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PLUMBING EQUIPMENT SCHEDULE			
MARK	EQUIPMENT	MANUFACTURER & MODEL NO.	SPECIFICATIONS
FS	FLOOR SINK	ZURN ZN1901-KC-2	12"x12"x8" DEEP CAST IRON BODY WITH WHITE ACID RESISTING PORCELAIN ENAMEL INTERIOR, ANCHOR FLANGE WITH SEEPAGE HOLES AND CLAMP COLLAR, NICKEL BRONZE FRAME WITH 1/2" GRATE.
DWH	DOMESTIC WATER HEATER	NAVLEN MODEL NPE-240A	COMMERCIAL GAS-FIRED CONDENSING TANKLESS, DIRECT VENT, INDOOR, 199,000 BTU MAX. INPUT, 4.4 GPM @ 90°F RISE, TWO (2) REQUIRED.
TMV	THERMOSTATIC MIXING VALVE	SYMMONS MAXLINE 7-225-CK-MS	0.5 GPM MINIMUM FLOW, THERMOSTATIC WATER TEMPERATURE LIMITING VALVE WITH INTEGRAL CHECKS, BRASS BODY, BRASS AND STAINLESS STEEL INTERNAL COMPONENTS, DUAL STAINLESS STEEL STRAINERS, VANDAL-RESISTANT CAP/TEMPERATURE ADJUSTMENT HANDLE, 1/2" MALE NPT CONNECTIONS. SET MIXING VALVE OUTLET TEMPERATURE TO 110° F.
EXT	EXPANSION TANK	AMTROL THERM-X-TROL MODEL ST-12-C	ASME CONSTRUCTION, STEEL TANK WITH FIXED DIAPHRAGM, STAINLESS STEEL SYSTEM CONNECTION, 55 PSI PRECHARGE, 150 PSI WORKING PRESSURE, 6.4 GALLONS.

PLUMBING LEGEND	
<b>PIPING</b>	
-----	DOMESTIC COLD WATER PIPING (CW)
-----	DOMESTIC HOT WATER PIPING (HW)
-----	GREASE WASTE PIPING (GW)
-----	NATURAL GAS PIPING (G)
-----	SANITARY PIPING (SAN)
-----	VENT PIPING (V)
<b>SYMBOLS</b>	
	BALL VALVE (NORMALLY OPEN)
	CAP
	CHECK VALVE
	FLOOR CLEANOUT (FCO)
	FLOOR SINK (FS)
	GAS COCK
	PIPE CONTINUES
	PIPE DOWN
	PIPE UP
	POINT OF CONNECTION TO EXISTING
	STRAINER
	T&P RELIEF VALVE
	THERMOMETER
	UNION
<b>ABBREVIATIONS</b>	
AAV	AIR ADMITTANCE VALVE
ABV	ABOVE
AFB	ABOVE FINISHED FLOOR
AHP	AS HIGH AS POSSIBLE
BDD	BUILDING
LW	LOW
LG	LINE
CO	CLEANOUT
CON	CONNECTOR CONNECTION
CON	CONTINUATION
DN	DOWN
E.C.	ELECTRICAL CONTRACTOR
ETR	EXISTING TO REMAIN
EX. EXIST. (E)	EXISTING
FFE	FINISHED FLOOR ELEVATION
FLR	FLOOR
G.C.	GENERAL CONTRACTOR
IE. INV ELEV	INVERT ELEVATION
M.C.	MECHANICAL CONTRACTOR
MTD	MOUNTED
P.C.	PLUMBING CONTRACTOR
T&P	TEMPERATURE AND PRESSURE
TP	TRAP PRIMER
TYP	TYPICAL
VTR	VENT THROUGH ROOF
W	WASTE

