

PLUMBING SYMBOLS

NOTE: THIS IS A MASTER LEGEND AND NOT ALL SYMBOLS, ABBREVIATIONS, ETC. ARE NECESSARILY USED ON THE DRAWINGS.

ANNOTATION	
①	PLUMBING PLAN NOTE CALLOUT
1	PLUMBING EQUIPMENT DESIGNATION. (CONTRACTOR FURNISHED AND INSTALLED). REFER TO PLUMBING FIXTURE OR EQUIPMENT SCHEDULES
1	EQUIPMENT DESIGNATION (OWNER FURNISHED, CONTRACTOR INSTALLED)
CU	MECHANICAL EQUIPMENT DESIGNATION (CONTRACTOR FURNISHED AND INSTALLED UNLESS NOTED OTHERWISE)
1	CONNECTION POINT OF NEW WORK TO EXISTING
1	DETAIL REFERENCE UPPER NUMBER INDICATES DETAIL NUMBER LOWER NUMBER INDICATES SHEET NUMBER
1	SECTION CUT DESIGNATION

PIPING	
---	DOMESTIC COLD WATER (CW)
---	SOFTENED COLD WATER (SCW)
---	DOMESTIC HOT WATER (HW)
---	DOMESTIC HOT WATER RECIRC. (HWR)
---	140" DOMESTIC HOT WATER (140")
T	TRAP PRIMER LINE (T)
S	SOIL PIPING - ABOVE FLOOR (S)
S	SOIL PIPING - BELOW FLOOR (S)
W	WASTE PIPING - ABOVE FLOOR (W)
W	WASTE PIPING - BELOW FLOOR (W)
GW	GREASE WASTE - ABOVE FLOOR (GW)
GW	GREASE WASTE - BELOW FLOOR (GW)
ST	STORM DRAIN - ABOVE FLOOR (ST)
ST	STORM DRAIN - BELOW FLOOR (ST)
OST	OVERFLOW STORM DRAIN - ABOVE FLOOR (OST)
VBG	VENT BELOW GRADE (VBG)
VBF	VENT BELOW FLOOR (VBF)
ID	INDIRECT DRAIN (ID)
CDH	CONDENSATE DRAIN - HIGH EFFICIENCY RTU (CDH)
CD	CONDENSATE DRAIN (CD)
ACD	AUXILIARY CONDENSATE DRAIN (ACD)
SPD	SUMP OR SEWAGE PUMP DISCHARGE (SPD)
G	NATURAL GAS (G)
G	NATURAL GAS ON ROOF (G)
MPC	MEDIUM PRESSURE NATURAL GAS (MPC)
MPC	MEDIUM PRESSURE NATURAL GAS ON ROOF (MPC)
NPW	NON POTABLE WATER (NPW)
LPG	LIQUIFIED PETROLEUM GAS (LPG)
WS	WATER SERVICE (WS)
FP	FIRE PROTECTION (FP)
PD	CONDENSATE PUMP DISCHARGE (PD)
---	EXISTING PIPING TO REMAIN
V	VENT PIPING (V)
FD	FLOOR DRAIN (FD), SIZE & TYPE
PA	PIPE ANCHOR
EJ	EXPANSION JOINT
BP	BACKFLOW PREVENTER
PG	PRESSURE GAUGE
TM	THERMOMETER
FC	FLANGE CONNECTION
HB	HOSE BIBB (HB)
NW	NONFREEZE WALL DRANT (NW)
MAN	MANUAL / AUTOMATIC RELIEF VALVE
PS	PRESSURE / VACUUM SWITCH
C	CLEANOUT
W	WALL CLEANOUT (WCO)
F	FLOOR CLEANOUT (FCO)
E	EXTERIOR CLEANOUT (ECO)
ELU	ELBOW UP
ELD	ELBOW DOWN
TU	TEE UP
TD	TEE DOWN
ELU-S	ELBOW UP WITH SHUT-OFF VALVE (SOV)
ELD-S	ELBOW DOWN WITH SHUT-OFF VALVE (SOV)
TU-S	TEE UP WITH SHUT-OFF VALVE (SOV)
TD-S	TEE DOWN WITH SHUT-OFF VALVE (SOV)
WA	WATER HAMMER ARRESTER (WHA) WITH PDI SIZES, (A, B, C, D, & E)
RP	RECIRCULATION PUMP
P	P-TRAP
G	GAS COCK
TP	TRAP PRIMER
TPD	TRAP PRIMER WITH DISTRIBUTION UNIT

