



MARK	DESCRIPTION	CONNECTIONS				SPECIFICATION	NOTES
		W	V	CW	HW		
P1	WATER CLOSET FLOOR MOUNTED, FLOOR OUTLET, ELONGATED VITREOUS CHINA BOWL. DC BATTERY POWERED, SENSOR-OPERATED, 1.28 GPF FLUSH VALVE. WHITE PLASTIC OPEN FRONT SEAT WITH ANTIMICROBIAL FINISH	4"	2"	1"	N/A	BOWL: KOHLER "WELLWORTH" K-4406 FLUSH VALVE: KOHLER "TRIPPOINT" K-10956 SEAT: CHURCH 95005SCT	
P1A	WATER CLOSET - ADA COMPLIANT FLOOR MOUNTED, FLOOR OUTLET, ELONGATED VITREOUS CHINA BOWL. DC BATTERY POWERED, SENSOR-OPERATED, 1.28 GPF FLUSH VALVE. WHITE PLASTIC OPEN FRONT SEAT WITH ANTIMICROBIAL FINISH	4"	2"	1"	N/A	BOWL: KOHLER "HIGHLINE" K-4405 FLUSH VALVE: KOHLER "TRIPPOINT" K-10956 SEAT: CHURCH 95005SCT	1
E2A	URINAL - ADA COMPLIANT CARRIER-MOUNTED, REAR OUTLET, WASHOUT VITREOUS CHINA BOWL. DC BATTERY POWERED, SENSOR-OPERATED, 0.125 GPF FLUSH VALVE	2"	2"	3/4"	N/A	BOWL: KOHLER "BARDON" K-4891-ET FLUSH VALVE: KOHLER "TRIPPOINT" K-10949 CARRIER: WADE 402-AM1-M3	1, 2
E3A	LAVATORY - ADA COMPLIANT BASIN SPECIFIED BY ARCHITECT; WALL-MOUNTED, DC BATTERY POWERED, SENSOR-OPERATED, 0.5 GPM FAUCET	2"	2"	3/4"	N/A	BASIN: BASIN PROVIDED BY GC FAUCET: KOHLER "PURIST" K-111837	2, 3
E4A	ELECTRIC WATER COOLER - BLEVEL SURFACE-MOUNTED, MANUAL CONTROLS, VANDAL RESISTANT, WITH BOTTLE FILLER	2"	2"	3/4"	N/A	COOLER: ELKAY LZLST8WSVRUK	2
E6A	SHOWER TRIM - ADA COMPLIANT 1.5 GPM PRESSURE-BALANCED SHOWER VALVE, INVERTER VALVE FOR HAND SPRAY, WITH SLIDE BAR	2"	2"	3/4"	3/4"	BASIN: PROVIDED BY GC TRIM: SYMMONS "ORIGINS" S-9601-PLR-1.5-CHKS-VP DRAIN: ZURN Z14155-CP-VP	2
E7	CUSTODIAL SINK NOMINAL 24" BY 24" BY 12" DROP FRONT BASIN WITH STAINLESS STEEL CAPS ON ALL CURBS; WALL-MOUNTED FAUCET WITH LEVER HANDLES, VACUUM BREAKER, MALE HOSE THREAD OUTLET, AND PAIL HOOK	3"	2"	3/4"	3/4"	BASIN: FIAT T583000 T&S BRASS 86-0674-CR-B5TP FAUCET:	4
HY1	INTERIOR HYDRANT - RESTROOMS	N/A	N/A	3/4"	N/A	HYDRANT: WOODFORD 24-PC	5
HY2	INTERIOR HYDRANT - MECHANICAL ROOMS	N/A	N/A	3/4"	N/A	HYDRANT: WOODFORD 26-BR	6
HY3	EXTERIOR HYDRANT - ROOF	N/A	N/A	1"	N/A	HYDRANT: WOODFORD SRH-MS	
WHA	WATER HAMMER ARRESTER	N/A	N/A	N/A	N/A	ARRESTER: WATTS SERIES LF15M2	7
FD1	FLOOR DRAIN - RESTROOMS	2"	2"	N/A	N/A	DRAIN: ZURN ZN4155-VP STRAINER: 6" TYPE "S" P-TRAP: 2" DEEP SEAL	
FD2	FLOOR DRAIN - MECHANICAL ROOMS	4"	2"	N/A	N/A	DRAIN: ZURN ZN4151-TS-Y STRAINER: 9" TYPE "Y" P-TRAP: 6" DEEP SEAL	
RD1	ROOF DRAIN - PRIMARY	SEE DWG	N/A	N/A	N/A	DRAIN: ZURN ZRB104-C-VP	
RD2	ROOF DRAIN - SECONDARY	SEE DWG	N/A	N/A	N/A	DRAIN: ZURN ZRB104-C-VP-W2	
PD1	PARKING DECK ROOF DRAIN - TRAFFIC RATED	SEE DWG	N/A	N/A	N/A	DRAIN: ZURN ZN150-DB-DP-DT-VP-Y	
DN	DRAINOUT NOZZLE	SEE DWG	N/A	N/A	N/A	NOZZLE: ZURN ZAB89-SS	
WCQ	WALL CLEANOUT	SEE DWG	N/A	N/A	N/A	CLEANOUT: ZURN Z1441-BP-VP	5
FCQ	FLOOR CLEANOUT	SEE DWG	N/A	N/A	N/A	CLEANOUT: ZURN ZN1400-BP-K-VP	
GCQ	GRADE CLEANOUT	SEE DWG	N/A	N/A	N/A	CLEANOUT: ZURN ZN1400-BP-VP	9

