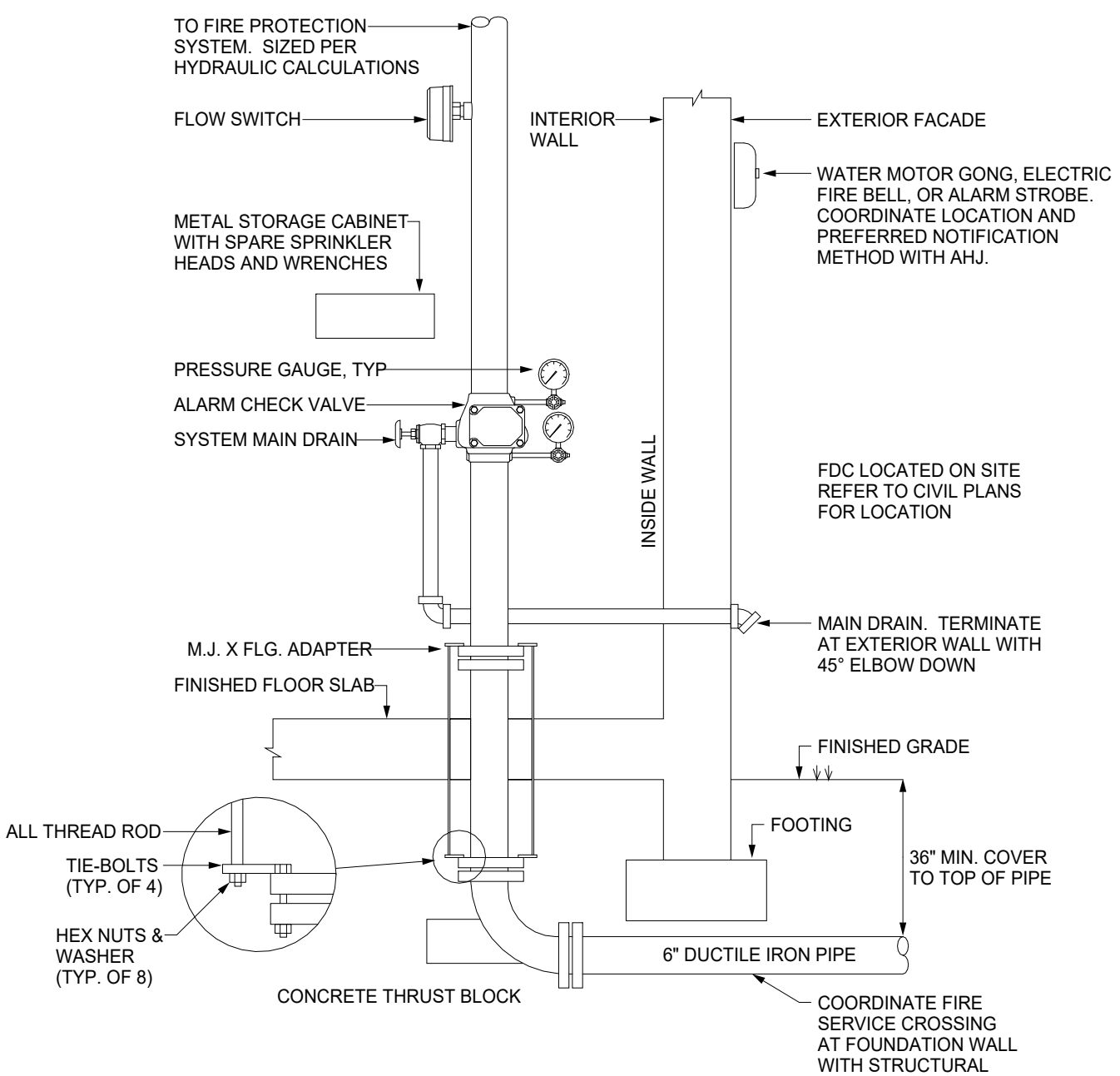
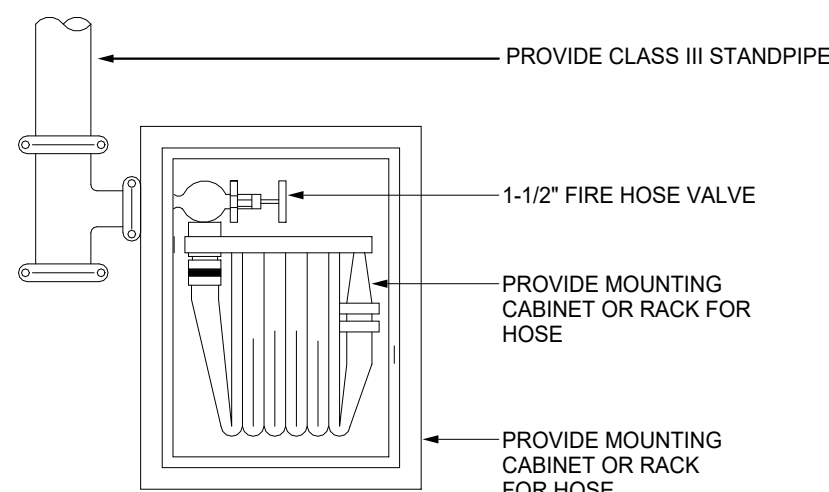