STANDARD MOUNTING HEIGHTS

PLUMBING	(FT, AFG, UNLESS NOTED OTHERWISE)
REFER TO THE ARCHITECTURAL DRAWINGS FOR PLUMBING FIXTURE MOUNTING HEIGHTS.	
UNO, INSTALL PLUMBING FIXTURES WITH THE MOUNTING HEIGHTS AS LISTED BELOW WITH FINAL APPROVAL BY THE ARCHITECT.	
ADA ACCESSIBLE DRINKING FOUNTAIN	36" MAX. FLOOR TO SPOUT
ADA ACCESSIBLE LAVATORIES	34" FLOOR TO RIM
ADA ACCESSIBLE SHOWER VALVES	38" MINIMUM TO 48" MAXIMUM FLOOR TO CENTERLINE
ADA ACCESSIBLE TUB VALVES	CENTER BETWEEN GRAB BAR AND TUB RIM
ADA ACCESSIBLE URINALS	17" FLOOR TO RIM
ADA ACCESSIBLE WATER CLOSET	17" TO 19" FLOOR TO TOP OF SEAT
ADA ACCESSIBLE WATER COOLER	35" FLOOR TO RIM
ADULT STANDARD DRINKING FOUNTAIN	41" FLOOR TO RIM
ADULT STANDARD WATER COOLER	41" FLOOR TO RIM
CHILD STANDARD DRINKING FOUNTAIN	30" FLOOR TO RIM
CHILD STANDARD WATER COOLER	30" FLOOR TO RIM
CHILD URINAL	14" FLOOR TO RIM
CLINIC SERVICE SINKS	30" FLOOR TO RIM
JANITOR'S SINK FAUCET FITTINGS	42" FLOOR TO CENTERLINE
HOSE BIBBS	36" AFF TO CENTERLINE
ICE MAKER OUTLET BOXES	24" FLOOR TO CENTER OF BOX
LAVATORY OR SINK	31" FLOOR TO RIM
NON FREEZE HYDRANT	18" AFG TO CENTERLINE
SHOWER HEADS	6"-6" MEN & 6"-0" WOMEN FLOOR TO CENTERLINE
SHOWER VALVES	48" MEN & 42" WOMEN FLOOR TO CENTERLINE
STANDARD URINALS	22" FLOOR TO RIM
SURGEON'S SCRUB-UP SINKS	35" FLOOR TO FRONT RIM
TUB VALVES	32" FLOOR TO CENTERLINE
WASHING MACHINE OUTLET BOXES	42" FLOOR TO RIM
WATER CLOSET	15" FLOOR TO RIM

