

SYMBOL LEGEND		
SYMBOL	ABBR	DESCRIPTION
	G	GAS PIPING
	CW	COLD WATER PIPING
	FW	FILTERED WATER PIPING
	HW	HOT WATER PIPING
	HUR	HOT WATER RETURN PIPING
	S	SANITARY PIPING
	V	VENT PIPING
	CD	CONDENSATE DRAIN PIPING
	(E)	EXISTING
	S.O.V.	SHUT-OFF VALVE
		CHECK VALVE
		GAS COCK
		UNION
		PIPE CAP & STUB-OUT
	WCO	WALL CLEAN OUT
	UCO	TWO-WAY CLEANOUT
	COTG	CLEANOUT TO GRADE
		PRESSURE REGULATOR
	WC	WATER CLOSET
	L	LAVATORY
	KS	KITCHEN SINK
	HS	HAND SINK
	MS	MOP SINK
	WH	WATER HEATER
	VTR	VENT THRU ROOF
	AFF.	ABOVE FINISHED FLOOR
	P.O.C.	POINT OF CONNECTION
	P.O.D.	POINT OF DISCONNECT
	T.D.L.	TOTAL DEVELOPED LENGTH
		PLUMBING DETAIL REFERENCE
		EQUIPMENT REFERENCE

(BUILDING)  
**WATER CALCULATION**  
BASED ON APPENDIX 'A' U.P.C.

TYPE	QTY.	F.U.	TOTAL
WC	6	2.5	15
L	8	1	8
SH	6	2	12
HB	2	2.5+1	3.5
KS/DW	6	3	18
CW	6	4	24
ICEMAKER	6	0.5	3
TOTAL F.U.			83.5
MAX. G.F.M.			40 G.P.M.

LOSSES

BLDG. HEIGHT	22 ft.
FEET x 0.43 P.S.I. / FEET	9.46 psi.
MIN. FIX. PRESSURE	20 psi.
WATER FILTER	0 psi.
TOTAL	29.46 psi.

DEVELOPED LENGTH TO FURTHEST FIXTURE

DEVELOPED LENGTH TO FURTHEST FIXTURE	168 ft.
FITTING LOSS TOTAL	168 ft.
TOTAL	336 ft.

MIN. PRESSURE AT P.O.C.

BLDG. PRESSURE LOSS	55 psi.
PRESSURE AVAILABLE FOR FRICTION LOSS	29.46 psi.

MAXIMUM ALLOWABLE PRESSURE DROP

MAXIMUM ALLOWABLE PRESSURE DROP	29.54 psi.
	336 ft.

PER 100 FT.

PER 100 FT.	7.60 psi.
	100 ft.

1/4" DIAMETER MAIN SELECTED PER CHART A-41 2012 U.P.C.

(BRANCH 'A')  
**GAS CALCULATION**

NAME	QTY.	INPUT (CFH)	TOTAL (CFH)
WATER HEATER	3	130	390
RANGE	3	65	195
DRYER	3	35	105
TOTAL			690 CFH

2" DIAMETER MAIN SELECTED PER TABLE 1216.2(1), 2012 U.P.C. 107 FT. T.D.L. (125 FT. ROW)