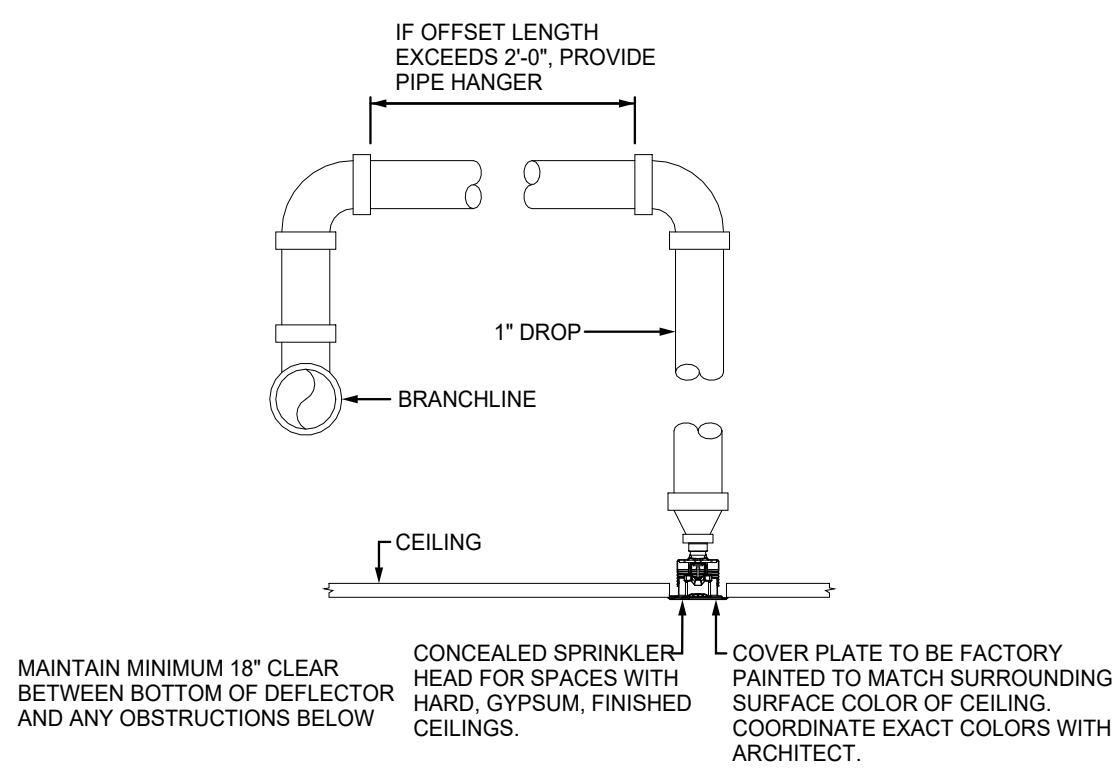
DETAIL OF FIRE SERVICE ENTRY

NO SCALE



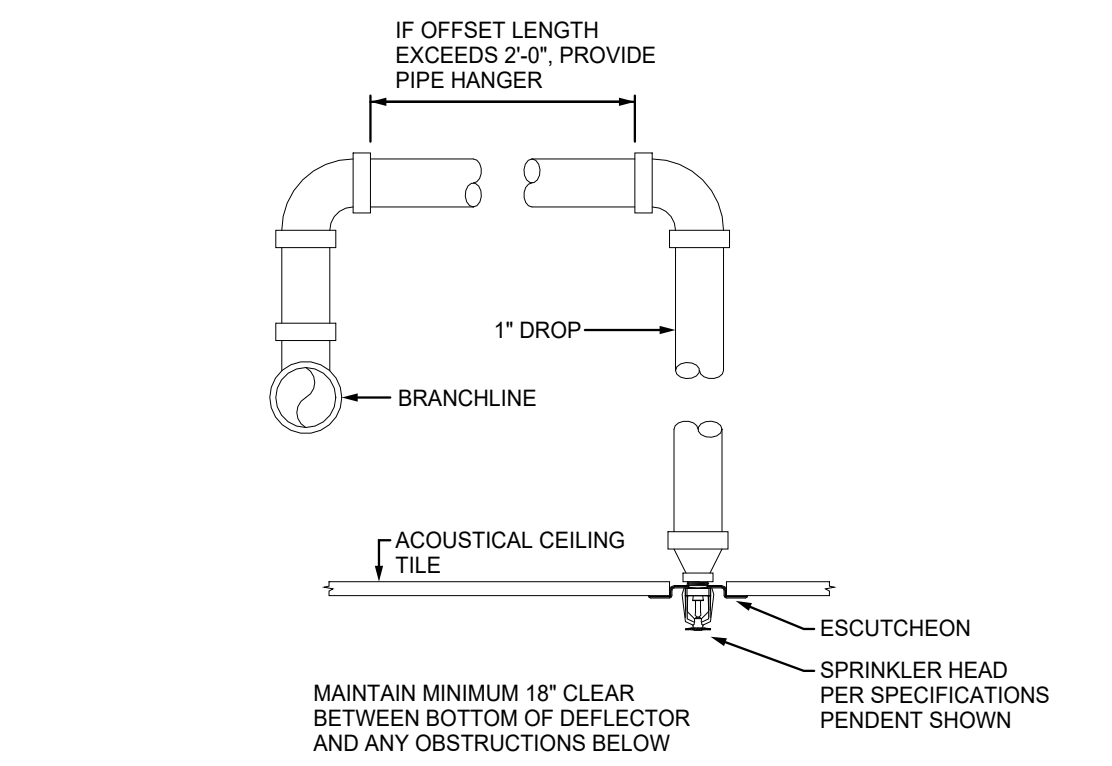
DETAIL OF HOSE CABINET AT STAGE

NO SCALE



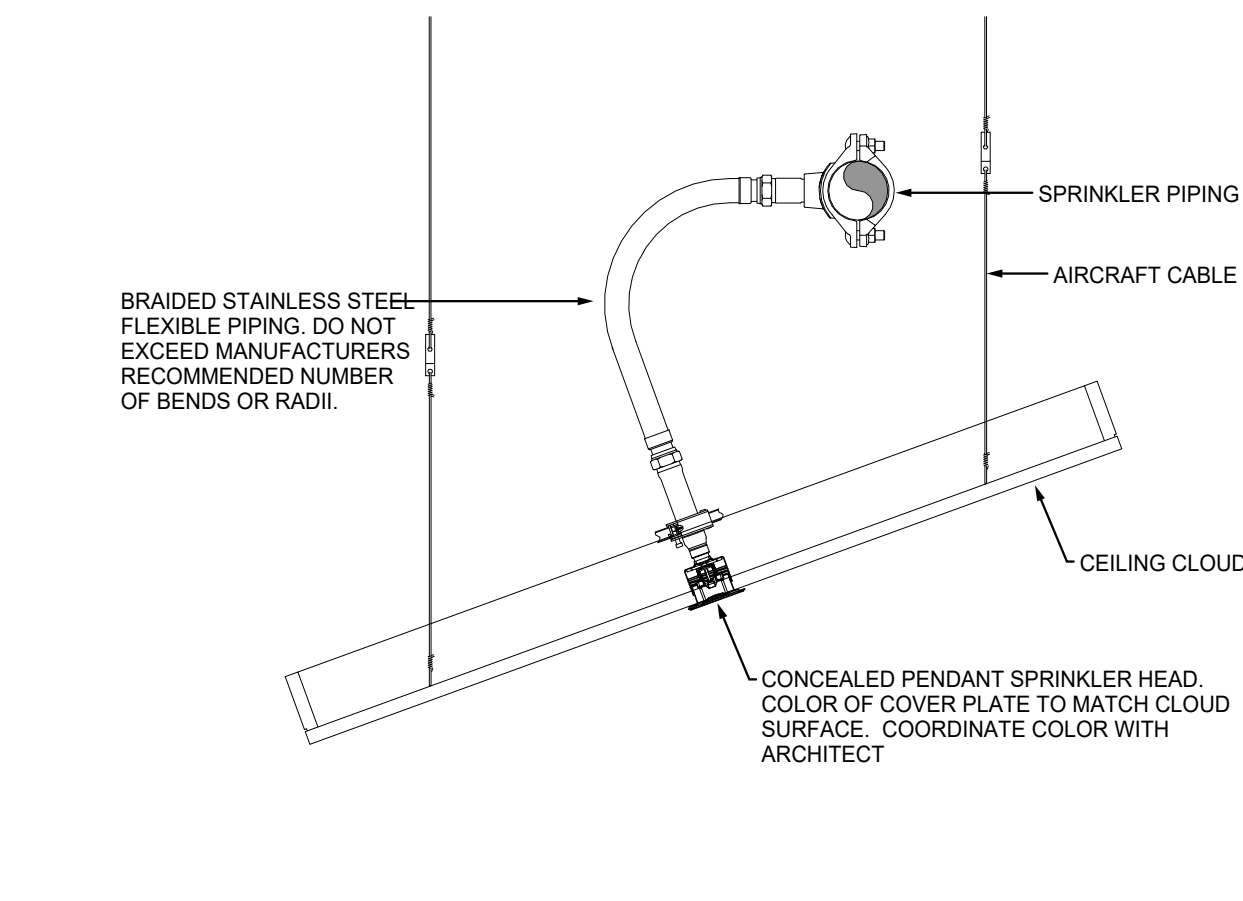
DETAIL OF SPRINKLER DROP

NO SCALE



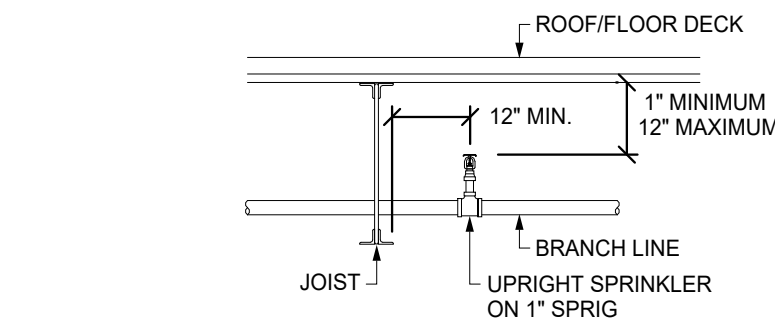
DETAIL OF SPRINKLER DROP

NO SCALE



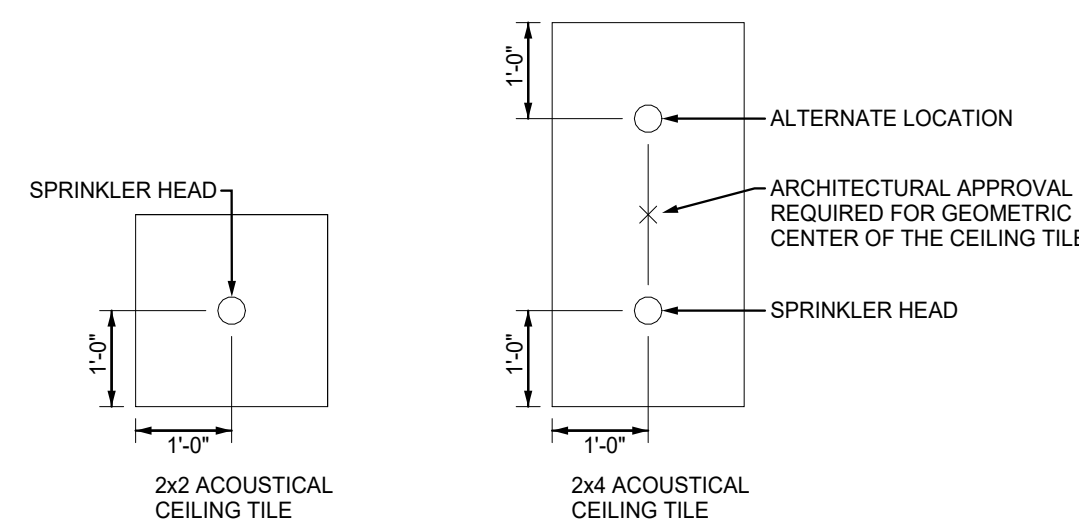
DETAIL OF SPRINKLER IN CEILING CLOUD

NO SCALE



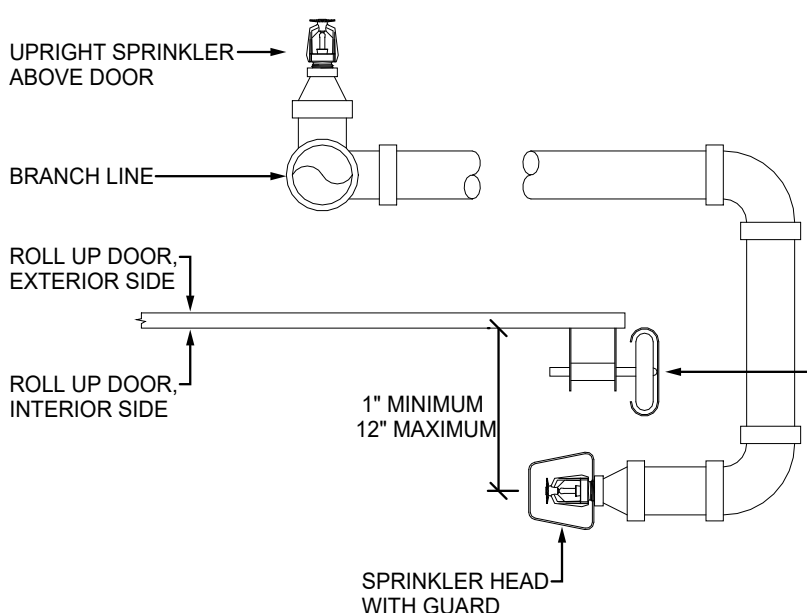
DETAIL OF JOIST CLEARANCE FOR UPRIGHT SPRINKLER HEADS

NO SCALE



DETAIL OF SPRINKLER HEAD IN CEILING TILE

NO SCALE



DETAIL OF SPRINKLER AT ROLL UP DOOR

NO SCALE

FIRE PROTECTION EQUIPMENT SCHEDULE

MARK	FIXTURE	REMARKS
EHC	FIRE HOSE CABINET	POTTER ROEMER WFC1000 SERIES FIRE HOSE CABINET, UL LISTED, FIRE RATED, 30X STAINLESS STEEL CABINET AND SOLID DOOR, COORDINATE