SEISMIC RESTRAINT NOTES

1. THIS IS A SEISMIC SITE CLASS D, AND DESIGN CATEGORY C PROJECT.
2. PROVIDE DESIGN AND INSTALLATION OF SEISMIC RESTRAINT ELEMENTS FOR THE PLUMBING SYSTEM(S) IN COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF THE 2018 NORTH CAROLINA BUILDING CODE AND ASCE 7-10, CHAPTER 13. REFER TO THE STRUCTURAL DESIGN CRITERIA ON SHEET S001 FOR THE SITE'S SEISMIC DESIGN CATEGORY (B, C OR D).
3. REFER TO THE LATEST EDITION OF THE "SEISMIC RESTRAINT MANUAL GUIDELINES FOR MECHANICAL SYSTEMS" PUBLISHED BY SMACNA TO DETERMINE THE CORRECT RESTRAINTS FOR PIPING.
4. PROVIDE CALCULATIONS AND PREPARE SHOP DRAWINGS FOR THE SPECIFIC METHODS OF SEISMIC RESTRAINT TO BE USED IN ACCORDANCE WITH ASCE 7-10, CHAPTER 13. REQUIRED RESTRAINT DEVICES, MATERIALS, AND SUPPLEMENTARY FRAMING SHALL BE AN INTEGRAL PART OF THE DESIGN AND INCLUDED IN THE SHOP DRAWINGS. PROVIDE ISOLATORS, SEISMIC MOUNTS, RESTRAINTS, ETC. AS NECESSARY TO COMPLY WITH ALL APPLICABLE REQUIREMENTS.
5. CALCULATIONS SHALL BE PREPARED BY A CERTIFIED OR LICENSED PROFESSIONAL WITH A MINIMUM 5 YEARS OF EXPERIENCE IN THE DESIGN AND SPECIFICATION OF SEISMIC RESTRAINT SYSTEMS.
6. SUBMIT CALCULATIONS AND SHOP DRAWINGS TO THE ARCHITECT, ENGINEER, AND LOCAL AUTHORITY HAVING JURISDICTION FOR REVIEW AND APPROVAL.
7. COPIES OF THE APPROVED RESTRAINT SYSTEM(S) INSTALLATION MANUAL SHALL BE ON THE JOBSITE PRIOR TO INSTALLATION.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY REQUIRED SPECIAL INSPECTIONS AND ASSOCIATED DOCUMENTATION. THE CONTRACTOR SHALL PROVIDE VERIFICATION IN WRITING OF COMPLIANCE WITH THE APPROVED SHOP DRAWINGS.
9. REVIEW AND APPROVAL OF THE SHOP DRAWINGS AND CALCULATIONS BY THE ARCHITECT/ENGINEER/ SHALL NOT RELIEVE THE CONTRACTOR OF HIS RESPONSIBILITY TO COMPLY WITH SEISMIC OR OTHER REQUIREMENTS OF THE 2018 NORTH CAROLINA BUILDING CODE AND ASCE 7-10.

COORDINATION DRAWINGS

PER SPECIFICATION SECTION 01 31 00 PROJECT MANAGEMENT AND COORDINATION, THE MECHANICAL CONTRACTOR SHALL ORGANIZE COORDINATION MEETINGS TO DEVELOP A SET OF COORDINATION DRAWINGS WITH ALL CONTRACTORS (ELECTRICAL, MECHANICAL, PLUMBING, FIRE PROTECTION, IT/DATA, AND GENERAL CONTRACTOR). THE MECHANICAL CONTRACTOR WILL HAVE THE LEAD RESPONSIBILITY FOR THE COORDINATION DRAWINGS. THE MECHANICAL CONTRACTOR SHALL PRODUCE THE ORIGINAL DRAWINGS AND FORWARD THE DRAWINGS TO EACH OF THE OTHER CONTRACTORS FOR THEM TO ADD THEIR SYSTEMS TO THIS SET OF COORDINATION DRAWINGS. THE CONTRACTORS WILL DEVELOP THE DRAWINGS IN THIS ORDER: MECHANICAL, FIRE PROTECTION, PLUMBING, ELECTRICAL, IT/DATA, AND GENERAL. THIS SHALL ALSO BE THE ORDER OF PRECEDENCE FOR INSTALLATION OF SYSTEMS. ANY RELOCATION OF SYSTEM ROUTINGS WILL BE FOUND IN THE COORDINATION PHASE AND NOTICED BY EACH OF THE CONTRACTORS. THESE DRAWINGS, WHEN COMPLETED, SHALL BE SIGNED OFF BY ALL OF THE ABOVE LISTED PARTIES. DRAWINGS SHALL BE COMPLETED PRIOR TO FABRICATION AND INSTALLATION OF DUCTWORK AND PIPING SYSTEMS, OR PURCHASE OF EQUIPMENT. THE FOLLOWING ITEMS REPRESENT THE MINIMUM REQUIREMENTS AND COORDINATION DRAWINGS:

