

FIRE PROTECTION CRITERIA	
<b>OVERALL DESCRIPTION</b>	THE CONSTRUCTION WILL CONSIST OF MULTIPLE NEW 3 AND 4 STORY APARTMENT BUILDINGS. THE BUILDINGS WILL BE LOCATED IN CHARLOTTE, NC. BUILDINGS 1-3 SHALL BE SERVED BY 4" FIRE MAIN AND CARRIAGE SHALL BE SERVED BY 4" FIRE MAIN.
<b>ACCEPTANCE TESTING</b>	ACCEPTANCE TESTING SHALL BE PROVIDED PER NFPA 13, 2013 EDITION, 2018 NFPA AND LOCAL REQUIREMENTS.
<b>OCCUPANCY CLASSIFICATION</b>	ALL OF THE BUILDINGS SHALL HAVE A 13R HAZARD OCCUPANCY.
<b>PREPARATION OF DOCUMENTS</b>	THE SPRINKLER SYSTEM FOR THE APARTMENT BUILDING WILL BE A WET PIPE SYSTEM. DESIGNED PER NFPA 13, 2013 EDITION, FOR LIGHT HAZARD OCCUPANCY. THE SYSTEM WILL INCLUDE USING HYDRANUTALLY SIZED STEEL STANDPIPES, ONE IN EACH STAR TOWER. THE STANDPIPES WILL BE CLASS 1 COMBINATION STANDPIPE/RISER 2 1/2" HOSE VALVES AND FIRE SPRINKLERS AT EACH LEVEL. LOCATE A COMBINATION FIRE RISER/STANDPIPE IN ONE OF THE STAIRWELLS ON BOTH SIDES OF THE BUILDING THE STANDPIPE OUTLETS AT THE TOP OF THE RISER WILL PROVIDE 100 GPM AT 100 PSI RESIDUAL. HOSE VALVE CONNECTIONS SHALL BE LOCATED AT THE FLOOR LANDINGS AND NOT AT INTERMEDIATE LANDINGS. FIRST STANDPIPE SHALL PROVIDE 500 GPM. EACH ADDITIONAL STANDPIPE SHALL PROVIDE 250 GPM.
<b>STANDPIPE HOSE CONNECTIONS</b>	STANDPIPE HOSE CONNECTIONS SHALL BE AT THE INTERMEDIATE LANDINGS WITHIN THE STAIRWAYS.
<b>ANY EXTERIOR WET PIPE SPRINKLER PIPES</b>	ANY EXTERIOR WET PIPE SPRINKLER PIPES SHALL BE INSULATED TO PREVENT FREEZING. APPROVED NFPA CPVC FIRE SPRINKLER PIPE MAY BE USED IN RESIDENTIAL UNITS IN USE OF SCHEDULE 40 STEEL.
<b>PROVIDE FLOOR CONTROL ASSEMBLY</b>	PROVIDE FLOOR CONTROL ASSEMBLY AT EACH FLOOR AS FIRE PIPE SERVING THAT FLOOR CONNECTS TO THE FIRE RISER.
<b>STRUCTURAL SUPPORT</b>	STRUCTURAL SUPPORT AND STRUCTURAL OPENINGS FOR THE FIRE PROTECTION SYSTEM INCLUDING LIVE AND DEAD LOADS HAVE BEEN COORDINATED WITH THE STRUCTURAL ENGINEER. STEEL SLEEVES WILL BE SET PRIOR TO CONCRETE PLACEMENT. TO PROVIDE FOR PENETRATIONS OF FIRE PROTECTION PIPING THROUGH THE FLOORS OR ROOF STRUCTURE. ALL PENETRATIONS WILL BE PROPERLY FIRE-CAULKED, AS REQUIRED.
<b>POINT OF SERVICE</b>	A 4" FIRE SERVICE WILL BE EXTENDED INTO THE SITE TO SERVE THE SPRINKLER SYSTEM.
<b>GOVERNING STANDARDS</b>	SYSTEM DESIGN AND INSTALLATION SHALL COMPLY WITH 2013 EDITION OF NFPA 13R, 2013 EDITION OF NFPA 14, AND THE 2013 EDITION OF NFPA 24 AS WELL AS THE 2018 NORTH CAROLINA BUILDING CODE AND THE LOCAL FIRE PREVENTION CODE.
<b>OCCUPANCY CLASSIFICATIONS</b>	THIS BUILDINGS ARE CLASSIFIED AS RESIDENTIAL, NFPA 13R.
<b>DESIGN APPROACH</b>	THE SYSTEM SHALL BE A HYDRAULICALLY-CALCULATED FULLY-AUTOMATIC WET PIPE SYSTEM INSTALLED THROUGHOUT THE ENTIRE BUILDING. THE SYSTEM SHALL MEET THE DEMAND, PRESSURE AND SPACING REQUIREMENTS OF NFPA 13. ANY PIPING NOT IN A CONDITIONED SPACE SHALL BE INSULATED TO PREVENT FREEZING.
