COMPLETION OF JOB, THIS CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKING AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW TO REMAIN.

8. ALL INSTALLATION OF ACCESSIBLE PLUMBING FIXTURES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE ACCESSIBILITY STANDARDS. REFER TO ARCHITECTURAL PLANS FOR SPECIFIC INSTALLATION REQUIREMENTS. LOCATE WATER CLOSET FLUSH VALVE LEVER BETWOEN TOILET AND LAVATORY. COORDINATE LOCATION OF FLUSH VALVE LEVER HANDLE WITH GRAB BAR. COORDINATE WITH ARCHITECTURAL DRAWINGS.

9. ALL VENT AND FLUE OUTLETS SHALL BE 10'-0" MINIMUM HORIZONTALLY AND 3'-0" MINIMUM VERTICALLY FROM ANY FRESH AIR INTAKES.

10. PROVIDE WATER HAMMER ARRESTORS AT ALL PLUMBING FIXTURES OR BATTERY OF FIXTURES WITH QUICK-CLOSING VALVES. WATER HAMMER ARRESTORS SHALL BE SIZED & INSTALLED PER PDI STANDARDS. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED.

11. PROVIDE BALANCING VALVES WITH THREADED CONNECTIONS IN HOT WATER RETURN PIPING, AND BALANCE SYSTEM FOR PROPER OPERATION.

12. COORDINATE WITH ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN PLUMBING.

13. ALL OPENINGS IN CEILINGS AND PLENUM WALLS FOR PLUMBING SHALL BE SEALED AIR TIGHT AND PROTECTED WITH FIRESTOP.

14. SEE SITE PLAN FOR EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.

15. ALL HOSE BIBS SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE SPECIFIED.

16. ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.

17. MAKE PROPER HW, CW, RE-CIRC., WASTE, AND VENT CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAIN, ELBOWS AND CONNECTIONS ARE NOT SHOWN.

18. CLEANOUTS SHALL BE PROVIDED NEAR BASE OF EACH VERTICAL WASTE OR SOLID STACK. PROVIDE 18" MINIMUM CLEARANCE FOR ACCESS.

19. PROVIDE VALVES AND UNIONS WHEN CONNECTING PIPING TO EQUIPMENT. LOCATE VALVES FOR EASY ACCESS AND SERVICING OF EQUIPMENT. PROVIDE ACCESS PANELS TO ALL SHUT-OFF VALVES.

20. PRESSURE TEST ALL NEW WATER PIPES, MINIMUM OF 4 HOURS BEFORE APPLYING PIPE INSULATION. ALL TESTS SHALL BE IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL WATER AUTHORITY.

21. IN THE EVENT OF CONFLICT BETWEEN VARIOUS SECTIONS OF CONSTRUCTION DOCUMENTS, THE MOST STRINGENT OF THE OPTIONS SHALL APPLY FOR BIDDING PURPOSE. AFTER AWARD OF CONTRACT BUT BEFORE STARTING DESIGN/CONSTRUCTION, CONTRACTOR SHALL REQUEST CLARIFICATIONS WITH BID ON ANY CONFLICTING INFORMATION FROM THE OWNER.

22. PROVIDE DIELECTRIC FITTINGS OTHER THAN DIELECTRIC UNIONS WHEN CONNECTING DISSIMILAR MATERIAL PIPING. DIELECTRIC UNIONS NOT PERMITTED.

23. ALL CONCRETE FLOORS, SLABS, BRICK AND BLOCK WALL PENETRATIONS SHALL BE SLEEVED AND FIRE STOPPED.

24. PROVIDE BALL VALVE FOR ALL CW AND HW BRANCH TAKE-OFFS.

25. ALL EXTERIOR ROOF PENETRATIONS SHALL BE SEALED WEATHERTIGHT.

26. SLOPES AND INVERT ELEVATIONS OF ALL INTERIOR PIPING SHALL BE ESTABLISHED BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. ALL PIPING SHALL BE LOCATED AND DETERMINED WHERE TO BE RUN TO AVOID CONFLICT WITH OTHER TRADES.

27. ALL PIPING SHALL BE PROVIDED WITH SECTIONAL SHUT-OFF VALVES AND ACCESS PANELS FOR ALL HIDDEN VALVES. PROVIDE ISOLATION VALVES FOR ALL PLUMBING FIXTURES.

28. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS, LEAKS, LACK OF PROPER SYSTEM PERFORMANCE OR NON-OPERATION FOR A PERIOD OF ONE YEAR AFTER DATED OF FINAL ACCEPTANCE OF WORK BY OWNER.

29. ALL WORK SHALL BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.

30. ALL EXPOSED PIPING TO FIXTURES SHALL BE HEAVILY CHROME-PLATED.

31. MAKE FINAL CONNECTIONS AFTER FIXTURES AND EQUIPMENT ARE SET IN PLACE. ALLREQUIRED TRIM, FAUCETS AND MINOR ITEMS NECESSARY FOR A COMPLETE FUNCTIONING INSTALLATION, SUCH AS STRAINERS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC., SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH EQUIPMENT REQUIREMENTS. ALL FAUCETS TO BE HEAVILY CHROME-PLATED.

32. SLEEVES THROUGH CMU BLOCKS WALLS AND/OR MASONRY FLOORS SHALL BE SCHEDULE 40 BLACK STEEL PIPE. SLEEVES THRU FLOORS SHALL STAND PROUD OF FLOOR SLAB BY 1/2". SLEEVES THROUGH SHEET ROCK WALL SHALL BE 18" GAUGE GALVANIZED SHEET METAL. THE SPACE BETWEEN THE PIPE AND SLEEVE SHALL BE PACKED WITH "3M" EXPANDABLE FOAM FIRE-STOP MATERIAL, TO ASSURE A RATING EQUAL TO THE PENETRATED WALL OR FLOOR.

33. HANGERS SHALL BE OF SIMILAR MATERIAL AS PIPING TO AVOID GALVANIC ACTION IN ACCORDANCE WITH MSS-SP-69, AND LOCATED AT INTERVALS NOT TO EXCEED 6'-0" O.C. WHERE "HUBLESS" PIPE IS BEING USED, PROVIDE HANGERS ON ETHER SIDE OF THE JOINTS AS RECOMMENDED BY CISPI BULLETIN 310. FOR INSULATED PIPING, INSULATION SHALL EXTEND CONTINUOUSLY THRU HANGER WITH OUT INTERRUPTION. PROVIDE SADDLE TO PROTECT INSULATION FROM COMPRESSION.

34. SOIL, WASTE AND VENT PIPING SHALL BE INSTALLED IN ACCORDANCE WITH CODE. HORIZONTAL DRAINAGE PIPING SHALL SLOPE PER 2018 IPC CODE, UNLESS OTHERWISE INDICATED. DOMESTIC WATER SHALL BE SLOPED TO DRAIN POINTS.

35. SUBMIT OPERATING AND MAINTENANCE MANUALS AND WARRANTY CERTIFICATES TO OWNER.

36. THE CONTRACTOR SHALL NOT CORE DRILL CONCRETE SLABS OR PRE-CAST CONCRETE PANELS OR DECK WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE BUILDING OWNER AND SHALL X-RAY PRIOR TO ANY CORE DRILLING. X-RAYING AND CORE DRILLING SLABS SHALL BE SCHEDULED WITH THE BUILDING OWNER, INCLUDE COSTS OF X-RAYING IN BID.

37. FINAL ACCEPTANCE OF PLUMPING SYSTEMS BY THE USER/OWNER, SHALL BE CONTINGENT TO COMPLIANCE WITH ALL COMMISSIONING REQUIREMENTS AND TESTS PRESCRIBED IN THE PROJECT DESIGN DOCUMENTS/SPECIFICATIONS AND APPROVAL BY THE CxA AGENT OF THE PROJECT.

38. UPON COMPLETION OF THE PROJECT, ALL DOMESTIC WATER PIPING SHALL BE SANITIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

ABBREVIATIONS

ABV	ABOVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AP	ACCESS PANEL
APPROX	APPROXIMATE
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISH FLOOR
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BT	BATHTUB
CA	COMPRESSED AIR
CD	CONDENSATE
CLG	CEILING
CO	COMPANY, CLEANOUT
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
CW	COLD WATER
DISP	DISPOSER
DWV	DRAINAGE WASTE & VENT
EA	EACH
ECO	EXTERIOR CLEANOUT
ETR	EXISTING TO REMAIN
EW	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FIXT	FIXTURE
FLR	FLOOR
FM	FORCED MAIN
FS	FLOOR SINK
G	NATURAL GAS
GCO	GRADE CLEANOUT
GD	GROUNDWATER DRAIN TILE
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RECIRCULATING
I.E.	INVERT ELEVATION
IW	INDIRECT WASTE
IPC	INTERNATIONAL PLUMBING CODE
LAV	LAVATORY
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	BRITISH THERMAL UNITS (x1000)
MIN	MINIMUM
MISC	MISCELLANEOUS
NFWH	NON-FREEZE WALL HYDRANT
NIC	NOT IN CONTRACT
OD	OVERFLOW ROOF DRAIN
OSD	OPEN SITE DRAIN
PD	PUMPED DISCHARGE
PDI	PLUMBING & DRAINAGE INSTITUTE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RM	ROOM
RTU	ROOF TOP UNIT
SAN	SANITARY
SFU	SUPPLY FIXTURE UNIT
ST	STORMWATER
TP	TRAP PRIMER VALVE
TPS	TRAP PRIMING STATION
TW	TEMPERED WATER
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
XR	EXISTING RELOCATED

LAB/MEDICAL PROJECTS

O	OXYGEN
MA	MEDICAL AIR
LA	LAB AIR
N	NITROGEN
LN	LIQUID NITROGEN
AR	ARGON
HE	HELIUM
SG	SPECIAL GAS
LV	LAB VACUUM
MV	MEDICAL VACUUM
CO2	CARBON DIOXIDE
DI	DEIONIZED WATER
ROS	REVERSE OSMOSIS SUPPLY
ROR	REVERSE OSMOSIS RETURN
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LHWR	LAB HOT WATER RECIRCULATING
VCW	VIVARIUM COLD WATER
VHW	VIVARIUM HOT WATER
NP	NON-POTABLE

SHEET NUMBERING LEGEND

P111A

- DISCIPLINE: "PD" DEMO, "P" NEW WORK
- PLAN TYPE: "1" FLOOR PLAN, "2" ENLARGED FLOOR ETC.
- SYSTEM TYPE: "0" FOR UNDERGROUND, "1" WATER & GAS, "2" DWV & STORM, "3" FIRE PROTECTION
- FLOOR LEVEL: "0" LOWEST FLOOR, "1" NEXT FLOOR LEVEL ETC.
- SECTOR

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	DEMOLISH AND REMOVE
	SOIL OR WASTE PIPING
ST	STORM PIPING
OD	OVERFLOW STORM PIPING
NP	NON-POTABLE WATER PIPING
ST	STORM PIPING BELOW SLAB
	VENT PIPING
CW	COLD WATER PIPING
	COLD WATER PIPING (SINGLE LINE)
HW	HOT WATER PIPING
	HOT WATER PIPING (SINGLE LINE)
HWR	HOT WATER RECRCULATING PIPING
	HOT WATER RECRCULATING PIPING (SINGLE LINE)
G	GAS PIPING
F	FIRE PROTECTION PIPING
	PIPE DOWN OR DROP
	PIPE UP OR RISE/FLOOR CLEANOUT
	CAPPED OR PLUGGED PIPE
	UNION
	WALL CLEANOUT
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	GAS COCK
	SHUTOFF VALVE IN RISE OR DROP
	DOUBLE CHECK BACKFLOW PREVENTER
	RPZ BACKFLOW PREVENTER
	CHECK VALVE
	BALANCING VALVE
	OUTSIDE STEM & YOKE VALVE
	PRESSURE GAGE W/ NEEDLE VALVE
	THERMOMETER
	TEMPERATURE & PRESSURE RELIEF VALVE
VB	VACUUM BREAKER
"A"	WATER HAMMER ARRESTER, LETTER INDICATES PDI
	HOSE BIBB
	WALL HYDRANT
	SOLENOID VALVE
	STRAINER
	PIPE GUIDE/SLEEVE
	PIPE ANCHOR
	FLEXIBLE CONNECTION
	FLOW DIRECTION
	RISER/DETAIL DESIGNATION
	FLOOR DRAIN
	CALL OUT DESIGNATION
X X	METER (GAS/WATER/FIRE)
X XXX	PUMP
	PUMP
M	KEYNOTE TAG
	LIMIT OF DEMOLITION
#	

DOUBLE SYMBOLS

	GATE VALVE
	BUTTERFLY VALVE
	3-WAY VALVE
	GAS COCK VALVE
	BALL VALVE
	BALANCE VALVE
	SHUT-OFF VALVE
	BACKFLOW PREVENNTER VALVE

REVISION	DESCRIPTION	BY	DATE

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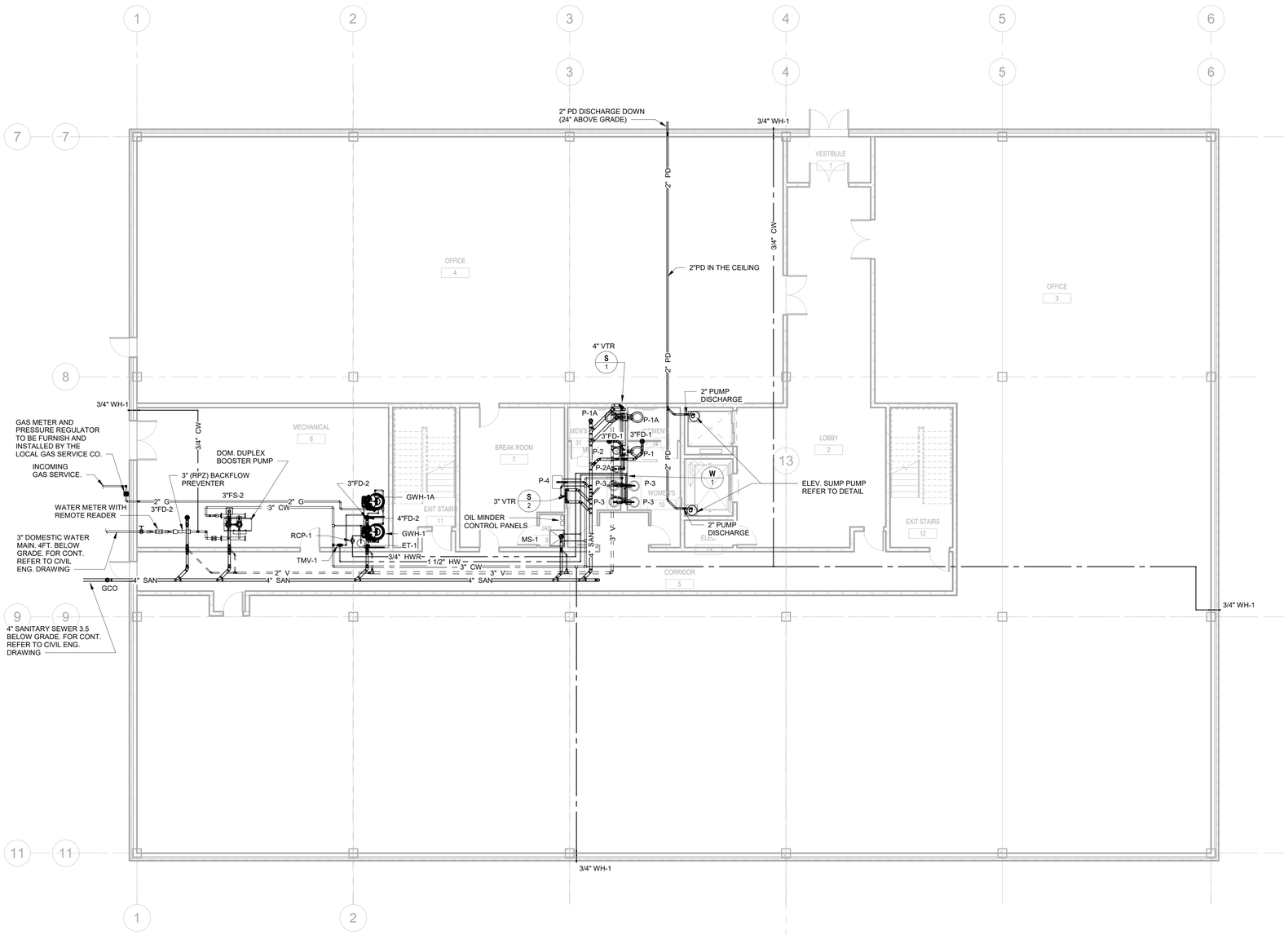
PLUMBING COVERSHEET

P002

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ___ OF ___ DWG. P002



1 FIRST FLOOR - SANITARY, WATER & GAS

1/8" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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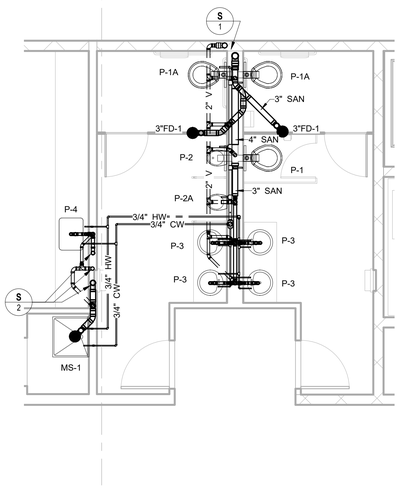
PLUMBING FIRST FLOOR PLAN

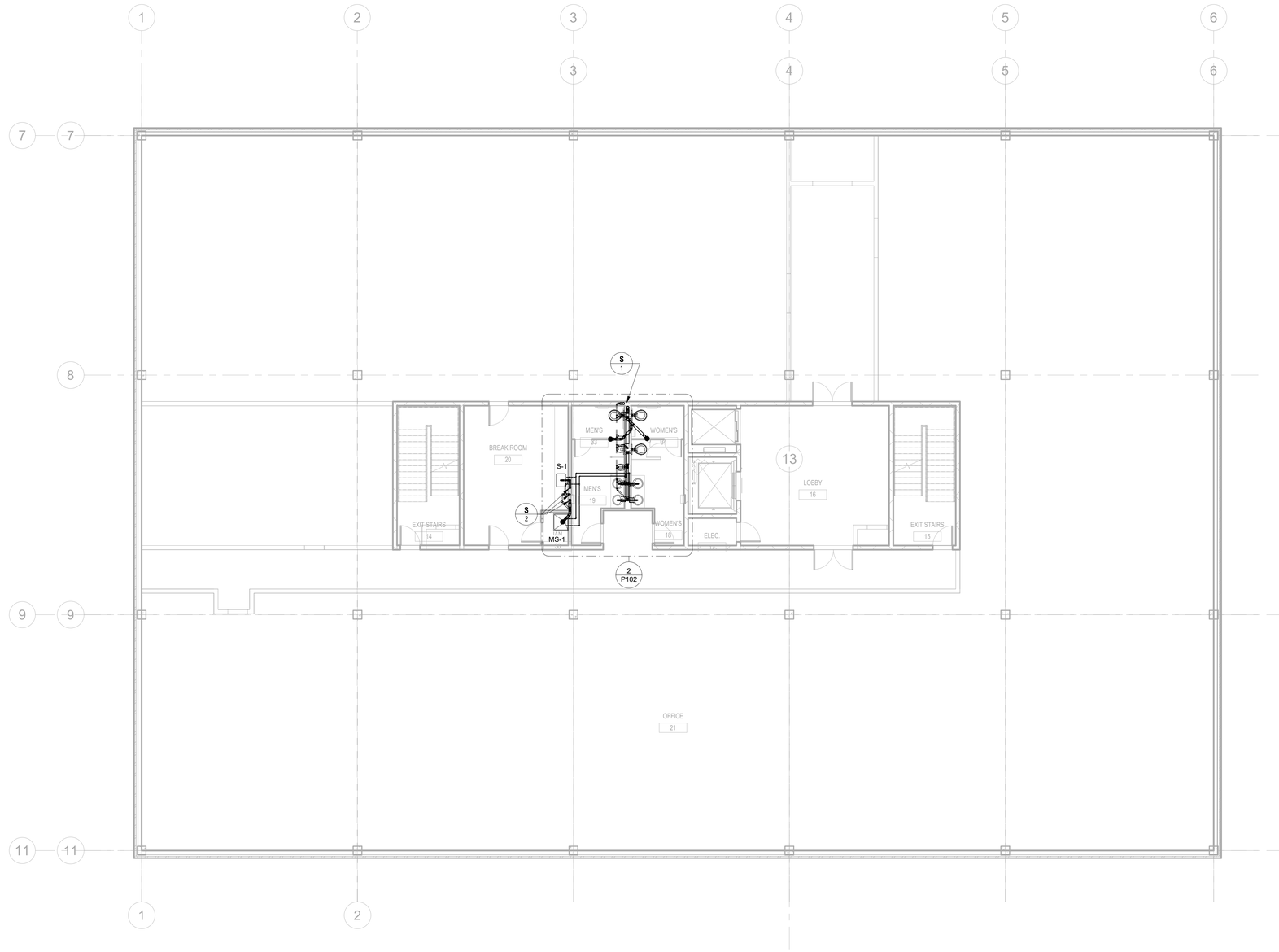
P101

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO.____OF____ DWG. P101



2 2ND FLR - REST ROOM ENLARGED PLAN
1/4" = 1'-0"



1 SECOND FLOOR - SANITARY, WATER & GAS
1/8" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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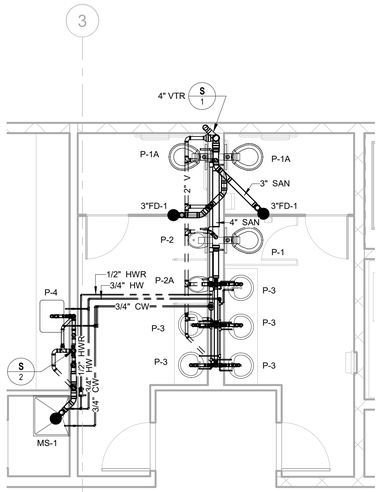
PLUMBING SECOND FLOOR PLAN

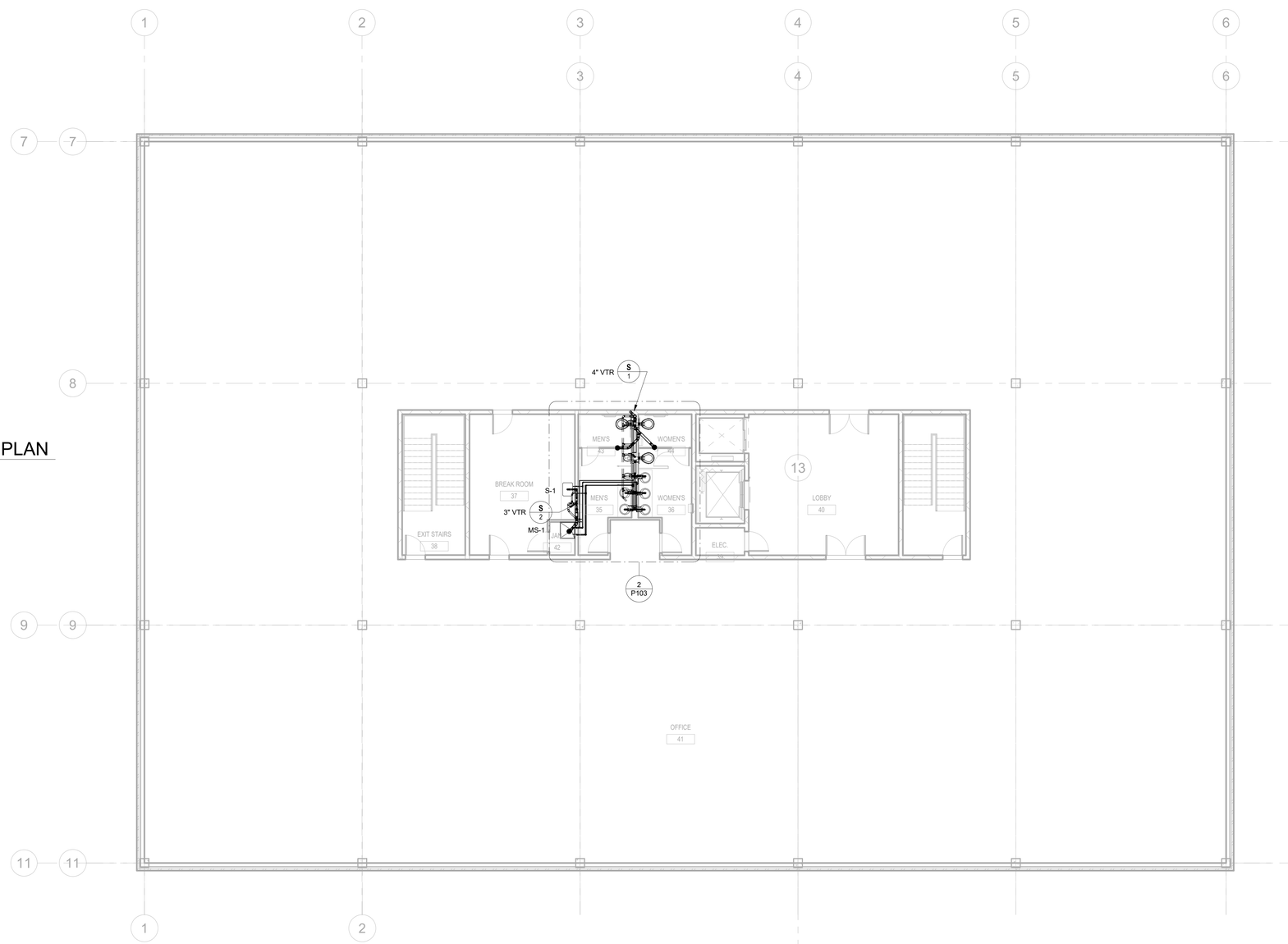
P102

SH. NO.___OF___ DWG. P102

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



2 THIRD FLOOR - REST ROOM ENLARGED PLAN
1/4" = 1'-0"



1 THIRD FLOOR - SANITARY, WATER & GAS
1/8" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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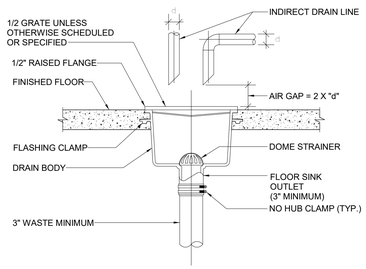
PLUMBING THIRD FLOOR PLAN

P103

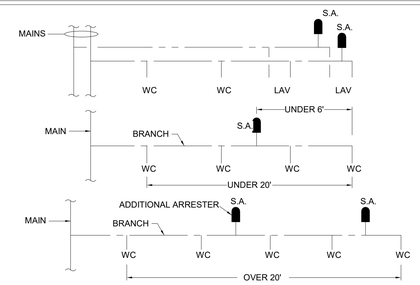
APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	Project Number / PROJECT/ W.O. #

SH. NO. ___ OF ___ DWG. P103



6 FLOOR SINK DETAIL

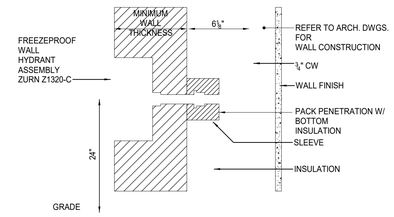
SCALE: NOT TO SCALE



NOTES:
1. SHOCK ARRESTORS SHALL BE INSTALLED ON ALL BRANCH PIPING SERVING PLUMBING FIXTURES, QUICK-CLOSING, VALVES, EQUIPMENT, OR WALL HYDRANTS/HOSE BIBS.
2. BRANCH PIPES WITH A DEVELOPED LENGTH OF 25' OR LESS MAY HAVE ARRESTORS REDUCED BY ONE SIZE.
3. BRANCH PIPES WITH A DEVELOPED LENGTH OF 75' OR GREATER MAY HAVE ARRESTORS REDUCED BY ONE SIZE.
4. STOP VALVE AND SHOCK ARRESTORS SHALL BE ACCESSIBLE THROUGH A SINGLE ACCESS DOOR.
5. SHOCK ARRESTORS SHALL BE CERTIFIED BY THE PLUMBING AND DRAINAGE INSTITUTE (PDI).
6. WHEN WORKING WATER PRESSURE EXCEEDS 65 PSI USE NEXT LARGEST SIZE.
7. MAXIMUM PIPING LENGTH COVERED BY ONE ARRESTOR SHALL BE 20 LINEAR FT.
8. ALL INSTALLATIONS AS DIRECTED BY MANUFACTURER

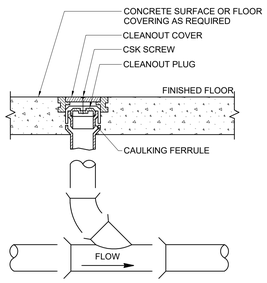
3 WATER HAMMER ARRESTOR DETAIL

SCALE: NOT TO SCALE



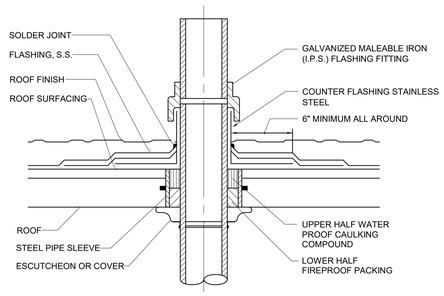
1 FREEZEPROOF WALL HYDRANT DETAIL

SCALE: NOT TO SCALE



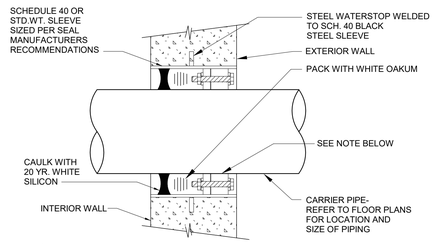
7 FLOOR CLEANOUT DETAIL

SCALE: NOT TO SCALE



4 VENT THRU ROOF DETAIL

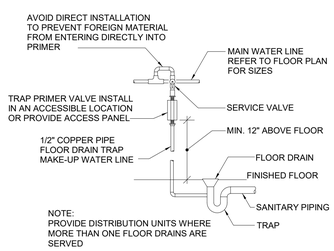
SCALE: NOT TO SCALE



NOTE:
SEAL ASSEMBLY SHALL BE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING RUBBER LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE CARRIER PIPING AND THE SLEEVE. BOLTS SHALL BE STAINLESS STEEL WITH DELRIN PLASTIC PRESSURE PLATES.

