

PLUMBING TABLES

PIPE INSULATION SCHEDULE

SERVICE	OPTION 1		OPTION 2		VAPOR RETARDER REQUIRED	NOTES
	MATERIAL	THICKNESS	MATERIAL	THICKNESS		
DOMESTIC COLD WATER, IRRIGATION WATER, CONDENSATE DRAINS, STORM DRAIN (IN CONDITIONED SPACE)	MINERAL-FIBER WITH JACKET	ALL SIZES: ½"	PVC/NBR	ALL SIZES: ¾"	YES	12,13
DOMESTIC COLD WATER, IRRIGATION WATER, CONDENSATE DRAINS, WASTE (OUTSIDE THE CONDITIONED SPACE)	MINERAL-FIBER WITH JACKET	(R-3) ½" PIPE: ½" ALL OTHER SIZES: 1"	PVC/NBR	(R-3) ½" PIPE: ½" ALL OTHER SIZES: ¾"	YES	7,8,10
ROOF DRAIN BODIES	MINERAL-FIBER OR CELLULAR GLASS WITH JACKET	1"	PVC/NBR	1"	YES	12
DOMESTIC HOT WATER AND RECIRCULATED HOT WATER (RESIDENTIAL)	MINERAL-FIBER WITH JACKET	(R-3) ½" PIPE: ½" ALL OTHER SIZES: 1"	PVC/NBR	(R-3) ½" PIPE: ½" ALL OTHER SIZES: ¾"	NO	2,10
DOMESTIC HOT WATER AND RECIRCULATED HOT WATER (NONRESIDENTIAL)	MINERAL-FIBER WITH JACKET	½"-1¼" PIPE: 1" 1½"-4" PIPE: 1.5"	PVC/NBR	½"-1¼" PIPE: 1" 1½"-4" PIPE: 1.5"	NO	3,9
EXPOSED SANITARY DRAINS AND DOMESTIC WATER SUPPLIES AND STOPS FOR ADA FIXTURES.	TRUEBRO LAV-GUARD	N/A	N/A	N/A	NO	11

- NOTES:
- PIPING INSULATION EXPOSED TO THE WEATHER SHALL BE PROTECTED FROM DAMAGE. CONTRACTOR SHALL PROVIDE SHIELDING FROM SOLAR RADIATION THAT CAN CAUSE DEGRADATION OF THE MATERIAL. ADHESIVE TAPE SHALL NOT BE PERMITTED.
 - PER 2015 WSEC SECTION R403.5.3 (RESIDENTIAL) INSULATION FOR HOT WATER PIPE SHALL HAVE A MINIMUM R-VALUE OF R-3.
 - PIPING FROM WATER HEATER TO THE TERMINATION OF HEATED WATER SUPPLY PIPE SHALL BE INSULATED IN ACCORDANCE WITH TABLE C403.2.9.
 - ON BOTH THE INLET AND OUTLET PIPING OF A STORAGE HOT WATER HEATER, THE FIRST 8 FEET OF PIPING OR PIPING FROM WATER HEATER TO HEAT TRAP SHALL BE INSULATED.
 - HEAT TRACED PIPING SHALL BE INSULATED IN THE SAME MANNER AS NON HEAT TRACED PIPING OR PER THE HEAT TRACE MANUFACTURER'S INSTRUCTIONS.
 - TUBULAR PIPING INSULATION SHALL NOT BE REQUIRED FOR THE FOLLOWING:
 - THE TUBING FROM THE CONNECTION AT THE TERMINATION OF THE FIXTURE SUPPLY PIPING TO A PLUMBING FIXTURE OR PLUMBING APPLIANCE.
 - VALVES, PUMPS, STRAINERS, AND THREADED UNIONS IN PIPING THAT IS 1 INCH OR LESS IN NOMINAL DIAMETER.
 - PIPING FROM USER-CONTROLLED SHOWER AND BATH MIXING VALVES TO THE WATER OUTLETS.
 - COLD WATER PIPING OF A DEMAND RECIRCULATION WATER SYSTEM.
 - TUBING FROM A HOT DRINKING-WATER HEATING UNIT TO THE WATER OUTLET.
 - PIPING AT LOCATIONS WHERE A VERTICAL SUPPORT OF THE PIPING IS INSTALLED.
 - PIPING SURROUNDED BY BUILDING INSULATION WITH A THERMAL RESISTANCE (R-VALUE) OF NOT LESS THAN R-3.
 - HOT WATER PIPING THAT IS PART OF THE FINAL PIPE RUN TO THE PLUMBING FIXTURE AND IS NOT PART OF THE HEATED-WATER CIRCULATION SYSTEM CIRCULATION PATH IS NOT REQUIRED TO MEET THE MINIMUM INSULATION REQUIREMENTS OF C404.6.
 - PER 2015 UPC SECTION 312.6 NO WATER, SOIL, OR WASTE PIPE SHALL BE INSTALLED OR PERMITTED OUTSIDE OF A BUILDING, IN ATTICS OR CRAWL SPACES, OR IN AN EXTERIOR WALL UNLESS, WHERE NECESSARY, ADEQUATE PROVISION IS MADE TO PROTECT SUCH PIPE FROM FREEZING. ALL HOT AND COLD WATER PIPES OUTSIDE THE CONDITIONED SPACE SHALL BE PROVIDED WITH INSULATION WITH A MINIMUM R-VALUE OF R-3.
 - HEAT TRACING SHALL BE PROVIDED FOR COLD WATER AND IRRIGATION WATER IN UNCONDITIONED SPACES. CONTACT ENGINEERING IF NECESSARY. PER 2015 WSEC SECTION C403.12.3 FREEZE PROTECTION SYSTEMS, SUCH AS HEAT TRACING OF OUTDOOR PIPING, SHALL INCLUDE AUTOMATIC CONTROLS CONFIGURED TO SHUT OFF THE SYSTEMS WHEN OUTDOOR AIR TEMPERATURES ARE ABOVE 40°F.
 - PER 2015 WSEC TABLE C403.2.9 INSULATION FOR HOT WATER AND HOT WATER RECIRCULATION SHALL HAVE A THERMAL CONDUCTIVITY OF 0.21-0.28 (BTU.IN/H.FT².F) AT OPERATING TEMPERATURE.
 - INSULATION R-VALUE SHALL MEET THE MINIMUM REQUIREMENT. THICKNESS IS BASED ON GRAINGER SAMPLE DATA FOR K-FLEX(PVC/NBR) AND OWENS CORNING(FIBER GLASS).
 - ALL ADA P-TRAPS, HOT WATER SUPPLY TUBING, AND SHUT-OFF COCKS SHALL BE PROTECTED WITH APPROVED COVERS TO PREVENT SCALDING.
 - REQUIRED BY ENGINEERING BASED ON BEST PRACTICE.
 - INSULATION IS NOT REQUIRED ON PLASTIC COLD WATER PIPING.

WASHINGTON STATE-COMMERCIAL ENERGY CODE
EFFICIENT HEATED WATER SUPPLY PIPING

NOMINAL PIPE SIZE (IN)	METHOD #1 – PIPE LENGTH (RECOMMENDED)		METHOD #2 – PIPE VOLUME			NOTES
	MAXIMUM ALLOWABLE PIPING LENGTH (FT)		PIPE VOLUME (FLUID OZ / FEET)	MAXIMUM ALLOWABLE PIPING LENGTH (FT)		
	PUBLIC LAVATORY FAUCET	OTHER FIXTURES		PUBLIC LAVATORY FAUCET	OTHER FIXTURES	
3/8	3	50	0.75	2.67	85	1–8
1/2	2	43	1.5	1.33	43	
5/8	1	32	2	1.00	32	
3/4	0.5	21	3	0.67	21	
7/8	0.5	16	4	0.50	16	
1	0.5	13	5	0.40	13	
1–1/4	0.5	8	8	0.25	8	
1–1/2	0.5	6	11	0.18	6	
2 OR LARGER	0.5	4	18	0.11	4	

- NOTES:
- CONTRACTOR MAY USE METHOD 1 OR 2 TO DETERMINE MAXIMUM ALLOWABLE PIPING LENGTH FROM SOURCE OF HEATED WATER.
 - PER 2015 WSEC SECTION C404.3 WATER HEATER, CIRCULATING WATER SYSTEM & HEAT TRACE TEMPERATURE MAINTENANCE SHALL BE CONSIDERED SOURCE OF HEATED WATER.
 - THIS TABLE IS BASED ON MINIMUM CODE REQUIREMENTS. CONTRACTOR SHALL FOLLOW OWNERSHIP/DEVELOPER REQUIREMENT AND/OR BRAND STANDARD REGARDING MAXIMUM WAITING TIME FOR HOT WATER DELIVERY [OR ALLOWABLE NON-CIRCULATING HOT WATER PIPING LENGTH] AS LONG AS IT IS STRICTER THAN CODE MINIMUM. CONTACT ENGINEERING AS NECESSARY.
 - PIPE LENGTH METHOD ONLY: WHERE THE PIPING CONTAINS MORE THAN ONE SIZE OF PIPE, THE LARGEST SIZE OF PIPE SHALL BE USED FOR DETERMINING THE MAXIMUM ALLOWABLE LENGTH OF PIPING.
 - PIPE LENGTH METHOD ONLY: PER WSEC TABLE C404.3.1
 - PIPE VOLUME METHOD ONLY: PER WSEC SECTION C404.3.2 THE VOLUME FROM HEATED WATER TO THE TERMINATION OF FIXTURE SUPPLY PIPE SHALL NOT EXCEED 2 FLUID OUNCES FOR PUBLIC LAVATORIES AND 0.5 GALLON (64 FLUID OUNCES) FOR OTHER FIXTURES.
 - PIPE VOLUME METHOD ONLY: PER C404.3.2.1 WATER VOLUME SHALL BE THE SUM OF INTERNAL VOLUMES OF PIPE, VALVES, METERS AND MANIFOLD BETWEEN THE NEAREST SOURCE OF HEATED WATER AND TERMINATION OF THE FIXTURE SUPPLY PIPE. PROVIDED CALCULATION DOES NOT INCLUDE VALVES, METERS, MANIFOLDS.
 - REFER TO MANUFACTURER RECOMMENDATIONS AND PLUMBING FIXTURE SCHEDULE IN COMPLIANCE WITH 2015 UPC SECTION A106 AND TABLES 610.3 & A103.1 FOR MINIMUM BRANCH PIPE SIZES.

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021 11:43 PM kwlodarchak

PIPING SUPPORTS (SUPPLY)

ALL SUSPENDED WATER SUPPLY PIPE SHALL BE SUPPORTED AS FOLLOWS PER 2015 UPC TABLE 313.3:		
	MAX. HORIZONTAL SPACING	MAX. VERTICAL SPACING
COPPER PIPE ≤1½"	6 FT.	10 FT.
COPPER PIPE >2"	10 FT.	10 FT.
COPPER TUBING ≤1½"	6 FT.	10 FT.
COPPER TUBING >2"	10 FT.	10 FT.
CPVC ≤ 1"	3 FT.	10 FT.
CPVC > 1¼"	4 FT.	10 FT.

PIPING SUPPORTS (WASTE)

ALL SUSPENDED SANITARY AND VENT PIPE SHALL BE SUPPORTED AS FOLLOWS PER 2015 UPC TABLE 313.3:		
	MAX. HORIZ. SPACING	MAX. VERT. SPACING
ABS	4 FT.	10 FT.
PVC (TYPE DWV)	4 FT.	10 FT.
CAST-IRON (<10 FT PIPE SECTIONS)	5 FT.	15 FT.
CAST-IRON (10 FT PIPE SECTIONS)	10 FT.	15 FT.