ABBREVIATIONS	
AFG	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
BFF	BELOW FINISHED FLOOR
BFG	BELOW FINISHED GRADE
BOP	BOTTOM OF PIPE
BOS	BOTTOM OF STRUCTURE
BTU	BRITISH THERMAL UNIT
CPVC	CHLORINATED POLYVINYL CHLORIDE
DN	DOWN
DFU	DRAINAGE FIXTURE UNIT
DS	DOWNSPOUT
ETR	EXISTING TO REMAIN
EWC	ELECTRIC WATER COOLER
FD	FLOOR DRAIN
FFA	FROM FLOOR ABOVE
FFB	FROM FLOOR BELOW
FF	FINISHED FLOOR
FL	FLOW LINE
FLA	FULL LOAD AMPS
FLR	FLOOR
GPM	GALLONS PER MINUTE
HD	HEAD, HUB DRAIN
IE	INVERT ELEVATION
IN	INCHES OF WATER COLUMN
JB	JUNCTION BOX
J-BOX	JUNCTION BOX
KW	KILOWATT
MAU	MAKE-UP AIR UNIT
MAX	MAXIMUM
MBH	1000 BTU PER HOUR
MH	MANHOLE
MIN	MINIMUM
N/C	NORMALLY CLOSED
N/O	NORMALLY OPEN
ORD	OVERFLOW ROOF DRAIN
PDI	PLUMBING DRAINAGE INSTITUTE
PVC	POLYVINYL CHLORIDE
PRV	PRESSURE REDUCING VALVE
RD	ROOF DRAIN
RPM	REVOLUTIONS PER MINUTE
RTU	ROOFTOP UNIT
SF	SQUARE FEET, SUPPLY FAN
SP	SUMP PUMP
SS	STAINLESS STEEL, SANITARY
SEW	SEWER, SOIL STACK
TDH	TOTAL DYNAMIC HEAD
TFA	TO FLOOR ABOVE
TFB	TO FLOOR BELOW
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY INC.
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT(S)
VCP	VITRIFIED CLAY PIPE
VS	VENT STACK
VTR	VENT THROUGH ROOF
W	WATER
W/O	WITHOUT
WC	WATER COLUMN
WS	WATER STACK
WSP	WATER SUPPLY FIXTURE UNIT

FIXTURE BRANCH CONNECTION SCHEDULE

FIXTURE	COLD WATER	HOT WATER	WASTE	VENT
WATER CLOSET (TANK)	1/2"	---	4"	2"
LAVATORY	1/2"	1/2"	2"	2"
ELECTRIC WATER COOLER	1/2"	---	2"	2"
JANITOR'S SINK	3/4"	3/4"	3"	2"
FLOOR DRAIN	---	---	3"	2"

NOTE:
PIPE SIZES SHOWN ARE MINIMUM.

Storage Tank Water Heater Sizing Calculator

Developed by the Plan Review Unit of the Environmental Health Section
NC Division of Public Health

Establishment Name: Sprint
Address: 2707 Guess Rd Ste 110 Durham, NC 27705

Equipment	Description	Number of compartments	Dimensions (Inches)			Gallons Per Hour (GPH)
			Length	Width	Depth	
Manual warewashing sink						0
Sink #1						0
Sink #2						0
Sink #3						0
Bar sink						0
Sinks are calculated at 75% capacity						Total: 0
Prep sink #1	Type of prep sink (vegetable, meat, seafood)	Number of compartments				Gallons Per Hour (GPH)
Prep sink #2						0
Prep sink #3						0
Prep sinks are calculated at 5 gallons per compartment						Total: 0
Enter the quantity of equipment	Quantity					Gallons Per Hour (GPH)
Handwashing sinks	1					5
Service sink	1					5
Hose reel	1					0
Clothes washer	1					0
Enter a description and estimated gallons per hour (GPH) usage of other equipment	Description	Estimated gallons per hour (GPH) usage				Gallons Per Hour (GPH)
Other equipment						0
Other equipment						0
Other equipment						0
Enter make, model and final rinse usage gallons per hour (GPH) for the warewashing machine	Make	Model	Final Rinse Usage (GPH)		Gallons Per Hour (GPH)	
Warewashing machine					0	
Enter the quantity of pre-rinse units	Quantity					Gallons Per Hour (GPH)
Pre-rinse	1					0
Warewashing machines are calculated at 70% of the final rinse usage specified by the manufacturer. Pre-rinse are calculated at 45 GPH.						Total: 0
Recovery Rate Needed (GPH):					10	
Water Heater Input (BTU or kW) Needed:						
Gas Water Heater		Electric Water Heater				
8,100 BTU at 70°F rise		2 kW at 70°F rise				
9,000 BTU at 80°F rise		2 kW at 80°F rise				
10,000 BTU at 90°F rise		2 kW at 90°F rise				
11,000 BTU at 100°F rise		2 kW at 100°F rise				