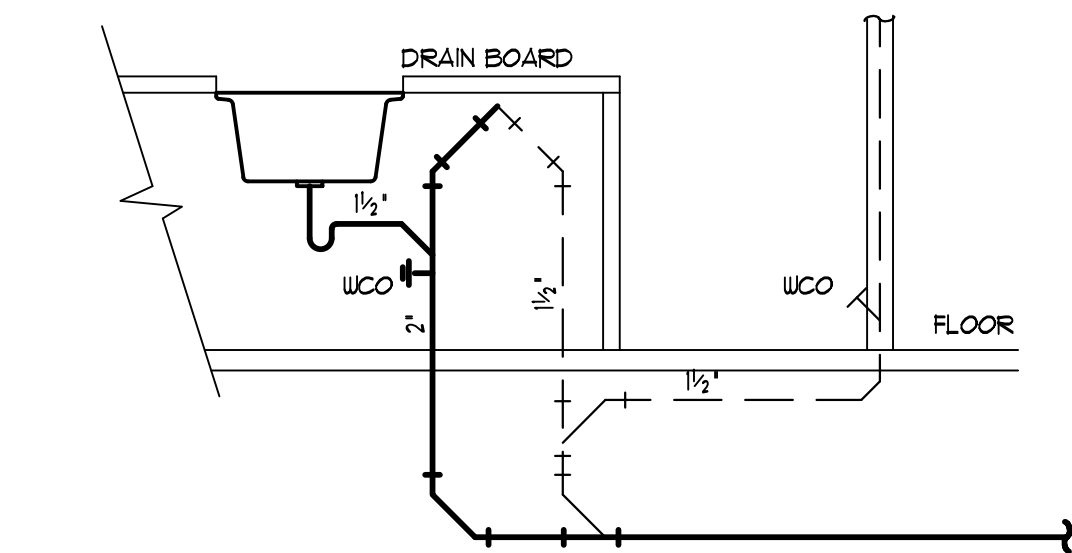
(BRANCH 'B')  
**GAS CALCULATION**

NAME	QTY.	INPUT (CFH)	TOTAL (CFH)
WATER HEATER	3	130	390
RANGE	3	65	195
DRYER	3	35	105
FAU	6	44	264
TOTAL			954 CFH

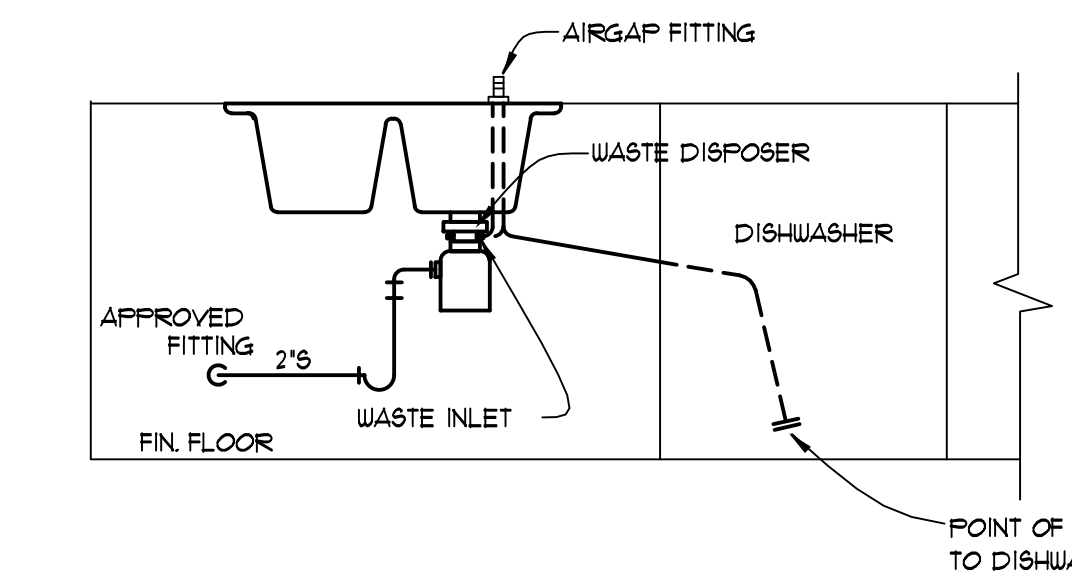
2" DIAMETER MAIN SELECTED PER TABLE 1216.2(1), 2012 U.P.C. 117 FT. T.D.L. (125 FT. ROW)

