UNIVERSITY OF SOUTH CAROLINA
COLUMBIA, SOUTH CAROLINA

707 CATAWBA ST
FIRE PROTECTION UPGRADE

FEB 05, 2021
ISSUED FOR BID

FIRE SPRINKLER DRAWING INDEX

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MILES ENGINEERING ASSOCIATES, LLC
Fire Protection Systems Design & Consulting

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project name
707 CATAWBA
FIRE PROTECTION UPGRADES

project number
H27-Z409 50003381-3

seals/signature

SOUTH CAROLINA MILES ENGINEERING ASSOCIATES No. C01959 CERTIFICATE OF AUTHORIZATION

SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 12591 02/05/21 JOHN D. MILES

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BID

date
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number	item	date

key plan

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sheet title
TITLE SHEET

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FS 0.0

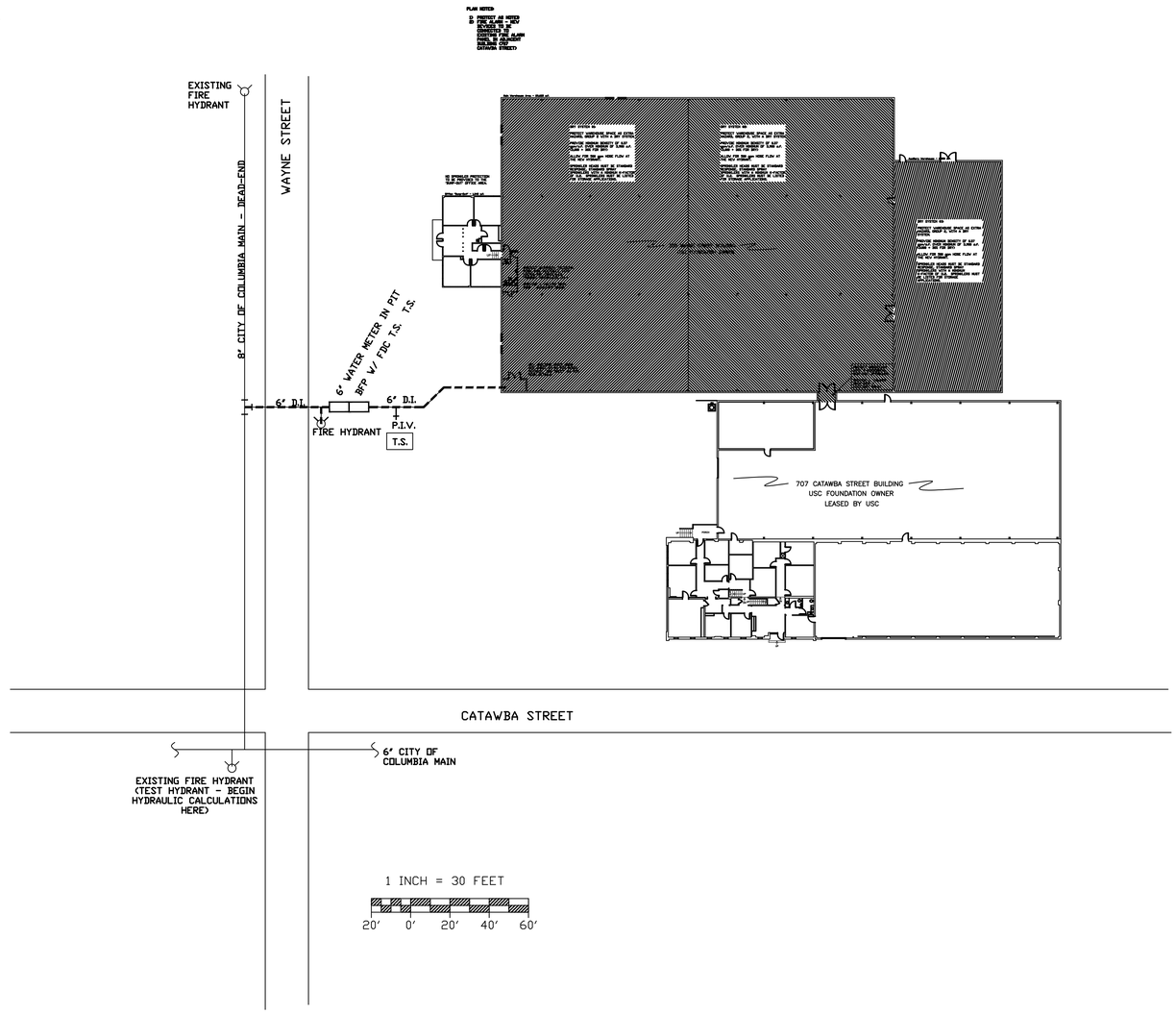
drawn by JDM
checked by JDM

GENERAL NOTES:

1) ALL MATERIALS AND INSTALLATION SHALL BE IN FULL COMPLIANCE WITH 2010 INTERNATIONAL FIRE CODE, 2010 EDITION NFPA 25, 2010 EDITION NFPA 13, SC STATE FIRE MARSHAL RULES AND REGULATIONS, SCDHEC RULES AND REGULATIONS, CITY OF COLUMBIA WATER DEPARTMENT REQUIREMENTS, COLUMBIA FIRE DEPARTMENT REQUIREMENTS, AND UNIVERSITY OF SOUTH CAROLINA REQUIREMENTS.
2) THE UNDERGROUND LINES INFORMATION SHOWN ON THIS DRAWING WAS TAKEN FROM THE EXISTING DRAWINGS AND IS PRESENTED HERE AS A GENERAL GUIDE ONLY, WITH NO GUARANTEE AS TO ACCURACY. VISIT THE SITE TO DETERMINE HOW EXISTING CONDITIONS WILL EFFECT COMPLETION OF THE WORK REQUIRED, AND INCLUDE THE CORRESPONDING COSTS IN THE PROPOSAL.
3) SEE SPECIFICATIONS FOR FURTHER INFORMATION.
4) NO SPRINKLERS TO BE INSTALLED AT 707 CATAWBA STREET UNDER THIS PROJECT. BUILDING SHOWN FOR REFERENCE – FIRE ALARM CONTROL PANEL LOCATED IN 707 CATAWBA.

