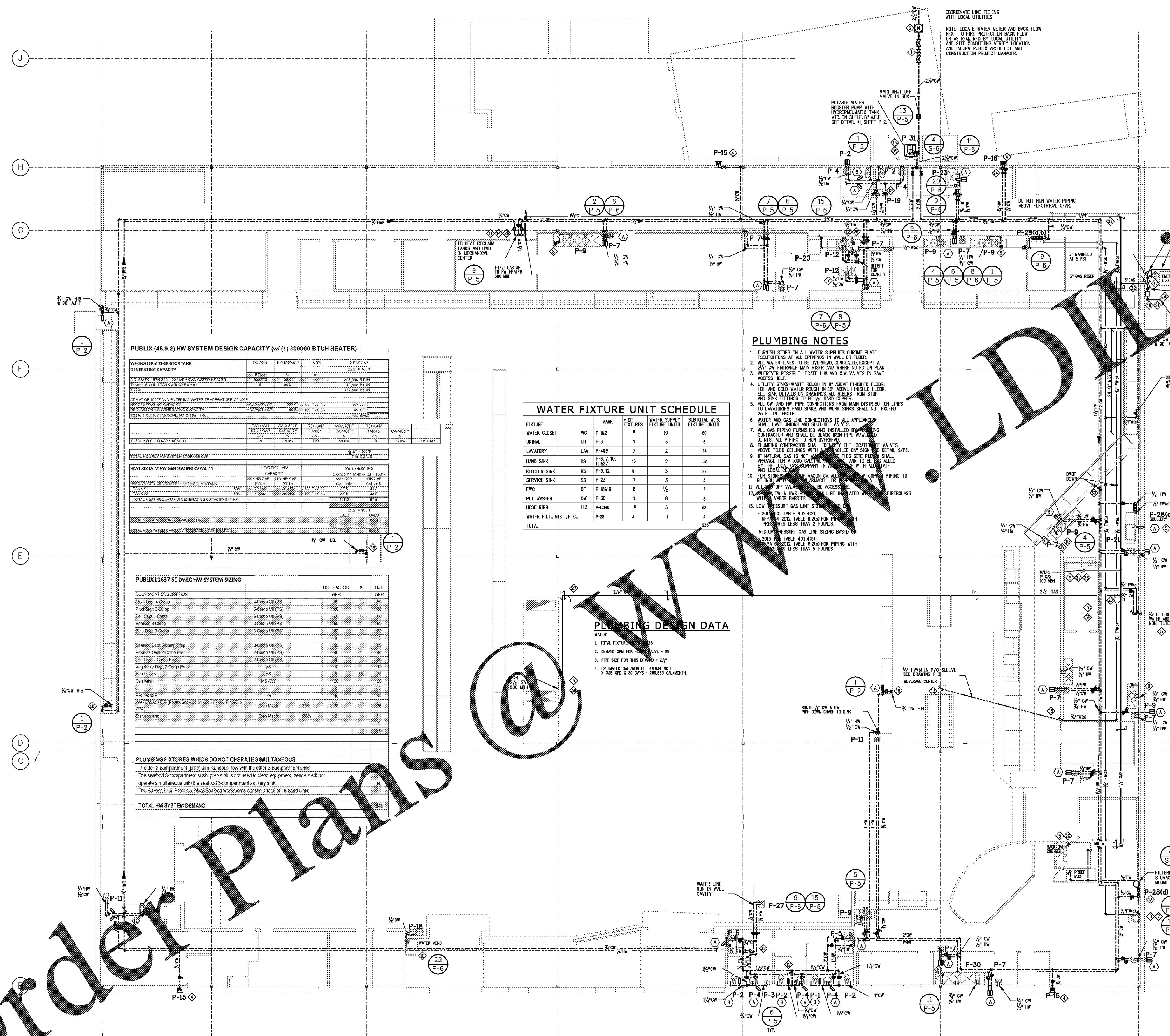

PUBLIX (45.9.2) HW SYSTEM DESIGN CAPACITY (w/ (1) 300000 BTUH HEATER)

