

CLEANOUT, DRAIN AND INTERCEPTOR SCHEDULE					
MARK	DESCRIPTION	CONNECTIONS			REMARKS
		TRAP	WASTE	VENT	
FC0	FLOOR CLEANOUT, FIN. AREAS	----	----	----	
FD0	FLOOR CLEANOUT, UNFIN. AREAS	----	----	----	
FD1	FLOOR DRAIN, LIGHT DUTY	----	----	----	
FD2	FLOOR DRAIN, HEAVY DUTY	----	----	----	PSD-16
FD4	FLOOR DRAIN, FLOOR SINK	----	----	----	PSD-16B
FDS	FLOOR SINK, STARBUCKS	----	----	----	
FD6	FLOOR DRAIN, HEAVY DUTY	----	----	----	PSD-16
GCO	GRADE CLEANOUT, EXTERIOR	----	----	----	
HD	HUB DRAIN	----	----	----	PSD-1
TD1	TRENCH DRAIN	----	----	----	PSD-34
TD2	TRENCH DRAIN	----	----	----	PSD-34
TD3	TRENCH DRAIN	----	----	----	PSD-34
CO	CLEANOUT	----	----	----	
WCO	WALL CLEANOUT, FIN. AREAS	----	----	----	

NOT ALL NOTES ARE USED. REFER TO FLOOR PLANS.

GENERAL NOTES

- CLEANOUTS LOCATED UNDER FIXTURES WILL NOT BE ACCEPTED.
- PIPING IN EXPOSED AREAS TO BE PAINTED TO MATCH STRUCTURE.
- PIPING IN AREAS SUBJECT TO FREEZING WILL NOT BE ACCEPTED.
- NOT USED
- SEAL ALL PLUMBING PENETRATIONS INTO FLOOR AND WALLS.
- SEAL AROUND ALL UTILITY PENETRATIONS INTO DEAD SPACE OF BAKERY CABINETS.
- SEAL ALL HAND SINKS AND URINALS TO WALL AND TOILETS TO FLOOR.
- FLOOR SINK COVERS SHALL BE EASILY ACCESSIBLE FOR CLEANING.
- COORDINATE ALL WATER AND SANITARY PIPES THAT CROSS EXTERIOR WALLS WITH CIVIL DWGS.
- ALL PIPE DROPS IN SALES AREA FROM ROOF FRAMING TO EITHER LOW WALLS OR EQUIPMENT SHOULD BE COORDINATED AND GROUPED TOGETHER WITH OTHER PIPES AND CONDUITS.
- ALL FLOOR DRAINS, HUB DRAINS AND FLOOR SINKS MUST BE EASILY ACCESSIBLE FOR SERVICING. REFER TO PISO-1 ON SHEET P5.2 FOR CASE CONNECTION DETAILS.
- EXPOSED WATER LINES AND WASTE LINES ON WALL, FLOOR, AND CEILING SURFACES ARE PROHIBITED.
- INSTALL ICE MACHINES WITH FLEXIBLE UTILITY LINES FOR CLEANING ACCESS.
- INSTALL A BENT METAL PLATE OVER EXPOSED PIPES IN LOCATIONS WHERE THEY MAY BE SUBJECT TO DAMAGE.
- WITH THE EXCEPTION OF CONDENSATE PIPING SERVING THE COOLING UNIT THERE SHALL BE NO PLUMBING PIPING INSTALLED IN A COOLER/FREEZER. ANY EQUIPMENT OR PLUMBING FIXTURE REQUIRING PIPE SHALL HAVE THE PIPE INSTALLED ON THE EXTERIOR OF THE COOLER/FREEZER AND OFFSET HORIZONTALLY THRU THE COOLER/FREEZER WALL AT THE APPLICABLE ROUGH-IN LOCATION.
- PROVIDE CHECK VALVES ON MOP SINKS, THREE COMPARTMENT SINKS AND ON COLD WATER AND HOT WATER SUPPLYING OVERHEAD SPRAYERS.
- NEW AND/OR RENOVATED CONSTRUCTION INCLUDES RAISING OR LOWERING OF FINISHED FLOOR DUE TO NEW FLOOR FINISHES. ADJUST ELEVATION OF CLEANOUT COVERS TO BE FLUSH WITH FINISHED FLOORS TO ACCOMMODATE RAISING OR LOWERING OF THE FINISHED FLOOR.
- NO SURFACE MOUNTED WATER OR VENT LINES PERMITTED IN PREP ROOMS.
- GENERAL CONTRACTOR AND REFRIGERATION CONTRACTOR SHARE COMBINED RESPONSIBILITY FOR LAYING OUT ANY NEW CASE DRAINS BASED ON TOE KICK OF THE CASES.
- BRANCH PIPE BALL VALVES SHALL BE MOUNTED 10'-6" ABOVE FINISHED FLOOR.
- PREP ROOM WATER AND VENTS. ROUTE PIPES IN WARM SPACE OUTSIDE INSULATED WALL PANELS, STUB THRU WALL TO SINKS INSIDE PREP ROOMS.
- REFER TO SPECIFICATION SECTION 221100 FOR BACKFLOW PREVENTER REQUIREMENTS AT ITEMS SUCH AS INTERIOR HOSE BIBBS, COFFEE MACHINES, ICE MACHINES, SEAFOOD STEAMER, SODA FOUNTAIN, ETC.
- REFER TO SPECIFICATION SECTION 114133 FOR WATER FILTER REQUIREMENTS AT ICE MACHINES, COFFEE MACHINES, OVENS, PROOFERS, ETC.
- MINIMUM SIZE VENT THRU ROOF SHALL BE 3". IF 2" VENT IS INSTALLED FROM FIXTURE(S) IT SHALL TRANSITION TO 3" PRIOR TO ROOF PENETRATION. TRANSITION SHALL OCCUR 12" BELOW ROOF.
- HOT WATER TO GE235-3 PROPORTIONER SHALL HAVE A SEPARATE DROP WITH BALL VALVE. TEE CONNECTION FROM SINK HW IS NOT ALLOWED.
- PROVIDE CW HB AND HW HB ADJACENT TO EACH 3-COMPARTMENT SINK.
- UTENSIL WASHER: HUB DRAIN AND PIPE 20"-0" DOWNSTREAM FROM HUB DRAIN SHALL BE SERVICE WEIGHT CAST IRON.
- COMBI-OVEN: FLOOR SINK DRAIN AND PIPE 20"-0" DOWNSTREAM FROM FLOOR SINK SHALL BE SERVICE WEIGHT CAST IRON.
- GAS DOUBLE RACK OVEN: HUB DRAIN AND PIPE 20"-0" DOWNSTREAM FROM HUB DRAIN SHALL BE SERVICE WEIGHT CAST IRON.
- NOT USED
- FLOOR DRAINS SHALL HAVE TRAP RINGS EQUIPPED WITH PROSET SYSTEMS, INC. MODEL TR-1000.
- CONTRACTOR SHALL FIELD VERIFY SIZE, DEPTH AND LOCATION OF UTILITIES PRIOR TO CONSTRUCTION.