UNDERGROUND WATER LINE NOTES:

1) IT IS THE CONTRACTOR'S RESPONSIBILITY TO FIELD–VERIFY THE LOCATIONS OF ALL UTILITIES PRIOR OT CONSTRUCTION AND TO NOTE ANY CONFLICTS. ANY DAMAGE TO UTILITIES INCURRED DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE CONTRACTOR AND IS TO BE REPAIRED AT THE CONTRACTOR'S EXPENSE. UTILITIES SHOWN ON THESE DRAWINGS ARE FOR GENERAL INFORMATION ONLY AND HAVE NOT BEEN FIELD VERIFIED.
2) PROVIDE MINIMUM SEPARATION DISTANCES BETWEEN POTABLE WATER AND SEWER LINES AS PER TEN STATES STANDARDS:
   * WATER OVER SEWER AT LEAST 18" VERTICAL (WHEN CROSSING) OR 10' HORIZONTAL (WHEN PARALLEL) SEPARATION,
   * WHEN WATER LINE IS CROSSING UNDER OR OVER A SEWER LINE, PIPE MUST BE LAID SUCH THAT FULL SECTIONS OF PIPE ARE CENTERED ON THE CROSSING AND EXTEND A DISTANCE OF 10' ON EACH SIDE OF THE POINT OF CROSSING.
3) EROSION AND SEDIMENT CONTROL PROCEDURES MUST BE MAINTAINED DURING THE ENTIRE CONSTRUCTION PERIOD. DEBRIS AND LOOSE SOIL ON ADJACENT STREETS MUST BE CONTROLLED THROUGH DAILY CLEANING. DISTURBED EARTH AREAS MUST BE STABILIZED WITHIN 30 DAYS FROM COMPLETION OF EXCAVATION OR GRADING ACTIVITES.
4) PAVEMENT PATCHING AND RESURFACING MUST BE COMPLETED WITHIN 5 DAYS AFTER COMPLETION OF GRADING OR EXCAVATION ACTIVITIES. SMALL PATCH AREAS CAN BE MAINTAINED WITH TEMPORARY PAVEMENT PATCHING OR STONE UNTIL PERMANENT PATCHING IS IN PLACE.
5) FIRE PROTECTION UNDERGROUND LINES SHALL BE INSTALLED AND TESTED IN FULL COMPLIANCE WITH NFPA 13 AND NFPA 24. LINE SHALL BE FLUSHED AT FULL FLOW BEFORE CONNECTION TO ABOVE GROUND PIPE, AND HYDRO TESTED AT 200 PSI. PROVIDE TEMPORARY 6" PIPING TO BUILDING EXTERIOR FOR FLUSHING. PROVIDE TEST AND MATERIALS CERTIFICATE TO ENGINEER AS PER NFPA 24. PERFORM STERILIZATION AND BACTERIOLOGICAL TESTING AS PER SCDHEC REGULATIONS.
6) WATER LINE AND HYDRANT LOCATIONS ARE APPROXIMATE. CONTRACTOR SHALL COORDINATE FINAL LOCATION WITH PROPERTY OWNER.
7) MINIMUM WATER LINE COVER DEPTH = 3'–0"
8) PROVIDE RESTRAINT HARNESSES AT EACH CHANGE OF WATER LINE FLOW DIRECTION, (VERTICAL OR HORIZONTAL) AND AT FIRE HYDRANTS, SEE DETAILS.
9) PROVIDE BACKFILL COMPACTION OF 98% STANDARD PROCTOR BENEATH PAVED AREAS. PROVIDE 95% AT UNPAVED AREAS.
10) UNDERGROUND PIPING SHOWN ON DRAWINGS AS D.I. SHALL BE UL–LISTED FOR FIRE SERVICE, THICKNESS CLASS 52, IN ACCORDANCE WITH AWWA C150, MANUFACTURED IN ACCORDANCE WITH AWWA C151, CEMENT–LINED AND BITUMINOUS SEAL–COATED IN ACCORDANCE WITH AWWA C104.
11) TEES, ELBOWS, REDUCERS, AND OTHER FITTINGS SHALL BE CEMENT LINED, BITUMINOUS SEAL–COATED DUCTILE IRON UL–LISTED FOR FIRE SERVICE RATED FOR MINIMUM 200 PSI WORKING PRESSURE. THE D.I. PIPE, SHALL BE CONNECTED TO DUCTILE–IRON FITTINGS WITH THRUST RESISTING MECHANICAL JOINTS USING EBBA IRON OF EASTLAND TEXAS SERIES 1100 OR APPROVED EQUAL.
12) ALL STRAIGHT PIPE COUPLINGS SHALL BE RESTRAINED USING EBBA IRON OF EASTLAND TEXAS SERIES 1700 OR APPROVED EQUAL.
13) CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND PROCURING ALL PERMITS AND APPROVALS ASSOCIATED WITH THE WORK, SEE PROJECT SPECIFICATIONS. SEE CITY OF COLUMBIA WATER DEPARTMENT SPECIFICATIONS FOR FURTHER INFORMATION.
14) ALL BOLTS, NUTS, WASHERS, RODS, HARNESSES, AND FASTENER COMPONENTS SHALL BE STAINLESS STEEL OR ASPHALT SEAL–COATED.
15) THE EQUIPMENT CALLOUTS ON ALL DRAWINGS HAVE BEEN PROVIDED TO DETERMINE THE LEVEL OF QUALITY OF EQUIPMENT REQUIRED FOR THIS PROJECT. IT IS IN NO WAY INTENDED TO LIMIT COMPETITION OR REQUIRE SOLE SOURCE PROCUREMENT. SUBSTITUTIONS MUST BE SUBMITTED FOR APPROVAL A MINIMUM OF FIVE DAYS PRIOR TO BID DATE.
16) CONTRACTOR IS RESPONSIBLE FOR PAYING ALL FEES AND PROCURING ALL PERMITS AND APPROVALS ASSOCIATED WITH THE WORK. 1
17) 8" CITY WATER MAIN NOTED FROM CITY OF COLUMBIA DRAWINGS; LOCATION IS APPROXIMATED.
18) CONTRACTOR SHALL CALL P.U.P.S. AND WAIT THE REQUIRED MINIMUM TIME BEFORE COMMENCING DIGGING.



FIRE SPRINKLER EXISTING SITE PLAN

SCALE: 1" = 30'

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checked by JDM

FIRE PROTECTION LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	SPRINKLER MAIN (W/ BRANCHES)		STANDPIPE W/FIRE DEPT. VALVE
	SPRINKLER BRANCH (W/ SPRINKLER)		PUMP TEST HEADER
	UNDERGROUND FIRE MAIN		WATER MOTOR GONG / ELECTRIC BELL
			FIRE EXTINGUISHER
		HR	FIRE HOSE RACK
D	DRAIN	FHC	FIRE HOSE CABINET
	RISER DOWN (ELBOW)		SIDEWALL SPRINKLER
	RISER UP (ELBOW)		UPRIGHT SPRINKLER
	RISE OR DROP		PENDENT SPRINKLER
			WET SYSTEM RISER
			DRY SYSTEM RISER
	POST INDICATOR VALVE		DELUGE VALVE RISER
	VALVE IN ROADWAY BOX		PREACTION VALVE RISER
	REDUCED PRESSURE ZONE BFP		CONCENTRIC REDUCER
	DOUBLE CHECK VALVE BFP		ECCENTRIC REDUCER
	VALVE IN RISE		CAP ON END OF PIPE
	ANGLE VALVE		PLUGGED TEE
	CHECK VALVE		PIPE HANGER
	SHUT-OFF VALVE - OS&Y		
	SHUT-OFF VALVE - BUTTERFLY		
	PRESSURE REDUCING VALVE		
	SHUT-OFF VALVE - PIV		ALARM VALVE RISER SYMBOL RISER NUMBER = 'X'
	UNION		
	FLOW SWITCH	X	HYDRAULIC NODE POINT
	PRESSURE GAUGE WITH GAUGE COCK		
	2-WAY WALL SIAMESE CONN.		
	2-WAY POST SIAMESE CONN.		