CABINET MOUNTING WITH ARCHITECT (RECESSED / SEMI RECESSED) WITH 1-1/2" FORGED BRASS FIRE HOSE ANGLE VALVE, 1-1/2" HOSE AND RACK AND POTTER ROEMER #2970 SERIES BRASS FOG NOZZLE WITH BUMPER.
FIRE PROTECTION EQUIPMENT NOTES		
1. ALL EQUIPMENT SHALL BE COORDINATED WITH THE AHJ.		
2. ALL EQUIPMENT SHALL BE FM AND UL LISTED.		
FIRE PROTECTION EQUIPMENT - APPROVED EQUALS		
FIRE DEPARTMENT VALVE - ARGCO, CROKER, POTTER ROEMER, ZURN		
FIRE HOSE CABINET - ARGCO, CROKER, POTTER ROEMER		

SPRINKLER DESIGN CRITERIA

WET SPRINKLER SYSTEM DESIGN AND INSTALLATION:	
1.	HYDRAULIC CALCULATIONS AND SYSTEM DESIGN ARE A DELEGATED DESIGN AND SHALL BE BASED ON THE AREA/ENSITY METHOD USING THE FOLLOWING CRITERIA AND IN ACCORDANCE WITH THE CURRENT LOCALLY ADOPTED EDITION OF NFPA 13.
2.	SPRINKLER PROTECTION