1. ALL COORDINATION DRAWINGS WILL BE PRODUCED AT 1/4"= 1'-0 SCALE.
2. COORDINATION DRAWINGS WILL BE DISTRIBUTED ON REPRODUCIBLE MATERIAL 48"X36".
3. COORDINATION DRAWINGS ARE NOT SHOP DRAWINGS AND ARE REQUIRED IN ADDITION TO SHOP DRAWINGS.
4. ONCE THE COMPLETE COORDINATION DRAWINGS HAVE BEEN COMPILED, THE MECHANICAL CONTRACTOR WILL DISTRIBUTE ONE SIGNED SET TO EACH OF THE FOLLOWING CONTRACTORS: ELECTRICAL, PLUMBING, FIRE PROTECTION, AND GENERAL. ADDITIONAL SETS WILL BE SENT TO THE OWNER, ARCHITECT, AND ENGINEER.

PLUMBING MATERIALS AND NOTES

DOMESTIC WATER PIPING:

1. DOMESTIC WATER PIPING AND JOINTS BELOW GRADE (BELOW FLOOR)
   PIPING 4" AND LARGER:
   A. PROVIDE DUCTILE IRON PIPE AND FITTINGS (AWWA C151, AWWA C110) WITH RUBBER GASKET JOINTS AND RODS (AWWA C111).
   PIPING 3" TO 1¼":
   A. PROVIDE TYPE 'K' HARD DRAWN OR ANNEALED COPPER TUBING (ASTM B 88) WITH WROUGHT COPPER FITTINGS AND BRAZED JOINTS – OR – PRESS CONNECT FITTINGS AND JOINTS (WITH APPROVAL OF AUTHORITY HAVING JURISDICTION).
   PIPING 1" AND SMALLER:
   A. PROVIDE TYPE 'K' SOFT ANNEALED COPPER TUBING (ASTM B 88) WITH NO JOINTS.
2. DOMESTIC WATER PIPING AND JOINTS ABOVE GRADE (ABOVE FLOOR)
   PIPE 2½" AND LARGER:
   A. TYPE 'L' HARD DRAWN SEAMLESS COPPER TUBING (ASTM B 88) AND CAST COPPER ALLOY FITTINGS (ASME B16.18). WITH BCUP SILVER/PHOSPHORUS/COPPER BRAZED JOINTS (AWS A5.8).
   B. COPPER PIPE AND FITTINGS AS SPECIFIED ABOVE EXCEPT WITH GROOVED ENDS (ASTM B 88, ASME B16.18) AND JOINTS UTILIZING GROOVED MECHANICAL COUPLINGS MEETING ASTM F1476.

   PIPE 2" AND SMALLER:
   A. TYPE 'L' HARD DRAWN SEAMLESS COPPER TUBING (ASTM B 88) AND CAST COPPER ALLOY FITTINGS (ASME B16.18) WITH LEAD FREE 95-5 TIN/SILVER SOLDER JOINTS (ASTM B 32)
3. STERILIZE THE DOMESTIC WATER SYSTEM IN ACCORDANCE WITH THE AMERICAN WATER WORKS ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
4. INSULATE DOMESTIC WATER PIPING ABOVE GRADE (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES) WITH GLASS FIBER INSULATION HAVING A VAPOR BARRIER AND JACKET. PIPE INSULATION SHALL HAVE A CONDUCTIVITY NOT EXCEEDING 0.27 BTUH x SQ. FT. FOLLOW SCHEDULE BELOW:

SERVICE TYPE	PIPE SIZES	INSULATION THICKNESS
DOMESTIC HOT WATER & CIRCULATION	½" – 1¼"	1"
DOMESTIC HOT WATER & CIRCULATION	1½" – 4"	1½"
DOMESTIC COLD WATER	½" – 1¼"	½"
DOMESTIC COLD WATER	1½" – 4"	1"

5. DOMESTIC WATER PIPING INSULATION, JACKETS, COVERINGS, SEALERS, MASTICS AND ADHESIVES ARE REQUIRED TO MEET A FLAME-SPREAD RATING OF 25 OR LESS AND A SMOKE-DEVELOPED RATING OF 50 OR LESS, AS TESTED BY ASTM E84 (NFPA 255) METHOD AND SHALL BE PLENUM RATED, PROVIDE PVC JACKET FOR EXPOSED PIPING IN MECHANICAL ROOMS.
6. PROVIDE TWO-PIECE, BRONZE OR BRASS BODY, FULL PORT, 600 PSI WOG, BALL TYPE SHUT-OFF VALVES WITH BLOW-OUT PROOF STEMS AND ADJUSTABLE PACKING GLANDS. VALVES SHALL BE LEAD FREE PER NSF 61, ANNEX G REQUIREMENTS. INSTALL VALVES IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.
7. 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 OTHER METALS.
8. 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 PARTITIONS, PROVIDE A HEAVY COATING OF ASPHALTIC ENAMEL ON THE COPPER PIPING AND 15# ASPHALT SATURATED FELT BETWEEN THE PIPING AND MASONRY.
9. DOMESTIC WATER PIPING SHALL BE SLOPED FOR DRAINAGE WITH DRAIN VALVES INSTALLED AT LOW POINTS.
10. DO NOT INSTALL ANY PIPING EXPOSED ON CMU WALLS.
11. DOMESTIC WATER SUPPLY PIPING SHALL BE TESTED AND PROVED WATERTIGHT UNDER A WATER PRESSURE OF NO LESS THAN THE WORKING PRESSURE OF THE SYSTEM, OR AN AIR TEST OF NO LESS THAN ONE-HUNDRED (100) PSI. THIS PRESSURE SHALL BE HELD FOR AT LEAST FIFTEEN (15) MINUTES. WATER USED IN TESTING SHALL BE OBTAINED FROM A POTABLE SOURCE OF SUPPLY.
12. BALANCE THE DOMESTIC HOT WATER CIRCULATION SYSTEM TO THE PERFORMANCE SPECIFICATIONS INDICATED ON THE PLANS.

SANITARY WASTE, VENT AND STORM DRAIN PIPING:

1. PIPING BELOW GRADE:
   A. SERVICE WEIGHT CAST IRON HUB AND SPIGOT PIPE (ASTM A 74) WITH COMPRESSION JOINTS (CISPI HSN) AND NEOPRENE GASKETS (ASTM C 564)
   B. SERVICE WEIGHT CAST IRON NO-HUB PIPE AND FITTINGS (CISPI 301) WITH NEOPRENE GASKET AND STAINLESS STEEL CLAMP JOINTS (CISPI 310)
   C. OPTION: SCHEDULE 40 PVC PIPE AND SOCKET FITTINGS (ASTM D 2665) WITH SOLVENT WELD JOINTS (ASTM D2855). INSTALL PLASTIC PIPE BELOW GRADE PER ASTM D2321. FOAM/CELLULAR CORE PVC PIPE IS NOT APPROVED.
2. PIPING ABOVE GRADE:
   A. SERVICE WEIGHT CAST IRON NO-HUB PIPE AND FITTINGS (CISPI 301) WITH NEOPRENE GASKET AND STAINLESS STEEL CLAMP JOINTS (CISPI 310)
   NOTE: HVAC SYSTEM UTILIZES CEILING CAVITIES AS RETURN PLENUMS. NO PLASTIC (PVC) PIPING IS PERMITTED IN THE PLENUMS
3. SLOPE SANITARY WASTE AND STORM DRAIN PIPING AT ¼" PER FOOT MINIMUM FOR PIPING 2½" AND SMALLER AND ⅛" PER FOOT MINIMUM FOR PIPING 3" AND LARGER UNLESS NOTED OTHERWISE.
4. PROVIDE CLEAN-OUTS AT THE BASE OF SANITARY WASTE STACKS AND STORM DRAIN RISERS AND AT EVERY TURN IN PIPING IN EXCESS OF 45° AND NO FURTHER THAN 100'-0" APART IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS.
5. PROVIDE FLOOR CLEANOUTS WITH TOPS DESIGNED TO MATCH SPECIFIC FLOOR FINISHES SUCH AS CARPET, TILE, ETC. YARD CLEANOUTS SHALL BE PROVIDED IN AN 18"x18"x6" CONCRETE PAD.
6. WHERE WASTE PIPING IS EXPOSED IN REST ROOM AREAS, PROVIDE CHROME PLATED BRASS PIPING, REMOVABLE P-TRAPS, MATCHING STOPS AND ESCUTCHEONS FOR ALL LAVATORIES.