BACKFLOW PREVENTION GUIDE			
INSTALLATION	PROTECTIVE DEVICE REQ'D.	ASSE STANDARD	REMARKS
BEVERAGE DISPENSER	DUAL CHECK W/ VENT	1032	
CARBONATED BEVERAGE DISP.	DUAL CHECK W/ VENT	1032	[1]
COFFEE BREWERS/ URN	DUAL CHECK W/ VENT	1032	
TEA BREWER	DUAL CHECK W/ VENT	1032	
CAPPUCCINO MACHINE	DUAL CHECK W/ VENT	1032	
DETERGENT DISPENSER	ATMOSPHERIC VACUUM BREAKER	1001	[2]
DISHWASHER	ATMOSPHERIC VACUUM BREAKER	1001	[2]
DRINKING FOUNTAIN	AIR GAP	----	
GARBAGE CAN WASHER	DUAL CHECK W/ VENT	1012	
GARBAGE DISPOSAL	ATMOSPHERIC VACUUM BREAKER	1001	
HOSE FAUCETS	HOSE BIBB VACUUM BREAKER	1011	
IRRIGATION SYSTEM	REDUCED PRESSURE PRINCIPLE	1013	[3]
JANITOR (MOP) SINK	HOSE BIBB VACUUM BREAKER	1011	
LAWATORY	AIR GAP	----	
LAWN SPRINKLER	PRESSURE VACUUM BREAKER	1020	[4]
STEAM TABLE	ATMOSPHERIC VACUUM BREAKER	1001	
TRAP PRIMER	AIR GAP	----	
WALL HYDRANTS	HOSE BIBB VACUUM BREAKER	1011	