A.	ALL SEATING, OFFICES, CONFERENCE ROOMS, WAITING AREAS, EDUCATIONAL AREAS, DINING AREAS, GANG TOILET ROOMS, SINGLE OCCUPANT TOILET ROOMS OVER 50 SQ.FT, LOBBIES, VESTIBULES AND CORRIDORS.
B.	LIGHT HAZARD: 0.10 GPM/SQ.FT OVER THE HYDRAULICALLY MOST REMOTE 1,500 SQ.FT.
B.	ALL KITCHEN, MECHANICAL EQUIPMENT ROOMS, JANITORIAL CLOSETS, TRANSFORMER ROOMS, ELECTRICAL SWITCHGEAR ROOMS, ELECTRICAL CLOSETS, AND STORAGE BETWEEN 100 AND 250 SQ.FT.
	ORDINARY HAZARD, GROUP-1: 0.15 GPM/SQ.FT OVER THE HYDRAULICALLY MOST REMOTE 1,500 SQ.FT.
	ORDINARY HAZARD, GROUP-2: 0.20 GPM/SQ.FT OVER THE HYDRAULICALLY MOST REMOTE 1,500 SQ.FT.
3.	ADD WATER ALLOWANCE FOR INSIDE AND OUTSIDE HOSE STREAM TO THE SPRINKLER REQUIREMENTS AT THE CONNECTION TO THE DISTRIBUTION MAIN.
4.	HYDRAULIC CALCULATIONS: THE CALCULATED DEMAND INCLUDING THE HOSE STREAM REQUIREMENTS SHALL FALL NO LESS THAN 10 PERCENT BELOW THE AVAILABLE SUPPLY CURVE.