**SPECIFICATION**

- GENERAL**
- CONTRACTOR SHALL CHECK AND VERIFY ALL SIZES, DIMENSIONS, AND CONDITIONS BEFORE STARTING ANY WORK. ANY DEVIATIONS OR PROBLEMS SHALL BE TRANSMITTED TO THE ENGINEER FOR REVIEW.
  - ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE 2012 IRC, U.P.C., U.P.C., 2011 NEC AND 2012 IECC AS AMENDED AND ADOPTED BY CLARK COUNTY.
  - ALL EQUIPMENT SHALL BE BALANCED, ADJUSTED, AND TESTED TO PROVIDE SAFE, STABLE, AND QUIET OPERATION.
  - CONTRACTOR TO PROVIDE A PRESSURE REDUCING VALVE W/ BYPASS SET TO 75 P.S.I. WHEN INCOMING WATER PRESSURE EXCEEDS 80 P.S.I.
  - DRAWINGS ARE DIAGNOSTIC, SMALL SCALE, AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED.
  - ALL DESIGNS TO COMPLY WITH 2012 U.P.C. AND WITH LOCAL AMENDMENTS.
  - MAINTAIN OCCUPANCY AND FIREWALL SEPARATION INTEGRITY AS REQUIRED. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF ALL OCCUPANCY/FIREWALL SEPARATIONS AND SPECIFIC DETAILS FOR CONSTRUCTION. PROVIDE ALL NECESSARY U.L. LISTED SLEEVES, ACCESS DOORS, CAULKING, ETC. FOR APPROVED INSTALLATION.
- PRODUCTS**
- DOMESTIC WATER PIPING (CONFIRM W/ BUILDER/OWNER)  
ABOVE GROUND, TYPE "M" COPPER WROUGHT FITTINGS, LEAD-FREE SOLDERED.  
BELOW SLAB, TYPE "L" COPPER TUBING, SLEEVED THRU SLAB, ALL JOINTS SILVER BRAZED.  
OR  
"WIRSDO" OR EQUAL, CROSS-LINKED POLYETHYLENE TYPE "A" PIPING WITH BRASS FITTINGS, SUITABLE FOR POTABLE WATER, WHEN INSTALLED BY A PRODUCT CERTIFIED TECHNICIAN.  
\* PIPING WITHIN THE BUILDING SHALL BE OF A LIKE MATERIAL, (FOR SIZES 1/4" AND LARGER COPPER SHALL BE USED.) REF. ABOVE SPECS.  
NOTE: DIELECTRIC FITTINGS SHALL BE USED WHEREVER DISSIMILAR METALS ARE JOINED.
  - SANITARY WASTE AND VENT PIPING  
ABS OR PVC, PAINT WITH LATEX PAINT WHERE EXPOSED.
  - GAS PIPING  
SCHEDULE 40 BLACK IRON, THREADED MALLEABLE FITTINGS INSIDE AND GALVANIZED FITTINGS AND PIPE WHERE EXPOSED, JOINT COMPOUND. PROVIDE ISOLATION VALVES AT ALL EQUIPMENT.  
SUSPENDED PIPING SHALL BE SUPPORTED AT THE FOLLOWING INTERVALS: 6 FEET FOR 1/2", 8 FEET FOR 3/4" AND 1", 10 FEET FOR 1-1/4" AND LARGER.  
UNDERSLAB: SLEEVED, SEALED & VENTED FERROUS GAS PIPING SHALL BE "GASITTE" OR EQUAL, AND HAVE FACTORY PROTECTIVE COATING. POLYETHYLENE GAS TARD PIPING: TO BE INSTALLED PER LATEST IAFMO.
  - DOMESTIC HOT WATER AND RECIRCULATING PIPE INSULATION  
(COPPER ONLY) CLOSED CELL NEOPRENE PIPE INSULATION WITH A MIN R-3 VALUE, INSTALLED IN UNCONDITIONED SPACES & ON ALL HOT WATER RECIRCULATING SYSTEMS PER 2012 IECC.
  - PLUMBING FIXTURES  
PROVIDE 90° ANGLE STOPS TO FINISH PLUMBING FIXTURES. PROVIDE SHUT-OFF VALVES WITH UNIONS TO ALL OTHER FIXTURES. PROVIDE PRESSURE BALANCED OR THERMOSTATIC MIXING VALVES PER 2012 U.P.C. AT ALL SHOWERS, BATHTUBS, AND/OR COMBINATIONS TO ALLOW FOR A MAXIMUM WATER TEMPERATURE OF 120°F. ALL PLUMBING FIXTURES SHALL COMPLY WITH LOCAL AUTHORITIES CURRENT WATER CONSERVATION CODES.