PLUMBING NOTES

- CONNECTIONS: PROVIDE PLUMBING FIXTURE CONNECTIONS TO BUILDING WASTE, VENT, COLD WATER, AND HOT WATER SYSTEM IN ACCORDANCE WITH DRAWINGS, MANUFACTURER'S RECOMMENDATIONS, AND LOCAL CODES. CONNECT TO EACH FIXTURE, EQUIPMENT, ETC. WITH ALL ACCESSORIES, VALVES, VACUUM BREAKERS, REGULATORS, UNIONS, ETC. AS REQUIRED AND AS RECOMMENDED BY THE MANUFACTURERS. REFER TO PLUMBING FIXTURE CONNECTION SCHEDULE ON PLANS.
- HOT AND COLD: WATER PIPING CONNECTION TO EACH FIXTURE SHALL BE COLD WATER ON THE RIGHT HAND SIDE AND HOT WATER ON THE LEFT HAND SIDE.
- HOT WATER: NON-CIRCULATING HOT WATER PIPE SHALL NOT EXCEED 10' UNLESS OTHERWISE SHOWN ON DRAWINGS.
- VENT STACKS: COORDINATE VENT STACK WITH HVAC EQUIPMENT TO MAINTAIN MINIMUM 10' CLEARANCE FROM OUTSIDE AIR INTAKES.
- CLEANOUTS: PROVIDE CLEANOUTS PER CURRENT UPC AND AS REQUIRED BY LOCAL JURISDICTIONS. CLEANOUTS SHALL BE LOCATED IN WALLS/FLOORS WHERE THEY ARE NOT HIGHLY VISIBLE. FLOOR CLEANOUTS IN CARPETED AREAS TO BE FITTED WITH CARPET INSERTS. LOCATIONS SHALL BE SUBMITTED TO ARCHITECT FOR APPROVAL. NOTE: NOT ALL CLEANOUTS ARE SHOWN ON THE PLUMBING DRAWINGS.
- SUDS RELIEF: PROVIDE SUDS RELIEF IN ACCORDANCE WITH 2015 UPC SECTION 711.0, STATE AND LOCAL CODES.
- SHUT-OFFS: PROVIDE 1/4 TURN BALL VALVE ANGLE STOP SHUT-OFF VALVES AND BRAIDED STAINLESS STEEL FLEX CONNECTORS AT HOT AND COLD WATER SUPPLY TO EACH FIXTURE. EXCEPTION: PROVIDE SCREWDRIVER STOPS AT BATH/SHOWERS.
- TUB SPOUTS SHALL BE THREADED (NO PUSH-ON FITTINGS).
- TRAP ARMS: PROVIDE TRAP ARMS SUCH THAT THE MAXIMUM LENGTH WILL NOT EXCEED CODE REQUIREMENTS.
- ADA INSULATION: AT PLUMBING PIPING EXPOSED UNDER LAVATORIES, INSULATE THE EXPOSED PIPING AND TRAPS WITH PRODUCT SPECIFICALLY DESIGNED FOR THIS APPLICATION MEETING ADA REQUIREMENTS. PROVIDE HANDI-LAV GUARD OR EQUIVALENT. OFFSET P-TRAPS TO CLEAR WHEELCHAIR ACCESS.
- GAS EQUIPMENT: GAS EQUIPMENT SHALL BE INSTALLED PER EQUIPMENT LISTINGS, APPLICABLE IFGC, UPC, LOCAL CODES & NFPA STANDARDS.
- GAS CONNECTIONS: INSTALL FLEXIBLE QUICK DISCONNECT ASSEMBLIES FOR ALL GAS FIRED KITCHEN EQUIPMENT PER APPLICABLE IFGC, UPC, LOCAL CODES & NFPA STANDARDS. PROVIDE LOCKABLE GAS SHUT-OFF VALVES FOR FIREPLACES & BBQS IN UNATTENDED PUBLIC LOCATIONS IN THE BUILDING.
- WATER HAMMER ARRESTORS: PROVIDE AT THE END OF HOT AND COLD WATER LINES SERVING TWO OR MORE FIXTURES; SIZE IN ACCORDANCE WITH PLUMBING AND DRAINAGE INSTITUTE (PDI) REQUIREMENTS. WATER HAMMER ARRESTORS ARE REQUIRED FOR QUICK CLOSING VALVES, SUCH AS LAUNDRY WASHERS, FLUSH VALVES (PUBLIC TOILETS), ETC.
- TRAP PRIMERS AS SPECIFIED: PROVIDE TRAP PRIMERS AND PIPING FOR FLOOR DRAINS, FLOOR SINKS, AREA DRAINS & HUB DRAINS. ARRANGE PIPING TO ACHIEVE EQUAL FLOW TO EACH DRAIN AND FLOOR SINK FOR TRAP PRIMERS SERVING MULTIPLE DRAINS AND FLOOR SINKS. COORDINATE EXACT LOCATIONS WITH ARCHITECT & ELECTRICAL ENGINEER.
- P-TRAPS: ALL EXPOSED P-TRAPS SHALL BE CHROME-PLATED BRASS. P-TRAPS SERVING HANDICAPPED COUNTER TOP LAVATORIES SHALL BE INSULATED.
- THROUGHOUT THE PROJECT PROVIDE BALL VALVES. GATE VALVES SHALL NOT BE USED. NO EXCEPTIONS.
- HOT WATER RECIRCULATING BALANCING VALVES SHOULD BE BELL & GOSSETT CIRCUIT SETTER (WATTS OR EQUAL) WITH INTEGRAL READOUT PORTS, ADJUSTMENT KNOB, DRAIN CONNECTION, AND POSITIVE SHUTOFF.
- DISASSEMBLY PROVISIONS: PROVIDE UNIONS OR FLANGES AT PIPING CONNECTIONS TO EQUIPMENT, COILS, TRAPS, CONTROL VALVES, AND OTHER COMPONENTS TO ALLOW DISASSEMBLY FOR MAINTENANCE.
- REDUCERS: PROVIDE AS REQUIRED FROM LINE PIPE SIZE TO EQUIPMENT, TRAP, COIL, AND CONTROL VALVE CONNECTION SIZES.
- VALVE TAGS: PROVIDE VALVE TAGS PER SPECIFICATIONS TO IDENTIFY VALVE AND THE AREA IT SERVES.
- OFFSETS: PROVIDE FOR BRANCH LINES TO EQUIPMENT.
- ALL TEMPERATURE MIXING VALVES SHALL COMPLY WITH ASSE-1070 SAFETY STANDARDS.
- PROVIDE PIPE MARKER WITH DIRECTION OF FLOW. LABEL "NON-POTABLE WATER DO NOT DRINK" CLEARLY ON NON-POTABLE WATER PIPING.
- PROVIDE EXPANSION LOOPS/EXPANSION JOINTS IN PIPING PER 2015 UPC TABLE 313.3 AND MANUFACTURER INSTALLATION INSTRUCTIONS.
- PROVIDE APPROVED PIPE HANGERS & PIPE SUPPORTS IN ACCORDANCE WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND 2015 UPC TABLES 313.3 & 313.6. SUBMIT FOR APPROVAL.
- DIELECTRIC UNIONS: PROVIDE AT CONNECTIONS OF DISSIMILAR PIPE.
- REFRIGERANT PIPING: PROVIDE SIZING & INSTALLATION IN STRICT ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS.
- CONDENSATE DRAIN: PROVIDE A P-TRAP FOR EACH HVAC UNIT CONDENSATE PAN WITH PLUG TEES FOR CLEANING. CONDENSATE DRAINS SHALL BE DISCHARGED TO AN INDIRECT WASTE OR OUTSIDE.
- PROVIDE VIBRATION, SEISMIC ISOLATIONS & CONTROLS IN ACCORDANCE WITH SPEC SECTION 230548.
- PIPING & EQUIPMENT SUPPORTS/HANGERS & SEISMIC RESTRAINTS TO BE DESIGNED BY DESIGN BUILT CONTRACTOR.
- IF NEEDED, PROVIDE VACUUM BREAKERS AT ALL HOSE BIBBS.
- FLOOR DRAINS OR SIMILAR TRAPS DIRECTLY CONNECTED TO THE DRAINAGE AND SUBJECT TO INFREQUENT USE SHALL BE PROVIDED WITH AN APPROVED AUTOMATIC MEANS OF MAINTAINING THEIR WATER SEALS IN ACCORDANCE WITH 2015 UPC 1007.0.
- INSULATION MATERIAL SHALL MEET CITY OF BELLEVUE QUALITY STANDARDS.
- ALL PIPING AND DUCTWORK SHALL BE INSULATED CONSISTENT WITH THE 2015 WASHINGTON STATE ENERGY CODE.
- BUILDING DRAIN AND VENT PIPING MATERIALS SHALL COMPLY WITH 2015 UPC 701.0 AND 903.0.
- ALL SANITARY SYSTEM MATERIAL SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
- ALL STORAGE WATER HEATING EQUIPMENT SHALL BE PROVIDED WITH AN APPROVED, LISTED EXPANSION TANK OR OTHER DEVICE DESIGNED FOR INTERMITTENT OPERATION FOR THERMAL EXPANSION CONTROL PER 2015 UPC 608.3.
- WATER HEATERS SHALL BE ANCHORED OR STRAPPED TO RESIST HORIZONTAL DISPLACEMENTS DUE TO SEISMIC MOTION PER 2015 UPC 507.2.
- MATERIAL EXPOSED WITHIN A DUCT OR PLENUM SHALL COMPLY WITH 2015 IMC 602.2.1.
- HVAC EQUIPMENT AND WATER HEATERS SHALL COMPLY WITH 2015 IMC CHAPTER 3.
- BOILERS SHALL COMPLY WITH ALL THE REQUIREMENTS OF 2015 IMC CHAPTER 10.
- PROVIDE EXPANSION TANKS FOR BOILERS PER 2015 IMC SECTION 1009.0.
- SHOWERS AND TUB/SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER 2015 UPC 408.0.
- PLUMBING FIXTURES AND FITTINGS SHALL COMPLY WITH CITY OF BELLEVUE WATER CONSERVATION STANDARDS.
- CONTRACTOR SHALL PROVIDE FIRESTOPPING AT PENETRATIONS AS NECESSARY TO RETAIN THE FIRE RATING OF ALL ASSEMBLIES. ALL WORK SHALL BE IN COMPLIANCE WITH CODE REQUIREMENTS FOR THE BUILDING CONSTRUCTION TYPE.
- PLUMBING CONTRACTOR SHALL PROVIDE REDUCED PRESSURE BACKFLOW PREVENTERS OR OTHER APPROVED BACKFLOW PREVENTION DEVICE WHERE REQUIRED BY HEALTH AUTHORITIES, FOOD SERVICE DRAWINGS, APPLIANCE MANUFACTURER INSTRUCTIONS AND BY CODE.

PROVIDE REQUIRED & PROPER BACK FLOW PREVENTERS AS SPECIFIED FOR THE APPLIANCES INCLUDING, BUT NOT LIMITED TO THE FOLLOWING:

- ICE MACHINES AND ICE MAKERS
- CARBONATED BEVERAGE DISPENSING SYSTEMS
- COFFEE BREWERS
- ESPRESSO MACHINES
- WATER FILTERS
- STEAM OR HOT WATER BOILERS
- IRRIGATION SYSTEM
- FIRE PROTECTION SYSTEM
- CHEMICAL TREATMENT SYSTEM
- SOAP/CHEMICAL DISPENSER SYSTEM
- COMMERCIAL WASHER

APPLICABLE CODES

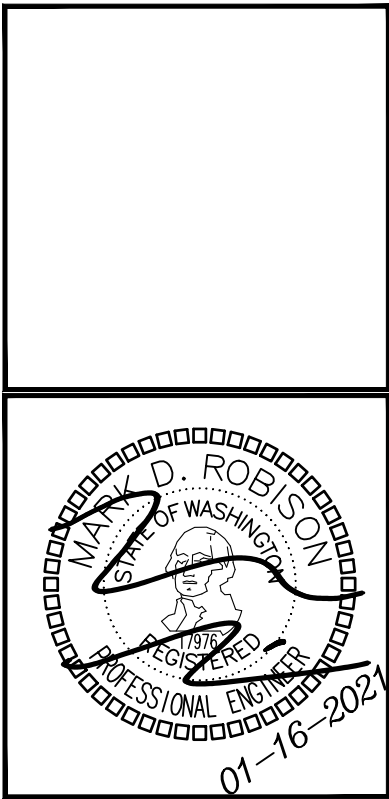
THE FOLLOWING PROJECT DESIGN IS BASED ON THE FOLLOWING CODES:

- 2015 INTERNATIONAL BUILDING CODE (IBC) & WASHINGTON STATE AMENDMENTS
- 2015 INTERNATIONAL MECHANICAL CODE (IMC) & WASHINGTON STATE AMENDMENTS
- 2015 UNIFORM PLUMBING CODE (UPC) & WASHINGTON STATE AMENDMENTS
- 2018 WASHINGTON STATE ENERGY CONSERVATION CODE (WSEC)

CONTRACTOR SUBSTITUTIONS & REVISIONS

PLEASE SUBMIT PROPOSALS FOR SUBSTITUTIONS OR REVISIONS FOR REVIEW AND APPROVAL PRIOR TO ORDERING MATERIAL OR DOING WORK. FOR EQUIPMENT THAT IS SCHEDULED BY MANUFACTURER'S NAME AND CATALOG DESIGNATIONS, THE MANUFACTURER'S PUBLISHED DATA AND/OR SPECIFICATION FOR THAT ITEM ARE CONSIDERED PART OF SPECIFICATION. ENGINEERING COSTS FOR REVISING MEP PLANS SHALL BE ADDRESSED IN THE COST ANALYSIS OF THE SUBSTITUTION PROPOSAL. CONTRACTOR TO COORDINATE WITH ENGINEER AND DETERMINE ASSOCIATED DESIGN AND PERMITTING COSTS. CONTRACTOR SHALL BE RESPONSIBLE FOR OTHER COSTS ASSOCIATED WITH UNFORESEEN ISSUES RESULTING FROM SUBSTITUTIONS OR REVISIONS.