2 WATERTIGHT PIPE SLEEVE THRU EXTERIOR WALL DETAIL

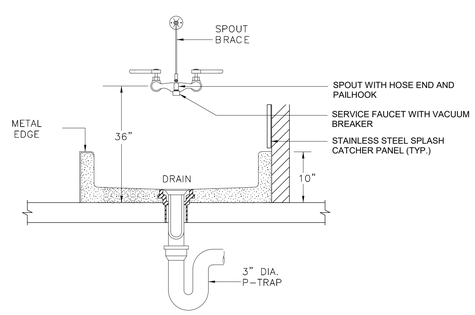
SCALE: NOT TO SCALE



NOTE:
PROVIDE DISTRIBUTION UNITS WHERE MORE THAN ONE FLOOR DRAINS ARE SERVED

8 TRAP PRIMER DETAIL

SCALE: NOT TO SCALE



5 FLOOR MOUNTED MOP SINK DETAIL

SCALE: NOT TO SCALE

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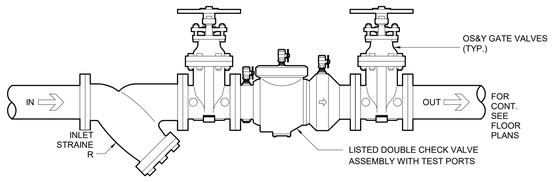
PLUMBING DETAILS

P301

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO. ___ OF ___ DWG. P301

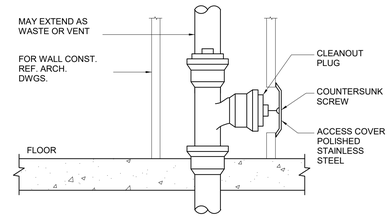


NOTES:

1. UNLESS OTHERWISE NOTED MOUNTING HEIGHT SHALL BE BETWEEN 42" ABOVE THE FINISHED FLOOR AND 12" CLEAR AROUND ALL SIDES

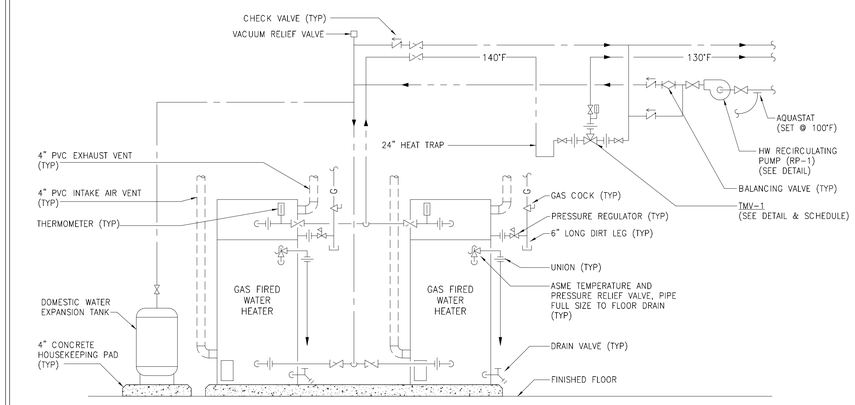
1 DOUBLE CHECK VALVE ASSEMBLY DETAIL

SCALE: NOT TO SCALE



5 WALL CLEANOUT DETAIL

SCALE: NOT TO SCALE

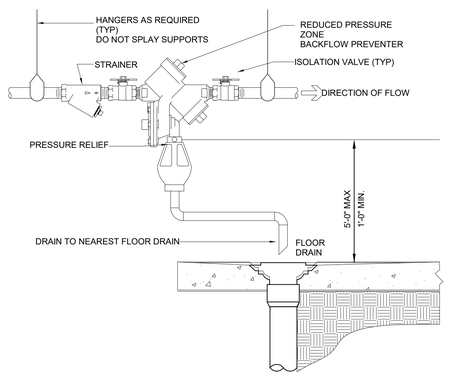


NOTES:

1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL CHECK VALVES, MULTI-PURPOSE VALVES TO BE INSTALLED IN THE HORIZONTAL POSITION ONLY.
3. IN-LINE RE-CIRC. PUMPS SHALL BE INSTALLED AT 66" AFF.
4. MAINTAIN CLEARANCES TO COMBUSTIBLES AS REQUIRED BY WATER HEATER MANUFACTURER.
5. ALL PUMPS MUST BE BALANCED TO SCHEDULED FLOW RATES.
6. VENT AND COMBUSTION AIR TERMINATIONS MUST BE SEPARATED PER NFPA-54 AND MANUFACTURER'S RECOMMENDATIONS.
7. MANIFOLD WATER HEATERS PER MANUFACTURER'S RECOMMENDATIONS TO MAINTAIN A HYDRAULICALLY BALANCED SYSTEM.

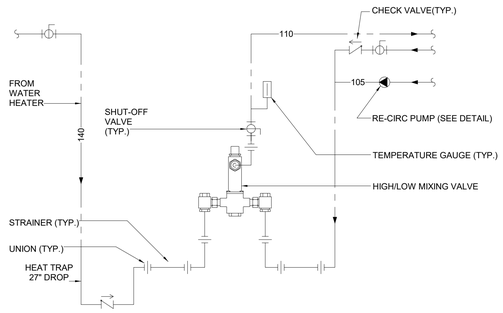
8 DUPLEX GAS FIRED WATER HEATER DETAIL

SCALE: NOT TO SCALE



2 TYPICAL BFP (UNDER 2 INCH DIAMETER) INSTALLATION DETAIL

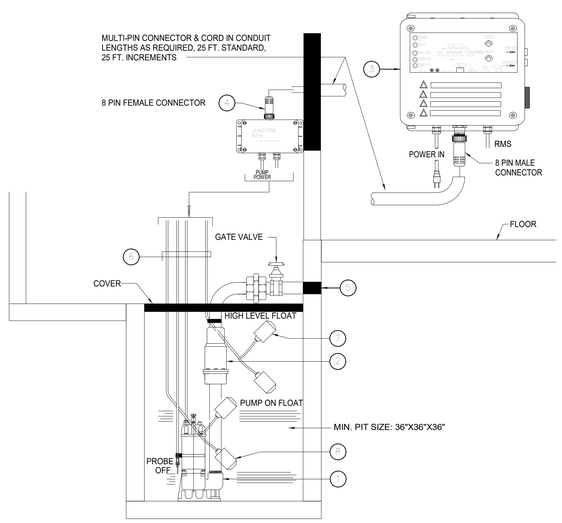
SCALE: NOT TO SCALE



NOTE:
FOR PIPE SIZES SEE SCHEDULE AND/OR RISER DIAGRAM (TYPICAL)

6 THERMOSTATIC MIXING VALVE PIPING DETAIL

SCALE: NOT TO SCALE

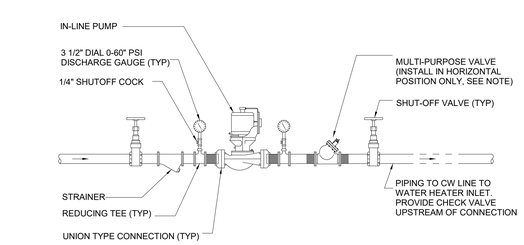


KEYED NOTES:

1. SP-1 STANCOR MODEL SE-100 SUBMERSIBLE EFFLUENT PUMP 1 HP, 460 VOLT, 3600 RPM, 2" DISCHARGE CONNECTION
2. STANCOR CHECK VALVE
3. STANCOR OIL MINDER 460V, 1Ø CONTROL SYSTEM WITH BUILT IN AUDIBLE AND VISUAL ALARM WHEN PUMP DOES NOT RUN DUE TO OIL IN PIT OR HIGH LIQUID ALARM. PROVIDE SILENCING BUTTON FOR AUDIBLE ALARM BUILT INTO PANEL. PANEL SHALL HAVE ADDITIONAL CONTACT FOR A REMOTE ALARM LOCATION. JUNCTION BOX WILL BE PROVIDED WITH MULTI-PIN CONNECTOR & CORD IN LENGTHS AS REQUIRED, 25 FT. IS STANDARD, OPTIONAL 25 FT. INCREMENTS ARE REQUIRED. LIGHTS FOR OIL SPILL, POWER, HIGH LIQUID LEVEL, OVERLOAD & PUMP RUN
4. JUNCTION BOX WILL BE PROVIDED WITH MULTI-PIN CONNECTOR AND CORD IN LENGTHS AS REQUIRED; 25 FT. IS STANDARD, OPTIONAL 25 FT. INCREMENTS AVAILABLE
5. ALL BURIED PUMP PRESSURE DISCHARGE PIPING SHALL BE PROTECTED WITH TAPECOAT CT CORROSION PROTECTION TAPE
6. OIL MINDER CABLE, POWER CABLE, PROBE CABLE, HIGH LIQUID ALARM CABLE & PUMP ON FLOAT CABLE.
7. HIGH LIQUID ALARM FLOAT WITH CLAMP DEVICE TO MOUNT TO PUMP DISCHARGE PIPING.
8. PUMP ON FLOAT.

9 ELEVATOR SUMP PUMP DETAIL

SCALE: NOT TO SCALE

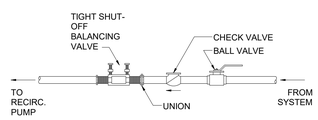


NOTES:

1. CONTRACTOR SHALL INSTALL AQUASTAT IN RETURN LINE FOR PUMP CONTROL
2. WHERE RE-CIRC. PIPING ON PUMP DISCHARGE IS LESS THAN 1-1/2", CONTRACTOR SHALL INSTALL SEPARATE CHECK VALVE, SHUT-OFF VALVE, AND BALANCE VALVE IN LIEU OF MULTI-PURPOSE VALVE.

3 IN-LINE RECIRCULATING PUMP DETAIL

SCALE: NOT TO SCALE



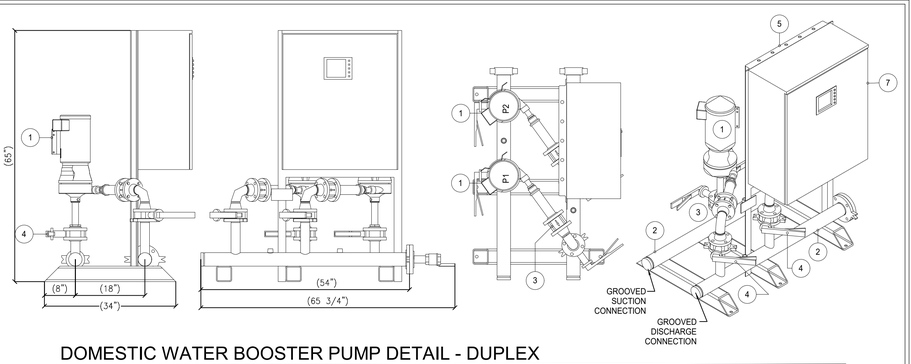
NOTES:

1. INSURE PROPER ACCESS IS PROVIDED TO VALVE AND THAT VALVE CAN BE METERED. DO NOT ORIENT TAPS DOWNWARD.
2. PROVIDE ACCESS PANEL IN HARD CEILING LOCATIONS.
3. PROVIDE TEE HANDLE WHERE LIMITED ACCESS.

7 HOT WATER CIRCULATION BALANCING VALVE DETAIL

SCALE: NOT TO SCALE

PARTS LIST		
SYM	QTY	PART
1	2	PUMP, EBARA MODEL 3U OR GOULDS MODEL SH
2	1	CAP, GROOVED, 304SS, 4"
3	2	VALVE, CHECK, TIGERFLOW 871W, 2-1/2"
4	4	VALVE, BUTTERFLY, TIGERFLOW L-ZH-L, 2-1/2"
5	1	PANEL STAND, TRIPLEX, PS004
6	2	VFD (NOT SHOWN)
7	1	CONTROLLER, TIGERFLOW MARK V, INTERNAL DRIVES



4 DOMESTIC WATER BOOSTER PUMP DETAIL - DUPLEX

SCALE: NOT TO SCALE

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PLUMBING DETAILS

P302

SH. NO. ___ OF ___ DWG. P302

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

THERMOSTATIC MIXING VALVE SCHEDULE

ID	AREA/SYSTEM SERVED	THERMOSTATIC CONTROLLERS	RUN OUT PIPE SIZES			BASIS OF DESIGN (OR EQUAL)	REMARKS
		GPM (FLOW @ 20 PSI)	CW INLET	HW INLET	TEMPERED WATER OUTLET		
TMV-1	GENERAL BLDG FIXTURES	---	---	---	---	---	

NOTES:
1. RUN-OUT PIPE SIZES ARE NOT NECESSARILY MIXING VALVE PIPE SIZES
2. ALL UNITS MUST BE INSTALLED, PIPED, AND ADJUSTED IN STRICT ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS

FLOOR DRAIN SCHEDULE

ID	TYPE	LOCATION/AREA	SIZE	BASIS OF DESIGN (OR EQUAL)	REMARKS
FD-1	FLOOR DRAIN	TOILET RM, KITCHEN	5" STRAINER	ZURN #Z415B	W/ 1/2" TRAP PRIMING LINE
FD-2	FLOOR DRAIN	MECHANICAL RMS	9" STRAINER	ZURN #Z550	W/ 1/2" TRAP PRIMING LINE

WATER HAMMER ARRESTOR SCHEDULE

PDI #	MIN.-MAX. FIXTURE UNIT CAPACITY	CONNECTION SIZE	MANUFACTURER & MODEL NUMBER (OR EQUAL)
"A"	1-11	1/2"	PPP, INC. MODEL SC-500
"B"	12-32	3/4"	PPP, INC. MODEL SC-750
"C"	33-60	1"	PPP, INC. MODEL SC-1000
"D"	61-113	1-1/4"	PPP, INC. MODEL SC-1250
"E"	114-154	1-1/2"	PPP, INC. MODEL SC-1500
"F"	155-330	2"	PPP, INC. MODEL SC-2000

NOTES:
1. AIR CHAMBERS ARE NOT ACCEPTABLE EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED
2. SIZE PER MANUFACTURER'S RECOMMENDATIONS
3. PROVIDE ACCESS PANELS WHERE REQUIRED TO BE IN CONCEALED LOCATIONS

TRAP PRIMING STATION SCHEDULE

ID	ELECTRICAL CHARACTERISTICS			BASIC OF DESIGN (OR EQUAL)
	AMPS	VOLTAGE	PHASE	
TSP-1	5	120	1	PPP INC. PTS SERIES, SURFACE MOUNTED

SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (INCHES)	MINUMUM SLOPE (INCH PER FOOT)
2-1/2 OR LESS	1/4
3 TO 6	1/8
8 OR LARGER	1/16

TABLE 704.1 OF THE INTERNATIONAL PLUMBING CODE 2018

PLUMBING FIXTURE SCHEDULE

ID	DESCRIPTION	CONNECTION SIZE							REMARKS
		WASTE	VENT	TRAP	TRAP ARM	TEMPERED	CW	HW	
P-1	WATER CLOSET	4"	2"	-	-	-	1"	-	WALL MOUNTED, HANDS-FREE ELECTRONIC FLUSH VALVE
P-1A	WATER CLOSET-ADA	4"	2"	-	-	-	1"	-	WALL MOUNTED, HANDS-FREE ELECTRONIC FLUSH VALVE
P-2	URINAL	2"	1 1/2"	-	-	-	3/4"	-	WALL MOUNTED, HANDS-FREE ELECTRONIC FLUSH VALVE
P-2A	URINAL-ADA	2"	1 1/2"	-	-	-	3/4"	-	WALL MOUNTED, HANDS-FREE ELECTRONIC FLUSH VALVE
P-3	LAVATORY	2"	2"	1 1/2"	1 1/2"	-	1/2"	1/2"	UNDERMOUNT, SENSOR OPERATED, BATTERY POWERED FAUCETS
P-4	PANTRY SINK	2"	1 1/2"	1 1/2"	1 1/2"	-	1/2"	1/2"	STAINLESS STEEL, UNDERMOUNT, WITH GARBAGE DISPOSER MODEL BADGER 5 XP, 3/4 HP AND FILTERED WATER FAUCET (BREAKROOM AND CONFERENCE)
P-5	MOP SINK	3"	2"	3"	3"	-	3/4"	3/4"	WALL MOUNTED FAUCET WITH VACUUM BREAKER
P-6	ELECTRIC WATER COOLER	2"	2"	1 1/2"	1 1/2"	-	1/2"	-	WALL MOUNTED, HI/LO PROVIDE WITH TIMER FOR NIGHT/OFF HOURS DE-ACTIVATION. COORDINATE WITH ELECTRICAL
HB-1	HOSE BIBB	-	-	-	-	-	3/4"	-	HANDS FREE ELECTRONIC FLUSH VALVE
WH-1	WALL HYDRANT	-	-	-	-	-	3/4"	-	HANDS FREE ELECTRONIC FLUSH VALVE

NOTES:
1. PROVIDE INSULATION KIT FOR WASTE AND WATER SUPPLY PIPES OF ALL HANDICAPPED LAVATORIES. TRUEBRO, LAVGUARD OR EQUAL.
2. PROVIDE MIXING VALVES FOR ALL HAND WASHING SINKS. SYMMONS 5-210-CK OR EQUAL.
3. SEE ARCHITECTURAL DOCUMENTS FOR EXACT FIXTURE LOCATION AND MOUNTING HEIGHTS.
4. PLUMBING FIXTURES ARE BY DIVISION 22 INCLUDING ROUGH-INS, DRAINS, SUPPLIES, TRIM AND FINAL CONNECTIONS.

GAS FIRED WATER HEATER SCHEDULE

ID	LOCATION	STORAGE CAPACITY (GALLONS) EACH	GAS INPUT (MBTU/HR) EACH	GAS TYPE	MIN. EFFICIENCY (%)	RECOVERY (GPH) EACH	INLET TEMP (°F)	OUTLET TEMP (°F)	FLUE SIZE (INCH) EACH		FLUE SIZE (INCH) EACH			BASIS OF DESIGN (OR EQUAL)	REMARKS
									INTAKE	EXHAUST	VOLTS	PHASE	HZ		
GWH-1 & GWH-1A	MECHANICAL ROOM B	100	199	NATURAL	96	230	40	140	5	5	120	1	60	A.O. SMITH CYCLONE, BTH-199 (Mxi)	EXTEND FRESH AIR AND EXHAUST OUT TO ATMOSPHERE

NOTES:
1. COORDINATE ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.
2. FLUE SIZES ARE NOT NECESSARILY THE EQUIPMENT CONNECTION SIZE. REFER TO MECHANICAL DRAWINGS FOR FLUE SIZES

DUPLEX DOMESTIC WATER BOOSTER PUMP SCHEDULE

ID	LOCATION	SERVICE	GPM (EACH)	GPM (TOTAL)	HEAD (FT.)	MOTOR HP (TOTAL)	ELECTRICAL CHARACTERISTICS			NPSHA (FT.)	NPSHR (FT.)	BASIS OF DESIGN (OR EQUAL)	REMARKS
							VOLTAGE	PHASE	RPM				
DWBP-1 & 2	MECHANICAL ROOM	CW	65	130	140	3	208	3	3500	-	92	GRUNDFOS HYDRO MPC E CRE 10	PROVIDE WITH VARIABLE FREQUENCY DRIVES

NOTES:
1. ACTUAL CAPACITY (FLOW AND HEAD) OF THE DUPLEX PACKAGE IS TO BE VERIFIED UPON PERFORMING A WATER FLOW TEST AFTER CONNECTION OF THE WATER MAIN TO THE TRANSITION MAIN.
2. THE TOTAL DYNAMIC HEAD SPECIFIED ABOVE INCLUDES A 5 PSIG PRESSURE DROP THROUGH THE UNIT AND PRESSURE REDUCING VALVE. SELECT PRV SO AS NOT TO EXCEED SCHEDULED VALUE.
3. PERFORMANCE AND ELECTRICAL CHARACTERISTICS ARE TYPICAL FOR EACH PUMP.
4. BRAKE HORSEPOWER OF SELECTED UNITS SHALL NOT EXCEED VALUE AT DESIGN OPERATING CONDITIONS.
5. NET POSITIVE SUCTION HEAD REQUIRED (NPSHR) SHALL NOT EXCEED NET POSTIVE SUCTION HEAD AVAILABLE (NPSHA).

PIPING MATERIAL SCHEDULE

PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION
SANITARY DRAIN PIPING (BELOW SLAB)	SCHEDULE 40 PVC AND FITTINGS
SANITARY DRAIN PIPING (ABOVE SLAB)	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
VENT PIPING	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L" COPPER PIPING
NATURAL GAS PIPING	SCHEDULE 40 BLACK STEEL PIPE, W/ CAST IRON FITTING

DOMESTIC WATER EXPANSION TANK SCHEDULE

ID	WATER HEATER VOLUME (GALLONS)	MAX. TEMP. (°F)	MAX. OPERATING PRESSURE (PSIG)	DESIGN FILL PRESSURE (PSIG)	TOTAL TANK VOLUME (GALLONS)	ACCEPTANCE VOLUME (GALLONS)	TANK DIMENSIONS		APPROX. OPERATING WEIGHT (LBS.)	BASIS OF DESIGN (OR EQUAL)	REMARKS
							HEIGHT	DIAMETER			
ET-1	200	200	150	55	14	8.96	20"	17"	120	AMTROL THERM-X-TROL ST-447-C	

PUMP SCHEDULE

ID	DESCRIPTION	GPM		HP	VOLTAGE	PHASE	RPM	BASIS OF DESIGN (OR EQUAL)	REMARKS
CP-1	HOT WATER CIRCULATING	6	14	1/16	115	1		GRUNFUS MAGNA3	IN-LINE

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

MEP. ENG.

NIST

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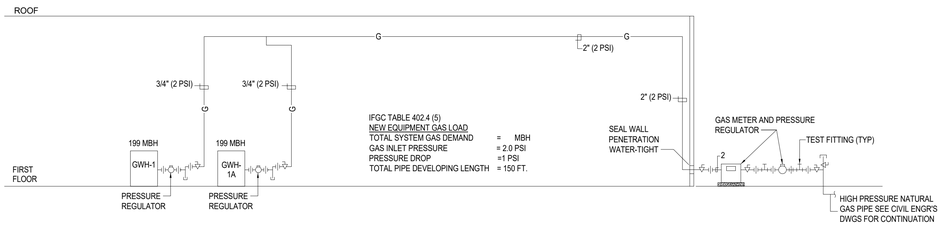
PLUMBING SCHEDULES

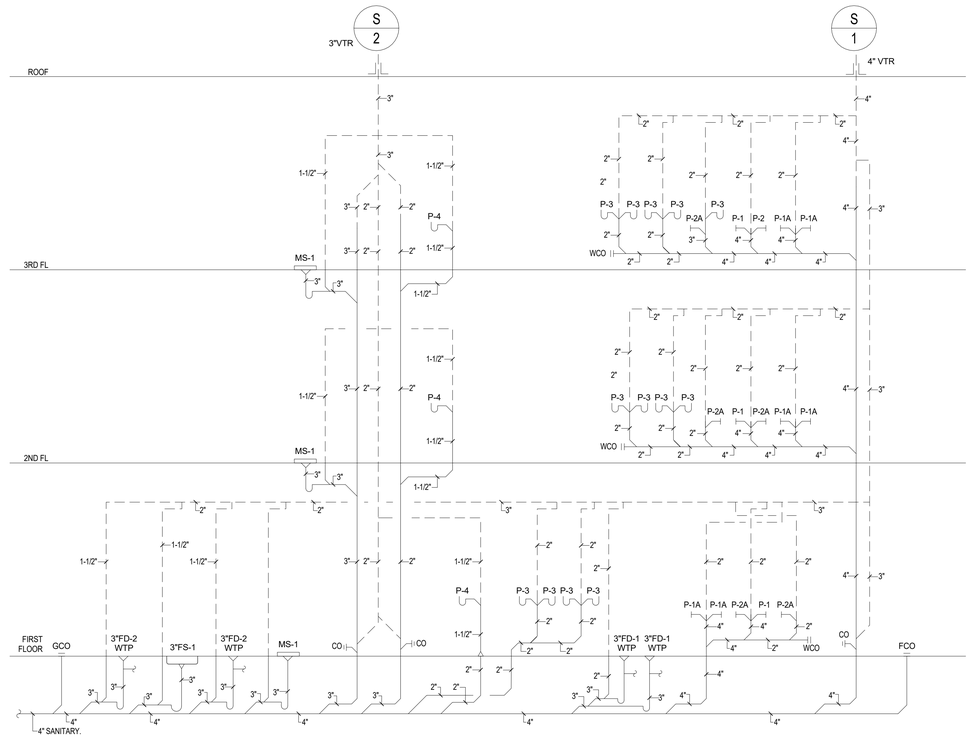
P401

APPROVED BY DATE	SPONSOR DATE	MAINTENANCE ENG. OFF. DATE	ENVIRONMENTAL MANAGEMENT DATE	SAFETY DATE	SHED – NIST FIRE MARSHAL/AHJ DATE	FACILITIES ENGR. OFF. DATE	VAY PROJECT LEADER DATE	AA DRAWN BY DATE	08/15/2022 PROJECT/ W.O. #	Project Number

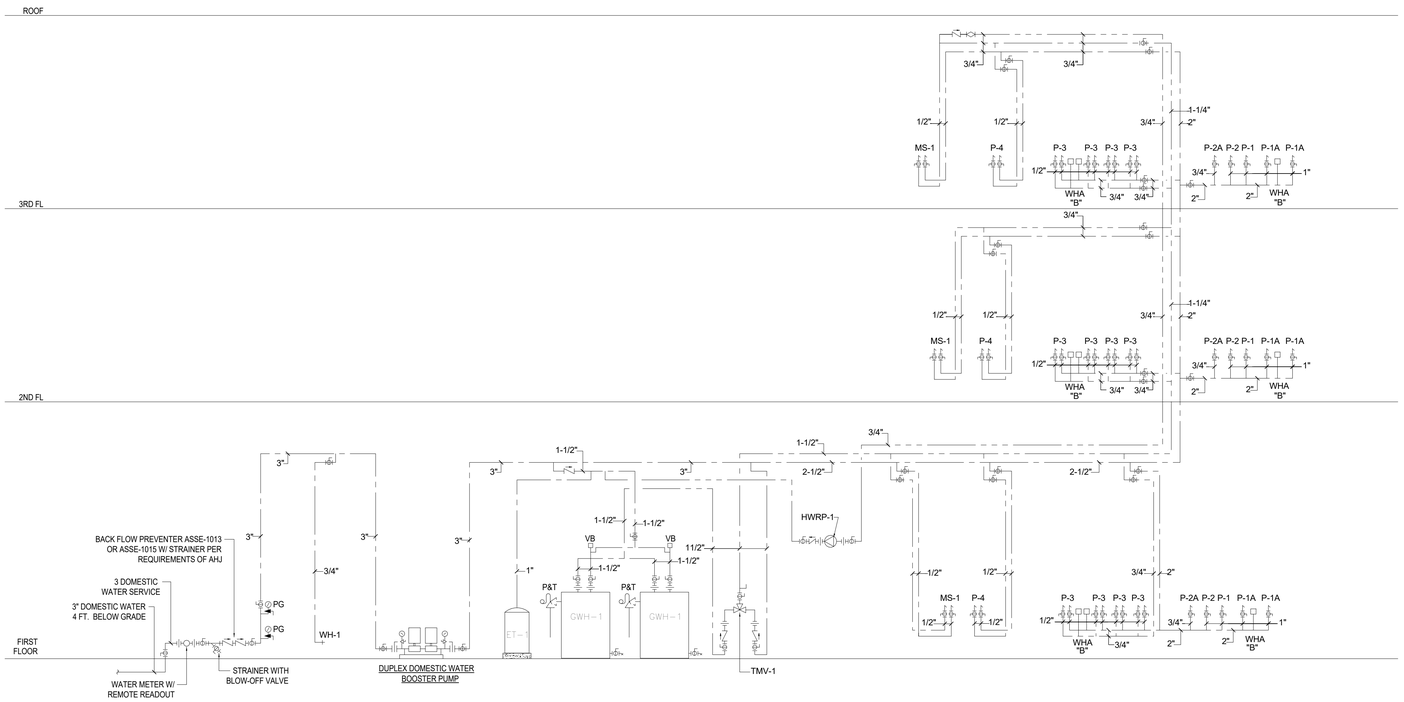
SH. NO.___OF___ DWG. P401



3 OFFICE BLDG GAS RISER DIAGRAM
1/4" = 1'-0"



1 OFFICE BLDG SANITARY RISER DIAGRAM
1/4" = 1'-0"



2 OFFICE BLDG WATER RISER DIAGRAM
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

MEP. ENG.

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SANITARY, WATER & GAS RISER DIAGRAMS

P501

SH. NO. ___ OF ___ DWG. P501

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

PLUMBING GENERAL CONDITIONS

1. THE INTENT OF THESE DRAWINGS IS TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. PROVIDE ALL LABOR AND MATERIAL NECESSARY TO ACHIEVE SUCH ENDS. CONTRACTOR IS OBLIGATED TO EXAMINE PLANS. ANY OBSERVED FAULTS OR AMBIGUITY IN THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY, SO THAT THE MATTER MAY BE RESOLVED PRIOR TO SUBMISSION OF BIDS. BY SUBMISSION OF BID, THE CONTRACTOR SHALL ACKNOWLEDGE ACCEPTANCE OF THESE PLANS AS AN ADEQUATE DEFINITION OF THE SCOPE OF WORK AND EXTRA COST CLAIMS BASED ON INADEQUACY OF PLANS WILL NOT BE CONSIDERED.

2. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.

3. THE PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING WORK WITH OTHER TRADES. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE APPARENT, THE ENGINEER SHALL BE ADVISED IMMEDIATELY, AND AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED.

4. CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AND ARRANGE FOR INSPECTIONS BY LOCAL AUTHORITIES HAVING JURISDICTION.

5. PROVIDE OPENINGS IN BUILDING CONSTRUCTION FOR PASSAGE OF PIPING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER. VERIFY SLAB PENETRATION LOCATIONS PRIOR TO PROCEEDING WITH WORK IN ORDER TO LOCATE OBSTRUCTIONS EMBEDDED IN SLAB.

6. ALL NECESSARY ALLOWANCES AND PROVISIONS SHALL BE MADE BY THIS CONTRACTOR FOR BEAMS, COLUMNS OR OTHER OBSTRUCTIONS OF THE BUILDING OR THE WORK OF OTHER CONTRACTORS, WHETHER OR NOT SAME IS INDICATED. WHERE NECESSARY TO AVOID OBSTRUCTIONS THE DUCTS SHALL BE TRANSFORMED, DIVIDED, OFFSET, RAISED OR LOWERED WITH THE REQUIRED FREE AREA BEING MAINTAINED WHILE MAINTAINING DESIGNED CEILING HEIGHTS.

7. ALL ROTATING PLUMBING EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

8. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

9. CONTROLS AND ACCESSORIES FOR EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.

10. PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN HIS WORK AREA DAILY AND SHALL ALSO REMOVE ALL TRASH AFTER WORK COMPLETION.

11. THE WORK DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY PREPARED BASE BUILDING DRAWINGS. IF EXISTING FIELD CONDITIONS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF DISCREPANCIES WHICH WILL AFFECT THE PROPOSED WORK PRIOR TO BEGINNING WORK.

12. SYMBOLS SHOWN ON SCHEDULES DEFINE TYPE OF EQUIPMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR RESEARCHING DRAWINGS FOR EXACT QUANTITIES REQUIRED OF EACH TYPE.

13. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, PIPING, ETC., SHALL BE FREE FROM INTERFERENCE WITH OTHER DISCIPLINES. WHERE CONFLICTS OCCUR, CONTRACTOR SHALL IMMEDIATELY CONTACT THE CONSTRUCTION MANAGER. WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER, OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.

14. THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, DRAIN POINTS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE. ALLOW FOR BETTER ACCESSIBILITY, AND ANY CHANGE FOR THAT PURPOSE SHALL BE APPROVED.