- NOTES:**
- PROVIDE LEVER ON ACCESSIBLE SIDE OF FIXTURE.
 - REFER TO ARCHITECTURAL PLANS FOR MOUNTING HEIGHT(S).
 - PROVIDE ADA COMPLIANT INSULATION KIT UNDER FIXTURE WHERE TRIM IS EXPOSED.
 - PROVIDE WITH ACCESSORIES AS INDICATED IN DETAIL 4/PO.2
 - INSTALL AT 12" ABOVE FINISH FLOOR.
 - INSTALL AT 36" ABOVE FINISH FLOOR.
 - REFER TO DETAIL 5/PO.2 FOR SIZING AND INSTALLATION REQUIREMENTS.
 - INSTALL AT 12" ABOVE FINISH GRADE.
 - INSTALL IN AN 18" BY 18" BY 8" CONCRETE PAD WHERE LOCATED IN NATURAL (DIRT, GRASS, ETC.) OR ASPHALT SURFACES.

APPROVED MANUFACTURERS:

THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE MODEL WHICH MOST CLOSELY MATCHES THE SPECIFIED PRODUCT. PROVIDE PRODUCTS MADE BY THE MANUFACTURERS LISTED. ALL FIXTURES OF THE SAME TYPE AND/OR MATERIAL SHALL BE PROVIDED BY ONE MANUFACTURER.

VITREOUS CHINA	AMERICAN STANDARD, KOHLER, SLOAN
ELECTRIC WATER COOLERS	ELKAY, HAWS, OASIS
CUSTODIAL SINK BASINS	ACORN, FIAT, FLORESTONE
FLUSH VALVES	AMERICAN STANDARD, KOHLER, SLOAN
LAVATORY FAUCETS	CHICAGO, DELTA, KOHLER
SHOWER TRIM	CHICAGO, DELTA, SYMMONS
CUSTODIAL SINK FAUCETS	CHICAGO, ELKAY, T&S BRASS
HYDRANTS	WATTS, WOODFORD, ZURN
WATER SPECIALTIES	SILOUX CHEF, WATTS, WILKINS
WATER CLOSET SEATS	BEMIS, CHURCH, KOHLER
SUPPLIES, P-TRAPS	BRASSCRAFT, McGUIRE, ZURN
CARRIERS, DRAINS	J.R. SMITH, WADE, ZURN

MARK	DESCRIPTION	VOLUME (GAL)	GPH @ 120°F	ELECTRICAL DATA (KW, V, PH, HZ)	SPECIFICATION	NOTES
EW1	ELECTRIC, VERTICAL STORAGE	20.0	23.0	4.5 208 1 60 RHEEM ESP2		2, 3
EW2	ELECTRIC, VERTICAL STORAGE	20.0	10.0	2.0 208 1 60 RHEEM ESP20		1, 2, 3

NOTES:

- EQUIVALENT MANUFACTURERS: BRADFORD WHITE, RHEEM, STATE INDUSTRIES
- WATER HEATER SHALL MEET OR EXCEED THE NORTH CAROLINA ENERGY CONSERVATION CODE 2012 ASHRAE 90.1.
- SET OUTLET TEMPERATURE TO 110°F.