5.	IT IS THE RESPONSIBILITY OF DIVISION 21 TO COORDINATE AN UP-TO-DATE FLOW TEST WITH LOCAL AUTHORITIES AND CARRY ANY COSTS ASSOCIATED WITH PERFORMING THE TEST.
COMPLY WITH THE FOLLOWING:	
1.	INTERNATIONAL BUILDING CODE, 2018 EDITION.
2.	INTERNATIONAL FIRE CODE, 2018 EDITION.
3.	NFPA 13 - SPRINKLER SYSTEMS, 2016 EDITION.
4.	NFPA 14 - STANDPIPE AND HOSE SYSTEMS, 2016 EDITION.
5.	NFPA 24 - PRIVATE SERVICE MAINS
6.	NFPA 25 - TESTING AND MAINTENANCE OF FP, 2017 EDITION.
7.	NFPA 70 - NATIONAL ELECTRIC CODE, 2017 EDITION.
8.	NFPA 72 - FIRE ALARM AND SIGNALING CODE, 2016 EDITION.
9.	NFPA 96 - FIRE PROTECTION FOR COMMERCIAL COOKING OPERATIONS, 2017 EDITION.
10.	NFPA 101 - LIFE SAFETY CODE, 2018 EDITION.
11.	NFPA 291 - RECOMMENDED PRACTICE FOR WATER FLOW TESTING AND MARKING OF HYDRANTS.