WH HEATER & THER-STOR TANK GENERATING CAPACITY	POWER	EFFICIENCY	UNITS	HEAT CAP @ ΔT = 100°F
	BTUH	%	#	
A.O. SMITH - BTH 300 - 300 MBH GAS WATER HEATER	300000	99%	1	297,000 BTUH
Therma-Stor III-1 TANK w/6 KW Element	6	99%	2	40,546 BTUH
TOTAL				337,546 BTUH
AT A ΔT OF 100°F AND ENTERING WATER TEMPERATURE OF 40°F				
HW GENERATING CAPACITY	=CAP/(ΔT x CP)	297,000 / 100 F x 8.33		357 GPH
RECLAIM TANKS GENERATING CAPACITY	=CAP/(ΔT x CP)	40,546 / 100 F x 8.33		49 GPH
TOTAL HOURLY HW GENERATION IN 1 HR				405 GALS

	GAS HWH BTUH CAP GAL	AVAILABLE CAPACITY %	RECLAIM TANK 1 GAL	AVAILABLE CAPACITY %	RECLAIM TANK 2 GAL	CAPACITY %	
TOTAL HW STORAGE CAPACITY	150	85.0%	119	85.0%	119	85.0%	312.8 GALS

	@ ΔT = 100°F
TOTAL HOURLY HW SYSTEM STORAGE CAP	718.0 GALS

HEAT RECLAIM HW GENERATING CAPACITY		HEAT RECLAIM CAPACITY MAX HR CAP BTUH	MIN HR CAP BTUH		HW GENERATING CAPACITY / TANK @ ΔT = 100°F MAX CAP GAL / HR	MIN CAP GAL / HR
HW CAPACITY GENERATE / HEAT RECLAIM TANK						
TANK #1	50%	72,900	36,450	/ 100 F x 8.33	87.5	43.8
TANK #2	50%	72,900	36,450	/ 100 F x 8.33	87.5	43.8
TOTAL HEAT RECLAIM HW GENERATING CAPACITY IN 1 HR					175.0	87.5
					@ ΔT = 100°F GALS	GALS
TOTAL HW GENERATING CAPACITY / HR					880.2	492.7
TOTAL HW SYSTEM CAPACITY (STORAGE + GENERATION)					880.0	805.5

PUBLIX #1637 SC DHEC HW SYSTEM SIZING

EQUIPMENT DESCRIPTION			USE FACTOR GPH	#	USE GPH
Meat Dept 4-Comp	4-Comp Util (PS)		80	1	80
Prod Dept 3-Comp	3-Comp Util (PS)		60	1	60
Deli Dept 3-Comp	3-Comp Util (PS)		60	1	60
Seafood 3-Comp	3-Comp Util (PS)		60	1	60
Bake Dept 3-Comp	3-Comp Util (PS)		60	1	60
			0	1	0
Seafood Dept 3-Comp Prep	3-Comp Util (PS)		60	1	60
Produce Dept 2-Comp Prep	2-Comp Util (PS)		40	1	40
Deli Dept 2-Comp Prep	2-Comp Util (PS)		40	1	40
Vegetable Dept 2-Comp Prep	VS		10	1	10
Hand sinks	HS		5	15	75
Can wash	MS-CW		20	1	20
			0		0
PRE-RINSE	PR		45	1	45
WAREWASHER (Power Soak 35.84 GPH FINAL RINSE x 70%)	Dish Mach	70%	36	1	36
Dishmachine	Dish Mach	100%	2	1	2.1
					0
					548

PLUMBING FIXTURES WHICH DO NOT OPERATE SIMULTANEOUS

- The deli 2-compartment (prep) simultaneous flow with the other 3-compartment sinks.
- The seafood 3-compartment sushi prep sink is not used to clean equipment, hence it will not operate simultaneous with the seafood 3-compartment scullery sink. — 60
- The Bakery, Deli, Produce, Meat/Seafood workrooms contain a total of 18 hand sinks.

TOTAL HW SYSTEM DEMAND — 548

WATER FIXTURE UNIT SCHEDULE

FIXTURE		MARK	# OF FIXTURES	WATER SUPPLY FIXTURE UNITS	SUBTOTAL W. S. FIXTURE UNITS
WATER CLOSET	WC	P-1&2	6	10	60
URINAL	UR	P-3	1	5	5
LAVATORY	LAV	P-4&5	7	2	14
HAND SINK	HS	P-6, 7, 10, 11,&27	16	2	32
KITCHEN SINK	KS	P-9, 12	9	3	27
SERVICE SINK	SS	P-23	1	3	3
EWC	DF	P-18&19	2	½	1
POT WASHER	DW	P-30	1	8	8
HOSE BIBB	H.B.	P-15&16	16	5	80
WATER FILT., MIST., ETC...		P-28	3	1	3
TOTAL					233