NOTE: THIS IS A STANDARD LEGEND. ALL ITEMS SHOWN ABOVE MAY NOT APPEAR ON DRAWINGS.

FIRE PROTECTION ABBREVIATIONS

ABBREVIATION/DEFINITION		ABBREVIATION/DEFINITION	
A/C	ABOVE CEILING	FS	FLOW SWITCH
AFF	ABOVE FINISHED FLOOR	FLR	FLOOR
AFG	ABOVE FINISHED GRADE	FHC	FIRE HOSE CABINET
B/F	BELOW FLOOR	FHR	FIRE HOSE RACK
BFP	BACKFLOW PREVENTER	FCA	FLOOR CONTROL ASSEMBLY
BLDG	BUILDING	IE	INVERT ELEVATION
BOP	BOTTOM OF PIPE	LOC	LOCATION
CI	CAST IRON	MIN	MINIMUM
CL	CENTER LINE	NIC	NOT IN CONTRACT
CONT	CONTINUATION	PS	LOW AIR PRESSURE SWITCH
CONTR	CONTRACTOR	RPZ-BFP	REDUCED PRESSURE ZONE BFP
DR	DRAIN	SPR	SPRINKLER
DN	DOWN	SP/FDV	STAND PIPE / FIRE DEPT. VALVE
DCV-BFP	DOUBLE CHECK VALVE BFP		
DWGS	DRAWINGS	TS	TAMPER SWITCH
DI	DUCTILE IRON	WMG	WATER MOTOR GONG
EL	ELEVATION		

NOTE: THESE ARE STANDARD ABBREVIATIONS, ALL ABBREVIATIONS SHOWN ABOVE MAY NOT APPEAR ON DRAWINGS.

A. SCOPE

1) THE AREA OF WORK SHALL BE FULLY SPRINKLED IN ACCORDANCE WITH NFPA 13 2016. THE ENTIRE FIRE PROTECTION

2) SYSTEM SHALL MEET, AS A MINIMUM, ALL FEDERAL, STATE, AND LOCAL CODES AND ORDINANCES, AND MUST BE APPROVED BY THE LOCAL AND STATE FIRE MARSHAL. DESIGN CRITERIA LISTED ON FSSSS AND WITHIN THESE DWGS IS THE MINIMUM CRITERIA ACCEPTABLE.

3) REFER TO THE FIRE PROTECTION SPECIFICATIONS FOR ADDITIONAL INFORMATION REGARDING THE FIRE PROTECTION SYSTEM. DRAWINGS AND SPECIFICATIONS ARE COMPLIMENTARY; WORK CALLED FOR IN EITHER THE DRAWINGS OR SPECIFICATIONS SHALL BE TREATED AS IF CALLED FOR BY BOTH. WORK SPECIFIED IN THESE DRAWINGS AND SPECIFICATIONS MAY EXCEED THE MINIMUM REQUIREMENTS OF LISTED CODES AND STANDARDS.

4) IT IS THE RESPONSIBILITY OF THE FIRE SPRINKLER CONTRACTOR TO INSTALL ALL FIRE SPRINKLER PIPING AND EQUIPMENT, AS REQUIRED.

5) SIZING AND LOCATION OF ALL PIPES AND ALL SPRINKLER ACCESSORIES SHALL BE THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR. ANY PIPING SHOWN ON THE FS DRAWINGS IS SCHEMATIC IN NATURE AND SHOULD NOT BE USED TO DETERMINE CUT LENGTHS OR FINAL LOCATIONS. FS DRAWINGS DO NOT SHOW PIPE ROUTING OFFSETS, RISERS, OR DROPS NECESSARY TO AVOID OBSTRUCTIONS.

6) THE SPRINKLER SYSTEM WITHIN THE BUILDING MUST BE MONITORED BY THE FIRE ALARM PANEL. ALL TAMPER SWITCHES, WATERFLOW INDICATORS, ALARM PRESSURE SWITCHES, AND OUTSIDE ALARM BELL SHALL BE INSTALLED BY THE SPRINKLER CONTRACTOR. WIRING TO THE ALARM SYSTEM SHALL BE BY THE FIRE ALARMS SYSTEMS CONTRACTOR.

7) SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE LOCATION OF SPRINKLER PIPING WITH ALL EQUIPMENT, APPLIANCES, DEVICES, AND STRUCTURES. CONTRACTOR IS RESPONSIBLE FOR BEING AWARE OF THE LOCATION OF HVAC DUCTS, DIFFUSERS, ELECTRICAL LIGHTING, PANELS, AND CEILING HEIGHTS. PENETRATION OR CUTTING OF STRUCTURAL MATERIALS IS NOT ALLOWED.

8) CONTRACTOR SHALL IMMEDIATELY CONTACT THE FP ENGINEER IF DISCREPANCIES ARE FOUND IN THE FS DRAWINGS OR SPECIFICATIONS. CONTRACTOR SHALL CONTACT THE FP ENGINEER IMMEDIATELY IF DISCREPANCIES ARE FOUND BETWEEN THE CONTRACT DOCUMENTS AND EXISTING CONDITIONS, OR BETWEEN THE CONTRACT DOCUMENTS AND REQUIREMENTS OF SPECIFIED CODES OR AUTHORITIES HAVING JURISDICTION. WHERE CONFLICTS OCCUR BETWEEN THE DRAWINGS, SPECIFICATIONS, OR CODES, THE CONTRACTOR SHALL BY DEFAULT FOLLOW THE MOST RESTRICTIVE REQUIREMENT. DRAWINGS AND SPECIFICATIONS ARE COMPLIMENTARY; WORK CALLED FOR IN EITHER THE DRAWINGS OR SPECIFICATIONS SHALL BE TREATED AS IF CALLED FOR BY BOTH.