15. ALL EQUIPMENT WHICH REQUIRES INTERFACE WITH THE ELECTRICAL TRADE, SUCH AS CONTROLLING DEVICES, DISCONNECT SWITCHES, MOTORS, ETC., SHALL BE FULLY COORDINATED BETWEEN ALL TRADES.

16. ALL WORK TO BE GUARANTEED FOR ONE YEAR AGAINST LABOR AND MATERIALS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACE OR REPAIRED AS DIRECTED FOR THE DURATION OF THE GUARANTEE PERIOD. TIME FOR THIS GUARANTEE SHALL BEGIN FROM THE DATE OF ACCEPTANCE OF THE COMPLETE WORK BY THE OWNER OR HIS APPOINTED REPRESENTATIVE. NOTE: THESE GUARANTEES SHALL BE SUBMITTED TO THE CO FOR RECORD PURPOSES.

17. AS USED IN THE DRAWINGS FOR PLUMBING WORK, CERTAIN NON-TECHNICAL WORDS SHALL BE UNDERSTOOD TO HAVE SPECIFIC MEANINGS AS FOLLOWS REGARDLESS OF INDICATIONS TO THE CONTRARY IN THE GENERAL CONDITION OR OTHER DOCUMENTS GOVERNING THE MECHANICAL WORK.
    A. "FURNISH" - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS OR ENCUMBRANCES.
    B. "INSTALL" - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
    C. "PROVIDE" - "FURNISH" AND "INSTALL".
    D. "NEW" - MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

PLUMBING GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

2. THE ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE POWER FOR ALL PLUMBING EQUIPMENT. DURING BID PERIOD AND AGAIN PRIOR TO EQUIPMENT ORDERING, THE (GENERAL CONTRACTOR AND THE) PLUMBING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR TO VERIFY THAT ALL EQUIPMENT ARE POWERED, AND PROPER VOLTAGE/WIRING/CAPACITY IS PROVIDED. IN THE EVENT OF REQUIREMENTS AMBIGUITY OR CONFLICT BETWEEN TRADES, THE CONTRACTOR IS REQUIRED TO GENERATE AN RFI ADDRESSING THE ISSUE AND REQUESTING CLARIFICATION. FAILURE TO DO SO WILL NEGATE HIS RIGHT FOR A CHANGE ORDER OR REQUEST FOR ADDITIONAL FUNDS DURING CONSTRUCTION RELATING TO THIS ISSUE.

3. DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE OF WORK, AND TO INDICATE THE GENERAL LOCATIONS OF EQUIPMENT, PIPING, ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT HIS WORK ACCORDING TO THE FOLLOWING GUIDELINES:
    A. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS FOR EQUIPMENT AND ROUGH INS AND THE EXACT ROUTING OF PIPING PRIOR TO CONSTRUCTION AS TO BEST FIT THE LAYOUT OF THE WORK. COORDINATE FINAL LAYOUT WITH ALL TRADES.
    B. WHERE OFFSETS IN PIPING ARE REQUIRED TO COORDINATE WORK OF OTHER TRADES, STRUCTURE, PIPING, CONDUITS, DUCTWORK, ETC. OR TO MAINTAIN CEILING HEIGHTS, THEY SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
    C. UNLESS OTHERWISE NOTED, ALL PIPING TO BE ROUTED CONCEALED IN WALLS, CHASES OR ABOVE CEILING. WATER PIPING SHALL NOT BE ROUTED IN EXTERIOR WALLS. ROUTE ALL PIPING AS HIGH AS POSSIBLE AND ALONG WALLS TO MAXIMIZE SPACE AVAILABLE FOR OTHER TRADES.
    D. COORDINATE ROUTING OF PIPING TO MAINTAIN ACCESS TO FILTERS, MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS. IN NO CASE SHALL PIPING PASS DIRECTLY OVER ELECTRICAL PANELS OR DISCONNECTS OR RESTRICT ACCESS TO ANY ELECTRICAL EQUIPMENT INCLUDING JUNCTION BOXES.
    E. ALL EXISTING PIPING SHOWN IS INTENDED TO INDICATE APPROXIMATE SIZE, NUMBER AND LOCATION OF PIPING BRANCHES FOR BIDDING PURPOSES ONLY. CONTRACTOR TO VERIFY EXACT SIZE AND CONFIGURATION PRIOR TO CONSTRUCTION.
    F. VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SYSTEMS REQUIRING CONNECTION TO NEW PIPING PRIOR TO COMMENCING WORK.

4. UNLESS OTHERWISE NOTED, SANITARY WASTE PIPING SHOWN IS BELOW FLOOR AND ALL OTHER PIPING IS OVERHEAD, ABOVE CEILING. DOMESTIC HOT, COLD AND RE-CIRC. WATER PIPING SHALL BE INSTALLED ON WARM SIDE OF INSULATION.

5. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 2018 INTERNATIONAL PLUMBING CODE (IPC) & ALL LOCAL AMENDMENTS, CODES AND REGULATIONS.

6. DURING THE PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND NAMES), MATERIALS, SIZES, LOCATING AND HOOK-UP POINTS. AS-BUILTS SHALL BE GIVEN TO [OWNER] AT COMPLETION OF JOB.

7. UPON COMPLETION OF JOB, THIS CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKING AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW TO REMAIN.

8. ALL INSTALLATION OF ACCESSIBLE PLUMBING FIXTURES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE ACCESSIBILITY STANDARDS. REFER TO ARCHITECTURAL PLANS FOR SPECIFIC INSTALLATION REQUIREMENTS. LOCATE WATER CLOSET FLUSH VALVE LEVER BETWEEN TOILET AND LAVATORY. COORDINATE LOCATION OF FLUSH VALVE LEVER HANDLE WITH GRAB BAR. COORDINATE WITH ARCHITECTURAL DRAWINGS.

9. ALL VENT AND FLUE OUTLETS SHALL BE 10'-0" MINIMUM HORIZONTALLY AND 3'-0" MINIMUM VERTICALLY FROM ANY FRESH AIR INTAKES.

10. PROVIDE WATER HAMMER ARRESTORS AT ALL PLUMBING FIXTURES OR BATTERY OF FIXTURES WITH QUICK-CLOSING VALVES. WATER HAMMER ARRESTORS SHALL BE SIZED & INSTALLED PER PDI STANDARDS. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED.

11. PROVIDE BALANCING VALVES WITH THREADED CONNECTIONS IN HOT WATER RETURN PIPING, AND BALANCE SYSTEM FOR PROPER OPERATION.

12. COORDINATE WITH ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN PLUMBING.

13. ALL OPENINGS IN CEILINGS AND PLENUM WALLS FOR PLUMBING SHALL BE SEALED AIR TIGHT AND PROTECTED WITH FIRESTOP.

14. SEE SITE PLAN FOR EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.

15. ALL HOSE BIBS SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE SPECIFIED.

16. ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.

17. MAKE PROPER HW, CW, RE-CIRC., WASTE, AND VENT CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAIN, ELBOWS AND CONNECTIONS ARE NOT SHOWN.

18. CLEANOUTS SHALL BE PROVIDED NEAR BASE OF EACH VERTICAL WASTE OR SOLID STACK. PROVIDE 18" MINIMUM CLEARANCE FOR ACCESS.

19. PROVIDE VALVES AND UNIONS WHEN CONNECTING PIPING TO EQUIPMENT. LOCATE VALVES FOR EASY ACCESS AND SERVICING OF EQUIPMENT. PROVIDE ACCESS PANELS TO ALL SHUT-OFF VALVES.

20. PRESSURE TEST ALL NEW WATER PIPES, MINIMUM OF 4 HOURS BEFORE APPLYING PIPE INSULATION. ALL TESTS SHALL BE IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL WATER AUTHORITY.

21. IN THE EVENT OF CONFLICT BETWEEN VARIOUS SECTIONS OF CONSTRUCTION DOCUMENTS, THE MOST STRINGENT OF THE OPTIONS SHALL APPLY FOR BIDDING PURPOSE. AFTER AWARD OF CONTRACT BUT BEFORE STARTING DESIGN/CONSTRUCTION, CONTRACTOR SHALL REQUEST CLARIFICATIONS WITH BID ON ANY CONFLICTING INFORMATION FROM THE OWNER.

22. PROVIDE DIELECTRIC FITTINGS OTHER THAN DIELECTRIC UNIONS WHEN CONNECTING DISSIMILAR MATERIAL PIPING. DIELECTRIC UNIONS NOT PERMITTED.

23. ALL CONCRETE FLOORS, SLABS, BRICK AND BLOCK WALL PENETRATIONS SHALL BE SLEEVED AND FIRE STOPPED.

24. PROVIDE BALL VALVE FOR ALL CW AND HW BRANCH TAKE-OFFS.

25. ALL EXTERIOR ROOF PENETRATIONS SHALL BE SEALED WEATHERTIGHT.

26. SLOPES AND INVERT ELEVATIONS OF ALL INTERIOR PIPING SHALL BE ESTABLISHED BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. ALL PIPING SHALL BE LOCATED AND DETERMINED WHERE TO BE RUN TO AVOID CONFLICT WITH OTHER TRADES.

27. ALL PIPING SHALL BE PROVIDED WITH SECTIONAL SHUT-OFF VALVES AND ACCESS PANELS FOR ALL HIDDEN VALVES. PROVIDE ISOLATION VALVES FOR ALL PLUMBING FIXTURES.

28. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS, LEAKS, LACK OF PROPER SYSTEM PERFORMANCE OR NON-OPERATION FOR A PERIOD OF ONE YEAR AFTER DATED OF FINAL ACCEPTANCE OF WORK BY OWNER.

29. ALL WORK SHALL BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.

30. ALL EXPOSED PIPING TO FIXTURES SHALL BE HEAVILY CHROME-PLATED.

31. MAKE FINAL CONNECTIONS AFTER FIXTURES AND EQUIPMENT ARE SET IN PLACE. ALLREQUIRED TRIM, FAUCETS AND MINOR ITEMS NECESSARY FOR A COMPLETE FUNCTIONING INSTALLATION, SUCH AS STRAINERS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC., SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH EQUIPMENT REQUIREMENTS. ALL FAUCETS TO BE HEAVILY CHROME-PLATED.

32. SLEEVES THROUGH CMU BLOCKS WALLS AND/OR MASONRY FLOORS SHALL BE SCHEDULE 40 BLACK STEEL PIPE. SLEEVES THRU FLOORS SHALL STAND PROUD OF FLOOR SLAB BY 1/2". SLEEVES THROUGH SHEET ROCK WALL SHALL BE 18" GAUGE GALVANIZED SHEET METAL. THE SPACE BETWEEN THE PIPE AND SLEEVE SHALL BE PACKED WITH "3M" EXPANDABLE FOAM FIRE-STOP MATERIAL, TO ASSURE A RATING EQUAL TO THE PENETRATED WALL OR FLOOR.

33. HANGERS SHALL BE OF SIMILAR MATERIAL AS PIPING TO AVOID GALVANIC ACTION IN ACCORDANCE WITH MSS-SP-69, AND LOCATED AT INTERVALS NOT TO EXCEED 6'-0" O.C. WHERE "HUBLESS" PIPE IS BEING USED, PROVIDE HANGERS ON ETHER SIDE OF THE JOINTS AS RECOMMENDED BY CISPI BULLETIN 310. FOR INSULATED PIPING, INSULATION SHALL EXTEND CONTINUOUSLY THRU HANGER WITH OUT INTERRUPTION. PROVIDE SADDLE TO PROTECT INSULATION FROM COMPRESSION.

34. SOIL, WASTE AND VENT PIPING SHALL BE INSTALLED IN ACCORDANCE WITH CODE. HORIZONTAL DRAINAGE PIPING SHALL SLOPE PER 2018 IPC CODE, UNLESS OTHERWISE INDICATED. DOMESTIC WATER SHALL BE SLOPED TO DRAIN POINTS.

35. SUBMIT OPERATING AND MAINTENANCE MANUALS AND WARRANTY CERTIFICATES TO OWNER.

36. THE CONTRACTOR SHALL NOT CORE DRILL CONCRETE SLABS OR PRE-CAST CONCRETE PANELS OR DECK WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE BUILDING OWNER AND SHALL X-RAY PRIOR TO ANY CORE DRILLING. X-RAYING AND CORE DRILLING SLABS SHALL BE SCHEDULED WITH THE BUILDING OWNER, INCLUDE COSTS OF X-RAYING IN BID.

37. FINAL ACCEPTANCE OF PLUMPING SYSTEMS BY THE USER/OWNER, SHALL BE CONTINGENT TO COMPLIANCE WITH ALL COMMISSIONING REQUIREMENTS AND TESTS PRESCRIBED IN THE PROJECT DESIGN DOCUMENTS/SPECIFICATIONS AND APPROVAL BY THE CxA AGENT OF THE PROJECT.

38. UPON COMPLETION OF THE PROJECT, ALL DOMESTIC WATER PIPING SHALL BE SANITIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

ABBREVIATIONS

ABV	ABOVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AP	ACCESS PANEL
APPROX	APPROXIMATE
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISH FLOOR
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BT	BATHTUB
CA	COMPRESSED AIR
CD	CONDENSATE
CLG	CEILING
CO	COMPANY, CLEANOUT
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
CW	COLD WATER
DISP	DISPOSER
DWV	DRAINAGE WASTE & VENT
EA	EACH
ECO	EXTERIOR CLEANOUT
ETR	EXISTING TO REMAIN
EW	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FIXT	FIXTURE
FLR	FLOOR
FM	FORCED MAIN
FS	FLOOR SINK
G	NATURAL GAS
GCO	GRADE CLEANOUT
GD	GROUNDWATER DRAIN TILE
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RECIRCULATING
I.E.	INVERT ELEVATION
IW	INDIRECT WASTE
IPC	INTERNATIONAL PLUMBING CODE
LAV	LAVATORY
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	BRITISH THERMAL UNITS (x1000)
MIN	MINIMUM
MISC	MISCELLANEOUS
NFWH	NON-FREEZE WALL HYDRANT
NIC	NOT IN CONTRACT
OD	OVERFLOW ROOF DRAIN
OSD	OPEN SITE DRAIN
PD	PUMPED DISCHARGE
PDI	PLUMBING & DRAINAGE INSTITUTE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RM	ROOM
RTU	ROOF TOP UNIT
SAN	SANITARY
SFU	SUPPLY FIXTURE UNIT
ST	STORMWATER
TP	TRAP PRIMER VALVE
TPS	TRAP PRIMING STATION
TW	TEMPERED WATER
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
XR	EXISTING RELOCATED

LAB/MEDICAL PROJECTS

O	OXYGEN
MA	MEDICAL AIR
LA	LAB AIR
N	NITROGEN
LN	LIQUID NITROGEN
AR	ARGON
HE	HELIUM
SG	SPECIAL GAS
LV	LAB VACUUM
MV	MEDICAL VACUUM
CO2	CARBON DIOXIDE
DI	DEIONIZED WATER
ROS	REVERSE OSMOSIS SUPPLY
ROR	REVERSE OSMOSIS RETURN
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LHWR	LAB HOT WATER RECIRCULATING
VCW	VIVARIUM COLD WATER
VHW	VIVARIUM HOT WATER
NP	NON-POTABLE

SHEET NUMBERING LEGEND

P111A

- DISCIPLINE: "PD" DEMO, "P" NEW WORK
- PLAN TYPE: "1" FLOOR PLAN, "2" ENLARGED FLOOR ETC.
- SYSTEM TYPE: "0" FOR UNDERGROUND, "1" WATER & GAS, "2" DWV & STORM, "3" FIRE PROTECTION
- FLOOR LEVEL: "0" LOWEST FLOOR, "1" NEXT FLOOR LEVEL ETC.
- SECTOR

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	DEMOLISH AND REMOVE
	SOIL OR WASTE PIPING
ST	STORM PIPING
OD	OVERFLOW STORM PIPING
NP	NON-POTABLE WATER PIPING
ST	STORM PIPING BELOW SLAB
	VENT PIPING
CW	COLD WATER PIPING
	COLD WATER PIPING (SINGLE LINE)
HW	HOT WATER PIPING
	HOT WATER PIPING (SINGLE LINE)
HWR	HOT WATER RECRCULATING PIPING
	HOT WATER RECRCULATING PIPING (SINGLE LINE)
G	GAS PIPING
F	FIRE PROTECTION PIPING
	PIPE DOWN OR DROP
	PIPE UP OR RISE/FLOOR CLEANOUT
	CAPPED OR PLUGGED PIPE
	UNION
	WALL CLEANOUT
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	GAS COCK
	SHUTOFF VALVE IN RISE OR DROP
	DOUBLE CHECK BACKFLOW PREVENTER
	RPZ BACKFLOW PREVENTER
	CHECK VALVE
	BALANCING VALVE
	OUTSIDE STEM & YOKE VALVE
	PRESSURE GAGE W/ NEEDLE VALVE
	THERMOMETER
	TEMPERATURE & PRESSURE RELIEF VALVE
VB	VACUUM BREAKER
"A"	WATER HAMMER ARRESTER, LETTER INDICATES PDI
	HOSE BIBB
	WALL HYDRANT
	SOLENOID VALVE
	STRAINER
	PIPE GUIDE/SLEEVE
	PIPE ANCHOR
	FLEXIBLE CONNECTION
	FLOW DIRECTION
	RISER/DETAIL DESIGNATION
	FLOOR DRAIN
	CALL OUT DESIGNATION
X X	METER (GAS/WATER/FIRE)
X XXX	PUMP
	PUMP
M	KEYNOTE TAG
	LIMIT OF DEMOLITION
#	

DOUBLE SYMBOLS

- GATE VALVE
- BUTTERFLY VALVE
- 3-WAY VALVE
- GAS COCK VALVE
- BALL VALVE
- BALANCE VALVE
- SHUT-OFF VALVE
- BACKFLOW PREVENNTER VALVE

REVISION	DESCRIPTION	BY	DATE

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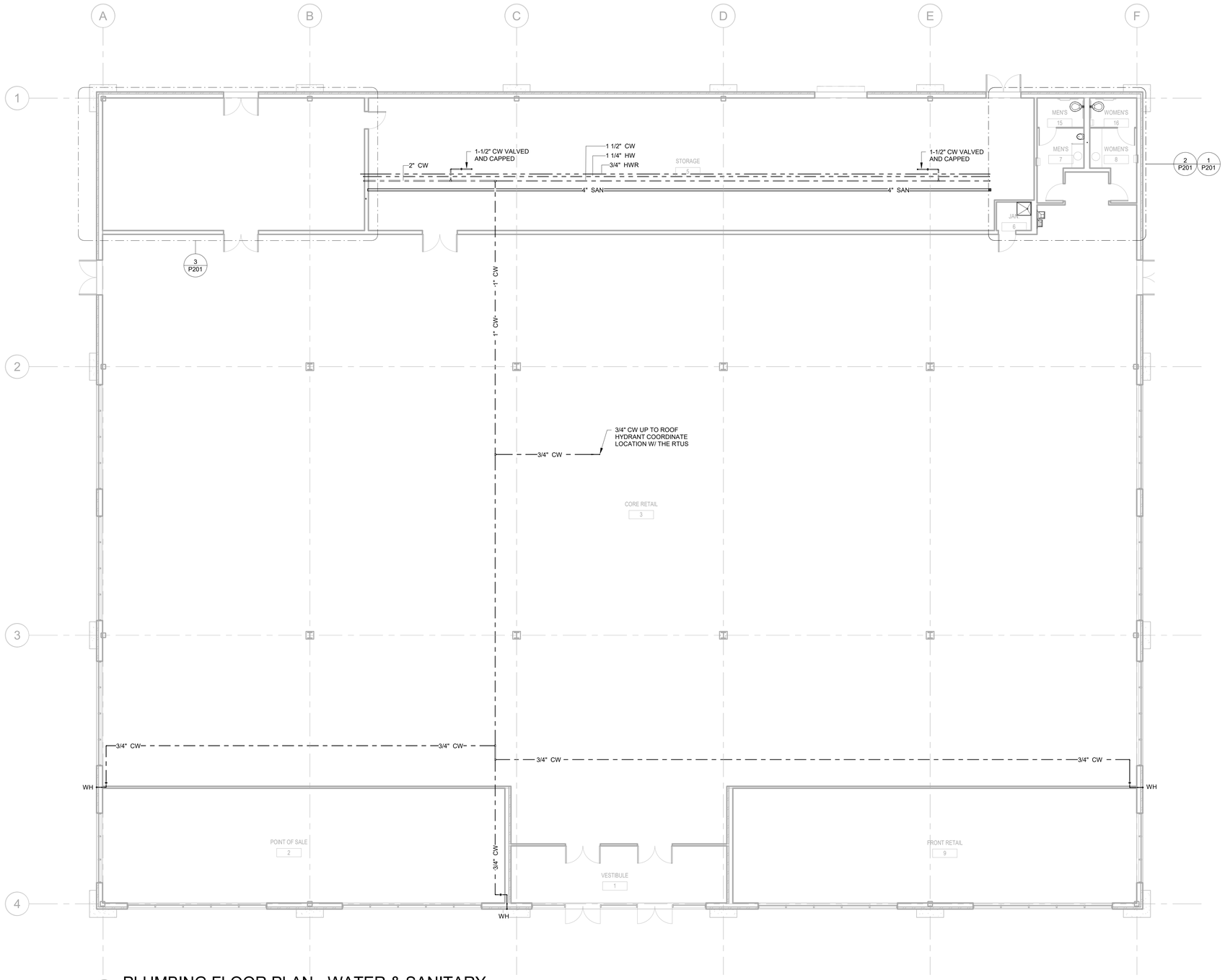
PLUMBING COVERSHEET

P002

SH. NO. ___ OF ___ DWG. P002

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number



1 PLUMBING FLOOR PLAN - WATER & SANITARY
1/8" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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PLUMBING FLOOR PLAN

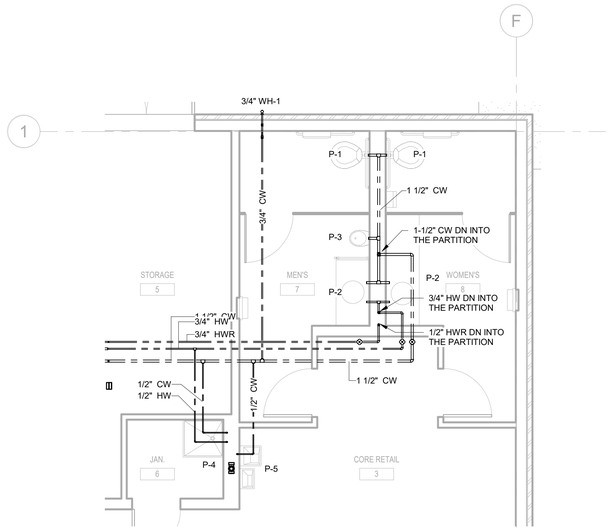
P101

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

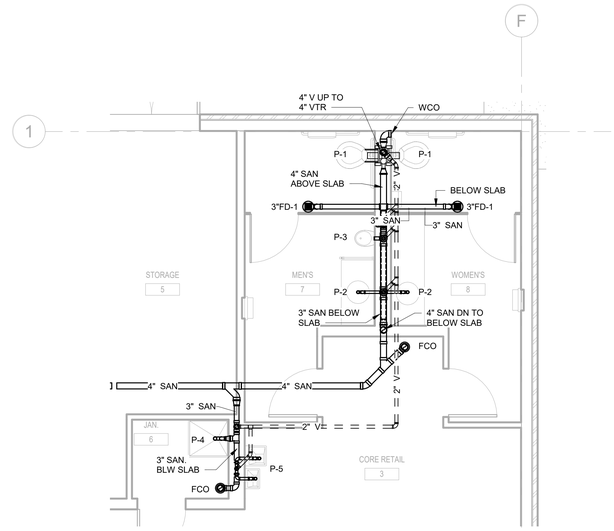
SH. NO. ___ OF ___ DWG. P101

KEYED NOTES	
KEYED NOTES	KEYED NOTE TEXT

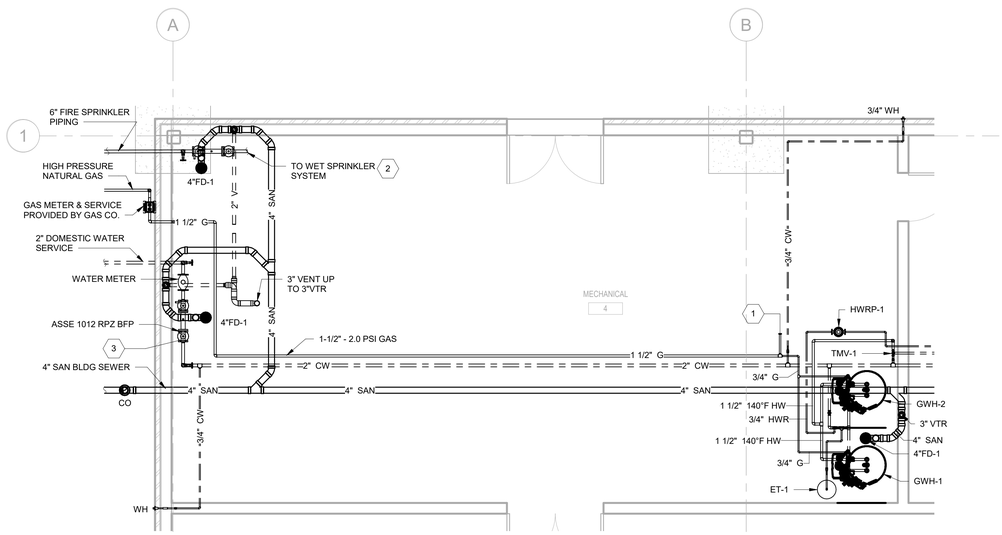
1	1" (2 PSI) GAS PIPE VALVED & CAPPED FOR THE ROOF TOP UNITS (RTU). ESTIMATED LOAD IS 800 MBH COORDINATE PIPE ROUTING & LOADS WITH THE MECHANICAL CONTRACTOR.
2	DESIGN OF FIRE SPRINKLER SYSTEM IS BY OTHERS. SHOWN FOR COORDINATION ONLY.
3	BACKFLOW PREVENTER ASSE-1015 OR ASSE-1013 AS REQUIRED BY THE AUTHORITY HAVING JURISDICTION.



1 RESTROOM LAYOUT - WATER SUPPLY
1/4" = 1'-0"



2 RESTROOM LAYOUT - SANITARY
1/4" = 1'-0"



3 MECHANICAL ROOM - PLUMBING FLOOR PLAN
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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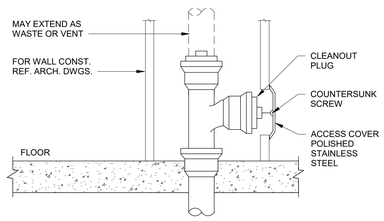
PLUMBING ENLARGED PLANS

P201

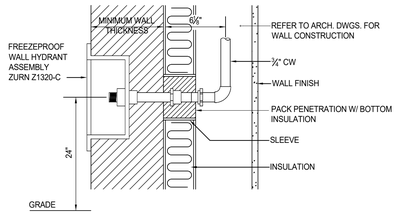
APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED - NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ___ OF ___ DWG. P201



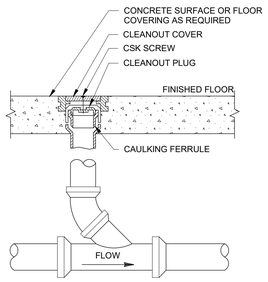
6 WALL CLEANOUT

SCALE: NOT TO SCALE



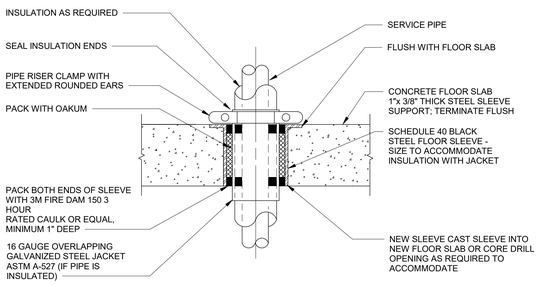
4 FREEZEPROOF WALL HYDRANT

SCALE: NOT TO SCALE



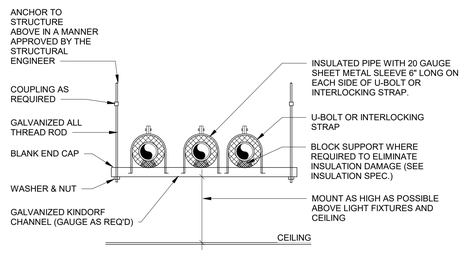
1 FLOOR CLEANOUT

SCALE: NOT TO SCALE



7 PIPE THRU FLOOR PENETRATION

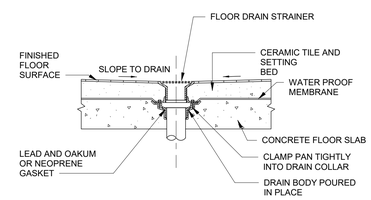
SCALE: NOT TO SCALE



NOTE:
1. ALL PIPING SUPPORT SYSTEM COMPONENTS SHALL HAVE A NON-CORROSIVE METAL FINISH, GALV-KROM OR EQUAL
2. COORDINATE CROSS PIPING WITH MECHANICAL PIPING ROUTED IN CORRIDORS & SPRINKLER PIPING MAINS CROSSING IN CORRIDORS.

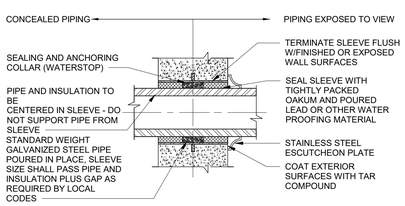
5 TRAPEZE PIPING SUPPORT

SCALE: NOT TO SCALE



2 FLOOR DRAIN

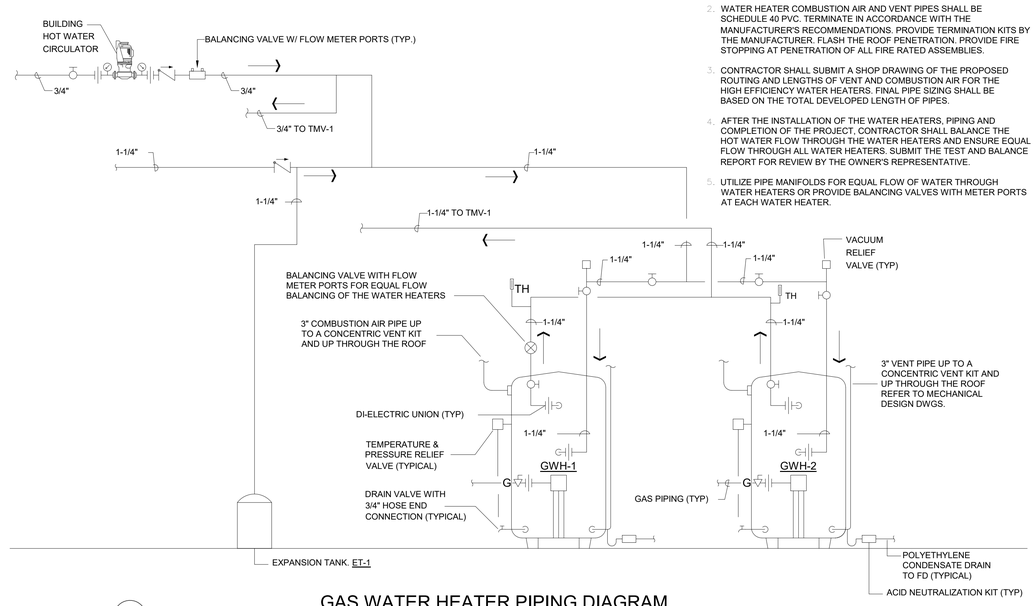
SCALE: NOT TO SCALE



8 SLEEVE THRU EXTERIOR WALL

SCALE: NOT TO SCALE

NOTES:
1. SET DISCHARGE TEMPERATURES OF THE WATER HEATERS AT 140°F.
2. WATER HEATER COMBUSTION AIR AND VENT PIPES SHALL BE SCHEDULE 40 PVC. TERMINATE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. PROVIDE TERMINATION KITS BY THE MANUFACTURER. FLASH THE ROOF PENETRATION. PROVIDE FIRE STOPPING AT PENETRATION OF ALL FIRE RATED ASSEMBLIES.
3. CONTRACTOR SHALL SUBMIT A SHOP DRAWING OF THE PROPOSED ROUTING AND LENGTHS OF VENT AND COMBUSTION AIR FOR THE HIGH EFFICIENCY WATER HEATERS. FINAL PIPE SIZING SHALL BE BASED ON THE TOTAL DEVELOPED LENGTH OF PIPES.
4. AFTER THE INSTALLATION OF THE WATER HEATERS, PIPING AND COMPLETION OF THE PROJECT, CONTRACTOR SHALL BALANCE THE HOT WATER FLOW THROUGH THE WATER HEATERS AND ENSURE EQUAL FLOW THROUGH ALL WATER HEATERS. SUBMIT THE TEST AND BALANCE REPORT FOR REVIEW BY THE OWNER'S REPRESENTATIVE.
5. UTILIZE PIPE MANIFOLDS FOR EQUAL FLOW OF WATER THROUGH WATER HEATERS OR PROVIDE BALANCING VALVES WITH METER PORTS AT EACH WATER HEATER.