**ISLAND SANITARY & VENT DETAIL**  
NO SCALE  
3 P001

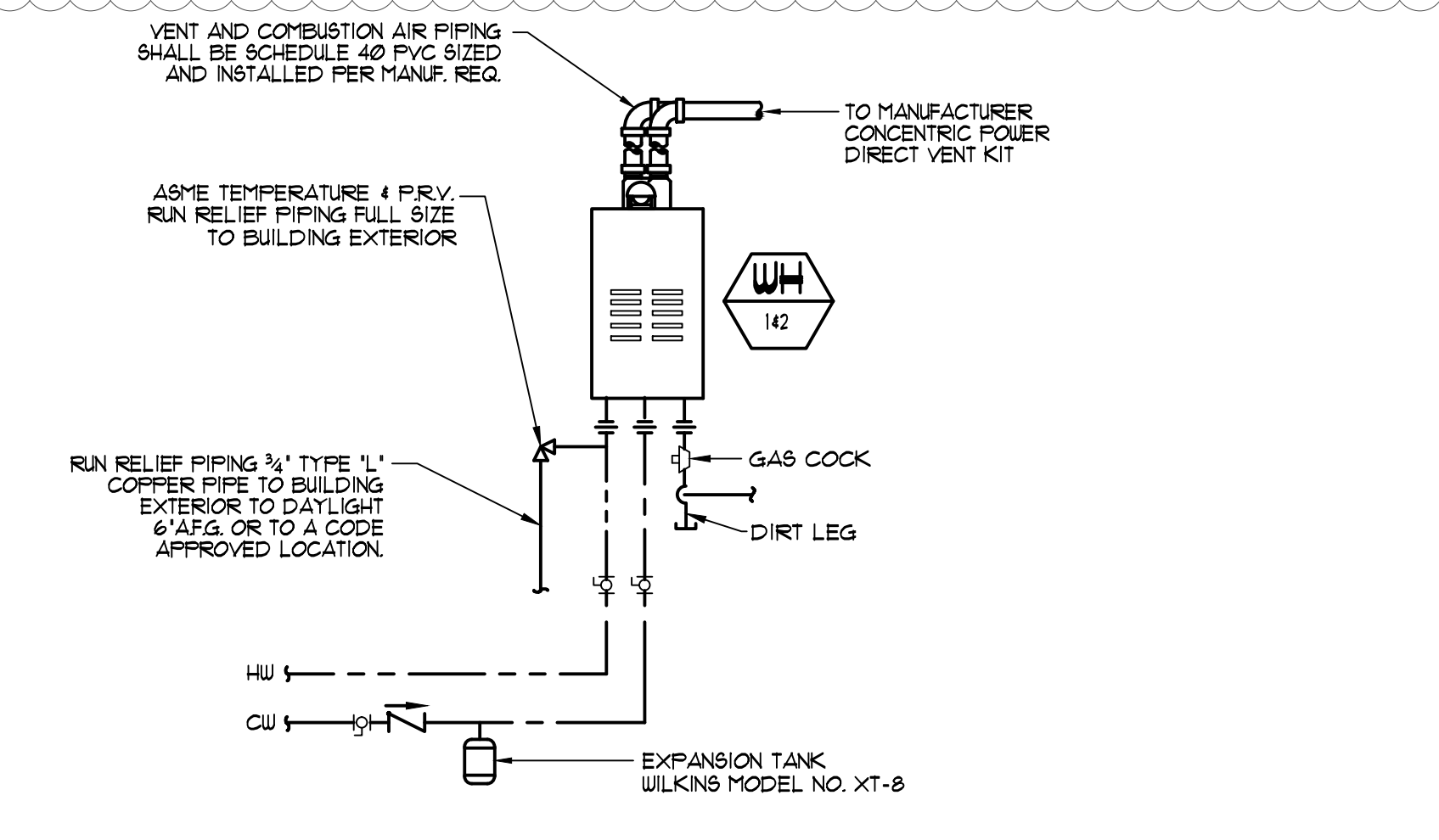


**KITCHEN SINK & DISHWASHER SANITARY DETAIL**  
NO SCALE  
2 P001

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**TANKLESS WATER HEATER SCHEDULE**

SYMBOL	MANUFACTURER/ MODEL NUMBER OR EQUAL	MINIMUM STORAGE (GALLONS)	ENERGY FACTOR	TYPE OF GAS	GAS INPUT (MBTUH)	REMARKS
	RINNAI RU1301	-	0.95	NATURAL	130,000	



**WATER HEATER DETAIL**  
NO SCALE  
1 P001

**PLUMBING SHEET INDEX**

SHEET NUMBER	SHEET NAME
P001	SPECIFICATION, SCHEDULE, DETAILS, CALCULATIONS, SYMBOL LEGEND AND SHEET INDEX
P101	FIRST FLOOR PLUMBING PLAN (WASTE & VENT)
P101J	FIRST FLOOR PLUMBING PLAN (WATER & GAS)
P102	SECOND FLOOR PLUMBING PLAN (WASTE & VENT)
P102J	SECOND FLOOR PLUMBING PLAN (WATER & GAS)

- GENERAL NOTES**
- SEAL ALL ROOF AND WALL PENETRATIONS WATER TIGHT.
  - MAINTAIN PLUMBING VENTS A MINIMUM OF 10'-0" AWAY FROM ANY OA INTAKE.
  - REFER TO PLUMBING FIXTURE SCHEDULE FOR ANY UNMARKED ROUGH-IN SIZES.
  - COORDINATE WORK WITH OTHER TRADES PRIOR TO ANY ROUGH-INS.
  - ALL SANITARY DRAINAGE PIPING 4" AND SMALLER SHALL BE SLOPED AT 1/4" PER FOOT.
  - ALL VENT AND BRANCH VENT PIPING SHALL BE FREE FROM DROPS/SAGS AND EACH SUCH VENT SHALL BE LEVEL OR SHALL BE SO GRADED AND CONNECTED AS TO DRIP BACK BY GRAVITY TO THE DRAINAGE PIPE IT SERVES.
  - ALL CONDENSATE PIPING SHALL BE SLOPED AT 1/8" PER FOOT.
  - CONTRACTOR SHALL FIELD VERIFY EXACT SIZE, INVERT AND LOCATION OF SAN PIPING.

NO.	DATE	REVISIONS
1	1-3-19	DESCRIPTION
2		BUILDING DEPT. COMMENTS
3		
4		
5		
6		
7		
8		
9		
10		



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JOB NO.:	201724-C
PHASE:	CD
DRAWN:	SO, LE
CHECKED:	SO
DATE:	10/22/2018

P001