PLUMBING NOTES

1. FURNISH STOPS ON ALL WATER SUPPLIES: CHROME PLATE ESCUTCHEONS AT ALL OPENINGS IN WALL OR FLOOR.
2. ALL WATER LINES TO BE OVERHEAD, CONCEALED, EXCEPT A 2½" CW ENTRANCE MAIN RISER AND WHERE NOTED ON PLAN.
3. WHEREVER POSSIBLE LOCATE H.W. AND C.W. VALVES IN SAME ACCESS HOLE.
4. UTILITY SINKS: WASTE ROUGH IN 8" ABOVE FINISHED FLOOR. HOT AND COLD WATER ROUGH IN 12" ABOVE FINISHED FLOOR. SEE SINK DETAILS ON DRAWINGS. ALL RISERS FROM STOP AND SINK FITTINGS TO BE ½" HARD COPPER.
5. ALL CW AND HW PIPE CONNECTIONS FROM MAIN DISTRIBUTION LINES TO LAVATORIES, HAND SINKS, AND WORK SINKS SHALL NOT EXCEED 25 FT. IN LENGTH.
6. WATER AND GAS LINE CONNECTIONS TO ALL APPLIANCES SHALL HAVE UNIONS AND SHUT-OFF VALVES.
7. ALL GAS PIPING FURNISHED AND INSTALLED BY PLUMBING CONTRACTOR AND SHALL BE BLACK IRON PIPE W/WELDED JOINTS. ALL PIPING TO RUN OVERHEAD.
8. PLUMBING CONTRACTOR SHALL IDENTIFY THE LOCATION OF VALVES ABOVE TILED CEILINGS WITH A "STENCILED ON" SIGN SEE DETAIL 9/P6.
9. IF NATURAL GAS IS NOT AVAILABLE TO THIS SITE PUBLIX SHALL ARRANGE FOR A 1000 GAL. PROPANE TANK TO BE INSTALLED BY THE LOCAL GAS COMPANY IN ACCORDANCE WITH ALL STATE AND LOCAL CODES.
10. FOR STORES SOUTH OF MACON, GA. ALL CW AND FW COPPER PIPING TO BE INSULATED WITH ½" ARMACELL OR APPROVED EQUAL.
11. ALL SHUTOFF VALVES SHALL BE ACCESSIBLE.
12. ALL HW, TW & HWR PIPING SHALL BE INSULATED WITH 1" FIBERGLASS WITH VAPOR BARRIER JACKET.
13. LOW PRESSURE GAS LINE SIZING BASED ON:
    - 2015 IGC TABLE 402.4(2),
    - NFPA 54-2012 TABLE 6.2(b) FOR PIPING WITH PRESSURES LESS THAN 2 POUNDS.

    MEDIUM PRESSURE GAS LINE SIZING BASED ON:
    - 2015 IGC TABLE 402.4(5),
    - NFPA 54-2012 TABLE 6.2(e) FOR PIPING WITH PRESSURES LESS THAN 5 POUNDS.

PLUMBING DESIGN DATA

WATER:

1. TOTAL FIXTURE UNITS - 233
2. DEMAND GPM FOR FLUSH VALVE - 95
3. PIPE SIZE FOR THIS DEMAND - 2½"
4. ESTIMATED GAL./MONTH = 46,634 SQ.FT. X 0.15 GPD X 30 DAYS = 209,853 GAL/MONTH.

POTABLE WATER BOOSTER PUMPING STATION

SYSTEM		GOULDS AQUAVAR e-ABII
MODEL		3AVN110HM0322
PUMP CONTROLLER		GOULDS e-ABII
CONT INPUT CURRENT	AMPS	20.5
MCCP	AMPS	25
POWER	V/Φ/HZ	208/1/60
PUMP		GOULDS 10HM03N
FLOW	GPM	50
HEAD PRESSURE	FT.	92.4
SPEED	RPM	3500
MOTOR POWER	H.P.	3
POWER	V/Φ/HZ	208/3/60
MOTOR	FLA	8.23
SAFETY FACTOR AMPS	AMPS	9.33
HYDROPNEUMATIC TANK		B&G PT-60V