NO.	DATE	DESCRIPTION							



DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT: SEASIDE AT KINGSTON
24700-16200 LINDVOG ROAD NE
KINGSTON, WA 98346

19401 40TH AVEW. SUITE 302
LYNNWOOD, WA 98036
PHONE: (206) 364-3343

ROBISON
ENGINEERING, INC

DATE: 01/16/2021

SHEET TITLE:
PLUMBING NOTES,
TABLES AND CODES

SHEET NO.
P00C1

PLUMBING FIXTURE UNIT COUNTS AND FIXTURE / DRAIN SCHEDULES	
--	--

PLAN MARK	FIXTURE TYPE	SERVICE SIZE - INCHES				LOCATION	FINISH	MANUFACTURER	BASIS OF DESIGN MODEL	FLOW RATE, GPM	NOTES
		CW	HW	W	V						
BT-1	BATH-TUB	3/4	3/4	2	1-1/2	TYPICAL APARTMENT	WHITE	KOHLER	K-20201-0	2.5 GPM	1-5.7
	IN-WALL VALVE						BRONZE	KOHLER	K-14426-BV		
	TRIM KIT						BRONZE	KOHLER	K-T14501-4		
SH-1	SHOWER PAN	1/2	1/2	2	1-1/2	TPYE A & C APARTMENT (FIRST FLOOR)	WHITE	ROYAL	RECTANGULAR 36"X36"	2.5 GPM	1-5.7
	SHOWER DRAIN						BRONZE	KOHLER	K-9132		
	TRIM KIT						BRONZE	KOHLER	K-TS-14422-4-BV		
SH-2	SHOWER PAN	1/2	1/2	2	1-1/2	TPYE B APARTMENT (FIRST FLOOR)	WHITE	ROYAL	CORNER 38"X38"	2.5 GPM	1-5.7
	SHOWER DRAIN						BRONZE	KOHLER	K-9132		
	TRIM KIT						BRONZE	KOHLER	K-TS-14422-4-BV		
SH-3	SHOWER PAN	1/2	1/2	2	1-1/2	TYPICAL APARTMENT (THIRD FLOOR)	WHITE	ROYAL	RECTANGULAR 48"X36"	2.5 GPM	1-5.7
	SHOWER DRAIN						BRONZE	KOHLER	K-9132		
	HAND-SHOWER						BRONZE	KOHLER	K-9059-BV		
	VALVE TRIM						CHROME	TBD	TBD		
LV-1	LAVATORY	1/2	1/2	1-1/2	1-1/2	TYPICAL APARTMENT	WHITE	CASCADIAN	L1580	1.2 GPM	1-5
	FAUCET						CHROME	PFISTER	LG1420600C		
KS-1	KITCHEN SINK	1/2	1/2	2	1-1/2	TYPICAL APARTMENT	STAINLESS	MOEN	G20193	2.2 GPM	1-5
	FAUCET						CHROME	PEERLESS	P188152LF		
WC-1	WATER CLOSET	1/2	---	3	2	TYPICAL APARTMENT	WHITE	WESTERN POTTERY	B832 ,-78ULF -HP	1.28 GPF	1-6
	SEAT						WHITE	COMFORT SEATS	C014WD		
WB-1	WASHER BOX	3/4	3/4	2	1-1/2	TYPICAL APARTMENT	WHITE	SIOUX CHIEF	696-2313	N/A	1-5
HB-1	WALL HYDRANT	3/4	---	---	---	PER DWGS.	N/A	WOODFORD	B65	N/A	1-3.5,8

NOTES:

1. REFER TO ARCH PLANS FOR MOUNTING HEIGHT
2. CONTRACTOR SHALL CONFIRM MAKE, MODEL, AND FINISH OF ALL FIXTURES WITH OWNER, ARCHITECT, AND INTERIOR DESIGNER PRIOR TO ORDERING.
3. PROVIDE RED/HOT AND BLUE/COLD WATER INDICATORS TO ALL FIXTURES.
4. ALL FIXTURE P-TRAPS SHALL BE CHROME-PLATED BRASS.
5. PROVIDE DAHL 1/4-TURN BALL VALVE ANGLE STOPS WITH BRAIDED STAINLESS STEEL FLEX CONNECTORS AT HOT AND COLD WATER SUPPLY TO EACH FIXTURE EXCEPT SHOWERS AND BATHS. PROVIDE SCREWDRIVER STOPS AT SHOWERS AND BATHS.
6. FLUSH TRIGGER SHALL BE ON WIDE SIDE OF ROOM.
7. SHOWERS AND TUB-SHOWER COMBINATIONS SHALL BE PROVIDED WITH MIXING VALVES PER UPC SECTION 408.3.
8. PROVIDE LOCKABLE BOX.

DRAINS & CLEANOUTS SCHEDULE								
PLAN MARK	FIXTURE TYPE	SERVICE SIZE - INCHES		LOCATION	FINISH	MANUFACTURER	BASIS OF DESIGN MODEL	NOTES
		W	V					
FCO	FLOOR CLEANOUT	PER PLANS	N/A	PER DWGS.	CAST IRON	WADE	6000	1
WCO	WALL CLEANOUT	PER PLANS	N/A	PER DWGS.	CAST IRON	WADE	8560	1

NOTES:

1. CONTRACTOR SHALL CONFIRM MAKE, MODEL, AND FINISH OF ALL FIXTURES WITH OWNER, ARCHITECT, AND INTERIOR DESIGNER PRIOR TO ORDERING.

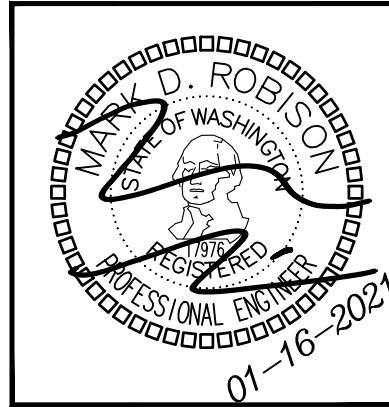
FIXTURE UNIT CALCULATIONS													
CALCULATIONS BASED ON 2015 UPC TABLES A103.1 AND 702.1.													
PER UNIT													
FIXTURE	FIXTURE UNITS				FLOOR				TOTAL QTY OF FIXTURES	TOTAL FIXTURE UNITS			
	TOTAL	CW	HW	W/V	1	2	3	R		SERVICE	CW ONLY	HW ONLY	W/V ONLY
LAVATORY (PRIVATE)	1	0.75	0.75	1	1		3		4	4	3	3	4
WATER CLOSET (PRIVATE, TANK)	2.5	2.5	0	3	1		2		3	7.5	7.5	0	9
SHOWER (PRIVATE)	2	1.5	1.5	2	1		1		2	4	3	3	4
BATH-TUB (PRIVATE)	4	3	3	2			1		1	4	3	3	2
KITCHEN SINK (PRIVATE)	1.5	1.125	1.125	2		1			1	1.5	1.125	1.125	2
DISHWASHER (PRIVATE)	1.5	0	1.5	0		1			1	1.5	0	1.5	0
CLOTHES WASHER	4	3	3	3			1		1	4	3	3	3
HOSE BIB / ROOF HYDRANT	2.5/1	2.5/1	0	0	1				1	2.5	2.5	0	0
	TOTAL	CW	HW	W/V									
TOTAL FIXTURE UNITS:	29	23.125	14.63	24									
DOMESTIC WATER PEAK FLOW:	19.5 GPM												
REQUIRED SERVICE SIZES IN BUILDING:	DOMESTIC WATER				SEWER SIZE								
	SERVICE SIZE:		1-1/4"		4"								
	METER SIZE:		5/8"		1/4" PER FT								

PLUMBING FIXTURE FLOW RATES PER 2015 UPC CH. 4		
FIXTURE TYPE	FLOW RATE	NOTES
SHOWERHEADS	2.5 GPM @ 80 PSI	
LAVATORY FAUCETS, RESIDENTIAL	2.2 GPM @ 60 PSI	1
LAVATORY FAUCETS, NON-RESIDENTIAL	0.5 GPM @ 60 PSI	2
KITCHEN FAUCETS	2.2 GPM @ 60 PSI	3
GRAVITY TANK-TYPE WATER CLOSETS	1.6 GALLONS/FLUSH	4
FLUSHOMETER TANK WATER CLOSETS	1.6 GALLONS/FLUSH	4
FLUSHOMETER VALVE WATER CLOSETS	1.6 GALLONS/FLUSH	4
ELECTROMECHANICAL HYDRAULIC WATER CLOSETS	1.6 GALLONS/FLUSH	4
URINALS	1.0 GALLONS/FLUSH	

NOTES:

1. LAVATORY FAUCETS SHALL NOT HAVE A FLOW RATE LESS THAN 0.8 GPM AT 20 PSI.
2. WHERE COMPLYING FAUCETS ARE UNAVAILABLE, AERATORS RATED AT 0.35 GPM OR OTHER MEANS MAY BE USED TO ACHIEVE REDUCTION.
3. KITCHEN FAUCETS MAY TEMPORARILY INCREASE FLOW ABOVE THE MAXIMUM RATE, BUT NOT ABOVE 2.2 GPM @ 60 PSI AND MUST DEFAULT TO A MAXIMUM FLOW RATE OF 1.8 GPM @ 60 PSI.
4. INCLUDES SINGLE AND DUAL FLUSH WATER CLOSETS WITH AN EFFECTIVE FLUSH OF 1.6 GALLONS OR LESS. SINGLE FLUSH TOILETS – THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.6 GALLONS. THE EFFECTIVE FLUSH VOLUME IS THE AVERAGE FLUSH VOLUME WHEN TESTED IN ACCORDANCE WITH ASME A112.19.2 DUAL FLUSH TOILETS – THE EFFECTIVE FLUSH VOLUME SHALL NOT EXCEED 1.6 GALLONS. THE EFFECTIVE FLUSH VOLUME IS DEFINED AS THE COMPOSITE, AVERAGE FLUSH VOLUME OF TWO REDUCED FLUSHES AND ONE FULL FLUSH. FLUSH VOLUMES WILL BE TESTED IN ACCORDANCE WITH ASME A112.19.2 AND ASME A112.19.14.

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021:11:45 PM kwlodarchak

[illegible]

DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT: **SEASIDE AT KINGSTON**
 24700-28200 LINDVOG ROAD NE
 KINGSTON, WA 98248

ROBISON
 ENGINEERING, INC

19401 140TH AVE., SUITE 302
 LYNNWOOD, WA 98036
 PHONE: (206) 364-3343

DATE: 01/16/2021

SHEET TITLE:
PLUMBING FIXTURE UNIT
COUNTS AND FIXTURE/DRAIN
SCHEDULE

SHEET NO.