### PLUMBING GENERAL NOTES

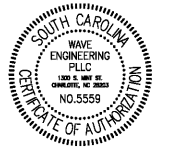
- GENERAL REQUIREMENTS:**
- GENERAL AND SPECIAL CONDITIONS: GENERAL AND SPECIAL CONDITIONS ARE HEREBY MADE AN INTEGRAL PART OF THIS DIVISION OF THE SPECIFICATIONS INsofar AS SAME ARE APPLICABLE TO THE WORK UNDER THIS DIVISION AND UNLESS OTHERWISE SPECIFIED.
  - SCOPE: PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT REQUIRED FOR THE COMPLETION AND OPERATION OF ALL SYSTEMS IN THIS SECTION OF WORK.
  - CODE COMPLIANCE: ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF ALL AUTHORITIES HAVING JURISDICTION: BUILDING DEPARTMENTS, AND DEPARTMENT OF HEALTH, APPLICABLE NATIONAL, STATE, AND LOCAL CODES, LAWS, AND REGULATIONS GOVERNING OR RELATING TO ANY PORTION OF THIS WORK SHALL BE INCORPORATED INTO AND MADE A PART OF THESE CONTRACT DOCUMENTS AND SPECIFICATIONS. THE CONTRACTOR IS TO NOTIFY THE ARCHITECT/ENGINEER OF ANY WORK OR MATERIALS WHICH VIOLATE ANY OF THE ABOVE CODES, LAWS, OR REGULATIONS. ANY WORK DONE BY THE CONTRACTOR CAUSING SUCH A VIOLATION SHALL BE CORRECTED AT THE CONTRACTOR'S EXPENSE AND AT NO EXPENSE TO THE OWNER.
  - PERMITS: APPLY FOR AND PAY FOR ALL NECESSARY PERMITS, FEES, AND INSPECTIONS REQUIRED BY ANY PUBLIC AUTHORITY HAVING JURISDICTION.
  - WARRANTY: PROVIDE ALL LABOR, MATERIALS, AND EQUIPMENT UNDER THIS SECTION OF THE SPECIFICATIONS WITH A ONE YEAR WARRANTY FROM THE DATE OF ACCEPTANCE OF WORK BY THE OWNER.
  - RECORD DRAWINGS: CONTRACTOR SHALL MAINTAIN AN ACCURATE RECORD OF ALL AS-BUILT CONDITIONS DURING CONSTRUCTION AND TURN OVER ONE COPY EACH TO THE OWNER AND THE ARCHITECT AFTER COMPLETION.
  - OPERATING MANUALS: CONTRACTOR SHALL FURNISH TO THE OWNER 3 SETS OF OPERATION AND MAINTENANCE MANUALS FOR ALL MAJOR PIECES OF EQUIPMENT.
  - COORDINATION: VERIFY ALL ROUGH-IN LOCATIONS AND COORDINATE PIPING AND EQUIPMENT LOCATIONS WITH WORK UNDER OTHER DIVISIONS OF THE SPECIFICATIONS TO AVOID CONFLICTS. CONTRACTOR MUST COORDINATE WITH OTHER TRADES FOR ALL STRUCTURES, PIPING, CONDUIT, WORK, LIGHTING, ETC TO PROPERLY BE INSTALLED. ANY CONFLICTS SHALL BE RESOLVED AT NO EXPENSE TO THE OWNER.
  - FIELD VERIFICATION: FIELD VERIFY EXISTING CONDITIONS BEFORE STARTING CONSTRUCTION AND NOTIFY THE ARCHITECT/ENGINEER OF ANY DISCREPANCIES BETWEEN THE CONSTRUCTION DOCUMENTS AND EXISTING CONDITIONS, AND/OR ANY POTENTIAL PROBLEMS OBSERVED BEFORE CONTINUING WORK IN THE AFFECTED AREAS.
  - SUBMITTALS: AS A MINIMUM, THE CONTRACTOR SHALL PROVIDE SUBMITTALS FOR ALL ITEMS SCHEDULED ON THE DRAWINGS, UNLESS NOTED OTHERWISE.