3 GAS WATER HEATER PIPING DIAGRAM

SCALE: NOT TO SCALE

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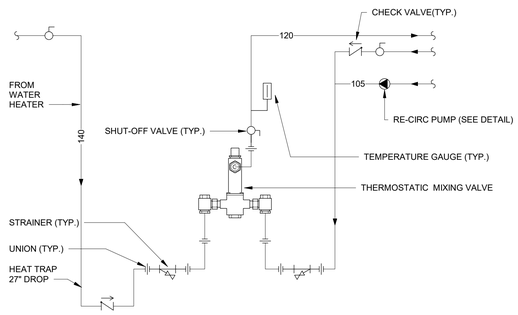
PLUMBING DETAILS

P301

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

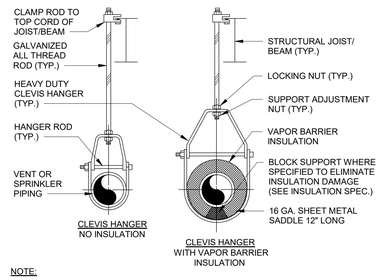
SH. NO. ___ OF ___ DWG. P301



NOTE:
FOR PIPE SIZES SEE SCHEDULE AND/OR RISER DIAGRAM (TYPICAL)

7 THERMOSTATIC MIXING VALVE PIPING

SCALE: NOT TO SCALE

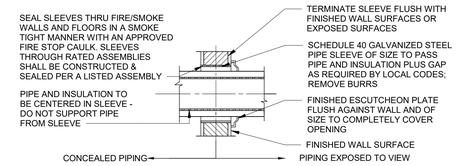


NOTE:

1. ALL PIPE HANGERS SHALL BE PAINTED WITH RUST INHIBITING PAINT AS SPECIFIED.

4 INDIVIDUAL PIPE SUPPORT

SCALE: NOT TO SCALE

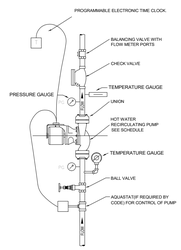


NOTE:

FOR INTERIOR FRAME PARTITIONS-PIPE SLEEVES MAY BE FABRICATED FROM GALVANIZED SHEET METAL; ROUND TUBE CLOSED WITH SNAPLOCK JOINT, WELDED SPIRAL SEAMS, OR WELDED LONGITUDINAL JOINT. FABRICATE FROM THE FOLLOWING GAUGES: 3" AND SMALLER, 20 GAUGE; 4" TO 6", 16 GAUGE; OVER 6", 14 GAUGE.

1 SLEEVE THRU INTERIOR WALL

SCALE: NOT TO SCALE

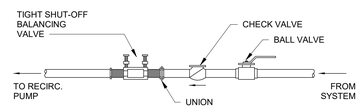


DOMESTIC HOT WATER CIRCULATING PUMP

SCALE

8 THERMOSTATIC MIXING VALVE PIPING

SCALE: NOT TO SCALE

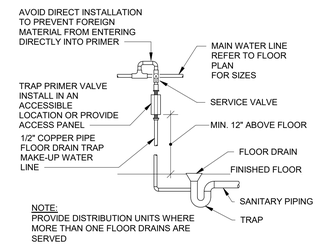


NOTES:

1. INSURE PROPER ACCESS IS PROVIDED TO VALVE AND THAT VALVE CAN BE METERED. DO NOT ORIENT TAPS DOWNWARD.
2. PROVIDE ACCESS PANEL IN HARD CEILING LOCATIONS.
3. PROVIDE TEE HANDLE WHERE LIMITED ACCESS.

5 HOT WATER CIRCULATION BALANCING VALVE

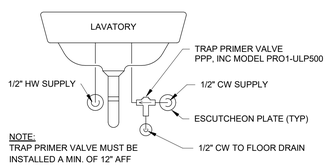
SCALE: NOT TO SCALE



NOTE:
PROVIDE DISTRIBUTION UNITS WHERE MORE THAN ONE FLOOR DRAINS ARE SERVED

2 TRAP PRIMER

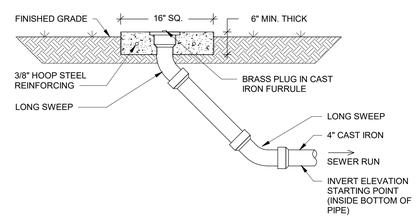
SCALE: NOT TO SCALE



NOTE:
TRAP PRIMER VALVE MUST BE INSTALLED A MIN. OF 12" AFF

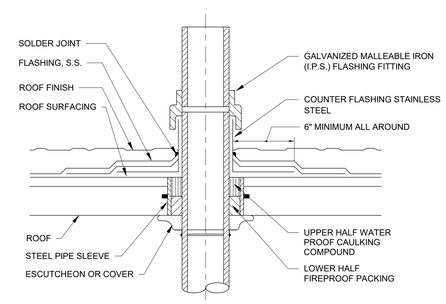
9 BELOW LAVATORY TRAP PRIMER

SCALE: NOT TO SCALE



6 EXTERIOR CLEANOUT

SCALE: NOT TO SCALE



3 VENT THRU ROOF

SCALE: NOT TO SCALE

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PLUMBING DETAILS

P302

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED - NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ___ OF ___ DWG. P302

WATER HAMMER ARRESTOR SCHEDULE

PDI #	MIN.-MAX. FIXTURE UNIT CAPACITY	CONNECTION SIZE	MANUFACTURER & MODEL NUMBER (OR EQUAL)
"A"	1-11	1/2"	PPP, INC. MODEL SC-500
"B"	12-32	3/4"	PPP, INC. MODEL SC-750
"C"	33-60	1"	PPP, INC. MODEL SC-1000
"D"	61-113	1-1/4"	PPP, INC. MODEL SC-1250
"E"	114-154	1-1/2"	PPP, INC. MODEL SC-1500
"F"	155-330	2"	PPP, INC. MODEL SC-2000

NOTES:
1. AIR CHAMBERS ARE NOT ACCEPTABLE EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED
2. SIZE PER MANUFACTURER'S RECOMMENDATIONS
3. PROVIDE ACCESS PANELS WHERE REQUIRED TO BE IN CONCEALED LOCATIONS

SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (INCHES)	MINUMUM SLOPE (INCH PER FOOT)
2-1/2 OR LESS	1/4
3 TO 6	1/8
8 OR LARGER	1/16

TABLE 704.1 OF THE INTERNATIONAL PLUMBING CODE 2018

TRAP PRIMING STATION SCHEDULE

ID	ELECTRICAL CHARACTERISTICS			BASIC OF DESIGN (OR EQUAL)
	AMPS	VOLTAGE	PHASE	
TSP-1	5	120	1	PPP INC. PTS SERIES, SURFACE MOUNTED

PIPING MATERIAL SCHEDULE

PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION
SANITARY DRAIN PIPING (BELOW SLAB)	SCHEDULE 40 PVC AND FITTINGS
SANITARY DRAIN PIPING (ABOVE SLAB)	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
VENT PIPING	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L" COPPER PIPING
NATURAL GAS PIPING	SCHEDULE 40 BLACK STEEL PIPE, W/ CAST IRON FITTING

CLEANOUT SCHEDULE

ID	APPLICATION	BASIC OF DESIGN (OR EQUAL)
CO	FINISHED FLOORS	ZURN Z1400
	CERAMIC & TERRAZO	ZURN Z1400-Z
	UNFINISHED FLOORS	ZURN Z1400-HD
WCO	LINE CLEANOUT	ZURN Z1468
	STACK CLEANOUT	ZURN Z1446
ECO	OUTSIDE AREAS	ZURN Z1400-HD

NOTES
1. INSTALL ECO IN 24x24x4 THICK CONCRETE PAD. TOP OF PAD ELEVATION TO BE 2" ABOVE FINISHED GRADE.
2. PROVIDE ALL CLEANOUTS WITH WIDE ANCHOR FLANGE & CLAMPS DEVICE. ATTACH CLEANOUTS TO MEMBRANE IN FLOOR. WHEN CLEANOUTS ATE LOCATED IN NONOMEMBRANE FLOORS, THEY SHALL BE FLASHED IN ACCORDANCE WITH THE SPECIFICATIONS.
3. PROVIDE LINE & STACK TYPE WALL CLEANOUTS WITH ACCESS COVERS.

PLUMBING FIXTURE SCHEDULE

ID	DESCRIPTION	BASIS OF DESIGN (OR EQUAL)	CONNECTION SIZE				REMARKS
			WASTE	VENT	CW	HW	
P-1	WATER CLOSET	FLOOR MOUNTED, FLUSH TANK, TWO PIECE ELONGATED BOWL, AMERICAN STANDARD 270FA001.020 WITH ELONGATED SOLID PLASTIC SEAT, CLOSED FRONT. 3/8" CHROME PLATED SUPPLY & STOP WAX BOWL RING & WATER CLOSET BOLTS TRIP LEVER TO BE ON THE OPENSIDE, WHITE COLOR	3"	2"	1"	---	1.6 GPF MAX OR AS REQUIRED BY THE GOVERNING CODES
P-2	LAVATORY	WHITE VITREOUS CHINA, UNDERMOUNT BOWL 17"X14"X15.5", AMERICAN STANDARD OVAL 0496.221.020 WITH DELTA FAUCET LAHARA COLLECTION, MODEL 528-SSMPU-DST DIAMOND COATED CERAMIC CARTRIDGE SINGLE LEVER WITH METALLIC POP-UP DRAIN, 2.2 GPM AT 60PSI, STAINLESS STEEL FINISH, PROVIDE CAST BRASS TRAP & SUPPLIES & STOPS, STAINLESS STEEL FINISH	1-1/2"	1-1/2"	1/2"	1/2"	2.2 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES
P-3	TUB & SHOWER	WHITE CAST IRON, 60"X30"X14", WITH ENAMEL FINISH, KOHLER VILLAGER MODEL K-715 WITH DELTA THERMOSTATICALLY CONTROLLED SHOWER VALVE, STAINLESS STEEL FINISH, SCALD-GUARD, METAL LEVER HANDLE, SHOWER ARM, SHOWER HEAT, DIVERTER VALVE	2"	1-1/2"	1/2"	1/2"	2.5 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES
P-4	SINK	SINGLE BASIN, STAINLESS STEEL SINK, 25"X21"X6" DROP 18 GAUGE WITH SOUND DAMPENING, ELKAY DSESR127221 WITH SINGLE HOLE FOR FAUCET & SOAP DISPENSER. KRAUS KPF-161055 FAUCET WITH DUAL FUNCTION PULL-DOWN SPRAYHEAD, BRASS TRAP & SUPPLIES & STOPS WITH STAINLESS STELL FINISH	2"	1-1/2"	1/2"	1/2"	2.2 GPM MAX OR AS REQUIRED BY THE GOVERNING CODES. PROVIDE A 1/2 HP GARBAGE DISPOSAL
P-5	WASH BOX	WASH BOX WITH WATER HAMMER ARRESTORS	2"	1-1/2"	1/2"	1/2"	
P-6	LAUNDRY SINK	FIBERGLASS, TWO-BOWL, FIBERGLASS MIX, 24"X40"X13-3/2 DEEP BOWL, FREESTANDING, FLOOR-FIAT MODEL #FLTDII100, WITH DECK MOUNTED FAUCET A.1	2"	1-1/2"	1/2"	1/2"	
WH-1	WALL HYDRANT	JOSAM 71300, ENCASED NON-FREEZE WALL HYDRANT WITH INTEGRAL VACUUM BREAKER AND KEY LOCK. INSTALL WALL HYDRANT 18" AFF.	--	--	3/4"	--	
HB-1	HOSE BIBB	ZURN Z1333, INTERIOR RECESSED WALL HYDRANT WITH INTERGRAL VACUUM BREAKER AND 3/4" HOSE CONNECTION	--	--	3/4"	--	

GAS FIRED WATER HEATER SCHEDULE

ID	LOCATION	STORAGE CAPACITY (GALLONS) EACH	GAS INPUT (MBTU/HR) EACH	GAS TYPE	MIN. EFFICIENCY (%)	RECOVERY (GPH) EACH @ 100°F DELTA T	INLET TEMP (°F)	OUTLET TEMP (°F)	FLUE SIZE (INCH) EACH		FLUE SIZE (INCH) EACH			BASIS OF DESIGN (OR EQUAL)	REMARKS
									INTAKE	EXHAUST	VOLTS	PHASE	HZ		
GWH-1 & GWH-2	MECHANICAL ROOM	60	120	NATURAL	97	140	40	140	3	3	120	1	60	A.O. SMITH CYCLONE, BTH-120 Mxi	EXTEND FRESH AIR AND EXHAUST OUT TO ATMOSPHERE

NOTES:
1. GAS BURNER SHALL BE CAPABLE OF OPERATING ON A MIN. GAS PRESSURE OF 3.5 INCHES WATER GAUGE AND A MAX. GAS PRESSURE OF 14 INCHES WATER GAUGE.
2. FLUE SIZES ARE NOT NECESSARILY THE EQUIPMENT CONNECTION SIZE. REFER TO MECHANICAL DRAWINGS FOR FLUE SIZES

DOMESTIC WATER EXPANSION TANK SCHEDULE

ID	WATER HEATER VOLUME (GALLONS)	MAX. TEMP. (°F)	MAX. OPERATING PRESSURE (PSIG)	DESIGN FILL PRESSURE (PSIG)	TOTAL TANK VOLUME (GALLONS)	ACCEPTANCE VOLUME (GALLONS)	TANK DIMENSIONS		APPROX. OPERATING WEIGHT (LBS.)	BASIS OF DESIGN (OR EQUAL)	REMARKS
							HEIGHT	DIAMETER			
ET-1	200	140	150	70	16.5	11	25"	15"	50	AMTROL THERM-X-TROL ST-35-CL	

THERMOSTATIC MIXING VALVE SCHEDULE

ID	AREA/SYSTEM SERVED	THERMOSTATIC CONTROLLERS	RUN OUT PIPE SIZES			BASIS OF DESIGN (OR EQUAL)	REMARKS
		GPM (FLOW @ 10 PSI)	CW INLET	HW INLET	TEMPERED WATER OUTLET		
TMV-1	GENERAL BLDG FIXTURES	5.5	3/4"	3/4"	3/4"	LAWLER SERIES 61-15	

NOTES:
1. RUN-OUT PIPE SIZES ARE NOT NECESSARILY MIXING VALVE PIPE SIZES
2. ALL UNITS MUST BE INSTALLED, PIPED, AND ADJUSTED IN STRICT ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS

FLOOR DRAIN SCHEDULE

ID	TYPE	LOCATION/AREA	SIZE	BASIS OF DESIGN (OR EQUAL)	REMARKS
FD-1	FLOOR DRAIN	GENERAL	12X12	ZURN #Z566	W/ 1/2" TRAP PRIMING LINE
HD-1	HUB DRAIN	CUST.	4" STRAINER	ZURN #Z211-S	W/ 1/2" TRAP PRIMING LINE

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

MEP. ENG.

NIST

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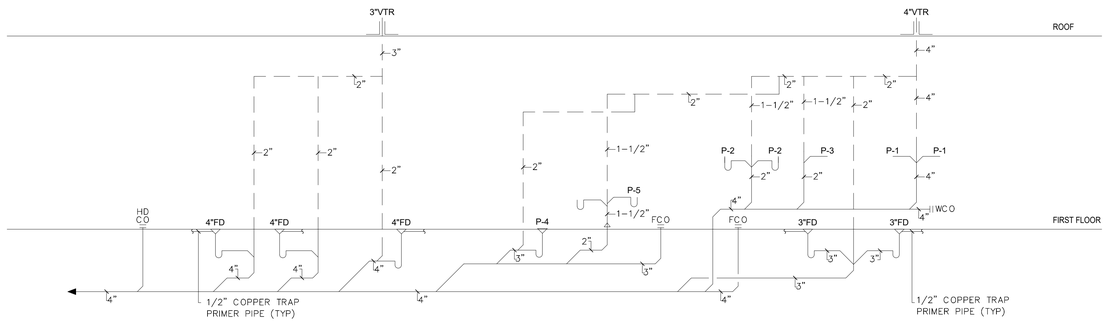
PLUMBING SCHEDULES

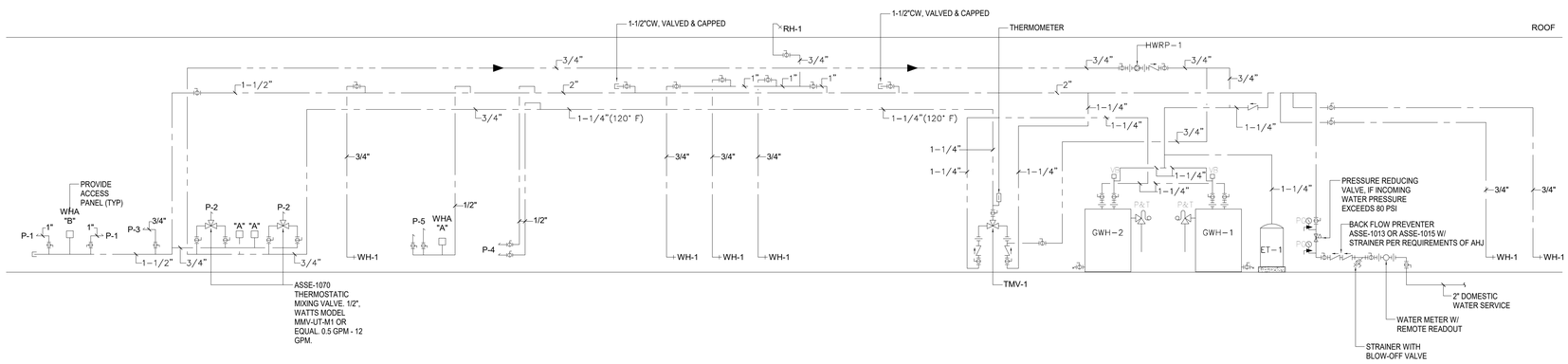
P401

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER VAY	DATE	DRAWN BY AA	DATE 08/15/2022	PROJECT/ W.O. # Project Number

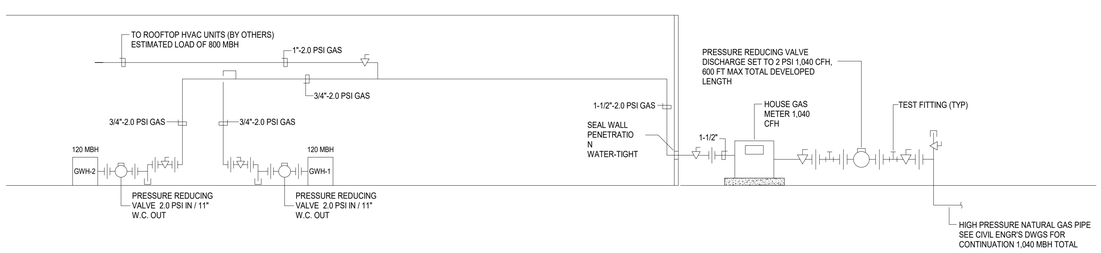
SH. NO. ___ OF ___ DWG. P401



1 RETAIL BLDG - SANITARY RISER DIAGRAM
NTS



2 RETAIL BLDG - WATER RISER DIAGRAM
NTS



3 RETAIL BLDG - GAS RISER DIAGRAM
NTS

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

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PLUMBING RISERS

P501

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ____ OF ____ DWG. P501

PLUMBING GENERAL CONDITIONS

1. THE INTENT OF THESE DRAWINGS IS TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. PROVIDE ALL LABOR AND MATERIAL NECESSARY TO ACHIEVE SUCH ENDS. CONTRACTOR IS OBLIGATED TO EXAMINE PLANS. ANY OBSERVED FAULTS OR AMBIGUITY IN THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY, SO THAT THE MATTER MAY BE RESOLVED PRIOR TO SUBMISSION OF BIDS. BY SUBMISSION OF BID, THE CONTRACTOR SHALL ACKNOWLEDGE ACCEPTANCE OF THESE PLANS AS AN ADEQUATE DEFINITION OF THE SCOPE OF WORK AND EXTRA COST CLAIMS BASED ON INADEQUACY OF PLANS WILL NOT BE CONSIDERED.
2. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.
3. THE PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING WORK WITH OTHER TRADES. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE APPARENT, THE ENGINEER SHALL BE ADVISED IMMEDIATELY, AND AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED.
4. CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AND ARRANGE FOR INSPECTIONS BY LOCAL AUTHORITIES HAVING JURISDICTION.
5. PROVIDE OPENINGS IN BUILDING CONSTRUCTION FOR PASSAGE OF PIPING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER. VERIFY SLAB PENETRATION LOCATIONS PRIOR TO PROCEEDING WITH WORK IN ORDER TO LOCATE OBSTRUCTIONS EMBEDDED IN SLAB.
6. ALL NECESSARY ALLOWANCES AND PROVISIONS SHALL BE MADE BY THIS CONTRACTOR FOR BEAMS, COLUMNS OR OTHER OBSTRUCTIONS OF THE BUILDING OR THE WORK OF OTHER CONTRACTORS, WHETHER OR NOT SAME IS INDICATED. WHERE NECESSARY TO AVOID OBSTRUCTIONS THE DUCTS SHALL BE TRANSFORMED, DIVIDED, OFFSET, RAISED OR LOWERED WITH THE REQUIRED FREE AREA BEING MAINTAINED WHILE MAINTAINING DESIGNED CEILING HEIGHTS.
7. ALL ROTATING PLUMBING EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
9. CONTROLS AND ACCESSORIES FOR EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.
10. PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN HIS WORK AREA DAILY AND SHALL ALSO REMOVE ALL TRASH AFTER WORK COMPLETION.
11. THE WORK DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY PREPARED BASE BUILDING DRAWINGS. IF EXISTING FIELD CONDITIONS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF DISCREPANCIES WHICH WILL AFFECT THE PROPOSED WORK PRIOR TO BEGINNING WORK.
12. SYMBOLS SHOWN ON SCHEDULES DEFINE TYPE OF EQUIPMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR RESEARCHING DRAWINGS FOR EXACT QUANTITIES REQUIRED OF EACH TYPE.
13. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, PIPING, ETC., SHALL BE FREE FROM INTERFERENCE WITH OTHER DISCIPLINES. WHERE CONFLICTS OCCUR, CONTRACTOR SHALL IMMEDIATELY CONTACT THE CONSTRUCTION MANAGER. WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER, OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.
14. THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, DRAIN POINTS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE. ALLOW FOR BETTER ACCESSIBILITY, AND ANY CHANGE FOR THAT PURPOSE SHALL BE APPROVED.
15. ALL EQUIPMENT WHICH REQUIRES INTERFACE WITH THE ELECTRICAL TRADE, SUCH AS CONTROLLING DEVICES, DISCONNECT SWITCHES, MOTORS, ETC., SHALL BE FULLY COORDINATED BETWEEN ALL TRADES.
16. ALL WORK TO BE GUARANTEED FOR ONE YEAR AGAINST LABOR AND MATERIALS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACE OR REPAIRED AS DIRECTED FOR THE DURATION OF THE GUARANTEE PERIOD. TIME FOR THIS GUARANTEE SHALL BEGIN FROM THE DATE OF ACCEPTANCE OF THE COMPLETE WORK BY THE OWNER OR HIS APPOINTED REPRESENTATIVE. NOTE: THESE GUARANTEES SHALL BE SUBMITTED TO THE CO FOR RECORD PURPOSES.
17. AS USED IN THE DRAWINGS FOR PLUMBING WORK, CERTAIN NON-TECHNICAL WORDS SHALL BE UNDERSTOOD TO HAVE SPECIFIC MEANINGS AS FOLLOWS REGARDLESS OF INDICATIONS TO THE CONTRARY IN THE GENERAL CONDITION OR OTHER DOCUMENTS GOVERNING THE MECHANICAL WORK.
    - A. "FURNISH" - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT. ALL AS PART OF THE MECHANICAL WORK. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS OR ENCUMBRANCES.
    - B. "INSTALL" - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
    - C. "PROVIDE" - "FURNISH" AND "INSTALL".
    - D. "NEW" - MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