MINIBOOSTER NOTES

1. PROVIDE LOW SUCTION PRESSURE SWITCH TO PROTECT THE MINI-BOOSTER PUMPING SYSTEM FROM LOSS OF WATER SUPPLY.
2. MOUNT HYDROPNEUMATIC TANK ON STRUCTURAL SHELF ABOVE PUMP. SEE SHELF DETAIL ON SHEET S-6, DETAIL #4.
3. MOUNT BOOSTER PUMPING SYSTEM ON NEOPRENE BEARING PAD. BOLTED TO REINFORCED CONCRETE HOUSEKEEPING PAD ANCHORED TO FLOOR SLAB.
4. PROVIDE WITH PRESSURE RELIEF VALVE AND ROUTE THE RELIEF PIPING TO THE EXTERIOR TO SPILL ON GRADE.
5. OPERATIONAL PARAMETERS: THE PUMP SHALL ACTIVATE WHEN THE SYSTEM PRESSURE FALLS BELOW 40 PSI. THE CONTROLLER WILL ENABLE THE PUMP TO PRESSURIZE THE SYSTEM TO MEET THE DEMAND AND CHARGE THE HYDROPNEUMATIC TANK. THE CONTROLLER SHALL DISABLE THE PUMP AT A SYSTEM PRESSURE OF 60 PSI.
6. PROVIDE WITH PUMP MFGR. SUPPLIED PRESSURE CONTROL VALVE AND INSTALL DOWNSTREAM OF THE PUMP HEADER. SET SYSTEM CONTROL PRESSURE AS NECESSARY TO MAINTAIN OUTLET PRESSURE AT THE MOST DEMANDING FIXTURE.

DRAWING NOTES

APPLICATION TO THIS SHEET ONLY DWG. P-1.