NATURAL GAS PIPING:

1. NATURAL GAS PIPING AND FITTINGS ABOVE GRADE: SCHEDULE 40 BLACK STEEL PIPING, TYPE S, SEAMLESS, GRADE B (ASTM A 53) AND 150 PSI MALLEABLE BLACK IRON FITTINGS, GRADE 32510, (ASTM B 16.3) OR FORGED STEEL WELDING TYPE FITTINGS (ASTM A234). PROVIDE THREADED JOINTS FOR PIPE 2" AND SMALLER. PROVIDE WELDED JOINTS (ASME B31.9) FOR PIPE 2½" AND LARGER.
2. SPACE GAS PIPING HANGER RODS 7'-0" ON CENTER MAXIMUM AND SPACE TRANSVERSE BRACING 20'-0" ON CENTER MAXIMUM. TRANSVERSE BRACING FOR ONE SECTION MAY ACT AS LONGITUDINAL BRACING FOR THE PIPE SECTION CONNECTED TO IT IF THE BRACING IS INSTALLED WITHIN 24" OF THE ELBOW OR TEE. COORDINATE HANGER LOCATIONS WITH STRUCTURAL DRAWING DETAILS.
3. PROVIDE A.G.A. CERTIFIED SHUT-OFF VALVES MINIMUM, 125 PSI RATED, NON- LUBRICATED PLUG TYPE WITH BRONZE BODY AND BRONZE PLUG, STRAINERS AND REGULATORS (AS RECOMMENDED BY THE EQUIPMENT MANUFACTURER) FOR ALL EQUIPMENT CONNECTED TO THE NATURAL GAS SYSTEM.
4. GAS PRESSURE REGULATORS SHALL COMPLY WITH ANSI Z21.80. PRESSURE REGULATOR SHALL MAINTAIN DISCHARGE PRESSURE SETTING DOWNSTREAM AND NOT EXCEED 150 PERCENT OF DESIGN DISCHARGE PRESSURE AT SHUTOFF. OVERPRESSURE PROTECTION DEVICE SHALL BE FACTORY MOUNTED ON REGULATOR. WHEN USING VENTLESS REGULATORS, MOUNT REGULATOR IN A HORIZONTAL UPRIGHT POSITION. IF VENTED TYPE REGULATORS ARE USED, INSTALL VENT PIPING (FULL SIZE OPENING) FROM GAS PRESSURE REGULATORS TO OUTDOORS AND TERMINATE IN WEATHERPROOF HOOD.
5. LABEL GAS PIPING ABOVE LAY-IN CEILINGS AND/OR IN MECHANICAL ROOMS. PROVIDE LABELS INDICATING GAS SUPPLY PRESSURE ON ALL MAINS AND DOWNSTREAM OF PRESSURE REGULATORS.

COMPRESSED AIR PIPING:

1. HARD DRAWN SEAMLESS COPPER TUBING (ASTM B 88), TYPE 'L' AND WROUGHT COPPER FITTINGS (ASME B16.22). JOINTS SHALL BE 95-5 TIN/SILVER SOLDER JOINTS (ASTM B 32).
2. SCHEDULE 40 BLACK STEEL (ASTM A53/A53M) WITH MALLEABLE IRON FITTINGS (ASME B16.3) OR FORGED STEEL WELDING TYPE (ASTM A234/A234M). JOINTS SHALL BE THREADED FOR 2 INCH AND SMALLER, WELDED FOR 2½ INCH AND LARGER.