PLUMBING GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.
2. THE ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE POWER FOR ALL PLUMBING EQUIPMENT. DURING BID PERIOD AND AGAIN PRIOR TO EQUIPMENT ORDERING, THE (GENERAL CONTRACTOR AND THE) PLUMBING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR TO VERIFY THAT ALL EQUIPMENT ARE POWERED, AND PROPER VOLTAGE/WIRING/CAPACITY IS PROVIDED. IN THE EVENT OF REQUIREMENTS AMBIGUITY OR CONFLICT BETWEEN TRADES, THE CONTRACTOR IS REQUIRED TO GENERATE AN RFI ADDRESSING THE ISSUE AND REQUESTING CLARIFICATION. FAILURE TO DO SO WILL NEGATE HIS RIGHT FOR A CHANGE ORDER OR REQUEST FOR ADDITIONAL FUNDS DURING CONSTRUCTION RELATING TO THIS ISSUE.
3. DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE OF WORK, AND TO INDICATE THE GENERAL LOCATIONS OF EQUIPMENT, PIPING, ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT HIS WORK ACCORDING TO THE FOLLOWING GUIDELINES:
    - A. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS FOR EQUIPMENT AND ROUGH INS AND THE EXACT routing OF PIPING PRIOR TO CONSTRUCTION AS TO BEST FIT THE LAYOUT OF THE WORK. COORDINATE FINAL LAYOUT WITH ALL TRADES.
    - B. WHERE OFFSETS IN PIPING ARE REQUIRED TO COORDINATE WORK OF OTHER TRADES, STRUCTURE, PIPING, CONDUITS, DUCTWORK, ETC. OR TO MAINTAIN CEILING HEIGHTS, THEY SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
    - C. UNLESS OTHERWISE NOTED, ALL PIPING TO BE ROUTED CONCEALED IN WALLS, CHASES OR ABOVE CEILING. WATER PIPING SHALL NOT BE ROUTED IN EXTERIOR WALLS. ROUTE ALL PIPING AS HIGH AS POSSIBLE AND ALONG WALLS TO MAXIMIZE SPACE AVAILABLE FOR OTHER TRADES.
    - D. COORDINATE ROUTING OF PIPING TO MAINTAIN ACCESS TO FILTERS, MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS. IN NO CASE SHALL PIPING PASS DIRECTLY OVER ELECTRICAL PANELS OR DISCONNECTS OR RESTRICT ACCESS TO ANY ELECTRICAL EQUIPMENT INCLUDING JUNCTION BOXES.
    - E. ALL EXISTING PIPING SHOWN IS INTENDED TO INDICATE APPROXIMATE SIZE, NUMBER AND LOCATION OF PIPING BRANCHES FOR BIDDING PURPOSES ONLY. CONTRACTOR TO VERIFY EXACT SIZE AND CONFIGURATION PRIOR TO CONSTRUCTION.
    - F. VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SYSTEMS REQUIRING CONNECTION TO NEW PIPING PRIOR TO COMMENCING WORK.
4. UNLESS OTHERWISE NOTED, SANITARY WASTE PIPING SHOWN IS BELOW FLOOR AND ALL OTHER PIPING IS OVERHEAD, ABOVE CEILING. DOMESTIC HOT, COLD AND RE-CIRC. WATER PIPING SHALL BE INSTALLED ON WARM SIDE OF INSULATION.
5. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 2018 INTERNATIONAL PLUMBING CODE (IPC) & ALL LOCAL AMENDMENTS, CODES AND REGULATIONS.
6. DURING THE PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND NAMES). MATERIALS, SIZES, LOCATING AND HOOK-UP POINTS. AS-BUILTS SHALL BE GIVEN TO [OWNER] AT COMPLETION OF JOB.
7. UPON COMPLETION OF JOB, THIS CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKING AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW TO REMAIN.
8. ALL INSTALLATION OF ACCESSIBLE PLUMBING FIXTURES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE ACCESSIBILITY STANDARDS. REFER TO ARCHITECTURAL PLANS FOR SPECIFIC INSTALLATION REQUIREMENTS. LOCATE WATER CLOSET FLUSH VALVE LEVER BETWEEN TOILET AND LAVATORY. COORDINATE LOCATION OF FLUSH VALVE LEVER HANDLE WITH GRAB BAR. COORDINATE WITH ARCHITECTURAL DRAWINGS.
9. ALL VENT AND FLUE OUTLETS SHALL BE 10'-0" MINIMUM HORIZONTALLY AND 3'-0" MINIMUM VERTICALLY FROM ANY FRESH AIR INTAKES.
10. PROVIDE WATER HAMMER ARRESTORS AT ALL PLUMBING FIXTURES OR BATTERY OF FIXTURES WITH QUICK-CLOSING VALVES. WATER HAMMER ARRESTORS SHALL BE SIZED & INSTALLED PER PDI STANDARDS. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED.
11. PROVIDE BALANCING VALVES WITH THREADED CONNECTIONS IN HOT WATER RETURN PIPING, AND BALANCE SYSTEM FOR PROPER OPERATION.
12. COORDINATE WITH ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN PLUMBING.
13. ALL OPENINGS IN CEILINGS AND PLENUM WALLS FOR PLUMBING SHALL BE SEALED AIR TIGHT AND PROTECTED WITH FIRESTOP.
14. SEE SITE PLAN FOR EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.
15. ALL HOSE BIBS SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE SPECIFIED.
16. ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.
17. MAKE PROPER HW, CW, RE-CIRC., WASTE, AND VENT CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAIN, ELBOWS AND CONNECTIONS ARE NOT SHOWN.
18. CLEANOUTS SHALL BE PROVIDED NEAR BASE OF EACH VERTICAL WASTE OR SOLID STACK. PROVIDE 18" MINIMUM CLEARANCE FOR ACCESS.
19. PROVIDE VALVES AND UNIONS WHEN CONNECTING PIPING TO EQUIPMENT. LOCATE VALVES FOR EASY ACCESS AND SERVICING OF EQUIPMENT. PROVIDE ACCESS PANELS TO ALL SHUT-OFF VALVES.
20. PRESSURE TEST ALL NEW WATER PIPES, MINIMUM OF 4 HOURS BEFORE APPLYING PIPE INSULATION. ALL TESTS SHALL BE IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL WATER AUTHORITY.
21. IN THE EVENT OF CONFLICT BETWEEN VARIOUS SECTIONS OF CONSTRUCTION DOCUMENTS, THE MOST STRINGENT OF THE OPTIONS SHALL APPLY FOR BIDDING PURPOSE. AFTER AWARD OF CONTRACT BUT BEFORE STARTING DESIGN/CONSTRUCTION, CONTRACTOR SHALL REQUEST CLARIFICATIONS WITH BID ON ANY CONFLICTING INFORMATION FROM THE OWNER.
22. PROVIDE DIELECTRIC FITTINGS OTHER THAN DIELECTRIC UNIONS WHEN CONNECTING DISSIMILAR MATERIAL PIPING. DIELECTRIC UNIONS NOT PERMITTED.
23. ALL CONCRETE FLOORS, SLABS, BRICK AND BLOCK WALL PENETRATIONS SHALL BE SLEEVED AND FIRE STOPPED.
24. PROVIDE BALL VALVE FOR ALL CW AND HW BRANCH TAKE-OFFS.
25. ALL EXTERIOR ROOF PENETRATIONS SHALL BE SEALED WEATHERTIGHT.
26. SLOPES AND INVERT ELEVATIONS OF ALL INTERIOR PIPING SHALL BE ESTABLISHED BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. ALL PIPING SHALL BE LOCATED AND DETERMINED WHERE TO BE RUN TO AVOID CONFLICT WITH OTHER TRADES.
27. ALL PIPING SHALL BE PROVIDED WITH SECTIONAL SHUT-OFF VALVES AND ACCESS PANELS FOR ALL HIDDEN VALVES. PROVIDE ISOLATION VALVES FOR ALL PLUMBING FIXTURES.
28. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS, LEAKS, LACK OF PROPER SYSTEM PERFORMANCE OR NON-OPERATION FOR A PERIOD OF ONE YEAR AFTER DATED OF FINAL ACCEPTANCE OF WORK BY OWNER.
29. ALL WORK SHALL BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.
30. ALL EXPOSED PIPING TO FIXTURES SHALL BE HEAVILY CHROME-PLATED.
31. MAKE FINAL CONNECTIONS AFTER FIXTURES AND EQUIPMENT ARE SET IN PLACE. ALLREQUIRED TRIM, FAUCETS AND MINOR ITEMS NECESSARY FOR A COMPLETE FUNCTIONING INSTALLATION, SUCH AS STRAINERS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC., SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH EQUIPMENT REQUIREMENTS. ALL FAUCETS TO BE HEAVILY CHROME-PLATED.
32. SLEEVES THROUGH CMU BLOCKS WALLS AND/OR MASONRY FLOORS SHALL BE SCHEDULE 40 BLACK STEEL PIPE. SLEEVES THRU FLOORS SHALL STAND PROUD OF FLOOR SLAB BY 1/2". SLEEVES THROUGH SHEET ROCK WALL SHALL BE 18" GAUGE GALVANIZED SHEET METAL. THE SPACE BETWEEN THE PIPE AND SLEEVE SHALL BE PACKED WITH "3M" EXPANDABLE FOAM FIRE-STOP MATERIAL, TO ASSURE A RATING EQUAL TO THE PENETRATED WALL OR FLOOR.
33. HANGERS SHALL BE OF SIMILAR MATERIAL AS PIPING TO AVOID GALVANIC ACTION IN ACCORDANCE WITH MSS-SP-69, AND LOCATED AT INTERVALS NOT TO EXCEED 6'-0" O.C. WHERE "HUBLESS" PIPE IS BEING USED, PROVIDE HANGERS ON ETHER SIDE OF THE JOINTS AS RECOMMENDED BY CISPI BULLETIN 310. FOR INSULATED PIPING, INSULATION SHALL EXTEND CONTINUOUSLY THRU HANGER WITH OUT INTERRUPTION. PROVIDE SADDLE TO PROTECT INSULATION FROM COMPRESSION.
34. SOIL, WASTE AND VENT PIPING SHALL BE INSTALLED IN ACCORDANCE WITH CODE. HORIZONTAL DRAINAGE PIPING SHALL SLOPE PER 2018 IPC CODE, UNLESS OTHERWISE INDICATED. DOMESTIC WATER SHALL BE SLOPED TO DRAIN POINTS.
35. SUBMIT OPERATING AND MAINTENANCE MANUALS AND WARRANTY CERTIFICATES TO OWNER.
36. THE CONTRACTOR SHALL NOT CORE DRILL CONCRETE SLABS OR PRE-CAST CONCRETE PANELS OR DECK WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE BUILDING OWNER AND SHALL X-RAY PRIOR TO ANY CORE DRILLING. X-RAYING AND CORE DRILLING SLABS SHALL BE SCHEDULED WITH THE BUILDING OWNER, INCLUDE COSTS OF X-RAYING IN BID.
37. FINAL ACCEPTANCE OF PLUMPING SYSTEMS BY THE USER/OWNER, SHALL BE CONTINGENT TO COMPLIANCE WITH ALL COMMISSIONING REQUIREMENTS AND TESTS PRESCRIBED IN THE PROJECT DESIGN DOCUMENTS/SPECIFICATIONS AND APPROVAL BY THE CxA AGENT OF THE PROJECT.
38. UPON COMPLETION OF THE PROJECT, ALL DOMESTIC WATER PIPING SHALL BE SANITIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

ABBREVIATIONS

ABV	ABOVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AP	ACCESS PANEL
APPROX	APPROXIMATE
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISH FLOOR
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BT	BATHTUB
CA	COMPRESSED AIR
CD	CONDENSATE
CLG	CEILING
CO	COMPANY, CLEANOUT
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
CW	COLD WATER
DISP	DISPOSER
DWV	DRAINAGE WASTE & VENT
EA	EACH
ECO	EXTERIOR CLEANOUT
ETR	EXISTING TO REMAIN
EW	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FIXT	FIXTURE
FLR	FLOOR
FM	FORCED MAIN
FS	FLOOR SINK
G	NATURAL GAS
GCO	GRADE CLEANOUT
GD	GROUNDWATER DRAIN TILE
GPF	GALLONS PER FLUSH
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RECIRCULATING
I.E.	INVERT ELEVATION
IW	INDIRECT WASTE
IPC	INTERNATIONAL PLUMBING CODE
LAV	LAVATORY
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	BRITISH THERMAL UNITS (x1000)
MIN	MINIMUM
MISC	MISCELLANEOUS
NFWH	NON-FREEZE WALL HYDRANT
NIC	NOT IN CONTRACT
OD	OVERFLOW ROOF DRAIN
OSD	OPEN SITE DRAIN
PD	PUMPED DISCHARGE
PDI	PLUMBING & DRAINAGE INSTITUTE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RM	ROOM
RTU	ROOF TOP UNIT
SAN	SANITARY
SFU	SUPPLY FIXTURE UNIT
ST	STORMWATER
TP	TRAP PRIMER VALVE
TPS	TRAP PRIMING STATION
TW	TEMPERED WATER
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
XR	EXISTING RELOCATED

LAB/MEDICAL PROJECTS

O	OXYGEN
MA	MEDICAL AIR
LA	LAB AIR
N	NITROGEN
LN	LIQUID NITROGEN
AR	ARGON
HE	HELIUM
SG	SPECIAL GAS
LV	LAB VACUUM
MV	MEDICAL VACUUM
CO2	CARBON DIOXIDE
DI	DEIONIZED WATER
ROS	REVERSE OSMOSIS SUPPLY
ROR	REVERSE OSMOSIS RETURN
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LHWR	LAB HOT WATER RECIRCULATING
VCW	VIVARIUM COLD WATER
VHW	VIVARIUM HOT WATER
NP	NON-POTABLE

SHEET NUMBERING LEGEND

P111A

- DISCIPLINE: "P0" DEMO; "P" NEW WORK
- PLAN TYPE: "1" FLOOR PLAN; "2" ENLARGED FLOOR ETC.
- SYSTEM TYPE: "0" FOR UNDERGROUND; "1" WATER & GAS; "2" DWV & STORM; "3" FIRE PROTECTION
- FLOOR LEVEL: "0" LOWEST FLOOR; "1" NEXT FLOOR LEVEL ETC.
- SECTOR

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	DEMOLISH AND REMOVE
	SOIL OR WASTE PIPING
ST	STORM PIPING
OD	OVERFLOW STORM PIPING
NP	NON-POTABLE WATER PIPING
ST	STORM PIPING BELOW SLAB
	VENT PIPING
CW	COLD WATER PIPING
	COLD WATER PIPING (SINGLE LINE)
HW	HOT WATER PIPING
	HOT WATER PIPING (SINGLE LINE)
HWR	HOT WATER RECRCULATING PIPING
	HOT WATER RECRCULATING PIPING (SINGLE LINE)
G	GAS PIPING
F	FIRE PROTECTION PIPING
	PIPE DOWN OR DROP
	PIPE UP OR RISE/FLOOR CLEANOUT
	CAPPED OR PLUGGED PIPE
	UNION
	WALL CLEANOUT
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	GAS COCK
	SHUTOFF VALVE IN RISE OR DROP
	DOUBLE CHECK BACKFLOW PREVENTER
	RPZ BACKFLOW PREVENTER
	CHECK VALVE
	BALANCING VALVE
	OUTSIDE STEM & YOKE VALVE
	PRESSURE GAGE W/ NEEDLE VALVE
	THERMOMETER
	TEMPERATURE & PRESSURE RELIEF VALVE
VB	VACUUM BREAKER
"A"	WATER HAMMER ARRESTER, LETTER INDICATES PDI
	HOSE BIBB
	WALL HYDRANT
	SOLENOID VALVE
	STRAINER
	PIPE GUIDE/SLEEVE
	PIPE ANCHOR
	FLEXIBLE CONNECTION
	FLOW DIRECTION
	FLOOR DRAIN
	RISER/DETAIL DESIGNATION
	CALL OUT DESIGNATION
X X	METER (GAS/WATER/FIRE)
X XXX	PUMP
	PUMP
M	KEYNOTE TAG
	LIMIT OF DEMOLITION
#	

DOUBLE SYMBOLS

- GATE VALVE
- BUTTERFLY VALVE
- 3-WAY VALVE
- GAS COCK VALVE
- BALL VALVE
- BALANCE VALVE
- SHUT-OFF VALVE
- BACKFLOW PREVENNTER VALVE

REVISION	DESCRIPTION	BY	DATE

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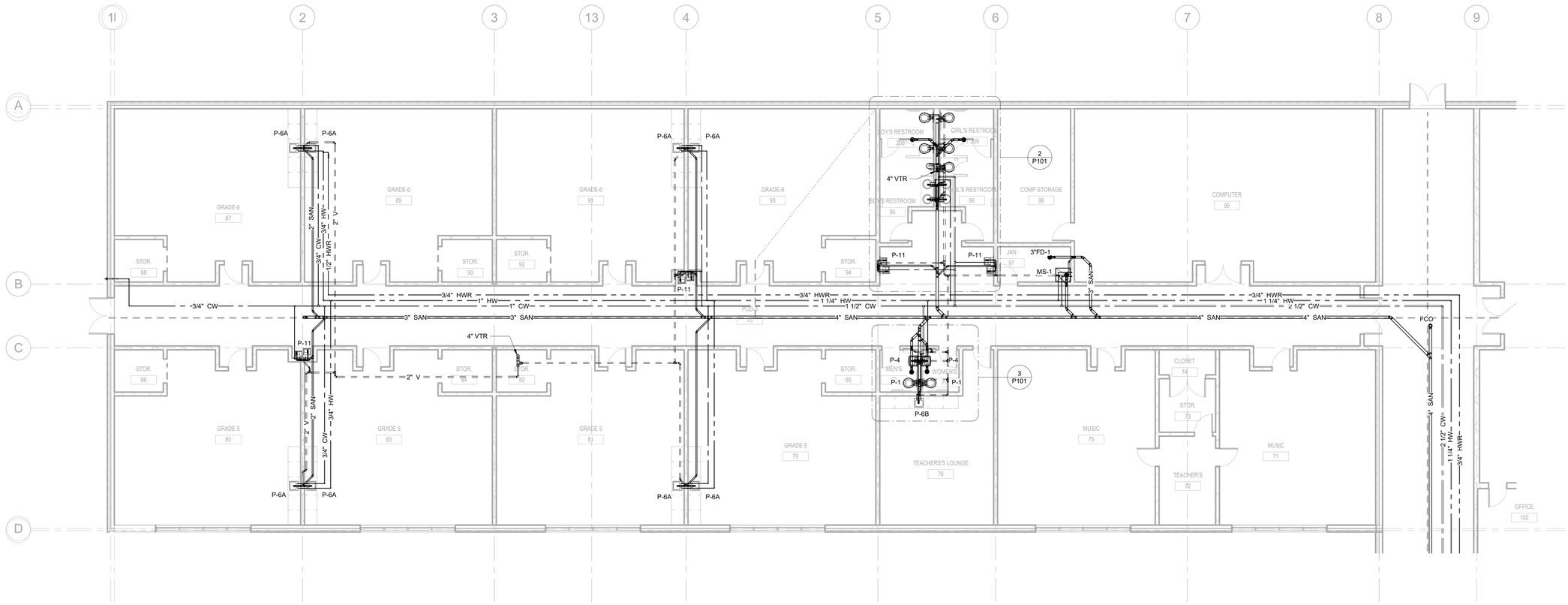
NIST – PRIMARY SCHOOL

PLUMBING COVERSHEET

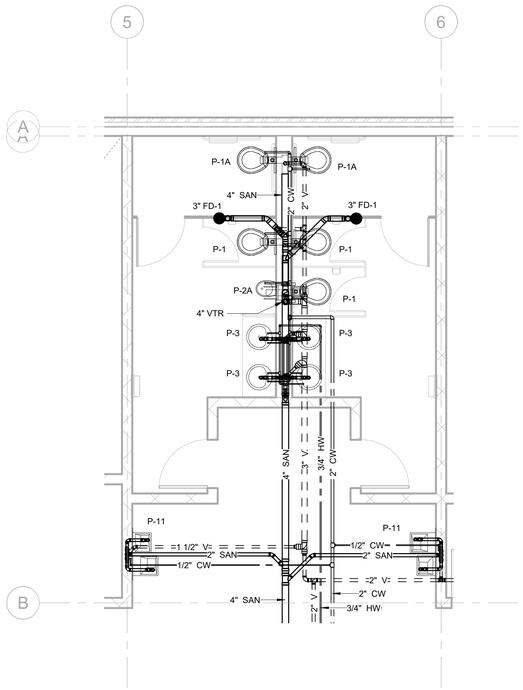
P002

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

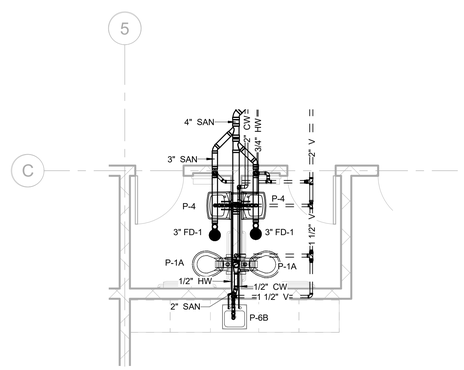
SH. NO. ___ OF ___ DWG. P002



1 FIRST FLOOR - SANITARY - WATER & GAS - AREA A
1/8" = 1'-0"



2 FIRST FLOOR - AREA A - BOYS & GIRLS RESTROOM
1/4" = 1'-0"



3 FIRST FLOOR - AREA A - MEN'S & WOMEN'S RESTROOM
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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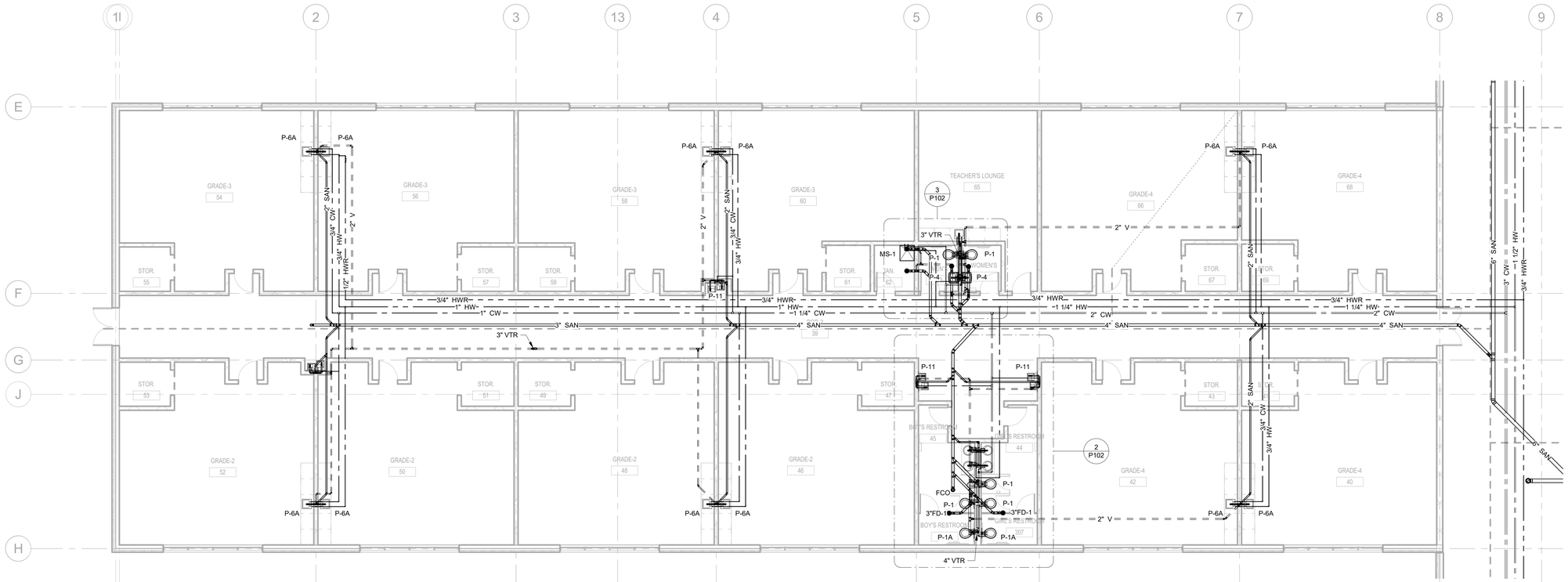
PLUMBING FLOOR PLAN AREA A

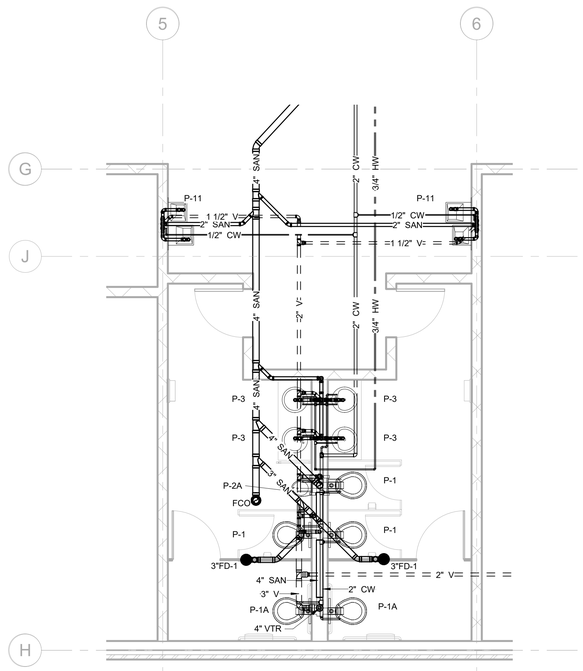
P101

SH. NO. ___ OF ___ DWG. P101

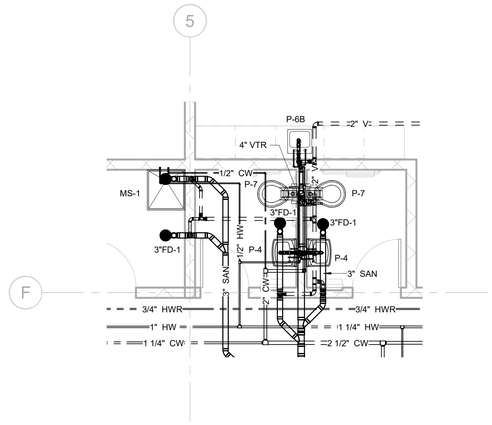
APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER VAY	DATE	DRAWN BY AA	DATE 08/15/2022	PROJECT/ W.O. # Project Number



1 FIRST FLOOR - SANITARY - WATER & GAS - AREA B
1/8" = 1'-0"



2 FIRST FLOOR - AREA B - BOYS & GIRLS RESTROOM
1/4" = 1'-0"



3 FIRST FLOOR - AREA B - MEN'S & WOMEN'S RESTROOM
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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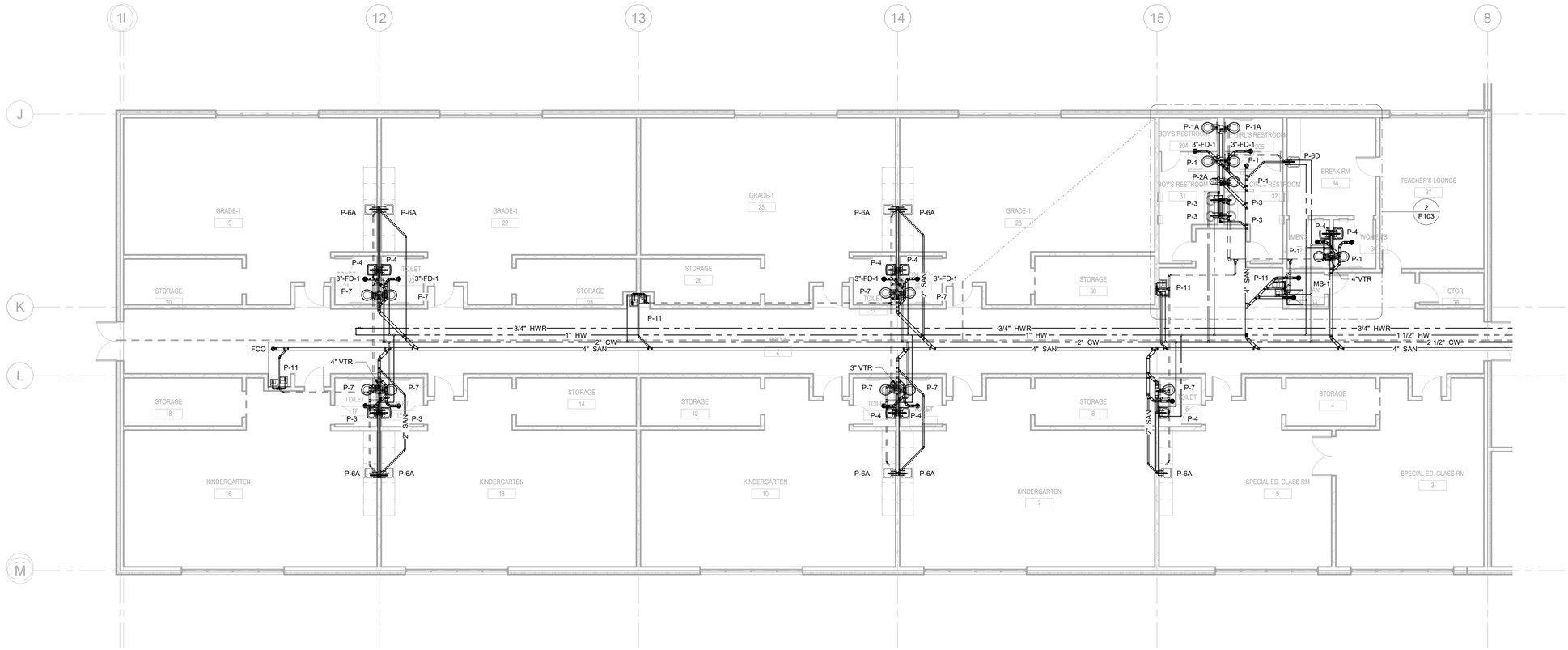
PLUMBING FLOOR PLAN – AREA B

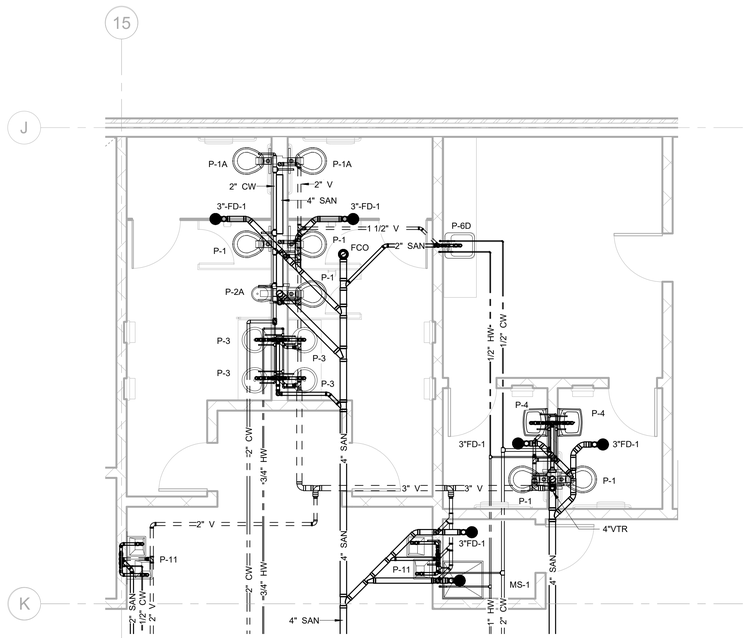
P102

SH. NO. ___ OF ___ DWG. P102

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



1 FIRST FLOOR - SANITARY - WATER & GAS - AREA C
1/8" = 1'-0"



2 FIRST FLOOR - AREA C - BOYS & GIRLS MEN'S & WOMEN'S RESTROOM
1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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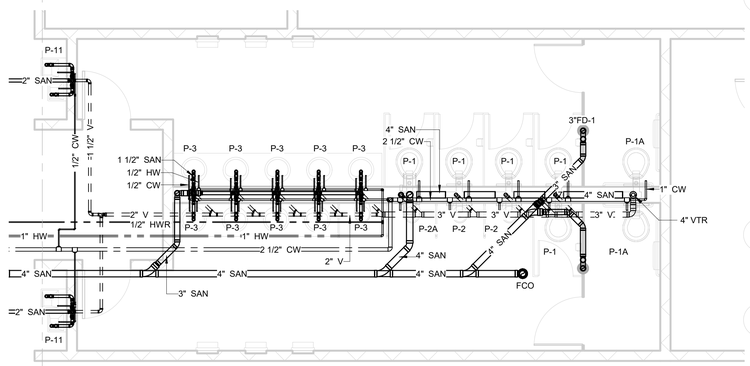
PLUMBING FLOOR PLAN – AREA C

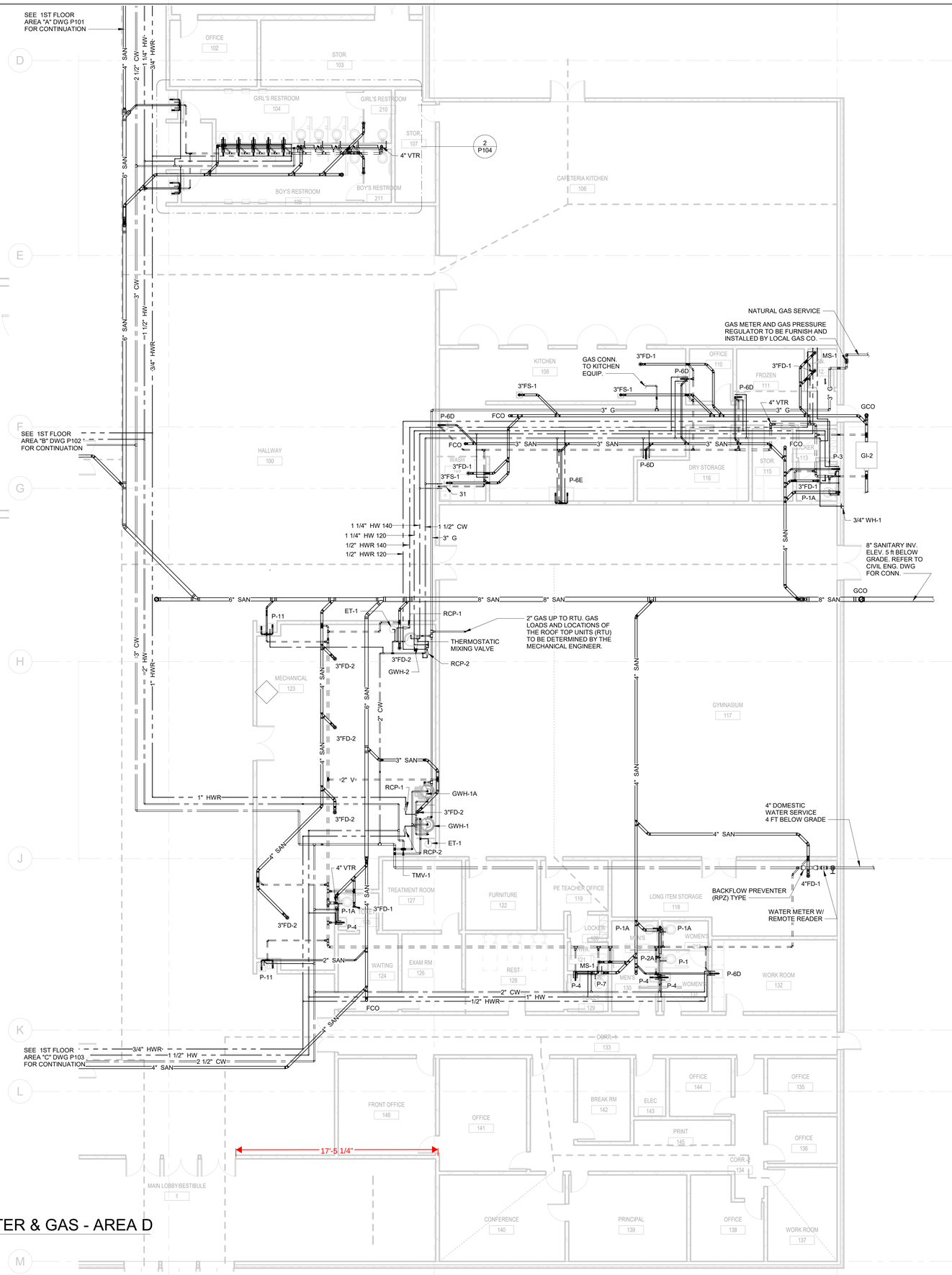
P103

SH. NO. ___ OF ___ DWG. P103

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



2 FIRST FLOOR - AREA D - BOYS & GIRLS RESTROOM
1/4" = 1'-0"



1 FIRST FLOOR - SANITARY - WATER & GAS - AREA D
1/8" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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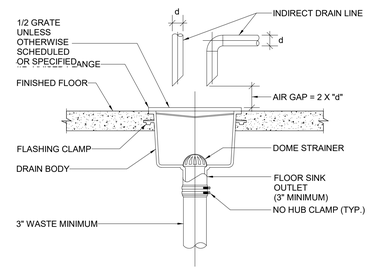
PLUMBING FLOOR PLAN – AREA D

