PLUMBING DRAWING / REVISION LOG

● NEW OR REVISED ISSUE
○ NON REVISED ISSUE

SHEET NUMBER	SHEET TITLE	ISSUE:	DESIGN DEVELOPMENT	50% CD	PERMIT SET			
		DATE:	02/21/2024	03/18/2024	03/25/2024			
P0.01	PLUMBING COVER SHEET		●	●	●			
P1.01	PLUMBING 1ST AND 2ND FLOOR PLANS		●	●	●			
P1.02	PLUMBING 3RD FLOOR AND ROOF PLANS		●	●	●			
P3.01	PLUMBING SCHEDULES		●	●	●			
P4.01	PLUMBING DETAILS		●	●	●			
P5.01	PLUMBING RISER DIAGRAMS		●	●	●			
P5.02	PLUMBING RISER DIAGRAMS				●			
P6.01	PLUMBING UNIT PLANS		●	●	●			
P6.02	PLUMBING UNIT PLANS		●	●	●			
P6.03	PLUMBING UNIT PLANS		●	●	●			
P6.04	PLUMBING UNIT PLANS		●	●	●			

PIPING SYMBOLS

SYMBOL	DESCRIPTION
	COLD WATER PIPING
	HOT WATER PIPING
G	NATURAL GAS PIPING
	SANITARY, SOIL, WASTE PIPING
	SANITARY ABOVE GROUND PIPING
ST	STORM PIPING
V	VENT PIPING
PD	PUMP DISCHARGE
C	CONDENSATE PIPING

KEY TO SYMBOLS

SYMBOL DESCRIPTION

ACU 1–1 — EQUIPMENT IDENTITY (SEE EQUIPMENT ABBREVIATION LIST AND SCHEDULES); EQUIPMENT DESIGNATION; SYSTEM NUMBER (IF APPLICABLE)

R 1 — RISER TYPE. REFER TO ABBREVIATIONS; RISER DESIGNATION; RISER NUMBER. REFER TO PLANS AND/OR RISER DIAGRAMS

1 / W-31 — SECTION NUMBER; SECTION DESIGNATION; SECTION DRAWING NUMBER

1 — REVISION NUMBER

(1) — SHEET NOTE NUMBER

CONNECT NEW TO EXISTING

KEY TO SYMBOLS

SYMBOL	DESCRIPTION
	PIPE UP
	PIPE DOWN
	SHUT OFF VALVE
	THREE WAY VALVE
	GAS COCK
M	WATER METER
	REDUCED PRESSURE ZONE ASSEMBLY
	CHECK VALVE
	PRESSURE REDUCING VALVE
	PRESSURE RELIEF VALVE
	BALANCING VALVE
	STRAINER
	UNION
	CAPPED LINE
	THERMOMETER
	THERMOSTATIC MIXING VALVE
	FLOOR DRAIN
FCO	FLOOR CLEAN OUT
CO	CLEAN OUT
	POINT OF CONNECTION
	ROOF DRAIN W/ OVERFLOW
	HOSE BIB
	PUMP
	VACUUM BREAKER

ABBREVIATIONS

ABV	ABOVE
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACK FLOW PREVENTOR
BLDG	BUILDING
BLW	BELOW
BSMT	BASEMENT
BTU	BRITISH THERMAL UNIT
CB	CATCH BASIN
CFH	CUBIC FEET PER HOUR
CI	CAST IRON
℄	CENTER LINE
CLG	CEILING
CMU	CONCRETE MASONRY UNIT
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CSST	CORRUGATED STAINLESS STEEL TUBING
CW	COLD WATER
°C	DEGREES CENTIGRADE
DFU	DRAINAGE FIXTURE UNIT
DIA	DIAMETER
DIAG	DIAGRAM
DISCH	DISCHARGE
DN	DOWN
DWG	DRAWING
(E)	EXISTING
EA	EACH
EHD	EQUILVENT HYDRAULIC DIAMETER
ELEV	ELEVATION
ENT	ENTERING
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EWC	ELECTRIC WATER COOLER
EW	EYE WASH
EXT	EXTERNAL
°F	DEGREES FAHRENHEIT
FAI	FRESH AIR INLET
FCO	FLOOR CLEAN OUT
FD	FLOOR DRAIN
FL	FLANGE
FLEX	FLEXIBLE
FLR	FLOOR
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
G	GAS
GA	GAUGE
GALV	GALVANIZED
GCO	GRADE CLEAN OUT
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GW	GREASE WASTE
HB	HOSE BIBB
HD	HEAD
HR	HOUR
HTR	HEATER
HW	HOT WATER
HWR	HOT WATER RETURN
ID	INTERNAL DIAMETER
INCL	INCLUDING
INV	INVERT
LAV	LAVATORY
MAX	MAXIMUM
MBH	1000 BRITISH THERMAL UNITS
MC	MECHANICAL CONTRACTOR
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
NH	NO HUB
No	NUMBER
NO	NORMALLY OPEN
NPW	NON-POTABLE WATER
NOM	NOMINAL
NTS	NOT TO SCALE
OPG	OPENING
OZ	OUNCE
PART	PARTIAL
PERF	PERFORATED
PEX	CROSS LINKED POLYETHYLENE TUBING
PH	PHASE
PIV	POST INDICATOR VALVE
POS	POSITIVE
PRESS	PRESSURE
PS	PRESSURE SWITCH
PRV	PRESSURE REDUCING VALVE
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
PC	PLUMBING CONTRACTOR
QTY	QUANTITY
RD	ROOF DRAIN
REQD	REQUIRED
RM	ROOM
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
RTU	ROOF TOP UNIT
S	SOIL
SAN	SANITARY
SCH	SCHEDULE
SHO	SHOWER
SPEC	SPECIFICATION
SQFT	SQUARE FEET
S/S	SERVICE SINK
ST	STORM
STD	STANDARD
SUP	SUPPLY
SYS	SYSTEM
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TS	TEMPER SWITCH
TYP	TYPICAL
URN	URINAL
V	VENT
VTR	VENT THRU ROOF
W	WASTE
WC	WATER CLOSET
WM	WATER METER
WSFU	WATER SUPPLY FIXTURE UNIT

MATERIAL SCHEDULE

SYSTEMS	PIPE: REQUIRED	PIPE: SERVICE C.I. PIPE (HUB & SPIGOT)	PIPE: NO-HUB C.I. PIPE	PIPE: P.V.C. SCH. 40 DRAINAGE PIPE	PIPE: C.P.V.C. SCH. 40	PIPE: BLACK IRON	PIPE: GALVANIZED STEEL	PIPE: COPPER TUBING TYPE 'L'	PIPE: COPPER TUBING TYPE 'DWV'	PIPE: PEX TUBE	PIPE: X-LINKED POLYETHYLENE	FITTINGS: SERVICE C.I. FITTINGS (HUB & SPIGOT)	FITTINGS: NO-HUB C.I. FITTINGS	FITTINGS: P.V.C. D.W.V. FABRICATED	FITTINGS: C.P.V.C. SCH. 40	FITTINGS: BLACK IRON	FITTINGS: GALVANIZED STEEL	FITTINGS: COPPER SOLDER FITTINGS	FITTINGS: FLANGED DUCTILE IRON PIPE	JOINTS: BRASS ASTM F1960 LISTED	JOINTS: PVC SOLVENT CEMENT	JOINTS: CPVC SOLVENT CEMENT	JOINTS: THREADED	JOINTS: SOLDERED 95-5	JOINTS: FLANGED DUCTILE IRON PIPE	JOINTS: COLD EXPANDSION RING
SANITARY BUILDING DRAIN (UNDER GROUND)	●	A		●								A		●						A	●					
SANITARY BUILDING DRAIN	●		A	●									A	●						A	●					
SANITARY STACKS	●		A	●									A	●						A	●					
SANITARY BRANCHES	●		A	●									A	●						A	●					
VENT STACKS	●		A	●									A	●						A	●					
VENT BRANCHES	●		A	●									A	●						A	●					
STORM BUILDING DRAIN (UNDER GROUND)	●	A		●								A		●						A	●					
STORM BUILDING DRAIN	●		A	●									A	●						A	●					
STORM STACKS	●		A	●									A	●						A	●					
STORM BRANCHES	●		A	●									A	●						A	●					
C.W. (SERVICE)	●				●										●							●				
C.W. (DISTRIBUTION)	●				●										●							●				
H.W. (DISTRIBUTION)	●				●										●							●				
GAS (DISTRIBUTION)	●					●										●							●			
C.W. (UNITS)	●										●								●							●
H.W. (UNITS)	●										●								●							●
GAS (UNITS)	●					●										●							●			
FLUE POWER VENTING	●			A	●								A	●							A	●				
INDIRECT WASTE	●			A					●				A					●			A				●	
SUMP DISCHARGE	●			●									●								●					
ELEVATOR SHAFT SUMP PUMP DISCHARGE	●			A			●						A				●				A			●		

NOTES:
"A" – PROVIDE DEDUCT ALTERNATE PRICE TO INSTALL ALTERNATE MATERIAL
ALL MATERIALS INSTALLED WITHIN A PLENUM ARE TO HAVE A 25 FLAME SPREAD & 50 SMOKE DEVELOPED WHEN TESTED ACCORDING TO ASTM E84 OR BE INSULATED WITH 3M FIRE BARRIER PLENUM WRAP 5A+, OR APPROVED EQUAL, SO AS TO COMPLY WITH THE ABOVE REQUIREMENTS.

PLUMBING FIXTURE SCHEDULE (TBD)

TAG	DESCRIPTION	MAKE	MODEL	FAUCET	PIPING CONNECTIONS: COLD	PIPING CONNECTIONS: HOT	PIPING CONNECTIONS: TRAP	PIPING CONNECTIONS: VENT	COMMENTS
KS–1	UNDERMOUNT SINGLE BOWL SS KITCHEN SINK	LEGACY	LS–78		1/2"	1/2"	1½"	1½"	
LAV–1	CULTURED MARBLE TOPS LAVATORY			PROFLO	3/8"	3/8"	1½"	1½"	
WC–1	ADA COMPLIANT CADET PRO RIGHT HEIGHT ELONGATED 215AB.104.020 WHITE FINISH	AMERICAN STANDARD	215AB.104.020		1/2"	NA	INTEGRAL	2"	
BT–1	BATH TUB	STERLING	71041111–0W	PROFLO	1/2"	1/2"	1½"	1½"	
SH–1	60"X34" SHOWER PAN	STERLING	72131100–0	PROFLO	1/2"	1/2"	2"	1½"	
HB–1	WALL FAUCET WITH BACKFLOW PREVENTER	ZURN	Z1341–BFP		1/2"	NA	NA	NA	
HB–2	ANIT–SIPHON, AUTOMATIC DRAINING NON FREEZE WALL HYDRANT WITH INTEGRAL BACKFLOW PREVENTER	ZURN	Z1321–C		1/2"	NA	NA	NA	
REF–1	ICE MAKER OUTLET BOX FOR REFRIGERATOR OR COFFEE MAKER, WITH ¼ TURN HAMMER BALL VALVE OUTLET	OATEY	39125	INCLUDED	3/8"	NA	NA	NA	

NOTES:
1. CONTRACTOR TO COORDINATE ALL PLUMBING FIXTURES OF UNITS AND AMENITY SPACES WITH ID/ARCH DRAWING.

ELECTRIC HOT WATER HEATERS

WH –

TAG	CAPACITY (GAL.)	1ST HR RATING	RECOVERY @ 90°F RISE (GPH)	ELEMENT POWER (kW)	ENERGY FACTOR (%)	POWER REQ. (V/PH)	AMP (FLA)	MOCP (FLA)	DIAMETER (IN.)	HEIGHT (IN.)	WATER CONN. (IN.)	MANUFACTURER MAKE AND MODEL	COMMENTS
EWH–1	47	63	21	6	.92	240/1	25	–	20	60 1/16	3/4	BRADFORDWHITE RE350T6	NOTES 1

NOTES:
1. PROVIDE ALL PIPING ACCESSORIES AND APPURTENANCES AS PER THE HOT WATER HEATER INSTALLATION DETAIL.

FLOOR DRAIN SCHEDULE

TAG	LOCATION	MAKE	MODEL	DESCRIPTION	OUTLET SIZE	TRAP SEAL	TRAP PRIMER
FD–1	BATHROOMS	ZURN	FD–2240–PV2	PVC WOOD DECK DRAIN	2"	4"	NO
FD–2	MECHANICAL ROOMS (TBD)	ZURN	Z507–P	7" MEDIUM DUTY C.I. DRAIN	3"	4"	NO

NOTES:
1. ALL TRAPPED FLOOR DRAINS SHALL BE INSTALLED WITH AN ASSE 1072 TRAP SEAL PROTECTION DEVICE.

BACKFLOW PREVENTERS / VACUUM BREAKERS SCHEDULE

APPLICATION	MFR.	MODEL #	DISCRIPTION
DISHWASHER	WATTS	188A	ANIT–SIPHON VACUUM BREAKER
SERVICE SINK (TBD)	WATTS	8	HOSE CONNECTION VACUUM BREAKER
WATER HEATER	WATTS	LF7	DUAL CHECK
BUILDING WATER SERVICE	WATT	LF009	REDUCED PRESSURE ZONE ASSEMBLY

NOTES:
1. ADDITIONAL BACKFLOW PREVENTER OR VACUUM BREAKERS ARE NOT REQUIRED WHERE SUCH DEVICES ARE INSTALLED INTEGRAL TO THE EQUIPMENT.

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MONTGOMERY TOWNSHIP
COUNTY OF SOMERSET, NJ

SHARBELL DEVELOPMENT CORP.
1 UNION STREET, SUITE 208
ROBBINSVILLE, NJ 08691
609 918-2400

ARMEN KHACHATURIAN
PRINCIPAL IN CHARGE
CM, JP, SM
PROJECT TEAM
AK
CHECKED BY
SHEET DESCRIPTION
PLUMBING COVER SHEET

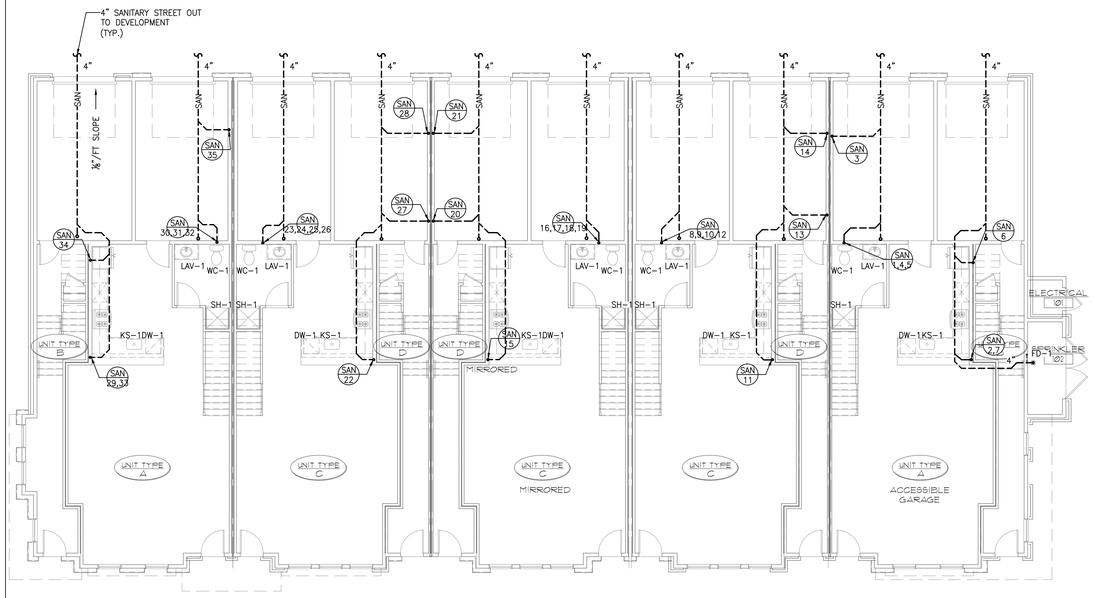
RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS
- - -

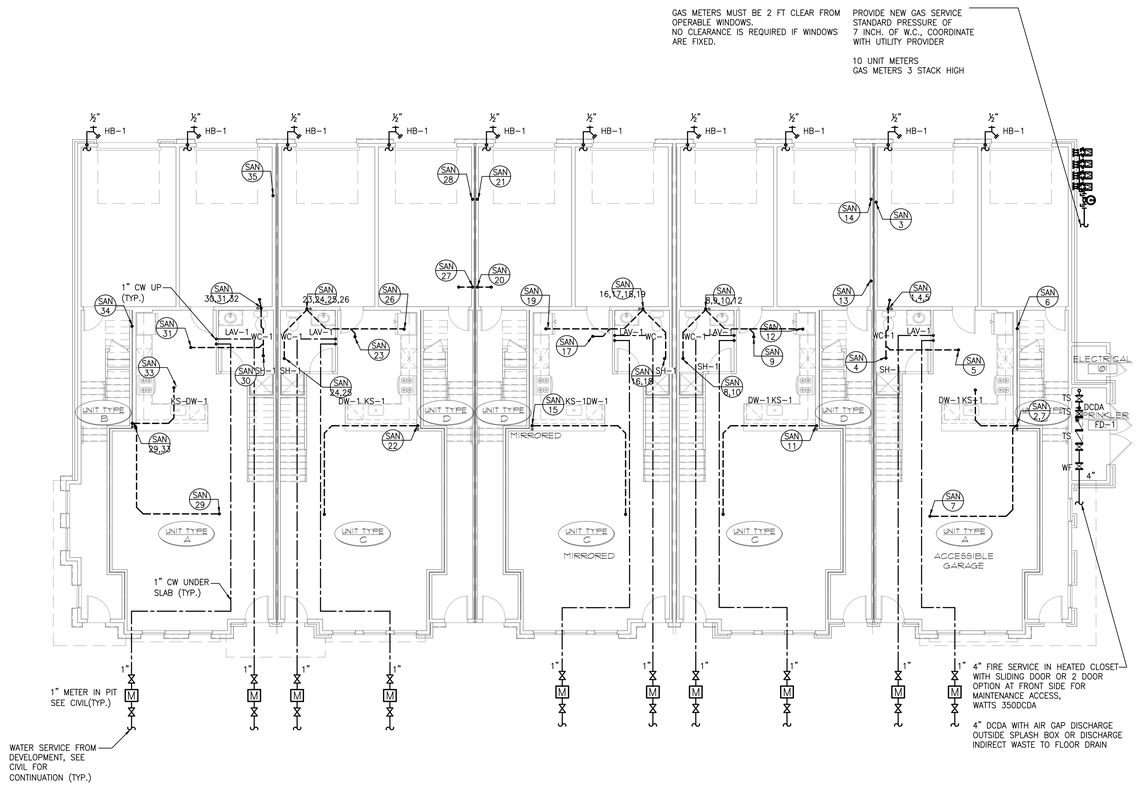
2697
PROJECT NUMBER

P0.01
SHEET NUMBER

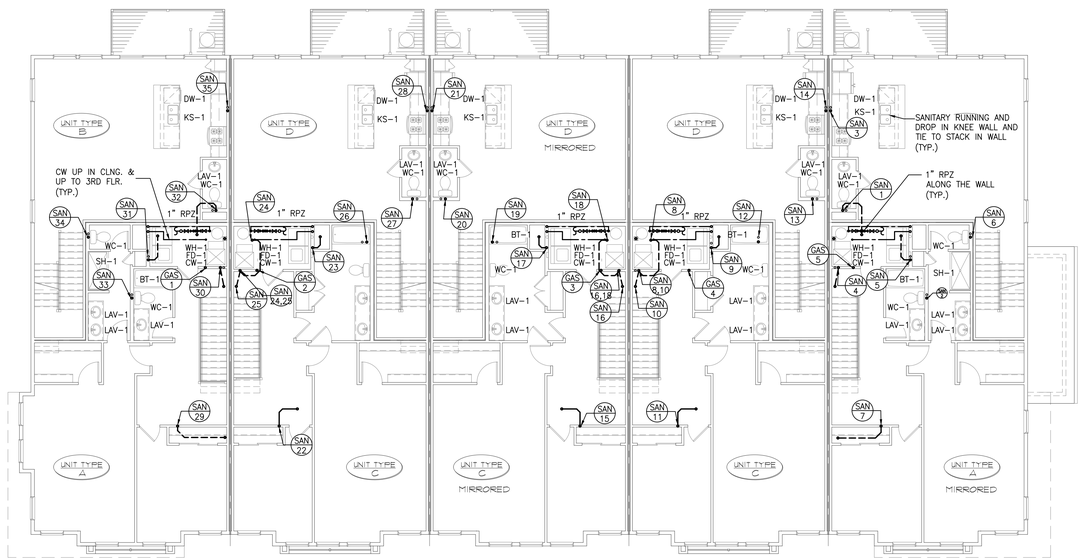
1 1/2" = 1'–0" | 1" = 1'–0" | 1/2" = 1'–0" | 1/4" = 1'–0" | 3/8" = 1'–0"



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



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



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

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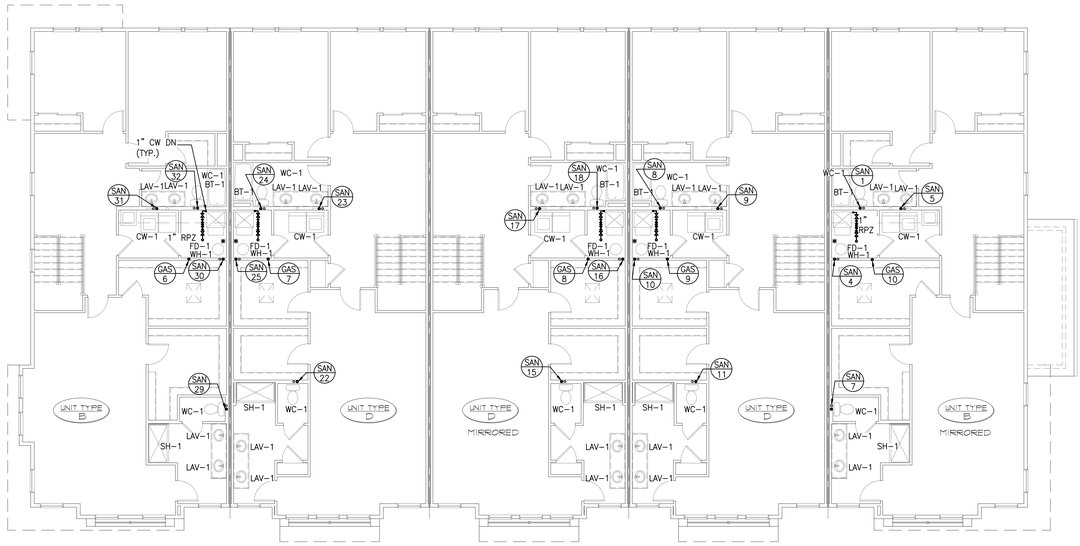
CM, JP, SM
PROJECT TEAM
AK
CHECKED BY
SHEET DESCRIPTION
PLUMBING 1ST AND 2ND FLOOR PLANS

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

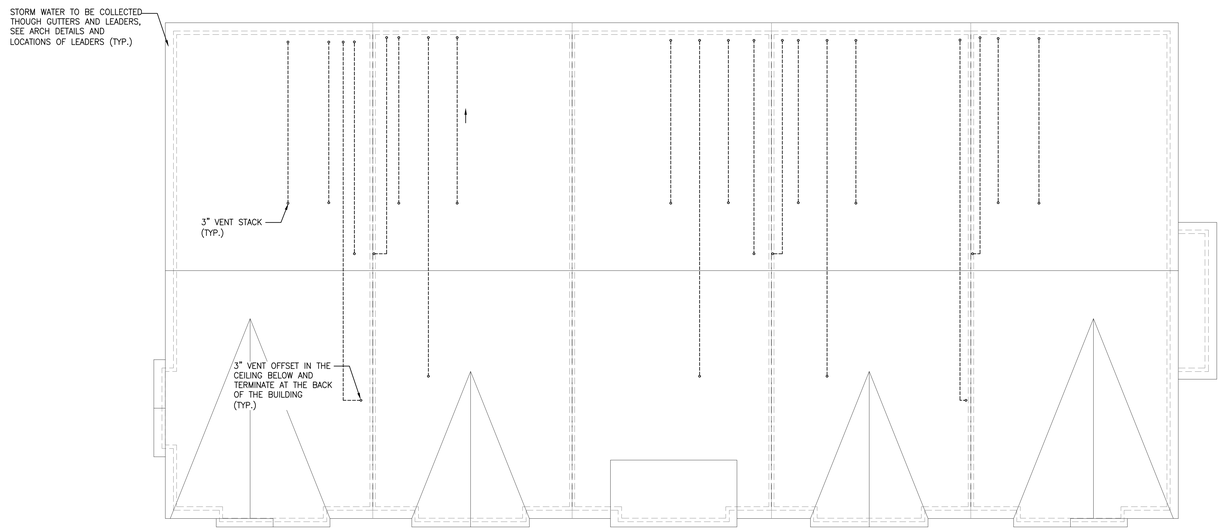
REVISIONS

2697
PROJECT NUMBER

P1.01
SHEET NUMBER



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



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

PROJECT NORTH

1 1/2" = 1'-0"
1" = 1'-0"
1 1/2" = 1'-0"
1/4" = 1'-0"
1/8" = 1'-0"

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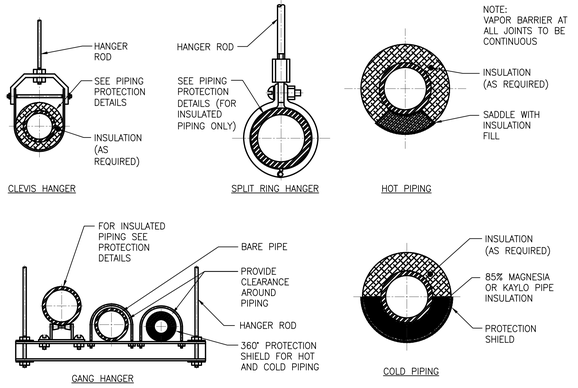
PRINCIPAL IN CHARGE
CM, JP, SM
PROJECT TEAM
AK
CHECKED BY
SHEET DESCRIPTION
PLUMBING 3RD FLOOR AND ROOF PLANS

