PLUMBING LEGEND

SYMBOL & ABBREV	ITEM
CW	COLD WATER
HW	HOT WATER
TW	TEMPERED WATER
HWR	HOT WATER RETURN
G	NATURAL GAS
SAN	SAN. WASTE
V	VENT
ST	STORM DRAIN
CD	CONDENSATE

SYMBOL	ABBREV	ITEM
	GV	GATE VALVE
	BV	BALL VALVE
	CV	CHECK VALVE
	GC	GAS COCK
	RD	ROOF DRAIN
	DPCO	DECK PLATE CLEAN OUT
	WPCO	WALL PLATE CLEAN OUT
		TRAPPED DRAIN
		TEE - UP
		TEE - DOWN
		TEE
		ELBOW - UP
		ELBOW DOWN
		ELBOW
		UNION

FIXTURE CONNECTION SCHEDULE

DESCRIPTION & SYMBOL		CONNECTION SIZE				
		HOT	TEMPERED	COLD	WASTE	VENT
WATER CLOSET	(WC-A)	---	---	1"	3"	2"
URINAL	(UR-A)	---	---	3/4"	2"	2"
LAVATORY	(LAV-A)	---	3/8"*	---	1-1/2"	1-1/2"
SINK	(SK-A)	---	3/8"*	3/8"*	1-1/2"	1-1/2"
GARBAGE DISPOSAL	(GD-A)	---	---	---	1-1/2"	---
DISHWASHER	(DW-A)	3/8"*	---	---	7/8" AG-1	---
MOP BASIN	(MB-A)	1/2"	---	1/2"	3"	2"
WATER HEATER	(EWH-1)	3/4"	---	3/4"	---	---
ANTI-FREEZE WALL HYDRANT	(WH-1)	---	---	3/4"	---	---
ROOF HYDRANT	(RH-1)	---	---	3/4"	---	---
DRINKING FOUNTAIN	(DF-A & B)	---	---	3/8"*	1-1/2"	1-1/2"
VACUUM SYSTEM	(VACUUM & FS-1)	---	---	3/4"	3"	2"

*1/2" ROUGH-IN, 3/8" SUPPLY

SIZE OF HORIZONTAL & VERTICAL STORM DRAINAGE PIPING

State	North Carolina	2018 NCPC TABLE 1106.2 (1),(2) &1106.3	
City	Charlotte		Indicates entries the user will input
Rain Fall Rate	3.7 (inches per hour)		Indicates automatically calculated outputs

Downspout Size: 4 x 6
Roof Area Per Downspout:

Main Roof												
Individual Horizontally Projected Roof Area (square feet)	6020	6368	5663	3496								
Type of Storm Drainage Piping	Size of Piping (inches Ø)											
1/8 unit vertical in 12 units horizontal (1-percent slope)		8	6	5								
1/4 unit vertical in 12 units horizontal (2-percent slope)	6	6	6	5								
1/2 unit vertical in 12 units horizontal (4-percent slope)	5	5	5	4								
Vertical Conductors and Leaders	5	5	5	4								
Total Horizontally Projected Roof Area (square feet)	6020	12388	18051	21547								
Type of Storm Drainage Piping	Size of Piping (inches Ø)											
1/8 unit vertical in 12 units horizontal (1-percent slope)	8	8	10	10								
1/4 unit vertical in 12 units horizontal (2-percent slope)	6	8	10	10								
1/2 unit vertical in 12 units horizontal (4-percent slope)	5	8	8	8								
Vertical Conductors and Leaders	5	6	8	8								
Canopy Roof												
Individual Horizontally Projected Roof Area (square feet)	550	690										
Type of Storm Drainage Piping	Size of Piping (inches Ø)											
1/8 unit vertical in 12 units horizontal (1-percent slope)	3	3										
1/4 unit vertical in 12 units horizontal (2-percent slope)	3	3										
1/2 unit vertical in 12 units horizontal (4-percent slope)	3	3										
Vertical Conductors and Leaders	2	2										
Total Horizontally Projected Roof Area (square feet)	550	1240										
Type of Storm Drainage Piping	Size of Piping (inches Ø)											
1/8 unit vertical in 12 units horizontal (1-percent slope)	3	4										
1/4 unit vertical in 12 units horizontal (2-percent slope)	3	4										
1/2 unit vertical in 12 units horizontal (4-percent slope)	3	4										
Vertical Conductors and Leaders	2	3										

PLUMBING MATERIAL LIST

NOTES:

1. ANY SUBSTITUTIONS TO THE SPECIFIED MATERIALS AND/OR EQUIPMENT MUST BE APPROVED BY OWNER BEFORE BIDDING AND ANY SUBSTITUTIONS SHALL BE STATED ON THE BID. IF NO SUBSTITUTIONS ARE NOTED ON THE BID, PROVIDED MATERIALS AND/OR EQUIPMENT SHALL BE FURNISHED EXACTLY AS SPECIFIED WITH NO EXCEPTIONS.

2. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION FOR ALL ABOVE EQUIPMENT/DEVICES LISTED ABOVE FOR COMPLETE INSTALLATION, MOUNTING AND CONNECTION REQUIREMENTS.

3. ALL FIXTURES, DEVICES AND MATERIAL SHALL COMPLY WITH THE SAFE DRINKING WATER ACT OF 2011.

FIXTURE	SYMBOL	DESCRIPTION
WATER CLOSET	WC-A	WATER CLOSET - AMERICAN STANDARD MADERA #3461.528 VITREOUS CHINA, FLOOR MOUNTED, TOP SPUD, ELONGATED BOWL, RIM 17 1/4" ABOVE FLOOR FOR WHEELCHAIR USE, BOLT CAPS, SLOAN SOLAR POWERED, SENSOR OPERATED FLUSH VALVE WITH BATTERY BACK-UP SOLIS 8111-1.28 WITH 1.28 GPF, ¾" ANGLE SUPPLY AND STOP AND 1¼" TOP SPUD CONNECTION AND SHALL BE CHROME PLATED, ADA COMPLIANT, VACUUM BREAKER, FACTORY SUPPLIED BATTERIES FOR BACK-UP ONLY, LOW BATTERY INDICATOR LIGHT, WALL AND SPUD FLANGES, WHITE HEAVY DUTY MOLDED SOLID PLASTIC ELONGATED SEAT WITH OPEN FRONT - BEMIS 1955.
URINAL	UR-A	URINAL - AMERICAN STANDARD "WASHBROOK" 6590.510, FLUSH VALVE TYPE, 0.5 GPF WHITE VITREOUS CHINA, WASHOUT, TOP SPUD OUTLET, ELONGATED - 14" RIM. FURNISH CARRIER WITH TOP AND BOTTOM BEARING PLATES, BOLT SECURELY TO FLOOR, SLOAN SOLAR POWERED, SENSOR OPERATED FLUSH VALVE WITH BATTERY BACK-UP SOLIS 8186-0.5 WITH 0.5 GPF, 3/4" INLET, SHALL BE CHROME PLATED, WITH SCREWDRIVER BACK CHECK ANGLE STOP VALVE, ADA COMPLIANT, VACUUM BREAKER, FACTORY SUPPLIED BATTERIES FOR BACK-UP ONLY, LOW BATTERY INDICATOR LIGHT, WALL AND SPUD FLANGES, MOUNT 15 1/2" AFF TO RIM AND VALVE HANDLE AT 44" AFF MAXIMUM, PROVIDE REMOVABLE STAINLESS STEEL STRAINER AMERICAN STANDARD 0470680070A.
LAVATORY	LAV-A	LAVATORY - AMERICAN STANDARD "NEW LUCERNE" 0356.421, 20"x18" VITREOUS CHINA, WALL HUNG WITH SINGLE CENTER HOLE FOR FAUCET, AMERICAN STANDARD 7723.018 OFFSET TAILPIECE ASSEMBLY WITH GRID DRAIN. SUPPLY WITH ANGLE STOPS, ADJ. CHROME PLATED CAST BRASS TRAP WITH CO, WADE WS20-D FLOOR MOUNTED CARRIER WITH CONCEALED ARMS ONLY, WHERE BRACKET WILL NOT BE ACCEPTABLE. INSTALL TAILPIECE, TRAP, TRAP-ARM AND SUPPLIES PARALLEL AS TIGHT AS POSSIBLE TO WALL FOR WHEELCHAIR USE. INSULATE AS PER SPEC. PROVIDE WITH SLOAN MODEL SF-2450 ELECTRONIC SENSOR ACTIVATED HANDWASHING FAUCET WITH BATTERY POWERED INFRARED SENSOR WITH ADJUSTABLE RANGE, 4" CENTERSET, SINGLE TEMPERATURE WATER SUPPLY CONNECTION AND 2.2 GPM VANDAL RESISTANT AERATOR, AND ADA COMPLIANT.