PLUMBING FIXTURE SCHEDULE:

- FIXTURES IN THIS SCHEDULE OR THEIR APPROVED EQUIVALENT ARE PROVIDED BY THE PLUMBING CONTRACTOR. SUBMIT SHOP DRAWINGS ON EACH OF THESE ITEMS. REFER TO SPECIFICATIONS FOR FURTHER INFORMATION AND INSTALLATION REQUIREMENTS. VERIFY REQUIREMENTS WITH MANUFACTURER'S INSTALLATION INSTRUCTIONS AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS. REFER TO THE ARCHITECTURAL DRAWINGS FOR THE PLUMBING FIXTURE MOUNTING HEIGHTS.
- (EWC)** ELECTRIC WATER COOLER (ADA ACCESSIBLE): ELKAY # EZSTLBC WALL-MOUNTED, BARRIER FREE, DUAL-LEVEL, FRONT AND SIDE PUSH ACTUATOR BAR, STAINLESS STEEL BOWL, FLEXIBLE POLYESTER ELASTOMER SAFETY BUBBLER AND GALVANIZED STEEL FRONT AND SIDES, CHILLER WITH 8.0 GALLONS PER HOUR CAPACITY, 50° F DRINKING WATER AT 80° F INLET TEMPERATURE, 70° F ROOM TEMPERATURE. IRIM; ELKAY # LKAPREZL ADA APRON ACCESSORY, McGUIRE # LF2165CC LEAD FREE BRASS COMPRESSION ANGLE STOP VALVE WITH RISER AND ESCUTCHEON, McGUIRE # B8912CF 1-1/2" GAUGE CAST BRASS PLATED BRASS ADJUSTABLE P-TRAP AND WASTE ARM WITH CLEANOUT PLUG AND ESCUTCHEON, AND SUITABLE CARRIER WITH STANCHIONS TO FLOOR. ELECTRICAL REQUIREMENTS: 120-VOLT, 3.0 FULL LOAD AMPS.
 - (ET)** EXPANSION TANK: AMTROL "THERM-A-TROL" T-5, WELDED STEEL PRESSURE TANK, POLYPROPYLENE LINING, FLEXIBLE BRITYL DIAPHRAGM, AIR CHARGING TUBE, 150 PSI MAXIMUM WORKING PRESSURE, 2.0 GALLON CAPACITY, 0.45 MAXIMUM ACCEPTANCE FACTOR, 3/4" NPT CONNECTION. SET THE AIR CHARGE PRESSURE TO MATCH EXISTING WATER SYSTEM PRESSURE.
 - (FD)** FLOOR DRAIN: R. SMITH # 805L (-A), CAST IRON BODY AND CLAMPING COVER, ADJUSTABLE 6" ROUND NICKEL BRONZE STRAINER. USE PUSH-ON JOINT OF OUTLET SIZE AS SHOWN ON PLANS.
 - (J)** JANITOR'S SINK: STEIN-WILLIAMS # MTB-2424, 24" x 24" x 10" HIGH TERRAZZO FINISH WITH INTEGRAL SINK, STAINLESS STEEL DRAIN BODY, SILET; FAUCET # 89-CF FAUCET WITH WALL BRACE, INTEGRAL VACUUM BREAKER, PAIL HOOK, AND 3/4" MALE HOSE THREADED OUTLET. SECURE FAUCET IN WALL WITH BACKBOARD. IRIM; # SB-850 TYPE 304, 20 GAUGE, STAINLESS STEEL WALL SURROUNDS, # 1-35 THREE FOOT LONG REINFORCED HOSE WITH 3/4" CHROME COUPLING AND WALL HOOK # V-70 EXTRUDED VINYL BUMPER GUARD, AND # T-40 24" STAINLESS STEEL MOP HANGER.