P0C2

WATER SUPPLY PRESSURE CALCULATIONS	
------------------------------------	--

DOMESTIC WATER PRESSURE CALCULATIONS		PRESSURE CHANGE (PSI)	RESIDUAL PRESSURE (PSI)
BASED ON 2015 UPC APPENDIX A			
(PE) WATER ENTRY LOSSES			
<u>STREET PRESSURE, PSI</u>			65
PER DISTRICT WATER PRESSURE TEST, STATIC PRESSURE IS 65 PSI			
HIGH-FLOW PRESSURE LOSS ALLOWANCE		-5	60
<u>EQUIPMENT LOSSES, PSI</u>			
WATER METER - 5/8" METER @ 20 GPM		-6	54
<u>SITE SERVICE LINE FRICTION LOSSES (ESTIMATE)</u>		-2	52.0
<u>STATIC HEAD, PSI</u>			
TOTAL ELEVATION GAIN, FEET	5	-2.165	49.8
FROM STREET SERVICE TO INDIVIDUAL UNIT WATER ENTRY			
MIN. PRESSURE AT INDIVIDUAL UNIT WATER ENTRY			49.8
(PEX) ABOVE GROUND SUPPLY DISTRIBUTION			
<u>STATIC HEAD, PSI</u>			
TOTAL ELEVATION GAIN, FT	25	-10.825	39.0
FROM WATER ENTRY TO FURTHEST FIXTURE OUTLET			
<u>PIPING FRICTION LOSSES</u>			
PIPING SYSTEM LENGTH, FEET	75		
FITTING ALLOWANCE, FEET	30		
AVERAGE FRICTION LOSS FACTOR, PSI/100'	13.0		
<u>PIPING FRICTION LOSS</u>		-13.65	25.4
MINIMUM PRESSURE AT FURTHEST FIXTURE OUTLET, PSI			25.4

SUPPLY PIPE SIZING TABLES

SUPPLY PIPE SIZING SCHEDULE - PEX											
FRICTION LOSS FACTOR:										13.00 PSI/100 FT	
PIPE SIZE	COLD WATER, FLUSH TANK			COLD WATER, FLUSH VALVE			HOT WATER			HOT WATER RECIRCULATION	
	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS	FIXTURE UNITS	FLOW, GPM	VELOCITY, FPS	FLOW, GPM	VELOCITY, FPS
1/2"	2.0	2.93	5.3	---	---	---	3.0	3.20	5.8	1.10	2.00
3/4"	8.0	7.50	6.8	1	7.50	6.9	10.0	8.16	7.4	2.20	2.00
1"	20.0	14.74	8.1	2.0	14.74	8.1	20.0	14.55	8.0	3.64	2.00
1-1/4"	42.0	25.02	9.2	8.0	25.02	9.2	33.0	21.76	8.0	5.44	2.00
1-1/2"	77.0	37.89	10.0	24.0	37.89	10.0	54.0	30.31	8.0	7.58	2.00
2"	199.0	64.97	10.0	91.0	64.97	10.0	134.0	51.97	8.0	12.99	2.00
2-1/2"	375.0	99.01	10.0	239.0	99.00	10.0	270.0	79.21	8.0	19.80	2.00
3"	589.0	140.79	10.0	494.0	141.00	10.0	443.0	112.60	8.0	28.16	2.00

PLUMBING EQUIPMENT SCHEDULES	
------------------------------	--

PIPE MATERIALS			
PIPE TYPE	MATERIAL	JOINT	NOTES
UNDERGROUND WATER SERVICE ENTRANCE PIPING	PE (POLYETHYLENE)	MECHANICAL FITTINGS	
WATER DISTRIBUTION PIPING – ABOVE GROUND	PEX	EXPANSION FITTINGS	2
WASTE & VENT PIPING	SCHEDULE 40 SOLID CORE PVC	SOLVENT CEMENT	
STORM PIPING	SCHEDULE 40 SOLID CORE PVC	SOLVENT CEMENT	

NOTES:

- ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
- PROVIDE THERMAL EXPANSION LOOPS FOR ALL CPVC PIPING PER MANUFACTURER REQUIREMENTS.

1. ALL SANITARY SYSTEM MATERIALS SHALL BE LISTED BY AN APPROVED LISTING AGENCY.
2. PROVIDE THERMAL EXPANSION LOOPS FOR ALL CPVC PIPING PER MANUFACTURER REQUIREMENTS.

DOMESTIC WATER HEATER SCHEDULE - ELECTRIC											
EQUIP. TAG	LOCATION	SERVICE	GPH RECOVERY AT 90°F TR	STORAGE CAPACITY, GAL	INLET/OUTLET CONNECTION	HEATER, KW	OPERATING WEIGHT (LBS)	ELECTRICAL	BOD ENERGY FACTOR	BASIS OF DESIGN	NOTES
WH-1	GARAGE (EACH UNIT)	DOMESTIC RESIDENTIAL HOT WATER (EACH UNIT)	21	79	¾"	4.5	860	208V/1P	0.92	BRADFORD WHITE RE380T6	1-4

NOTES:

1. WATER HEATER RECOVERY AND POWER REQUIREMENT ARE BASED ON NON-SIMULTANEOUS OPERATION.
2. FOR WATER HEATER PIPING, SEE PIPING DIAGRAM DETAIL 1 ON P4C0.
3. PROVIDE DRAIN PAN FOR WATER HEATER.
4. PROVIDE ADJACENT 3" MIN. BOLLARD IN GARAGE, PER ARCH PLANS.

1. WATER HEATER RECOVERY AND POWER REQUIREMENT ARE BASED ON NON-SIMULTANEOUS OPERATION.
2. FOR WATER HEATER PIPING, SEE PIPING DIAGRAM DETAIL 1 ON P4C0.
3. PROVIDE DRAIN PAN FOR WATER HEATER.
4. PROVIDE ADJACENT 3" MIN. BOLLARD IN GARAGE, PER ARCH PLANS.

EXPANSION TANK										
EQUIP. TAG	LOCATION	SERVICE	CAPACITY GAL.	PRE-CHARGE PRESSURE, PSI	TANK SIZE, IN		CONNECTION SIZE, IN	OPERATING WEIGHT, LBS	BASIS OF DESIGN	NOTES
					DIAMETER	HEIGHT				
ET-1	GARAGE (EACH UNIT)	DOMESTIC RESIDENTIAL HOT WATER (EACH UNIT)	4.4	49.8	11	15	¾	35	AMTROL ST-12	1

NOTES:

1. INSTALL ACCORDING TO MANUFACTURER REQUIREMENTS.

BACKWATER VALVE SCHEDULE										
--------------------------	--	--	--	--	--	--	--	--	--	--

1. INSTALL ACCORDING TO MANUFACTURER REQUIREMENTS.

BACKWATER VALVE SCHEDULE						
EQUIP NO.	LOCATION	SERVICE	PIPE MATERIAL	INLET/OUTLET SIZE	BASIS OF DESIGN	NOTES
BWV-1	GARAGE(AS SHOWN)	AS SHOWN	PVC	4"	IPEX 223288W	1,2

NOTES:

1. VALVE OPERATES IN THE NORMALLY CLOSED POSITION.
2. INSTALL PER MANUFACTURER REQUIREMENTS.

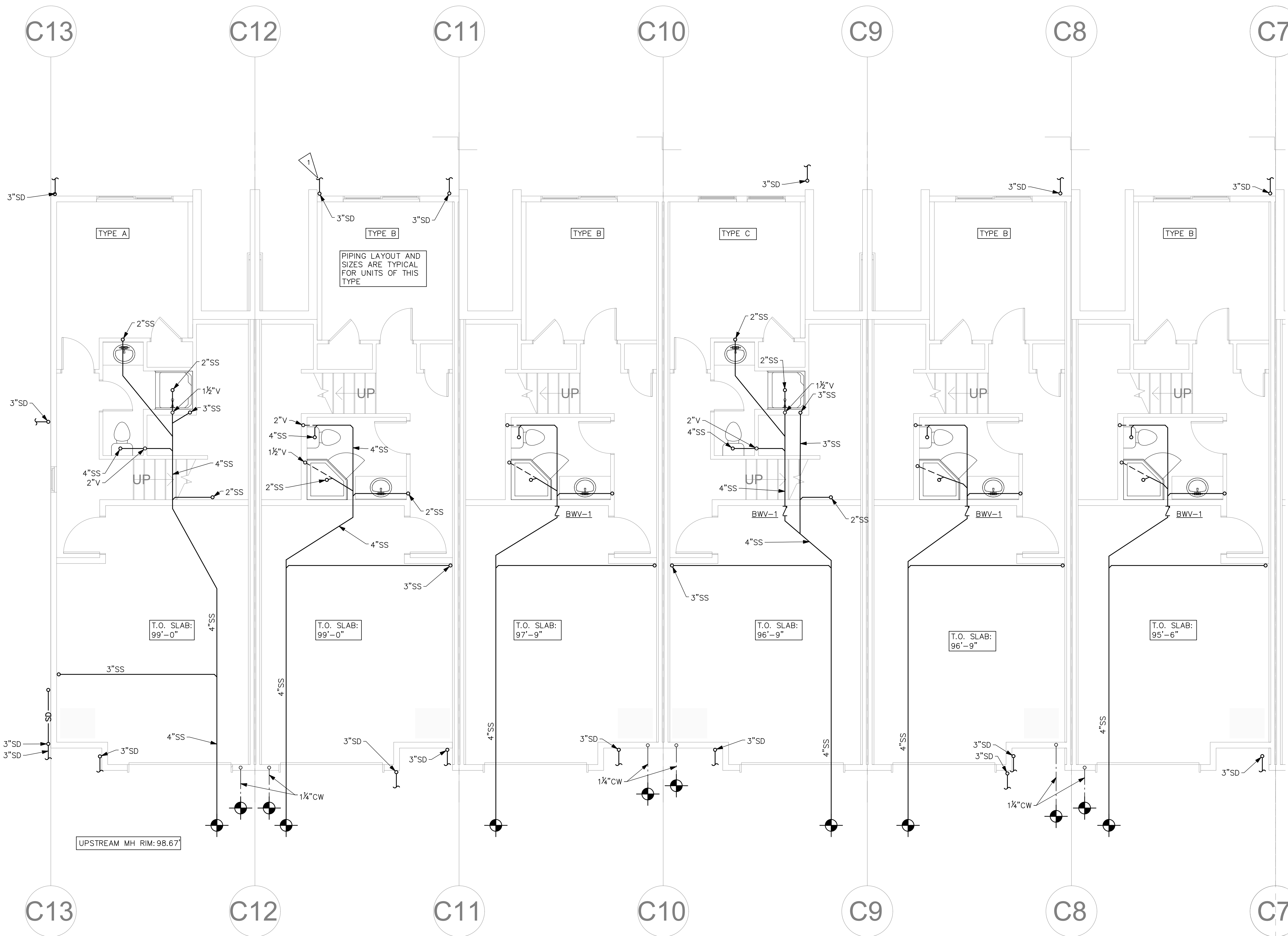
1. VALVE OPERATES IN THE NORMALLY CLOSED POSITION.
2. INSTALL PER MANUFACTURER REQUIREMENTS.

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021 11:47 PM kwlodarchak

see water heater information below as selected to
 comply with energy code requirements.
 KW 2/12/2021

EFFICIENT WATER HEATING 5c:
Water heating system shall include one of the following:
[unspecified alternates omitted for clarity]
Electric heat pump water heater with a minimum EF of 2.0 and meeting the standards of NEEA's Northern Climate Specifications for Heat Pump Water Heaters.
To qualify to claim this credit, the building permit drawings shall specify the option being selected and shall specify the water heater equipment type and the minimum equipment efficiency.

		NO.		DATE		DESCRIPTION							
DRAWN:		MLT											
		DESIGNED:						MLT					
CHECKED:		JMR											
		APPROVED:						JMR					
PROJECT: SEASIDE AT KINGSTON 24700-20200 LINDVOG ROAD NE KINGSTON, WA 98346		19401 40TH AVE. SUITE 302 LYNNWOOD, WA 98036 PHONE: (206) 364-3343 ROBISON ENGINEERING, INC											
DATE:		01/16/2021											
SHEET TITLE:		PLUMBING EQUIPMENT SCHEDULES AND PIPE SIZING TABLES											
SHEET NO.		P0C3											



SHEET NOTES:

1. STORM DRAIN SIZING: STORM DRAINAGE PIPING IS SIZED PER 2015 UPC TABLE 1101.8, FOR 2" PER HOUR RAINFALL RATE, AT 1/8" PER FOOT SLOPE:

PIPE SIZE	VERTICAL	HORIZONTAL
3"	4,400 SF	1,644 SF
4"	9,200 SF	3,760 SF
6"	17,300 SF	10,700 SF
8"	27,000 SF	23,000 SF
10"	58,000 SF	41,400 SF

2. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2015 UPC TABLE 703.2. PER SECTION 708.0 & 708.1, ALL HORIZONTAL DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.