  - SUBSTITUTIONS: THE PRODUCTS SCHEDULED ON THE DRAWINGS ARE THE BASIS OF DESIGN. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL SUBSTITUTIONS MADE WITHOUT THE WRITTEN APPROVAL MEET THE DRAWING SPECIFICATIONS AND FIT WITHIN THE SPACES PROVIDED.
  - LABELING: PLUMBING PIPING WITH ADHESIVE PIPE LABELS INDICATING SERVICE AND DIRECTION OF FLOW. PIPE LABELS SHALL BE LOCATED NEAR ALL BRANCH CONNECTIONS, NEAR ALL FLOOR AND WALL PENETRATIONS, AND AT MAXIMUM INTERVALS OF 25' ALONG EACH RUN.
  - PLUMBING SYSTEMS INCLUDE, BUT ARE NOT LIMITED TO:
    - FIRE STOPPING
    - DOMESTIC WATER SYSTEM
    - SANITARY WASTE AND VENT SYSTEM
    - NATURAL GAS SYSTEM
- FIXTURES:**
- PROVIDE COMPLETE FIXTURES AND INCLUDE SUPPLIES, STOPS, VALVES, FAUCETS, DRAINS, TRAPS, TAILPIECES, ESCUTCHEONS, ETC. EXPOSED COPPER OR BRASS MATERIALS SHALL BE CHROME PLATED.
  - SEAL ALL EDGES OF PLUMBING FIXTURES IN CONTACT WITH FLOORS, WALLS, OR COUNTERTOPS USING SANITARY-TYPE, ONE-PART, MILDEW RESISTANT SILICONE SEALANT. MATCH SEALANT COLOR TO FIXTURE COLOR.
  - REFER TO ARCHITECTURAL DRAWINGS FOR MOUNTING HEIGHTS OF PLUMBING FIXTURES.
- FIRE STOPPING:**
- FIRE STOP ALL PENETRATIONS, BY PIPING OR CONDUITS, OF FIRE RATED WALLS, FLOORS, AND PARTITIONS. PROVIDE 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 DEVICE(S) OR SYSTEM(S) WITH AN 'F' RATING EQUAL TO THE RATING OF THE ASSEMBLY BEING PENETRATED.
- DOMESTIC WATER PIPING:**
- FURNISH AND INSTALL A COMPLETE SYSTEM OF DOMESTIC HOT AND COLD WATER FROM EXISTING SUPPLIES TO ALL FIXTURES AND/OR EQUIPMENT REQUIRING DOMESTIC WATER SUPPLIES. VERIFY LOCATION OF BEGINNING POINTS.
  - DOMESTIC WATER PIPING ABOVE GROUND: ASTM B 88 TYPE 'L' HARD COPPER TUBE WITH WROT COPPER FITTINGS, AND SOLDERED OR PRESSURE-SEALED JOINTS.
  - IF PERMITTED BY LOCAL CODES, ASTM F876 CROSSLINKED POLYETHYLENE PEX-A TUBING, AND ASTM F1960 PEX-A COLD EXPANSION FITTINGS, MANUFACTURED BY UPONOR, MAY BE USED. ALL FIXTURE ROUGH-INS MUST BE COPPER.
  - TESTING: CAP AND SUBJECT WATER PIPING TO STATIC WATER PRESSURE OF 100 PSI OR 50 PSI ABOVE OPERATING PRESSURE, WHICHEVER IS GREATER. MAINTAIN PRESSURE FOR NOT LESS THAN 15 MINUTES.
  - CLEANING: CLEAN AND DISINFECT NEW PIPING AND EXISTING PIPING THAT HAS BEEN ALTERED IN ACCORDANCE WITH THE AMERICAN PLUMBING AND MECHANICAL ASSOCIATION'S SPECIFICATIONS AND LOCAL HEALTH DEPARTMENT REGULATIONS.