9) IT IS NOT THE INTENT OF THESE PLANS AND SPECIFICATIONS TO PROVIDE A COMPLETE DETAILED DESCRIPTION OF THE APPARATUS, MATERIALS, EQUIPMENT, ETC. WHICH IS REQUIRED TO MAKE A COMPLETE AND FUNCTIONAL INSTALLATION OF THIS SPECIFIC FIRE PROTECTION SYSTEM. IT SHALL BE THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR TO PROVIDE ALL REQUIRED MATERIAL AND EQUIPMENT AND PERFORM ALL WORK REQUIRED TO INSTALL A COMPLETE AND APPROVED INSTALLATION.

B. MATERIALS

1) FOR WET SYSTEMS PIPING: ALL SPRINKLER PIPING 1½" DIAMETER AND LESS SHALL BE MINIMUM SCHEDULE 40 BLACK STEEL WITH THREADED FITTINGS. ALL SPRINKLER PIPING GREATER THAN 1½" DIAMETER SHALL BE MINIMUM SCHEDULE 10 BLACK STEEL.

2) ALL DRAIN LINE PIPING MUST BE GALVANIZED STEEL.

3) IN A.T. CEILING AREAS, SPRINKLER HEADS SHALL BE QUICK RESPONSE; RECESSED PENDANT AND OF A COLOR AND FINISH SUITABLE TO THE ARCHITECT. IN HARD CEILINGS, SPRINKLER HEADS SHALL BE QUICK RESPONSE; CONCEALED PENDANT AND OF A COLOR AND FINISH SUITABLE TO THE ARCHITECT.

C. INSTALLATION

1) ALL PENETRATIONS OF RATED ASSEMBLIES SHALL BE FIRE STOPPED WITH AN APPROVED ASSEMBLY AS PRESCRIBED IN THE INTERNATIONAL BUILDING CODE. SEE ARCHITECTURAL DRAWINGS FOR LOCATIONS OF FIRE-RATED ASSEMBLIES.

2) ALL INSPECTOR'S TEST CONNECTIONS AND LOW POINT DRAINS SHALL BE PER NFPA 13 (UNLESS OTHERWISE NOTED) AND SHALL BE DISPLAYED ON THE SHOP DRAWINGS. MAIN DRAIN AND TEST PIPING SHALL BE ROUTED TO THE EXTERIOR OF THE BUILDING. PROVIDE CONCRETE SPLASH BLOCKS FOR ALL DRAINS AND TEST CONNECTIONS.

3) AUXILIARY DRAINS AND INSPECTOR'S TEST CONNECTIONS SHALL BE LOCATED TIGHT AGAINST THE PERIMETER WALLS

4) SPRINKLER PROTECTION MUST BE PROVIDED IN THE ELECTRICAL EQUIPMENT ROOMS. THE BRANCH LINE SUPPLYING THE SPRINKLERS TO THESE ROOMS ARE THE ONLY SPRINKLER PIPING PERMITTED TO ENTER THESE SPACES FROM FINISHED FLOOR TO THE ROOF DECK. SPRINKLER MAINS, CROSS MAINS, BRANCH LINES SUPPLYING OTHER ROOMS, AUXILIARY DRAINS, AND INSPECTOR'S TEST CONNECTIONS SHALL BE ROUTED AROUND THESE LOCATIONS.

5) IN PH 1 WORK, PIPING SHALL BE RUN CONCEALED IN ALL HALLWAY FINISHED CEILING AREAS, UNLESS NOTED OTHERWISE ON THESE DRAWINGS. SPRINKLER SUBCONTRACTOR IS RESPONSIBLE FOR PAINTING OF EXPOSED PIPING IN ALL AREAS, INCLUDING MECHANICAL ROOMS AND STORAGE ROOM AREAS. PIPING MUST BE PREPARED, PRIMED, AND PAINTED A COLOR ACCEPTABLE TO THE ARCHITECT, IN ACCORDANCE WITH THE PAINT MANUFACTURER'S RECOMMENDATIONS. IN AREAS WHERE THE EXPOSED STRUCTURE IS PAINTED, THE SPRINKLER PIPING SHALL BE PAINTED TO MATCH THE STRUCTURE.

6) FOR AREAS WITH LAY-IN CEILING TILES, ALL HEADS SHALL BE PLACED IN THE CENTER OF THE TILE. PROTECT CEILING MEMBRANE WITH TRIM RING, OR FLEX CONNECTIONS, AS PER SEISMIC REQUIREMENTS.

7) PROVIDE FREEZE-PROTECTION FOR WET PIPING IN ALL AREAS SUBJECT TO TEMPERATURES LESS THAN 40 DEGREES F.

D. HANGERS AND BRACING

1) WHERE REQUIRED BY THE BUILDING CODE, BUILDING OFFICIAL, OR OTHER AUTHORITIES HAVING JURISDICTION. PROVIDE RIGID SEISMIC BRACING IN CONFORMANCE WITH NFPA 13, THE IBC, PROJECT SPECIFICATIONS, AND THE DETAILS ON THESE FS SHEETS.

2) CONTRACTOR IS RESPONSIBLE FOR PROVIDING AND INSTALLING ALL NECESSARY BRACING MEMBERS, TRAPEZE MEMBERS, AND REINFORCEMENT MEMBERS. ONLY RIGID BRACING IS ALLOWED, CABLE BRACING IS NOT PERMITTED. EXCEPTION: CABLE IS ACCEPTABLE FOR BRANCH LINE END RESTRAINTS.

3) SHOW ALL BRACING LOCATIONS AND DETAILS ON THE SHOP DRAWINGS. INCLUDE CALCULATIONS TO VERIFY SIZING OF SWAY BRACING PROVIDED. ALLOWABLE BRACE LOADS SHALL BE BASED ON A 30-44 DEG ANGLE RANGE.

E. ACCEPTANCE TESTING

1) CONTRACTOR SHALL THOROUGHLY FLUSH THE SUPPLY MAIN AT MAXIMUM FLOW CAPACITY BEFORE CONNECTING EXISTING SYSTEM SUPPLY TO THE NEW FIRE SPRINKLER SYSTEM RISER. CONNECT FLUSHING APPARATUS TO THE SPRINKLER RISER MANIFOLD BEFORE INSTALLING THE NEW RISER. PROVIDE TEMPORARY PIPING OF DIAMETER AT LEAST AS LARGE AS THE MANIFOLD, TO CARRY THE FLUSHING WATER THROUGH AN OPEN PIPE END TO THE EXTERIOR OF THE BUILDING. FLUSH UNTIL WATER RUNS CLEAR. PROVIDE PHOTOGRAPHS OF THE FLUSHING APPARATUS AND THE ACTUAL FLUSHING FLOW TO THE FP ENGINEER.

2) AT THE COMPLETION OF SYSTEMS TESTING, THE SPRINKLER CONTRACTOR SHALL COMPLETE AND PROVIDE TO THE FP ENGINEER A CONTRACTOR'S MATERIAL AND TEST CERTIFICATE PER NFPA 13 FOR ABOVEGROUND SPRINKLER PIPING SYSTEMS.