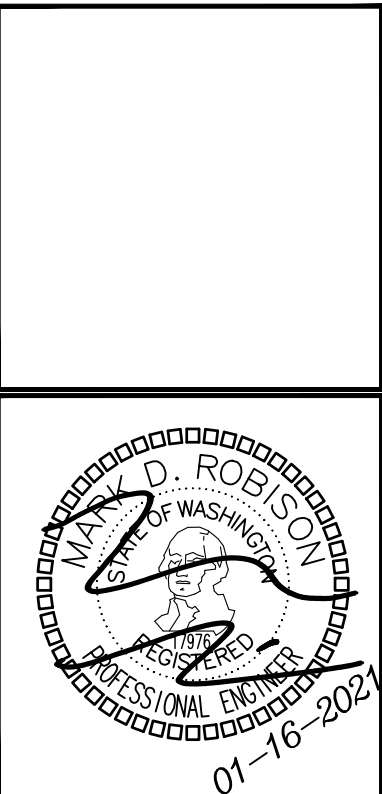
PIPE SIZE	VERT.	HORIZ.	VENT.
10"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

3. ALL FIXTURES LOCATED BELOW THE NEXT UPSTREAM DRAINAGE MANHOLE RIM SHALL BE PROTECTED BY A BACKWATER VALVE.

- FLAG NOTES:
1. CONNECT ROOF DOWNSPOUTS TO CIVIL STORM LINES (TYP.)

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021:11:50 PM kwlodarchak

DESCRIPTION		REVISIONS	
NO.	DATE	NO.	DATE



DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT: SEASIDE AT KINGSTON
24700-10200 LINDVOG ROAD NE
KINGSTON, WA 98346

19401 40TH AVE. SUITE 302
LYNNWOOD, WA 98036
PHONE: (206) 364-3343

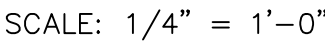
ROBISON
ENGINEERING, INC

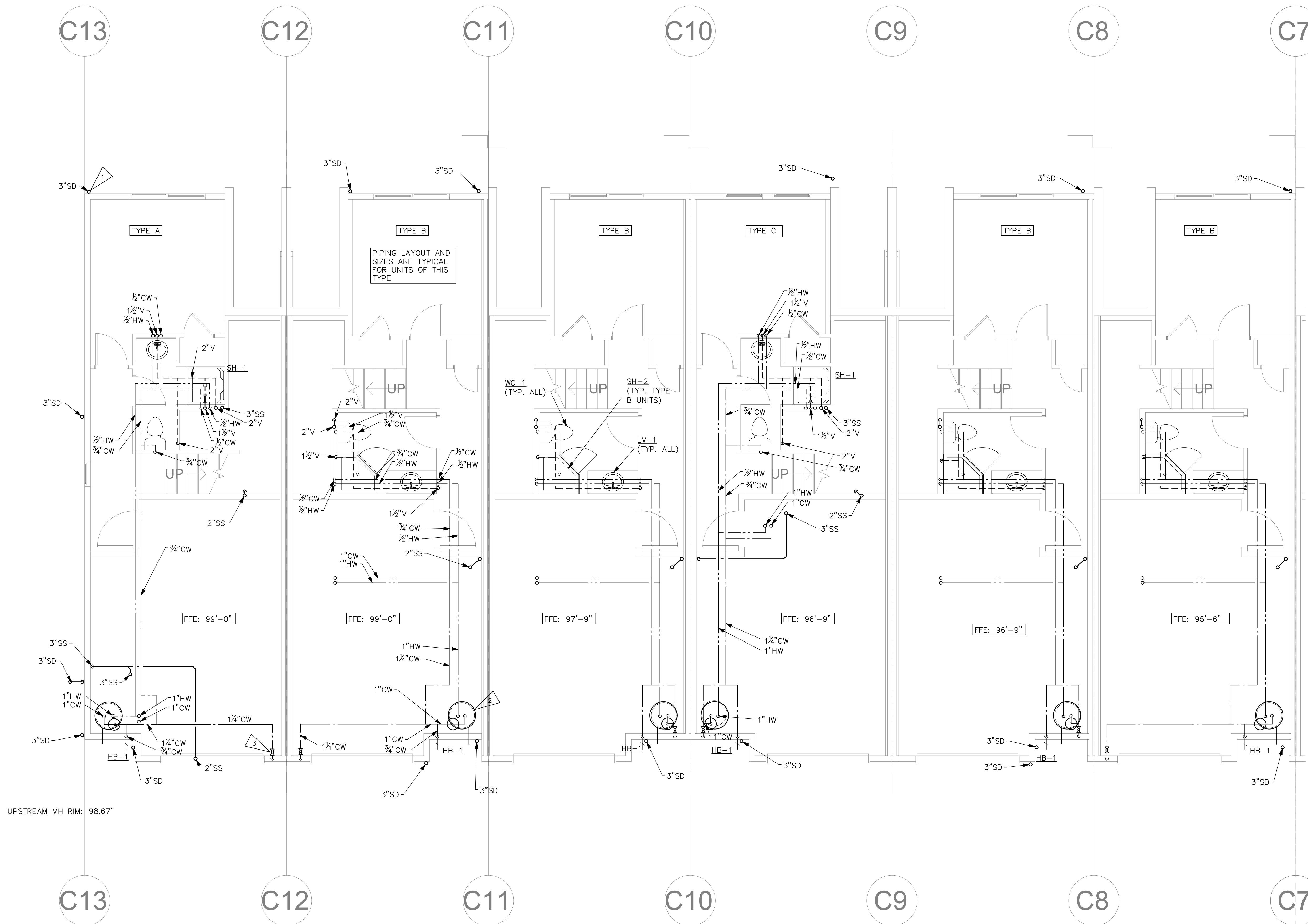
DATE: 01/16/2021

SHEET TITLE:
PLUMBING
UNDERSLAB
PLAN - NORTH

SHEET NO.
P2C0

PLUMBING UNDERSLAB PLAN - NORTH
SCALE: 1/4" = 1'-0"





SHEET NOTES:

- STORM DRAIN SIZING: STORM DRAINAGE PIPING IS SIZED PER 2015 UPC TABLE 1101.8, FOR 2" PER HOUR RAINFALL RATE, AT 1/8" PER FOOT SLOPE:

PIPE SIZE	VERTICAL	HORIZONTAL
3"	4,400 SF	1,644 SF
4"	9,200 SF	3,760 SF
6"	17,300 SF	10,700 SF
8"	27,000 SF	23,000 SF
10"	58,000 SF	41,400 SF

- WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2015 UPC TABLE 703.2. PER SECTION 708.0 & 708.1, ALL HORIZONTAL DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.

PIPE SIZE	VERT.	HORIZ.	VENT.
10"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

- ALL FIXTURES LOCATED BELOW THE NEXT UPSTREAM DRAINAGE MANHOLE RIM SHALL BE PROTECTED BY A BACKWATER VALVE.

- FLAG NOTES:**
- ROOF DOWNSPOUTS (TYP.)
 - WATER HEATER & EXPANSION TANK IN GARAGE, WITH DRAINS DISCHARGED TO OUTSIDE. SEE DETAIL 1, P4C0 (TYP. ALL UNITS)
 - MAIN UNIT SHUTOFF VALVE (TYP. ALL UNITS)

NO.	DATE	DESCRIPTION	REVISIONS

DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT: **SEASIDE AT KINGSTON**
24700-10200 LINDVOG ROAD NE
KINGSTON, WA 98846

19401 40TH AVE. SUITE 302
LYNNWOOD, WA 98036
PHONE: (206) 364-3343

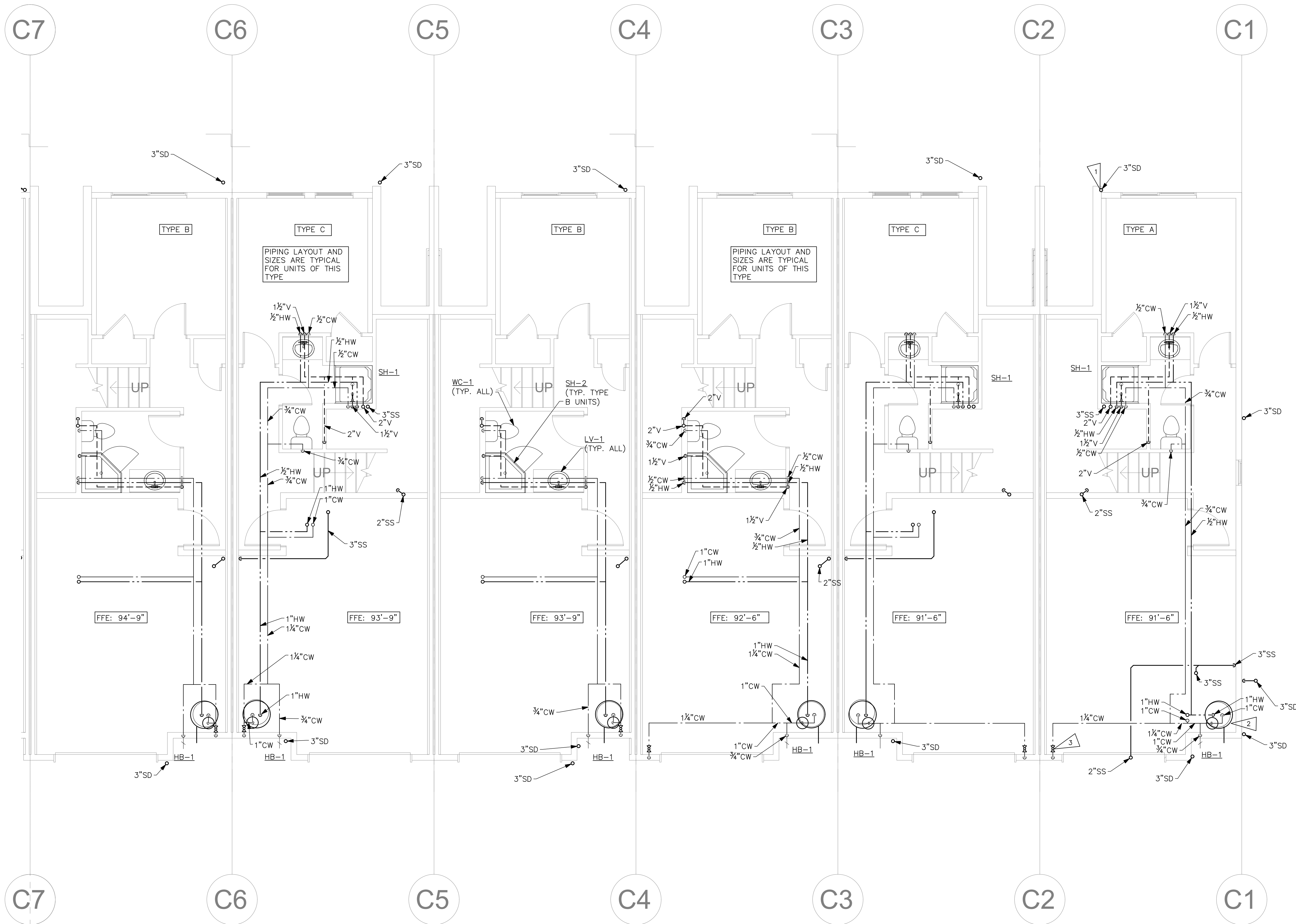
ROBISON
ENGINEERING, INC

DATE: 01/16/2021

SHEET TITLE:
PLUMBING
FIRST FLOOR
PLAN - NORTH

SHEET NO.
P2C2

PLUMBING FIRST FLOOR PLAN - NORTH
SCALE: 1/4" = 1'-0"



PLUMBING FIRST FLOOR PLAN – SOUTH

SCALE: 1/4" = 1'-0"



SHEET NOTES:

- STORM DRAIN SIZING: STORM DRAINAGE PIPING IS SIZED PER 2015 UPC TABLE 1101.8, FOR 2" PER HOUR RAINFALL RATE, AT 1/8" PER FOOT SLOPE:

PIPE SIZE	VERTICAL	HORIZONTAL
3"	4,400 SF	1,644 SF
4"	9,200 SF	3,760 SF
6"	17,300 SF	10,700 SF
8"	27,000 SF	23,000 SF
10"	58,000 SF	41,400 SF
- WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2015 UPC TABLE 703.2. PER SECTION 708.0 & 708.1, ALL HORIZONTAL DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.