PLUMBING GENERAL NOTES

GENERAL REQUIREMENTS:

1. PLUMBING WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE NORTH CAROLINA STATE PLUMBING CODE AND WITH THE REQUIREMENTS OF THE LOCAL AUTHORITY HAVING JURISDICTION.
2. SCOPE: PROVIDE ALL LABOR, MATERIAL AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL PLUMBING SYSTEMS IN ACCORDANCE WITH ALL APPLICABLE CODES.
3. PERMITS: 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 CONSTRUED TO BE A PART OF THIS CONTRACT.
4. WARRANTY: PROVIDE A ONE YEAR WARRANTY, FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER, FOR ALL PLUMBING MATERIALS AND EQUIPMENT.
5. 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.
6. FIELD VERIFY PROPER OPERATION OF EXISTING SYSTEMS BEFORE STARTING CONSTRUCTION. NOTIFY THE ARCHITECT / ENGINEER OF RECORD OF ANY PROBLEMS OR DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS AND/OR ANY POTENTIAL PROBLEMS OBSERVED BEFORE CONTINUING WORK IN THE EFFECTED AREAS.
7. WHERE DISCREPANCIES ARE FOUND IN THE DRAWINGS AND SPECIFICATIONS THE MORE STRINGENT SHALL APPLY. CONTACT ENGINEER FOR CLARIFICATION.
8. ALL PIPING SHALL BE MANUFACTURED IN THE UNITED STATES OF AMERICA.
9. 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.
10. CUT WALLS, FLOORS AND CEILINGS AS REQUIRED FOR INSTALLATION OF PLUMBING WORK. ALL CUTTING SHALL BE HELD TO A MINIMUM. PATCH AND FINISH SURFACES TO MATCH ADJOINING SURFACES. REFER TO DIVISION 01 OF THE PROJECT MANUAL.
11. PLUMBING PLANS SHALL NOT BE SCALED. REFERENCE THE ARCHITECTURAL PLANS FOR ALL LOCATIONS OF PLUMBING FIXTURES, WALLS, DOORS, WINDOWS, ETC.
12. PLUMBING PIPING AND SPECIALTIES SHALL BE LOCATED CONCEALED IN WALLS, PARTITIONS OR ABOVE CEILINGS UNLESS NOTED OTHERWISE. PLUMBING PIPING IN EXPOSED AREAS SHALL BE RUN TIGHT TO UNDERSIDE OF STRUCTURE. PROVIDE ACCESS DOORS FOR CONCEALED SPECIALTIES.
13. PLUMBING PIPING, VENTS, ETC. EXTENDING THROUGH EXTERIOR WALLS AND/OR THE ROOF SHALL BE FLASHED AND COUNTER FLASHED IN A WATERPROOF MANNER PER THE REQUIREMENTS OF THE ROOFING MANUFACTURER. COORDINATE FLASHING WITH THE GENERAL CONTRACTOR.
14. DO NOT INSTALL PLUMBING PIPING IN AREAS SUBJECT TO FREEZING TEMPERATURES. INSTALL PLUMBING PIPING AS SHOWN IN EXTERIOR WALLS ON THE CONDITIONED SIDE OF THE WALL INSULATION.
15. PROVIDE NON-CONDUCTING DIELECTRIC UNIONS WHENEVER CONNECTING DISSIMILAR METALS.
16. ATTACH HANGERS TO STRUCTURE, HANGERS SHALL NOT ATTACH TO THE DECK. PROVIDE SECONDARY SUPPORTS AS NECESSARY FOR A PROPER INSTALLATION.
17. PROVIDE ACCESS DOORS FOR VALVES, WATER HAMMER ARRESTORS, TRAP PRIMERS, ETC. CONCEALED IN MASONRY WALLS, GYPBOARD WALLS AND/OR CEILINGS THAT WILL REQUIRE MAINTENANCE ACCESS. COORDINATE SIZE AND LOCATION WITH ARCHITECT.
18. PLUMBING SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO: PLUMBING FIXTURES AND EQUIPMENT, FIRE STOPPING, SEISMIC BRACING, PIPE IDENTIFICATION, DOMESTIC WATER SYSTEM, SANITARY WASTE AND VENT SYSTEM, STORM DRAIN SYSTEM, NATURAL GAS SYSTEM AND COMPRESSED AIR SYSTEM.