P104

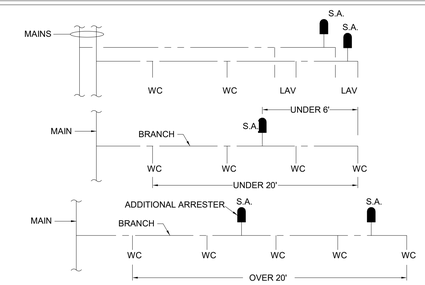
SH. NO.___OF___ DWG. P104

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



4 **FLOOR SINK DETAIL**

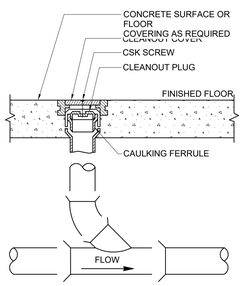
SCALE: NOT TO SCALE



NOTES:
1. SHOCK ARRESTORS SHALL BE INSTALLED ON ALL BRANCH PIPING SERVING PLUMBING FIXTURES, QUICK-CLOSING, VALVES, EQUIPMENT, OR WALL HYDRANTS/HOSE BIBS.
2. BRANCH PIPES WITH A DEVELOPED LENGTH OF 25' OR LESS MAY HAVE ARRESTORS REDUCED BY ONE SIZE.
3. BRANCH PIPES WITH A DEVELOPED LENGTH OF 75' OR GREATER MAY HAVE ARRESTORS REDUCED BY ONE SIZE.
4. STOP VALVE AND SHOCK ARRESTORS SHALL BE ACCESSIBLE THROUGH A SINGLE ACCESS DOOR.
5. SHOCK ARRESTORS SHALL BE CERTIFIED BY THE PLUMBING AND DRAINAGE INSTITUTE (PDI).
6. WHEN WORKING WATER PRESSURE EXCEEDS 65 PSI USE NEXT LARGEST SIZE.
7. MAXIMUM PIPING LENGTH COVERED BY ONE ARRESTOR SHALL BE 20 LINEAR FT.
8. ALL INSTALLATIONS AS DIRECTED BY MANUFACTURER

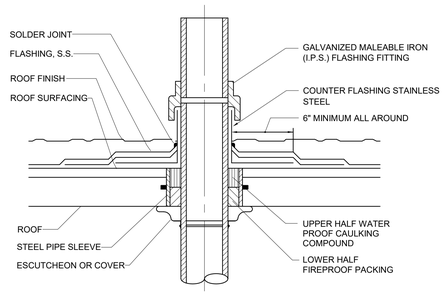
1 **WATER HAMMER ARRESTOR DETAIL**

SCALE: NOT TO SCALE



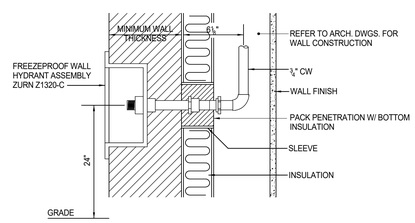
7 **FLOOR CLEANOUT DETAIL**

SCALE: NOT TO SCALE



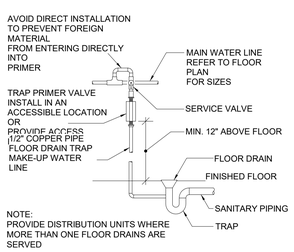
5 **VENT THRU ROOF DETAIL**

SCALE: NOT TO SCALE



2 FREEZEPROOF WALL HYDRANT DETAIL

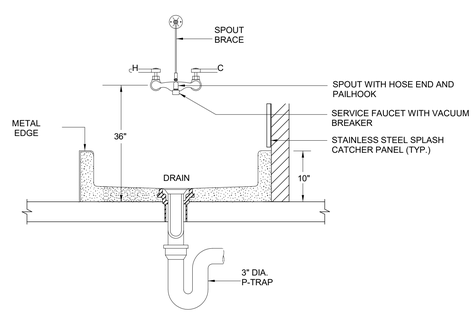
SCALE: NOT TO SCALE



NOTE:
PROVIDE DISTRIBUTION UNITS WHERE MORE THAN ONE FLOOR DRAINS ARE SERVED

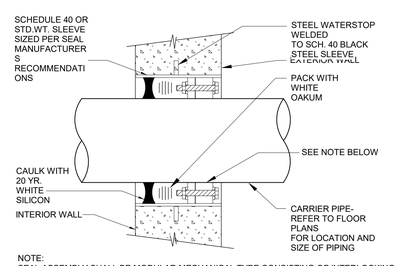
8 **TRAP PRIMER DETAIL**

SCALE: NOT TO SCALE



6 **FLOOR MOUNTED MOP SINK DETAIL**

SCALE: NOT TO SCALE



NOTE:
SEAL ASSEMBLY SHALL BE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING RUBBER LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE CARRIER PIPING AND THE SLEEVE. BOLTS SHALL BE STAINLESS STEEL WITH DELRIN PLASTIC PRESSURE PLATES.

3 **WATERTIGHT PIPE SLEEVE THRU EXTERIOR WALL DETAIL**

SCALE: NOT TO SCALE

REVISION	DESCRIPTION	BY	DATE

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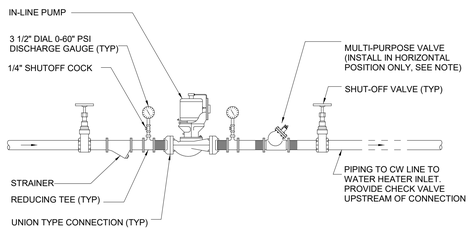
PLUMBING DETAILS

P301

SH. NO. ____ OF ____ DWG. P301

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	VAY PROJECT LEADER	DATE	AA DRAWN BY	DATE 08/15/2022	Project Number PROJECT/ W.O. #

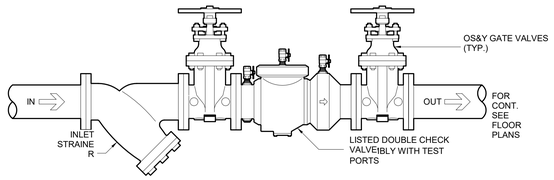


NOTES:

1. CONTRACTOR SHALL INSTALL AQUASTAT IN RETURN LINE FOR PUMP CONTROL
2. WHERE RE-CIRC. PIPING ON PUMP DISCHARGE IS LESS THAN 1-1/2", CONTRACTOR SHALL INSTALL SEPARATE CHECK VALVE, SHUT-OFF VALVE, AND BALANCE VALVE IN LIEU OF MULTI-PURPOSE VALVE.

5 IN-LINE RECIRCULATING PUMP DETAIL

SCALE: NOT TO SCALE

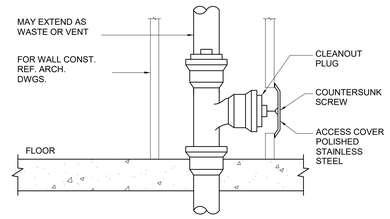


NOTES:

1. UNLESS OTHERWISE NOTED MOUNTING HEIGHT SHALL BE BETWEEN 42" ABOVE THE FINISHED FLOOR AND 12" CLEAR AROUND ALL SIDES

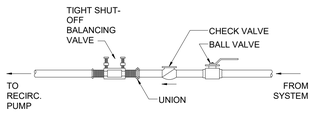
3 DOUBLE CHECK VALVE ASSEMBLY DETAIL

SCALE: NOT TO SCALE



1 WALL CLEANOUT DETAIL

SCALE: NOT TO SCALE

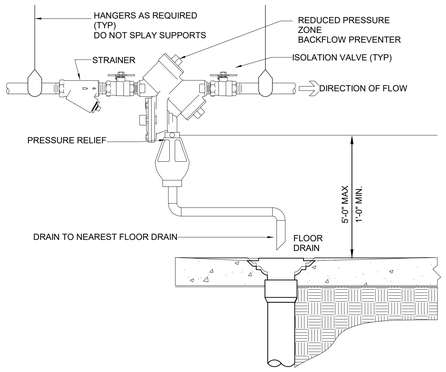


NOTES:

1. INSURE PROPER ACCESS IS PROVIDED TO VALVE AND THAT VALVE CAN BE METERED. DO NOT ORIENT TAPS DOWNWARD.
2. PROVIDE ACCESS PANEL IN HARD CEILING LOCATIONS.
3. PROVIDE TEE HANDLE WHERE LIMITED ACCESS.

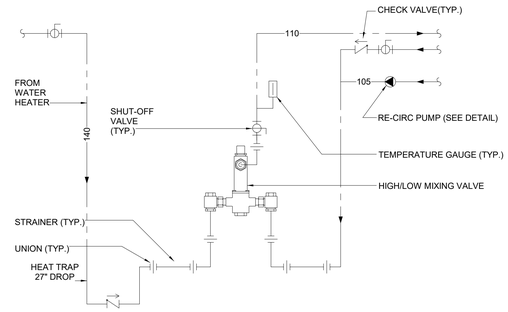
6 HOT WATER CIRCULATION BALANCING VALVE DETAIL

SCALE: NOT TO SCALE



4 TYPICAL BFP (UNDER 2 INCH DIAMETER) INSTALLATION DETAIL

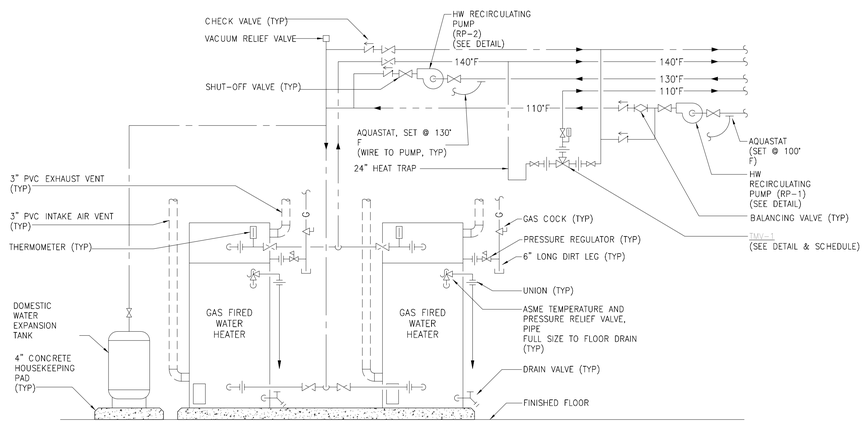
SCALE: NOT TO SCALE



NOTE:
FOR PIPE SIZES SEE SCHEDULE AND/OR RISER DIAGRAM (TYPICAL)

2 THERMOSTATIC MIXING VALVE PIPING DETAIL

SCALE: NOT TO SCALE



NOTES:

1. INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
2. ALL CHECK VALVES, MULTI-PURPOSE VALVES TO BE INSTALLED IN THE HORIZONTAL POSITION ONLY.
3. IN-LINE RE-CIRC. PUMPS SHALL BE INSTALLED AT 66" AFF.
4. MAINTAIN CLEARANCES TO COMBUSTIBLES AS REQUIRED BY WATER HEATER MANUFACTURER.
5. ALL PUMPS MUST BE BALANCED TO SCHEDULED FLOW RATES.
6. VENT AND COMBUSTION AIR TERMINATIONS MUST BE SEPARATED PER NFPA-54 AND MANUFACTURER'S RECOMMENDATIONS.
7. MANIFOLD WATER HEATERS PER MANUFACTURER'S RECOMMENDATIONS TO MAINTAIN A HYDRAULICALLY BALANCED SYSTEM.

7 DUPLEX GAS FIRED WATER HEATER DETAIL

SCALE: NOT TO SCALE

REVISION	DESCRIPTION	BY	DATE

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PLUMBING DETAILS

P302

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

SH. NO. ___ OF ___ DWG. P302

GAS LOAD SCHEDULE

ID	DESCRIPTION	MBH	QTY	SUB-TOTAL
WATER HEATING				
GWH-1	GAS FIRED DOMESTIC WATER HEATER	200	1	200
GWH-2	GAS FIRED DOMESTIC WATER HEATER	200	1	200
HEATING				
DOAS-001	VENTILATION	-	1	-
DOAS-002	VENTILATION	-	1	-
DOAS-003	VENTILATION	-	1	-
RTU-001	ROOF TOP UNIT	-	1	-
RTU-002	ROOF TOP UNIT	-	1	-
		-		-
KITCHEN EQUIPMENT				
12	COMBI/OVEN	170	1	40
13	RANGE/OVEN	164	1	164
14	CONVECTION STEAMER	60	1	60
			TOTAL:	3440

NOTES:

1. GAS PRESSURE OF .25 PSI WITH PRESSURE DROP OF 0.5 PSI.
2. MAX. EQUIVALENT LENGTH OF PIPE = 130 FT.
3. GAS PIPE SIZING IS BASED ON 2012 IFGC TABLE 402.4(1).

THERMOSTATIC MIXING VALVE SCHEDULE

ID	AREA/SYSTEM SERVED	THERMOSTATIC CONTROLLERS	RUN OUT PIPE SIZES			BASIS OF DESIGN (OR EQUAL)	REMARKS
		GPM (FLOW @ 20 PSI)	CW INLET	HW INLET	TEMPERED WATER OUTLET		
TMV-1	GENERAL BLDG FIXTURES	---	---	---	---	---	

NOTES:
1. RUN-OUT PIPE SIZES ARE NOT NECESSARILY MIXING VALVE PIPE SIZES
2. ALL UNITS MUST BE INSTALLED, PIPED, AND ADJUSTED IN STRICT ACCORDANCE WITH MANUFACTURER'S REQUIREMENTS

FLOOR DRAIN SCHEDULE

ID	TYPE	LOCATION/AREA	SIZE	BASIS OF DESIGN (OR EQUAL)	REMARKS
FD-1	FLOOR DRAIN	GENERAL	5" STRAINER	ZURN #Z415B	W/ 1/2" TRAP PRIMING LINE
FD-2	FLOOR DRAIN	MECHANICAL ROOM	9" STRAINER	ZURN #520	W/ 1/2" TRAP PRIMING LINE
FS-1	FLOOR SINK	KITCHEN	12" x 12"	ZURN #1751	W/ 1/2" TRAP PRIMING LINE
OSD	OPEN SITE DRAIN	NEXT TO FREEZER	4"		

PIPING MATERIAL SCHEDULE

PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION
SANITARY DRAIN PIPING (BELOW SLAB)	SCHEDULE 40 PVC AND FITTINGS
SANITARY DRAIN PIPING (ABOVE SLAB)	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
VENT PIPING	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L" COPPER PIPING
NATURAL GAS PIPING	SCHEDULE 40 BLACK STEEL PIPE, W/ CAST IRON FITTING

WATER HAMMER ARRESTOR SCHEDULE

PDI #	MIN.-MAX. FIXTURE UNIT CAPACITY	CONNECTION SIZE	MANUFACTURER & MODEL NUMBER (OR EQUAL)
"A"	1-11	1/2"	PPP, INC. MODEL SC-500
"B"	12-32	3/4"	PPP, INC. MODEL SC-750
"C"	33-60	1"	PPP, INC. MODEL SC-1000
"D"	61-113	1-1/4"	PPP, INC. MODEL SC-1250
"E"	114-154	1-1/2"	PPP, INC. MODEL SC-1500
"F"	155-330	2"	PPP, INC. MODEL SC-2000

NOTES:
1. AIR CHAMBERS ARE NOT ACCEPTABLE EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED
2. SIZE PER MANUFACTURER'S RECOMMENDATIONS
3. PROVIDE ACCESS PANELS WHERE REQUIRED TO BE IN CONCEALED LOCATIONS

INTERCEPTOR SCHEDULE

ID	DESCRIPTION	GREASE CAPACITY (LBS)	INLET/OUTLET SIZES	TANK DIMENSIONS			DRAW-OFF	BASIS OF DESIGN (OR EQUAL)	REMARKS
				HEIGHT	WIDTH	LENGTH			
GI-1	KITCHEN GREASE INTERCEPTOR	1500	4"	7'-3"	6'-4"	7'-10"		COLUMBIA PRE-CAST-1500	

PUMP SCHEDULE

ID	DESCRIPTION	GPM	HEAD (FT.)	HP	VOLTAGE	PHASE	RPM	BASIS OF DESIGN (OR EQUAL)	REMARKS
SP-1	ELEVATOR SUMP PUMP	50	25	1/2	115	1		STANCOR MODEL SE-50 OIL MINDER	
CP-1	HOT WATER CIRCULATING	6	14	1/16	115	1		GRUNFUS MAGNA3	IN-LINE
CP-2	HOT WATER CIRCULATING	2	10	1/16	115	1		GRUNFUS MAGNA3	IN-LINE

PLUMBING FIXTURE SCHEDULE

ID	DESCRIPTION	BASIS OF DESIGN (OR EQUAL)	CONNECTION SIZE				REMARKS
			WASTE	VENT	CW	HW	
P-1	WATER CLOSET	AMERICAN STANDARD MILLENIUM 2856.128 K-4406SLOAN OPTIMA 11-1.6 ES-S TMO FLUSH VALVE	4"	2"	1"	---	WALL MOUNTED, 1.6 GPF, 15" MONTNG HEIGHT, ELONGATED OPEN FRONT SEAT
P-1A	WATER CLOSET - ADA	AMERICAN STANDARD MILLENIUM 2856.128 SLOAN OPTIMA 11-1.6 ES-S TMO FLUSH VALVE	4"	2"	1"	---	WALL MOUNTED, 1.6 GPF, ADA, 17" MOUNTING HEIGHT, ELONGATED OPEN FRONT SEAT
P-2	URINAL	SLOAN WEUS-1000.1401-0.125 ECOS BATTERY FLUSH VALVE	2"	2"	3/4"	---	1.0 GPF, 24" MOUNTING HEIGHT
P-2A	URINAL - ADA	SLOAN WEUS-1000.1401-0.125 ECOS BATTERY FLUSH VALVE	2"	2"	3/4"	---	ADA, .125 GPF, 15" MOUNTING HEIGHT
P-3	LAVATORY	SLOAN SS-3001 WITH SLOAN ETF-80 OPTIMA HARDWIRED SENSOR FAUCET	1-1/2"	1-1/2"	1/2"	1/2"	OVAL UNDERMOUNT, 0.5 GPM SET @ 12 SEC. CYCLE (0.1 GPC), ASSE 1070 BELOW LAV MIXING VALVE
P-4	LAVATORY - ADA	SLOAN WALLMOUNT SS-3103 SLOAN OPTIMA ETF-80 HARDWIRED SENSOR FAUCET	1-1/2"	1-1/2"	1/2"	1/2"	ADA, WALL MOUNTED, 0.5 GPM SET @ 12 SEC. CYCLE (0.1 GPC), ASSE 1070 BELOW LAV MIXING VALVE, INSULATE TRAP & SUPPLIES
P-5	SHOWER - ADA	AQUA-BATH C4136BF-FUS WITH POWERS P905H-K1-1B PRESSURE BALANCING VALVE	2"	1-1/2"	1/2"	1/2"	SHOWER HEAD 2.5 GPM, INCLUDE SHOWERHEAD, ARM, FLANGE, DIVERTER AND HANDHELD SHOWER SYSTEM
P-6A	CLASSROOM SINK	ELKAY CDKAD251765 WITH FAUCET MODEL LKD2432-LK114A FLEXI-GUARD BUBBLER	1-1/2"	1-1/2"	1/2"	1/2"	STAINLESS STEEL, COUNTER MOUNTED
P-6B	SINK	ELKAY DLR202210 WITH CHICAGO FAUCET MODEL 1100-G2E3-317AB	1-1/2"	1-1/2"	1/2"	1/2"	STAINLESS STEEL, COUNTER MOUNTED
P-6C	SINK	ELKAY DLRQ252210 WITH CHICAGO FAUCET MODEL 1100-G2E3-317AB					STAINLESS STEEL, COUNTER MOUNTED
P-6E	SINK	ELKAY DLRSS332212 WITH CHICAGO FAUCET MODEL 1100-G2E3-317AB	2"	1-1/2"	1/2"	1/2"	STAINLESS STEEL, COUNTER MOUNTED W/ GARBAGE DISPOSER INSINKERATOR BADGER 5XP - 3/4 HP
P-6D	SINK	ELKAY LR3322EK WITH CHICAGO FAUCET MODEL 1100-G2E3-317AB	1-1/2"	1-1/2"	1/2"	1/2"	SINK SHALL DRAIN TO NEUTRALIZATION TANK IN SCIENCE LAB WHERE INDICATED.
P-7	WATER CLOSET	AMERICAN STANDARD BABY DEVORO-FLOWISE 2282.001 WITH SLOAN DUAL FLUSH WES-111	4"	2"	1"	---	FLOOR MOUNTED 1.28 GPF, 10" MOUNTING HEIGHT, ROUND FRONT SEAT
P-8	WATER CLOSET	AMERICAN STANDARD MADERA WITH SLOAN DUAL FLUSH WES-111	4"	2"	1"	---	FLOOR MOUNTED, 1.28 GPF, 15" MONTNG HEIGHT, ELONGATED OPEN FRONT SEAT
P-10	MOP SINK	FLORESTONE 20 FIAT MODEL 830-AA FAUCET	3"	1 1/2"	3/4"	3/4"	FLOOR MOUNTED, PROVIDE MOP BRACKET (T-40) & HOSE (T35)
P-11	ELECTRIC WATER COOLER	ELKAY VANDAL RESISTANT EZH2O LVRCTL8WS & LVRCTLDDWS WITH FLEXI-GUARD BUBBLER	1 1/2"	1 1/2"	1/2"		ADA, DUAL HEIGHT
P-11A	ELECTRIC WATER COOLER	ELKAY VANDAL RESISTANT EZH2O LVRCTL8WS & LVRCTLDDWS WITH FLEXI-GUARD BUBBLER	1 1/2"	1 1/2"	1/2"		CHILDREN ADA HEIGHT DUAL HEIGHT
P-12	WASHER BOX	GUY GRAY RECESSED BOX	2"	1 1/2"	3/4"	3/4"	

1. PROVIDE POINT OF USE THERMOSTATIC MIXING VALVE-ASSE-1070.
2. PER DCPS DESIGN GUIDELINES CHAPTER 7, PLUMBING DESIGN CRITERIA, G-PLUMBING FIXTURES, ITEM 17, ALL ART ROOM SINKS SHALL BE PROVIDED WITH A PLASTER TRAP/SOLIDS INTERCEPTOR. PROVIDE ZURN Z1180 SOLIDS INTERCEPTOR INSIDE CABINET.
3. PER DCPS DESIGN GUIDELINES CHAPTER 7, PLUMBING DESIGN CRITERIA, G-PLUMBING FIXTURES, ITEM 7, ALL SCIENCE SINKS SHALL BE PROVIDED BY CASEWORK CONTRACTOR. SEE ARCHITECTURAL DOCUMENTS FOR CLARIFICATION OF SINK REQUIREMENTS. PLUMBER IS RESPONSIBLE FOR ROUGH-INS AND FINAL CONNECTIONS ONLY FOR SCIENCE SINKS. PLUMBER ALSO RESPONSIBLE TO PROVIDE 5 GALLON ACID NEUTRALIZATION TANK IN CABINET BENEATH EACH SCIENCE SINK. WASTE PIPING FROM SINK TO TANK SHALL BE ACID RESISTANT POLYPROPYLENE WITH MECHANICAL JOINTS. PROVIDE 50 POUND BAG OF LIMESTONE CHIPS MADE FOR ACID NEUTRALIZATION FOR EACH SINK. ACID VENT SHALL BE ROUTED TO ATMOSPHERE INDEPENDENT OF OTHER VENT PIPING.

KITCHEN EQUIPMENT FIXTURE SCHEDULE

ID	DESCRIPTION	WATER		WASTE			GAS	REMARKS
		CW	HW	INDIRECT	DIRECT	VENT		
9	HANDSINK	1/2"	1/2"		1-1/2"	1-1/2"		
12	COMVECTION OVEN, MOBILE						3/4"	170 CFH
13	RANGE/OVEN, MOBILE						3/4"	184 CFH
14	CONVECTION STEAMER	1/2"					1/2"(2)	60 CFH
16	PRE SINK	1/2"	1/2"	1-1/2"(2)				
21a	HOT FOOD SERVING COUNTER	1/2"		3/4"				
25	SOILED DISH TABLE PRE-RINSE	1/2"	1/2"					
26	DISPOSER	1/2"			2"	1-1/2"		SS-200 2HP, 208 V, 3PH
27	DISHMACHINE		3/4"					
31	POT WASHING SINK	3/4"	3/4"		2"(3)			
38	MOP SINK	3/4"	3/4"		3"	1-1/2"		

NOTES:
1. KITCHEN EQUIPMENT PROVIDED UNDER FOOD SERVICE DRAWINGS. PROVIDE ROUGH-IN AND FINAL CONNECTION UNDER THIS DIVISION. COORDINATE FINAL CONNECTION AND ROUGH-IN REQUIREMENTS WITH FOOD SERVICE DRAWINGS.
2. EQUIPMENT NO.'S ARE PER THE KITCHEN EQUIPMENT DRAWINGS.

DOMESTIC WATER EXPANSION TANK SCHEDULE

ID	WATER HEATER VOLUME (GALLONS)	MAX. TEMP. (°F)	MAX. OPERATING PRESSURE (PSIG)	DESIGN FILL PRESSURE (PSIG)	TOTAL TANK VOLUME (GALLONS)	ACCEPTANCE VOLUME (GALLONS)	TANK DIMENSIONS		APPROX. OPERATING WEIGHT (LBS.)	BASIS OF DESIGN (OR EQUAL)	REMARKS
							HEIGHT	DIAMETER			
ET-1	200	140	150	55	14	8.96	20"	17"	120	AMTROL THERM-X-TROL ST-447-C	
ET-2	100	140	150	55	6	3.76	15"	11"		AMTROL ST-12V	

GAS FIRED WATER HEATER SCHEDULE

ID	LOCATION	STORAGE CAPACITY (GALLONS)	GAS INPUT (BTU/HR)	GAS TYPE	MIN. EFFICIENCY	RECOVERY (GPH @100)	INLET TEMP (°F)	OUTLET TEMP (°F)	FLUE SIZE		ELECTRICAL CHARACTERISTICS			BASIS OF DESIGN (OR EQUAL)	REMARKS
									INTAKE	EXHAUST	VOLTS	PHASE	HZ		
GWH-1 & GWH-1A	MECHANICAL ROOM	100	199,000	NAT	96	230	40	140	3"	3"	115	1	60	AO SMITH- CYCLONE MODEL BTH-199Mxi	
GWH-2	MECHANICAL ROOM	100	199,000	NAT.	96	230	40	140	3"	3"	115	1	60	AO SMITH- CYCLONE MODEL BTH-199Mxi	

NOTES:
1. GAS BURNER SHALL BE CAPABLE OF OPERATING ON A MIN. GAS PRESSURE OF [ ] INCHES WATER GUAGE AND A MX. GAS PRESSURE OF [ ] INCHES WATER GUAGE
2. FLUE SIZES ARE NOT NECESSARILY THE EQUIPMENT CONNECTION SIZE.

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

MEP. ENG.

NIST

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PLUMBING SCHEDULES

P401

SH. NO.___OF ___ DWG. P401

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number

1 SCHOOL SANITARY RISER DIAGRAM

1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

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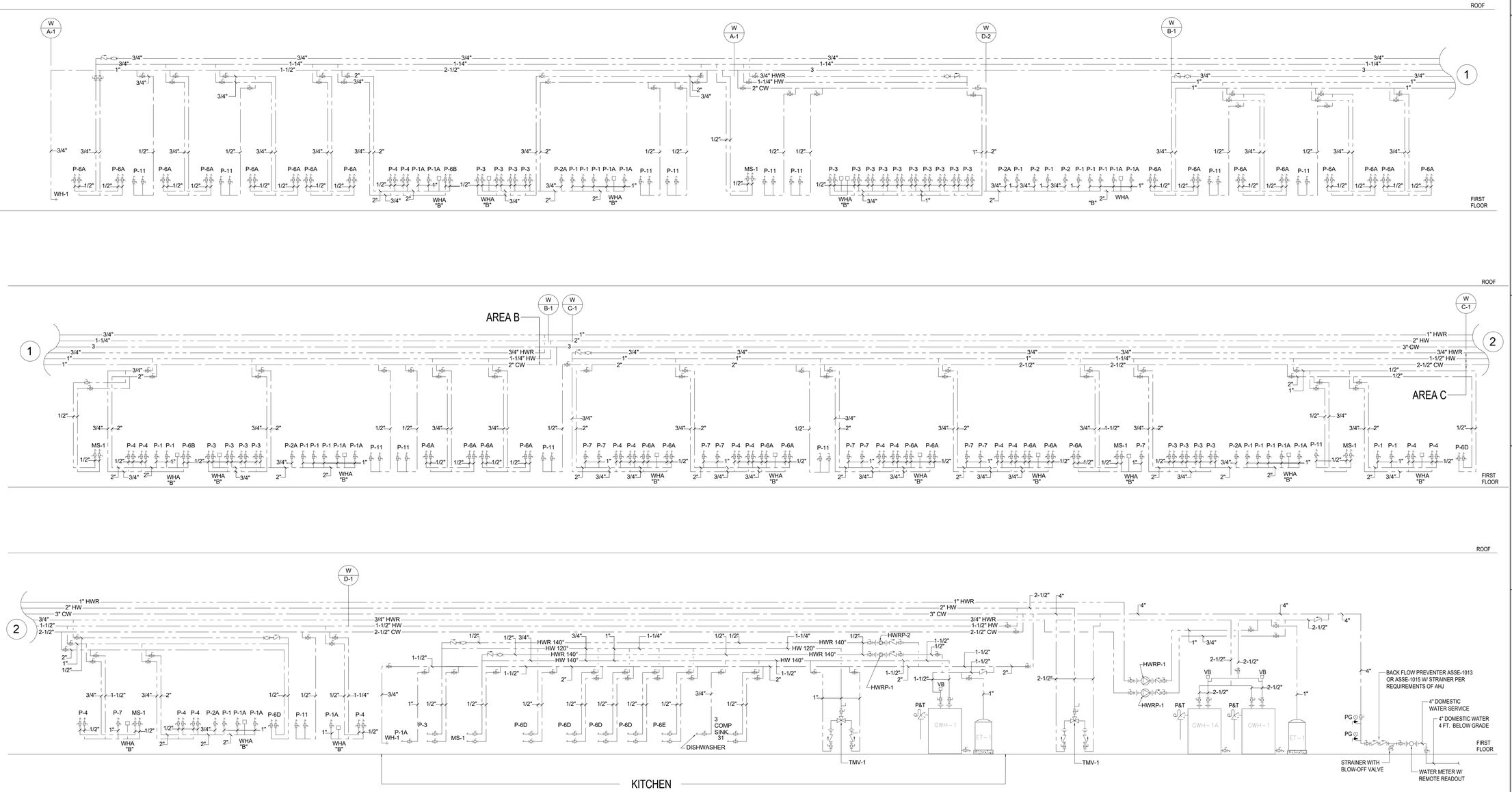
PLUMBING SANITARY RISER DIAGRAM

P501

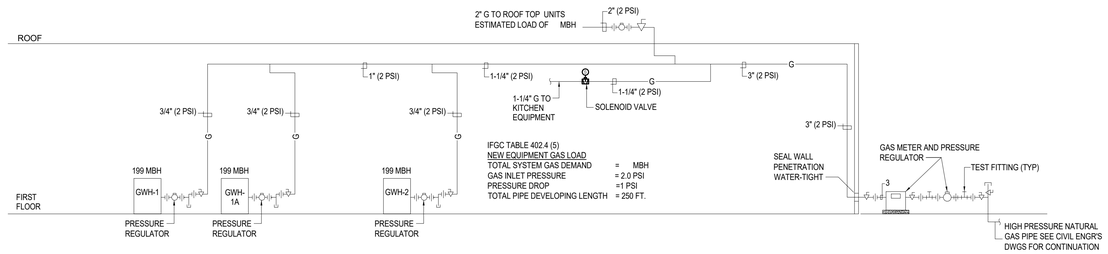
APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO. ___ OF ___ DWG. P501



1 SCHOOL WATER RISER DIAGRAM

1/4" = 1'-0"



2 SCHOOL GAS RISER DIAGRAM

1/4" = 1'-0"

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

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PLUMBING WATER & GAS RISER DIAGRAM

P502

SH. NO. ____ OF ____ DWG. P502

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	VAY PROJECT LEADER	DATE	AA DRAWN BY	08/15/2022 DATE	Project Number PROJECT/ W.O. #

PLUMBING GENERAL CONDITIONS

1. THE INTENT OF THESE DRAWINGS IS TO PROVIDE COMPLETE AND PROPERLY FUNCTIONING PLUMBING SYSTEMS. PROVIDE ALL LABOR AND MATERIAL NECESSARY TO ACHIEVE SUCH ENDS. CONTRACTOR IS OBLIGATED TO EXAMINE PLANS. ANY OBSERVED FAULTS OR AMBIGUITY IN THESE PLANS SHALL BE CALLED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY, SO THAT THE MATTER MAY BE RESOLVED PRIOR TO SUBMISSION OF BIDS. BY SUBMISSION OF BID, THE CONTRACTOR SHALL ACKNOWLEDGE ACCEPTANCE OF THESE PLANS AS AN ADEQUATE DEFINITION OF THE SCOPE OF WORK AND EXTRA COST CLAIMS BASED ON INADEQUACY OF PLANS WILL NOT BE CONSIDERED.