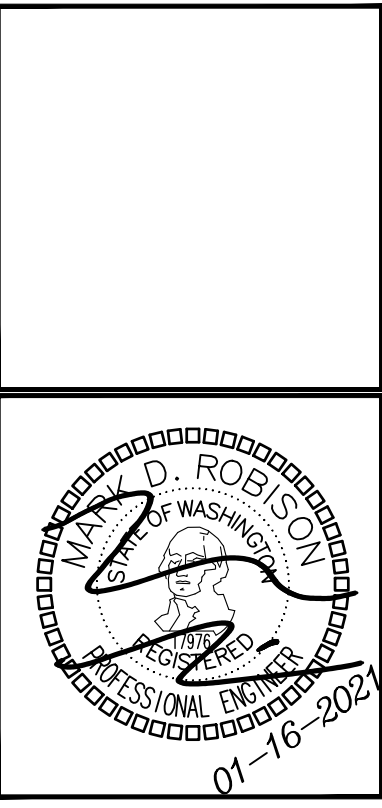
PIPE SIZE	VERT.	HORIZ.	VENT.
10"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU
- ALL FIXTURES LOCATED BELOW THE NEXT UPSTREAM DRAINAGE MANHOLE RIM SHALL BE PROTECTED BY A BACKWATER VALVE.

FLAG NOTES:

- ROOF DOWNSPOUTS (TYP.)
- WATER HEATER & EXPANSION TANK IN GARAGE, WITH DRAINS DISCHARGED TO OUTSIDE. SEE DETAIL 1, P4C0 (TYP. ALL UNITS)
- MAIN UNIT SHUTOFF VALVE (TYP. ALL UNITS)

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021:11:58 PM kwlodarchak

DESCRIPTION		REVISIONS	
NO.	DATE	NO.	DATE



DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT: SEASIDE AT KINGSTON
24700-10200 LINDVOG ROAD NE
KINGSTON, WA 98346

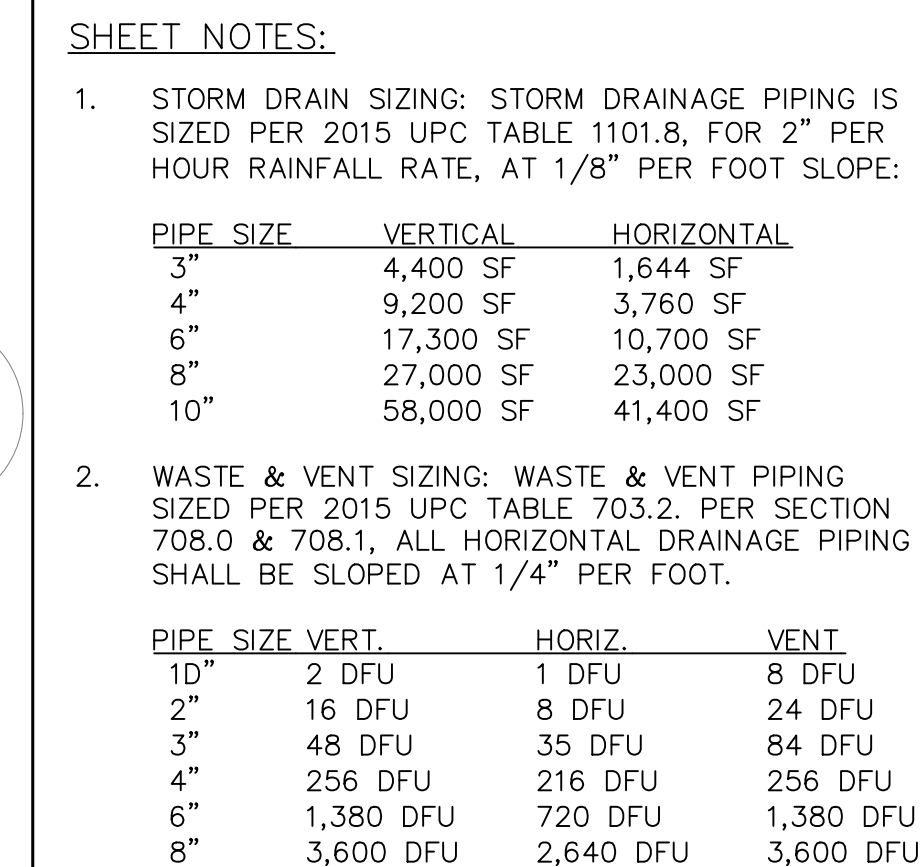
19401 40TH AVE. SUITE 302
LYNNWOOD, WA 98036
PHONE: 206/364-3343


ROBISON
ENGINEERING, INC

DATE: 01/16/2021

SHEET TITLE:
PLUMBING
FIRST FLOOR
PLAN – SOUTH

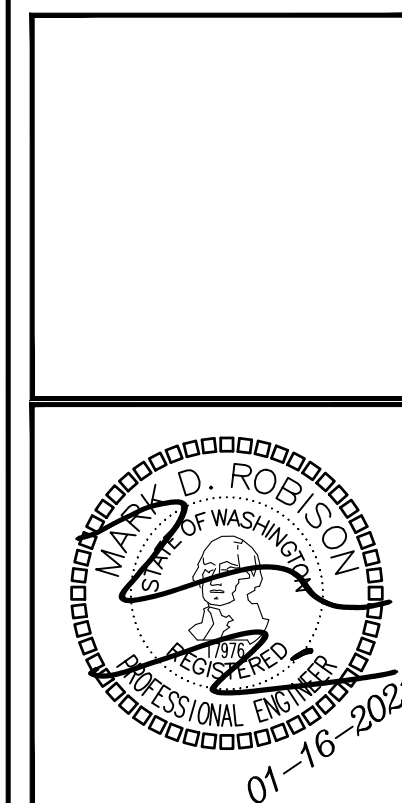
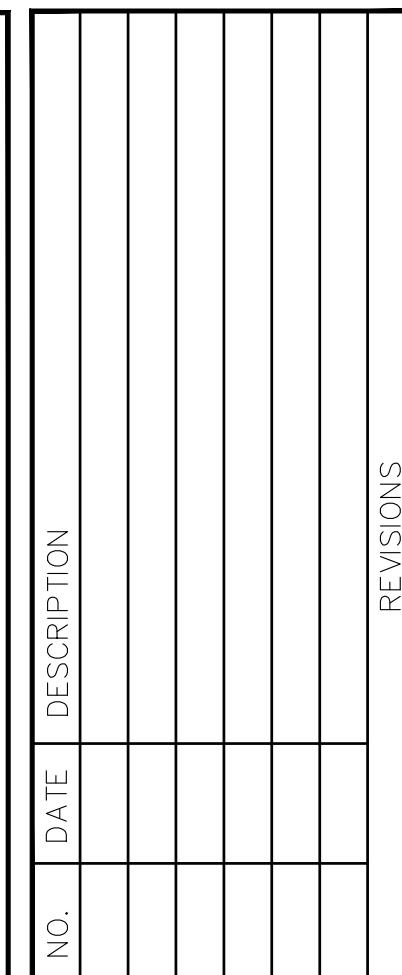
SHEET NO.
P2C3



FLAG NOTES: 

1. ROOF DOWNSPOUTS (TYP.)

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021:12:00 PM kwlodarchak



DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT: **SEASIDE AT KINGSTON**
 24700-28200, LINDVOG ROAD NE
 KINGSTON, WA **98846**

ROBISON
 ENGINEERING, INC

19401 40TH AVE W, SUITE 302
 LYNNWOOD, WA 98036
 PHONE: (206) 664-3343

DATE: 01/16/2021

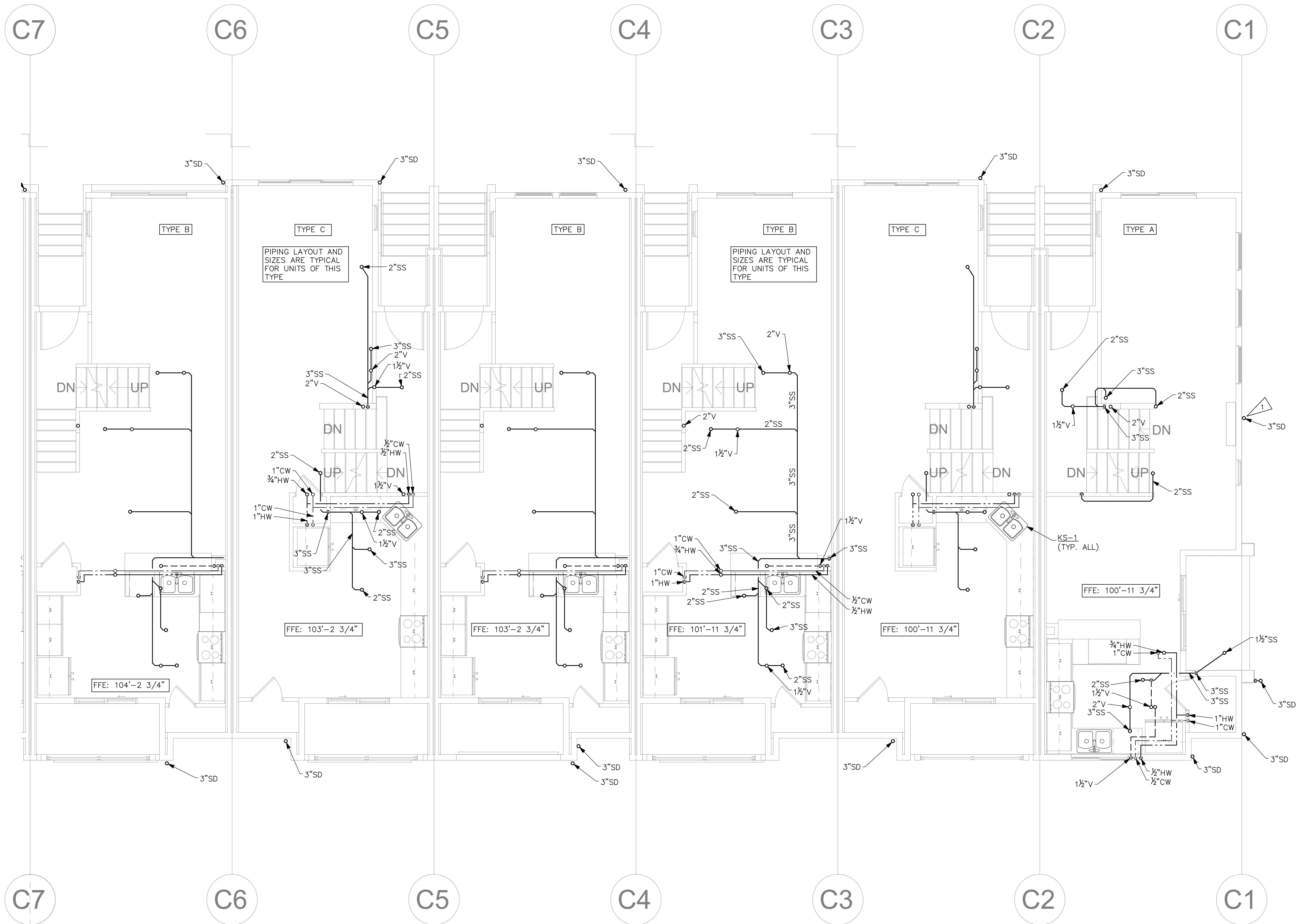
SHEET TITLE:
PLUMBING
SECOND FLOOR
PLAN - NORTH

SHEET NO.
P2C4

PLUMBING SECOND FLOOR PLAN — NORTH

SCALE: 1/4" = 1'-0"





PLUMBING SECOND FLOOR PLAN – SOUTH
SCALE: 1/4" = 1'-0"

SHEET NOTES:

1. STORM DRAIN SIZING: STORM DRAINAGE PIPING IS SIZED PER 2015 UPC TABLE 1101.8, FOR 2" PER HOUR RAINFALL RATE, AT 1/8" PER FOOT SLOPE:

PIPE SIZE	VERTICAL	HORIZONTAL
3"	4,400 SF	1,644 SF
4"	9,200 SF	3,760 SF
6"	17,300 SF	10,700 SF
8"	27,000 SF	23,000 SF
10"	58,000 SF	41,400 SF

2. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2015 UPC TABLE 703.2. PER SECTION 708.0 & 708.1, ALL HORIZONTAL DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.