FIRE PROTECTION SPECIFICATION

GENERAL	
1.	FURNISH ALL LABOR, MATERIALS, EQUIPMENT AND SERVICES NECESSARY FOR PROPER COMPLETION OF ALL FIRE PROTECTION, PIPING AND DRAINAGE WORK.
2.	WORK SHALL COMPLY WITH ALL APPLICABLE NFPA, STATE, COUNTY AND LOCAL LAWS AND ORDINANCES. IN THE ABSENCE OF LOCAL REGULATIONS, WORK SHALL MEET 2018 INTERNATIONAL BUILDING, FIRE CODES AND THESE DOCUMENTS.
3.	ALL PRODUCT DATA SUBMITTALS SHALL BE BOUND TOGETHER BY SPECIFICATION SECTION AND SUBMITTED IN A SINGLE DIGITAL FILE COMPATIBLE WITH ADOBE ACROBAT (.PDF) FOR REVIEW.
4.	CONTRACTOR SHALL KEEP ACCURATE RECORDS OF INSTALLATIONS. AT THE END OF INSTALLATION, CONTRACTOR SHALL SUBMIT A SET OF FLOOR PLANS IN A FORMAT COMPATIBLE WITH ADOBE ACROBAT (.PDF) WHICH HAVE BEEN MARKED WITH AS-BUILT CONDITIONS.
MATERIALS	
PIPING	
1.	ALL PIPE SHALL BE NEW AND CONFORM TO THE LATEST ASTM STANDARD AND SPECIFICATIONS.
2.	FIRE PROTECTION, WET THE FOLLOWING IS A QUICK SUMMARY, REFER TO SECTION 21 1313 FOR MORE INFORMATION.
A.	1-1/2" AND SMALLER: SCHEDULE 40 BLACK STEEL, ASTM A136, ASTM A796, THREADED JOINTS, ASTM B36, 10 WITH MALLEABLE IRON FITTINGS.
B.	2" AND LARGER: SCHEDULE 10 BLACK STEEL, ASTM A136, ASTM A796, ROLLED GROOVE, PAINTED GROOVE END FITTINGS, ASTM A47, RIGID PATTERN.
GENERAL	
1.	PROVIDE SLEEVES AT ALL WALL AND FLOOR PENETRATIONS. SEAL AS REQUIRED TO PREVENT LEAKAGE, MAINTAIN FIRE RATINGS AND MAINTAIN BUILDING INTEGRITY.
2.	PROVIDE HANGERS, SUPPORTS AND ACCESSORIES REQUIRED FOR INSTALLATION. SPACE HANGERS AND SUPPORTS AS REQUIRED BY NFPA 13, FIRE CODE AND MANUFACTURERS RECOMMENDATIONS.
INSTALLATION	
1.	SPRINKLER DESIGN IS A DELEGATED DESIGN.
2.	PROVIDE CHROMIUM PLATED BRASS FLANGES WHEREVER PIPES PASS THROUGH EXPOSED FINISHED FLOORS, WALLS OR CEILINGS.
3.	IDENTIFY ALL PIPE WITH STRAP-ON PIPE MARKERS. COLORS TO MATCH ASTM A-13.
4.	PROVIDE PIPE JOINTS AS REQUIRED TO COMPLETE WORK. JOINTS SHALL BE AIR AND WATER TIGHT.
5.	ALL SYSTEM VALVES SHALL BE EQUIPPED WITH TAMPER SWITCHES.
EXCEPTION: DRAIN VALVES	