- PROVIDE FILTER IMMEDIATELY UPSTREAM OF THE DUAL CHECK WITH VENT. DUAL CHECK TO BE MADE OF TYPE 316 STAINLESS STEEL.
 - USE ASSE 1001 ATMOSPHERIC VACUUM BREAKER IN CONDITIONS HAVING INTERMITTENT FLOW (NOT CONTINUOUS PRESSURE). USE ASSE 1006 PRESSURE VACUUM BREAKER IN CONDITIONS HAVING CONTINUOUS PRESSURE.
 - USE ASSE 1013 REDUCED PRESSURE PRINCIPLE (RP2) BACKFLOW PREVENTER IN SYSTEMS WITH A HIGH HAZARD SUCH AS IRRIGATION SYSTEMS USING INJECTED CHEMICAL DELIVERY SYSTEMS TO LAWN, A PRESSURE VACUUM SYSTEM (ASSE 1020) CAN BE USED ON IRRIGATION SYSTEMS THAT HAVE A LOW HAZARD SUCH AS A SYSTEM WITH STANDARD SPRINKLER HEADS.
 - USE ASSE 1020 PRESSURE VACUUM BREAKER WITH A LOW HAZARD SYSTEM SUCH AS A SYSTEM WITH STANDARD SPRINKLER HEADS. USE ASSE 1013 BACKFLOW PREVENTER IN SYSTEMS WITH HIGH HAZARD (SEE NOTE 3).
- NOT ALL NOTES ARE USED. REFER TO FLOOR PLANS.

WATER HEATER SCHEDULE			
WATER HEATERS SHALL BE CONTRACTOR FURNISHED, CONTRACTOR INSTALLED (CFC) UNLESS NOTED OTHERWISE			
WATER HEATER "A" SHALL BE A THERMA-STOR MODEL II-1 THERMAL TRANSFER WATER HEATER, SINGLE REFRIGERATION CIRCUIT, PARALLEL RACK APPLICATION AS SHOWN IN STANDARD DETAIL, PSD-BR. 200 GALLON UNITS WILL BE REQUIRED PER STORE. 119 GALLON CAPACITY.			
DIRECT BUY #PRO K-0001227			
WATER HEATER "B" (GWH-1) SEE WATER HEATER SCHEDULE - NATURAL GAS ON THIS SHEET			
REMARKS:			
REFER TO THE APPROPRIATE SPECIFICATION SECTIONS FOR ADDITIONAL INFORMATION.			
REFER TO THE STANDARD DETAIL FOR ADDITIONAL INFORMATION AND DETAILS.			
PROVIDE DRAIN PAN FOR ALL WATER HEATERS LOCATED IN OR NEAR FINISHED AREAS AS WELL AS ANY ELEVATED LOCATIONS. PROVIDE DRAIN FROM PAN AND VENT TO POINT OF DISCHARGE EITHER TO A FLOOR DRAIN OR A POINT THAT IS EXTERIOR TO THE BLDG.			
WATER HEATER SHALL BE IN COMPLIANCE WITH ASHRAE 90.1B-CURRENT EDITION FOR STANDBY ENERGY EFFICIENCY			
HOT WATER RETURNS FROM THE STORE SHALL BE CONNECTED TO THE HOT WATER RETURN INLETS ON WATER HEATER "A" TYPE REQUIRES PER STANDARD DETAIL PSD-6R.			

PLUMBING LEGEND			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
-----	COLD WATER - EXISTING	F.D.	FLOOR DRAIN/FLOOR SINK
-----	HOT WATER - EXISTING	F.C.O.	FLOOR CLEANOUT
-----	HOT WATER RETURN - EXISTING	W.C.O.	WALL CLEANOUT
-----	COLD WATER	V.T.R.	VENT THRU ROOF
-----	HOT WATER	L.V.T.R.	INDIRECT VENT THRU ROOF
-----	HOT WATER RETURN	H.B.	NON-FREEZE HOSE BIBB
-----	SANITARY - EXISTING	⊙	CONNECT TO EXISTING
-----	SANITARY VENT - EXISTING	R.D.	ROOF DRAIN
-----	SANITARY	R.R.D.	RELIEF ROOF DRAIN
-----	SANITARY VENT	R.L.	RAIN LEADER
-----		R.R.L.	RELIEF RAIN LEADER
-----		HW	INDIRECT WASTE
-----		GW	GREASE WASTE