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

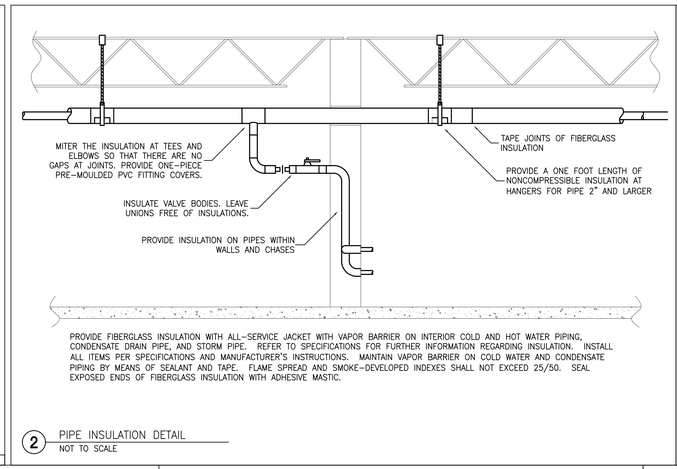
2697
PROJECT NUMBER

P1.02
SHEET NUMBER

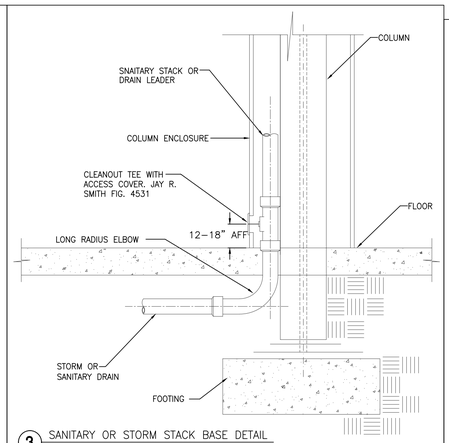


1 PIPING SUPPORT AND INSULATION DETAIL
NOT TO SCALE

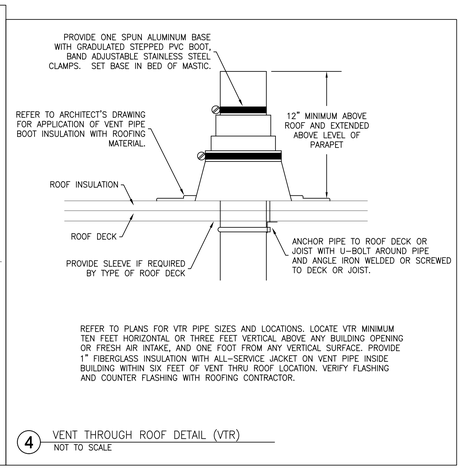
15083



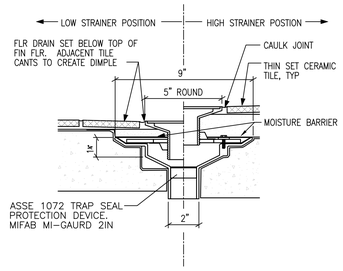
2 PIPE INSULATION DETAIL
NOT TO SCALE



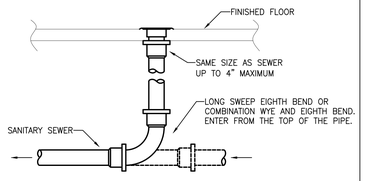
3 SANITARY OR STORM STACK BASE DETAIL
NOT TO SCALE



4 VENT THROUGH ROOF DETAIL (VTR)
NOT TO SCALE

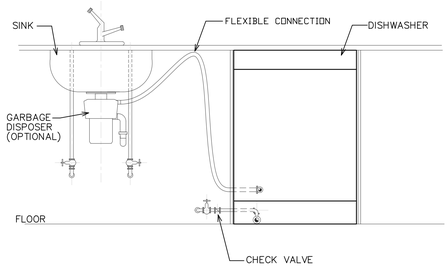


5 FLOOR DRAIN DETAIL
NOT TO SCALE

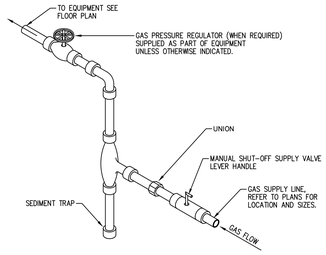


PROVIDE FLOOR CLEANOUTS WHERE SHOWN ON PLANS. LOCATE CLEANOUTS WHERE THERE IS 18" CLEAR AROUND. PROVIDE ROUND SECURED ADJUSTABLE TOP WITH "CO" ON COVER THAT IS SUITABLE FOR THE FLOOR FINISH (CARPET MARKER, RECESSED FOR TILE, SCORIATED FOR UNFINISHED FLOORS).

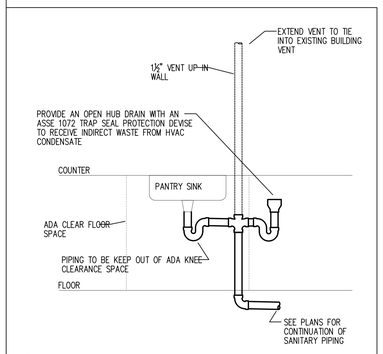
7 FLOOR CLEANOUT DETAIL
NOT TO SCALE



8 SCHEMATIC DISHWASHER AND SINK DETAIL
NOT TO SCALE

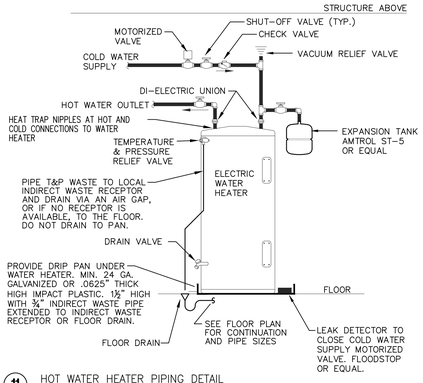


9 DETAIL OF GAS CONNECTION
NOT TO SCALE



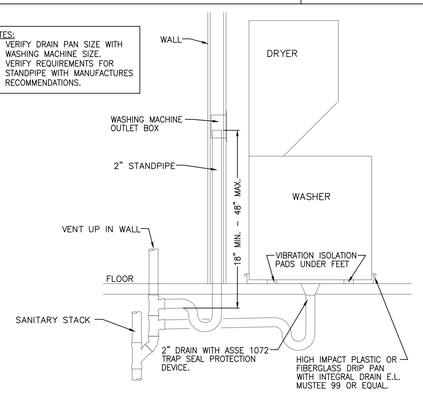
10 SINK AND HUB DRAIN DETAIL
NOT TO SCALE

NOTE:
ANCHOR OR SUPPORT WATER HEATER IN SEISMIC AREAS.

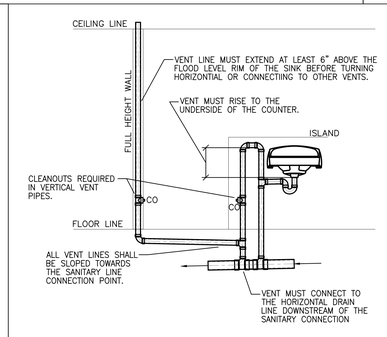


11 HOT WATER HEATER PIPING DETAIL
NOT TO SCALE

NOTES:
1. VERIFY DRAIN PAN SIZE WITH WASHING MACHINE SIZE.
2. VERIFY REQUIREMENTS FOR STANDPIPE WITH MANUFACTURES RECOMMENDATIONS.



12 CLOTHES WASHER PAN INSTALLATION
NOT TO SCALE



13 ISLAND SINK VENTING DETAIL
NOT TO SCALE

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PRINCIPAL IN CHARGE
CM, JP, SM
PROJECT TEAM
AK
CHECKED BY
SHEET DESCRIPTION
PLUMBING DETAILS

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

2697
PROJECT NUMBER

P3.01
SHEET NUMBER

1. SCOPE OF WORK:

1.1. ALL WORK INDICATED ON THE DRAWINGS AND SPECIFICATIONS SHALL BE INCLUDED UNDER THE BASE BID, EXCEPT WHERE THERE IS SPECIFIC REFERENCE TO EXCLUSION AND INCORPORATION IN OTHER QUOTATIONS.

2. GENERAL:

2.1. EXISTING PIPING WHERE INDICATED FOR EXISTING SYSTEMS IS DIAGRAMMATIC ONLY.

2.2. BECOME THOROUGHLY FAMILIAR WITH ACTUAL BUILDING SYSTEMS, WHICH ARE TO BE CHANGED, ALTERED, OR TO WHICH NEW CONNECTIONS ARE TO BE MADE. VERIFY ALL EXISTING CONDITIONS INCLUDING PIPE SIZE, LOCATION, AND ELEVATION.

2.3. THE INTENT OF THE WORK IS INDICATED ON THE DRAWINGS AND DESCRIBED HEREINAFTER. NO CONSIDERATION WILL BE GRANTED FOR REASON OF LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR REGARDING ACTUAL PHYSICAL CONDITIONS AT THE SITE.

2.4. COORDINATE WORK WITH ALL TRADES AND EXISTING CONDITIONS OF THE JOB SITE AND MAINTAIN REQUIRED CEILING HEIGHTS AND SPACE CONDITIONS.

2.5. ALL EQUIPMENT SHALL BE ASBESTOS FREE AND INDICATED AS SUCH.

2.6. PROVIDE APPROVED BACKFLOW PREVENTION FOR CONNECTION TO NON – POTABLE FIXTURES AND EQUIPMENT AS REQUIRED BY CODE.

2.7. ALL PIPING AND EQUIPMENT SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE. HANGERS AND SUPPORTS SHALL BE SPECIFICALLY APPROVED FOR USE IN EACH APPLICATION. WHERE OVERHEAD CONDITIONS DOES NOT PERMIT THE FASTENING OF HANGER RODS IN REQUIRED LOCATIONS, PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND APPROVED. DO NOT USE EXPANSION SHIELDS.

2.8. NO PLUMBING WORK SHALL BE HUNG FROM DUCTWORK OR THE HANGERS OF OTHER TRADES.

2.9. DUE TO THE NATURE OF ALTERATION WORK WHICH REQUIRES THE BUILDING OR FACILITY TO BE KEPT OPERABLE AT ALL TIMES, IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE ALL ACTIVITIES, CONNECTIONS, SHUT DOWNS AND THE LIKE WITH THE GENERAL CONTRACTOR, TENANT, AND BUILDING OWNER. ANY INTERRUPTIONS OF BUILDING SERVICES INCLUDING PHYSICAL ACCESS TO ADJACENT SPACES MUST BE COORDINATED WITH THE BUILDING OWNER. ALL TEMPORARY CONNECTIONS OR AFTER–HOUR WORK SHALL BE SO ARRANGED WITH ALL PARTIES INVOLVED.

2.10. IF THIS TRADE MUST PERFORM WORK IN OCCUPIED AREAS, IT SHALL MAKE ARRANGEMENTS WITH THE GENERAL CONTRACTOR AND THE OWNER AS TO THE TIME AND METHOD IN WHICH THIS WORK SHALL BE PERFORMED. ARRANGE FOR ALL ADJACENT AREAS TO BE PROPERLY PROTECTED AGAINST DAMAGE, DEBRIS, DIRT AND DUST.

2.11. PROVIDE AS PART OF NEW WORK:

2.11.1. HANGERS AND SUPPORTS FOR PIPING
2.11.2. SCAFFOLDING, RIGGING, AND HOISTING
2.11.3. RUBBISH REMOVAL AND CLEANING
2.11.4. CUTTING AND PATCHING
2.11.5. SLEEVES, OPENINGS AND THE CORE DRILLING OF EXISTING SLABS
2.11.6. CAULKING, FIREPROOFING, AND THE PACKING AND FILLING OF SLEEVES AND OPENINGS
2.11.7. SHOP DRAWINGS AND "AS BUILT" DRAWINGS
2.11.8. OBTAINING ALL REQUIRED PERMITS, APPROVALS, ACCEPTANCE, FILING AND INSPECTION CERTIFICATES
2.11.9. GUARANTEE ALL WORK, LABOR AND MATERIALS FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE
2.11.10. VERIFYING EXISTING CONDITIONS AT THE PROJECT SITE
2.11.11. TESTS: OPERATION, PERFORMANCE AND CODE–REQUIRED TESTS
2.11.12. PROTECTION OF WORK AND ADJACENT SPACES DURING CONSTRUCTION
2.11.13. COORDINATION WITH OTHER TRADES
2.11.14. IDENTIFICATION: VALVE TAGS, VALVE TAG SCHEDULES, AND PIPING IDENTIFICATION
2.11.15. MANUALS: O&M MANUAL & SUBMITTAL DATA TO BE PROVIDED TO OWNER FOR ALL EQUIPMENT AND SYSTEMS REQUIRING MAINTENANCE PROVIDED FOR THE PROJECT.
2.11.16. NARRATIVE OF HOW EACH SYSTEM OPERATES, INCLUDING SETPOINTS

2.12. DRAWINGS ARE DIAGRAMMATIC AND THEREFORE DO NOT RELIEVE THIS CONTRACTOR FROM PROVIDING ALL WORK AND EQUIPMENT NECESSARY TO COMPLETE THE INSTALLATION ACCORDING TO THE REQUIREMENTS.

2.13. THE ARRANGEMENT, POSITION, AND CONNECTION OF PIPES, DRAINS, VALVES, ETC., INDICATED ON THE DRAWINGS SHALL BE TAKEN AS A CLOSE APPROXIMATION, AND WHILE THEY SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, THE RIGHT IS RESERVED BY THE OWNER TO CHANGE THE LOCATIONS TO ACCOMMODATE ANY CONDITIONS WHICH MAY ARISE DURING THE PROGRESS OF THE WORK, WITHOUT ADDITIONAL COMPENSATION TO THIS CONTRACTOR FOR SUCH CHANGES, PROVIDED THAT THE CHANGES ARE REQUESTED PRIOR TO THE INSTALLATION OF THIS CONTRACTOR'S WORK.

2.14. THE RESPONSIBILITY FOR ACCURATELY LAYING OUT THE WORK RESTS WITH THIS CONTRACTOR. SHOULD IT BE FOUND THAT ANY OF HIS WORK IS SO LAID OUT THAT INTERFERENCE WILL OCCUR, HE SHALL SO REPORT THAT TO THE GENERAL CONTRACTOR.

2.15. ALL MATERIALS AND FIXTURES USED FOR THE ENTIRE PLUMBING PROJECT SHALL BE NEW AND VOID OF ANY DEFECTS. ALL MATERIALS AND FIXTURES SHALL CARRY STANDARD MANUFACTURES WARRANTY AGAINST ANY DEFECTS AND / OR DEFICIENCIES.

2.16. ALL COMPONENTS AND MATERIALS USE AS A PORTION OF THE DOMESTIC WATER SYSTEM ARE TO BE NSF 61 LISTED FOR USE IN POTABLE WATER SYSTEMS AND NSF–372 LISTED AS 'LEAD FREE'.

3. CODES, PERMITS, AND INSPECTIONS:

3.1. INSTALL ALL WORK IN FULL ACCORDANCE WITH THE REQUIREMENTS OF ALL LOCAL AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION OVER THESE MATTERS, AS WELL AS WITH ANY REQUIREMENTS OF NFPA, UL, FM, ETC, AND OTHER APPLICABLE CODES.

3.2. SECURE AND PAY FOR ALL NECESSARY APPROVALS, PERMITS, INSPECTIONS, CARTING, LEGAL DUMPING, ETC., AND DELIVER THE OFFICIAL RECORDS OF THE GRANTING OF PERMITS TO THE ARCHITECT AND OWNER WITHOUT ANY ADDITIONAL COST TO THE OWNER.

3.3. PAY ALL FILING FEES TO OBTAIN RELEASE OF APPROVED PLANS.

3.4. PAY ROYALTIES OR FEES REQUIRED IN CONNECTION WITH THE USE OF PATENTED DEVICES OR SYSTEMS, AND SAVE THE OWNER, THE ARCHITECT, THE CONSULTING ENGINEER, AND THE TENANT HARMLESS FROM ANY CLAIMS OR LAWSUITS ARISING FROM SUCH USE, AND INDEMNIFY EACH THEREOF AGAINST ATTORNEYS' FEES IN CONNECTION THEREWITH.

3.5. PROVIDE ALL SIGNS REQUIRED BY THE MUNICIPAL AUTHORITIES.

4. GUARANTEES AND CERTIFICATIONS:

4.1. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR DEFECTS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP AS WELL AS DAMAGE TO THE WORK OF OTHER TRADES RESULTING FROM SAME SHALL BE REPLACED OR REPAIRED AS DIRECTED FOR THE DURATION OF STIPULATED GUARANTEE PERIODS. THE DURATION OF GUARANTEE PERIODS SHALL BE ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE INSTALLATION BY THE OWNER, UNLESS A MORE STRINGENT PERIOD IS STIPULATED ELSEWHERE.

5. ENGINEER'S REVIEW, SHOP DRAWINGS, AND CERTIFICATIONS:

5.1. PREPARE AND SUBMIT DETAILED SHOP DRAWINGS. THE ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES IS ONLY FOR THE CONVENIENCE OF THE OWNER IN FOLLOWING THE WORK AND DOES NOT RELIEVE THIS TRADE OF RESPONSIBILITY FOR DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW SHALL NOT BE CONSTRUED AS A COMPLETE OR DETAILED CHECK OF THE WORK SUBMITTED, NOR SHALL IT RELIEVE THIS TRADE OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS AND SAMPLES, OR FROM THE NECESSITY OF FURNISHING ANY WORK REQUIRED BY THE CONTRACT DOCUMENTS WHICH HAVE BEEN OMITTED FROM THE SHOP DRAWING SUBMITTALS.

5.2. NO PART OF THE WORK SHALL BE STARTED IN THE SHOP OR IN THE FIELD UNTIL THE ENGINEER HAS REVIEWED THE SHOP DRAWINGS AND SAMPLES FOR THAT PORTION OF THE WORK. THEREAFTER, THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE INDICATED STATUS OF THE REVIEWED SHOP DRAWINGS. PRIOR TO ASSEMBLING THE WORK, THE FOLLOWING SHALL BE SUBMITTED: SCALED FLOOR PLAN AND CEILING DRAWINGS WITH DIMENSIONED LOCATIONS OF ALL PIPING AND EQUIPMENT INCLUDING SIZES, ELEVATIONS, AND APPROPRIATE INDICATION OF COORDINATION BETWEEN STRUCTURAL AND PLUMBING ELEMENTS. MANUFACTURER'S CATALOGUE CUTS OF ALL EQUIPMENT TO BE USED. SAMPLES OF ALL DEVICES, WHICH WILL BE CLEARLY VISIBLE TO VIEW. ALL SUBMITTALS SHALL BE PROPERLY IDENTIFIED WITH PROJECT NAME, ARCHITECT, ENGINEER, AND SUBCONTRACTOR'S NAME, ADDRESS, AND TELEPHONE NUMBER. PROVIDE CLEAR DETAILED REPRODUCIBLE "AS–BUILT" DRAWINGS UPON COMPLETION OF WORK AND PROVIDE SETS OF THE SAME TO LANDLORD AS DIRECTED.

5.3. THE ARCHITECT AND/OR ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES WITH REASONABLE PROMPTNESS AND WILL RETURN THEM TO THE CONTRACTOR STAMPED TO INDICATE THE APPROPRIATE ACTION AS FOLLOWS:

5.3.1. "NO EXCEPTIONS TAKEN" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE CONTRACT DOCUMENTS.

5.3.2. "MAKE CORRECTIONS NOTED" MEANS THAT FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED PROVIDING THE SUBMITTAL COMPLIES WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND THE CONTRACT DOCUMENTS. A COPY OF THE CORRECTED SUBMITTAL SHALL BE RETURNED TO THE ARCHITECT AND/OR ENGINEER FOR RECORD. IF, FOR ANY REASON, THE CONTRACTOR CANNOT COMPLY WITH THE NOTATIONS, THE CONTRACTOR SHALL RESUBMIT AS DESCRIBED FOR SUBMITTALS STAMPED "REVISE AND RESUBMIT".

5.3.3. "REVISE AND RESUBMIT" MEANS THAT THE CONTRACTOR MUST COMPLY WITH THE ARCHITECT'S AND/OR ENGINEER'S NOTATIONS AND RESUBMIT BEFORE FABRICATION, MANUFACTURE OR CONSTRUCTION MAY PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE JOB SITE.

5.3.4. "REJECTED" MEANS THAT THE SUBMITTAL DOES NOT COMPLY WITH THE CONTRACT DOCUMENTS AND THAT FABRICATION, MANUFACTURER CONSTRUCTION SHALL NOT PROCEED. SUBMITTALS STAMPED IN THIS MANNER ARE NOT PERMITTED ON THE JOB SITE.

6. DEMOLITION, CONNECTIONS TO EXISTING WORK, AND ALTERATION:

6.1. REFER TO THE CONTRACT DOCUMENTS FOR THE EXTENT OF SYSTEMS TO BE REMOVED. THE CONTRACTOR SHALL FIELD VERIFY AND INCLUDE IN THE BID ALL REMOVALS REQUIRED FOR THE COMPLETION OF WORK.

6.2. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING SYSTEMS TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. SUBMIT TO OWNER AND ARCHITECT FOR APPROVAL, DATE AND SCHEDULE OF ALL NECESSARY TEMPORARY SHUTDOWNS OF EXISTING SERVICES. ALL SHUTDOWNS SHALL BE MADE AT SUCH TIMES AS THEY WILL NOT INTERFERE WITH REGULAR OPERATION OF EXISTING FACILITIES AND ONLY AFTER WRITTEN APPROVAL OF THE SAME HAS BEEN OBTAINED FROM OWNER.

6.3. MAKE TEMPORARY CONNECTIONS AS REQUIRED BETWEEN NEW AND EXISTING WORK TO INSURE CONTINUOUS OPERATION OF THE FACILITY. ALL COSTS ASSOCIATED WITH AND RESULTING FROM TEMPORARY CONNECTIONS SHALL BE BORNE BY THIS CONTRACTOR.

6.4. CONNECT NEW WORK TO EXISTING WORK IN A NEAT AND APPROVED MANNER. RESTORE ANY DISTURBED EXISTING WORK TO ITS ORIGINAL CONDITION.

6.5. PROVIDE CAPS, PLUGS, AND OUTLETS AS REQUIRED ON EXISTING PIPING.

6.6. REMOVE AND /OR RELOCATE EXISTING PIPING AND OTHER WORK AS REQUIRED TO COMPLETE FINAL INSTALLATION OF NEW PIPING WORK.

6.7. ANY PIPING RENDERED DEFUNCT BY THIS ALTERATION WORK SHALL BE REMOVED. ALERT THE ARCHITECT AND GENERAL CONTRACTOR OF ANY "DISCOVERED" ABANDONED PIPING, IN GENERAL, ALL ABANDONED, INACTIVE, OR SUPERFLUOUS PIPING, INCLUDING HANGERS AND CLAMPS SHALL BE REMOVED.

6.8. ALL NEW AND EXISTING SYSTEMS SHALL BE LEFT IN PERFECT WORKING ORDER UPON COMPLETION OF ALL NEW WORK.

7. CUTTING AND PATCHING:

7.1. DO ANY CUTTING REQUIRED FOR THE PASSAGE OR INSTALLATION OF PIPES, SUPPORTS, AND THE LIKE. IN GENERAL, OTHERS WILL DO DEMOLITION OF EXISTING WALLS AND CEILINGS.

7.2. OTHERS WILL DO ALL PATCHING. THE EXPENSE OF CUTTING AND RESTORING SURFACES TO THEIR ORIGINAL CONDITION WHEN CAUSED BY THIS TRADE'S FAILURE TO PERFORM ITS PRELIMINARY WORK SHALL BE BORNED BY THIS TRADE.

8. SLEEVES:

8.1. PROVIDE 18 GAUGE GALVANIZED SHEET METAL SLEEVES FOR ALL PIPES PASSING THROUGH WALLS OR FLOORS. PROVIDE SLEEVES WITH AN I.D. OF AT LEAST 1/2" GREATER THAN THE OUTSIDE OF THE PIPE, INCLUDING INSULATION WHICH MUST BE CONTINUOUS THROUGH THE SLEEVE. PACK SPACE BETWEEN PIPES AND SLEEVES WITH AN APPROVED FIRESTOP MATERIAL. WHERE SLEEVES PASS THROUGH RATED CONSTRUCTION, FIT ESCUTCHEONS ON BOTH SIDES OF CONSTRUCTION.

9. GENERAL INSTALLATION OF PIPE:

9.1. MAINTAIN A MINIMUM OF 1/8" PITCH PER FOOT IN THE DIRECTION OF FLOW ON ALL DRAINAGE LINES 3" & LARGER. MAINTAIN A MINIMUM PITCH OF 1/4" PER FOOT FOR ALL DRAINAGE PIPING SMALLER THAN 3".

9.2. USE REDUCING FITTINGS, UNLESS OTHERWISE APPROVED IN SPECIAL CASES, IN MAKING REDUCTION IN SIZE OF PIPE. BUSHINGS WILL NOT BE ALLOWED UNLESS SPECIFICALLY APPROVED.

9.3. WHERE CHROME PLATED PIPING IS INSTALLED, CUT AND THREAD PIPE SO THAT NO UN–PLATED PIPE THREADS ARE VISIBLE UPON COMPLETING OF WORK.

9.4. CONNECTION TO GAS APPLIANCES SHALL INCLUDE AN EQUIPMENT SHUTOFF, A DIRT LEG AND FINAL CONNECTION SHALL BE MADE WITH A ANSI Z21.24 LISTED FLEXILE CONNECTOR SIZED PER EQUIPMENT CONNECTION SIZE WITH A MAXIMUM LENGTH OF 3' EXCEPT FOR RANGE AND DOMESTIC CLOTHES WASHER WHICH SHALL HAVE A MAX LENGTH OF 6'. CONNECTORS TO BE USED OUTDOORS SHALL ALSO BE ANSI Z21.75 LISTED. CONNECTORS FOR MOVABLE AND COMMERCIAL COOKING EQUIPMENT SHALL BE LISTED AS COMPLYING WITH ANSI Z21.69.