 - (LV)** WALL-MOUNTED LAVATORY (ADA ACCESSIBLE): AMERICAN STANDARD # 0355.012 "LUCERNE" 20-1/2" x 18-1/4" RECTANGULAR MOUNTED WHITE VITREOUS CHINA FIXTURE WITH FAUCET LEDGE AND FRONT OVERFLOW. WALL MOUNTED FAUCET: SLOAN # EB-850-BDT 4" CENTERSET, BATTERY POWERED VANDAL RESISTANT, FAUCET WITH 0.5 GPM AERATOR AND ASSE 1070 COMPLIANT BELOW DECK THERMOSTATIC MIXING VALVE. IRIM; McGUIRE # 155A GRID DRAIN WITH TAILPIECE, McGUIRE # 2165CCLK LOOSE KEY COMPRESSION ANGLE STOP VALVES WITH RISERS AND ESCUTCHEONS, McGUIRE # B972CF-1/4" 17 GAUGE TUBULAR CHROME PLATED BRASS ADJUSTABLE P-TRAP AND WASTE ARM WITH CLEANOUT PLUG AND ESCUTCHEON, CONCEALED ARM CARRIER WITH STANCHIONS TO FLOOR, AND TRUEBRO "HANDI LAV-GUARD" # 102 INSULATION KIT FOR WATER AND WASTE PIPES.
 - (RP)** RECIRCULATION PUMP: BELL & GOSSET # NBF-9U WET ROTOR TYPE INLINE PUMP WITH 2800 RPM MOTOR, LEAD FREE BRONZE BODY WITH UNION CONNECTIONS, CAPACITY OF 2 GPM AT 7 FEET OF HEAD. PROVIDE WITH HONEYWELL #LB006C SURFACE MOUNTED AQUASTAT WITH SINGLE POLE DOUBLE THROW SWITCH FOR CIRCULATOR CONTROL AND ADJUSTABLE DIFFERENTIAL SET TO 10F. SET AQUASTAT TO SHUT OFF RECIRCULATION PUMP AT WATER HEATER SET POINT AND ON AT 10F BELOW SET POINT. ELECTRICAL REQUIREMENTS: 120-VOLT, 0.4 FULL LOAD AMPS.
 - (TMV)** THERMOSTATIC MIXING VALVE: POWERS # e480, SOLID BRASS BODY, WX ELEMENT, CORROSION RESISTANT INTERNAL PARTS, AND INTERGRAL CHECKS, ASSE 1070 COMPLIANT, CAPABLE OF 2.2 GPM WITH A 20 PSI DIFFERENTIAL AND A MINIMUM FLOW RATE OF 0.5 GPM. MAXIMUM TEMPERATURE STOP SET FOR 110 DEGREES. MOUNT BELOW THE PLUMBING FIXTURE WHERE INDICATED ON PLANS(S).
 - (TP)** TRAP PRIMER: PRECISION PLUMBING PRODUCTS # PR-500 "PRIME RITE", CORROSION RESISTANT BRASS BODY, "O" RING SEALS, 1/2" INLET AND OUTLET, AND INTEGRAL VACUUM BREAKER. INSTALL THE VALVE AT A MINIMUM OF 12" ABOVE FINISHED FLOOR. PROVIDE WITH DISTRIBUTION # DU-2 FOR TWO, # DU-3 FOR THREE, OR # DU-4 FOR FOUR DRAIN CONNECTIONS.
 - (TS)** TIME SWITCH: INTERMATIC # ET1705CSPST, 7 DAY, ONE CIRCUIT-SINGLE POLE SINGLE THROW, ELECTRONIC TIME SWITCH OR EQUAL BY TORK. TIME SWITCH SHALL BE MOTOR RATED (1 H.P. @ 120 VOLT, SINGLE PHASE), MINIMUM OF 20 SET POINTS (14 ON/OFF CYCLES) AND BATTERY BACK UP. COORDINATE WITH DIVISION 16 FOR INSTALLATION AND INTERLOCK OF TIME SWITCH IN SERIES WITH THE AQUASTAT AND RECIRCULATION PUMP.