PLUMBING FIXTURE SCHEDULE										
MARK	KROGER MARK	DESCRIPTION	STANDARD DETAIL	CONNECTIONS				REMARKS		
				TRAP	WASTE	VENT	HW		CW	
WC1	PLTUFH	WATER CLOSET, ACCESSIBLE	---	INTEGRAL	4"	2"	---	1"		
WC2	PLTUF	WATER CLOSET	---	INTEGRAL	4"	2"	---	1"		
UR1	PLUR	URNAL, ACCESSIBLE	---	INTEGRAL	2"	2"	---	3/4"		
LAV1	PLC-1B	LAVATORY, 1 BOWL COUNTERTOP	PSD-50	1-1/4"	2"	1-1/2"	1/2"	1/2"		
LAV2	PLC-2B	LAVATORY, 2 BOWL COUNTERTOP	PSD-50	1-1/4"	2"	1-1/2"	1/2"	1/2"		
LAV3	PL10	LAVATORY, WALL MOUNTED	---	1-1/4"	2"	1-1/2"	1/2"	1/2"		
EDF	PL24	ELECTRIC DRINKING FOUNTAIN	---	1-1/4"	2"	1-1/2"	---	1/2"		
EDF1	PL24-2	ELECTRIC DRINKING FOUNTAIN	---	1-1/4"	2"	1-1/2"	---	1/2"		
SK1	PLHSW	HAND SINK (WALL MOUNT)	---	1-1/2"	2"	2"	1/2"	1/2"		
SK1/EW	PLHSWE	HAND SINK W/ EYE WASH	---	1-1/2"	2"	2"	1/2"	1/2"	EYEWASH INTEGRAL WITH FAUCET	
SK2	PL1RX	COUNTERTOP SINK (DROP-IN)	---	1-1/2"	2"	2"	1/2"	1/2"		
SK3	PL1F	FLOORAL SINK (DROP-IN)	---	1-1/2"	2"	2"	1/2"	1/2"		
SK5	PL3C-1B	THREE COMPARTMENT SINK	PSD-7	1-1/2"	2"	2"	1/2"	1/2"	INSTALL 3/8" NPT TEE BETWEEN FAUCET AND SPRAYER FOR PROPORTIONER 7A IS ONLY USED AT CONDITIONING SINK	
SK6	PL3-20	THREE COMPARTMENT SINK	PSD-7/7A	1-1/2"	2"	2"	1/2"	1/2"		
SK7	PL1BR	COUNTERTOP SINK BREAK ROOM	---	1-1/2"	2"	2"	1/2"	1/2"		
SK9	PL1SND	SEAFOOD PREP SINK	PSD-6S	1-1/2"	2"	2"	1/2"	1/2"	LESS DISPOSAL	
SK10	PL3M-7	THREE COMPARTMENT SINK	PSD-7	1-1/2"	2"	2"	1/2"	1/2"	NO SPRAYER	
SK11	PL1PC-1B	ONE COMPARTMENT SINK	PSD-5A	1-1/2"	2"	2"	1/2"	1/2"		
MB	PL1M	MOP SINK (CONTRACTOR SUPPLY)	PSD-22	3"	3"	2"	1/2"	1/2"		
EW	PL20	EMERGENCY EYEWASH	---	1-1/2"	2"	---	---	1/2"		
WB	WB	FREEZE PROOF WALL HYDRANT	PSD-150	---	---	---	---	3/4"		
HB	HB	INTERIOR HOSE BIBB	---	---	---	---	---	3/4"		
RH	RH	FREEZE PROOF ROOF HYDRANT	PSD-150	---	---	---	---	3/4"		
HR	HR	EXTERIOR HOSE REEL	---	---	---	---	---	3/4"		
TMV-1	TMV-1	THERMOSTATIC MIXING VALVE	---	---	---	---	1/2"	1/2"		
TP-1	TP-1	TRAP PRIMER/ DISTRIBUTION UNIT	---	---	---	---	---	1/2"		
WHA-n	WHA-n	WATER HAMMER ARRESTOR	---	---	---	---	---	---	TO BE USED AND INSTALLED AS PER PDI STD. WH-201, CURRENT EDITION.	
B124B-60	B124B-60	DOUBLE DOOR PROOFER	---	---	---	---	---	1/2"	PROVIDE VALVED & FILTERED CW LINE AT 85" AFF.	
B109G	B109G	GAS SINGLE RACK OVEN	---	---	---	---	---	---	PROVIDE VALVED & FILTERED CW LINE AT 96" AFF.	
D15CS-480	D15CS-480	SINGLE COMBI OVEN	PSD-23A	---	---	---	---	---	PROVIDE VALVED CW FILTERED LINE AND CW LINE.	
D15CD-480	D15CD-480	DOUBLE COMBI OVEN	PSD-23A	---	---	---	---	---	PROVIDE VALVED CW FILTERED LINE AND CW LINE.	
D176B-480	D176B-480	PREP WASHER	---	---	---	---	---	3/4"	PROVIDE VALVE W/ PRESSURE REGULATOR SET AT 25 PSI AT 6'-2" AFF.	
S7	S7	MINI COMBO OVEN STEAMER	---	---	---	---	---	1/2"	PROVIDE 3/8" OD CW AT 3'-5" AFF. VALVED & FILTERED.	
R87	R87	RECONSTITUTION WATER DISPENSER	---	---	---	---	---	1/2"	PROVIDE 3/8" WATER FROM SINK TO R87	
P54	P54	PRODUCE MISTING CONTROLLER	---	---	---	---	---	1/2"	PRODUCE MISTING CONNECTION FROM P43 OUTPUT.	
S36TSC-8	S36TSC-8	ICE FLAKER	---	---	---	---	---	1/2"	PROVIDE (2) 3/8" CW (20-120 PSI) VALVED & FILTERED.	
PLDW1	PLDW1	WATER FILTER SYSTEM	---	---	---	---	---	3/4"	PROVIDE VALVED CW W/PRESSURE REGULATOR SET AT 30 PSI.	
PLDW2	PLDW2	WATER FILTER SYSTEM	---	---	---	---	---	3/4"	PROVIDE VALVED CW W/PRESSURE REGULATOR SET AT 30 PSI.	
PLBPWF	PLBPWF	WATER FILTER SYSTEM	---	---	---	---	---	3/4"	PROVIDE VALVED CW W/PRESSURE REGULATOR SET AT 30 PSI.	
PLPWF	PLPWF	WATER FILTER SYSTEM	---	---	---	---	---	1/2"	PROVIDE VALVED CW W/PRESSURE REGULATOR SET AT 30 PSI.	