PIPE SIZE	VERT.	HORIZ.	VENT.
10"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

FLAG NOTES:  X

1. ROOF DOWNSPOUTS (TYP.)

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021:12:03 PM kwlodarchak

NO.	DATE	DESCRIPTION	REVISIONS



01-16-2021

DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT: SEASIDE AT KINGSTON
24700-10200 LINDVOG ROAD NE
KINGSTON, WA 98346

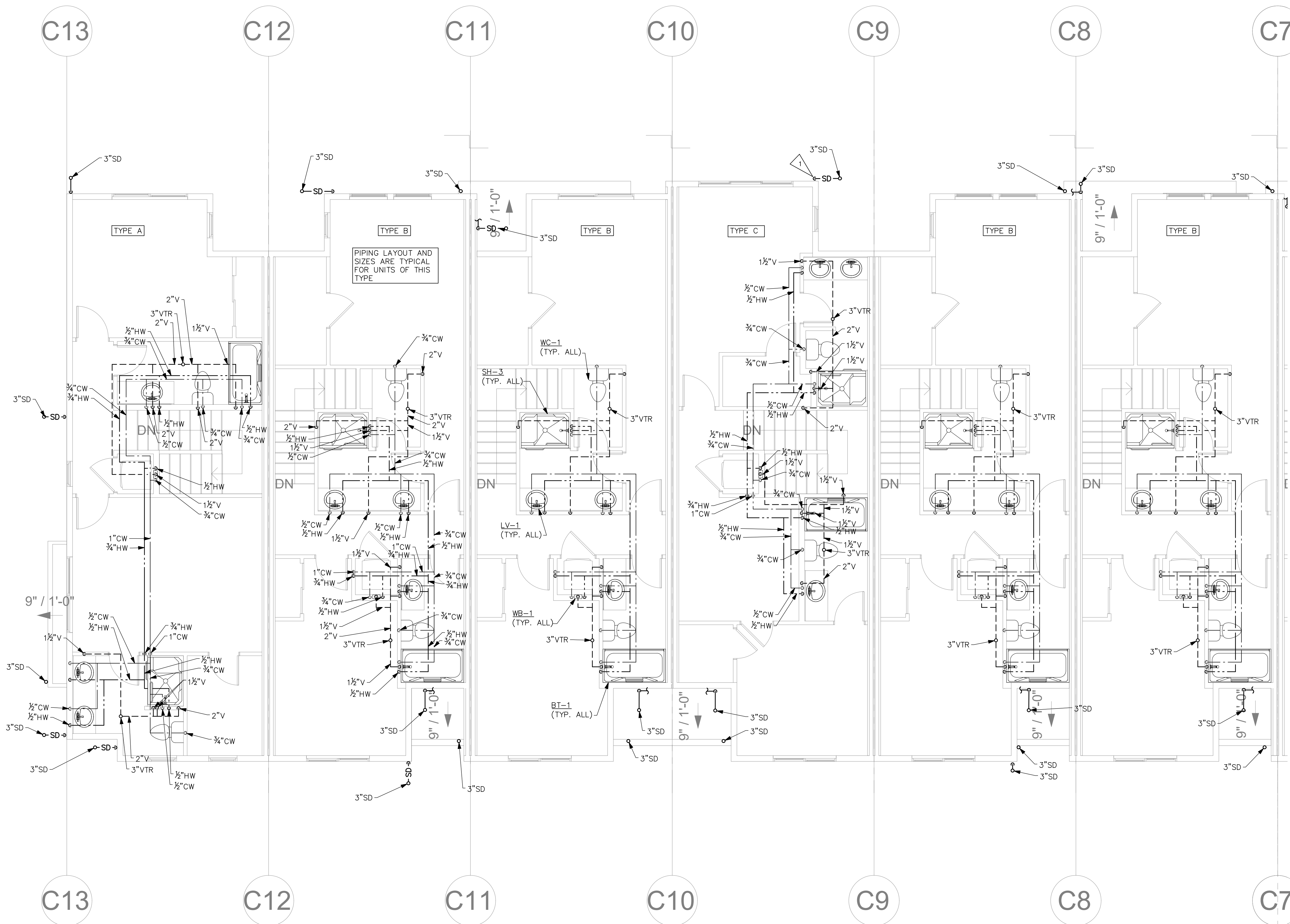
19401 40TH AVE. SUITE 302
LYNNWOOD, WA 98036
PHONE: (206) 364-3343

ROBISON
ENGINEERING, INC

DATE: 01/16/2021

SHEET TITLE:
PLUMBING
SECOND FLOOR
PLAN – SOUTH

SHEET NO.
P2C5



PLUMBING THIRD FLOOR PLAN – NORTH
SCALE: 1/4" = 1'-0"

SHEET NOTES:

1. STORM DRAIN SIZING: STORM DRAINAGE PIPING IS SIZED PER 2015 UPC TABLE 1101.8, FOR 2" PER HOUR RAINFALL RATE, AT 1/8" PER FOOT SLOPE:

PIPE SIZE	VERTICAL	HORIZONTAL
3"	4,400 SF	1,644 SF
4"	9,200 SF	3,760 SF
6"	17,300 SF	10,700 SF
8"	27,000 SF	23,000 SF
10"	58,000 SF	41,400 SF

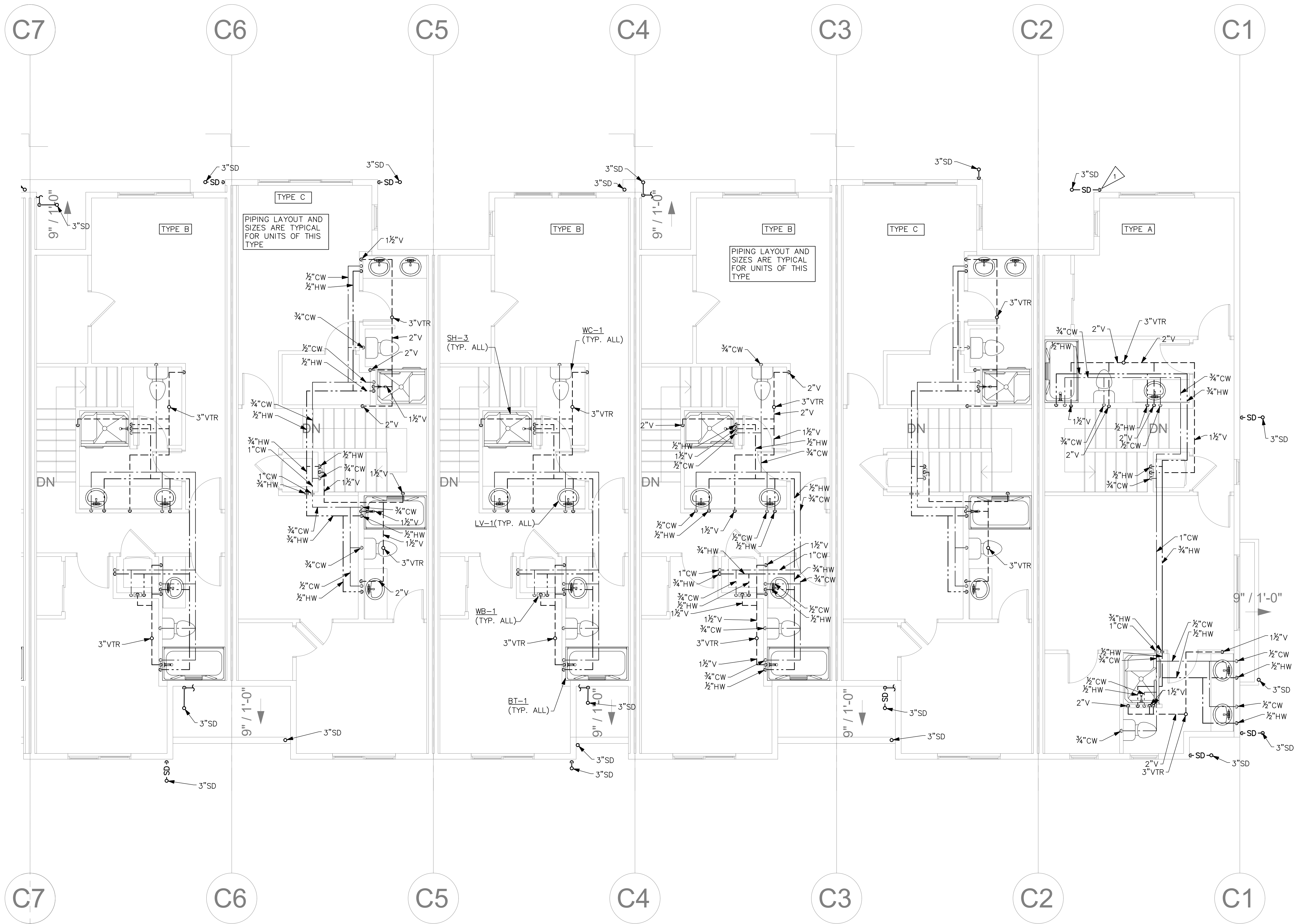
2. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2015 UPC TABLE 703.2. PER SECTION 708.0 & 708.1, ALL HORIZONTAL DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.

PIPE SIZE	VERT.	HORIZ.	VENT.
10"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

FLAG NOTES: 1. ROOF DOWNSPOUTS (TYP.)

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021 12:06 PM kwlodarchak

NO.		DATE		DESCRIPTION		REVISIONS	
DRAWN: MLT		DESIGNED: MLT		CHECKED: JMR		APPROVED: JMR	
PROJECT: SEASIDE AT KINGSTON 24700-10200 LINDVOG ROAD NE KINGSTON, WA 98346				19401 40TH AVE. SUITE 302 LYNNWOOD, WA 98036 PHONE: (206) 364-3343			
SHEET TITLE: PLUMBING THIRD FLOOR PLAN – NORTH				ROBISON ENGINEERING, INC			
SHEET NO. P2C6				DATE: 01/16/2021			



PLUMBING THIRD FLOOR PLAN - SOUTH

SCALE: 1/4" = 1'-0"



SHEET NOTES:

1. STORM DRAIN SIZING: STORM DRAINAGE PIPING IS SIZED PER 2015 UPC TABLE 1101.8, FOR 2" PER HOUR RAINFALL RATE, AT 1/8" PER FOOT SLOPE:

PIPE SIZE	VERTICAL	HORIZONTAL
3"	4,400 SF	1,644 SF
4"	9,200 SF	3,760 SF
6"	17,300 SF	10,700 SF
8"	27,000 SF	23,000 SF
10"	58,000 SF	41,400 SF

2. WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2015 UPC TABLE 703.2. PER SECTION 708.0 & 708.1, ALL HORIZONTAL DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.