<b>PROVIDE A 4" RPZ VALVE ASSEMBLY</b>	PROVIDE A 4" RPZ VALVE ASSEMBLY WITHIN THE RISER ROOM FOR EACH BUILDING.
<b>FLOW TEST INFORMATION</b>	FLOW TEST INFORMATION STATIC - XX PSI RESIDUAL - XX PSI DISCHARGE - XXXX GPM FLOW AT 20 PSI - XXXX GPM TEST PERFORMED XXXXXXXXX LOCATION: XXXXXX
<b>VALVING AND ALARM REQUIREMENTS</b>	INSTALL FLOW SWITCH IN FIRE RISER AND PUT TAMPER SWITCH ON CONTROL VALVE IN RISER WITH LOCAL AUDIBLE ALARM AND CENTRAL STATION MONITORING.
<b>MIC RISK EVALUATION</b>	VERIFY THAT THERE IS NO RISK OF MIC WITH LOCAL UTILITY.
<b>BACKFLOW PREVENTION DETAILS</b>	4" RPDA ASSEMBLY BACKFLOW PREVENTER MEETING LOCAL REQUIREMENTS SHALL BE INSTALLED. MAXIMUM PRESSURE DROP ACROSS BACKFLOW PREVENTER TO BE 10 PSI. THERE SHALL BE NO TAPS, PIPING BRANCHES, UNAPPROVED BYPASS PIPING, HYDRANTS, FIRE DEPT. CONNECTION POINTS, OR OTHER WATER-USE APPURTENANCES CONNECTED TO THE SUPPLY LINE BETWEEN ANY WATER METER AND ITS CHA-REQUIRED BACKFLOW PREVENTER.

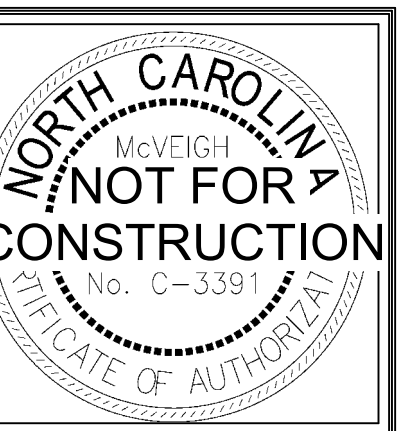
FIRE PROTECTION CRITERIA	
<b>WORKING PLANS, DESIGN, AND INSTALLATION</b>	A SEPARATE TAMPERED CONTROL VALVE AND FLOW SWITCH SHALL BE REQUIRED FOR EACH FLOOR WHEN SPRINKLER MONITORING OR A FIRE ALARM SYSTEM IS REQUIRED. TAMPERED CONTROL VALVES SHALL BE ZONED SEPARATELY FOR EACH BUILDING FLOOR.
<b>FIRE DEPARTMENT CONNECTIONS</b>	FIRE DEPARTMENT CONNECTIONS SHALL BE AT LEAST 1 1/2" CONNECTION TYPE SHALL BE COORDINATED WITH THE LOCAL FIRE DEPARTMENT.
<b>LOCAL WATER FLOW ALARMS</b>	LOCAL WATER FLOW ALARMS SHALL BE PROVIDED ON ALL SPRINKLER SYSTEMS. AN ELECTRIC BELL SHALL BE MOUNTED ON THE EXTERIOR OF THE STRUCTURE ABOVE THE FFC.
<b>CALCULATIONS</b>	CALCULATIONS SHALL MAINTAIN A 10% PRESSURE SAFETY MARGIN FROM WATER PRESSURE TESTS.
<b>FIRE PROTECTION CONTRACTOR TO SUBMIT ELECTRONIC WORKING DRAWINGS</b>	ENGINEER FOR REVIEW. ALL SUBMITTALS SHALL BEAR A DATED REVIEW CERTIFICATION AND SIGNATURE OF A MINIMUM NCET LEVEL II CET. SUBMITTAL DATA TO INCLUDE BUT NOT LIMITED TO HYDRAULIC CALCULATION DATA, CEILING HEIGHTS, BULB CEILING, BEAM SIZES AND SOFFIT DEPTHS, DIMENSIONING OF HEADS, CLEARLY IDENTIFIED CALCULATED AREAS, INSPECTOR'S TEST, RISER LOCATION, DETAIL, AND HANGER TYPE AND LOCATION.
<b>MATERIALS</b>	UNDERGROUND PIPE AND FITTINGS - CLASS 90 DUCTILE IRON CONFORMING TO ANSIAWWA C110A21.10 AND ANSIAWWA C111A21.11 OR CLASS 315 PVC PIPE FOR SIZES 6" AND SMALLER CONFORMING TO ASTM 2241.