10. MATERIALS OF PIPING SYSTEMS:

10.1. SOLID CORE PVC PIPE AND FITTINGS SHALL BE MANUFACTURED FROM PVC COMPOUND WITH A CELL CLASS OF 12454 PER ASTM D 1784 AND CONFORM WITH NATIONAL SANITATION FOUNDATION (NSF) STANDARD 14. PIPE SHALL BE IRON PIPE SIZE (IPS) CONFORMING TO ASTM D 1785 AND ASTM D 2665. FITTINGS SHALL CONFORM TO ASTM D 2665. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. SOLVENT CEMENTS SHALL CONFORM TO ASTM D 2564, PRIMER SHALL CONFORM TO ASTM F 656. THE SYSTEM IS INTENDED FOR NON–PRESSURE DRAINAGE APPLICATIONS WHERE THE TEMPERATURE WILL NOT EXCEED 140°F. VERTICAL PIPE RUNS OF 3 STORIES OR GREATER SHALL BE INSTALLED WITH EXPANSION COUPLINGS FOR EVERY 3 FLOORS. ANY PENETRATIONS OF FIRE RESISTANCE RATED WALLS AND HORIZONTAL ASSEMBLIES SHALL BE PROTECTED WITH A FIRE COLLAR TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479.

10.2. HUBLESS CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A–888 AND CISPI STANDARD 301. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE. HUBLESS COUPLINGS SHALL CONFORM TO ASTM C–1540 FOR HEAVY DUTY COUPLINGS. GASKETS SHALL CONFORM TO ASTM C–564. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. COUPLINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S BAND TIGHTENING SEQUENCE AND TORQUE. TIGHTEN BANDS WITH A PROPERLY CALIBRATED TORQUE LIMITING DEVICE. TEST THE SYSTEM HYDROSTATICALLY AFTER INSTALLATION TO 10 FT. OF HEAD (4.3 PSI MAXIMUM).

10.3. HUB AND SPIGOT CAST IRON PIPE AND FITTINGS SHALL BE MANUFACTURED FROM GRAY CAST IRON AND SHALL CONFORM TO ASTM A–74. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE. HUB & SPIGOT PIPE AND FITTINGS SHALL BE SERVICE (SV). JOINTS SHALL BE MADE USING A COMPRESSION GASKET MANUFACTURED FROM AN ELASTOMER MEETING THE REQUIREMENTS OF ASTM C–564. ALL PIPE AND FITTINGS TO BE PRODUCED BY A SINGLE MANUFACTURER AND ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS AND LOCAL CODE REQUIREMENTS. TEST THE SYSTEM HYDROSTATICALLY AFTER INSTALLATION TO 10 FT. OF HEAD (4.3 PSI MAXIMUM).

10.4. COPPER WATER PIPING SHALL BE SEAMLESS DRAWN OR EXTRUDED TYPE "L" COPPER TUBING, HARD TEMPER IN ACCORDANCE WITH ASTM B–88. FITTINGS SHALL BE WROUGHT OR CAST BRASS SOLDERED FITTINGS CONFORMING WITH ASME B16.18 OR ASME B16.22. SOLDER JOINTS SHALL BE MADE IN ACCORDANCE WITH ASTM B 828 USING ASTM B–32 LEAD FREE SOLDER AND ASTM B–813 FLUX.

10.5. COPPER INDIRECT WASTE PIPING SHALL BE SEAMLESS DRAWN COPPER TUBING, MANUFACTURED IN ACCORDANCE WITH ASTM B–306. FITTINGS SHALL BE WROUGHT OR CAST BRASS SOLDERED FITTINGS CONFORMING WITH ASME B16.23 OR ASME B16.29. SOLDER JOINTS SHALL BE MADE IN ACCORDANCE WITH ASTM B 828 USING ASTM B–32 LEAD FREE SOLDER AND ASTM B–813 FLUX.

10.6. CROSS–LINKED POLYETHYLENE TUBING SHALL MEET THE SDR–9 DIMENSION STANDARD AND PERFORMANCE SPECIFICATIONS OF ASTM F–876/F–877 AND CSA B137.5 AND BE APPROVED FOR USE WITH ASTM F1807 AND ASTM F1960 FITTING SYSTEMS. TUBING SYSTEM SHALL ALSO COMPLY WITH ANSI/NSF 14 AND 61 AS SUITABLE FOR USE WITH POTABLE WATER. TEMPERATURE AND PRESSURE RATINGS SHALL BE 160 PSI AT 73.4°F, 100 PSI AT 180°F, AND 80 PSI AT 200°F. ANY PENETRATIONS OF FIRE RESISTANCE RATED WALLS AND HORIZONTAL ASSEMBLIES SHALL BE PROTECTED WITH A FIRE COLLAR TESTED IN ACCORDANCE WITH ASTM E 814 OR UL 1479.

10.7. BLACK IRON PIPE SHALL BE SCHEDULE 40 WELDED PIPE CONFORMING TO ASTM A–53 OR SEAMLESS DRAWN PIPE CONFORMING TO ASTM A–53 AND A–106. PIPE SHALL BE INSTALL WITH TAPERED THREADED OR WELDED JOINTS. A SOFT SETTING THREAD SEALANT SHALL BE USED ON ALL THREADED JOINTS. FITTINGS SHALL BE BLACK MALLEABLE IRON FITTINGS.

10.8. CORRUGATED STAINLESS STEEL TUBING WITH ARC RESISTANT JACKET COVERING SYSTEM SHALL BE MANUFACTURED TO COMPLY WITH ANSI LC 1 WITH ALL ADDENDA AND BE LISTED BY CSA. TUBING SHALL BE MANUFACTURED FROM 300 SERIES STAINLESS STEEL STRIP CONFORMING TO ASTM A240. TUBING SHALL HAVE AN ARC RESISTANT, UV RESISTANT, FIRE RATED POLYMER JACKET DESIGNED TO COMPLY WITH ASTM E–84 FOR FLAME SPREAD AND SMOKE DEVELOPMENT. TUBING SHALL BE RATED FOR OPERATION UP TO 25 PSI. FITTINGS SHALL BE BRASS FLARE FITTING AS LISTED BY CSA.

10.9. PROVIDE APPROVED TYPE VACUUM BREAKERS AND/OR CHECK VALVES, OR BACKFLOW PREVENTORS AS HEREIN SPECIFIED ON ALL EQUIPMENT AND FIXTURE CONNECTIONS REQUIRED BY CODE, INDICATED ON THE DRAWINGS, AS SPECIFIED, OR AS REQUIRED FOR THE PROPER FUNCTIONING OF THE EQUIPMENT.

10.10. ALL PIPING EXPOSED TO VIEW SHALL BE CHROME PLATED. THE TERM EXPOSED TO VIEW SHALL APPLY TO ALL PIPING FROM THE POINT WHERE IT LEAVES THE WALL, CEILING, OR FLOOR CONSTRUCTION, TO THE POINT OF FINAL CONNECTION TO THE FIXTURE. PIPING BUILT INTO FIXED BENCHWORK WITH ACCESS DOORS OR PANELS SHALL NOT BE CONSIDERED "EXPOSED TO VIEW."

11. INSULATION:

11.3. DOMESTIC WATER PIPING: FOR COLD WATER PIPING, PROVIDE ½" INSULATION WITH FACTORY APPLIED SELFSEALING, CONTINUOUS, VAPOR BARRIER JACKETS. FOR HOT WATER PIPING, THE FIRST 8' OF NON–CIRCULATED HOT WATER SYSTEMS AND ALL PORTIONS OF RECIRCULATED HOT WATER SYSTEMS (140°F. OR LESS) SHALL BE INSULATED. HOT WATER PIPING INSULATION SHALL BE 1" THICK FOR PIPING UP TO 1¼", AND 1½" THICK FOR LARGER PIPING. INSULATION CONDUCTIVITY NOT TO EXCEED 0.27 BTU PER INCH/HOUR×FT²×F.

11.4. ALL INSULATION AND VAPOR BARRIERS SHALL BE SEALED AND CONTINUOUS THROUGH HANGERS, SLEEVES, FITTINGS, VALVES, ETC.

11.5. ON RAIN CONDUCTORS WHICH PASS THROUGH OCCUPIED AREAS PROVIDE 1½" THICK FIBERGLASS INSULATION WITH FACTORY APPLIED SELFSEALING VAPOR BARRIER JACKET.

11.6. ALL EXPOSED SUPPLY AND WASTE PIPING UNDER PUBLIC LAVATORIES AND SINKS SHALL BE INSULATED TO PROTECT AGAINST CONTACT IN ACCORDANCE WITH ANSI A117.1 SECTION 606.6.

12. VALVES:

12.1. ALL WATER VALVES SHALL BE TWO PIECE, FULL PORT BALL VALVES WITH THREADED CONNECTIONS, APOLLO AS STANDARD. NOTE: SOLDERED OR BRAZED CONNECTIONS WILL NOT BE ACCEPTED.

12.2. GAS VALVES SHALL BE LOCKABLE PLUG VALVE–WALLWORTH NO.2911 OR AS APPROVED.

12.3. THERMOSTATIC MIXING VALVES SHALL BE INSTALLED TO PROVIDE TEMPERED WATER (MAX. TEMP. 110°F) TO PUBLIC USE HAND WASHING FACILITIES AND SHALL BE LISTED IN ACCORDANCE WITH ASSE 1070.

12.4. ALL CHECK VALVES ARE TO BE ASSE 1024 DUAL CHECK VALVES UNLESS OTHERWISE NOTED.

12.5. PRESSURE VACUUM BREAKERS SHALL BE INSTALLED 12" ABOVE THE HIGHEST OUTLET THEY ARE PROTECTING. THE VACUUM BREAKER SHALL RENDER POSITIVE PROTECTION AGAINST BACK–SIPHONAGE AND INCORPORATE A CHECK VALVE AND INLET SHUT–OFF.

12.6. VACUUM BREAKERS SHALL BE RATED TO 150 PSI WORKING PRESSURE AND SHALL WITHSTAND TEMPERATURES TO 170 F. THE VACUUM RELIEF VALVE MUST BE OF BRASS CONSTRUCTION WITH A SPRING LOADED DIAPHRAGM MEMBER TO ASSURE POSITIVE OPENING OF AIR INLET WHEN BACK–SIPHONAGE OCCURS. PRESSURE VACUUM BREAKERS SHALL BE WATTS # 800 OR AS APPROVED.

13. HANGERS:

13.1. PROVIDE SUITABLE AND SUBSTANTIAL HANGERS AND SUPPORTS FOR ALL PIPING. SUPPORT HORIZONTAL PIPING IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

MATERIAL	PIPE SIZE	MAX. HANGER
COPPER TUBE	1¼" & SMALLER	6'–0"
COPPER TUBE	1½" & LARGER	10'–0"
THREADED STEEL	1" & SMALLER	6'–0"
THREADED STEEL	1¼" & LARGER	10'–0"
PEX	ALL	32"
PVC	ALL	4'–0"
NO–HUB C.I.	ALL	5'–0"

13.2. THREADED ROD FOR HANGERS SUPPORTING PIPING UP TO 2" SHALL BE ⅜". FROM PIPING FROM 2½"–4" SHALL BE ½".

13.3. NO–HUB PIPING SHALL HAVE A MINIMUM OF TWO HANGERS PER LENGTH OF PIPE. PIPE HANGERS TO BE INSTALLED ON EACH SIDE OF THE JOINT.

14. PLUMBING FIXTURES:

14.1. ALL PLUMBING FIXTURES FINISHES AND TRIM SHALL BE SPECIFIED BY THE ARCHITECT.

14.2. ALL PIPING ESCUTCHEONS, FIXTURE TAILPIECES, TRAPS, ETC., EXPOSED TO VIEW TO BE CHROME PLATED.

14.3. PROVIDE FIXTURE SUPPORTS, I.E. CHAIR CARRIERS, LAVATORY SUPPORTS.

15. CLEANING:

15.1. PRIOR TO UTILIZATION THE POTABLE WATER SYSTEM SHALL BE FLUSHED WITH CLEAN WATER UNTIL WATER RUNS CLEAR AND FREE OF DEBRIS OR PARTICLES. FLUSHING SHALL BE PREFORMED WITH ANY STRAINERS OR AERATORS REMOVED.

15.2. AFTER FLUSHING, THE POTABLE WATER SYSTEM SHALL BE DISINFECTED BY FILLING THE SYSTEM WITH A WATER/ CHLORINE SOLUTION CONTAINING AT LEAST 50 PARTS PER MILLION OF CHLORINE; THE SOLUTION SHALL BE ALOUD TO STAND FOR AT LEAST 24 HOURS. ALTERNATELY A WATER/ CHLORINE SOLUTION CONTAINING AT LEAST 200 PARTS PER MILLION CAN BE USED FOR A DURATION OF AT LEAST 3 HOURS BUT NO MORE THAN 6 HOURS.

15.3. AFTER DISINFECTION THE SYSTEM SHALL BE FLUSHED WITH POTABLE WATER UNTIL THE CHLORINE LEVELS AT ALL OUTLETS ARE EQUAL TO THAT OF THE INCOMING WATER SUPPLY.

15.4. A CERTIFICATION OF PERFORMANCE AND LABORATORY TEST REPORT SHOWING THE ABSENCE OF COLIFORM ORGANISMS IN THE POTABLE WATER SYSTEM SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDICTION.

16. TESTS:

16.1. PRIOR TO SUBMITTING AN APPLICATION FOR FINAL ACCEPTANCE OF THE WORK, ALL TESTS DEEMED NECESSARY TO SHOW PROPER EXECUTION OF THE WORK SHALL HAVE BEEN PERFORMED AND COMPLETED IN THE PRESENCE OF AN ARCHITECT'S / OWNER'S REPRESENTATIVE. SCHEDULING OF ALL TESTING PROCEDURES SHALL BE ARRANGED TO SUIT THE CONVENIENCE OF THE ARCHITECT AND/OR OWNER'S REPRESENTATIVE.

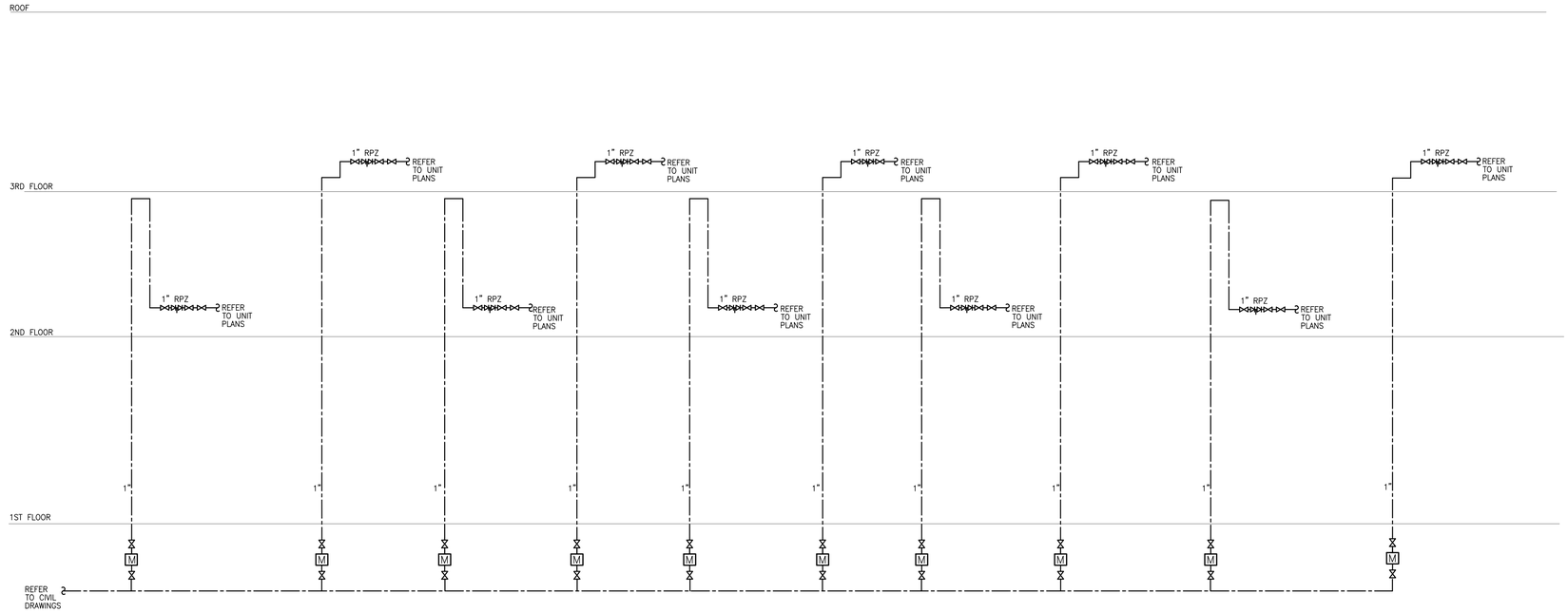
16.2. SUBJECT THE DRAINS, WASTE AND VENT PIPING TO A WATER TEST IN ACCORDANCE WITH ALL LOCAL REQUIREMENTS. THE SYSTEM SHALL BE TESTED TO A HYDROSTATIC PRESSURE EQUIVALENT TO AT LEAST A TEN FOOT OF HEAD OF WATER. AFTER FILLING, DISCONNECT WATER SUPPLY AND LET IT STAND FOR FIFTEEN (15) MINUTES UNDER TEST, DURING WHICH TIME THERE SHALL BE NO LOSS OR LEAKAGE.

16.3. TEST ALL INTERIOR WATER DISTRIBUTION SYSTEMS TO A PRESSURE OF AT LEAST 50 PSI HIGHER THAN THEIR NORMAL OPERATING STATIC PRESSURE. MINIMUM TEST SHALL BE GAUGE SET AT 150 PSI, WHICH SHALL STAND FOR TWO HOURS WITH NO LOSS IN PRESSURE.

16.4. FURNISH AND PAY FOR ALL DEVICES, MATERIALS, SUPPLIES AND LABOR REQUIRED IN CONNECTION WITH TESTS. MAKE ALL TESTS IN THE PRESENCE, AND TO THE SATISFACTION OF THE OWNER, ENGINEER, PLUMBING AND OTHER INSPECTORS OF THE AGENCIES HAVING JURISDICTION, AND ANY APPLICABLE INSURANCE ASSOCIATIONS AND PUBLIC UTILITIES. REPAIR, OR IF REQUIRED BY THE ENGINEER, REPLACE DEFECTIVE WORK WITH NEW WORK WITHOUT EXTRA CHARGE TO THE OWNER. REPEAT TESTS AS DIRECTED UNTIL ALL WORK IS PROVEN SATISFACTORY. RESTORE TO ITS ORIGINAL CONDITION ANY WORK DAMAGED OR DISTURBED BY TESTS, ENGAGING THE ORIGINAL TRADES TO DO THE RESTORATION WORK. NOTIFY THE OWNER, ENGINEER, AND INSPECTORS HAVING JURISDICTION AT LEAST 48 HOURS IN ADVANCE OF MAKING THE REQUIRED TESTS SO THAT ARRANGEMENTS MAY BE MADE FOR THEIR PRESENCE TO WITNESS THE SAME.

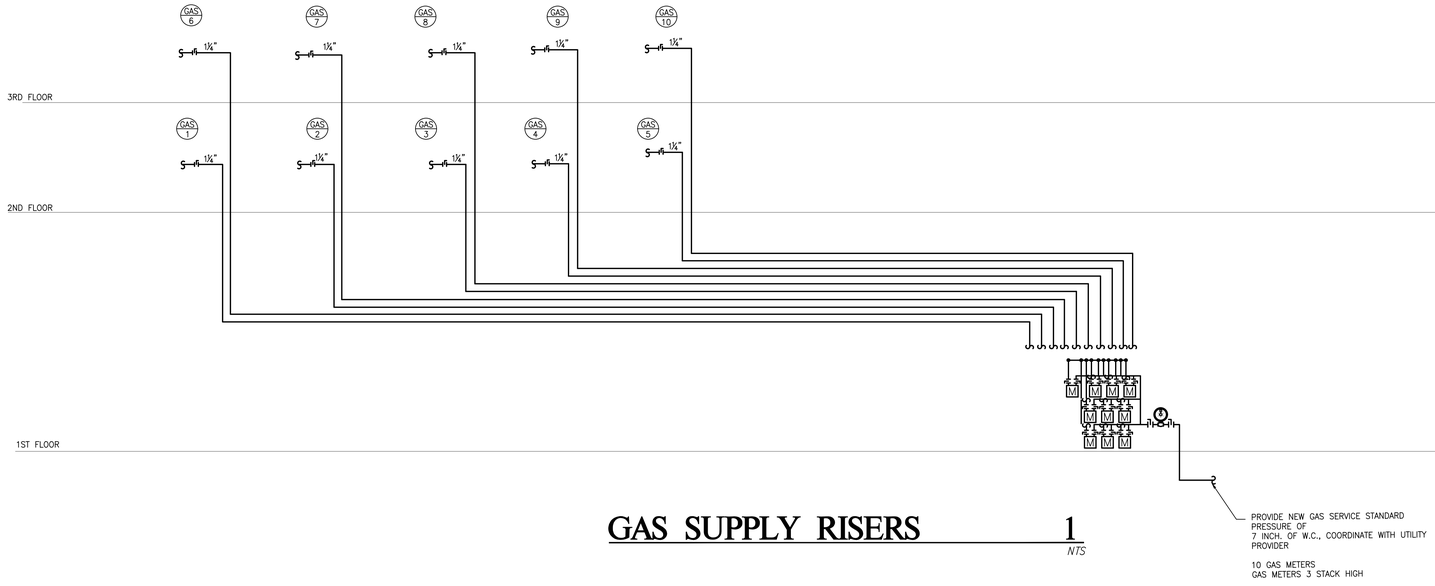
16.5. TEST GAS DISTRIBUTION SYSTEM AT AN AIR PRESSURE OF 1.5 TIMES THE PROPOSED MAXIMUM WORKING PRESSURE BUT NOT LESS THAN 3 PSIG. THE TEST DURATION SHALL BE 30 MINUTES FOR EACH 500 CUBIC FEET OF PIPE OR FRACTION THERE OF WITH NO DROP IN PRESSURES.

16.6. ALL TESTABLE BACKFLOW PREVENTION DEVICES SHALL BE FIELD TESTED IN ACCORDANCE WITH ASSE 5010, BY ASSE 5000 CERTIFIED INDIVIDUAL, PRIOR TO FINAL INSPECTION. COPIES OF TEST RES



WATER SUPPLY RISERS 1

NTS



GAS SUPPLY RISERS 1

NTS

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ARMEN KHACHATURIAN
PRINCIPAL IN CHARGE

CM, JP, SM
PROJECT TEAM

AK
CHECKED BY

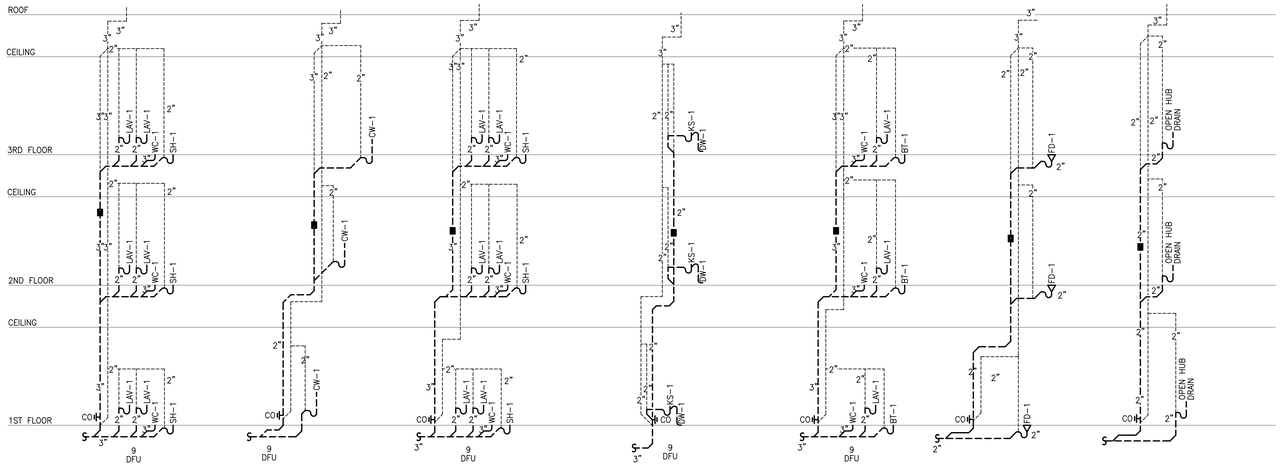
SHEET DESCRIPTION
PLUMBING RISERS DIAGRAM

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

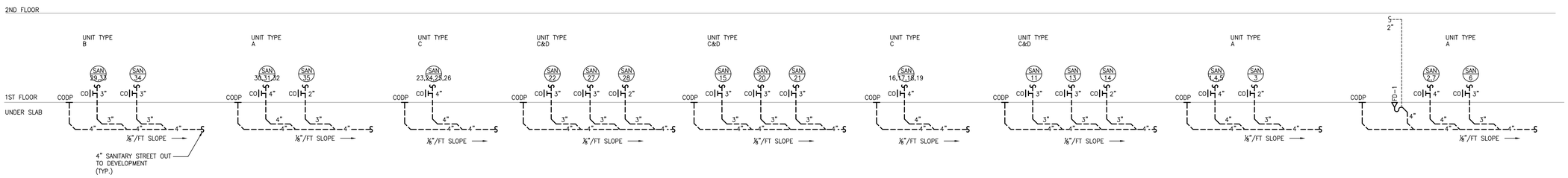
2697
PROJECT NUMBER

P5.01
SHEET NUMBER

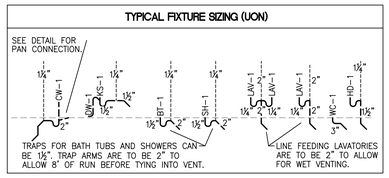


TYPICAL SANITARY RISERS 1

NTS



TYPICAL FIXTURE SIZING (UON)



GENERAL NOTES:

1. THE TOTAL OF DFU FOR THE STACKS DIFFERS FROM THAT OF THE HORIZONTAL PIPING DUE TO BATHROOM GROUPS BEING SPLIT UP ONTO SEPARATE STACKS.
2. STACK VENTS CAN BE COMBINED AS NECESSARY TO MINIMIZE ROOFTOP PENETRATIONS

GENERAL NOTE

1. DRAINAGE FIXTURE UNIT COUNTS ARE BASED ON NATIONAL STANDARD PLUMBING CODE 2021 TABLE 11.4.1&11.4.4A.
2. BUILDING DRAINS AND SEWER IS BASED ON NATIONAL STANDARD PLUMBING CODE 2021 TABLE 11.5.1A&11.5.1B.