PIPE SIZE	VERT.	HORIZ.	VENT.
10"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

FLAG NOTES:



1. ROOF DOWNSPOUTS (TYP.)

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021:12:08 PM kwlodarchak

NO.	DATE	DESCRIPTION	REVISIONS



DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT: SEASIDE AT KINGSTON
24700-10200 LINDVOG ROAD NE
KINGSTON, WA 98346

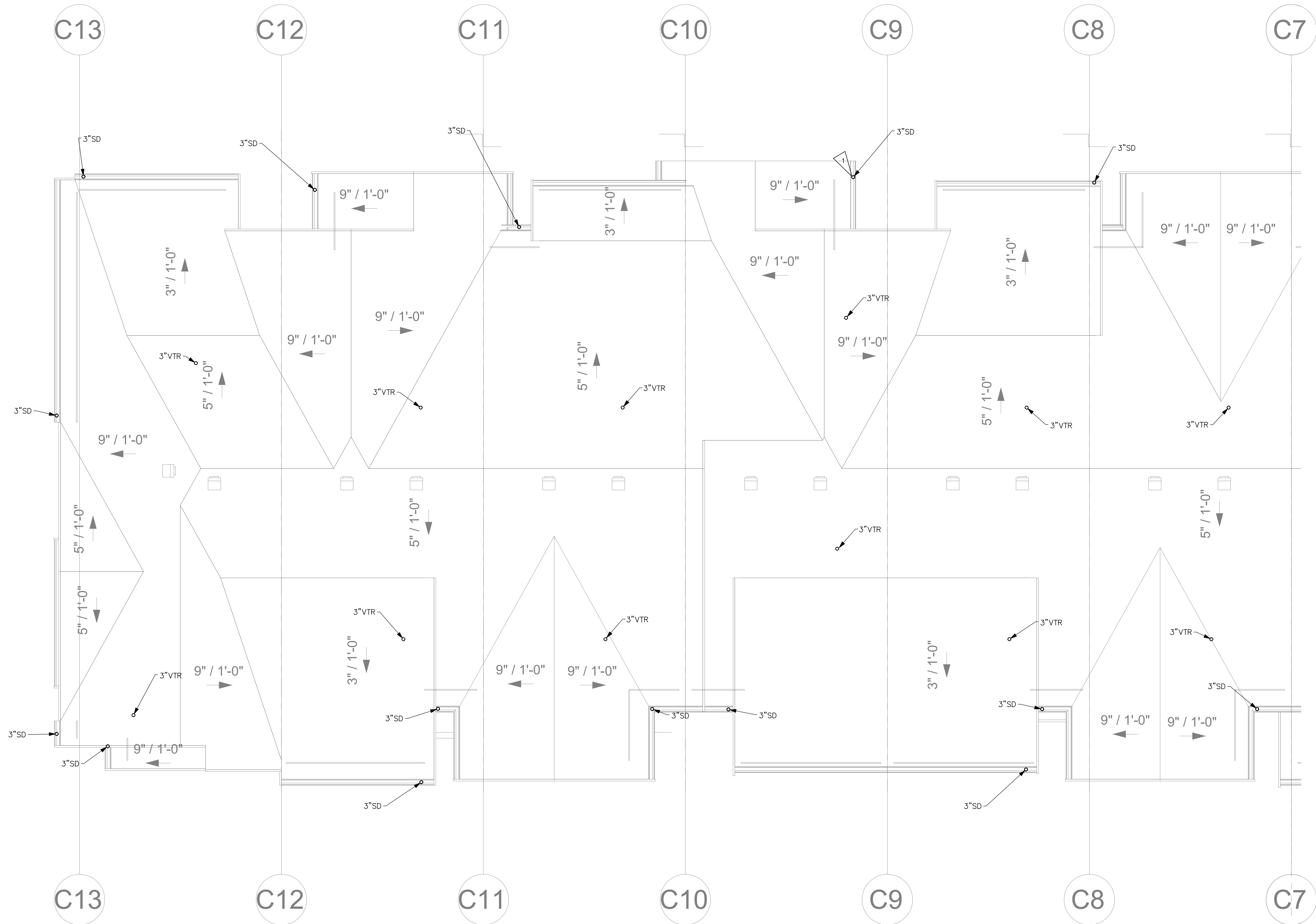
19401 40TH AVE. SUITE 302
LYNNWOOD, WA 98036
PHONE: (206) 364-3343

ROBISON
ENGINEERING, INC

DATE: 01/16/2021

SHEET TITLE:
PLUMBING
THIRD FLOOR
PLAN - SOUTH

SHEET NO.
P2C7



PLUMBING ROOF PLAN – NORTH
SCALE: 1/4" = 1'-0"

SHEET NOTES:

1.


STORM DRAIN SIZING: STORM DRAINAGE PIPING IS SIZED PER 2015 UPC TABLE 1101.8, FOR 2" PER HOUR RAINFALL RATE, AT 1/8" PER FOOT SLOPE:

PIPE SIZE	VERTICAL	HORIZONTAL
3"	4,400 SF	1,644 SF
4"	9,200 SF	3,760 SF
6"	17,300 SF	10,700 SF
8"	27,000 SF	23,000 SF
10"	58,000 SF	41,400 SF

2.

WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2015 UPC TABLE 703.2. PER SECTION 708.0 & 708.1, ALL HORIZONTAL DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.

PIPE SIZE	VERT.	HORIZ.	VENT.
10"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

FLAG NOTES:  1. ROOF DOWNSPOUTS (TYP.)


Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021:12:11 PM kwlodarchak

NO.

DATE

DESCRIPTION

REVISIONS



DRAWN: MLT

DESIGNED: MLT

CHECKED: JMR

APPROVED: JMR

PROJECT: SEASIDE AT KINGSTON
24700-10200 LINDVOG ROAD NE
KINGSTON, WA 98346

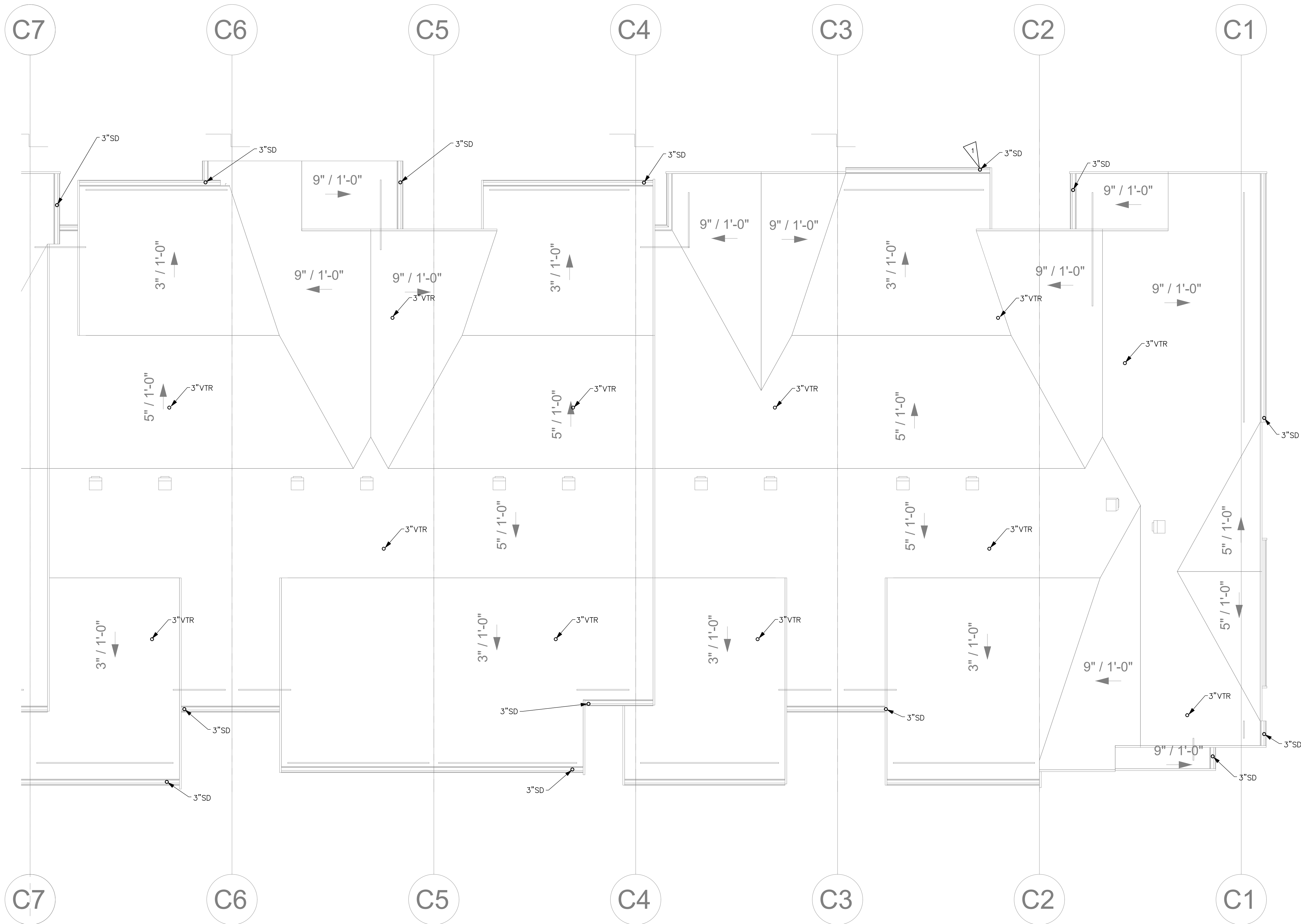
19401 40TH AVE. SUITE 302
LYNNWOOD, WA 98036
PHONE: (206) 364-3343

DATE: 01/16/2021

SHEET TITLE:
PLUMBING
ROOF PLAN –
NORTH

SHEET NO.
P2C8

ROBISON
ENGINEERING, INC



PLUMBING ROOF PLAN – SOUTH
SCALE: 1/4" = 1'-0"

SHEET NOTES:

1.


STORM DRAIN SIZING: STORM DRAINAGE PIPING IS SIZED PER 2015 UPC TABLE 1101.8, FOR 2" PER HOUR RAINFALL RATE, AT 1/8" PER FOOT SLOPE:

PIPE SIZE	VERTICAL	HORIZONTAL
3"	4,400 SF	1,644 SF
4"	9,200 SF	3,760 SF
6"	17,300 SF	10,700 SF
8"	27,000 SF	23,000 SF
10"	58,000 SF	41,400 SF

2.

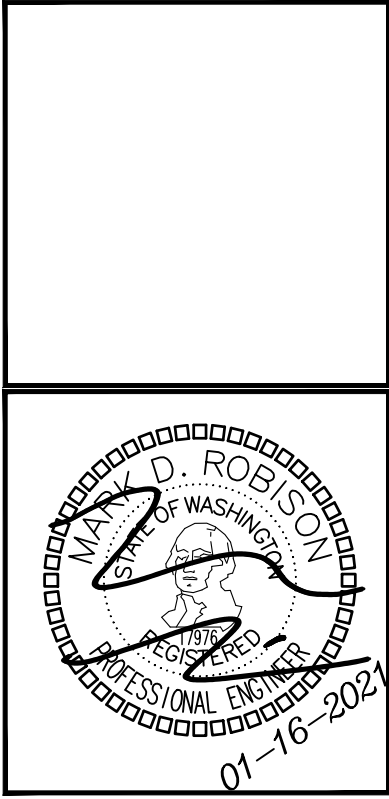
WASTE & VENT SIZING: WASTE & VENT PIPING SIZED PER 2015 UPC TABLE 703.2. PER SECTION 708.0 & 708.1, ALL HORIZONTAL DRAINAGE PIPING SHALL BE SLOPED AT 1/4" PER FOOT.

PIPE SIZE	VERT.	HORIZ.	VENT.
10"	2 DFU	1 DFU	8 DFU
2"	16 DFU	8 DFU	24 DFU
3"	48 DFU	35 DFU	84 DFU
4"	256 DFU	216 DFU	256 DFU
6"	1,380 DFU	720 DFU	1,380 DFU
8"	3,600 DFU	2,640 DFU	3,600 DFU

FLAG NOTES:  1. ROOF DOWNSPOUTS (TYP.)

Reviewed for Code Compliance
Kitsap County Building/ Fire Marshals
02/12/2021 12:14 PM kwiodarchak

DESCRIPTION		REVISIONS	
NO.	DATE		



DRAWN:	MLT
DESIGNED:	MLT
CHECKED:	JMR
APPROVED:	JMR

PROJECT:

SEASIDE AT KINGSTON
24700-10200 LINDVOG ROAD NE
KINGSTON, WA 98846

19401 40TH AVE. SUITE 302
LYNNWOOD, WA 98036
PHONE: (206) 364-3343

ROBISON
ENGINEERING, INC

DATE: 01/16/2021

SHEET TITLE:
PLUMBING
ROOF PLAN –
SOUTH

SHEET NO.
P2C9



DETAIL

SCALE: NONE



DETAIL

SCALE: NONE



DETAIL

SCALE: NONE



DETAIL

SCALE: NONE



DETAIL

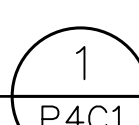
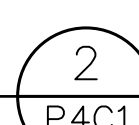
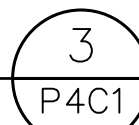
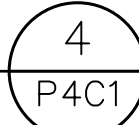
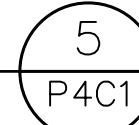
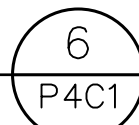
SCALE: NONE



DETAIL

SCALE: NONE

SHEET NO.
P4C0



SHEET NO.
P4C1