MARK	DESCRIPTION	VOLUME (GAL)	DIAMETER (IN)	HEIGHT (IN)	SPECIFICATION	NOTES
ET1	THERMAL EXPANSION TANK DIAPHRAGM TYPE	3.5	10	14	WESSELS TTA-5	1, 2, 3

NOTES:

- EQUIVALENT MANUFACTURERS: AMT, BELL & BROSSETT, WATTS.
- MOUNT SECURELY FROM STRUCTURE.
- PROVIDE WITH SHUTOFF VALVE, PRESSURE GAUGE, AIR-CHARGE FITTING, AND TANK DRAIN; PRECHARGE TO 40.0 PSIG.

MARK	DESCRIPTION	CAPACITY (GPM)	FT-HD	ELECTRICAL DATA (HP, V, PH, HZ)	SPECIFICATION	NOTES
SP	SUBMERGIBLE ELEVATOR SUMP PUMP	50	25	3/4 120 1 60	LIBERTY ELV290	1, 2, 3

NOTES:

- EQUIVALENT MANUFACTURERS: LITTLE GIANT, WELLS, ZOELLER.
- INSTALL IN ACCORDANCE WITH MANUFACTURER'S INSTRUCTIONS AND DETAIL 2/PO.2
- PROVIDE OIL DETECTION SYSTEM AND CONTROL PANEL WITH AUDIBLE AND VISUAL ALARM.

PLUMBING SPECIFICATIONS

INSULATION:

- PIPE INSULATION SHALL BE MINERAL FIBER INSULATION (ASTM C547) HAVING A MINIMUM K-FACTOR OF 0.27 BTU/H/FT² AT 75°F. PROVIDE WITH VAPOR RETARDER JACKET.
- INSULATE PIPING SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:

PIPE SIZE	INSULATION
1/2" TO 1 1/2"	1"
2" TO 4"	1 1/2"
6" TO 12"	2"
HORIZONTAL STORM DRAINAGE PIPING	ALL
- PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS, AND ADHESIVES ARE REQUIRED TO MEET A FLAME-SPREAD INDEX OF 25 OR LESS AND A SMOKE-DEVELOPED INDEX OF 50 OR LESS AS TESTED BY ASTM E84 AND SHALL BE PLENUM RATED.

DOMESTIC WATER SYSTEMS:

- UNDERGROUND PIPING: PROVIDE TYPE "K" SOFT ANNEALED SEAMLESS COPPER TUBING (ASTM B88) WITH NO JOINTS.
- ABOVEGROUND PIPING: PROVIDE TYPE "L" HARD DRAWN SEAMLESS COPPER TUBING (ASTM B88) AND CAST COPPER ALLOY FITTINGS (ASME B16.18). JOINTS SHALL BE LEAD FREE 95/5 TIN/SILVER SOLDER JOINTS (ASTM B32).

WHERE APPROVED BY THE OWNER - PROVIDE COPPER PIPE AND FITTINGS AS SPECIFIED ABOVE EXCEPT WITH GROOVED ENDS (ASTM B88, ASME B16.18) AND JOINTS UTILIZING GROOVED MECHANICAL COUPLINGS (ASTM F1478).

- PROVIDE TWO-PIECE, BRONZE OR BRASS BODY, FULL PORT, 600 PSI WOG, BALL SHUTOFF VALVES WITH BLOWOUT-PROOF STEMS AND ADJUSTABLE PACKING GLANDS. INSTALL VALVES IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISH MATERIALS. PROVIDE HANDLE EXTENSIONS WHERE INSTALLED IN INSULATED PIPING.
- PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER-PLATED. WHERE COPPER PIPING IS CARRIED ON TRAPEZE HANGERS WITH OTHER PIPING, PROVIDE A PERMANENT ELECTROLYTIC ISOLATION MATERIAL TO PREVENT CONTACT WITH DISSIMILAR METALS. ELECTRICAL TAPE OR SIMILAR ADHESIVE WRAPPING IS NOT AN APPROVED ISOLATION METHOD.
- PROTECT COPPER PIPING AGAINST CONTACT WITH ALL MASONRY. WHERE COPPER IS SLEEVED THROUGH MASONRY, PROVIDE COPPER OR RED BRASS SLEEVES. WHERE COPPER MUST BE CONCEALED IN OR AGAINST MASONRY, PROVIDE A HEAVY COATING OF ASPHALTIC ENAMEL ON THE COPPER PIPING AN 1# ASPHALT SATURATED FELT BETWEEN THE PIPING AND THE MASONRY.