3) THE COMPLETELY ASSEMBLED ABOVEGROUND FIRE SPRINKLER SYSTEM SHALL BE TESTED FOR 2 HOURS AT 200 PSI, AND THERE SHALL BE NO LOSS OF PRESSURE OR VISIBLE LEAKAGE FOR THE DURATION OF THE TEST.

F. PRE-ACTION SYSTEMS

1) FIRE SPRINKLER CONTRACTOR IS TO PROVIDE COMPLETE AND SEPERATE DOUBLE INTERLOCK PRE-ACTION SYSTEMS IN THE 3 VAULTS AS SHOWN, INCLUDING ALL COMPONENTS OF THE DELUGE VALVE ELECTRONIC ACTIVATION SYSTEM-INCLUDING INSIDE VAULT SMOKE DETECTORS, ELECTRICAL PANELS, CONDUIT AND WIRING. POWER TO THE PANELS WILL BE PROVIDED BY THE ELECTR CONTRACTOR. CONTACT ALARM DESIGNER FOR POWER SUPPLIES AND INTERFACES WITH THE BLDG FIRE ALARM SYSTEM. .

2) PROVIDE NITROGEN-BASED CORROSION CONTROL FOR ALL PRE-ACTION DRY SYSTEMS PIPING.

6) PROVIDE INTERNALLY AND EXTERNALLY GALVANIZED PIPING AND FITTINGS FOR ALL PRE-ACTION DRY SYSTEMS PIPING

7) PROVIDE SRKLR GUARDS FOR ALL HEADS LESS THAN 7' ABOVE F.F.

G. SPECIAL INSTRUCTIONS

1) IN GYPSUM BOARD CEILINGS, SPRINKLERS SHALL BE LOCATED TO AVOID SURFACE MOUNTED LIGHTS AND OTHER OBSTRUCTIONS. TWO-PIECE EXTENDED ESCUTCHEONS ARE NOT ACCEPTABLE.

2) AREA OF CLOSETS AND OTHER SMALL ROOMS SHALL BE INCLUDED IN DESIGN CALCULATIONS IF DESIGN AREA LESS THAN 1500 SF IS UTILIZED FOR WET SYSTEMS. SPRINKLER PROTECT ALL BATHROOMS AND CLOSETS.

3) IN PH 1 WORK, PIPING TO BE CONCEALED IN ALL HALLWAY FINISHED CEILING AREAS, AND IN THE FRONT MAIN ENTRY DISPLAY AREA. USE OF STEEL SOFFITS IS ACCEPTABLE. EXPOSED PIPING IS ACCEPTABLE IN THE OFFICES/WORKROOM AREAS. USE SIDEWALLS TO AVOID EXPOSED PIPING IN ROOMS WITH DECORATIVE CEILING MOLDING. PRIME AND PAINT ALL EXPOSED PIPING AS PER PROJECT SPECIFICATIONS.

4) FIRE SPRINKLER WORK BEGINS AT THE EXISTING RISER HEADER AT WAYNE ST. SEE DETAIL AT SHT FS 1.0

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sheet title
FIRE SPRINKLER
NOTES

sheet number
FS 0.2

drawn by JDM
checked by JDM

INSIDE CLOUD IS PHASE 1 AREA

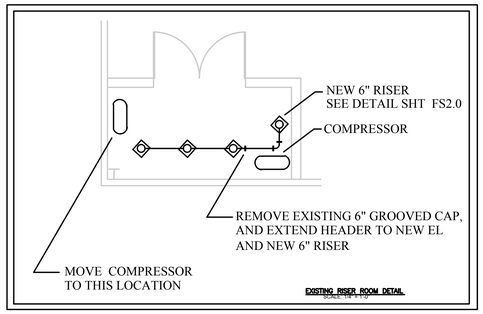
350 WAYNE ST WAREHOUSE

Min 6" sched 10

NOTE: PROVIDE FREEZE PROTECTION HEAT TRACE SYSTEM FOR NEW BULK MAIN PIPING IN UNHEATED AREA OF 350 WAYNE AND IN THE SPACE BETWEEN THE TWO STRUCTURES. USE UL LISTED OR FM APPROVED HEAT TRACE SYSTEM. PROVIDE WEATHERPROOF COVERING IN THE SPACE BETWEEN THE TWO STRUCTURES.

PROVIDE NFPA 13 COMPLIANT SEISMIC JOINT

EXISTING RISER ROOM



EXISTING RISER ROOM DETAIL
SCALE: 1/4" = 1'-0"

FILM STORAGE VAULT

FILM STORAGE VAULT

FILM STORAGE VAULT

PROVIDE ACCESSIBLE CONTROL, SIGN, TO EXIT LABEL AND INTERIOR GRILL

6" BLIND FLANGE FOR PHASE 2

Min 6" sched 10

6" BLIND FLANGE FOR PHASE 2

SVAD STUDIO 15 14' x 16'

SVAD STUDIO 14 14' x 16'

SVAD ART SHOP 16' x 52'

SVAD STUDIO 13 12' x 20'

SVAD STUDIO 12 12' x 20'

SVAD STUDIO 11 12' x 20'

SVAD STUDIO 10 12' x 20'

SVAD STUDIO 5 12' x 20'

SVAD STUDIO 6 12' x 20'

SVAD STUDIO 4 12' x 20'

SVAD STUDIO 7 12' x 20'

SVAD STUDIO 3 12' x 20'

SVAD STUDIO 8 12' x 20'

SVAD STUDIO 2 12' x 20'

SVAD STUDIO 9 12' x 20'

PORCH

UP

OFFICE/WORK AREA

OFFICE/WORK AREA

STORAGE

OFFICE/WORK AREA

OFFICE/WORK AREA

OFFICE/WORK AREA

OFFICE/WORK AREA

OFFICE/WORK AREA

OFFICE/WORK AREA

OFFICE/WORK AREA

OFFICE/WORK AREA

OFFICE/WORK AREA

OFFICE/WORK AREA

EXHIBITS AREA

OFFICE/WORK AREA

DN

UP

DRESS

DRESS

MULTIPURPOSE ROOM 476 SF 24 SEATS

THEATRE WORK RM / STOR 240 SF

SVAD STUDIO 1 PHOTOGRAPHY 238 SF

CPE THEATRE 3330 SF

THEATRE ENTRY & ART EXHIBIT 369 SF

MEN

WOMEN

SVAD C/R

67" DIA.

67" DIA.

CUST.