2. ALL WORK ON THIS PROJECT SHALL BE INSTALLED IN ACCORDANCE WITH APPLICABLE CODES AND REGULATIONS.

3. THE PLUMBING CONTRACTOR SHALL COORDINATE THE INSTALLATION OF PLUMBING WORK WITH OTHER TRADES. MINOR DEVIATIONS FROM THE PLANS MAY BE MADE TO AVOID MINOR CONFLICTS. WHEN MAJOR CONFLICTS ARE APPARENT, THE ENGINEER SHALL BE ADVISED IMMEDIATELY, AND AFFECTED WORK SHALL NOT BE INSTALLED UNTIL THE CONFLICT HAS BEEN RESOLVED.

4. CONTRACTOR SHALL OBTAIN AND PAY FOR PERMITS AND ARRANGE FOR INSPECTIONS BY LOCAL AUTHORITIES HAVING JURISDICTION.

5. PROVIDE OPENINGS IN BUILDING CONSTRUCTION FOR PASSAGE OF PIPING. DO NOT PENETRATE STRUCTURAL MEMBERS WITHOUT PRIOR APPROVAL OF ARCHITECT AND STRUCTURAL ENGINEER. VERIFY SLAB PENETRATION LOCATIONS PRIOR TO PROCEEDING WITH WORK IN ORDER TO LOCATE OBSTRUCTIONS EMBEDDED IN SLAB.

6. ALL NECESSARY ALLOWANCES AND PROVISIONS SHALL BE MADE BY THIS CONTRACTOR FOR BEAMS, COLUMNS OR OTHER OBSTRUCTIONS OF THE BUILDING OR THE WORK OF OTHER CONTRACTORS, WHETHER OR NOT SAME IS INDICATED. WHERE NECESSARY TO AVOID OBSTRUCTIONS THE DUCTS SHALL BE TRANSFORMED, DIVIDED, OFFSET, RAISED OR LOWERED WITH THE REQUIRED FREE AREA BEING MAINTAINED WHILE MAINTAINING DESIGNED CEILING HEIGHTS.

7. ALL ROTATING PLUMBING EQUIPMENT SHALL BE MOUNTED ON VIBRATION ISOLATION IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

8. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.

9. CONTROLS AND ACCESSORIES FOR EQUIPMENT SHALL BE PROVIDED BY EQUIPMENT MANUFACTURER.

10. PLUMBING CONTRACTOR SHALL THOROUGHLY CLEAN HIS WORK AREA DAILY AND SHALL ALSO REMOVE ALL TRASH AFTER WORK COMPLETION.

11. THE WORK DETAILED ON THESE PLANS IS BASED ON PREVIOUSLY PREPARED BASE BUILDING DRAWINGS. IF EXISTING FIELD CONDITIONS ARE DIFFERENT THAN SHOWN, THE CONTRACTOR SHALL ADVISE THE ENGINEER OF DISCREPANCIES WHICH WILL AFFECT THE PROPOSED WORK PRIOR TO BEGINNING WORK.

12. SYMBOLS SHOWN ON SCHEDULES DEFINE TYPE OF EQUIPMENT ONLY. CONTRACTOR IS RESPONSIBLE FOR RESEARCHING DRAWINGS FOR EXACT QUANTITIES REQUIRED OF EACH TYPE.

13. CONTRACTOR SHALL VERIFY THAT ALL EQUIPMENT, PIPING, ETC., SHALL BE FREE FROM INTERFERENCE WITH OTHER DISCIPLINES. WHERE CONFLICTS OCCUR, CONTRACTOR SHALL IMMEDIATELY CONTACT THE CONSTRUCTION MANAGER. WHERE THE WORK OF VARIOUS TRADES WILL BE INSTALLED IN CLOSE PROXIMITY TO ONE ANOTHER, OR WHERE THERE IS EVIDENCE THAT THE WORK OF ONE TRADE WILL INTERFERE WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL ASSIST IN WORKING OUT SPACE CONDITIONS TO MAKE A SATISFACTORY ADJUSTMENT. IF THE CONTRACTOR ALLOWS ONE TRADE TO INSTALL HIS WORK BEFORE COORDINATING WITH WORK OF OTHER TRADES, THE CONTRACTOR SHALL MAKE NECESSARY CHANGES TO CORRECT THE CONDITION WITHOUT EXTRA CHARGE.

14. THE CONTRACTOR SHALL LOCATE ALL EQUIPMENT WHICH MUST BE SERVICED, OPERATED, MAINTAINED IN FULLY ACCESSIBLE POSITION. EQUIPMENT SHALL INCLUDE, BUT NOT BE LIMITED TO, VALVES, TRAPS, CLEANOUTS, MOTORS, CONTROLLERS, DRAIN POINTS, ETC. IF REQUIRED FOR ACCESSIBILITY, FURNISH ACCESS DOORS FOR THIS PURPOSE. MINOR DEVIATIONS FROM DRAWINGS MAY BE MADE. ALLOW FOR BETTER ACCESSIBILITY, AND ANY CHANGE FOR THAT PURPOSE SHALL BE APPROVED.

15. ALL EQUIPMENT WHICH REQUIRES INTERFACE WITH THE ELECTRICAL TRADE, SUCH AS CONTROLLING DEVICES, DISCONNECT SWITCHES, MOTORS, ETC., SHALL BE FULLY COORDINATED BETWEEN ALL TRADES.

16. ALL WORK TO BE GUARANTEED FOR ONE YEAR AGAINST LABOR AND MATERIALS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP, AS WELL AS DAMAGE TO THE WORK OF ALL TRADES RESULTING FROM SAME, SHALL BE REPLACE OR REPAIRED AS DIRECTED FOR THE DURATION OF THE GUARANTEE PERIOD. TIME FOR THIS GUARANTEE SHALL BEGIN FROM THE DATE OF ACCEPTANCE OF THE COMPLETE WORK BY THE OWNER OR HIS APPOINTED REPRESENTATIVE. NOTE: THESE GUARANTEES SHALL BE SUBMITTED TO THE CO FOR RECORD PURPOSES.

17. AS USED IN THE DRAWINGS FOR PLUMBING WORK, CERTAIN NON-TECHNICAL WORDS SHALL BE UNDERSTOOD TO HAVE SPECIFIC MEANINGS AS FOLLOWS REGARDLESS OF INDICATIONS TO THE CONTRARY IN THE GENERAL CONDITION OR OTHER DOCUMENTS GOVERNING THE MECHANICAL WORK.
    - A. "FURNISH" - PURCHASE AND DELIVER TO THE PROJECT SITE COMPLETE WITH EVERY NECESSARY APPURTENANCE AND SUPPORT, ALL AS PART OF THE MECHANICAL WORK. PURCHASING SHALL INCLUDE PAYMENT OF ALL SALES TAXES AND OTHER SURCHARGES AS MAY BE REQUIRED TO ASSURE THAT PURCHASED ITEMS ARE FREE OF ALL LIENS, CLAIMS OR ENCUMBRANCES.
    - B. "INSTALL" - UNLOAD AT THE DELIVERY POINT AT THE SITE AND PERFORM EVERY OPERATION NECESSARY TO ESTABLISH SECURE MOUNTING AND CORRECT OPERATION AT THE PROPER LOCATION IN THE PROJECT, ALL AS PART OF THE MECHANICAL WORK.
    - C. "PROVIDE" - "FURNISH" AND "INSTALL".
    - D. "NEW" - MANUFACTURED WITHIN THE PAST TWO YEARS AND NEVER BEFORE USED.

PLUMBING GENERAL NOTES

1. BEFORE COMMENCEMENT OF WORK, CONTRACTOR SHALL VERIFY EXACT LOCATIONS, ELEVATIONS AND CHARACTERISTICS OF UTILITIES AND PIPING AND SHALL IMMEDIATELY NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES.

2. THE ELECTRICAL CONTRACTOR IS REQUIRED TO PROVIDE POWER FOR ALL PLUMBING EQUIPMENT. DURING BID PERIOD AND AGAIN PRIOR TO EQUIPMENT ORDERING, THE (GENERAL CONTRACTOR AND THE) PLUMBING CONTRACTOR SHALL COORDINATE WITH THE ELECTRICAL CONTRACTOR TO VERIFY THAT ALL EQUIPMENT ARE POWERED, AND PROPER VOLTAGE/WIRING/CAPACITY IS PROVIDED. IN THE EVENT OF REQUIREMENTS AMBIGUITY OR CONFLICT BETWEEN TRADES, THE CONTRACTOR IS REQUIRED TO GENERATE AN RFI ADDRESSING THE ISSUE AND REQUESTING CLARIFICATION. FAILURE TO DO SO WILL NEGATE HIS RIGHT FOR A CHANGE ORDER OR REQUEST FOR ADDITIONAL FUNDS DURING CONSTRUCTION RELATING TO THIS ISSUE.

3. DRAWINGS ARE IN PART DIAGRAMMATIC, INTENDED TO CONVEY SCOPE OF WORK, AND TO INDICATE THE GENERAL LOCATIONS OF EQUIPMENT, PIPING, ETC. CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS AND LAYOUT HIS WORK ACCORDING TO THE FOLLOWING GUIDELINES:
    - A. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS FOR EQUIPMENT AND ROUGH INS AND THE EXACT ROUTING OF PIPING PRIOR TO CONSTRUCTION AS TO BEST FIT THE LAYOUT OF THE WORK. COORDINATE FINAL LAYOUT WITH ALL TRADES.
    - B. WHERE OFFSETS IN PIPING ARE REQUIRED TO COORDINATE WORK OF OTHER TRADES, STRUCTURE, PIPING, CONDUITS, DUCTWORK, ETC. OR TO MAINTAIN CEILING HEIGHTS, THEY SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
    - C. UNLESS OTHERWISE NOTED, ALL PIPING TO BE ROUTED CONCEALED IN WALLS, CHASES OR ABOVE CEILING. WATER PIPING SHALL NOT BE ROUTED IN EXTERIOR WALLS. ROUTE ALL PIPING AS HIGH AS POSSIBLE AND ALONG WALLS TO MAXIMIZE SPACE AVAILABLE FOR OTHER TRADES.
    - D. COORDINATE ROUTING OF PIPING TO MAINTAIN ACCESS TO FILTERS, MOTORS, ELECTRICAL EQUIPMENT, AND CONTROLS. IN NO CASE SHALL PIPING PASS DIRECTLY OVER ELECTRICAL PANELS OR DISCONNECTS OR RESTRICT ACCESS TO ANY ELECTRICAL EQUIPMENT INCLUDING JUNCTION BOXES.
    - E. ALL EXISTING PIPING SHOWN IS INTENDED TO INDICATE APPROXIMATE SIZE, NUMBER AND LOCATION OF PIPING BRANCHES FOR BIDDING PURPOSES ONLY. CONTRACTOR TO VERIFY EXACT SIZE AND CONFIGURATION PRIOR TO CONSTRUCTION.
    - F. VERIFY EXACT SIZE AND LOCATION OF ALL EXISTING SYSTEMS REQUIRING CONNECTION TO NEW PIPING PRIOR TO COMMENCING WORK.

4. UNLESS OTHERWISE NOTED, SANITARY WASTE PIPING SHOWN IS BELOW FLOOR AND ALL OTHER PIPING IS OVERHEAD, ABOVE CEILING. DOMESTIC HOT, COLD AND RE-CIRC. WATER PIPING SHALL BE INSTALLED ON WARM SIDE OF INSULATION.

5. ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH 2018 INTERNATIONAL PLUMBING CODE (IPC) & ALL LOCAL AMENDMENTS, CODES AND REGULATIONS.

6. DURING THE PROGRESS OF THE WORK, MAINTAIN AN ACCURATE RECORD OF ALL CHANGES MADE IN THE PLUMBING SYSTEMS. THE RECORD DRAWING SHALL SHOW CHANGES IN MANUFACTURER (WITH NUMBERS AND NAMES). MATERIALS, SIZES, LOCATING AND HOOK-UP POINTS. AS-BUILTS SHALL BE GIVEN TO [OWNER] AT COMPLETION OF JOB.

7. UPON COMPLETION OF JOB, THIS CONTRACTOR SHALL INSPECT ALL EXPOSED PORTIONS OF THE PLUMBING INSTALLATION AND COMPLETELY REMOVE ALL EXPOSED LABELS, SOIL, MARKING AND FOREIGN MATERIAL EXCEPT PRODUCT LABELS AND THOSE REQUIRED BY LAW TO REMAIN.

8. ALL INSTALLATION OF ACCESSIBLE PLUMBING FIXTURES SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE STATE ACCESSIBILITY STANDARDS. REFER TO ARCHITECTURAL PLANS FOR SPECIFIC INSTALLATION REQUIREMENTS. LOCATE WATER CLOSET FLUSH VALVE LEVER BETWEEN TOILET AND LAVATORY. COORDINATE LOCATION OF FLUSH VALVE LEVER HANDLE WITH GRAB BAR. COORDINATE WITH ARCHITECTURAL DRAWINGS.

9. ALL VENT AND FLUE OUTLETS SHALL BE 10'-0" MINIMUM HORIZONTALLY AND 3'-0" MINIMUM VERTICALLY FROM ANY FRESH AIR INTAKES.

10. PROVIDE WATER HAMMER ARRESTORS AT ALL PLUMBING FIXTURES OR BATTERY OF FIXTURES WITH QUICK-CLOSING VALVES. WATER HAMMER ARRESTORS SHALL BE SIZED & INSTALLED PER PDI STANDARDS. AIR CHAMBERS SHALL NOT BE CONSIDERED AN EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED.

11. PROVIDE BALANCING VALVES WITH THREADED CONNECTIONS IN HOT WATER RETURN PIPING, AND BALANCE SYSTEM FOR PROPER OPERATION.

12. COORDINATE WITH ARCHITECTURAL DRAWINGS BEFORE ROUGHING IN PLUMBING.

13. ALL OPENINGS IN CEILINGS AND PLENUM WALLS FOR PLUMBING SHALL BE SEALED AIR TIGHT AND PROTECTED WITH FIRESTOP.

14. SEE SITE PLAN FOR EXTENT OF ALL PIPING LEAVING AND ENTERING BUILDING.

15. ALL HOSE BIBS SHALL BE MOUNTED 18" ABOVE FINISHED FLOOR, UNLESS OTHERWISE SPECIFIED.

16. ALL WALL HYDRANTS SHALL BE MOUNTED 24" ABOVE FINISHED GRADE UNLESS OTHERWISE SPECIFIED.

17. MAKE PROPER HW, CW, RE-CIRC., WASTE, AND VENT CONNECTIONS TO ALL FIXTURES AND EQUIPMENT EVEN THOUGH ALL BRANCH MAIN, ELBOWS AND CONNECTIONS ARE NOT SHOWN.

18. CLEANOUTS SHALL BE PROVIDED NEAR BASE OF EACH VERTICAL WASTE OR SOLID STACK. PROVIDE 18" MINIMUM CLEARANCE FOR ACCESS.

19. PROVIDE VALVES AND UNIONS WHEN CONNECTING PIPING TO EQUIPMENT. LOCATE VALVES FOR EASY ACCESS AND SERVICING OF EQUIPMENT. PROVIDE ACCESS PANELS TO ALL SHUT-OFF VALVES.

20. PRESSURE TEST ALL NEW WATER PIPES, MINIMUM OF 4 HOURS BEFORE APPLYING PIPE INSULATION. ALL TESTS SHALL BE IN COMPLIANCE WITH REQUIREMENTS OF THE LOCAL WATER AUTHORITY.

21. IN THE EVENT OF CONFLICT BETWEEN VARIOUS SECTIONS OF CONSTRUCTION DOCUMENTS, THE MOST STRINGENT OF THE OPTIONS SHALL APPLY FOR BIDDING PURPOSE. AFTER AWARD OF CONTRACT BUT BEFORE STARTING DESIGN/CONSTRUCTION, CONTRACTOR SHALL REQUEST CLARIFICATIONS WITH BID ON ANY CONFLICTING INFORMATION FROM THE OWNER.

22. PROVIDE DIELECTRIC FITTINGS OTHER THAN DIELECTRIC UNIONS WHEN CONNECTING DISSIMILAR MATERIAL PIPING. DIELECTRIC UNIONS NOT PERMITTED.

23. ALL CONCRETE FLOORS, SLABS, BRICK AND BLOCK WALL PENETRATIONS SHALL BE SLEEVED AND FIRE STOPPED.

24. PROVIDE BALL VALVE FOR ALL CW AND HW BRANCH TAKE-OFFS.

25. ALL EXTERIOR ROOF PENETRATIONS SHALL BE SEALED WEATHERTIGHT.

26. SLOPES AND INVERT ELEVATIONS OF ALL INTERIOR PIPING SHALL BE ESTABLISHED BEFORE ANY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. ALL PIPING SHALL BE LOCATED AND DETERMINED WHERE TO BE RUN TO AVOID CONFLICT WITH OTHER TRADES.

27. ALL PIPING SHALL BE PROVIDED WITH SECTIONAL SHUT-OFF VALVES AND ACCESS PANELS FOR ALL HIDDEN VALVES. PROVIDE ISOLATION VALVES FOR ALL PLUMBING FIXTURES.

28. ALL WORK SHALL BE GUARANTEED AGAINST DEFECTS, LEAKS, LACK OF PROPER SYSTEM PERFORMANCE OR NON-OPERATION FOR A PERIOD OF ONE YEAR AFTER DATED OF FINAL ACCEPTANCE OF WORK BY OWNER.

29. ALL WORK SHALL BE COORDINATED WITH ALL TRADES PRIOR TO INSTALLATION.

30. ALL EXPOSED PIPING TO FIXTURES SHALL BE HEAVILY CHROME-PLATED.

31. MAKE FINAL CONNECTIONS AFTER FIXTURES AND EQUIPMENT ARE SET IN PLACE. ALLREQUIRED TRIM, FAUCETS AND MINOR ITEMS NECESSARY FOR A COMPLETE FUNCTIONING INSTALLATION, SUCH AS STRAINERS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC., SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH EQUIPMENT REQUIREMENTS. ALL FAUCETS TO BE HEAVILY CHROME-PLATED.

32. SLEEVES THROUGH CMU BLOCKS WALLS AND/OR MASONRY FLOORS SHALL BE SCHEDULE 40 BLACK STEEL PIPE. SLEEVES THRU FLOORS SHALL STAND PROUD OF FLOOR SLAB BY 1/2". SLEEVES THROUGH SHEET ROCK WALL SHALL BE 18" GAUGE GALVANIZED SHEET METAL. THE SPACE BETWEEN THE PIPE AND SLEEVE SHALL BE PACKED WITH "3M" EXPANDABLE FOAM FIRE-STOP MATERIAL, TO ASSURE A RATING EQUAL TO THE PENETRATED WALL OR FLOOR.

33. HANGERS SHALL BE OF SIMILAR MATERIAL AS PIPING TO AVOID GALVANIC ACTION IN ACCORDANCE WITH MSS-SP-69, AND LOCATED AT INTERVALS NOT TO EXCEED 6'-0" O.C. WHERE "HUBLESS" PIPE IS BEING USED, PROVIDE HANGERS ON ETHER SIDE OF THE JOINTS AS RECOMMENDED BY CISPI BULLETIN 310. FOR INSULATED PIPING, INSULATION SHALL EXTEND CONTINUOUSLY THRU HANGER WITH OUT INTERRUPTION. PROVIDE SADDLE TO PROTECT INSULATION FROM COMPRESSION.

34. SOIL, WASTE AND VENT PIPING SHALL BE INSTALLED IN ACCORDANCE WITH CODE. HORIZONTAL DRAINAGE PIPING SHALL SLOPE PER 2018 IPC CODE, UNLESS OTHERWISE INDICATED. DOMESTIC WATER SHALL BE SLOPED TO DRAIN POINTS.

35. SUBMIT OPERATING AND MAINTENANCE MANUALS AND WARRANTY CERTIFICATES TO OWNER.

36. THE CONTRACTOR SHALL NOT CORE DRILL CONCRETE SLABS OR PRE-CAST CONCRETE PANELS OR DECK WITHOUT THE KNOWLEDGE AND WRITTEN CONSENT OF THE STRUCTURAL ENGINEER AND THE BUILDING OWNER AND SHALL X-RAY PRIOR TO ANY CORE DRILLING. X-RAYING AND CORE DRILLING SLABS SHALL BE SCHEDULED WITH THE BUILDING OWNER, INCLUDE COSTS OF X-RAYING IN BID.

37. FINAL ACCEPTANCE OF PLUMPING SYSTEMS BY THE USER/OWNER, SHALL BE CONTINGENT TO COMPLIANCE WITH ALL COMMISSIONING REQUIREMENTS AND TESTS PRESCRIBED IN THE PROJECT DESIGN DOCUMENTS/SPECIFICATIONS AND APPROVAL BY THE CxA AGENT OF THE PROJECT.

38. UPON COMPLETION OF THE PROJECT, ALL DOMESTIC WATER PIPING SHALL BE SANITIZED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING JURISDICTION.

ABBREVIATIONS

ABV	ABOVE
AD	AREA DRAIN
AFF	ABOVE FINISH FLOOR
AFG	ABOVE FINISH GRADE
AP	ACCESS PANEL
APPROX	APPROXIMATE
AV	ACID VENT
AW	ACID WASTE
BAS	BUILDING AUTOMATION SYSTEM
BFF	BELOW FINISH FLOOR
BFP	BACKFLOW PREVENTER
BLDG	BUILDING
BT	BATHTUB
CA	COMPRESSED AIR
CD	CONDENSATE
CLG	CEILING
CO	COMPANY, CLEANOUT
CW	COLD WATER
DFU	DRAINAGE FIXTURE UNITS
DIA	DIAMETER
DN	DOWN
DS	DOWNSPOUT
DWG	DRAWING
CW	COLD WATER
DISP	DISPOSER
DWV	DRAINAGE WASTE & VENT
EA	EACH
ECO	EXTERIOR CLEANOUT
ETR	EXISTING TO REMAIN
EW	EMERGENCY EYEWASH
ES	EMERGENCY SHOWER
EWC	ELECTRIC WATER COOLER
EWH	ELECTRIC WATER HEATER
EX	EXISTING
FD	FLOOR DRAIN
FFE	FINISHED FLOOR ELEVATION
FIXT	FIXTURE
FLR	FLOOR
FM	FORCED MAIN
FS	FLOOR SINK
G	NATURAL GAS
GCO	GRADE CLEANOUT
GD	GROUNDWATER DRAIN TILE
GPF	GALLONS PER FLUISH
GPM	GALLONS PER MINUTE
GWH	GAS WATER HEATER
HB	HOSE BIBB
HW	HOT WATER
HWR	HOT WATER RECIRCULATING
I.E.	INVERT ELEVATION
IW	INDIRECT WASTE
IPC	INTERNATIONAL PLUMBING CODE
LAV	LAVATORY
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MB	MOP BASIN
MBH	BRITISH THERMAL UNITS (x1000)
MIN	MINIMUM
MISC	MISCELLANEOUS
NFWH	NON-FREEZE WALL HYDRANT
NIC	NOT IN CONTRACT
OD	OVERFLOW ROOF DRAIN
OSD	OPEN SITE DRAIN
PD	PUMPED DISCHARGE
PDI	PLUMBING & DRAINAGE INSTITUTE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RM	ROOM
RTU	ROOF TOP UNIT
SAN	SANITARY
SFU	SUPPLY FIXTURE UNIT
ST	STORMWATER
TP	TRAP PRIMER VALVE
TPS	TRAP PRIMING STATION
TW	TEMPERED WATER
TYP	TYPICAL
UNO	UNLESS OTHERWISE NOTED
UR	URINAL
V	VENT
VB	VACUUM BREAKER
VTR	VENT THRU ROOF
W	WASTE
W/	WITH
WC	WATER CLOSET
WCO	WALL CLEANOUT
WH	WALL HYDRANT
XR	EXISTING RELOCATED

LAB/MEDICAL PROJECTS

O	OXYGEN
MA	MEDICAL AIR
LA	LAB AIR
N	NITROGEN
LN	LIQUID NITROGEN
AR	ARGON
HE	HELIUM
SG	SPECIAL GAS
LV	LAB VACUUM
MV	MEDICAL VACUUM
CO2	CARBON DIOXIDE
DI	DEIONIZED WATER
ROS	REVERSE OSMOSIS SUPPLY
ROR	REVERSE OSMOSIS RETURN
LCW	LAB COLD WATER
LHW	LAB HOT WATER
LHWR	LAB HOT WATER RECIRCULATING
VCW	VIVARIUM COLD WATER
VHW	VIVARIUM HOT WATER
NP	NON-POTABLE

SHEET NUMBERING LEGEND

P111A

- DISCIPLINE: "PD" DEMO, "P" NEW WORK
- PLAN TYPE: "1" FLOOR PLAN, "2" ENLARGED FLOOR ETC.
- SYSTEM TYPE: "0" FOR UNDERGROUND, "1" WATER & GAS, "2" DWV & STORM, "3" FIRE PROTECTION
- FLOOR LEVEL: "0" LOWEST FLOOR, "1" NEXT FLOOR LEVEL ETC.
- SECTOR

PLUMBING SYMBOLS

SYMBOL	DESCRIPTION
	DEMOLISH AND REMOVE
	SOIL OR WASTE PIPING
ST	STORM PIPING
OD	OVERFLOW STORM PIPING
NP	NON-POTABLE WATER PIPING
ST	STORM PIPING BELOW SLAB
	VENT PIPING
CW	COLD WATER PIPING
	COLD WATER PIPING (SINGLE LINE)
HW	HOT WATER PIPING
	HOT WATER PIPING (SINGLE LINE)
HWR	HOT WATER RECRCULATING PIPING
	HOT WATER RECRCULATING PIPING (SINGLE LINE)
G	GAS PIPING
F	FIRE PROTECTION PIPING
	PIPE DOWN OR DROP
	PIPE UP OR RISE/FLOOR CLEANOUT
	CAPPED OR PLUGGED PIPE
	UNION
	WALL CLEANOUT
	GATE VALVE
	BALL VALVE
	GLOBE VALVE
	BUTTERFLY VALVE
	GAS COCK
	SHUTOFF VALVE IN RISE OR DROP
	DOUBLE CHECK BACKFLOW PREVENTER
	RPZ BACKFLOW PREVENTER
	CHECK VALVE
	BALANCING VALVE
	OUTSIDE STEM & YOKE VALVE
	PRESSURE GAGE W/ NEEDLE VALVE
	THERMOMETER
	TEMPERATURE & PRESSURE RELIEF VALVE
VB	VACUUM BREAKER
"A"	WATER HAMMER ARRESTER, LETTER INDICATES PDI
	HOSE BIBB
	WALL HYDRANT
	SOLENOID VALVE
	STRAINER
	PIPE GUIDE/SLEEVE
	PIPE ANCHOR
	FLEXIBLE CONNECTION
	FLOW DIRECTION
	FLOOR DRAIN
	RISER/DETAIL DESIGNATION
	CALL OUT DESIGNATION
X X	METER (GAS/WATER/FIRE)
X XXX	PUMP
	PUMP
M	KEYNOTE TAG
	LIMIT OF DEMOLITION
#	

DOUBLE SYMBOLS

- GATE VALVE
- BUTTERFLY VALVE
- 3-WAY VALVE
- GAS COCK VALVE
- BALL VALVE
- BALANCE VALVE
- SHUT-OFF VALVE
- BACKFLOW PREVENNTER VALVE