SANITARY WASTE AND VENT AND STORM DRAINAGE SYSTEMS:

- UNDERGROUND PIPING: PROVIDE SERVICE WASTE CAST IRON HUB AND SPIGOT PIPE AND FITTINGS (ASTM A74) WITH NEOPRENE COMPRESSION GASKETS (ASTM C564).
- ABOVEGROUND PIPING: PROVIDE SERVICE WASTE CAST IRON HUBS AND FITTINGS (CISPI 301) WITH NEOPRENE GASKETS AND STAINLESS STEEL CLAMP JOINTS (CISPI 310).
- SLOPE SANITARY WASTE AND VENT PIPING AT 1/8" PER FOOT MINIMUM FOR PIPING 2 1/2" AND SMALLER AND 1/16" PER FOOT MINIMUM FOR PIPING 3" AND LARGER. SLOPE ALL GREASE WASTE PIPING AT 1/8" PER FOOT. SLOPE ALL STORM DRAINAGE PIPING AT 1/8" PER FOOT.
- PROVIDE CLEANOUTS AT THE BASE OF SANITARY WASTE STACKS AND AT EVERY FOUR HORIZONTAL 45° BENDS IN SERIES, AND NO FURTHER THAN 100'-0" APART IN HORIZONTAL RUNS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.
- PROVIDE FLOOR CLEANOUTS WITH TOPS DESIGNED TO MATCH SPECIFIC FLOOR FINISH GRADE. CLEANOUTS SHALL BE PROVIDED IN AN 18" BY 18" BY 6" CONCRETE PAD WHERE NOT INSTALLED IN CONCRETE SIDEWALKS.

NATURAL GAS SYSTEMS:

- UNDERGROUND PIPING: PROVIDE POLYETHYLENE PLASTIC PIPE OR STEEL PIPE (ASTM A53) WITH HEAT-FUSION FITTINGS AND JOINTS (ASTM D2513). ALL PIPE OR TUBING AND FITTINGS SHALL BE STAMPED WITH "GAS" AND "ASTM D2513" BY THE MANUFACTURER. TRANSITION FROM PLASTIC PIPE OR TUBING TO METALLIC PIPING IN RISE BELOW FINISH GRADE ON UTILITY SIDE OF MAIN.
- ABOVEGROUND PIPING: SCHEDULE 40 BLACK STEEL PIPE (ASTM A53) WITH BLACK IRON FITTINGS (ASTM B16.3) OR FORGED STEEL WELDING PIPE FITTINGS (ASTM A234). PROVIDE THREADED JOINTS FOR EXPOSED AND/OR ACCESSIBLE PIPING. PROVIDE BURNERS FOR CONCEALED AND/OR INACCESSIBLE PIPING.
- PROVIDE AGA CERTIFIED SHUTOFF VALVES, 125 PSI PERMITTED NON-LUBRICATED PLUG TYPE WITH BRONZE BODY AND BRONZE PLUG.
- SUPPORT NATURAL GAS PIPING IN ACCORDANCE WITH THE NORTH CAROLINA FUEL GAS CODE.
- PAINT ALL NATURAL GAS PIPING WITH TWO COATS OF YELLOW ENAMEL PAINT (2 MIL THICKNESS MINIMUM). IDENTIFY PIPING AT 2'-0" CENTERS FOR ALL LOW PRESSURE PIPING (0.5 PSI). IDENTIFY PIPE AT 6'-0" CENTERS FOR ALL MEDIUM PRESSURE PIPING (2.0 PSI).
- TEST ALL NATURAL GAS PIPING IN ACCORDANCE WITH THE NORTH CAROLINA FUEL GAS CODE.