REFER TO MECHANICAL DRAWINGS FOR EQUIPMENT GAS DEMANDS.

WATER HEATER SCHEDULE - NATURAL GAS

MARK	LOCATION	MANUFACTURER	MODEL	KROGER #PRO NUMBER	INPUT (BTUH)	FUEL CONN.	VOLTAGE/PHASE	WATER CONN.	EWI 'F	LMT 'F	TANK (GAL.)	AR INLET & VENT	RECOVERY (GPH)	REMARKS
GWH1	SUSHI PREP	LAING, INC.	CGN20080	K-0002409	199,999	1/2"	120V/1φ	1-1/2"	40	110	90	3"	233	[1][2][3][4]

- WATER HEATER TO BE IN COMPLIANCE WITH ASHRAE 90.1B-CURRENT EDITION FOR STANDBY ENERGY EFFICIENCY.
- PROVIDE EXPANSION TANK FOR DOMESTIC HOT WATER SYSTEM.
- WATER HEATER PROVIDED BY OWNER (KROGER) TO BE INSTALLED BY THE CONTRACTOR.
- WATER HEATER VENTED WITH SOLID WALL PVC OR CPVC PIPE AND FITTINGS. TO BE INSTALLED IN STRICT COMPLIANCE WITH THE WATER HEATER MANUFACTURER'S WRITTEN INSTALLATION GUIDELINES.