FIRE PROTECTION LEGEND

FS	FIRE SERVICE
F	FIRE PROTECTION LINE
D	DRAIN LINE (FIRE PROTECTION SYSTEM)
S	SUPERVISED VALVE
C	CHECK VALVE
BP	BACKFLOW PREVENTER
FDV	FIRE DEPARTMENT VALVE
PT	PIPE TURNING UP
PD	PIPE TURNING DOWN
BT	PIPE BOTTOM TAP
PC	PIPE CONTINUED
FS	PIPE SLEEVE (AT FOUNDATION OR MASONRY WALL)
FC	FIRE VALVE CABINET / FIRE HOSE CABINET
#	DRAWING NOTE / KEY NOTE
#	REVISION NUMBER
ACV	ALARM CHECK VALVE (ACV)
AFF	ABOVE FINISHED FLOOR
AHJ	AUTHORITY HAVING JURISDICTION
EST	ESTIMATED
FFE	FINISHED FLOOR ELEVATION
FHC	FIRE HOSE CABINET
FDG	FIRE DEPARTMENT CONNECTION
FDV	FIRE DEPARTMENT VALVE
FM	FACTORY MUTUAL
FS	FLOW SWITCH
GPM	GALLONS PER MINUTE
ITC	INSPECTORS TEST CONNECTION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
PSI	POUNDS PER SQUARE INCH
SF	SQUARE FEET
TS	TAMPER SWITCH
UL	UNDERWRITERS LABORATORY

SPRINKLER NOTES

- PROVIDE A NFPA 13 COMPLIANT SYSTEM TO PROVIDE TOTAL COVERAGE FOR THE BUILDING.
- ALL PIPING 1-1/2" AND SMALLER SHALL BE SCHEDULE 40 STEEL WITH THREADED JOINTS AND CAST IRON OR MALLEABLE IRON FITTINGS. HANGER SPACING SHALL CONFORM TO NFPA 13 REQUIREMENTS.
- ALL PIPING 2" AND LARGER MAY BE SCHEDULE 10 PIPE WITH ROLLED GROOVED JOINTS. HANGER SPACING SHALL CONFORM TO NFPA 13 REQUIREMENTS.
- THE USE OF THIN WALL, LIGHT WALL, OR PIPING WITH A WALL THICKNESS LESS THAN SCHEDULE 10 IS PROHIBITED.
- EXPOSED UPRIGHT OR PENDANT STYLE SPRINKLER HEADS SHALL BE QUICK RESPONSE WITH GLASS BULB, SPRINKLER FRAME STYLE AND SPRAY NOZZLE EQUAL TO VIKING MODEL M. INSTALL SPRINKLER HEADS IN CENTER OF CEILING TILE.
- PIPING SHALL BE INSTALLED IN A MANNER AS TO HIDE PIPING AS MUCH AS POSSIBLE.
- PROVIDE SHOP DRAWINGS INCLUDING A REFLECTED CEILING PLAN INDICATING SPRINKLER HEADS, LIGHTS AND HVAC DEVICES.
- PROVIDE CONCEALED PENDANT, QUICK RESPONSE, SPRINKLER HEADS IN HARD GYPSUM CEILINGS. COORDINATE LOCATION OF SPRINKLER HEAD WITH OTHER DEVICES LOCATED IN CEILING. CONCEALED COVER PLATE SHALL BE FACTORY PAINTED TO MATCH SURROUNDING AREA. COORDINATE COLOR WITH ARCHITECT.
- PROVIDE UPRIGHT SPRINKLER HEADS IN ALL SPACES WITHOUT A FINISHED CEILING. HEADS TO BE LOCATED WITHIN 12" OF THE DECKING ABOVE.
- PROVIDE FIRE PROTECTION BELOW ALL OBSTRUCTIONS 48" INCHES OR LARGER IN WIDTH. THIS INCLUDES GROUPS OF ITEMS THAT, INDIVIDUALLY ARE LESS THAN 48 INCHES IN WIDTH, BUT WHEN ROUTED TOGETHER IN CLOSE PROXIMITY, ARE 48 INCHES OR WIDER.
- CORRUGATED, FLEXIBLE SPRINKLER DROPS (VICTUALIC AHS OR EQUAL) ARE NOT ALLOWED. IF FLEXIBLE DROPS ARE USED, PROVIDE BRAIDED STEEL.
- SPRINKLER PIPING LOCATED BELOW STAIRS AND STAIR LANDINGS SHALL BE KEPT AS HIGH AS POSSIBLE AND SHALL BE CENTERED ON AS WELL AS BE PARALLEL TO ARCHITECTURAL FEATURES.
- ALL SPRINKLER HEADS LOCATED IN MECHANICAL SPACES OR AREAS WHERE THE SPRINKLER HEAD IS LOCATED AT 8'-0" ABOVE FINISHED FLOOR OR LOWER SHALL BE PROVIDED WITH A SPRINKLER GUARD.
- WHERE CEILING CAVITIES OR EXPOSED PIPING IS TO BE PAINTED, PROVISIONS SHALL BE MADE BY THE CONTRACTOR TO PROTECT ALL SPRINKLER HEADS WITHIN THE AREA FROM BEING PAINTED ALSO. ANY SPRINKLER HEADS THAT ARE FIELD PAINTED SHALL BE REPLACED AT NO ADDITIONAL COST. THIS INCLUDES CONCEALED COVER PLATES.
- SPRIGS 4'-0" AND LONGER SHALL BE RESTRAINED AGAINST LATERAL MOVEMENT.
- ALL SPRINKLER MAIN AND BRANCH PIPING SHALL BE CLOSELY COORDINATED WITH OTHER SYSTEMS SUCH AS MECHANICAL, PLUMBING, ELECTRICAL, ETC. THE ROUTING OF MECHANICAL, DUCTWORK TAKES PRECEDENCE AND FIRE PROTECTION PIPING SHALL BE OFFSET OR OTHERWISE RE-ROUTED TO FACILITATE THE INSTALLATION OF THE MECHANICAL SYSTEM. THIS APPLIES TO EXISTING FIRE PROTECTION PIPING AS WELL AS NEW.