SINK	SK-A	SINK (ADA COMPLIANT, UNDERMOUNT, SINGLE COMPARTMENT, CENTER REAR DRAIN) - FURNISHED BY ALDI VENDOR WITH COUNTERTOP; INSTALLED BY CONTRACTOR. ASSEMBLY AMERICAN STANDARD 7175.002 GOOSENECK TYPE FAUCET WITH 8" SPOUT, AERATOR & WRISTBLADE HANDLES. 17 GA. C.P. BRASS CONTINUOUS WASTE. ADJ. CHROME PLATED CAST BRASS TRAP. INSULATE AS PER SPEC.
GARBAGE DISPOSAL	GD-A	GARBAGE DISPOSAL - INSINKERATOR #BADGER 500 PLUS, 1/2 HP, 120V, 60HZ, 5.5A
DISHWASHER	DW-A	DISHWASHER - FURNISHED BY ALDI.
DISHWASHER AIR GAP ASSEMBLY	AG-1	5/8" O.D. INLET x 7/8" O.D. OUTLET DISHWASHER AIR GAP ASSEMBLY WITH STAINLESS STEEL CAP; BRASSCRAFT #BC9441
MOP BASIN	MB-A	MOP BASIN - FIAT MSB-2424, 24"x24"x10", MOLDED STONE INTEGRAL 3" DRAIN AND STAINLESS STEEL STRAINER. AMERICAN STANDARD 8344.112 FAUCET WITH VACUUM BREAKER, COLOR INDEX, BUTTON STOPS, CHROME FINISH AND 6' HOSE. DEEP SEAL TRAP.
WATER HAMMER SHOCK ABSORBER	SA-A	WATER HAMMER DEVICES EQUAL TO PPP INC. SIZED PER LINE SIZE AND FIXTURE UNITS.
ELECTRIC WATER HEATER	EWH-1	ELECTRIC WALL MOUNTED WATER HEATER PRESTIGE 19PHPOU, 19.9 GALLON CAPACITY, 2.0 KW, 120 VOLTS, 1 PHASE, U.L. LISTED, GLASS LINED TANK, THERMOSTAT, MAGNESIUM ANODE ROD, HIGH TEMPERATURE CUT-OFF, BRASS DRAIN VALVE AND T & P RELIEF VALVE. PIPE RELIEF VALVE DOWN TO MOP BASIN, MAX. 26" HIGH, WITH SIDE CONNECTIONS. UNIT SHALL CONFORM TO ASHRAE 90 OR LATEST VERSION.
EXPANSION TANK		AMTROL THERM-X-TROL ST-5, 2.1 GAL, MAX ACCEP. FACTOR .43.
RE-CIRCULATION PUMP	RP-1	ASTRO 205BS0SO, 1/4 HP HOT WATER RE-CIRCULATION SYSTEM
TEMPERATURE MIXING VALVE	MV-A	MIXING VALVE WATTS MODEL LFMMV, ¾", 4.0 PSI PRESSURE DROP AT 2.0 GPM WITH RANGE TEMPERATURE OF 80ºF TO 120ºF, SET VALVE AT A MAXIMUM OF 110ºF. VALVE TO BE INSTALLED AT EACH LAVATORY AND BREAKROOM SINK AND SHALL MEET ASSE STANDARD 1070. VALVE TO BE A CSA LABELED CSA B125 CERTIFIED. VALVE SHALL BE BRONZE BODY WITH INTEGRAL CHECKS, FILTER WASHERS AND AN ADJUSTMENT CAP WITH LOCKING FEATURE. THE VALVE SHALL BE APPROVED FOR 0.5 GPM WATERFLOW IN ACCORDANCE WITH THE LATEST ASSE-1017 AND ASSE 1070.
DRINKING FOUNTAINS	DF-A	DRINKING FOUNTAIN - ELKAY MODEL EDFP210C, SS DRINKING FOUNTAIN, WALL MOUNT WITH SAFETY BUBBLER, FRONT PUSH BAR CONTROL, LK464 DRAIN AND TRAP ASSEMBLY. MOUNT ON ELKAY MODEL MPW200 IN-WALL SUPPORT MOUNTING PLATE WITH MODEL ML-100 IN-WALL CARRIER LEGS.
	DF-B	DRINKING FOUNTAIN - ELKAY MODEL EDFP214C, SS DRINKING FOUNTAIN, WALL MOUNT WITH SAFETY BUBBLER, FRONT PUSH BAR CONTROL, LK464 DRAIN AND TRAP ASSEMBLY, BARRIER-FREE ACCESS, ADA COMPLIANT. MOUNT ON ELKAY MODEL MPW200 IN-WALL SUPPORT MOUNTING PLATE WITH MODEL ML-100 IN-WALL CARRIER LEGS.