1. WATTS SERIES 957 2½" BFP OR APPROVED EQUAL.
2. 1½" OR 2" WATER METER W/ A MAX PRESSURE DROP OF 4 PSI @ 80 GPM. 2½"CW PIPE UNDER GROUND TO BE FULLY COATED WITH MASTIC. (RED LION SEAL COAT OR APPROVED EQUAL.)
3. 2" GATE VALVE ON COLD WATER MAIN RISER. PROVIDE WATTS 223-2" PRESSURE REDUCING VALVE WHERE REQUIRED.
4. HYDRANT MOUNTED IN EXTERIOR WALL @ 18" ABOVE EXTERIOR GRADE VACUUM BREAKER REQUIRED.
5. WATER AND GAS LINE CONNECTIONS TO ALL APPLIANCES SHALL HAVE UNIONS, SHUTOFF VALVES, QUICK DISCONNECT AND SWIVEL FITTINGS.
6. 1/2" FW WITH SHUTOFF VALVE TO WATER CHILLER. PIPE OVERFLOW TO HUB DRAIN.
7. HOSE CONNECTION WITH STAINLESS STEEL BALL VALVE AND QUICK DISCONNECT WITH ½" CLEAR PLASTIC BRAIDED HOSE.
8. ¾" HOT WATER HOSE BIBB MOUNTED ON LEG OF SINK WITH WATTS LF7R BACKFLOW PREVENTER. SEE END SINK ELEVATION DETAIL.
9. ¾" COLD WATER HOSE BIBB MOUNTED ON LEG OF SINK WITH WATTS LF7R BACKFLOW PREVENTER. SEE END SINK ELEVATION DETAIL.
10. STOP VALVE AND WATTS LF7R BACKFLOW PREVENTER.
11. PLUMBER SHALL PROVIDE SHUTOFF VALVES AND DRAIN VALVES FOR FREEZE PROTECTION. HW PIPING INSULATION SHALL EXTEND THROUGH THE CURB INTO THE MECHANICAL CENTER TO THE POINT OF CONNECTION TO THE HW RECLAIM/HEATING SYSTEM.
12. LOCATE SHUTOFF VALVES WITHIN 1'-0" ABOVE LAY-IN CEILING AND PROVIDE ACCESS DOOR IN NON LAY-IN TILE CEILING. SEE CEILING SHUT-OFF VALVE DETAIL.
13. PROVIDE PVC SLEEVE BELOW SLAB FOR WATER AND SYRUP TUBING.
14. PTR VALVES ON HWH, HEAT RECOVERY MUST BE INSTALLED PER LOCAL CODES.
15. SPRINKLER MAIN BY FIRE SPRINKLER CONTRACTOR.
16. GAS METER AND 5 POUND PRESSURE REGULATOR BY GAS COMPANY.
17. FILTER SYSTEM MOUNTED TO SIDE OF WALL, 108" A.F.F.
18. ROUTE ¾" CW TO REFRIGERATED CASE HB CONNECTION. SEE DETAIL 2/P-2
19. NOT USED
20. GAS TO +7'-0" A.F.F. THEN PROVIDE GAS COCK, DRIP LEG, UNION AND THREADED CONNECTION TO OVEN.
21. PROVIDE SIGNAGE WITH 6 INCH LETTERS TO READ: "MAIN GAS SHUTOFF". LOCATE AT 10'-0" AFG.
22. REFER TO WALL PENETRATION DETAIL DESIGN NO. C-AJ-1081 ON SHEET UL-1.
23. COLD WATER, ROUTED TO MOBILE SINKS. SEE MOBILE SINK END ELEV. DETAIL.
24. SURFACE MOUNT HW/CW, INSULATE WITH ARMACELL HERE ONLY. PROTECT FROM DAMAGE WITH A STAINLESS STEEL COVER.
25. NOT USED
26. FURNISH AND INSTALL ANSI Z #21.15 GAS ISOLATION BALL VALVE.
27. SEISMIC RESTRAINTS WHERE REQUIRED. SEE ANSI/SMACNA SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL SYSTEMS, THIRD EDITION FOR ATTACHMENT DETAILS. TRANSVERSE BRACING - 2 OPPOSING ¼" CABLES 20 FT MAX. LONGITUDINAL BRACING - 2 OPPOSING ¼" CABLES. 40 FT MAX
28. MECHANICAL CENTER SUPPLIER TO PIPE RECLAIM TANKS, CIRCULATING PUMP AND PIPING TO UNDERSIDE OF PREFAB UNIT. PLUMBING CONTRACTOR TO MAKE FINAL WATER PIPING CONNECTIONS.
29. ROUTE 2" MEDIUM DENSITY POLYETHYLENE FLEXIBLE GAS PIPE, 12" MAXIMUM, BELOW GRADE TO THE EMERGENCY STANDBY GENERATOR. PROVIDE WITH INSULATED 18 AWG TRACER WIRE AND MECH JOINT ADAPTORS.
30. IF REQUIRED ROUTE ALL EXTERIOR GAS PIPE 10' AFF SUPPORTED W/SS PIPE SUPPORTS. ALL ABOVE GROUND EXTERIOR PIPE SHALL BE GALVANIZED STEEL PIPE.
31. FURNISH AND INSTALL DIRECT OPERATED, 5 PSI TO 3 PSI PRESSURE REDUCING REGULATOR FOR THE 500 KW GENERATOR. SENSUS MODEL 243-12-2 2" BODY W/1¼" ORIFICE @ 4000 CFH OR APPROVED EQUAL.
32. ROUTE CW AND HW DN. TO 1 FT. ABOVE CEILING TILE.
33. ROUTE CW AND HW PIPING 1'-0" ABOVE THE PRODUCE, DELI AND BAKERY CEILINGS. COORDINATE PIPE ROUTING AND PIPE SUPPORTS WITH HVAC DUCT SYSTEM.
34. PROVIDE DIRECT OPERATED 5 PSI TO 14" WC PRESSURE REDUCING REGULATOR FOR THE 60 KW EMERGENCY GENERATOR. SENSUS MODEL 243-12-2 1½" BODY W/ ⅜" ORIFICE OR APPROVED EQUAL. PROVIDE A MINIMUM 10FT. DEVELOPED LENGTH OF GAS PIPING FROM THE REGULATOR OUTLET TO THE GENERATOR INLET.
35. A 6 FT. MAX GAS APPLIANCE CONNECTOR MADE OF TIGHTLY WOVEN FLEXIBLE 304 STAINLESS STEEL BRAIDED TUBING COVERED WITH PVC COATING. EACH APPLIANCE CONNECTION TO THE GAS PIPE DISTRIBUTION SYSTEM SHALL HAVE A MANUAL SHUTOFF VALVE AND QUICK DISCONNECT COUPLING. A FULL 360° MULTIPLANE RANGE OF MOTION SWIVEL FITTING SHALL BE USED TO CONNECT THE FLEXIBLE CONNECTOR TO THE GAS APPLIANCE.
36. ¾" HOSE BIBB MOUNTED ON LEG OF SINK WITH WATTS #7 BACKFLOW PREVENTER. SEE END SINK ELEVATION DETAIL. PROVIDE ¾" ZURN ZW3870XLT THERMOSTATIC MIXING VALVE ABV. CEILING AND SET TO 120°F. HW & CW SHALL BE ½", TW OUTPUT SHALL BE ¾" DOWN TO HOSE BIBB.
37. FURNISH AND INSTALL DIRECT OPERATED 5PSI TO 11" WC PRESSURE REDUCING REGULATOR FOR THE HOUSE LOAD. SENSUS MODEL 243-12-2 1½" BODY OR APPROVED EQUAL. THE REGULATOR'S ORIFICE SHALL BE SIZED TO MEET HOUSE GAS LOAD. ORIFICE SIZE WILL VARY BASED ON THE KITCHEN AND HEATING EQUIPMENT GAS LOADS INSTALLED IN THIS STORE.
38. ROUTE GAS TO RTU THROUGH THE ROOF. ALLOW FOR THE INSTALLATION OF A GAS SHUTOFF VALVE, DRIP LEG AND UNION. SEE DETAIL ON SHT. P-2.
39. ROUTE ¾" RELIEF PIPING FROM BOOSTER PUMP RELIEF VALVE TO OUTSIDE AND SPILL ON GRADE.