NOTE

1. THESE PLUMBING RISER DRAWINGS AND PIPING LAYOUT ARE DIAGRAMMATIC.
2. DO NOT SCALE THESE PLUMBING DRAWINGS.
3. PROVIDE PLUMBING SHOP DRAWINGS FOR APPROVAL.
4. CONTRACTOR SHALL COORDINATE OFFSET OF PIPING AS SHOWN ON RISERS AND FLOOR PLANS.

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PLUMBING RISERS
DIAGRAM

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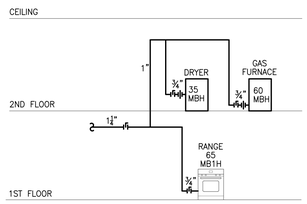
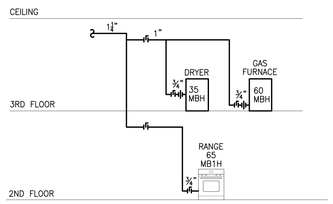
REVISIONS

2697
PROJECT NUMBER

P5.02
SHEET NUMBER



TYPICAL UNIT PLUMBING GAS SUPPLY RISER
SCALE: NTS



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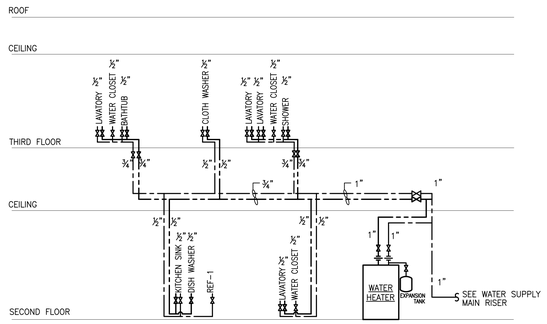
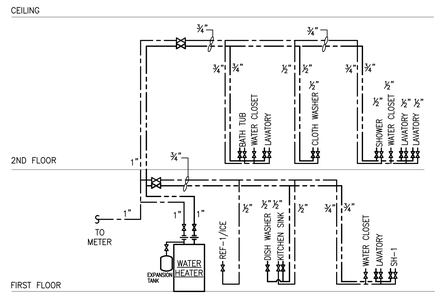
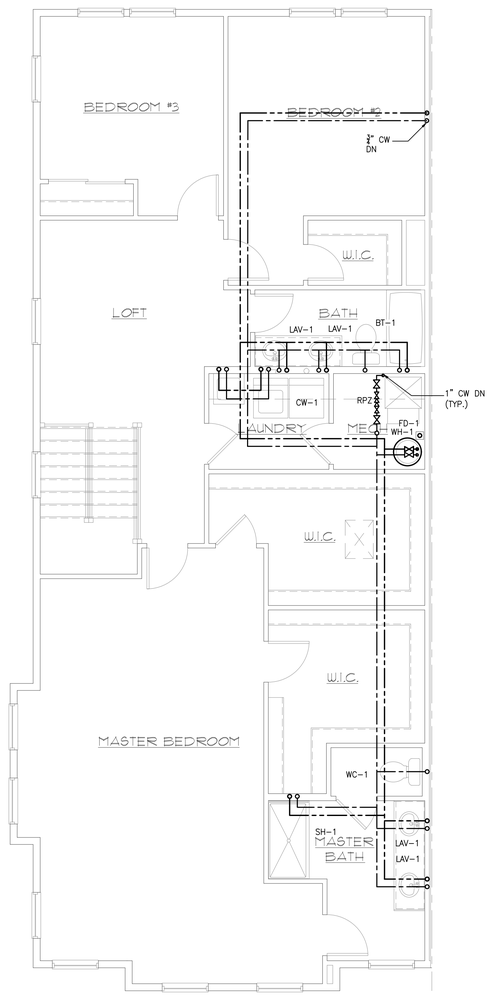
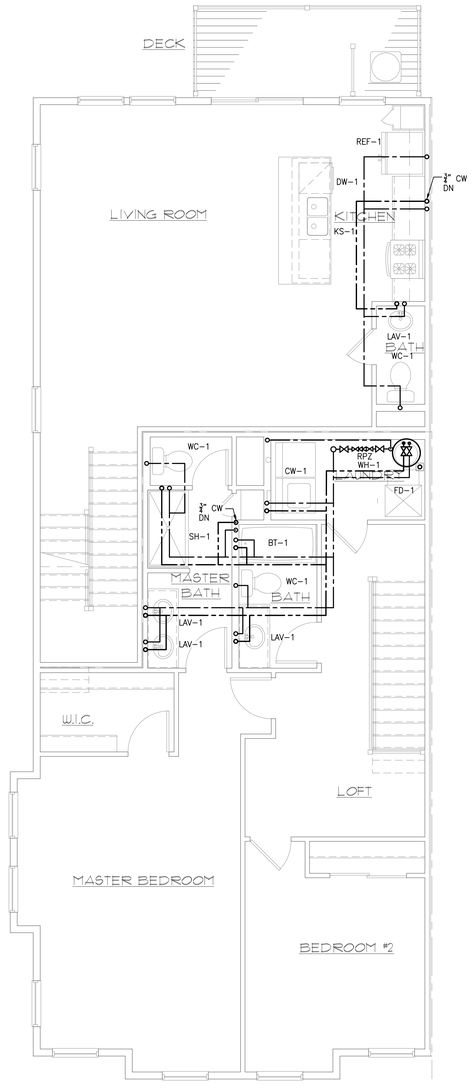




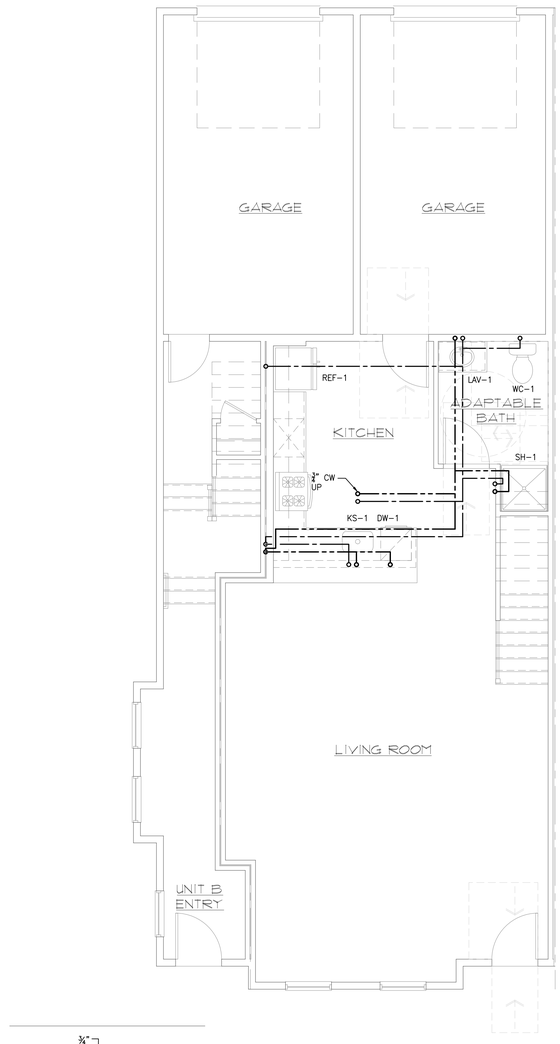
TYPICAL WATER SUPPLY DISTRIBUTION IN UNIT
NTS

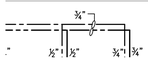


PLUMBING THIRD FLOOR PLAN - A + B
SCALE: 1/4" = 1'-0"



PLUMBING SECOND FLOOR PLAN - A + B
SCALE: 1/4" = 1'-0"





PLUMBING FIRST FLOOR PLAN - A + B
SCALE: 1/4" = 1'-0"

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PLUMBING UNIT PLANS

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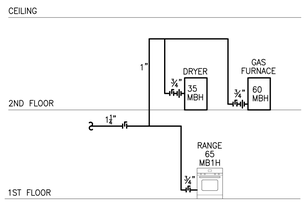
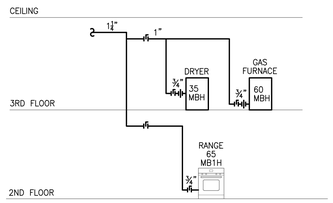
REVISIONS

2697
PROJECT NUMBER

P6.01
SHEET NUMBER



TYPICAL UNIT PLUMBING GAS SUPPLY RISER
SCALE: NTS



TYPICAL UNIT PLUMBING GAS SUPPLY RISER
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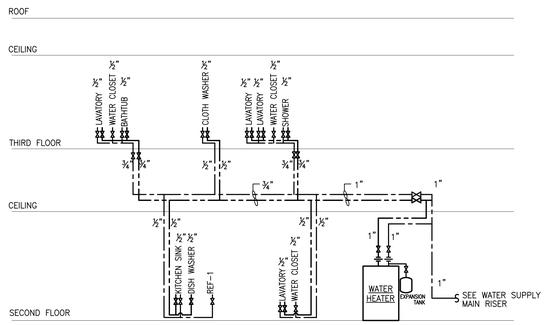
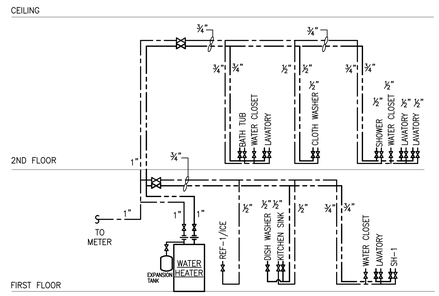
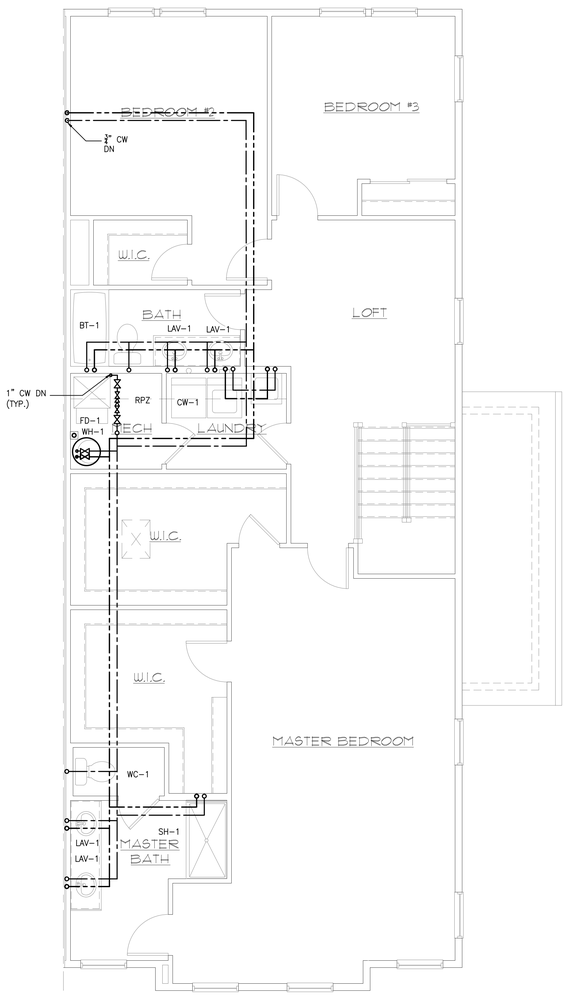
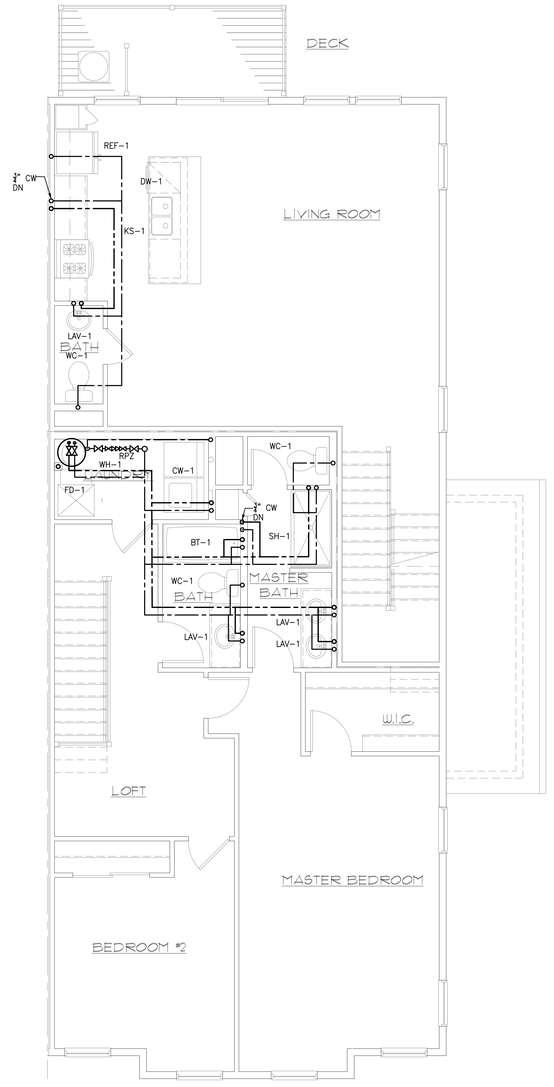




TYPICAL WATER SUPPLY DISTRIBUTION IN UNIT
NTS



PLUMBING THIRD FLOOR PLAN - A + B (MIRRORED)
SCALE: 1/4" = 1'-0"



PLUMBING SECOND FLOOR PLAN - A + B (MIRRORED)
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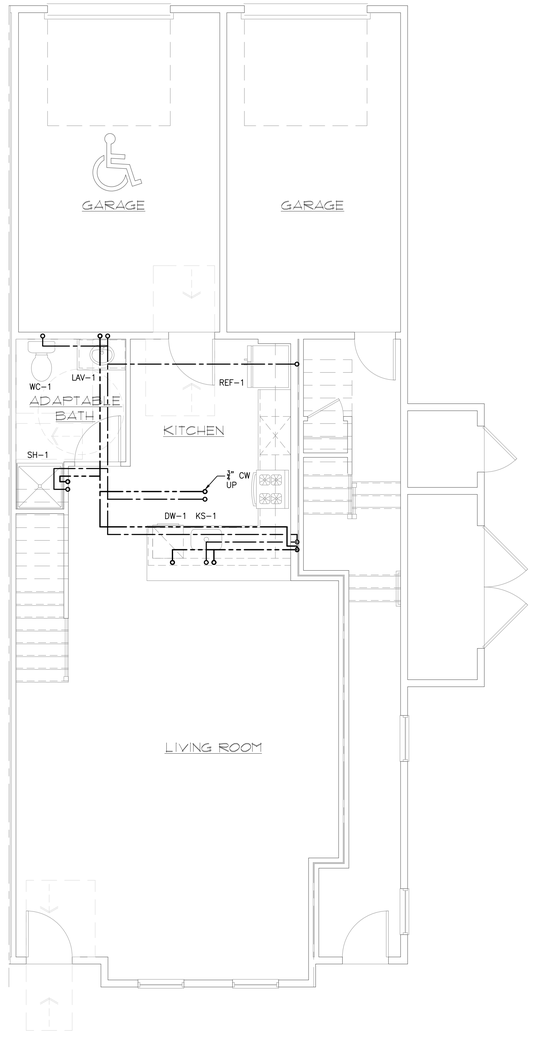

PLUMBING FIRST FLOOR PLAN - A + B (MIRRORED)
SCALE: 1/4" = 1'-0"

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SHEET DESCRIPTION
PLUMBING UNIT PLANS

RELEASED FOR	DATE
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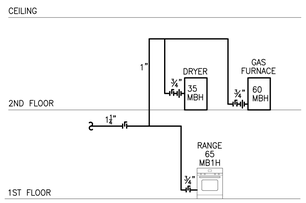
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

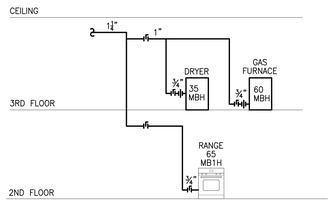
REVISIONS

2697
PROJECT NUMBER

P6.02
SHEET NUMBER



TYPICAL UNIT PLUMBING GAS SUPPLY RISER
SCALE: NTS



TYPICAL UNIT PLUMBING GAS SUPPLY RISER
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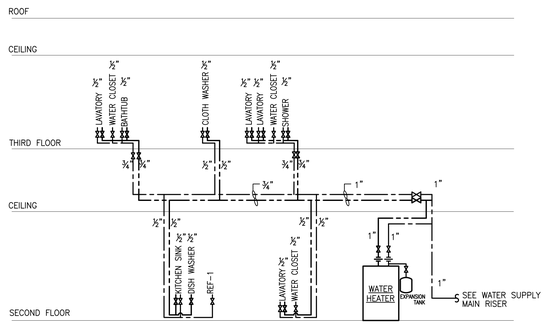
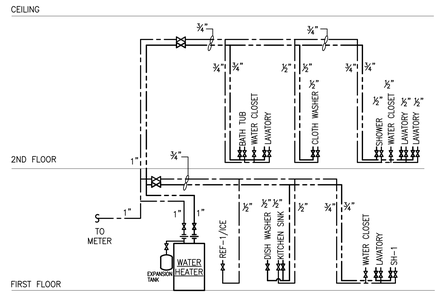
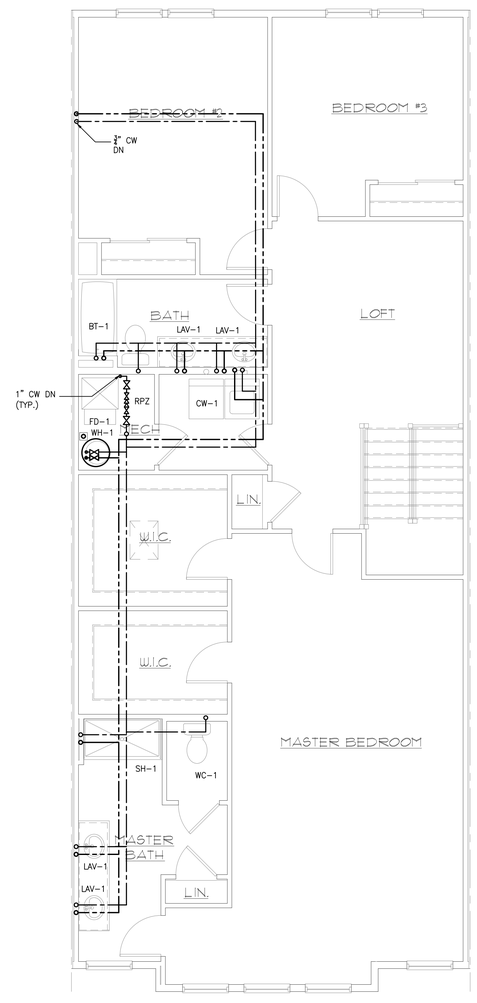
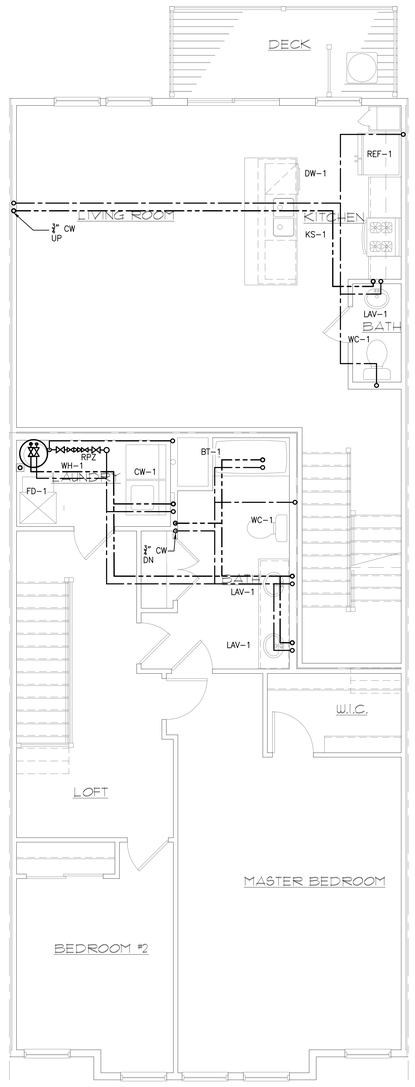




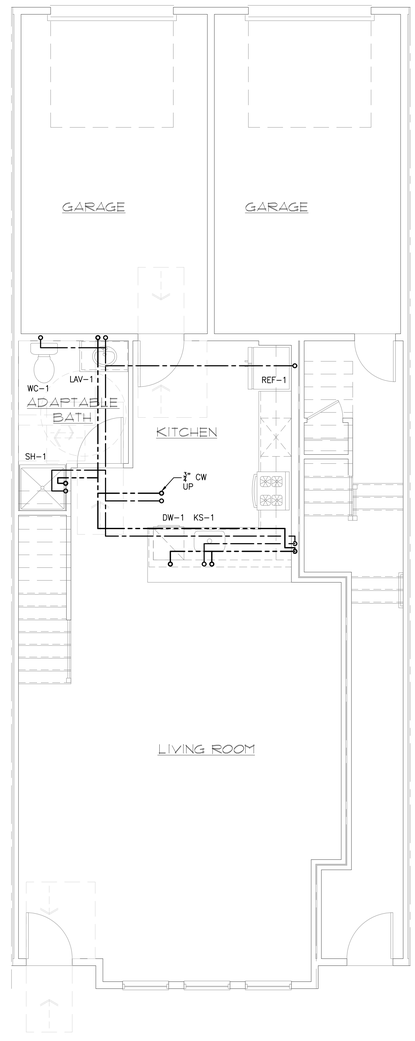
TYPICAL WATER SUPPLY DISTRIBUTION IN UNIT
NTS



PLUMBING THIRD FLOOR PLAN - C + D
SCALE: 1/4" = 1'-0"



PLUMBING SECOND FLOOR PLAN - C + D
SCALE: 1/4" = 1'-0"



PLUMBING FIRST FLOOR PLAN - C + D
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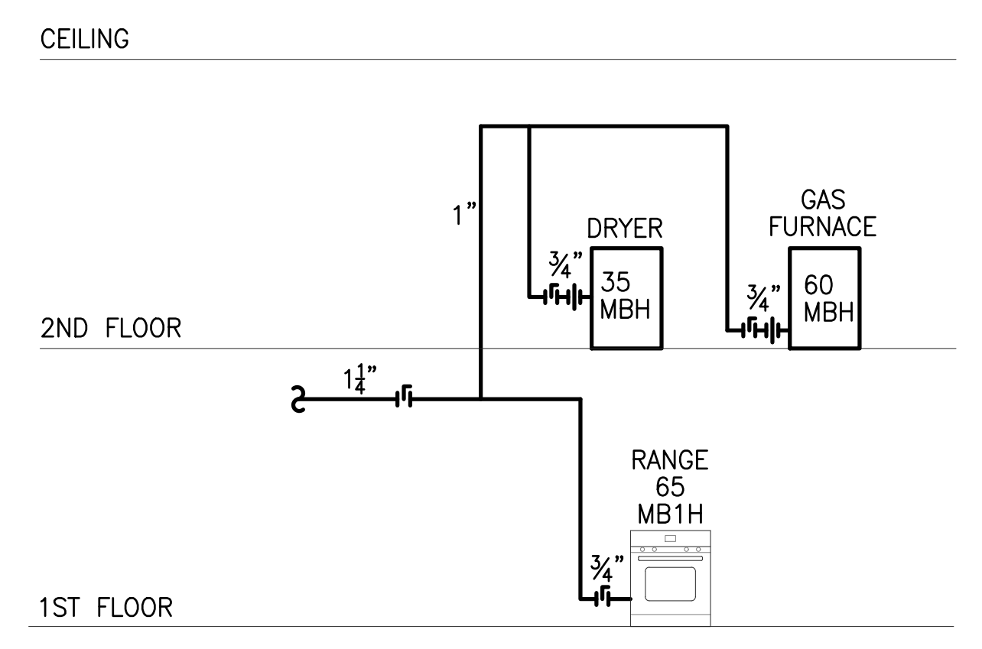
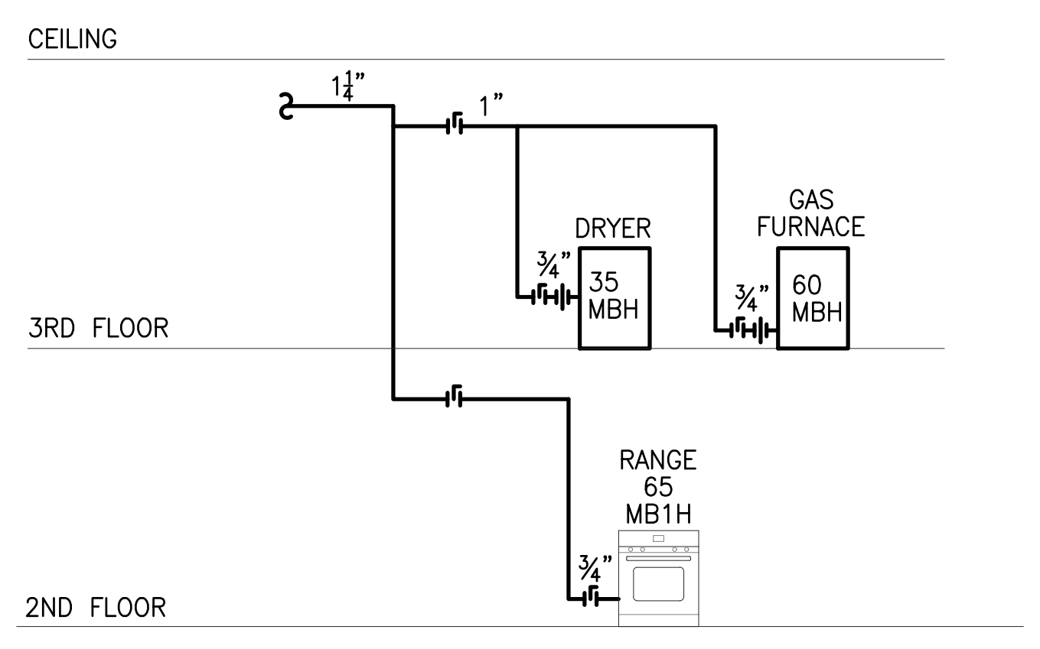
REVISIONS