FIRE PROT. SHOP DRAWING NOTES

- PRIOR TO SUBMITTING FIRE PROTECTION SHOP DRAWINGS AND HYDRAULIC CALCULATIONS FOR REVIEW, CONFIRM THE FOLLOWING.
- FIRE PROTECTION SHOP DRAWINGS AND THE COVER PAGE FOR EACH SET OF HYDRAULIC CALCULATIONS ARE SEALED AND SIGNED BY A PROFESSIONAL ENGINEER LICENSED IN THE STATE OF ARKANSAS.
 - ALL NODE POINTS IN THE HYDRAULIC CALCULATIONS APPEAR ON THE SHOP DRAWINGS AND THAT THE NOMENCLATURE BETWEEN THE TWO SETS OF DOCUMENTS MATCHES. THIS INCLUDES NODE POINTS LOCATED ON SITE SUCH AS THE BACKFLOW PREVENTER AND SOURCE.
 - PIPE SIZES, LENGTHS AND ELEVATIONS NOTED IN THE HYDRAULIC CALCULATIONS MATCH PIPE SIZES, LENGTHS AND ELEVATIONS NOTED ON THE FIRE PROTECTION SHOP DRAWINGS.
 - SHOP DRAWINGS SHALL BE CLEARLY LEGIBLE. NODE POINTS, PIPE SIZES, LENGTHS, ELEVATIONS AND OTHER PERTINENT INFORMATION SHOULD NOT OVERLAP EACH OTHER OR OVERLAP ARCHITECTURAL FEATURES OR OTHER GRAPHIC ELEMENTS SO THEY BECOME DIFFICULT TO READ WHEN PLOTTED.
 - WHEN MULTIPLE NODE POINTS ARE LOCATED IN VERY CLOSE PROXIMITY TO ONE ANOTHER THAT LEADER LINES ARE USED TO IDENTIFY WHERE THE NODE POINT IS LOCATED IN THE DESIGN.
 - REMOTE AREAS ARE TO BE CLEARLY OUTLINED AND IDENTIFIED ON THE FIRE PROTECTION SHOP DRAWINGS AND THAT THE NOMENCLATURE MATCHES THE HYDRAULIC CALCULATIONS.
 - PIPE SCHEDULE AND SPRINKLER HEAD K-FACTORS IN HYDRAULIC CALCULATIONS SHALL MATCH INFORMATION CONTAINED IN THE FIRE PROTECTION MATERIALS SUBMITTAL.
 - ALL CEILING MOUNTED DEVICES (LIGHTS, DIFFUSERS, RETURN AIR GRILLES, ETC) ARE INDICATED IN THE CEILING SYSTEM AND SPRINKLER HEADS ARE LOCATED AND COORDINATED WITH CEILING MOUNTED DEVICES.

ELECTRICAL COORDINATION NOTES

- THE FIRE PROTECTION DESIGN IS A DELEGATED DESIGN. ELECTRICAL REQUIREMENTS HAVE BEEN GENERALLY COORDINATED WITH THE ELECTRICAL ENGINEER. IT IS THE RESPONSIBILITY OF THIS CONTRACTOR TO COORDINATE THE SPECIFIC ELECTRICAL REQUIREMENTS OF ITEMS PROVIDED WITH DIVISION 26.
- QUANTITIES OF FLOW SWITCHES, TAMPER SWITCHES, PRESSURE SWITCHES ETC ARE APPROXIMATE AND MAY VARY BASED ON THE ACTUAL DELEGATED DESIGN.
- ALL WIRING (CONTROL, POWER ETC) BETWEEN FIRE PROTECTION EQUIPMENT (TS, FS, ETC) AND THE FIRE ALARM PANEL SHALL BE ENCASED IN A CONDUIT. COORDINATE WITH DIVISION 26.