UNHATCHED AREAS ARE CLASSIFIED AS LIGHT HAZ. MIN DENSITY = 0.1 GPM/SF OVER MOST HYDRAULICALLY REMOTE 1500 SF

DIAGONAL HATCHED AREAS ARE CLASSIFIED AS ORD HAZ. GROUP 1. MIN DENSITY = 0.15 GPM/SF OVER MOST HYDRAULICALLY REMOTE 1500 SF

DOUBLE DIAGONAL HATCHED AREAS ARE CLASSIFIED AS ORD HAZ. GROUP 1. MIN DENSITY = 0.15 GPM/SF OVER MOST HYDRAULICALLY REMOTE 1950 SF DOUBLE INTERLOCK PREACTION SYSTEM

ANGLE HATCHED AREAS ARE CLASSIFIED AS ORD HAZ. GROUP 2. MIN DENSITY = 0.20 GPM/SF OVER MOST HYDRAULICALLY REMOTE 1500 SF

NOTE

1) IN PH 1 WORK, PIPING TO BE CONCEALED IN ALL HALLWAY FINISHED CEILING AREAS, AND IN THE FRONT MAIN ENTRY EXHIBITS AREA. USE OF STEEL SOFFITS IS ACCEPTABLE. EXPOSED PIPING IS ACCEPTABLE IN THE OFFICES/WORKROOM AREAS. USE SIDEWALLS TO AVOID EXPOSED PIPING IN ROOMS WITH DECORATIVE CEILING MOLDING. PRIME AND PAINT ALL EXPOSED PIPING AS PER PROJECT SPECIFICATIONS.

FIRST FLOOR PLAN

SCALE: 1/8" = 1'-0"

INSIDE CLOUD IS PHASE 1 AREA
AREA OUTSIDE CLOUD IS PHASE 2

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FIRE SPRINKLER
FIRST FLOOR PLAN

sheet number
FS 1.0

drawn by JDM
checked by JDM

AREA ON THIS DWG IS PHASE 2

UNHATCHED AREAS ARE CLASSIFIED AS LIGHT HAZ.
MIN DENSITY = 0.1 GPM/SF OVER MOST
HYDRAULICALLY REMOTE 1500 SF

DIAGONAL HATCHED AREAS ARE CLASSIFIED AS ORD
HAZ. GROUP 1. MIN DENSITY = 0.15 GPM/SF OVER
MOST HYDRAULICALLY REMOTE 1500 SF

SECOND FLOOR PLAN

SCALE: 1/8" = 1'-0"

NOTES
1) ALL WORK SHOWN THIS SHEET IS PHASE 1
2) IN PH 1 WORK, PIPING TO BE CONCEALED IN ALL HALLWAY FINISHED CEILING AREAS, AND IN THE FRONT MAIN ENTRY EXHIBITS AREA. USE OF STEEL SOFFITS IS ACCEPTABLE. EXPOSED PIPING IS ACCEPTABLE IN THE OFFICES/WORKROOM AREAS. USE SIDEWALLS TO AVOID EXPOSED PIPING IN ROOMS WITH DECORATIVE CEILING MOLDING. PRIME AND PAINT ALL EXPOSED PIPING AS PER PROJECT SPECIFICATIONS.

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owner
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project name
707 CATAWBA
FIRE PROTECTION UPGRADES

project number
H27-Z409 50003381-3

seals/signature
SOUTH CAROLINA MILES ENGINEERING ASSOCIATES No. CO1959 CERTIFICATE OF AUTHORIZATION
SOUTH CAROLINA REGISTERED PROFESSIONAL ENGINEER No. 12591 02/05/21 JOHN D. MILES

issued for
BID

date
FEB 05, 2021

number	item	date

key plan

sheet title
FIRE SPRINKLER
SECOND FLOOR PLAN

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FS 1.1

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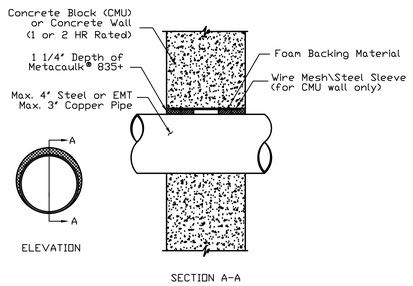
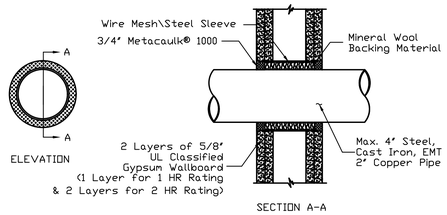
checked by JDM



UL FILE NO. CAJ1247



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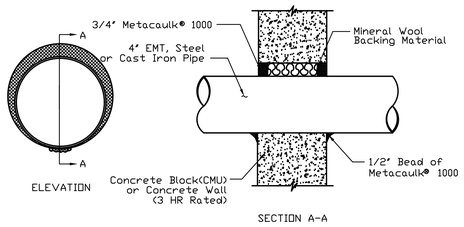

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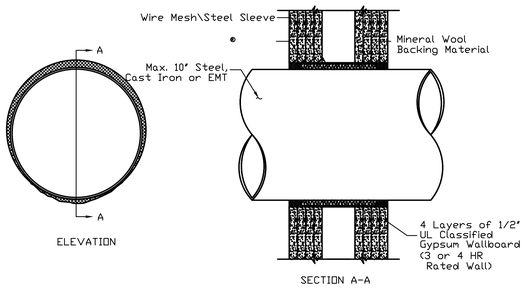
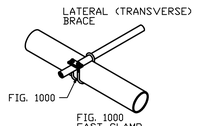


UL FILE NO. WL1159

FIRESTOPPING DETAILS

NOT TO SCALE

Note: Provide flexible fittings within 12" each side of all penetrations of masonry or concrete walls.



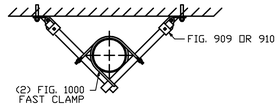
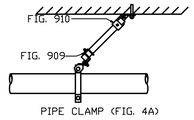
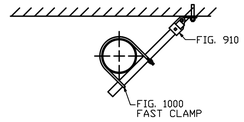


FIG. 1000 FASTCLAMP RISER BRACE



TYPICAL LONGITUDINAL SWAY BRACE

1 -- 1" Pipe
1 -- 3/8" x 2 1/2" Bolt

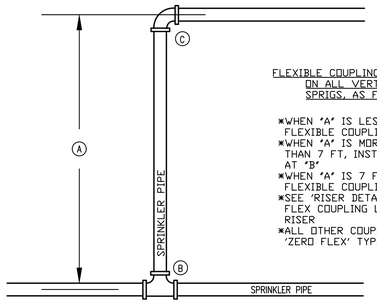


TYPICAL LATERAL SWAY BRACE

1 -- 1" Pipe
1 -- 3/8" x 2 1/2" Bolt
1 -- 1/2" Drilled Fastener
1 -- 1/2" Drilled Fastener