2697
PROJECT NUMBER

P6.03
SHEET NUMBER



TYPICAL UNIT PLUMBING GAS SUPPLY RISER
SCALE: NTS



TYPICAL UNIT PLUMBING GAS SUPPLY RISER
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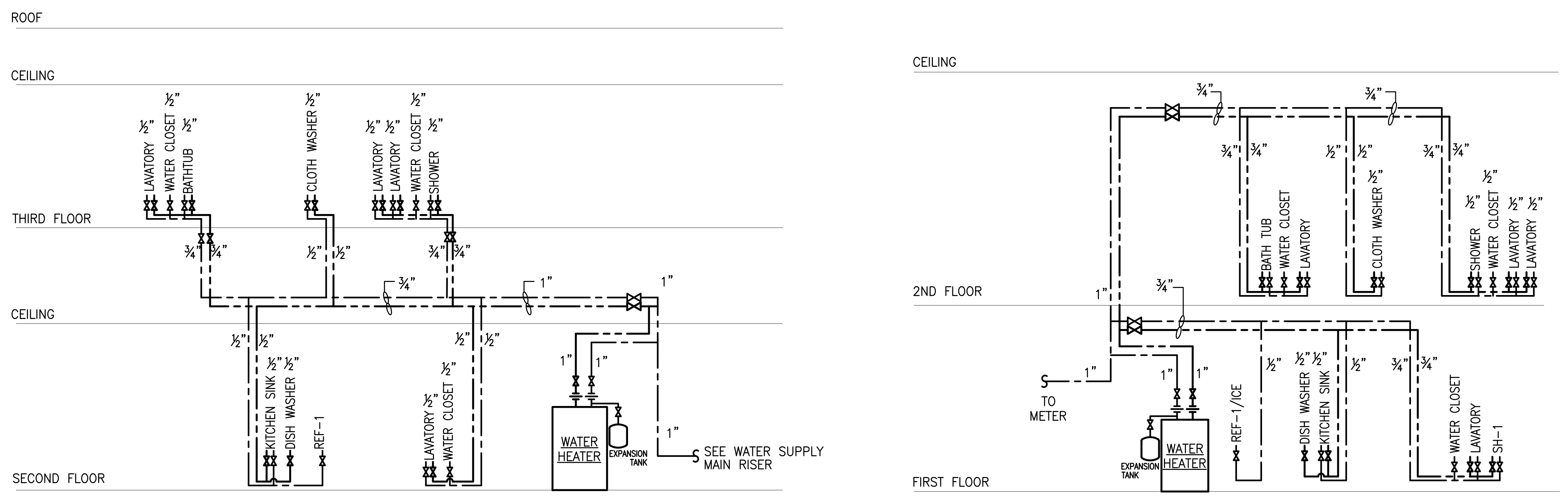
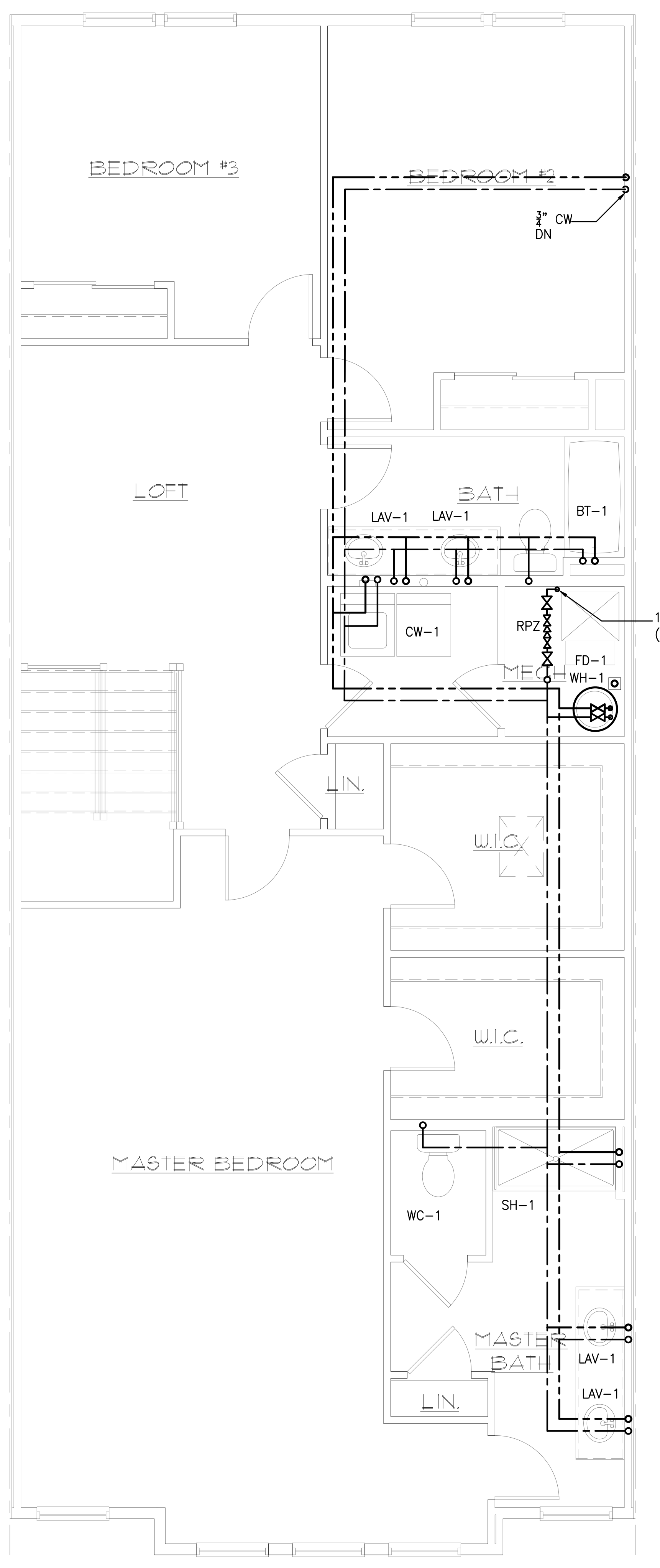
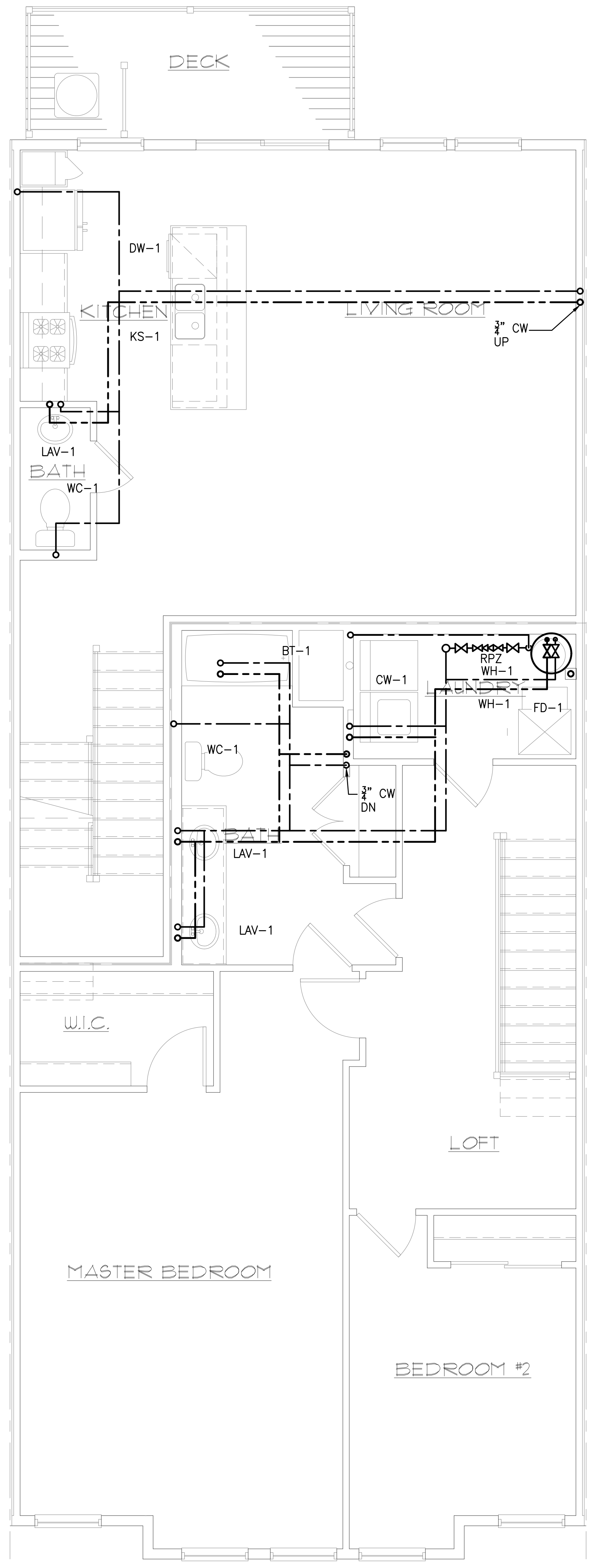


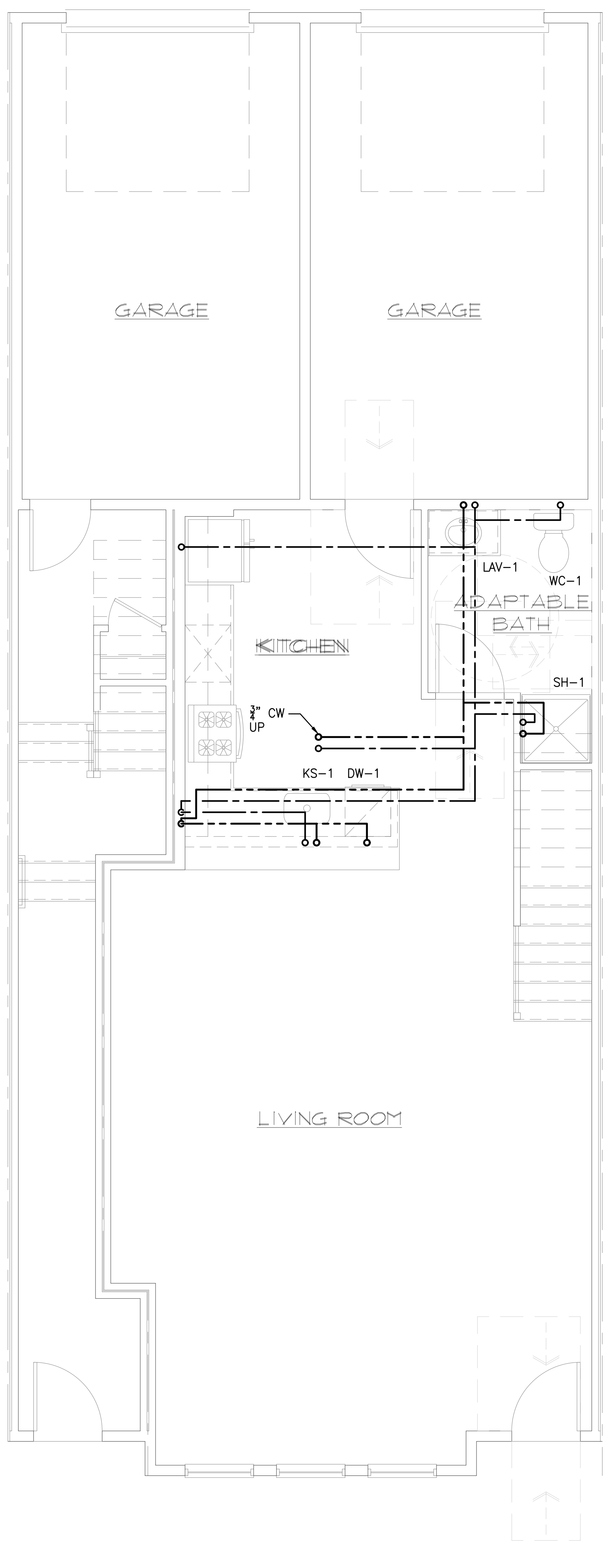
TYPICAL WATER SUPPLY DISTRIBUTION IN UNIT
NTS



PLUMBING THIRD FLOOR PLAN - C + D (MIRRORED)
SCALE: 1/4" = 1'-0"



PLUMBING SECOND FLOOR PLAN - C + D (MIRRORED)
SCALE: 1/4" = 1'-0"



PLUMBING FIRST FLOOR PLAN - C + D (MIRRORED)
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REVISIONS

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PROJECT NUMBER

P6.04
SHEET NUMBER

FIRE PROTECTION DRAWING / REVISION LOG

● NEW OR REVISED ISSUE
○ NON REVISED ISSUE

SHEET NUMBER	SHEET TITLE	ISSUE:	DESIGN DEVELOPMENT	50% CD	PERMIT SET			
		DATE:	02/21/2024	03/18/2024	03/25/2024			
FP0.01	FIRE PROTECTION COVER SHEET		●	●	●			
FP1.01	FIRE PROTECTION 1ST AND 2ND FLOOR PLANS		●	●	●			
FP1.02	FIRE PROTECTION 3RD FLOOR AND ROOF PLANS		●	●	●			
FP3.01	FIRE PROTECTION SCHEDULES		●	●	●			
FP4.01	FIRE PROTECTION DETAILS		●	●	●			
FP6.01	FIRE PROTECTION UNIT PLANS		●	●	●			
FP6.02	FIRE PROTECTION UNIT PLANS		●	●	●			
FP6.03	FIRE PROTECTION UNIT PLANS		●	●	●			
FP6.04	FIRE PROTECTION UNIT PLANS		●	●	●			

FIRE PROTECTION MATERIAL SCHEDULE

SYSTEM	PIPE	FITTINGS	JOINTS	REMARKS
BURIED BUILDING FIRE SERVICE	PVC	PVC	PVC	3" AND LARGER PIPING
BURIED BUILDING FIRE SERVICE	PVC	PVC	PVC	2" PIPING
SPRINKLER	CPVC	CPVC	SOCKET	BLAZEMASTER CPVC PIPE MAY BE USED IN RESIDENTIAL APPLICATIONS ONLY WHEN INSTALLED AS PER MANUFACTURER'S SPECIFICATIONS.
DRAIN PIPE	STEEL SCHED 40 GALVANIZED	GALVANIZED	THREADED	

NOTES:
1. ALL MATERIALS SELECTED ON THIS SCHEDULE MUST BE APPROVED BY THE LOCAL AUTHORITIES.

CODE COMPLIANCE

2021 INTERNATIONAL BUILDING CODE
(WITH NEW JERSEY ADOPTED AMENDMENTS)
2021 INTERNATIONAL FIRE CODE WITH AMENDMENTS
NFPA 13 – 2019
NFPA 14 – 2019
NFPA 20 – 2019

SCHEDULE OF SPRINKLER HEADS

SYMBOL	MFR.	MODEL	SIN	TYPE	LOCATION	FINISH & REMARKS	TEMP. RATING	'K' FACTOR	HEAD COVERAGE	MIN. FLOW	MIN. PRESS.	LISTINGS
◉	VIKING	RESIDENTIAL	VK474	RESIDENTIAL CONCEALED PENDENT	THROUGHOUT THE FACILITY IN RESIDENTIAL AREAS WITH SUSPENDED CEILINGS UNLESS OTHERWISE NOTED	AS SELECTED BY ARCHITECT	155°F	5.8	20'x20'	AS LISTED	AS LISTED	
○	RELIABLE	G5–56	RA3415	QUICK RESPONSE CONCEALED PENDENT SPRINKLER	THROUGHOUT THE FACILITY IN CORRIDORS AND UTILITY CLOSET AREAS	AS SELECTED BY ARCHITECT	155°F	5.6	AS LISTED	AS LISTED	AS LISTED	
▶	VICTAULIC	FIRELOCK	V4431	QUICK RESPONSE RECESSED HORIZONTAL SIDEWALL	THROUGHOUT THE FACILITY ON 3RD FLOOR RESIDENTIAL UNITS OR WITHIN RESIDENTIAL AREA	AS SELECTED BY ARCHITECT	155°F	4.4	AS LISTED	AS LISTED	AS LISTED	
▷	VIKING	VK157	VK157	DRY VERTICAL SIDEWALL SPRINKLERS	THROUGHOUT THE FACILITY UNDER GARAGE DOORS	AS SELECTED BY ARCHITECT	155°F	5.6	AS LISTED	AS LISTED	AS LISTED	

NOTES:
1. SPRINKLER HEADS SHALL BE INSTALLED AS PER MANUFACTURER'S REQUIREMENT.
2. PROVIDE METAL WIRE GUARDS WHERE SPRINKLERS ARE SUBJECT TO DAMAGE AND SPRINKLER HEADS LOCATED UNDER HVAC DUCTS IN FIRE PROTECTION EQUIPMENT ROOMS WHEN LOCATED LOWER THAN 7'–0" A.F.F. ETC.
3. ALL SPRINKLER HEADS THROUGHOUT THE FACILITY SHALL BE OF THE ORDINARY TEMPERATURE RATING EXCEPT AS FOLLOWS:
   a. SPRINKLER HEADS IN FIRE PROTECTION ROOMS SHALL BE OF INTERMEDIATE TEMPERATURE RATING (200°).
   b. SPRINKLER HEADS LOCATED CLOSE TO HEATERS, SHALL BE OF THE TEMPERATURE RATING AS REQUIRED BY NFPA 13R.
   c. ALL HEAT GENERATING EQUIPMENT WHICH CAN AFFECT THE TEMPERATURE RATING OF THE SPRINKLER HEADS SHALL BE CLEARLY IDENTIFIED ON THE SHOP DRAWINGS PRIOR TO SUBMISSION FOR APPROVAL.
1. SPRINKLER HEADS MINIMUM FLOW & MINIMUM PRESSURE REQUIREMENTS TO BE BASED ON HYDRAULIC CALCULATION DESIGN DENSITIES.
2. ALL SPRINKLER HEAD FINISHES TO BE APPROVED BY ARCHITECT.
3. SPRINKLERS FOR THE ATTIC TO BE LISTED AS AN ATTIC SPRINKLER (VIKING MODEL V–BB)

SYMBOLS

- F — FIRE MAIN
- SP — SPRINKLER MAIN
- DR — DRAIN PIPE
- FSP — COMBINED FIRE STANDPIPE SPRINKLER
- DSP — DRY STANDPIPE
- WSP — WET STANDPIPE
- BALL VALVE
- HOSE VALVE
- FLOOR CONTROL VALVE ASSEMBLY
- CHECK VALVE
- CONTROL VALVE (OS & Y)
- PRESSURE REDUCING VALVE
- ALARM CHECK VALVE ASSEMBLY
- DRY PIPE VALVE ASSEMBLY
- OWH — OUTSIDE WALL HYDRANT
- OGH — OUTSIDE GROUND HYDRANT
- NON FREEZE WALL HYDRANT
- HOSE BIBB
- FIRE DEPARTMENT CONNECTION (SIAMESE)
- FIRE DEPARTMENT TEST HEADER
- FIRE HYDRANT
- FHV — FIRE HOSE VALVE
- ALARM GONG
- P.I.V. — POST INDICATOR VALVE
- FDV — FIRE DEPARTMENT VALVE
- PRE–ACTION VALVE
- OPENING THROUGH STEEL
- TERMINATION POINT OF DEMOLITION AND CAP
- CONNECT NEW TO EXISTING
- S98 — HYDRAULIC CALCULATION POINT INDICATOR
- FHR — FIRE HOSE RACK/CABINET
- FHV — FIRE HOSE VALVE
- PUMPS: 1. HOUSE PUMP (AKA FILL PUMP) 2. FIRE PUMP (SHOW GPM & MANUAL OR AUTOMATIC) 3. BOOSTER PUMP (SHOW GPM)
- TS — TAMPER SWITCH
- WF — WATER FLOW SWITCH
- EXISTING SPRINKLER PIPING TO REMAIN
- NEW SPRINKLER PIPING
- EXISTING SPRINKLER PIPING TO BE REMOVED
- XX / FP.XXX — DETAIL REFERENCE: DETAIL NUMBER / DETAIL REFERENCE: DRAWING NUMBER
- FSP / X — RISER CALLOUT: RISER TYPE / RISER CALLOUT: RISER NUMBER
- RCV — RISER CONTROL VALVE

ABBREVIATIONS

ABV	ABOVE
ABD	AUTOMATIC BALL DRIP
AD	ACCESS DOOR
AFF	ABOVE FINISHED FLOOR
BFP	BACK FLOW PREVENTER
BLDG	BUILDING
BLW	BELOW
BSMT	BASEMENT
CI	CAST IRON
℄	CENTER LINE
CLG	CEILING
CO	CLEAN OUT
COL	COLUMN
CONC	CONCRETE
CONN	CONNECTION
CV	CHECK VALVE
°C	DEGREES CENTIGRADE
DIA	DIAMETER
DIAG	DIAGRAM
DISCH	DISCHARGE
DN	DOWN
DWG	DRAWING
(E)	EXISTING
EA	EACH
ELEV	ELEVATION
ENT	ENTERING
EQ	EQUAL
EQUIP	EQUIPMENT
EQUIV	EQUIVALENT
EX	EXISTING
EXT	EXTERNAL
°F	DEGREES FAHRENHEIT
FAI	FRESH AIR INLET
FD	FLOOR DRAIN
FH	FIRE HYDRANT
FHC	FIRE HOSE CABINET
FHR	FIRE HOSE RACK
FL	FLANGE
FLEX	FLEXIBLE
FLR	FLOOR
FP	FIRE PROTECTION
FPM	FEET PER MINUTE
FPS	FEET PER SECOND
FT	FEET
GA	GAUGE
GALV	GALVANIZED
GC	GENERAL CONTRACTOR
GPD	GALLONS PER DAY
GPH	GALLONS PER HOUR
GPM	GALLONS PER MINUTE
GV	GATE VALVE
HC	HUNG CEILING
HD	HEAD
HR	HOUR
HTR	HEATER
ID	INTERNAL DIAMETER
INCL	INCLUDING
JP	JOCKEY PUMP
MAX	MAXIMUM
MFR	MANUFACTURER
MIN	MINIMUM
MISC	MISCELLANEOUS
MTD	MOUNTED
(N)	NEW
NC	NORMALLY CLOSED
NIC	NOT IN CONTRACT
No	NUMBER
NO	NORMALLY OPEN
NPW	NON–POTABLE WATER
NOM	NOMINAL
NTS	NOT TO SCALE
OPG	OPENING
OS&Y	OUTSIDE SCREW & YOKE
OZ	OUNCE
PART	PARTIAL
PERF	PERFORATED
PEX	CROSS LINKED POLYETHYLENE TUBING
PH	PHASE
PIV	POST INDICATOR VALVE
PO	PLUGGED OUTLET
POS	POSITIVE
PRESS	PRESSURE
PS	PRESSURE SWITCH
PSI	POUNDS PER SQUARE INCH
PSIG	POUNDS PER SQUARE INCH GAUGE
PSIA	POUNDS PER SQUARE INCH ABSOLUTE
PV	PLUG VALVE
PVC	POLYVINYL CHLORIDE
QTY	QUANTITY
RCV	RISER CONTROL VALVE
REQD	REQUIRED
RM	ROOM
RPZ	REDUCED PRESSURE ZONE BACKFLOW PREVENTER
SCH	SCHEDULE
SCV	SPRINKLER CONTROL VALVE
SPEC	SPECIFICATION
STD	STANDARD
SUP	SUPPLY
SYS	SYSTEM
TDH	TOTAL DYNAMIC HEAD
TEMP	TEMPERATURE
TS	TAMPER SWITCH
TYP	TYPICAL
UG	UNDERGROUND
V	VENT
VO	VALVED OUTLET
W	WASTE
WF	WATER FLOW SWITCH
WM	WATER METER

NOTE :
SYMBOL LIST AND ABBREVIATIONS PROVIDED FOR CONVENIENCE ONLY.
NOT EVERY SYMBOL OR ABBREVIATION IS NECESSARY USED IN.

DESIGN CRITERIA

1. SPRINKLER SYSTEM LAYOUT AND CALCULATIONS SHALL COMPLY WITH 2021 BUILDING CODE OF NEW JERSEY, FIRE CODE OF NEW JERSEY, NFPA 13 (2019), OWNER'S INSURANCE COMPANY REQUIREMENTS AND GOOD ENGINEERING PRACTICE.
2. THE SPRINKLER SYSTEM SHALL BE HYDRAULICALLY CALCULATED BASED ON COORDINATED SHOP DRAWINGS.
3. SPACE OCCUPANCY CLASSIFICATION: AS PER NFPA STANDARD IS: LIGHT HAZARD IN RESIDENTIAL AREAS, EXTRA HAZARD GROUP II IN CAR STACKERS, PARKING AREAS, ORDINARY HAZARD GROUP I IN MECHANICAL ROOMS & PARKING SPACE, ORDINARY HAZARD GROUP II IN COMMERCIAL RETAIL SPACES.
4. SPRINKLERS PROTECTION SHALL PROVIDE A MINIMUM DENSITY OF DISCHARGE OF 0.1 GPM / SQ.FT. IN LIGHT HAZARD AREAS, 0.15 GPM / SQ.FT. IN OH1 AREAS AND 0.2 GPM / SQ.FT. IN OH2 AREAS. DESIGN AREA FOR WET SYSTEMS IS 1500 SQ.FT.; DESIGN AREA FOR DRY SYSTEM IS 1950 SQ.FT.
5. SPRINKLER COVERAGE IS 225 SQ.FT. FOR LIGHT HAZARD AREAS AND 130 SQ.FT. FOR ORDINARY HAZARD LOCATIONS.
6. RESIDENTIAL SPRINKLER HEADS ARE PERMITTED TO PROTECT THE DWELLING UNITS. REQUIRED DENSITY SHALL BE 0.10 GPM/SQ.FT. IN THE DWELLING UNITS. RESIDENTIAL SPRINKLER COVERAGE SHALL BE AS PER THE MANUFACTURER'S TABLES.
7. MINIMUM PRESSURE AT ANY SPRINKLER HEAD SHALL BE 7.0 PSI OR THE MANUFACTURER'S RECOMMENDED PRESSURE WHICHEVER IS THE HIGHER.