  - INSULATE DOMESTIC WATER PIPING ABOVE GROUND (EXCEPT EXPOSED CONNECTIONS TO PLUMBING FIXTURES, WITH 1/2" THICKNESS ENGINEERED POLYMER FOAM INSULATION, OR MINERAL-FIBER PREFORMED PIPE INSULATION WITH FACTORY-APPLIED ASJ).
  - DOMESTIC WATER PIPING INSULATION: Gaskets, COVERINGS, SEALERS, MASTICS, AND ADHESIVES SHALL NOT EXCEED A TENSILE STRENGTH RATING OF 25 AND A SMOKE DEVELOPED RATING OF 50 WHEN TESTED IN ACCORDANCE WITH ASTM E 84.
  - ALL PIPE INSULATION SHALL RUN CONTINUOUSLY THROUGH WALLS, AND CONNECTIONS.
  - SHUT-OFF VALVES SHALL BE TWO-PIECE, BRONZE, FULL PORT, BALL TYPE, MANUFACTURED BY APOLLO OR NIBCO. PROVIDE SHUT-OFF VALVES WHERE INDICATED ON THE DRAWINGS. INSTALL VALVES IN A LOCATION THAT PERMITS ACCESS FOR SERVICE AND OPERATION WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS. PROVIDE ACCESS DOORS IF REQUIRED.
  - PROTECT COPPER PIPING AGAINST CONTACT WITH DISSIMILAR METALS. ALL HANGERS, SUPPORTS, ANCHORS, AND CLIPS SHALL BE COPPER OR COPPER-PLATED.
- SANITARY WASTE AND VENT PIPING:**
- FURNISH AND INSTALL COMPLETE SYSTEMS OF SANITARY WASTE AND VENT PIPING FROM ALL PLUMBING FIXTURES AND/OR EQUIPMENT REQUIRING WASTE AND VENT CONNECTIONS. ALL WASTE AND VENT PIPING SHALL BE CONCEALED IN THE BUILDING CONSTRUCTION WHERE POSSIBLE.
  - SANITARY WASTE AND VENT PIPING BELOW GROUND: ASTM A 74, SERVICE WEIGHT, HUBLESS, CAST IRON SOIL PIPE AND FITTINGS, AND GASKETED JOINTS. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE, AND LISTED BY NSF INTERNATIONAL.
  - SANITARY WASTE AND VENT PIPING ABOVE GROUND: ASTM A 888 AND CISPI 301, HUBLESS, CAST IRON SOIL PIPE AND FITTINGS, AND HEAVY DUTY SHIELDED, STAINLESS STEEL COUPLINGS. ALL PIPE AND FITTINGS SHALL BE MARKED WITH THE COLLECTIVE TRADEMARK OF THE CAST IRON SOIL PIPE INSTITUTE, AND LISTED BY NSF INTERNATIONAL.
  - IF PERMITTED BY LOCAL CODES, ASTM D 2665 SCHEDULE 40 SOLID WALL PVC PIPE WITH ASTM D 3311 SCHEDULE 40 SOCKET-TYPE FITTINGS MAY BE USED FOR SANITARY WASTE AND VENT PIPING ABOVE AND BELOW GROUND. PVC PIPING INSTALLED IN RETURN AIR PLENUMS MUST BE PROTECTED WITH 3M FIRE BARRIER PLENUM WRAP 5A+ OR SIMILAR PRODUCT. ALL BURIED PVC PIPING SHALL BE INSTALLED PER ASTM D 2321.
  - TESTING: CLOSE OPENINGS IN PIPING SYSTEM AND FILL WITH WATER TO POINT OF OVERFLOW, BUT NOT LESS THAN 10-FOOT HEAD OF WATER. MAINTAIN PRESSURE FOR NOT LESS THAN 15 MINUTES.
  - INVERT ELEVATIONS SHALL BE ESTABLISHED AND VERIFIED BEFORE SANITARY PIPING IS INSTALLED IN ORDER THAT PROPER SLOPES WILL BE MAINTAINED. SLOPE SANITARY PIPING 2-1/2" AND SMALLER AT 1/4" PER FOOT MINIMUM, AND SLOPE SANITARY PIPING 3" AND LARGER AT 1/8" PER FOOT MINIMUM.