 - (WCO)** WALL CLEANOUT: JAY R. SMITH # 4530S, CAST IRON CLEANOUT TEE, COUNTER SUNK PLUG, STAINLESS STEEL ROUND COVER AND SCREW, AND IRON PLUG WITH GASKET SEAL. REFER TO SPECIFICATIONS FOR INSTALLATION.
 - (WC)** FLOOR-MOUNTED WATER CLOSET (ADA ACCESSIBLE): KOHLER "HIGHLINE" TANK TYPE WHITE VITREOUS CHINA FIXTURE WITH ELONGATED BOWL, 1.0 GALLON PER FLUSH, CLOSE COUPLED TANK WITH PRESSURE ASSISTED SIPHON JET ACTION AND SPEED CONNECT TANK/BOWL COUPLING SYSTEM. INSTALL SIDE MOUNTED CHROME TRIP LEVER ON THE WIDE SIDE OF THE STALL. # K-351B, LEFT HAND TRIP LEVER TANK; # K-351BA, RIGHT HAND TRIP LEVER TANK. REFERENCE DRAWINGS FOR EXACT NUMBER OF RIGHT AND LEFT HAND TRIP LEVER TANKS REQUIRED. IRIM; CHURCH # 9500SSC WHITE OPEN-FRONT CONTOURED, SOLID PLASTIC, HEAVY DUTY, SEAT LESS COVER WITH SELF-SUSTAINING CHECK HINGES AND STAINLESS STEEL BOLTS, McGUIRE # 2166CC ANGLE STOP VALVE WITH RISER AND CHROME-PLATED ESCUTCHEON.
 - (WH)** WATER HEATER: A.O SMITH # DEL-10, 10 GALLON GLASS LINED STORAGE TANK, ONE 2KW DIRECT-IMMERSION HEATING ELEMENT, SURFACE-MOUNTED THERMOSTATS, ANODE ROD, T & P VALVE, AND 10 GALLONS PER HOUR RECOVERY AT A 80 DEGREE TEMPERATURE RISE. SET WATER HEATER OPERATING TEMPERATURE TO 120 °F. ELECTRICAL REQUIREMENTS: 208 VOLT SINGLE PHASE, 9.6 FULL LOAD AMPS
 - (WHA)** WATER HAMMER ARRESTER: PRECISION PLUMBING PRODUCTS, HARD DRAWN COPPER BODY WITH WROUGHT COPPER FITTINGS, PISTON TYPE WITH LUBRICATED EPDM "O" RING SEALS, MEETING ASSE 1010 OR PDI WH-201. PROVIDE PDI SIZES "A" THROUGH "F" AS SHOWN ON PLANS. PROVIDE SIZE "A" UNLESS SHOWN OTHERWISE ON THE PLANS.
 - (WM)** WATER METER: BADGER METER # 55 1", LEAD FREE BRONZE MAINCASE AND MEASURING CHAMBER, BOTTOM PLATE, STAINLESS STEEL TRIM AND BOLTS, THERMOPLASTIC STRAINER, OSCILLATING PISTON MEASURING ELEMENT, STRAIGHT READING HERMETICALLY SEALED REGISTER, REGISTRATION IN US GALLONS, MAGNETIC DRIVE, AND COMPLIANCE WITH ANSI / AWWA C700. PROVIDE WITH REMOTE READING SYSTEM AS REQUIRED.

#1408 DURHAM

2707 GUESS RD, SUITE 110
DURHAM, NC 27705

DATE: _____

PROJECT NUMBER: _____

PROJECT NAME: _____

PROJECT ADDRESS: _____

PROJECT CONTACT: _____

DATE: SEPTEMBER 26, 2017

PROJECT: **P-3**

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