PLUMBING FIXTURES AND EQUIPMENT:

1. PROVIDE COMPLETE PLUMBING FIXTURES AND EQUIPMENT. INCLUDE SUPPLIES, STOPS, VALVES, FAUCETS, DRAINS, TRAPS, TAIL PIECES, ESCUTCHEONS, ETC.
2. PLUMBING FIXTURES AND EQUIPMENT SHALL BE INSTALLED PER THE MANUFACTURER'S RECOMMENDATIONS AND INSTALLATION INSTRUCTIONS.
3. NO PRIVATE LABELED MATERIALS WILL BE ACCEPTED AS EQUALS TO PRODUCTS SPECIFIED HEREIN.
4. 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 EQUIPMENTS INSTALLATION INSTRUCTIONS. ALL COSTS ASSOCIATED WITH SUBSTITUTIONS SHALL BE INCLUDED IN THE ORIGINAL BASE BID.
5. PROVIDE CONCRETE HOUSEKEEPING PADS FOR ALL FLOOR MOUNTED PLUMBING EQUIPMENT.

FIRE STOPPING:

1. FIRE STOP ALL PENETRATIONS, BY PIPING OR CONDUITS, OF FIRE RATED WALLS, FLOORS AND PARTITIONS. PROVIDE A DEVICE(S) OR SYSTEM(S) WHICH HAS BEEN TESTED AND LISTED AS COMPLYING WITH ASTM E-814 AND INSTALL IN ACCORDANCE WITH THE CONDITIONS OF THEIR LISTING. PROVIDE A DEVICE(S) OR SYSTEM(S) WITH AN 'F' RATING EQUAL TO THE RATING OF (PER U.L.) OF THE ASSEMBLY BEING PENETRATED. REFER TO ARCHITECTURAL PLANS FOR WALL AND FLOOR TYPES.

PIPE IDENTIFICATION:

1. PIPE IDENTIFICATION SHALL MATCH THE FACILITY'S EXISTING STANDARD. IF NO STANDARD EXISTS, THEN THE PIPE IDENTIFICATION SHALL BE IN ACCORDANCE WITH ANSI A13.1.
2. PROVIDE PIPING LABELS FOR ALL PLUMBING PIPING. PIPING LABELS SHALL BE ACRYLIC FACED, WRAP-AROUND TYPE. EACH LABEL SHALL INDICATE THE PIPING CONTENTS, DIRECTION OF FLOW AND SHALL BEAR THE MANUFACTURER'S STANDARD COLOR FOR THE SERVICE INDICATED.

FLOW TEST DATA

DATE	LOCATION	PRESSURE		FLOW (GPM)
		STATIC (PSI)	RESIDUAL (PSI)	
09/28/20	CITY OF CLINTON PUBLIC UTILITIES	52	48	1100

FLOW TEST NOTES:
1. REFER TO CIVIL SITE UTILITY PLANS FOR EXACT LOCATION OF FIRE HYDRANTS.

PLUMBING LOAD SUMMARY

LOAD	FIXTURE UNITS	FLOW
SANITARY WASTE	115 DFU	–
DOMESTIC WATER	280 SFU	105 GPM

SHOCK ARRESTOR TABLE

DRAWING SYMBOL	FIXTURE UNITS	PDI WH201 STANDARD DESIGNATION	ARRESTOR SIZE	APPROVED MANUFACTURERS
SA-A	1-11	A	½"	– SIOUX CHIEF – WATTS – PPP INC.
SA-B	12-32	B	¾"	
SA-C	33-60	C	1"	
SA-D	61-113	D	1¼"	REMARKS
SA-E	114-154	E	1½"	INSTALL SHOCK ARRESTORS PER PDI WH201 GUIDELINES
SA-F	155-330	F	2"	