PROVIDE SIDEWALL SPRINKLERS ON 3RD FLOOR UNITS FED FROM THE FLOOR BELOW

CONTRACTOR TO PROVIDE EXPANSION FITTINGS FOR AREAS WITH EXPANSION JOINTS

PERFORMANCE SPECIFICATION CRITERIA

SPRINKLER PLANS AS SHOWN ARE FOR BIDDING PURPOSES ONLY. SPRINKLER CONTRACTOR IS TO OBTAIN CURRENT HYDRANT FLOW TEST DATA AND PROVIDE HYDRAULIC CALCULATIONS FOR SYSTEM PIPE SIZING IN ACCORDANCE WITH NFPA 13R. CONTRACTOR IS TO SUBMIT SHOP DRAWINGS INDICATING HYDRAULIC CALCULATIONS, PIPING LAYOUT & SIZING. SHOP DRAWINGS AND CALCULATIONS ARE TO BE SIGNED & SEALED BY A PROFESSIONAL ENGINEER, AND REVIEWED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION. ALL WORK IS TO BE DONE IN ACCORDANCE WITH NFPA 13R, INTERNATIONAL BUILDING CODE 2021 AND ALL OTHER STATE, LOCAL, GOVERNING AND APPLICABLE CODES.

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ARMEN KHACHATURIAN
PRINCIPAL IN CHARGE

CM, JP, SM
PROJECT TEAM

AK
CHECKED BY

SHEET DESCRIPTION
FIRE PROTECTION COVER SHEET

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

2697
PROJECT NUMBER

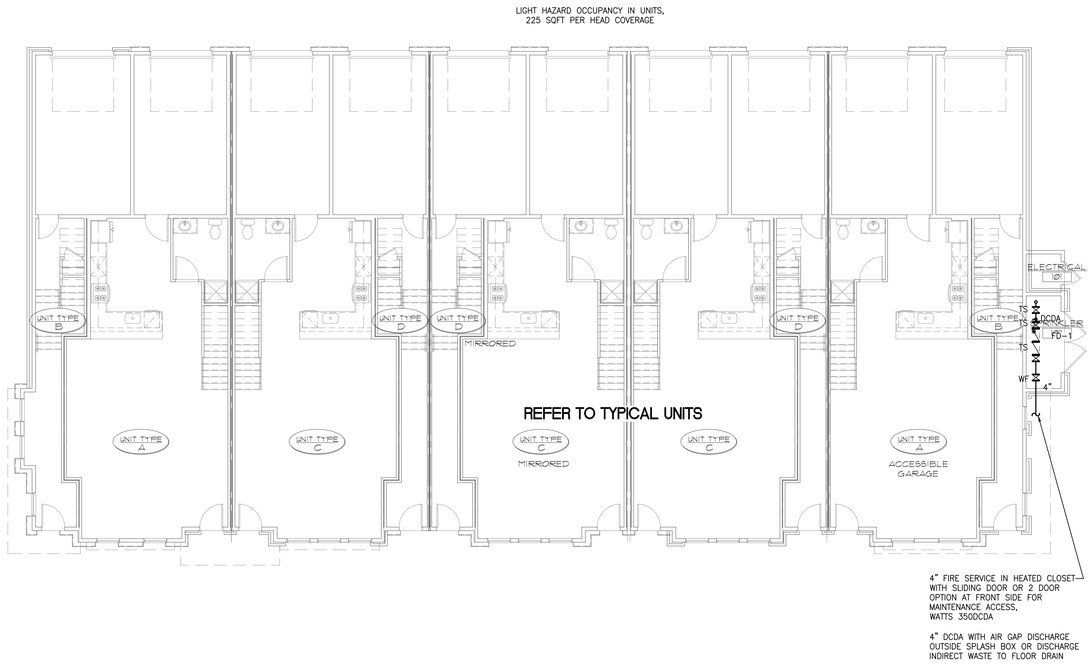
FP0.01
SHEET NUMBER

1 1/2" = 1'–0"
1" = 1'–0"
1 1/2" = 1'–0"
1/4" = 1'–0"
1/8" = 1'–0"

FIRE PROTECTION GENERAL NOTES:

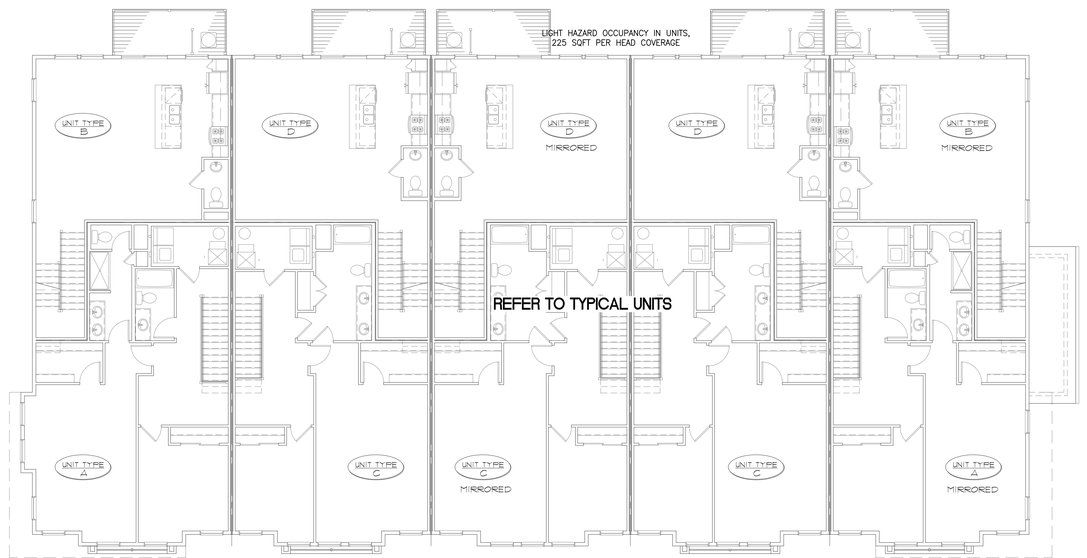
- SPRINKLER DESIGN IN ACCORDANCE WITH NFPA 13R
- LIGHT HAZARD OCCUPANCY IN ALL UNITS, 20'X20' RESIDENTIAL SPRINKLER
- SPRINKLER CONTRACTOR TO VERIFY CEILING HEIGHTS/SOFFITS, ANY OPEN TO ABOVE/BELOW SPACES, AND FOLLOW OBSTRUCTION RULES IN ACCORDANCE WITH NFPA 13R.
- PROVIDE DRY SIDEWALL HEADS FOR CLOSETS IN GARAGE OR SPACES SUBJECT TO FREEZING
- SPRINKLER HEADS TO MEET MANUFACTURERS MINIMUM PRESSURE AND FLOW REQUIREMENTS (TYPICAL FOR ALL UNITS)

IF INSULATION CANNOT BE INSTALLED ON TOP OF SPRINKLER PIPES ON THE THIRD FLOOR, PROVIDE SIDEWALL SPRINKLERS ON 3RD FLOOR UNITS FED FROM THE FLOOR BELOW



FIRE PROTECTION FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"



FIRE PROTECTION SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0"

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SHEET DESCRIPTION
FIRE PROTECTION
1ST AND 2ND FLOOR PLANS

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

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PROJECT NUMBER

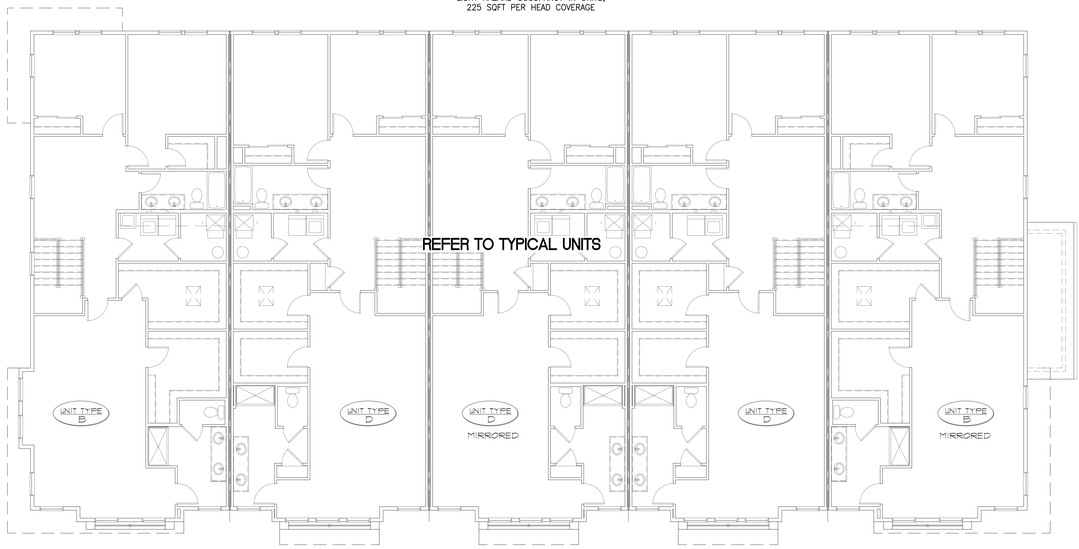
FP1.01
SHEET NUMBER

FIRE PROTECTION GENERAL NOTES:

- SPRINKLER DESIGN IN ACCORDANCE WITH NFPA 13R
- LIGHT HAZARD OCCUPANCY IN ALL UNITS, 20'X20' RESIDENTIAL SPRINKLER
- SPRINKLER CONTRACTOR TO VERIFY CEILING HEIGHTS/SOFFITS, ANY OPEN TO ABOVE/BELOW SPACES, AND FOLLOW OBSTRUCTION RULES IN ACCORDANCE WITH NFPA 13R.
- PROVIDE DRY SIDEWALL HEADS FOR CLOSETS IN GARAGE OR SPACES SUBJECT TO FREEZING
- SPRINKLER HEADS TO MEET MANUFACTURERS MINIMUM PRESSURE AND FLOW REQUIREMENTS (TYPICAL FOR ALL UNITS)

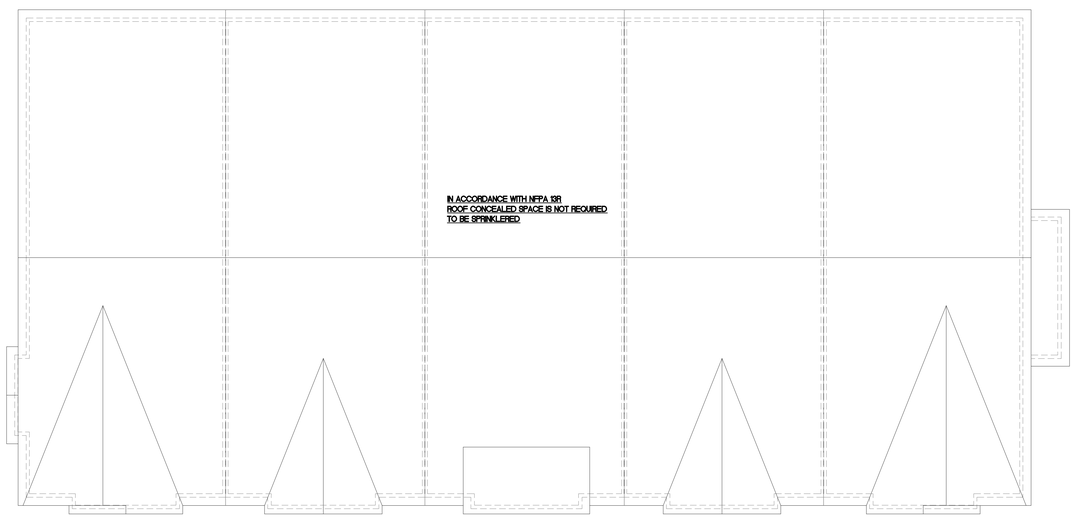
IF INSULATION CANNOT BE INSTALLED ON TOP OF SPRINKLER PIPES ON THE THIRD FLOOR, PROVIDE SIDEWALL SPRINKLERS ON 3RD FLOOR UNITS FED FROM THE FLOOR BELOW

LIGHT HAZARD OCCUPANCY IN UNITS,
225 SQFT PER HEAD COVERAGE



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

IN ACCORDANCE WITH NFPA 13R
ROOF CONCEALED SPACE IS NOT REQUIRED
TO BE SPRINKLERED



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

PROJECT NORTH

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CHECKED BY
SHEET DESCRIPTION
FIRE PROTECTION 3RD FLOOR AND ROOF PLANS

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

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FP1.02
SHEET NUMBER

FIRE PROTECTION SPECIFICATIONS

1. GENERAL:

1.1. ALL PROVISIONS IN THE GENERAL SPECIFICATIONS ABOVE APPLY TO THE FIRE PROTECTION SPECIFICATIONS.

1.2. THE FIRE PROTECTION SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH THE BUILDING CODE AND NFPA INSTALLATION OF SPRINKLER SYSTEMS. THE ENGINEERING PLANS PROVIDED ARE PRELIMINARY PLANS AS DEFINED IN NFPA PROVIDED FOR SCOPE AND REVIEW BY THE AUTHORITY HAVING JURISDICTION. WORKING PLANS AND HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA SHALL BE SUBMITTED AND APPROVED BY THE ENGINEER AND THE AHJ PRIOR TO THE INSTALLATION OF SYSTEM EQUIPMENT.

1.3. THE FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC, AND THEREFORE DO NOT RELIEVE THIS CONTRACTOR FROM PROVIDING ALL WORK AND EQUIPMENT NECESSARY TO COMPLETE THE INSTALLATION ACCORDING TO THEIR REQUIREMENTS. THE NUMBER AND SPACING OF SPRINKLER HEADS, SPACING AND SIZE OF A PIPE LOCATION AND NUMBER OF VALVES, METHOD OF DRAWING LINES, ALARM VALVES, AND ALL OTHER WORK AND DETAILS SHALL BE AS REQUIRED BY THE OWNER'S UNDERWRITES, NFPA, AND ALL OTHER AUTHORITIES HAVING JURISDICTION.

1.4. THE SPRINKLER HEADS IN ALL AREAS ARE TO BE INSTALLED ON A TRUE AXIS LINE IN BOTH DIRECTIONS WITH A MAXIMUM DEVIATION FROM AXIS LINE OF 1/2 IN. PLUS OR MINUS. IN ADDITION, ALL SPRINKLERS SHALL BE LOCATED IN CENTER OF TILES, GRIDS AND/OR ALIGNED WITH LIGHTS, DIFFUSERS, ETC., AS INDICATED ON ARCHITECTURAL REFLECTED CEILING PLANS AND DETAILS. AT THE COMPLETION OF THE INSTALLATION, IF ANY HEADS ARE FOUND TO EXCEED THE ABOVFF—MENTIONED TOLERANCE, SAME SHALL BE REMOVED AND REINSTALLED BY THIS CONTRACTOR.

1.5. THE ARRANGEMENT, POSITIONS AND CONNECTIONS OF PIPE, DRAINS, VALVES, ETC., SHOWN ON THE DRAWINGS SHALL BE TAKEN AS A CLOSE APPROXIMATION AND WHILE THEY SHALL BE FOLLOWED AS CLOSELY AS POSSIBLE, THE RIGHT IS RESERVED BY THE OWNER TO CHANGE LOCATIONS, TO ACCOMMODATE ANY CONDITIONS WHICH MAY ARISE DURING THE PROGRESS OF THE WORK, WITHOUT ADDITIONAL COMPENSATION TO THIS CONTRACTOR FOR SUCH CHANGES, PROVIDED THAT THE CHANGES ARE REQUESTED PRIOR TO THE INSTALLATION OF THIS CONTRACTOR'S WORK. THE RESPONSIBILITY FOR ACCURATELY LAYING OUT THE WORK RESTS WITH THIS CONTRACTOR. SHOULD IT BE FOUND THAT ANY OF HIS WORK IS SO LAID OUT THAT INTERFERENCE WILL OCCUR, HE SHALL SO REPORT THAT TO THE OWNER.

1.6. PROVIDE ALL SPRINKLER HEADS IN STRICT ACCORDANCE WITH APPROVED SHOP DRAWINGS. THE ARCHITECT AND OWNER RESERVE THE RIGHT TO REJECT ANY AND ALL WORK NOT IN ACCORDANCE WITH THE APPROVED SHOP DRAWINGS.

1.7. ALL PIPING AND EQUIPMENT SHALL BE SUBSTANTIALLY SUPPORTED FROM THE BUILDING STRUCTURE. HANGERS AND SUPPORTS SHALL BE SPECIFICALLY APPROVED FOR USE IN EACH APPLICATION. WHERE OVERHEAD CONDITIONS DOES NOT PERMIT THE FASTENING OF HANGER RODS IN REQUIRED LOCATIONS, PROVIDE ADDITIONAL STEEL FRAMING AS REQUIRED AND APPROVED. DO NOT USE EXPANSION SHIELDS.

1.8. NO FIRE PROTECTION WORK SHALL BE HUNG FROM DUCTWORK OR THE HANGERS OF OTHER TRADES.

1.9. BECOME THOROUGHLY FAMILIAR WITH ACTUAL BUILDING SYSTEMS, WHICH ARE TO BE CHANGED, ALTERED, OR TO WHICH NEW CONNECTIONS ARE TO BE MADE. VERIFY ALL EXISTING CONDITIONS INCLUDING PIPE SIZE, LOCATION, AND ELEVATION.

1.10. THE INTENT OF THE WORK IS INDICATED ON THE DRAWINGS AND DESCRIBED HEREINAFTER. NO CONSIDERATION WILL BE GRANTED FOR REASON OF LACK OF FAMILIARITY ON THE PART OF THE CONTRACTOR REGARDING ACTUAL PHYSICAL CONDITIONS AT THE SITE.

1.11. COORDINATE WORK WITH ALL TRADES AND EXISTING CONDITIONS OF THE JOB SITE AND MAINTAIN REQUIRED CEILING HEIGHTS AND SPACE CONDITIONS.

1.12. ALL EQUIPMENT SHALL BE ASBESTOS FREE AND INDICATED AS SUCH.

1.13. DUE TO THE NATURE OF ALTERATION WORK WHICH REQUIRES THE BUILDING OR FACILITY TO BE KEPT OPERABLE AT ALL TIMES, IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE ALL ACTIVITIES, CONNECTIONS, SHUT DOWNS AND THE LIKE WITH THE GENERAL CONTRACTOR, TENANT, AND BUILDING OWNER. ANY INTERRUPTIONS OF BUILDING SERVICES INCLUDING PHYSICAL ACCESS TO ADJACENT SPACES MUST BE COORDINATED WITH THE BUILDING OWNER. ALL TEMPORARY CONNECTIONS OR AFTER—HOURS WORK SHALL BE SO ARRANGED WITH ALL PARTIES INVOLVED.

1.14. THIS TRADE MUST PERFORM WORK IN OCCUPIED AREAS, IT SHALL MAKE ARRANGEMENTS WITH THE GENERAL CONTRACTOR AND THE OWNER AS TO THE TIME AND METHOD IN WHICH THIS WORK SHALL BE PERFORMED. ARRANGE FOR ALL ADJACENT AREAS TO BE PROPERLY PROTECTED AGAINST DAMAGE, DEBRIS, DIRT AND DUST.

1.15. PROVIDE AS PART OF NEW WORK:

1.15.1. HANGERS AND SUPPORTS FOR PIPING

1.15.2. SCAFFOLDING, RIGGING, AND HOISTING

1.15.3. RUBBISH REMOVAL AND CLEANING

1.15.4. CUTTING AND PATCHING

1.15.5. SLEEVES, OPENINGS AND THE CORE DRILLING OF EXISTING SLABS

1.15.6. CAULKING, FIREPROOFING, AND THE PACKING AND FILLING OF SLEEVES AND OPENINGS

1.15.7. SHOP DRAWINGS AND "AS BUILT" DRAWINGS

1.15.8. OPERATING AND MAINTENANCE INSTRUCTIONS

1.15.9. OBTAINING ALL REQUIRED PERMITS, APPROVALS, ACCEPTANCE, FILING AND INSPECTION CERTIFICATES

1.15.10. GUARANTEE ALL WORK, LABOR AND MATERIALS FOR ONE YEAR FOLLOWING DATE OF ACCEPTANCE

1.15.11. VERIFYING EXISTING CONDITIONS AT THE PROJECT SITE

1.15.12. SPARE PARTS AND TOOLS

1.15.13. TESTS: OPERATION, PERFORMANCE AND CODFP—REQUIRED TESTS

1.15.14. PROTECTION OF WORK AND ADJACENT SPACES DURING CONSTRUCTION

1.15.15. COORDINATION WITH OTHER TRADES

1.15.16. IDENTIFICATION: VALVE TAGS, VALVE TAG SCHEDULES, AND PIPING IDENTIFICATION

2. SCOPE OF WORK:

2.1 PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, TOOLS, APPLIANCES, SERVICES, HOISTING, SCAFFOLDING, SUPPORT AND SUPERVISION FOR THE FURNISHING AND INSTALLING OF ALL THE FIRE PROTECTION WORK, AND ALL RELATED WORK, COMPLETE, IN ACCORDANCE WITH THE CONTRACT DOCUMENT, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:

2.1.1. PROVIDE A COMPLETE AUTOMATIC SPRINKLER SYSTEM IN ACCORDANCE WITH THE OWNERS UNDERWRITER'S, NFPA, AND THE RULES OF ALL AUTHORITIES HAVING JURISDICTION.

2.1.2. SPRINKLER SYSTEMS SHALL INCLUDE CONNECTIONS TO THE SPRINKLER PIPING AND PROVISION OF A COMBINATION SHUTOFF VALVE AND PRESSURE REDUCING VALVE, FLOW SWITCH AND A DRAIN/TEST CONNECTION CONNECTED TO A VERTICAL DRAIN RISER SERVING THE FLOOR CONTROL VALVE.

2.1.3. THE SPRINKLER SYSTEMS SHALL BE HYDRAULICALLY CALCULATED TO THE FOLLOWING PARAMETERS:

2.1.3.1. OFFICE AREAS AND THE LIKE: LIGHT HAZARD, 0.10 GPM/SQ FT. OVER 1,500 SQ.FT.

2.1.3.2. STORAGE, SHOWROOM, MECHANICAL EQUIPMENT ROOMS: ORDINARY HAZARD, 0.15 GPM/SQ.FT. OVER 1,500 SQ.FT.

2.1.4. INCLUDE ALL PIPE, FITTINGS, BRANCHES, VALVES, ALARM VALVES, LADDERS, SIGNS, PROTECTIVE PAINTING, ALARM SWITCHES, TEST CONNECTION, SPRINKLER HEADS, DRAINS, TESTS, ALARM PANELS, ETC., IN FULL ACCORDANCE WITH UNDERWRITERS' AND MUNICIPAL REQUIREMENTS.

2.1.5. DO ANY CUTTING REQUIRED FOR THE PASSAGE OR INSTALLATION OF PIPES, SUPPORTS, AND THE LIKE. IN GENERAL, DEMOLITION OF EXISTING WALLS AND CEILINGS WILL BE DONE BY OTHERS.

2.1.6. ALL PATCHING WILL BE DONE BY OTHERS. THE EXPENSE OF CUTTING AND RESTORING SURFACES TO THEIR ORIGINAL CONDITION WHEN CAUSED BY THIS TRADE'S FAILURE TO PERFORM ITS PRELIMINARY WORK, SHALL BE BORNED BY THIS TRADE.

3.DEMOLITION, CONNECTIONS TO EXISTING WORK, AND ALTERATION:

3.1. REFER TO THE CONTRACT DOCUMENTS FOR THE EXTENT OF SYSTEMS TO BE REMOVED. THE CONTRACTOR SHALL FIELD VERIFY AND INCLUDE IN THE BID ALL REMOVALS REQUIRED FOR THE COMPLETION OF WORK.

3.2. PLAN INSTALLATION OF NEW WORK AND CONNECTIONS TO EXISTING SYSTEMS TO INSURE MINIMUM INTERFERENCE WITH REGULAR OPERATION OF EXISTING FACILITIES. SUBMIT TO OWNER AND ARCHITECT FOR APPROVAL, DATE AND SCHEDULE OF ALL NECESSARY TEMPORARY SHUTDOWNS OF EXISTING SERVICES. ALL SHUTDOWNS SHALL BE MADE AT SUCH TIMES AS THEY WILL NOT INTERFERE WITH REGULAR OPERATION OF EXISTING FACILITIES AND ONLY AFTER WRITTEN APPROVAL OF THE SAME HAS BEEN OBTAINED FROM OWNER.

3.3. MAKE TEMPORARY CONNECTIONS AS REQUIRED BETWEEN NEW AND EXISTING WORK TO INSURE CONTINUOUS OPERATION OF THE FACILITY. ALL COSTS ASSOCIATED WITH AND RESULTING FROM TEMPORARY CONNECTIONS SHALL BE BORNE BY THIS CONTRACTOR.

3.4. CONNECT NEW WORK TO EXISTING WORK IN A NEAT AND APPROVED MANNER. RESTORE ANY DISTURBED EXISTING WORK TO ITS ORIGINAL CONDITION.

3.5. PROVIDE CAPS, PLUGS, AND OUTLETS AS REQUIRED ON EXISTING PIPING.

3.6. REMOVE AND / OR RELOCATE EXISTING AND OTHER WORK AS REQUIRED TO COMPLETE FINAL INSTALLATION.

3.7. ANY PIPING RENDERED DEFUNCT BY THIS ALTERATION WORK SHALL BE REMOVED. ALERT THE ARCHITECT AND GENERAL CONTRACTOR OF ANY "DISCOVERED" ABANDONED PIPING. IN GENERAL, ALL ABANDONED, INACTIVE, OR SUPERFLUOUS PIPING, INCLUDING HANGERS AND CLAMPS SHALL BE REMOVED.

3.8. ALL NEW AND EXISTING SYSTEMS SHALL BE LEFT IN PERFECT WORKING ORDER UPON COMPLETION OF ALL NEW WORK.

4.SLEEVES:

4.1. PROVIDE SLEEVES FOR ALL PIPES PASSING THROUGH FLOORS, WALLS AND CONCRETE, OR CONCRETE FIREPROOFED BEAMS. SLEEVES IN CONCRETE BEAMS, THROUGH CONCRETE WALLS, AND EXPOSED PIPES PENETRATING FLOORS: SCHEDULE 40 STEEL PIPE. SLEEVES WITHIN FURRED OUT ENCLOSURES IN FLOORS, THROUGH PARTITIONS, STEEL BEAMS AND WALLS: 18 GAUGE GALVANIZED SHEET METAL.