PLUMBING FIXTURES AND EQUIPMENT:

- PROVIDE COMPLETE PLUMBING FIXTURES INCLUDING SUPPLIES, STOPS, VALVES, FAUCETS, DRAINS, TRAPS, TRAPCES, ELBOWS, ETC.
- WHERE WASTE PIPING IS EXPOSED IN RESTROOM AND KITCHEN AREAS, PROVIDE CHROME-PLATED BRASS PIPING, REMOVABLE P-TRAPS, AND MATCHING STOPS AND ESCUTCHEONS FOR ALL LAVATORIES AND SINKS.
- PLUMBING FIXTURES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS.

THE PLUMBING CONTRACTOR IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH SUBSTITUTIONS TO SPECIFIED PLUMBING FIXTURES AND EQUIPMENT, INCLUDING BUT NOT LIMITED TO: PROVIDING MAINTENANCE ACCESS CLEARANCE, PIPING, ELECTRICAL, REPLACEMENT OF OTHER SYSTEM COMPONENTS, BUILDING ALTERATIONS, ETC. AND ANY MODIFICATIONS TO ASSOCIATED MECHANICAL, ELECTRICAL, OR PLUMBING SYSTEMS REQUIRED BY THE FIXTURE OR EQUIPMENT'S INSTALLATION INSTRUCTIONS. ALL COSTS ASSOCIATED WITH SUBSTITUTIONS SHALL BE INCLUDED IN THE ORIGINAL BASE BID.

PLUMBING GENERAL NOTES

GENERAL REQUIREMENTS:

- PLUMBING WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NORTH CAROLINA PLUMBING CODE AND WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
- PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL PLUMBING SYSTEMS IN ACCORDANCE WITH ALL APPLICABLE CODES.
- APPLY AND PAY FOR ALL NECESSARY PERMITS, FEES, AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION. ACREAGE CHARGES, FACILITIES CHARGES AND BOND PROPERTY ASSESSMENTS ARE NOT TO BE CONSIDERED TO BE A PART OF THIS CONTRACT.
- COORDINATE ALL PLUMBING PIPING LOCATIONS, ROUGH-IN LOCATIONS, AND EQUIPMENT LOCATIONS WITH OTHER TRADES TO AVOID CONFLICTS AND INTERFERENCES. FINAL PIPING AND EQUIPMENT LOCATIONS SHALL BE A CODE COMPLIANT INSTALLATION FOR ALL TRADES.
- THE CUTTING, NOTCHING, AND BORING OF HOLES IN STRUCTURAL MEMBERS SHALL BE AS PRESCRIBED BY THE STRUCTURAL ENGINEER.
- TRENCHES INSTALLED PARALLEL TO FOOTINGS SHALL NOT EXTEND BELOW THE FORTY-FIVE (45) DEGREE BEARING PLANE OF THE FOOTING OR WALL.
- ALL PIPING SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.
- ALL VALVES, BACKFLOW PREVENTERS, BOOSTER PUMPS, ETC. SERVING THE DOMESTIC WATER SYSTEM SHALL MEET LEAD FREE STANDARDS PER ANSI/NSF 372 AND NSF 61, ANNEX G.
- PLUMBING PLANS SHALL NOT BE SCALED. REFERENCE THE ARCHITECTURAL PLANS FOR ALL LOCATIONS OF PLUMBING FIXTURES, WALLS, DOORS, WINDOWS, ETC.
- PLUMBING PIPING AND SPECIALTIES SHALL BE LOCATED CONCEALED IN WALLS, PARTITIONS OR ABOVE CEILING UNLESS NOTED OTHERWISE. PLUMBING PIPING IN EXPOSED AREAS SHALL BE RUN TIGHT TO UNDERSIDE OF STRUCTURE. PROVIDE ACCESS DOORS FOR CONCEALED SPECIALTIES.
- PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
- PLUMBING PIPING, VENTS, ETC. EXTENDING THROUGH EXTERIOR WALLS AND/OR THE ROOF SHALL BE FLASHED AND COUNTER FLASHED IN A WATERPROOF MANNER. COORDINATE FLASHING WITH THE GENERAL CONTRACTOR.
- DO NOT INSTALL PLUMBING PIPING IN AREAS SUBJECT TO FREEZING TEMPERATURES. INSTALL PLUMBING PIPING SHOWN IN EXTERIOR WALLS ON THE CONDITIONED SIDE OF THE WALL INSULATION.
- ATTACH HANGERS TO STRUCTURE. HANGERS SHALL NOT ATTACH TO FINISH FLOOR JOISTS. SUPPORT PIPING IN ACCORDANCE WITH SECTION 308 OF THE NORTH CAROLINA PLUMBING CODE.
- FIRESTOP ALL PENETRATIONS OF FIRE-RATED WALLS, FLOOR, AND PARTITIONS. PROVIDE A DEVICE SYSTEM WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THE LISTING. PROVIDE DEVICE OR SYSTEM WITH AN RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED. REFER TO ARCHITECTURAL PLANS FOR WALL AND FLOOR TYPES.
- PROVIDE PIPING LABELS FOR ALL PLUMBING PIPING. PIPING LABELS SHALL BE PLYWOOD FACED WRAP-AROUND TYPE. EACH LABEL SHALL INDICATE THE PIPING CONTENTS, DIRECTION OF FLOW, AND SHALL BEAR THE OWNER'S STANDARD NUMBER FOR THE SERVICE INDICATED.
- TEST PIPING SYSTEMS IN ACCORDANCE WITH SECTION 312 OF THE NORTH CAROLINA PLUMBING CODE.
- AFTER THE DOMESTIC WATER SYSTEMS HAVE BEEN INSTALLED AND APPROVED, THE ENTIRE SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH ANM 301.1. DURING THE DISINFECTING PROCESS, ALL VALVES, ACCESSORIES SHALL BE INDEPENDENTLY AND MANUALLY OPERATED AT LEAST THREE (3) TIMES. AFTER TESTING AND FLASHING THE DOMESTIC WATER SYSTEMS, THE CONTRACTOR SHALL SUBMIT THE DISINFECTION REPORT TO A THIRD PARTY TESTING LABORATORY FOR APPROVAL PRIOR TO REQUESTING A CERTIFICATE OF OCCUPANCY.
- THE CONTRACTOR SHALL EXPRESSLY AND COMPLETELY FOLLOW THE MANUFACTURER'S INSTRUCTIONS REQUIRED FOR VALIDATION OF THE MANUFACTURER'S WARRANTY, INCLUDING BUT NOT LIMITED TO SERVICE, MAINTENANCE, AND ADJUSTMENT OF THE EQUIPMENT.
- THE CONTRACTOR SHALL GUARANTEE ALL WORK, MATERIALS, AND EQUIPMENT FURNISHED AGAINST DEFECTS, LEAKS, PERFORMANCE, AND NONOPERATION FOR A PERIOD OF ONE (1) YEAR AFTER THE DATE OF THE OWNER'S FINAL ACCEPTANCE, OR AS INDICATED IN THE GENERAL CONDITIONS. DEFECTS SHALL BE INTERPRETED AS DEFECTIVE MATERIALS OR EQUIPMENT OR UNSATISFACTORY INSTALLATION AND ARE NOT INTENDED TO APPLY TO ORDINARY WEAR AND TEAR. THE CONTRACTOR SHALL PAY FOR ANY REPAIRS OR REPLACEMENTS CAUSED BY THESE DEFECTS WITHIN THE PERIOD COVERED BY THE GUARANTEE, INCLUDING ALL INCIDENTAL WORK REQUIRED TO FIX THE DEFICIENCY.

PLUMBING LEGEND

NEW PIPING	ABBR.	DESCRIPTION
----	CW	COLD WATER PIPING
----	HW	HOT WATER PIPING
----	W	SANITARY WASTE PIPING
----	GW	GREASE WASTE PIPING
----	V	SANITARY VENT PIPING
----	PRD	PRIMARY ROOF DRAIN PIPING
----	SRD	SECONDARY ROOF DRAIN PIPING
----	D	DRAIN
----	G	NATURAL GAS SUPPLY PIPING
----	ED	ELBOW DOWN
----	T	TEE BOTTOM CONNECTION
----	EL	ELBOW UP
----	PC	PIPE CONTINUATION
----	PC	PIPE CAP
----	RV	RUN VALVE
----	FC	FLOOR CLEANOUT
----	WC	WALL CLEANOUT
----	GC	GRADE CLEANOUT
----	FD	FLOOR DRAIN
----	RD	ROOF DRAIN
----	HY	HYDRANT
----	WHA	WATER HAMMER ARRESTER
----	TM	THERMOMETER
----	PG	PRESSURE GAUGE