SEISMIC BRACING DETAILS

NOT TO SCALE – CONTRACTOR TO CALCULATE PER NFPA 13



FLEXIBLE COUPLINGS ARE TO BE INSTALLED ON ALL VERTICAL PIPES OTHER THAN SPRIGS, AS FOLLOWS:

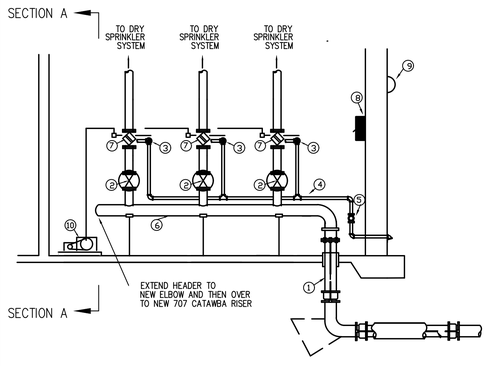
- WHEN 'A' IS LESS THAN 3 FT, NO FLEXIBLE COUPLING IS REQUIRED
- WHEN 'A' IS MORE THAN 3 FT BUT LESS THAN 7 FT, INSTALL A FLEXIBLE COUPLING AT 'B'
- WHEN 'A' IS 7 FT OR GREATER, INSTALL FLEXIBLE COUPLINGS AT 'B' AND 'C'
- SEE 'RISER DETAIL' ON THIS SHEET FOR FLEX COUPLING LOCATIONS ON THE MAIN RISER
- ALL OTHER COUPLINGS SHALL BE RIGID OR 'ZERO FLEX' TYPE

FLEXIBLE COUPLINGS FOR RISERS

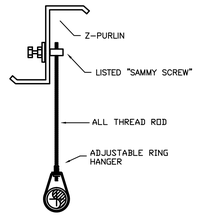
NOT TO SCALE

EXISTING RISER ELEVATION – KEY PLAN

1. 6" LEAD-IN FROM MAIN WATER SUPPLY
2. LISTED OS&Y VALVE w/TAMPER SWITCH
3. MAIN DRAIN VALVE
4. MAIN DRAIN
5. SIGHT GLASS
6. 6" RISER MANIFOLD
7. DRY PIPE VALVE w/QUICK OPENING DEVICE AND/OR ANTI-FLOODING DEVICE (IF REQUIRED BY NFPA 13) w/AN AUTOMATIC AIR MAINTENANCE DEVICE w/A PRESSURE TYPE WATERFLOW SWITCH & LOW AIR PRESSURE ALARM SWITCH.
8. SPARE SPRINKLER CABINET- WITH WRENCHES-ADD HEADS CABINET AND HEADS AS NECESSARY TO ACCOMODATE NEW AS 707 CATAWBA SYSTEM
9. ELECTRIC BELL
10. SINGLE STAGE AIR COMPRESSOR w/AN AUTOMATIC START KIT-BASE MOUNTED – SIZE H.P. AS REQUIRED. ELECTRICAL SUPPLY IS SIZED FOR MAX. 2 H.P., 208V., 1ø.



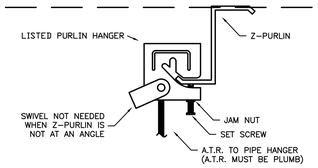
EXISTING RISER ELEVATION 350 WAYNE RISER ROOM
NOT TO SCALE



Z-PURLIN: "SAMMY SCREW" HANGER

NOTES:

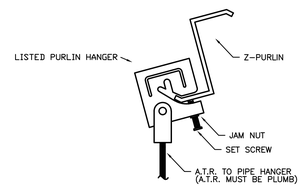
1) A.T.R. MUST BE PLUMB AND STRAIGHT. BEND ROD IS NOT PERMITTED.
2) INSTALL PER MANUFATURER INSTRUCTION AND LISTING CRITERIA.



Z-PURLIN HANGER AND A.T.R. FOR Z-PURLIN

NOTES:

1) ERICO PURLIN HANGER PH
2) FOR PIPE SIZES UP TO 3" SCHEDULE 40
3) INSTALL PER MANUFATURER INSTRUCTION AND LISTING CRITERIA.



Z-PURLIN HANGER AND A.T.R. FOR Z-PURLIN INSTALLED AT AN ANGLE

NOTES:

1) ERICO PURLIN HANGER PH
2) FOR PIPE SIZES UP TO 3" SCHEDULE 40
3) INSTALL PER MANUFATURER INSTRUCTION AND LISTING CRITERIA.

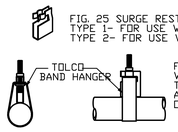
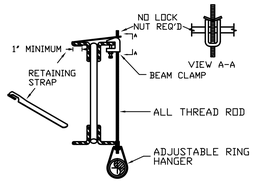


FIG. 25 SURGE RESTRAINER
TYPE 1- FOR USE WITH 1" AND 1 1/4" PIPE AND HANGER.
TYPE 2- FOR USE WITH 1 1/2" AND 2" PIPE AND HANGER.

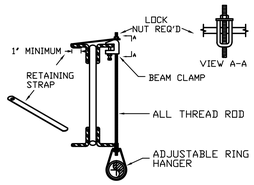
FIG. 25 IS DESIGNED TO BE USED ONLY WITH TOLCO BAND HANGERS FIG. 200, 2NFPA, TO RESTRICT UPWARD MOVEMENT OF PIPE AS IT OCCURS DURING SPRINKLER HEAD ACTIVATION OR EARTHQUAKE TYPE ACTIVITY



TOP BAR JOIST CLAMP, ROD, AND RING

NOTES:

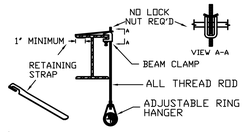
1) ATTACH TO TOP JOIST CHORD ONLY.
2) ALL SEISMIC STRAPS MUST BE SECURELY ATTACHED TO STRUCTURE, USING THROUGH-BOLT OR SELF TAPPING SCREW IF FULL 180° LOOP WITH 1" RETURN CANNOT BE PROVIDED.
3) SEISMIC STRAPS MUST BE CONFIGURED TO ADEQUATELY RESIST MOVEMENT OF C-CLAMP FROM THE LIP. NO SLACK IN STRAP BETWEEN C-CLAMP AND STRUCTURE IS ALLOWED.



TOP BAR JOIST CLAMP, ROD, AND RING

NOTES:

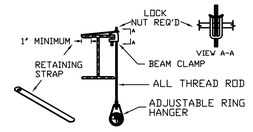
1) ATTACH TO TOP JOIST CHORD ONLY.
2) ALL SEISMIC STRAPS MUST BE SECURELY ATTACHED TO STRUCTURE, USING THROUGH-BOLT OR SELF TAPPING SCREW IF FULL 180° LOOP WITH 1" RETURN CANNOT BE PROVIDED.
3) SEISMIC STRAPS MUST BE CONFIGURED TO ADEQUATELY RESIST MOVEMENT OF C-CLAMP FROM THE LIP. NO SLACK IN STRAP BETWEEN C-CLAMP AND STRUCTURE IS ALLOWED.