4.2. PROVIDE SLEEVES WITH AN I.D. AT LEAST 1/2 IN. GREATER THAN OUTSIDE OF PIPE SERVED, INCLUDING PIPE INSULATION WHICH MUST BE CONTINUOUS THROUGH SLEEVE. FINISH SLEEVES FLUSH WITH UNDERSIDE OF SLAB AND 1 IN. ABOVE FINISHED FLOOR.

4.3. WHERE PIPING PENETRATES WALLS (OTHER THAN FOUNDATION WALLS), PARTITIONS, FLOOR SLABS, ETC., SPACE BETWEEN PIPING AND SLEEVE SHALL BE PACKED WITH "3M" M.E.A. APPROVED FIRFP—RATED MATERIAL WHERE SLEEVES PASS THROUGH FIRFP—RATED CONSTRUCTION, FIT ESCUTCHEON ON BOTH SIDES OF CONSTRUCTION.

4.4. PROVIDE WATERPROOF TYPE PIPE SLEEVES, ZURN Z—197 WITH GALVANIZED SCHEDULE 40 PIPE EXTENSIONS WHERE PENETRATING MEMBRANE WATERPROOFED FLOORS.

5. CODES, PERMITS, AND INSPECTIONS:

5.1. INSTALL ALL WORK IN FULL ACCORDANCE WITH THE REQUIREMENTS OF LOCAL AND GOVERNMENTAL DEPARTMENTS HAVING JURISDICTION OVER THESE MATTERS, AS WELL AS WITH ANY REQUIREMENTS OF NFPA, UL, FM, BSA, MEA, ETC, AND OTHER APPLICABLE CODES.

5.2. SECURE AND PAY FOR ALL NECESSARY APPROVALS, PERMITS, INSPECTIONS, CARTING, LEGAL DUMPING, ETC., AND DELIVER THE OFFICIAL RECORDS OF THE GRANTING OF PERMITS TO THE ARCHITECT AND OWNER WITHOUT ANY ADDITIONAL COST TO THE OWNER.

5.3. PAY ALL FILING FEES TO OBTAIN RELEASE OF APPROVED PLANS.

5.4. PAY ROYALTIES OR FEES REQUIRED IN CONNECTION WITH THE USE OF PATENTED DEVICES OR SYSTEMS, AND SAVE THE OWNER, THE ARCHITECT, THE CONSULTING ENGINEER, AND THE TENANT HARMLESS FROM ANY CLAIMS OR LAWSUITS ARISING FROM SUCH USE, AND INDEMNIFY EACH THEREOF AGAINST ATTORNEYS' FEES IN CONNECTION THEREWITH.

5.5. PROVIDE ALL SIGNS REQUIRED BY THE MUNICIPAL AUTHORITIES.

6. MATERIALS OF PIPING SYSTEMS:

6.1. WET SPRINKLER PIPING SHALL BE BLACK STEEL, SCHEDULE 40, SCHEDULE 10 WILL BE PERMITTED FOR SIZES 2 1/2" AND LARGER.

6.2. FITTINGS SHALL BE SCREWED, STANDARD WEIGHT, CAST IRON, UL AND FM APPROVED, FITTINGS. MECHANICAL GROOVE COUPLINGS, VICTAULIC STYLE 75, OR AS APPROVED, MAY BE USED WITH SCHEDULE 10 PIPE. COUPLINGS SHALL BE ROLLED GROOVE. WHEN USED WITH SCHEDULE 80 PIPE, COUPLINGS SHALL BE CUT GROOVE. EITHER ROLL OR CUT GROOVE MAY BE USED WITH SCHEDULE 40 PIPE. WELDED JOINTS AND FITTINGS MAY BE USED WHERE PERMITTED BY THE AUTHORITIES HAVING JURISDICTION PROVIDED SAFETY PROCEDURES DESCRIBED IN NFPA—13 AND 14 ARE FOLLOWED.

6.3. FOR PIPING 2 IN. AND LARGER, VICTAULIC STYLE 920 OR STYLE 921 MECHANICAL—T WITH LOCATING COLLAR ENGAGING INTO THE PIPE MAY BE USED FOR LESS THAN FULL SIZE BRANCH CONNECTIONS.

6.4. EXTERIOR WATER PIPING SHALL BE DUCTILE IRON WATER PIPE CLASS 56, ANSI A21.51.. FITTINGS SHALL BE PUSH ON OR MECHANICAL JOINT.ANSI A21.10. AND ANSI A21.11. FITTINGS SHALL BE CONCRETE LINED PER A21.4.

7. IDENTIFICATION OF SYSTEMS:

7.1. PROVIDE A TAG FOR EACH VALVE, THREE INCH DIAMETER BRASS OR ALUMINUM TAGS STAMPED WITH DESIGNATING NUMBERS TWO INCHES HIGH, PAINTED WITH WHITE ENAMEL; BACKGROUND PAINTED WITH RED ENAMEL. ATTACH TAG TO VALVE HANDLE OR SPINDLE WITH BRASS CHAIN.

8. HANGERS, INSERTS, AND PIPE SUPPORTS:

8.1. PROVIDE SUITABLE AND SUBSTANTIAL HANGERS AND SUPPORTS FOR ALL PIPING.

8.2. SPACE SUPPORTS SO THAT THERE IS AT LEAST ONE HANGER FOR EACH LENGTH OF PIPE, WITH ONE HANGER WITHIN 30 INCHES OF THE END SPRINKLER HEAD. WHERE THIS WOULD REQUIRE HANGERS CLOSER THAN 6 FEET 0 INCHES APART, HANGER SPACING MAY BE INCREASED TO TO FEET 0 INCHES BETWEEN HANGERS FOR PIPES UP TO AND INCLUDING 2 INCH IPS AND 12 FEET 0 INCHES BETWEEN HANGERS FOR PIPES 2—1/2 INCH IPS AND LARGER. WHERE POSSIBLE, FASTEN HANGER RODS TO STRUCTURAL STEEL BEAMS.

8.3. SUPPORT HANGERS FROM APPROVED CONCRETE INSERTS WHERE CONCRETE SLABS EXIST. IF ANY PIPE HAS TO BE HUNG IN A SPACE WHERE NO INSERTS HAVE BEEN PROVIDE, DRILL A HOLE FROM BELOW THROUGH STONE CONCRETE SLABS, AND PROVIDE A ROD AND HANGER ATTACHED TO AN APPROVED FISHPLATE, OR FOR PIPES SMALLER THAN 3 INCH IPS, INSTALL A PHILLIPS RED HEAD STUD CONCRETE ANCHOR OR OTHER.

8.4. DO NOT HANG PIPING FROM DUCTWORK OR PIPING.

8.5. THIS CONTRACTOR MAY COORDINATE WITH THE OTHER CONTRACTORS TO USE COMMON MEANS OF SUPPORT. SUBMIT FOR APPROVAL ALL PERTINENT DESIGN DATA RELATING TO THE SUPPORT, AS WELL AS VERIFICATION OF THE RESPONSIBILITY FOR THE SUPPORT.

9. VALVES:

9.1 ALL WATER CONTROL VALVES WITHING THE BUILDING SHALL BE MILWAUKEE "GATE 2885—FP" OS&Y WEDGE GATE VALVES WITH PAINTED IRON WHEEL HANDLES, SHALL HAVE THE NAME OF THE MANUFACTURER AND WORKING PRESSURE CAST OR STAMPED THEREON.

9.2 VALVES CONTROLLING SPRINKLER BUTTERFLY, BALL OR OS&Y GATE VALVES.

9.2.1. BALL VALVES SHALL BE MILWAUKEE "BA—100" OR APPROVED ALL BRASS OR BRONZE CONSTRUCTION WITH REPLACEABLE TEFLON SEAT RING, TWO—PIECE UNION OR THREFP—PIECE BOLTED CONSTRUCTION, WITH STUFFING BOX; WORKING PRESSURE SHALL NOT BE LESS THAN 175 PSI AT 175°F. AND SHALL CONFORM WITH ANSI STANDARDS. ALL VALVES SHALL BE STANDARD PORT UNLESS FULL—PORTED VALVES ARE INDICATED ON PLANS. THREADED VALVES USED IN BRAZED OR SOLDERED PIPING SYSTEMS SHALL BE FITTED WITH ADAPTERS. WHEN BRAZED OR SOLDERED END VALVES ARE USED, TEFLON SEATS MUST BE REMOVED PRIOR TO SOLDERING OR BRAZING.

9.2.2. BUTTERFLY VALVES SHALL BE MILWAUKEE BUTTERBALL "BB—SC" SERIES SLOW CLOSING INDICATING WAFER TYPE BUTTERFLY VALVE WITH OR WITHOUT SUPERVISORY TAMPER SWITCH ASSEMBLY (USE SCREWED LUG TYPE WHEN VALVE HAS TO PERFORM DEAD—END SERVICE): CAST IRON BODY TO 200 PSI WWP, DUCTILE IRON FOR HIGHER PRESSURES, INSTALLED BETWEEN FLANGES OF SIMILAR RATING. ACTUATORS SHALL BE MANUAL GEAR TYPE WITH HANDWHEEL; AND VALVE SHALL INCORPORATE A VISIBLE INDICATION OF OPEN OR CLOSED POSITION.

9.2.3. PRESSURE REGULATING VALVES (PRV) WHERE INSTALLED SHALL BE COMBINATION SHUTOFF AND PRESSURE REGULATING TYPE 400 PSI WWP BRONZE BODY WITH BALANCED PISTON. VALVE SHALL BE ZURN SERIES Z3004 "PRESSURPP—TRU" OR POTTER ROEMER SERIES PRV—400—2.5 "REG—U—MATIC" OR AS APPROVED. PROVIDE PRESSURE GAUGE DOWNSTREAM OF PRV.

9.2.4. PROVIDE LADDERS TO ALL VALVES LOCATED MORE THAN 7 FEET 0 INCHES ABOVE FLOOR.

9.2.5. DRY PIPE VALVE SHALL BE A 4" DIFFERENTIAL TYPE VALVE RELIABLE "MODEL D" OR APPROVED EQUAL, WATER TO AIR SEAT AREA DIFFERENTIAL TO BE AT LEAST 6 TO 1, CAPABLE OF CONTROLLING AIR PRESSURE RANGING FROM 20 TO 50 PSI. DRY PIPE VALVE CONSTRUCTION SHALL BE CAST IRON, DRY PIPE VALVE SEAT SHALL BE OF BRONZE CONSTRUCTION WITH O—RING SEALS TO PREVENT CORROSION AND LEAKAGE. THREADED—IN, ONE PIECE AIR AND WATER SEAT SHALL BE REMOVABLE FOR EASE OF MAINTENANCE. END CONNECTION STYLES TO BE [4" (100 MM) OR 6" (150 MM) ANSI FLANGED INLET AND OUTLET IN ACCORDANCE WITH ANSI B16.1 (125 LB.) FLANGE] [4" (100 MM) OR 6" (150 MM) ANSI FLANGED INLET AND GROOVED OUTLET, WITH GROOVED OUTLET DIMENSIONS PER ANSI/AWWA C606] [100 MM OR 150 MM METRIC FLANGED INLET AND OUTLET PER EN 1092—2, NF—FP—29—282, AND BS 4504 PN 16 FLANGES]. DRY PIPE VALVE SHALL HAVE A RATED WORKING PRESSURE OF 175 PSI (12.1 BAR) AND SHALL BE FACTORY HYDROSTATIC TESTED AT 350 PSI (24.1 BAR). THE FRICTION LOSS FOR THE DRY VALVE SHALL NOT EXCEED [28 FEET (8.5 M) FOR 4"] [47 FEET (14.3M) FOR 6"] OF EQUIVALENT LENGTH OF [4"] [6"] SCHEDULE 40 PIPE.

10. SPRINKLER HEADS:

10.1. PROVIDE AUTOMATIC SPRINKLER HEADS OF FINISH AS APPROVED BY THE OWNER, THE MUNICIPAL AUTHORITIES AND BY THE INSURING AGENCIES HAVING JURISDICTION. SPRINKLER HEADS SHALL BE SELECTED AS PER THE SPRINKLER SCHEDULE TABLE IN DRAWING SP—001.

10.2. ALL HEADS SHALL BE "STANDARD" 1/2 INCH DIAMETER ORIFICE, UPRIGHT, PENDENT, FLUSH TYPE PENDENT, COVER PLATE FLUSH TYPE, OR DRY TYPE PENDENT, TO FIT THE CONDITIONS IN WHICH THEY ARE INSTALLED.

10.3. ALL HEADS SHALL BE OF THE PROPER TEMPERATURE RATING FOR THE LOCATIONS IN WHICH THEY ARE INSTALLED. IN GENERAL, TEMPERATURE RATING SHALL BE 165°F., EXCEPT FOR MECHANICAL EQUIPMENT ROOMS, WHICH SHALL BE 286°F.

11. SPRINKLER SYSTEM APPURTENANCES:

11.1. PROVIDE THE SPRINKLER SYSTEM APPURTENANCES REQUIRED TO PROVIDE FIRE PROTECTION FOR THE RENOVATED AREA.

11.2. DETECTOR CHECK VALVE SHALL BE WATTS MODEL No. 709DCDA.

12. ALARM DEVICES:

12.1. ALL INTERCONNECTING FIRE PROTECTION WIRING WILL BE FURNISHED UNDER THE SPECIFICATIONS OF OTHER TRADES. PROVIDE ALL SWITCHES DIRECTLY CONNECTED TO EQUIPMENT PROVIDED BY THIS TRADE, REQUIRED FOR THE TRANSMISSION OF ALARM IMPULSES. SWITCHES SHALL BE OPEN OR CLOSED TYPE TO CONFORM WITH THE ALARM SYSTEM TO WHICH THEY ARE CONNECTED.

12.2. PROVIDE TAMPER SWITCHES FOR THE FOLLOWING VALVES:

12.2.1. ALL VALVES CONTROLLING THE FLOW OF WATER TO SPRINKLER HEADS, INCLUDING FLOOR CONTROL VALVES, AND METER VALVES, ETC.

12.2.2. SWITCHES SHALL GIVE AN ALARM IF THE VALVES SERVED ARE CLOSED, THE SWITCHES ARE REMOVED, OR IF THE COVER IS OPENED. VALVE STEMS SHALL BE NOTCHED TO TAKE THE SWITCHES. SWITCHES SHALL BE ACME FIRE ALARM CO. TYPE OSYS—U, OR AS APPROVED.

12.3. PROVIDE THE FOLLOWING FLOW ALARM DEVICES:

12.3.1. RETARD CHAMBER AND CLOSED CIRCUIT ELECTRIC SWITCH FOR EACH ALARM VALVE.

12.3.2. PADDLE TYPE WATER FLOW DETECTORS, CLOSED CIRCUIT TYPE WITH AN ADJUSTABLE RETARD OR TIME DELAY TO PREVENT FALSE ALARMS DUE TO WATER PRESSURE SURGES. SWITCHES SHALL BE ACME FIRE ALARM CO., TYPE WFD, OR AS APPROVED.

13. SPRINKLER DRAINS:

13.1. PROVIDE ALL NECESSARY DRAIN VALVES, CAPPED NIPPLES, AUXILIARY PIPING, ETC., AS REQUIRED TO DRAIN TRAPPED PORTIONS OF THE SYSTEM.

13.2. INSPECTORS TEST CONNECTIONS SHALL BE PROVIDED WITH A SIGHT CONNECTION AND PIPED TO WASTE.

13.3. MAIN DRAIN AND TEST CONNECTION SHALL BE PIPED TO WASTE.

13.4. PROVIDE ALL PIPING REQUIRED TO SPILL THE DRAINS AND TEST CONNECTIONS TO THE FLOOR, FUNNEL OR OTHER DRAINAGE CONNECTIONS PROVIDED UNDER THE PLUMBING CONTRACT, OR ARRANGE WITH THE PLUMBING CONTRACTOR TO PROVIDE ADDITIONAL DRAINAGE FACILITIES, IN WHICH CASE PAY ALL CHARGES RELATED TO THE ADDITIONAL PLUMBING WORK.

14. ACCESS DOORS FOR FINISHED CONSTRUCTION

14.1. PROVIDE ACCESS DOORS AS REQUIRED FOR ALL CONCEALED VALVES, CLEANOUTS AND OTHER ELEMENTS REQUIRING ACCESS ABOVE CEILINGS OR BEHIND WALLS OR AS INDICATED ON THE DRAWINGS. THE INSTALLATION OF ALL DOORS WILL BE PERFORMED UNDER THE SPECIFICATIONS OF ANOTHER TRADE. COORDINATE THE WORK AND ASSUME RESPONSIBILITY FOR THE ACCESSIBILITY OF ALL VALVES.

14.2. USE THE FOLLOWING TYPE DOORS AS MANUFACTURED BY KARP ASSOCIATES, INC.

14.2.1. IN PLASTER CEILINGS, KARP DSC 210—PL.

14.2.2. IN 3 HOUR MASONRY ENCLOSURES (PIPE OR DUCT SHAFTS), KARP DSC—211—FRT WITH 1—1/2 INCH VERMICULITE PLASTER FILL. METAL LATH LINING FOR PLASTER SHALL BE SELF—FURRING TYPE, TACK WELDED TO PAN.

14.2.3. IN NON—RATED MASONRY, KARP DSC—211.

14.2.4. IN DRY WALL CONSTRUCTION, KARP DSC—214M.

14.3. SIZE ACCESS DOORS AS INDICATED ON THE DRAWINGS, OR AS SPECIFIED, BUT NOT SMALLER THAN 16 INCHES BY 16 INCHES. WHERE MORE THAN TWO VALVES ARE SERVED BY A DOOR AND THE BONNETS ARE WITHIN 12 INCHES OF THE FACE OF THE DOOR, THE SIZE OF THE DOOR SHALL BE INCREASED SO THAT ALL PORTIONS OF THE VALVES ARE WITHIN THE AREA DEFINED BY THE OPENING IN THE DOOR. WHERE THE BONNETS OF THE VALVES ARE MORE THAN 12 INCHES FROM THE FACE OF THE DOOR, THE DOORS SHALL HAVE A MINIMUM OF 20 INCH X 20 INCH CLEAR OPENING.

14.4. FURNISH BUTTONS OR TABS TO CEILING CONTRACTOR FOR SETTING, AS APPROVED BY ARCHITECT, TO INDICATE LOCATION OF VALVES, CLEANOUTS OR OTHER EQUIPMENT LOCATED ABOVE REMOVABLE TYPE CEILINGS WHERE ACCESS DOORS ARE NOT FURNISHED.

15. TESTS:

15.1. TEST THE SYSTEMS BEFORE ANY PAINT IS APPLIED.

15.2. TEST ALL SYSTEMS IN FULL ACCORDANCE WITH APPLICABLE UNDERWRITERS' AND MUNICIPAL REQUIREMENTS, BUT IN NO CASE SHALL THE SPRINKLER SYSTEM BE TESTED AT LESS THAN 200 LBS. HYDROSTATIC PRESSURE. APPLY THE TEST FOR A MINIMUM OF TWO (2) CONSECUTIVE HOURS WITH NO LOSS IN PRESSURE. PRIOR TO APPLYING THE HYDROSTATIC TEST ON A DRY PIPE SYSTEM, IT SHALL BE TESTED WITH 40 PSIG COMPRESSED AIR FOR A PERIOD OF 24 HOURS WITH A PRESSURE LOSS NOT TO EXCEED 1½" PSIG.

15.3. FURNISH AND PAY FOR ALL DEVICES, MATERIALS, SUPPLIES, LABOR AND POWER REQUIRED IN CONNECTION WITH TESTS. MAKE ALL TESTS IN THE PRESENCE AND TO THE SATISFACTION OF THE ENGINEER, INSURANCE UNDERWRITERS AND CITY INSPECTORS HAVING JURISDICTION.

15.4. REPAIR, OR IF REQUIRED BY THE ENGINEER REPLACE, DEFECTIVE WORK WITH NEW WORK WITHOUT EXTRA CHARGE TO THE OWNER. REPEAT TESTS AS DIRECTED, UNTIL ALL WORK IS PROVEN SATISFACTORY.

15.5. RESTORE TO ITS ORIGINAL CONDITION ANY WORK DAMAGED OR DISTURBED BY TESTS, ENGAGING THE ORIGINAL TRADES TO DO THE WORK OF RESTORATION.

15.6. NOTIFY THE ENGINEER AND INSPECTORS HAVING JURISDICTION AT LEAST 48 HOURS IN ADVANCE OF MAKING THE REQUIRED TESTS, SO THAT ARRANGEMENTS MAY BE MADE FOR THEIR PRESENCE TO WITNESS THE TESTS.

15.7. TEST EQUIPMENT IN SERVICE AND DEMONSTRATE THAT THE EQUIPMENT PERFORMS THE WORK INTENDED FOR IT AND THAT IT COMPLIES WITH THE REQUIREMENTS OF THESE SPECIFICATIONS FOR SUCH EQUIPMENT.

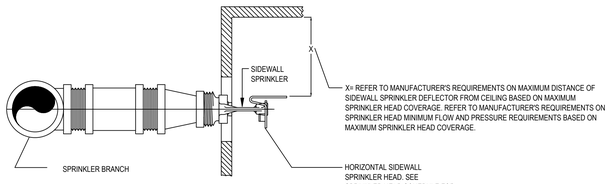
16. GUARANTEES AND CERTIFICATIONS:

16.1. ALL WORK SHALL BE GUARANTEED TO BE FREE FROM LEAKS OR DEFECTS. ANY DEFECTIVE MATERIALS OR WORKMANSHIP AS WELL AS DAMAGE TO THE WORK OF OTHER TRADES RESULTING FROM SAME SHALL BE REPLACED OR REPAIRED AS DIRECTED FOR THE DURATION OF STIPULATED GUARANTEE PERIODS. THE DURATION OF GUARANTEE PERIODS SHALL BE ONE YEAR FROM THE DATE OF THE FINAL ACCEPTANCE OF THE INSTALLATION BY THE OWNER, UNLESS A MORE STRINGENT PERIOD IS STIPULATED ELSEWHERE.

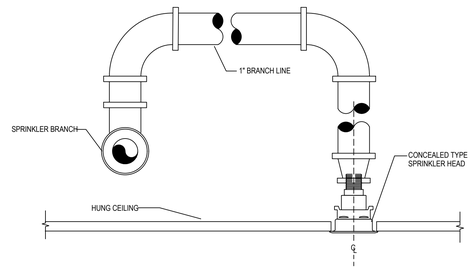
17. ENGINEER'S REVIEW, SHOP DRAWINGS, AND CERTIFICATIONS:

17.1. PREPARE AND SUBMIT DETAILED SHOP DRAWINGS. THE ENGINEER WILL REVIEW SHOP DRAWINGS AND SAMPLES FOR CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND THE INFORMATION CONTAINED IN THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW OF SHOP DRAWINGS AND SAMPLES IS ONLY FOR THE CONVENIENCE OF THE OWNER IN FOLLOWING THE WORK AND DOES NOT RELIEVE THIS TRADE OF RESPONSIBILITY FOR DEVIATIONS FROM THE REQUIREMENTS OF THE CONTRACT DOCUMENTS. THE ENGINEER'S REVIEW SHALL NOT BE CONSTRUED AS A COMPLETE OR DETAILED CHECK OF THE WORK SUBMITTED, NOR SHALL IT RELIEVE THIS TRADE OF RESPONSIBILITY FOR ERRORS OF ANY SORT IN THE SHOP DRAWINGS AND SAMPLES, OR FROM THE NECESSITY OF FURNISHING ANY WORK REQUIRED BY THE CONTRACT DOCUMENTS WHICH HAVE BEEN OMITTED FROM THE SHOP DRAWING SUBMITTALS.

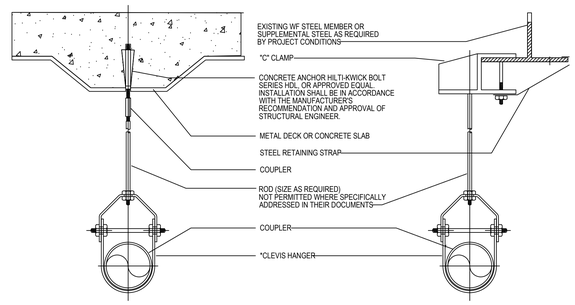
17.2. NO PART OF THE WORK SHALL BE STARTED IN THE SHOP OR IN THE FIELD UNTIL THE ENGINEER HAS REVIEWED THE SHOP DRAWINGS AND SAMPLES FOR THAT PORTION OF THE WORK. THEREAFTER, THE WORK SHALL BE EXECUTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND THE INDICATED STATUS OF THE REVIEWED SHOP DRAWINGS. PRIOR TO ASSEMBLING THE WORK, THE FOLLOWING SHALL BE SUBMITTED: SCALED FLOOR PLAN AND CEILING DRAWINGS WITH DIMENSIONED LOCATIONS OF ALL PIPING AND EQUIPMENT INCLUDING SIZES, ELEVATIONS, AND APPROPRIATE INDICATION OF COORDINATION BETWEEN STRUCTURAL AND MECHANICAL ELEMENTS. MANUFACTURER'S CATALOGUE CUTS OF ALL EQUIPMENT TO BE USED. SAMPLES OF ALL DEVICES, WHICH WILL BE CLEARLY VISIBLE TO VIEW. ALL SUBMITTALS SHALL BE PROPERLY



1 TYPICAL HORIZONTAL SIDEWALL SPRINKLER HEAD DETAIL
NOT TO SCALE

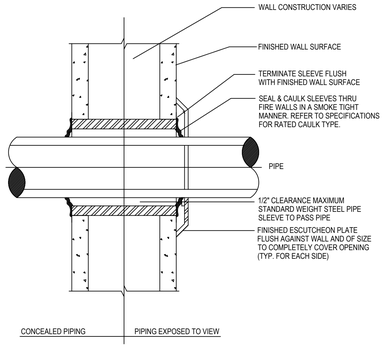


2 TYPICAL SPRINKLER ARM OVER DETAIL
NOT TO SCALE

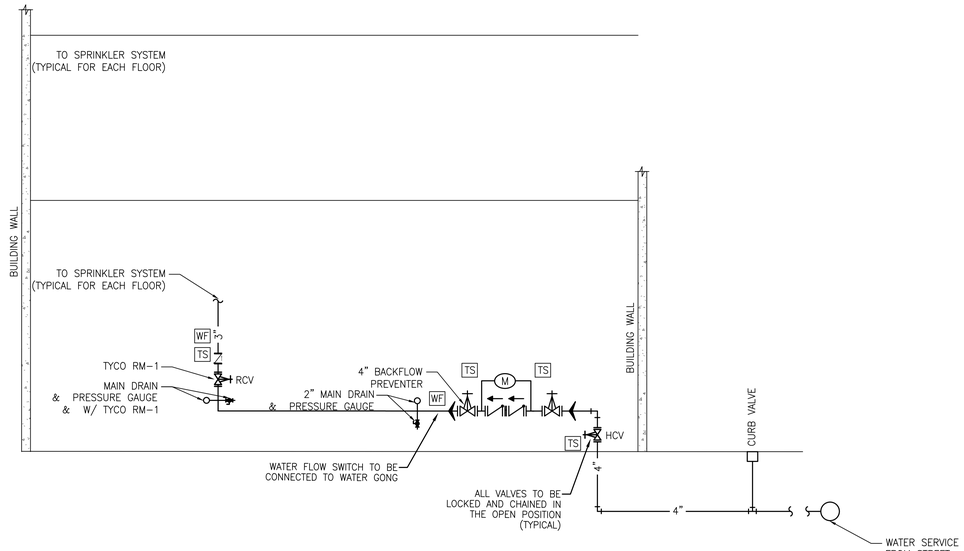


NOTES:
1. CLEVIS HANGERS REQUIRED ON PIPING LARGER THAN 1"
2. GENERAL PURPOSE HANGERS MAY BE USED ON 1" SPRINKLER PIPING ONLY.