ADDITIONAL ABBREVIATIONS

ABBREVIATION	DESCRIPTION	UNIT	ABBREVIATION	DESCRIPTION	UNIT
AFC	KILOWATT	KW	MAX	MAXIMUM	
AFF	MINIMUM		MIN	MINIMUM	
AFG	NOT IN CONTRACT		NSC	NOT TO SCALE	
BFF	POUNDS PER SQUARE INCH	PSI	NTS	NOT TO SCALE	
BFG	TEMPERATURE AND PRESSURE	T&P			
BTU/H	BRITISH THERMAL UNIT PER HOUR	BTU/H			
CFT	CUBIC FEET PER HOUR	CFT/H			
DFU	DRAINAGE FIXTURE UNIT	DFU			
DN	TYPICAL				
DN	VENT TERMINAL THROUGH ROOF	VTR			
DN	WATER SUPPLY FIXTURE UNITS	WSFU			
GPC	GALLONS PER CYCLE	GPC			
GPF	ELECTRICAL CONTRACTOR	EC			
GPH	FIRE ALARM CONTRACTOR	FC			
GPM	GENERAL CONTRACTOR	GC			
HP	MECHANICAL CONTRACTOR	MC			
IE	PLUMBING CONTRACTOR	PC			
"	SPRINKLER CONTRACTOR	SC			

2012 NORTH CAROLINA ENERGY CONSERVATION CODE
COMMERCIAL ENERGY EFFICIENCY - PLUMBING SUMMARY

501.1 METHOD OF COMPLIANCE

2012 NCECC CHAPTER 5
 COMCHECK PROVIDED (2012 NCECC)

ASHRAE 90.1-2010 PRESCRIPTIVE
 COMCHECK PROVIDED (90.1-2010)

ASHRAE 90.1-2010 PERFORMANCE
 ENERGY MODELING DATA PROVIDED

501.2 APPLICATION COMPLIANCE

506.2.1 EFFICIENT MECH EQUIPMENT
 506.2.4 HI EFFICIENCY DOMESTIC HW

506.2.2 REDUCED LTG DENSITY
 506.2.5 ONSITE RENEWABLE ENERGY

506.2.3 ENERGY RECOVERY SYSTEMS
 506.2.6 DAYLIGHTING CONTROLS

504.2 SERVICE WATER-HEATING EQUIPMENT PERFORMANCE EFFICIENCY

SYSTEM DESCRIPTION - ELECTRIC WATER HEATER **EW11**

STORAGE WATER HEATERS, ELECTRIC:

SIZE CATEGORY (≤ 12 KW):	4.5 KW
STORAGE TOTAL:	20 GALLONS
MINIMUM ENERGY FACTOR REQUIRED:	0.97 - 0.00132 X 20 = 0.9436
ENERGY FACTOR OF SPECIFIED HEATER(S):	0.95

504.2 SERVICE WATER-HEATING EQUIPMENT PERFORMANCE EFFICIENCY

SYSTEM DESCRIPTION - ELECTRIC WATER HEATER **EW12**

STORAGE WATER HEATERS, ELECTRIC:

SIZE CATEGORY (≤ 12 KW):	2.0 KW
STORAGE TOTAL:	20 GALLONS
MINIMUM ENERGY FACTOR REQUIRED:	0.97 - 0.00132 X 20 = 0.9436
ENERGY FACTOR OF SPECIFIED HEATER(S):	0.95

SYSTEM DESIGN SUMMARIES

PLUMBING SYSTEM	TOTAL FIXTURE UNITS	PEAK DEMAND FLOW
SANITARY WASTE	121.00 DFM	N/A
DOMESTIC WATER SUPPLY	207.50 WSFU	91.65 GPM

REVISIONS

NO.	DATE	DESCRIPTION
1	2016-08-17	UTILITY COORD.