PLUMBING LEGEND

NEW PIPING	ABBR.	DESCRIPTION
——	CW	COLD WATER PIPING
— —	HW	HOT WATER PIPING
— — —	HWR	HOT WATER RETURN PIPING
——	W	SANITARY WASTE PIPING
— — — —	V	SANITARY VENT PIPING
—— GW ——	GW	GREASE LADEN WASTE PIPING
—— OIL/WATER ——	–	OIL/WATER WASTE PIPING
—— SD ——	SD	STORM DRAIN PIPING – BEL. GRADE
—— CA ——	CA	COMPRESSED AIR
—— D ——	D	DRAIN
	–	ELBOW DOWN
	–	ELBOW UP
	–	PIPE CONTINUES
	–	PIPE CAP
	–	BALL VALVE
	CV	CHECK VALVE
	BV	BALANCING VALVE / CIRCUIT SETTER
	–	GAS COCK
	PRV	PRESSURE REDUCING/REGULATING VALVE
	–	IN-LINE PUMP
	–	DIRECTION OF FLOW
	–	PIPE REDUCER
	FCO	FLOOR CLEAN OUT
	WCO	WALL CLEAN OUT
	CO	END OF LINE CLEAN OUT
	YCO	YARD CLEAN OUT
	FD	FLOOR DRAIN
	FS	FLOOR SINK
	HB	HOSE BIBB/WALL HYDRANT
SA=#	SA	SHOCK ARRESTOR – SUFFIX INDICATES PDI SIZE
#	–	THERMOMETER

ADDITIONAL ABBREVIATIONS

AFF	ABOVE FINISHED FLOOR	PSI	POUNDS PER SQUARE INCH
AFG	ABOVE FINISHED GRADE	SF	SQUARE FEET
BFF	BELOW FINISHED FLOOR	SFU	SUPPLY FIXTURE UNITS
BTUH	BRITISH THERMAL UNIT / HOUR	T&P	TEMPERATURE AND PRESSURE
CFH	CUBIC FEET PER HOUR	TW	TEMPERED WATER
CLG	CEILING	TYP	TYPICAL
CONT	CONTINUATION	UR	URINAL
DN	DOWN	VB	VACUUM BREAKER
FFE	FINISHED FLOOR ELEVATION	VLV	VALVE
FIN	FINISH	VTR	VENT THRU ROOF
FL	FLOOR	WC	WATER COLUMN
GPM	GALLONS PER MINUTE		
HP	HORSE POWER	EC	ELECTRICAL CONTRACTOR
INV	INVERT ELEVATION	GC	GENERAL CONTRACTOR
KW	KILOWATT	MC	MECHANICAL CONTRACTOR
PH	PHASE	PC	PLUMBING CONTRACTOR

2018 NORTH CAROLINA ENERGY CONSERVATION CODE

COMMERCIAL ENERGY EFFICIENCY – PLUMBING SUMMARY

C401 METHOD OF COMPLIANCE

- ■ 2018 NCECC CHAPTER 4
- ☐ ASHRAE 90.1-2013 PRESCRIPTIVE
- ☐ ASHRAE 90.1-2013 PERFORMANCE
- ☐ N/A (EXISTING LIGHTING, HVAC, AND DOM. WATER HEATING SYSTEMS TO REMAIN)
- ☐ COMCHECK PROVIDED (2018 NCECC)
- ☐ COMCHECK PROVIDED (90.1-2013)
- ☐ ENERGY MODELING DATA PROVIDED

C406 ADDITIONAL EFFICIENCY PACKAGE OPTIONS

- ☐ C406.2 EFFICIENT MECH EQUIPMENT
- ■ C406.3 REDUCED LTG DENSITY
- ☐ C406.4 ENHANCED LTG CONTROLS
- ☐ C406.5 ON-SITE RENEWABLE ENERGY
- ☐ C406.6 DEDICATED OA SYSTEM
- ☐ C406.7 SERVICE WATER HEATING
- ☐ NOT APPLICABLE BASED ON PROJECT SCOPE

TABLE C404.2 – MINIMUM PERFORMANCE OF WATER HEATING EQUIPMENT[c]