  - WHERE SANITARY PIPING IS EXPOSED IN TOILET ROOMS, PROVIDE CHROME-PLATED BRASS PIPING WITH MATCHING STOPS AND ESCUTCHEONS. PROVIDE REMOVABLE TRAPS WITH INTEGRAL CLEANOUT PLUG FOR ALL LAVATORIES AND SINKS.
  - INSTALL CLEANOUTS IN A LOCATION THAT PERMITS ACCESS FOR SERVICE WITHOUT DAMAGE TO THE BUILDING OR FINISHED MATERIALS. CLEANOUT PLUGS SHALL BE INSTALLED IN ACCORDANCE WITH PLUMBING CODE REQUIREMENTS.
- NATURAL GAS PIPING:**
- WORK TO INCLUDE PIPING FROM EXISTING PIPING, TO ALL GAS-FIRED EQUIPMENT SERVING BUILDING, INCLUDING FINAL CONNECTIONS TO EQUIPMENT.
  - ALL WORK SHALL BE IN ACCORDANCE WITH NCGFC, ALL APPLICABLE LOCAL CODE REQUIREMENTS, THE PROVISIONS OF NFPA 54 AND THE REGULATIONS OF THE GAS COMPANY PROVIDING SERVICE.
  - THE GAS PIPING SYSTEM HAS BEEN DESIGNED USING THE LONGEST LENGTH METHOD WITH THE FOLLOWING CRITERIA:
    - GAS TYPE: NATURAL GAS
    - INLET PRESSURE: 2.0 PSI
    - PRESSURE DROP: 1.0 PSI
    - SPECIFIC GRAVITY: 0.60
    - SYSTEM LENGTH: 100 FT
    - TOTAL LOAD: 1.241 MBH (1 MBH = 1 CFH)
    - SIZING TABLE: 2018 NCGFC, TABLE 402.4(5)
  - NATURAL GAS PIPING: ASTM A 53 SCHEDULE 40 SEAMLESS BLACK STEEL PIPE WITH MALLEABLE FITTINGS AND THREADED JOINTS.
  - TEST, INSPECT, AND PURGE ALL NEW PIPING AND ALL EXISTING PIPING THAT HAS BEEN ALTERED IN ACCORDANCE WITH NFPA 54, NCGFC, AND AUTHORITY HAVING JURISDICTION.
  - VALVES SHALL BE FULL PORT BALL VALVES APPROVED FOR USE IN NATURAL GAS PIPING SYSTEMS.
  - PROVIDE SHUT-OFF VALVE, UNION, VENTLESS GAS REGULATOR, DRIP LEG, AND TEST CONNECTION AT EACH PIECE OF GAS-FIRED EQUIPMENT TO PROVIDE PRESSURE TO EQUIPMENT AS REQUIRED BY MANUFACTURER.
  - ALL GAS PIPING LOCATED ON ROOFS SHALL BE INSTALLED ON MANUFACTURED PIPE SUPPORTS SIMILAR TO ERICO CADDY PYRAMID 50. WOOD BLOCKING WILL NOT BE PERMITTED.
  - ALL PIPING EXPOSED TO THE OUTDOORS, RUN IN UNCONDITIONED SPACES, OR EXPOSED IN FINISHED SPACES SHALL BE PAINTED WITH TWO COATS OF ENAMEL COLOR SELECTED BY ARCHITECT, OR AS REQUIRED BY GAS COMPANY.
  - PROVIDE EMERGENCY SOLENOID SHUT-OFF VALVE FOR COOKING EQUIPMENT AS REQUIRED BY CODE. SOLENOID VALVE SHALL BE WIRED TO EXHAUST HOOD FIRE SUPPRESSION SYSTEM.

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02.08.2021

FOR CONSTRUCTION

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REVISION		
no.	date	comment

DRAWN BY: SBC  
CHECKED BY: BRD  
SUBMITTAL DATE: 02.08.2021  
PROJECT NUMBER: 02-2031

PLUMBING  
SPECS, NOTES  
& LEGEND

P0.01