WATER HAMMER ARRESTOR SCHEDULE

PIPE SIZE	FIXTURE UNITS	PDI
½"	1-11	A
¾"	12-32	B
1"	33-60	C
1¼"	61-113	D
1½"	114-154	E
2"	155-330	F

WATER HAMMER ARRESTORS SHALL BE PRECISION PLUMBING PRODUCTS MODEL # SC-500A THRU SC-2000F OR APPROVED EQUAL

GAS SYSTEM DESIGN DATA

EQUIPMENT	DEMAND	ACTUAL LINE LENGTH	DEVELOPED LINE LENGTH	PRESSURE	NOTES
BAKERY OVEN	290	169'	250'	11" W.C.	3
GAS WATER HEATER	300	169'	250'	11" W.C.	3
A/C HEAT	800	269'	400'	11" W.C.	3
MAU-1	100	96'	144'	11" W.C.	3
HOUSE TOTAL	1,490			11" W.C.	1, 3
60 KW EMER. GEN.	860 CU FT	8'	12'	14" W.C.	1, 3, 4
TOTAL GAS DEMAND	2,350 CU FT			5 PSI @ MANIFOLD	2

NOTES:

1. TABLE 402.4 (2) - 2015 IGC
2. TABLE 402.4 (5) - 2015 IGC
3. DEVELOPED LINE LENGTH INCLUDES A 1.5X SAFTEY FACTOR ADDED TO THE ACTUAL LINE LENGTH. GAS SIZED PER BRANCH LENGTH METHOD: IGC 402.4.2
4. 1½" MINIMUM GAS LINE TO EMERGENCY GENERATOR

Publix. SUPER MARKETS

CORPORATE OFFICES, FACILITIES DESIGN
BOX 407, LAKELAND, FL 33802
(863) 680-5295
PHYSICAL ADDRESS:
3300 PUBLIX CORPORATE PARKWAY
LAKELAND, FL 33811-3311

PUBLIX FACILITIES DESIGN DEPARTMENT

© COPYRIGHT 2017 PUBLIX SUPER MARKETS, INC.

THESE CONSTRUCTION DOCUMENTS ARE THE PROPERTY OF PUBLIX SUPER MARKETS, INC. AND ARE NOT TO BE COPIED OR REUSED FOR ANY SPECIFIC BUILDING WITHOUT WRITTEN PERMISSION. THESE DRAWINGS SHALL NOT BE DUPLICATED WITHOUT PRIOR WRITTEN PERMISSION OF PUBLIX SUPER MARKETS, INC.

THE DESIGN INDICATED IN THESE CONSTRUCTION DOCUMENTS DOES, TO THE BEST OF MY KNOWLEDGE, INFORMATION, AND BELIEF, COMPLY WITH THE APPLICABLE MINIMUM BUILDING CODES

PLOT DATE: 25 AUG 2017

REVISION DATA:

1637
PUBLIX @ LAKE CROSSING
PLATT SPRINGS RD & HWY 6
LEXINGTON, LEXINGTON, SC

45.9.2
V0807-2017
SIENNA - LITE

WATER & GAS PLUMBING PLAN

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

P-1

Order Plans @ www.LDIline.com