	FOR DF-A & B	DRINKING FOUNTAIN MOUNTING EQUIPMENT - PROVIDE ELKAY MODEL MPW200 IN-WALL MOUNTING (CARRIER) PLATE FOR BI-LEVEL MOUNTING. PROVIDE ELKAY MODEL ML100 IN-WALL (CARRIER) PLATE MOUNTING LEGS, SECURE TO FLOOR.
ANTI-FREEZE WALL HYDRANT	WH-1	ANTI-FREEZE WALL HYDRANT - WOODFORD B65 WITH VACUUM BREAKER, FREEZELESS, AUTOMATIC DRAINING, FLUSH MOUNT WITH WALL BOX AND LOCKING COVER; FURNISH WITH (2) EXTRA KEYS.
ROOF HYDRANT	RH-1	WOODFORD SRH-MS - HOSE CONNECTION BACKFLOW PREVENTER. MODEL 50H WITH ¾" HOSE CONNECTION. ASSE 1052 LISTED. FIELD TESTABLE DUAL CHECK HOLDS AGAINST 125 PSI BACKFLOW PRESSURE. ¾" NPT FEMALE INLET CONNECTION. 1¼" U.S. MADE GALVANIZED PIPE. MAXIMUM WORKING PRESSURE: 100 PSI. MAXIMUM TEMPERATURE 120ºF.
FLOOR DRAIN	FD-1	FLOOR DRAIN - WADE W-1100-A, CAST IRON BODY WITH DEEP SEAL TRAP, TRAP GUARD, FLASHING COLLAR AND 6" NICKEL BRONZE ADJUSTABLE TOP, INSTALL DRAINS OUT OF LIFT TRUCK TRAFFIC WAY.
FLOOR DRAIN	FD-2	FLOOR DRAIN - WADE W-1100TS, CAST IRON BODY WITH DEEP SEAL TRAP, TRAP GUARD, FLASHING COLLAR AND 6" HEAVY DUTY CAST IRON ADJUSTABLE TOP AND GRATE, INSTALL DRAINS OUT OF LIFT TRUCK TRAFFIC WAY.
HUB DRAIN	HD-1	HUB DRAIN - OPEN-ENDED CAST IRON HUB DRAIN PIPE, FULL PIPE SIZE, WITH DEEP SEAL TRAP. PROVIDE WITH TRAP GUARD INSERT. INSTALL DRAINS OUT OF LIFT TRUCK TRAFFIC WAY.
ROOF DRAIN	RD-1	ROOF DRAIN - WADE 3000 SERIES, CAST IRON BODY POLYPROPYLENE LOCKABLE DOME WITH INTEGRAL CLAMP AND GRAVEL GUARD, OUTLET SIZE AS NOTED ON P101 WITH TY SEAL AND UNDER-DECK CLAMP.
ROOF DRAIN	RD-2	ROOF DRAIN - WADE 3000-SO SERIES, CAST IRON ROOF WITH WIDE FLANGE BODY, FLASHING RING, CAST IRON MUSHROOM DOME, OUTLET SIZE AS NOTED ON P101 WITH TY SEAL SIDE OUTLET.
FLOOR CLEANOUT CONCRETE FLOORS	DPCO	FLOOR CLEANOUT - WADE 6000-X CAST IRON CLEANOUT WITH THREADED ADJUSTABLE HOUSING, TAPERED BRASS PLUG AND ROUND SCORIATED CAST IRON HEAVY DUTY TOP MINIMUM SIZE SHALL BE LINE SIZE UP TO 4" MAXIMUM. ADJUST LOCATION TO BE READILY ACCESSIBLE AND OUTSIDE OF THE PATHWAY TO DOORS. ANSI LOAD CLASS: SPECIAL DUTY (OVER 10,000 LBS).
WALL CLEANOUT	WPCO	
REDUCED PRESSURE BACKFLOW (On VACUUM Fill Line)	RPZ-A	WATTS 3/4" LF009-QT-S LEAD FREE REDUCED PRESSURE BACKFLOW PREVENTER. 12 PSI PRESSURE LOSS @ 4 GPM(VAC. PUMP). ASSE 1013 AWWA C511-92 WITH STRAINER.
FLOOR SINK	FS-1	VACUUM SINK - FIAT MSB-2424, 24"x24"x10", MOLDED STONE INTEGRAL 3" DRAIN AND STAINLESS STEEL STRAINER.

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