<b>ABOVE-GROUND PIPING AND FITTINGS WITHIN RISER ROOM</b>	BLACK STEEL CONFORMING TO ASTM SPECIFICATIONS FOR BLACK AND HOT DIPPED ZINC COATED (GALVANIZED) WELDED AND SEAMLESS STEEL PIPE FOR ORDINARY USES, ANSI/ASTM A53. FITTINGS SHALL BE WELDED, SOLDERED, OR GROOVED MECHANICAL JOINT.
<b>ABOVE-GROUND PIPING AND FITTINGS OUTSIDE RISER ROOM</b>	PIPING SHALL BE RIGID CPVC, TYPE IV GRADE I, WITH A CELL CLASSIFICATION OF 2347 AS DEFINED IN ASTM D1741. THE COMPOUND AND FINISHED PRODUCT SHALL BE ORANGE IN COLOR, AND SHALL BE APPROVED BY NSF FOR USE WITH POTABLE WATER. FITTINGS USED SHALL BE UL LISTED CPVC FITTINGS AND SHALL MEET OR EXCEED REQUIREMENTS OF ASTM F487, ASTM F488, SOLVENT CEMENTS SHALL MEET OR EXCEED REQUIREMENTS OF ASTM F886 AND ASTM F483.
<b>FOR PORTE COCHERE</b>	PROVIDE SCH 40 PIPING FOR PIPING SMALLER THAN 2" AND SCH 10 FOR PIPING 2" AND LARGER.
<b>PIPE HANGERS</b>	CONFORM TO NFPA 13 AND US STANDARDS FOR SPACING, NUMBER, SIZE, AND TYPE. SHALL BE GENERALLY SUPPORTED BY CLAMPS AND RODS SECURED TO OVERHEAD CONSTRUCTION.
<b>VALVES</b>	OS&Y TYPE, ORON BODY BRONZE MOUNTED, DOUBLE DISC WITH PARALLEL SEATS OR BUTTERFLY, LUG TYPE, DUCTILE IRON BODY, STAINLESS STEEL STEM, ALUMINUM BRONZE DISC, PNEUMATIC RING AND BUNA N SEAT. VALVES SHALL BE FMUL LISTED AND APPROVED FOR FIRE PROTECTION SERVICE.
<b>ACCEPTANCE TEST AND MAINTENANCE</b>	SYSTEMS SHALL PASS A HYDROSTATIC PRESSURE TEST PERFORMED FOR THE UNDERGROUND AND ABOVE-GROUND PIPING SYSTEM IN ACCORDANCE WITH NFPA 13. ALL TESTS SHALL BE WITNESSED BY THE LOCAL AUI OR ENGINEER OF RECORD. ALL FIRE PENETRATIONS SHALL BE FILLED WITH APPROVED MATERIAL, AND NAIL PLATES SHALL BE IN PLACE AT TIME OF TEST. WHERE METAL STUDS ARE USED, PIPING SHALL BE PROTECTED WITH EITHER A SLEEVE OR GROMMET.
<b>ALL RISERS SHALL HAVE A HYDRAULIC DATA NAMEPLATE</b>	IN ACCORDANCE WITH NFPA 13. SPARE SPRINKLER HEADS SHALL BE LOCATED IN A SPARE HEAD CABINET WITH SPRINKLER HEAD WRENCH. LABELS FOR INSPECTORS TEST, AUXILIARY CONTROL VALVES, ETC. SHALL BE IN PLACE. DWELLING UNIT IDENTIFICATION AND/OR BUILDING DIAGRAM SHALL BE IN PLACE AT EACH RISER.
<b>CPVC PIPING</b>	THE FACTORY ISSUED CERTIFICATION CARD MUST BE CARRIED BY PIPE FITTER DURING INSTALLATION AND IS TO BE MADE AVAILABLE TO FIRE CODE OFFICIAL UPON REQUEST.
<b>SEISMIC RESTRAINTS</b>	SPECIFY SEISMIC RESTRAINTS FOR SPRINKLER PIPING IN SEISMIC AREAS REQUIRED BY 2018 IBC 1613.1. SPECIFY FLEXIBLE COUPLINGS AT FLEXURE JOINTS PER NFPA 13 9.3.2.1. PROVIDE SUFFICIENT INFORMATION ON DESIGN DRAWINGS SHOWING TYPICAL SEISMIC BRACING DETAILS, LOCATION OF 4-WAY BRACING, LONGITUDINAL AND LATTITUDINAL BRACING, AND END OF TIE LINE RESTRAINING BRACING.



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NOTES & LEGENDS - FIRE PROTECTION

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