PUMP SCHEDULE

MARK	LOCATION	MFG.	MODEL	CAPACITY		MOTOR		CONNECTIONS		TYPE	REMARKS	
				FLOW (GPM)	HEAD (FT.)	H.P.	VOLTAGE/φ	SUCTION	DISCHARGE			
CP2	SUSHI PREP	LAING, INC.	ACT-303-BTW	---	---	---	0.044	115V/1φ	3/8" OD	3/8" OD	INLINE	[1][2]
CP2	MURRAY'S CHEESE	LAING, INC.	ACT-303-BTW	---	---	---	0.044	115V/1φ	3/8" OD	3/8" OD	INLINE	

- PUMP SHALL BE OF STAINLESS STEEL, BRASS OR BRONZE CONSTRUCTION AND SUITABLE FOR USE WITH 140°F WATER.
- PUMP SHALL BE MOUNTED BELOW SINK AT THE LOCATION(S) INDICATED AND INSTALLED IN COMPLIANCE WITH THE MANUFACTURER'S GUIDELINES.

ABBREVIATIONS

AF	ABOVE FINISHED FLOOR	DISCH	DISCHARGE	GPS	GALLONS PER SECOND	RL	RAIN LEADER
AFG	ABOVE FINISHED GRADE	DWG	DRAWING	GWH	GAS WATER HEATER	REQD	REQUIRED
AB	ABOVE	EE	EVERT ELEVATION	HB	HOSE BIBB	SECT	SECTION
ARCH	ARCHITECTURAL	EQPT	EQUIPMENT	HORZ	HORIZONTAL	STRUC	STRUCTURAL
AV	ACID VENT	ELEV	ELEVATION	H/CW	HOT AND COLD WATER	SD	STORM DRAIN(AGE)
AW	ACID WASTE	ELECT	ELECTRICAL	HW	HOT WATER	SS	STAINLESS STEEL
BEL	BELOW	EW	ELECTRIC WATER HEATER	HWS	HOT WATER SUPPLY	SV	SANITARY VENT
BFF	BELOW FINISHED FLOOR	EXT	EXTERIOR	HW	HOT WATER RETURN	SW/SANL	SANITARY WASTE
BFG	BELOW FINISHED GRADE	FCO	FLOOR CLEANOUT	IE	INVERT ELEVATION	TYP	TYPICAL
BFP	BACKFLOW PREVENTER	FD	FLOOR DRAIN	LPG	LIQUIFIED PROPANE GAS	VRV	VACUUM RELIEF VALVE
CD	CONDENSATE	FD-E	FLOOR DRAIN, EXISTING	MECH	MECHANICAL	VTR	VENT THROUGH ROOF
CFM	CUBIC FEET PER MINUTE	FF	FINISHED FLOOR	NG	NATURAL GAS	VB	VACUUM BREAKER
CFS	CUBIC FEET PER SECOND	FFE	FINISHED FLOOR ELEVATION	OD	OVERFLOW DRAIN	WCO	WALL CLEANOUT
CLG	CEILING	FG	FINISHED GRADE	OPNG	OPENING	WH	WATER HEATER
CIRC	CIRCULATOR	FL	FLOOR LINE	ORG	ORIGINAL	WHA	WATER HAMMER ARRESTOR
CONN	CONNECTION(ION)	FPHB	FREEZEPROOF HOSE BIBB	PRV	PRESSURE REDUCING VALVE		
CO	CLEANOUT	FPM	FEET PER MINUTE	PSI	POUNDS PER SQUARE INCH		
CONC	CONCRETE	FPS	FEET PER SECOND	PSIA	PSI, ABSOLUTE		
CP	CHROME PLATED	GCO	GRADE CLEANOUT	PSIG	PSI, GAUGE PRESSURE		
CW	COLD WATER	GPH	GALLONS PER HOUR	RD-E	ROOF DRAIN - EXISTING		
DN	DOWN	GPM	GALLONS PER MINUTE	RD-n	ROOF DRAIN		



KROGER
STORE #473

2013 UNIVERSITY AVENUE
OXFORD, MISSISSIPPI 38655

A DEVELOPMENT OF
THE KROGER COMPANY



Naos Design
Group Of
Mississippi,
PLLC.

MARC BREETZ
ARCHITECT

645 Lakeland East Drive
Suite 101
Flowood, Mississippi 39232
(p) 303.759.5777
(f) 720.360.4281

ARCHITECT OF RECORD



COMMERCIAL DESIGN SYSTEMS,
INC.

1825 SW GALLBREATH DRIVE
SHERWOOD, OREGON 97140
503.855.7000 (p)503.855.850