EQUIPMENT TYPE	SIZE CATEGORY (INPUT)	SUB CATEGORY OR RATING CONDITION	PERFORMANCE REQUIRED[a,b]	REQUIRED EFFICIENCY	EFFICIENCY OF SPECIFIED EQUIPMENT
STORAGE WATER HEATERS GAS	> 155,000 BTU/H	< 4000 BTU/H/GAL	80% E_t (Q/800+110√V)SL, BTU/H	93%	95%

a. ENERGY FACTOR (EF) AND THERMAL EFFICIENCY (E_t) ARE MINIMUM REQUIREMENTS. IN THE EF EQUATION V IS THE VOLUME IN GALLONS.
b. STANDBY LOSS (SL) IS THE MAXIMUM BTU/H BASED ON A NOMINAL 70° TEMPERATURE DIFFERENCE BETWEEN STORED WATER AND AMBIENT REQUIREMENTS. IN TEH SL EQUATION Q IS THE NAMEPLATE INPUT RATE IN BTU/H. IN THE EQUATIONS FOR ELECTRIC WATER HEATERS, V IS THE RATED VOLUME IN GALLONS AND V_m IS THE MEASURED VOLUME IN GALLONS. IN THE SL EQUATION FOR GAS WATER HEATERS AND BOILERS, V IS THE RATED VOLUME IN GALLONS.
c. REFER TO WATER HEATER SCHEDULES FOR SPECIFIED WATER HEATING EQUIPMENT TYPES, CAPACITIES (STORAGE VOLUME) AND ENERGY INPUTS (ELECTRIC AND/OR GAS)

C408 – SYSTEM COMMISSIONING

- ☐ BUILDING IS LESS THAN 10,000 SQUARE FEET AND IS EXEMPT FROM THE SYSTEM COMMISSIONING REQUIREMENTS OF SECTION C408.
- ■ BUILDING IS GREATER THAN 10,000 SQUARE FEET AND REQUIRES SYSTEM COMMISSIONING PER SECTION C408.

COMMISSIONING NOTE - 2018 NCECC C408

THE OWNER WILL CONTRACT WITH A THIRD PARTY COMMISSIONING AGENT THAT WILL BE RESPONSIBLE FOR SYSTEM COMMISSIONING PER 2018 NCECC SECTION C408. THE PLUMBING CONTRACTOR WILL BE REQUIRED TO COORDINATE WITH THE COMMISSIONING AGENT AND PROVIDE ALL NECESSARY TIME, MATERIALS, AND PROCEDURES AS REQUIRED BY THE COMMISSIONING AGENT TO PERFORM THE REQUIRED COMMISSIONING ACTIVITIES.

PLUMBING DRAWING INDEX

SHT. NO.	SHEET NAME	SCALE
P001	PLUMBING LEGEND, NOTES AND SPECIFICATIONS	NO SCALE
P002	PLUMBING SCHEDULES	NO SCALE
P003	PLUMBING DETAILS	NO SCALE
P101	AREAS 1 AND AREA 2 DRAINAGE PLANS – PLUMBING	1/8" = 1'-0"
P102	AREA 3 DRAINAGE PLAN – PLUMBING	1/8" = 1'-0"
P103	AREA 1 AND AREA 2 WATER SUPPLY PLANS – PLUMBING	1/8" = 1'-0"
P104	AREA 3 WATER SUPPLY PLAN – PLUMBING	1/8" = 1'-0"
P105	AREA 3 COMPRESSED AIR PLAN – PLUMBING	1/8" = 1'-0"
P200	ENLARGED WATER SUPPLY PLANS – PLUMBING	1/4" = 1'-0"

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environmentsforlife
architecture planning interiors
six coliseum centre
2815 coliseum centre drive, suite 500
charlotte, north carolina 28217
t] 704 379 1919
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www.adwarchitects.com

SAMPSON COUNTY 911 & ES FACILITIES

CLINTON, NORTH CAROLINA

CONSTRUCTION DOCUMENTS

PLUMBING LEGEND NOTES AND SPECIFICATIONS

DATE 12.04.2020
PROJECT NO 20003
REVISIONS

NUM.	DATE	DESCRIPTION:
1	12-17-18	REVISION #1

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NORTH CAROLINA REGISTERED PROFESSIONAL 043866 ENGINEER DANIEL A. REVILLA
SEAL 12/04/2020

SHEET NUMBER P001