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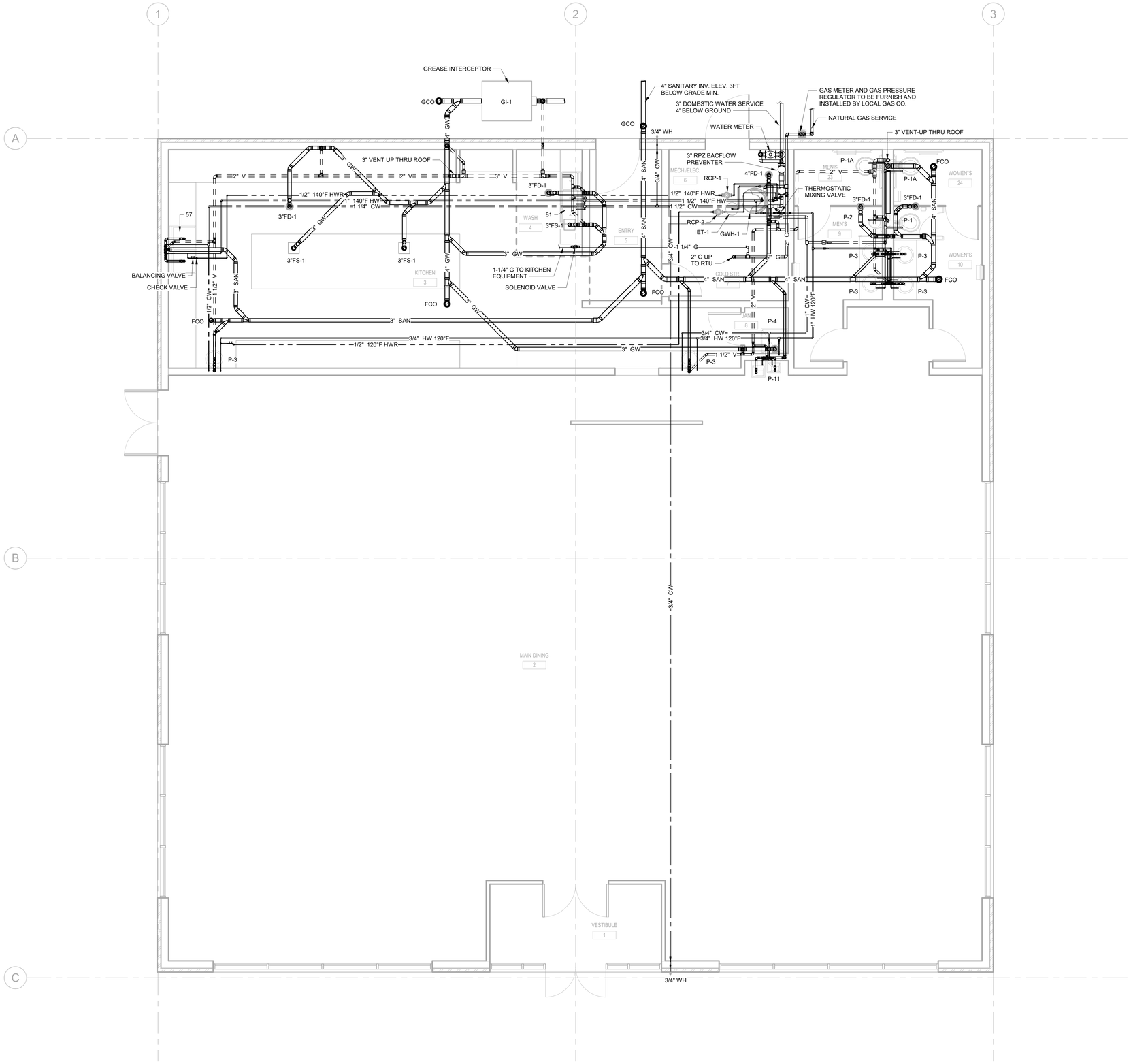
PLUMBING COVERSHEET

P002

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO. ____ OF ____ DWG. P002



1 FIRST FLOOR - FIRST FLOOR - SANITARY, WATER & GAS
1/4" = 1'-0"

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GENERAL NOTES

1. REFER TO P001 FOR GENERAL NOTES, SYMBOL LEGEND AND LIST OF ABBREVIATIONS.

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PLUMBING FLOOR PLAN

P101

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														VAY		AA	08/15/2022	Project Number

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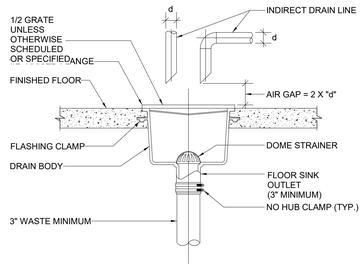
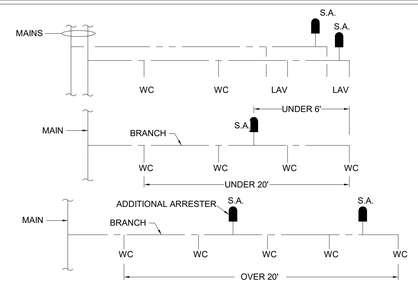


6 **FLOOR SINK DETAIL**

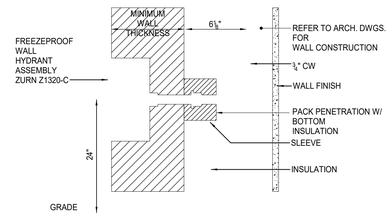
SCALE: NOT TO SCALE



NOTES:
1. SHOCK ARRESTORS SHALL BE INSTALLED ON ALL BRANCH PIPING SERVING PLUMBING FIXTURES, QUICK-CLOSING, VALVES, EQUIPMENT, OR WALL HYDRANTS/HOSE BIBS.
2. BRANCH PIPES WITH A DEVELOPED LENGTH OF 25' OR LESS MAY HAVE ARRESTORS REDUCED BY ONE SIZE.
3. BRANCH PIPES WITH A DEVELOPED LENGTH OF 75' OR GREATER MAY HAVE ARRESTORS REDUCED BY ONE SIZE.
4. STOP VALVE AND SHOCK ARRESTORS SHALL BE ACCESSIBLE THROUGH A SINGLE ACCESS DOOR.
5. SHOCK ARRESTORS SHALL BE CERTIFIED BY THE PLUMBING AND DRAINAGE INSTITUTE (PDI).
6. WHEN WORKING WATER PRESSURE EXCEEDS 65 PSI USE NEXT LARGEST SIZE.
7. MAXIMUM PIPING LENGTH COVERED BY ONE ARRESTOR SHALL BE 20 LINEAR FT.
8. ALL INSTALLATIONS AS DIRECTED BY MANUFACTURER

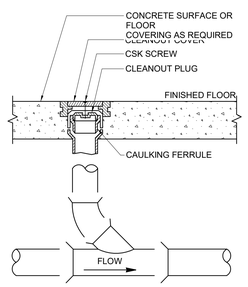
3 **WATER HAMMER ARRESTOR DETAIL**

SCALE: NOT TO SCALE



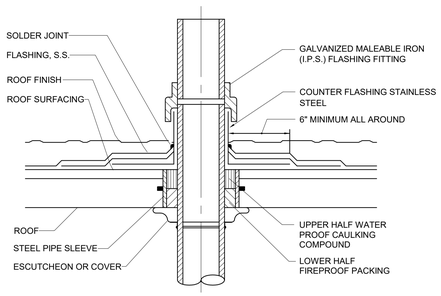
1 **FREEZEPROOF WALL HYDRANT DETAIL**

SCALE: NOT TO SCALE



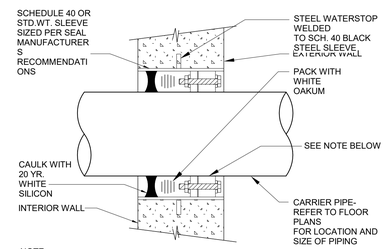
7 **FLOOR CLEANOUT DETAIL**

SCALE: NOT TO SCALE



4 **VENT THRU ROOF DETAIL**

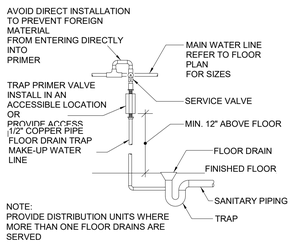
SCALE: NOT TO SCALE



NOTE:
SEAL ASSEMBLY SHALL BE MODULAR MECHANICAL TYPE CONSISTING OF INTERLOCKING RUBBER LINKS SHAPED TO CONTINUOUSLY FILL THE ANNULAR SPACE BETWEEN THE CARRIER PIPING AND THE SLEEVE. BOLTS SHALL BE STAINLESS STEEL WITH DELRIN PLASTIC
PRESSURE PLATES.

2 **WATERTIGHT PIPE SLEEVE THRU EXTERIOR WALL DETAIL**

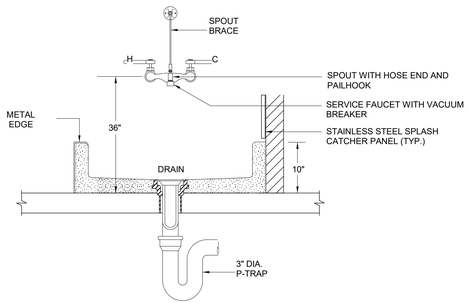
SCALE: NOT TO SCALE



NOTE:
PROVIDE DISTRIBUTION UNITS WHERE MORE THAN ONE FLOOR DRAINS ARE SERVED

8 **TRAP PRIMER DETAIL**

SCALE: NOT TO SCALE



5 **FLOOR MOUNTED MOP SINK DETAIL**

SCALE: NOT TO SCALE

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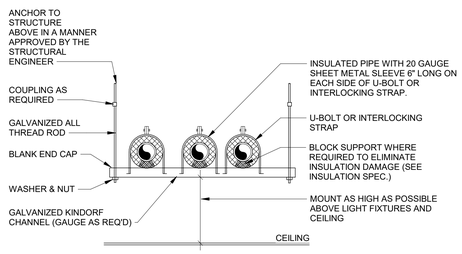
PLUMBING DETAILS

P301

SH. NO. ___ OF ___ DWG. P301

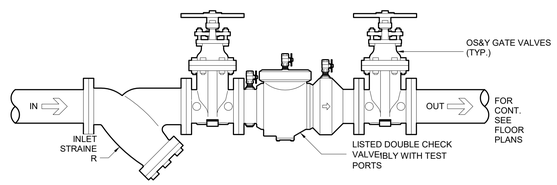
APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER	DATE	DRAWN BY	DATE	PROJECT/ W.O. #
														VAY		AA	08/15/2022	Project Number



NOTE:
1. ALL PIPING SUPPORT SYSTEM COMPONENTS SHALL HAVE A NON-CORROSIVE METAL FINISH, GALV-KROM OR EQUAL
2. COORDINATE CROSS PIPING WITH MECHANICAL PIPING ROUTED IN CORRIDORS & SPRINKLER PIPING MAINS CROSSING IN CORRIDORS.

6 TRAPEZE PIPING SUPPORT

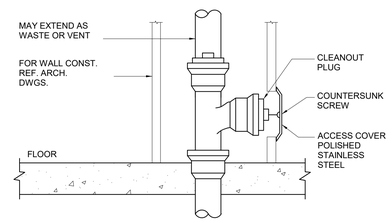
SCALE: NOT TO SCALE



NOTES:
1. UNLESS OTHERWISE NOTED MOUNTING HEIGHT SHALL BE BETWEEN 42" ABOVE THE FINISHED FLOOR AND 12" CLEAR AROUND ALL SIDES

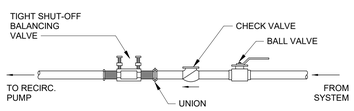
3 DOUBLE CHECK VALVE ASSEMBLY DETAIL

SCALE: NOT TO SCALE



1 WALL CLEANOUT DETAIL

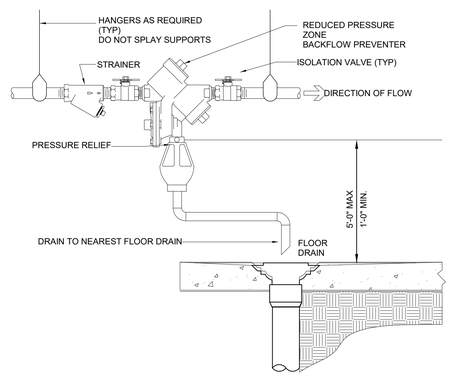
SCALE: NOT TO SCALE



NOTES:
1. INSURE PROPER ACCESS IS PROVIDED TO VALVE AND THAT VALVE CAN BE METERED. DO NOT ORIENT TAPS DOWNWARD.
2. PROVIDE ACCESS PANEL IN HARD CEILING LOCATIONS.
3. PROVIDE TEE HANDLE WHERE LIMITED ACCESS.

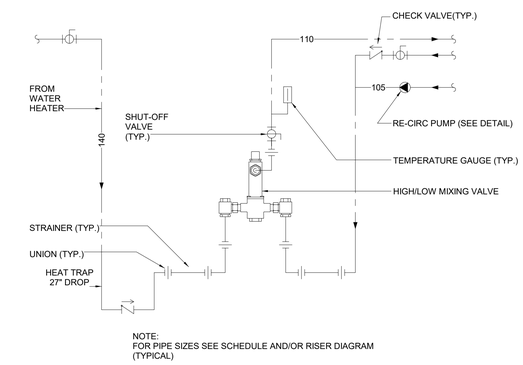
7 HOT WATER CIRCULATION BALANCING VALVE

SCALE: NOT TO SCALE



4 TYPICAL BFP (UNDER 2 INCH DIAMETER) INSTALLATION DETAIL

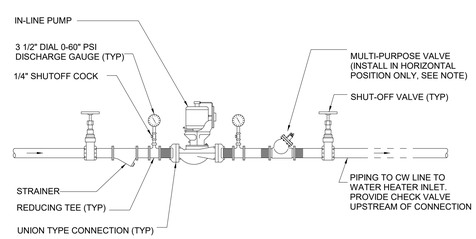
SCALE: NOT TO SCALE



NOTE:
FOR PIPE SIZES SEE SCHEDULE AND/OR RISER DIAGRAM (TYPICAL)

2 THERMOSTATIC MIXING VALVE PIPING DETAIL

SCALE: NOT TO SCALE



NOTES:
1. CONTRACTOR SHALL INSTALL AQUASTAT IN RETURN LINE FOR PUMP CONTROL
2. WHERE RE-CIRC. PIPING ON PUMP DISCHARGE IS LESS THAN 1-1/2", CONTRACTOR SHALL INSTALL SEPARATE CHECK VALVE, SHUT-OFF VALVE, AND BALANCE VALVE IN LIEU OF MULTI-PURPOSE VALVE.

5 IN-LINE RECIRCULATING PUMP DETAIL

SCALE: NOT TO SCALE

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PLUMBING DETAILS

P302

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	PROJECT LEADER: VAY	DATE	DRAWN BY: AA	DATE: 08/15/2022	PROJECT/ W.O. #: Project Number

SH. NO. ___ OF ___ DWG. P302

PIPING MATERIAL SCHEDULE

PLUMBING SYSTEM	PLUMBING MATERIAL DESCRIPTION
SANITARY DRAIN PIPING (BELOW SLAB)	SCHEDULE 40 PVC AND FITTINGS
SANITARY DRAIN PIPING (ABOVE SLAB)	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
VENT PIPING	STANDARD WEIGHT CAST IRON PIPE, W/ NO HUB JOINTS
DOMESTIC WATER PIPING (ABOVE SLAB)	TYPE "L" COPPER PIPING
NATURAL GAS PIPING	SCHEDULE 40 BLACK STEEL PIPE, W/ CAST IRON FITTING

INTERCEPTOR SCHEDULE

ID	DESCRIPTION	CAPACITY (GAL.)	INLET/ OUTLET SIZES	TANK DIMENTIONS			BASIS OF DESIGN (OR EQUAL)	REMARKS
				HEIGHT	WIDTH	LENGTH		
GI-1	EXTERIOR GREASE INTERCEPTOR TRIPLE COMPARTMENT	1600	4"	66"	64"	170"	BAYSTAR PRECAST	GREASE INTERCEPTOR SHALL BE ON WSSC APPROVED LIST

WATER HAMMER ARRESTOR SCHEDULE

PDI #	MIN.-MAX. FIXTURE UNIT CAPACITY	CONNECTION SIZE	MANUFACTURER & MODEL NUMBER (OR EQUAL)
"A"	1-11	1/2"	PPP, INC. MODEL SC-500
"B"	12-32	3/4"	PPP, INC. MODEL SC-750
"C"	33-60	1"	PPP, INC. MODEL SC-1000

NOTES:
1. AIR CHAMBERS ARE NOT ACCEPTABLE EQUAL TO WATER HAMMER ARRESTORS AND SHALL NOT BE INSTALLED
2. SIZE PER MANUFACTURER'S RECOMMENDATIONS
3. PROVIDE ACCESS PANELS WHERE REQUIRED TO BE IN CONCEALED LOCATIONS

SLOPE OF HORIZONTAL DRAINAGE PIPE

SIZE (INCHES)	MINUMUM SLOPE (INCH PER FOOT)
2-1/2 OR LESS	1/4
3 TO 6	1/8
8 OR LARGER	1/16

TABLE 704.1 OF THE INTERNATIONAL PLUMBING CODE 2018

PLUMBING FIXTURE SCHEDULE

ID	DESCRIPTION	CONNECTION SIZE							REMARKS
		WASTE	VENT	TRAP	TRAP ARM	TEMPERED	CW	HW	
P-1	WATER CLOSET	4"	2"	-	-	-	1"	-	FLOOR MOUNTED, HANDS-FREE ELECTRONIC FLUSH VALVE
P-1A	WATER CLOSET-ADA	4"	2"	-	-	-	1"	-	WALL MOUNTED, HANDS-FREE ELECTRONIC FLUSH VALVE
P-2	URINAL	2"	1 1/2"	-	-	-	3/4"	-	WALL MOUNTED, HANDS-FREE ELECTRONIC FLUSH VALVE
P-2A	URINAL-ADA	2"	1 1/2"	-	-	-	3/4"	-	WALL MOUNTED, HANDS-FREE ELECTRONIC FLUSH VALVE
P-3	LAVATORY	2"	2"	1 1/2"	1 1/2"	-	1/2"	1/2"	UNDERMOUNT, FAUCET WITH LEVER HANDLES
P-4	MOP SINK	3"	2"	3"	3"	-	3/4"	3/4"	WALL MOUNTED FAUCET WITH VACUUM BREAKER
P-5	ELECTRIC WATER COOLER	2"	2"	1 1/2"	1 1/2"	-	1/2"	-	STAINLESS STEEL, WALL MOUNTED COOLER, FILTERED, 8 GPH, ADA. COORDINATE WITH ELECTRICAL
WH-1	WALL HYDRANT	-	-	-	-	-	3/4"	-	EXPOSED, NON FREEZE (LOADING DOCK)

NOTES:
1. PROVIDE INSULATION KIT FOR WASTE AND WATER SUPPLY PIPES OF ALL HANDICAPPED LAVATORIES. TRUEBRO, LAVGUARD OR EQUAL.
2. PROVIDE MIXING VALVES FOR ALL HAND WASHING SINKS. SYMMONS 5-210-CK OR EQUAL. SET DISCHARGE TO 105^{0}F.
3. SEE ARCHITECTURAL DOCUMENTS FOR EXACT FIXTURE LOCATION AND MOUNTING HEIGHTS.
4. PLUMBING FIXTURES ARE BY DIVISION 22 INCLUDING ROUGH-INS, DRAINS, SUPPLIES, TRIM AND FINAL CONNECTIONS.

GAS FIRED WATER HEATER SCHEDULE

ID	LOCATION	STORAGE CAPACITY (GALLONS) EACH	GAS INPUT (MBTU/HR) EACH	GAS TYPE	MIN. EFFICIENCY (%)	RECOVERY (GPH) EACH	INLET TEMP (°F)	OUTLET TEMP (°F)	FLUE SIZE (INCH) EACH		FLUE SIZE (INCH) EACH			BASIS OF DESIGN (OR EQUAL)	REMARKS
									INTAKE	EXHAUST	VOLTS	PHASE	HZ		
GWH-1	MECHANICAL ROOM	100	199	NATURAL	96	230	40	140	4	4	120	1	60	A.O. SMITH CYCLONE BTH-199 (A)	EXTEND FRESH AIR AND EXHAUST OUT TO ATMOSPHERE

NOTES:
1. COORDINATE ELECTRICAL REQUIREMENTS WITH THE ELECTRICAL CONTRACTOR.

DOMESTIC WATER EXPANSION TANK SCHEDULE

ID	WATER HEATER VOLUME (GALLONS)	MAX. TEMP. (°F)	MAX. OPERATING PRESSURE (PSIG)	DESIGN FILL PRESSURE (PSIG)	TOTAL TANK VOLUME (GALLONS)	ACCEPTANCE VOLUME (GALLONS)	TANK DIMENSIONS		APPROX. OPERATING WEIGHT (LBS.)	BASIS OF DESIGN (OR EQUAL)	REMARKS
							HEIGHT	DIAMETER			
ET-1	100	140	150	55	6	3.76	15"	11"		AMTROL ST-12V	

PUMP SCHEDULE

ID	DESCRIPTION	GPM	HEAD (FT.)	HP	VOLTAGE	PHASE	RPM	BASIS OF DESIGN (OR EQUAL)	REMARKS
CP- 1 & 2	HOT WATER CIRCULATING	2	10	1/16	115	1		GRUNFUS MAGNA3	IN-LINE

KITCHEN EQUIPMENT SCHEDULE - PLUMBING

ITEM	QTY.	DESCRIPTION	WATER			WASTE			GAS		REMARKS
			HW	CW	FILTERED	DW	IW	VENT SIZE	GAS SIZE	MBTU	
1	1	WALK-IN COOLER/FREEZER									1
2	1	COOLER REFRIGERATION SYSTEM									
3	1	FREEZER REFRIGERATION SYSTEM									
11	5	HAND SINK	1/2"	1/2"		1 1/2"		1 1/2"			2 3
13	1	PREP SINK	1/2"	1/2"		1 1/2"					
15	1	VENTILATOR									
15a	1	FIRE PROTECTION SYSTEM									
16	1	COMBI OVEN		3/4"	3/4"		2"				1
17	1	CONVECTION OVEN							3/4"	55.0(2)	
18	1	TILTING SKILLET, 30-GALLON	1/2"	1/2"					3/4"	91.0	
19	1	TILTING KETTLE, 40-GALLON							3/4"	140.0	
20	1	FLOOR TROUGH				4"		2"			
22	1	VENTILATOR									
23	1	CHARBROILER							3/4"	87.0	
24	1	GRIDDLE							3/4"	120	
26	1	FRYER ASSEMBLY							1"		
27	1	REACH-IN FREEZER, MOBILE								366.0	
33	1	VENTILATOR									
34	1	CONVEYOR OVEN									
36	3	HAND SINK	1/2"	1/2"		1 1/2"		1 1/2"			2 3
42	2	DROP-IN HOT FOOD WELL		1/2"			1"				1 4
43	2	DROP-IN COLD FOOD WELL					1"				1
47	1	TEA DISPENSER			1/4"						4
48	1	COFFEE BREWER		3/8"							4
49	1	CONDIMENT COUNTER		1/2"	1/2"		2"				1
53	1	SALAD BAR COUNTER, MOBILE					1"				1
56	1	RETRACTABLE HOSE REEL	1/2"	1/2"							4
57	1	POT WASHING SINK	3/4"	3/4"			2"				1
59	1	DISPOSER		1/2"		2"		1 1/2"			4
60	1	SOILED DISHTABLE	1/2"	1/2"			2"				1
61	1	CONDENSATE CANOPY					1/2"				1
62	1	DISHMACHINE	3/4"	3/4"			1 1/2"				1
65	1	MOP SINK	1/2"	1/2"		3"		1 1/2"			
68	1	PREP SINK	1/2"	1/2"			1 1/2"				1
70	1	VENTILATOR									
71	1	GRIDDLE							3/4"	60.0	
72	1	CHARBROILER							3/4"	58.0	
74	1	RANGE								60.0	
78	1	DROP-IN HOT FOOD WELL		1/4"			1"				1 4
78A	1	FOOD PROTECTOR WITH LIGHTS									
79	1	DROP-IN COLD FOOD WELL					1"				1
80	1	DISPOSER		1/2"		2"		1 1/2"			
81	1	POT WASHING SINK	3/4"	3/4"			2"				1

REMARKS:

1. INDIRECT WASTE PIPES SHLL BE EXTENDED AND SPILLED OVER NEAREST FLOOR SINK. PROVIDE 1-INCH MINIMUM OF AIR GAP.
2. PROVIDE 1/2" COLD AND HOT WATER SUPPLIES WITH STOP, 1 1/2" TAILPIECE AND 1 1/2" 'P' TRAP.
3. PROVIDE TEMPERING VALVE ASSE 1070 POWERS LFe-480 (0.5 GPM) AND/OR LFG-480 (0.25 GPM). VALVE TO BE SET AT 105 DEGREES FAHRENHEIT.
4. PROVIDE DUAL CHECK VALVE ASSE 1024

THERMOSTATIC MIXING VALVE SCHEDULE

ID	AREA/SYSTEM SERVED	THERMOSTATIC CONTROLLERS	RUN OUT PIPE SIZES			BASIS OF DESIGN (OR EQUAL)	REMARKS
		GPM (FLOW @ 20 PSI)	CW INLET	HW INLET	TEMPERED WATER OUTLET		
TMV-1	GENERAL BLDG FIXTURES	---	1 1/4"	1 1/4"	1 1/2"	LAWLER MODEL 805	PROVIDE HIGH/LOWTYPE VALVE, SET @ 120°F

NOTES:
1. RUN-OUT PIPE SIZES ARE NOT NECESSARILY MIXING VALVE PIPE SIZES. REFER TO PLANS AND RISER FIAGRAMS.
2. PROVIDE UNIT IN SURFACE MOUNTED STAINLESS STEEL CABINET.
3. UNIT MUST BE INSTALLED, PIPED AND ADJUSTED IN STRICT ACCORDANCE WITH MANUFACTURERS REQUIREMENTS
4. FIELD INSULATE ALL PIPING WITHIN CABINET ENCLOSURE

FLOOR DRAIN SCHEDULE

ID	TYPE	LOCATION/AREA	SIZE	BASIS OF DESIGN (OR EQUAL)	REMARKS
FD-1	FLOOR DRAIN	TOILET RM, KITCHEN	5" STRAINER	ZURN #Z415B	W/ 1/2" TRAP PRIMING LINE
FD-2	FLOOR DRAIN	MECHANICAL RMS	9" STRAINER	ZURN #Z550	W/ 1/2" TRAP PRIMING LINE

TRAP PRIMING STATION SCHEDULE

ID	ELECTRICAL CHARACTERISTICS			BASIC OF DESIGN (OR EQUAL)
	AMPS	VOLTAGE	PHASE	
TSP-1	5	120	1	PPP INC. PTS SERIES, SURFACE MOUNTED

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

MEP. ENG.

NIST

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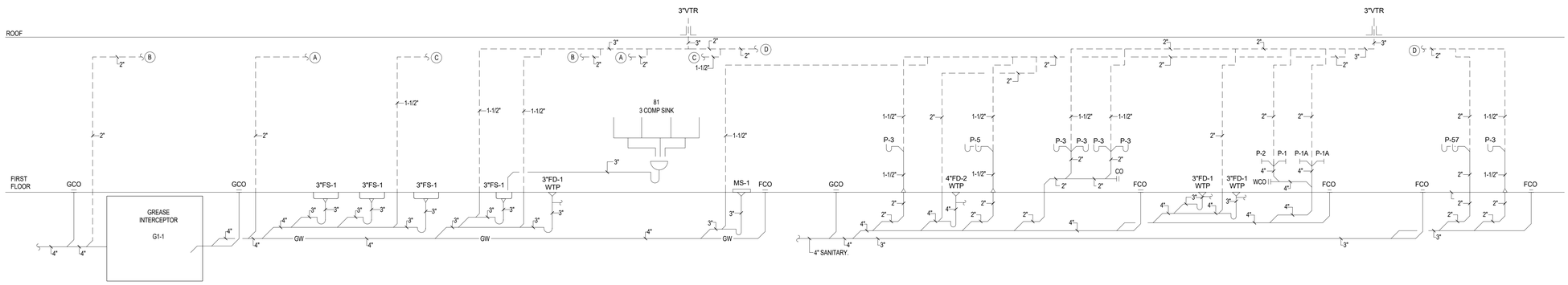
NIST – FULL SERVICE RESTAURANT

PLUMBING SCHEDULES

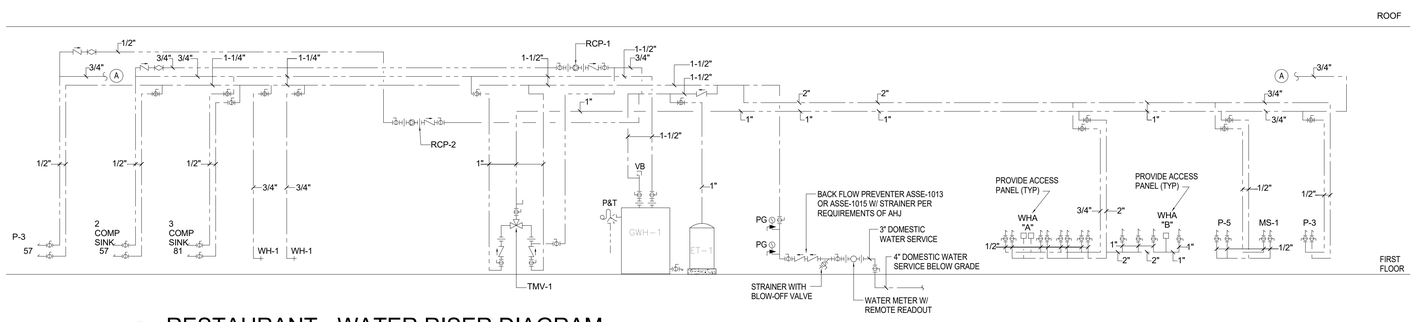
P401

SH. NO. ___ OF ___ DWG. P401

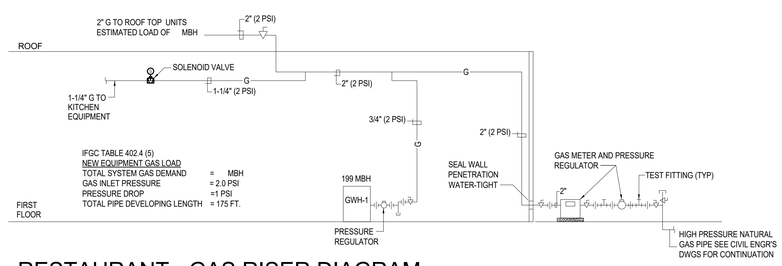
APPROVED BY DATE	SPONSOR DATE	MAINTENANCE ENG. OFF. DATE	ENVIRONMENTAL MANAGEMENT DATE	SAFETY DATE	SHED – NIST FIRE MARSHAL/AHJ DATE	FACILITIES ENGR. OFF. DATE	PROJECT LEADER DATE	DRAWN BY DATE	PROJECT/ W.O. #
							VAY	AA 08/15/2022	Project Number



1 RESTAURANT - SANITARY RISER DIAGRAM
NOT TO SCALE



2 RESTAURANT - WATER RISER DIAGRAM
NOT TO SCALE



3 RESTAURANT - GAS RISER DIAGRAM
NOT TO SCALE

REVISION	DESCRIPTION	BY	DATE

ARCHITECT

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RISER DIAGRAM

P501

APPROVED BY	DATE	SPONSOR	DATE	MAINTENANCE ENG. OFF.	DATE	ENVIRONMENTAL MANAGEMENT	DATE	SAFETY	DATE	SHED – NIST FIRE MARSHAL/AHJ	DATE	FACILITIES ENGR. OFF.	DATE	VAY PROJECT LEADER	DATE	AA DRAWN BY	DATE	08/15/2022 PROJECT/ W.O. #	Project Number

SH. NO.____OF____ DWG. P501