3 TYPICAL HANGER DETAIL
NOT TO SCALE



4 TYPICAL DETAIL OF PIPE INSTALLATION THROUGH RATED WALL
NOT TO SCALE



5 FIRE SPRINKLER RISER DIAGRAM BUILDING/UNIT (TYPICAL FOR EACH)
NOT TO SCALE

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609 918-2400

ARMEN KHACHATURIAN
PRINCIPAL IN CHARGE
CM, JP, SM
PROJECT TEAM
AK
CHECKED BY
SHEET DESCRIPTION
FIRE PROTECTION DETAILS

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

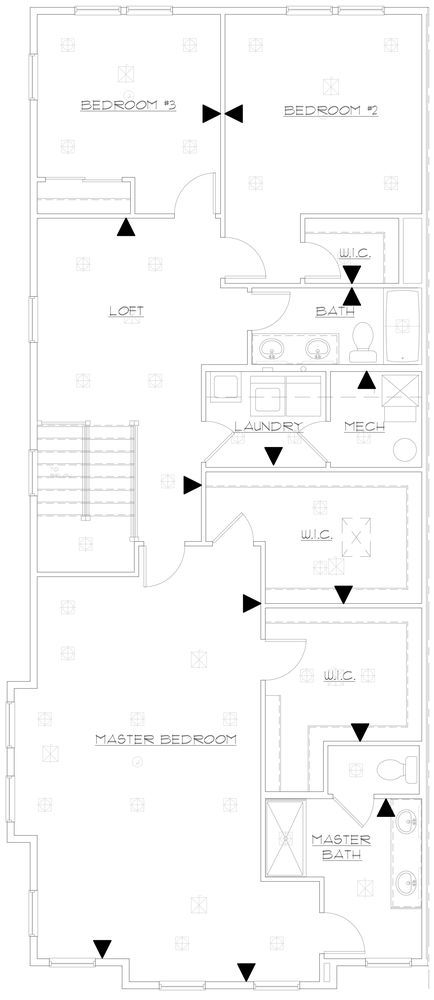
2697
PROJECT NUMBER

FP4.01
SHEET NUMBER

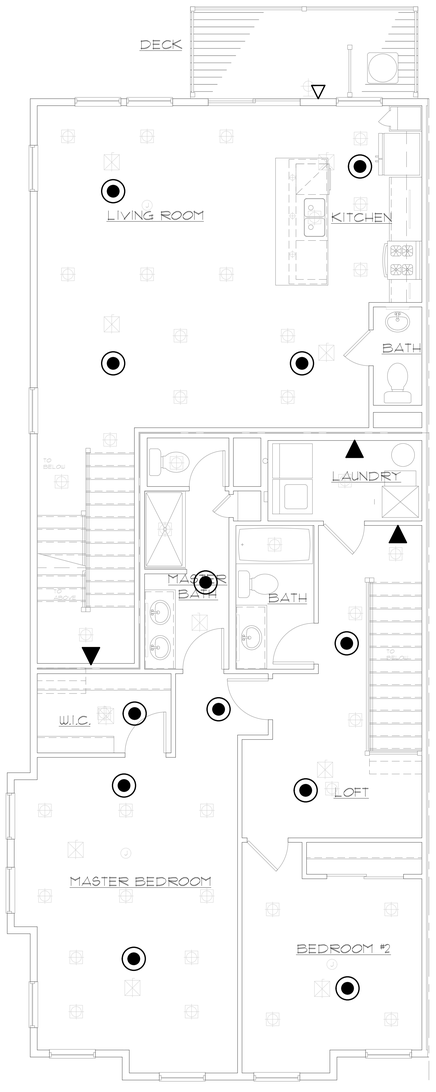
FIRE PROTECTION GENERAL NOTES:

1. SPRINKLER SHALL NOT BE LESS THAN 8 FT IN SAME COMPARTMENT.
2. PROVIDE SPRINKLER HEADS UNDER FIXED OBSTRUCTIONS OVER 4 FT WIDE. SPRINKLER HEADS SHALL BE COORDINATED WITH FIXED OBSTRUCTIONS AND POSITION HEADS AS PER NFPA FOR ADEQUATE SPRINKLER DISCHARGE PATTERN.
3. NO SPRINKLER HEADS REQUIRED IN BATHROOMS LESS THAN 55 SQFT.
4. PROVIDE CORROSION RESISTANT PROTECTIVE COATING SPRINKLER HEADS IN BATHROOM OVER 55 SQFT.
5. CLOSETS THAT CONTAINS FIRE PROTECTION EQUIPMENT SHALL BE SPRINKLERED REGARDLESS OF SIZE.
6. PROVIDE 20'X20' RESIDENTIAL SPRINKLER IN ALL APARTMENT UNITS.
7. INSTALLING CONTRACTOR TO VERIFY CEILING HEIGHTS/SOFFITS, ANY OPEN TO ABOVE/BELOW SPACES AND MODIFY HEAD LAYOUT IN ACCORDANCE WITH NFPA 13R
8. SPRINKLER HEADS TO MEET MANUFACTURERS MINIMUM PRESSURE AND FLOW REQUIREMENTS (TYPICAL FOR ALL UNITS)
9. ALL HEADS TO BE CENTERED WITH OTHER CEILING DEVICES AND SPACED EQ/EQ
10. FIRE SPRINKLER CONTRACTOR TO COORDINATE WITH INTERIOR DESIGN REFLECTED CEILING PLANS AND MEP CEILING PLANS

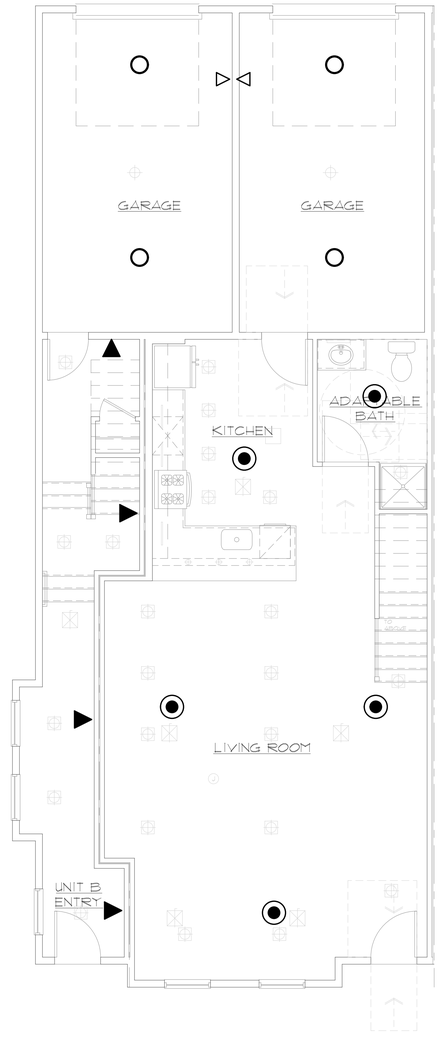
IF INSULATION CANNOT BE INSTALLED ON TOP OF SPRINKLER PIPES ON THE THIRD FLOOR, PROVIDE SIDEWALL SPRINKLERS ON 3RD FLOOR UNITS FED FROM THE FLOOR BELOW



FIRE PROTECTION THIRD FLOOR PLAN - A + B
SCALE: 1/4" = 1'-0"



FIRE PROTECTION SECOND FLOOR PLAN - A + B
SCALE: 1/4" = 1'-0"



FIRE PROTECTION FIRST FLOOR PLAN - A + B
SCALE: 1/4" = 1'-0"

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ROBBINSVILLE, NJ 08691
609 918-2400

ARMEN KHACHATURIAN
PRINCIPAL IN CHARGE
CM, JP, SM
PROJECT TEAM
AK
CHECKED BY
SHEET DESCRIPTION
FIRE PROTECTION UNIT PLANS

RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

2697
PROJECT NUMBER

FP6.01
SHEET NUMBER

FIRE PROTECTION GENERAL NOTES:

1. SPRINKLER SHALL NOT BE LESS THAN 8 FT IN SAME COMPARTMENT
2. PROVIDE SPRINKLER HEADS UNDER FIXED OBSTRUCTIONS OVER 4 FT WIDE. SPRINKLER HEADS SHALL BE COORDINATED WITH FIXED OBSTRUCTIONS AND POSITION HEADS AS PER NFPA FOR ADEQUATE SPRINKLER DISCHARGE PATTERN.
3. NO SPRINKLER HEADS REQUIRED IN BATHROOMS LESS THAN 55 SQFT.
4. PROVIDE CORROSION RESISTANT PROTECTIVE COATING SPRINKLER HEADS IN BATHROOM OVER 55 SQFT.
5. CLOSETS THAT CONTAINS FIRE PROTECTION EQUIPMENT SHALL BE SPRINKLERED REGARDLESS OF SIZE.
6. PROVIDE 20'X20' RESIDENTIAL SPRINKLER IN ALL APARTMENT UNITS.
7. INSTALLING CONTRACTOR TO VERIFY CEILING HEIGHTS/SOFFITS, ANY OPEN TO ABOVE/BELOW SPACES AND MODIFY HEAD LAYOUT IN ACCORDANCE WITH NFPA 13R
8. SPRINKLER HEADS TO MEET MANUFACTURERS MINIMUM PRESSURE AND FLOW REQUIREMENTS (TYPICAL FOR ALL UNITS)
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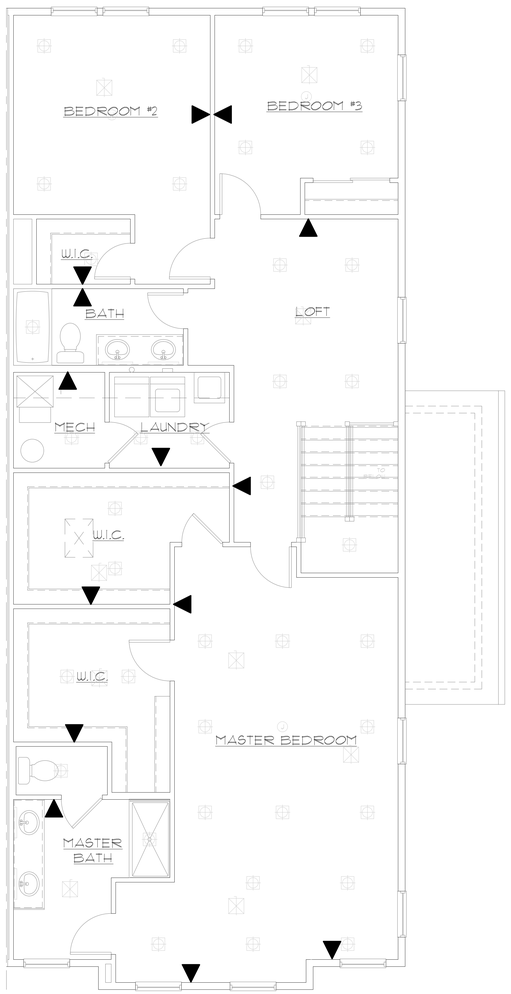
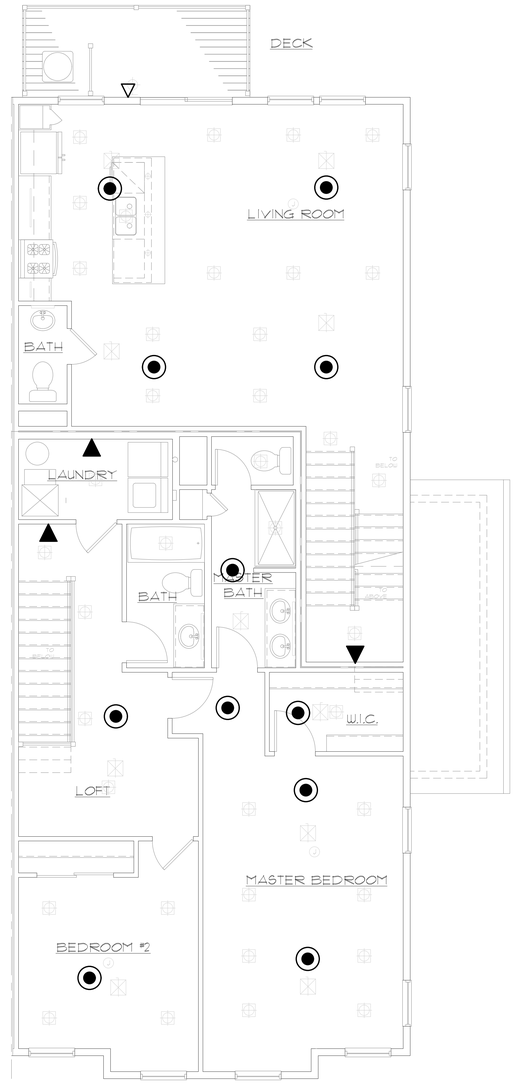
10. FIRE SPRINKLER CONTRACTOR TO COORDINATE WITH INTERIOR DESIGN REFLECTED CEILING PLANS AND MEP CEILING PLANS

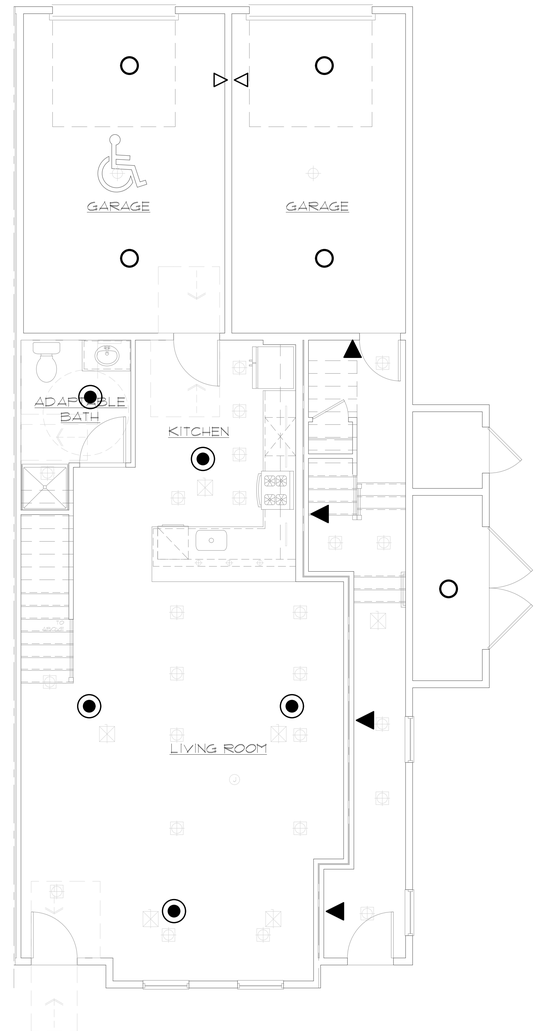
IF INSULATION CANNOT BE INSTALLED ON TOP OF SPRINKLER PIPES ON THE THIRD FLOOR, PROVIDE SIDEWALL SPRINKLERS ON 3RD FLOOR UNITS FED FROM THE FLOOR BELOW



FIRE PROTECTION THIRD FLOOR PLAN - A + B (MIRRORED)
SCALE: 1/4" = 1'-0"



FIRE PROTECTION SECOND FLOOR PLAN - A + B (MIRRORED)
SCALE: 1/4" = 1'-0"



FIRE PROTECTION FIRST FLOOR PLAN - A + B (MIRRORED)
SCALE: 1/4" = 1'-0"

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RELEASED FOR	DATE
☐ SCHEMATIC DESIGN	1/26/2024
☐ DESIGN DEVELOPMENT	2/21/2024
☐ 50% CD'S	3/18/2024
■ PERMIT	3/25/2024

REVISIONS

2697
PROJECT NUMBER

FP6.02
SHEET NUMBER

FIRE PROTECTION GENERAL NOTES:

1. SPRINKLER SHALL NOT BE LESS THAN 8 FT IN SAME COMPARTMENT
2. PROVIDE SPRINKLER HEADS UNDER FIXED OBSTRUCTIONS OVER 4 FT WIDE. SPRINKLER HEADS SHALL BE COORDINATED WITH FIXED OBSTRUCTIONS AND POSITION HEADS AS PER NFPA FOR ADEQUATE SPRINKLER DISCHARGE PATTERN.
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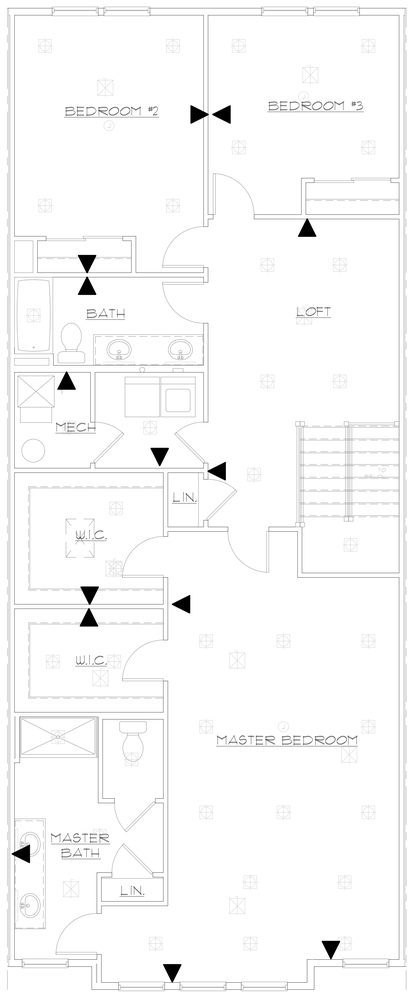
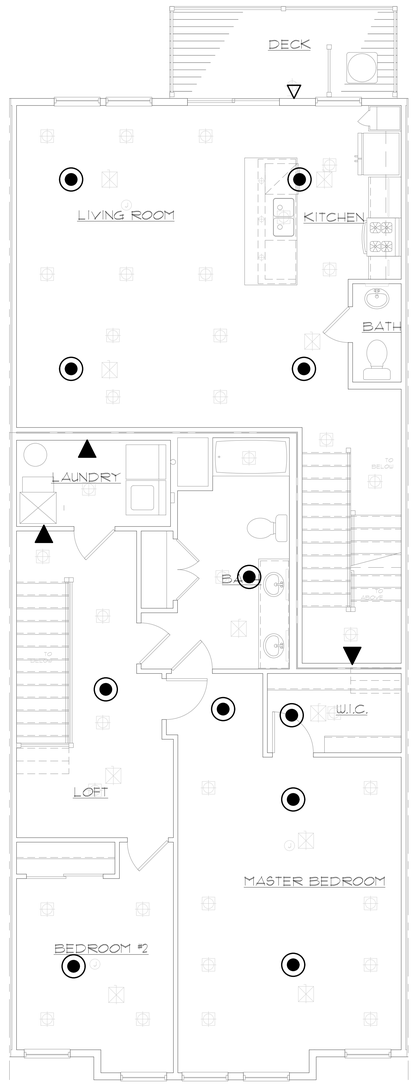
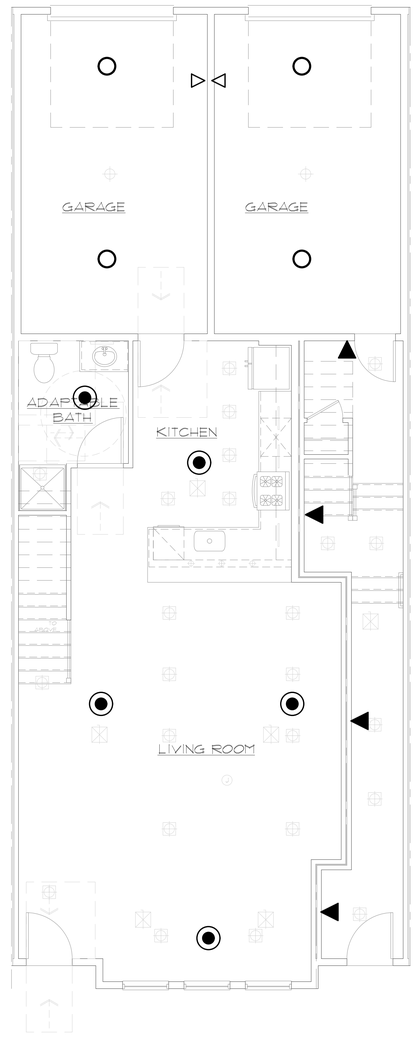


FIRE PROTECTION THIRD FLOOR PLAN - C + D
SCALE: 1/4" = 1'-0"



FIRE PROTECTION SECOND FLOOR PLAN - C + D
SCALE: 1/4" = 1'-0"



FIRE PROTECTION FIRST FLOOR PLAN - C + D
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■ PERMIT	3/25/2024

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FP6.03
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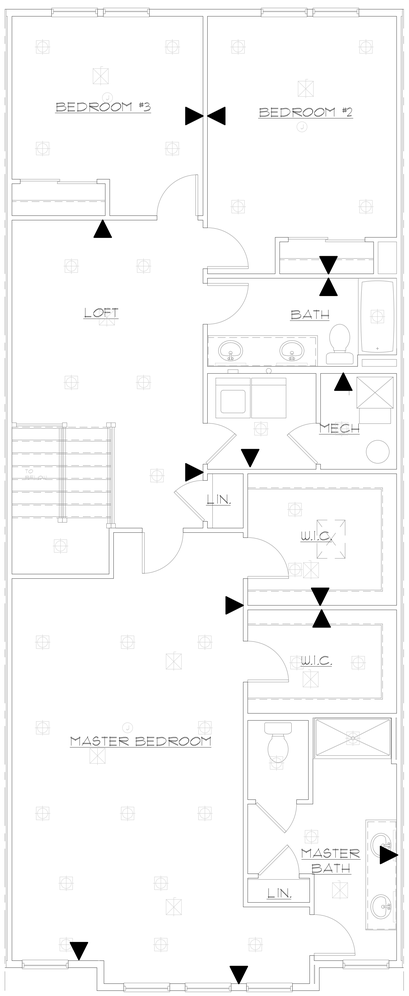
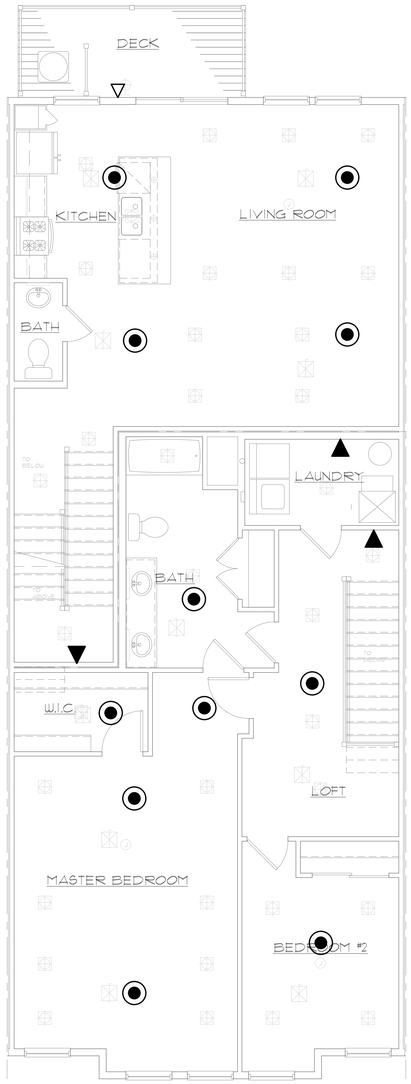
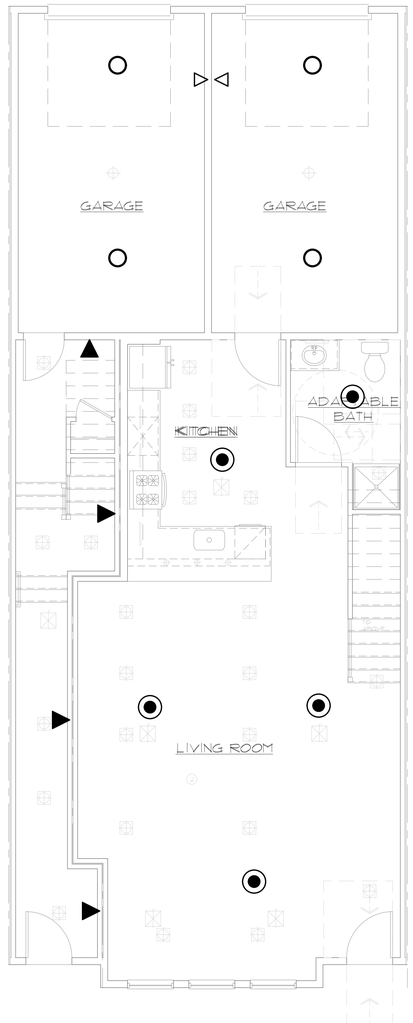


FIRE PROTECTION THIRD FLOOR PLAN - C + D (MIRRORED)
SCALE: 1/4" = 1'-0"



FIRE PROTECTION SECOND FLOOR PLAN - C + D (MIRRORED)
SCALE: 1/4" = 1'-0"



FIRE PROTECTION FIRST FLOOR PLAN - C + D (MIRRORED)
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