TOP BEAM FLANGE CLAMP, ROD, AND RING

NOTES:

1) ATTACH TO TOP BEAM FLANGE ONLY.
2) ALL SEISMIC STRAPS MUST BE SECURELY ATTACHED TO STRUCTURE, USING THROUGH-BOLT OR SELF TAPPING SCREW IF FULL 180° LOOP WITH 1" RETURN CANNOT BE PROVIDED.
3) SEISMIC STRAPS MUST BE CONFIGURED TO ADEQUATELY RESIST MOVEMENT OF C-CLAMP FROM THE LIP. NO SLACK IN STRAP BETWEEN C-CLAMP AND STRUCTURE IS ALLOWED.



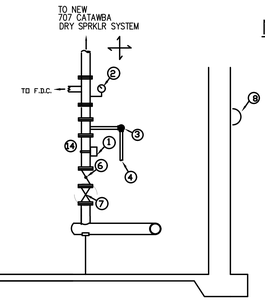
TOP BEAM FLANGE CLAMP, ROD, AND RING

NOTES:

1) ATTACH TO TOP BEAM FLANGE ONLY.
2) ALL SEISMIC STRAPS MUST BE SECURELY ATTACHED TO STRUCTURE, USING THROUGH-BOLT OR SELF TAPPING SCREW IF FULL 180° LOOP WITH 1" RETURN CANNOT BE PROVIDED.
3) SEISMIC STRAPS MUST BE CONFIGURED TO ADEQUATELY RESIST MOVEMENT OF C-CLAMP FROM THE LIP. NO SLACK IN STRAP BETWEEN C-CLAMP AND STRUCTURE IS ALLOWED.

ACCEPTABLE HANGER DETAILS

NOT TO SCALE



SECTION A – NEW RISER ELEVATION 350 WAYNE TO SUPLY 707 CATAWBA
NOT TO SCALE

NEW RISER ELEVATION - KEY PLAN

1. WATERFLOW INDICATOR FS
2. WATER PRESSURE GAGE
3. MAIN DRAIN & TEST VALVE
4. MAIN DRAIN - FLOW TEST LINE -TO OUTSIDE
5. SIGHT GLASS
6. WAFER CHECK VALVE
7. O.S.&Y. GATE VALVE w/TAMPER SWITCH TS
8. ELECTRIC BELL FLOW ALARM
9. MINIMUM 6' LEAD-IN FROM MAIN WATER SUPPLY
4. SPARE SPRINKLER CABINET-PAINTED

NOTE: PROVIDE FREEZE PROTECTION HEAT TRACE SYSTEM FOR NEW BULK MAIN PIPING IN UNHEATED AREA OF 350 WAYNE USE UL LISTED OR FM APPROVED HEAT TRACE SYSTEM SUCH AS RAYCHEM/TYCO X-L OR APPROVED EQUAL

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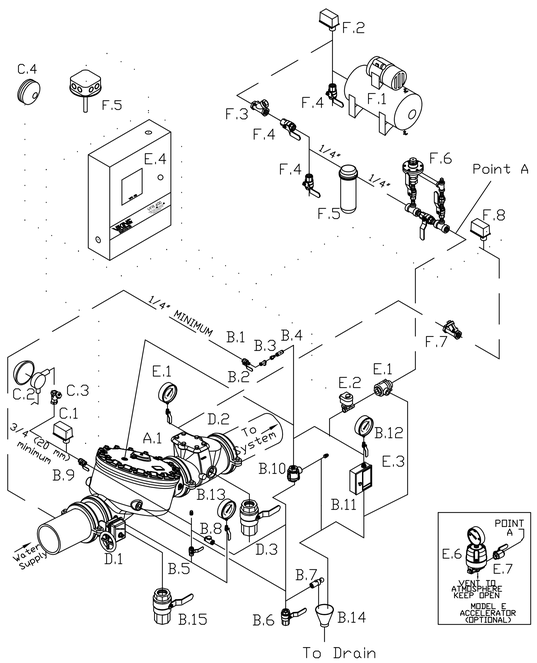

SYSTEM COMPONENTS

A. Valve
   A.1 Deluge Valve
B. Deluge Valve Conventional Trim
   (See Deluge Valve Conventional Trim Charts)
   B.1 Priming Valve (Normally Open)
   B.2 Strainer
   B.3 1/16" Restricted Orifice
   B.4 Spring Loaded Check Valve
   B.5 Alarm Test Valve (Normally Closed)
   B.6 Auxiliary Drain Valve (Normally Closed)
   B.7 Drip Check Valve
   B.8 Drain Check Valve
   B.9 Alarm Shut-Off Valve (Normally Open)
   B.10 Pressure Operated Relief Valve (P.O.R.V.)
   B.11 Emergency Release
   B.12 Priming Pressure Water Gauge and Valve
   B.13 Water Supply Pressure Gauge and Valve
   B.14 Drain Cup
   B.15 Flow Test Valve (Normally Closed)
C. Water Flow Alarm Equipment
   C.1 Alarm Pressure Switch and/or
   C.2 Water Motor Alarm (Strainer Required)
   C.3 Strainer
   C.4 Electric Alarm Bell
D. Riser
   D.1 Water Supply Control Valve
   D.2 Easy Riser Check Valve or rubber seated check valve
   D.3 Sprinkler System Main Drain
   D.4 System Pressure Gauge and Valve
E. Release System
   E.1 Pneumatic Actuator
   E.2 Solenoid Valve (Normally Closed)
   E.3 Electric / Pneumatic Release Trim
   E.4 System Control Panel
   E.5 Electric Detection System. Heat Detector shown for clarity.
   E.6 Accelerator (Optional, See Inset)
   E.7 Accelerator Isolation Valve
F. Air Supply
   F.1 Tank Mounted Air Compressor
   F.2 Air Supervisory Pressure Switch (Compressor On/Off Control Switch)
   F.3 Soft Seat Check Valve
   F.4 Shut Off Valve (Indicating Ball Valve recommended.)
   F.5 Dehydrator
   F.6 Air maintenance Device & By-Pass Trim
   F.7 Soft Seat Swing Check Valve
   F.8 Air Pressure Supervisory Switch

——— Dashed lines indicate pipe required but not listed in 'System Components' Table.

· · · Dotted lines indicate electrical detection system wiring required but not listed in 'System Components' Table.

* Deluge Valve Trim Packages contain items B.1 through B.15 and associated nipples. Accessory Package for Conventional Deluge Valve Trim contains B.2 through B.5, B7 through B.11, and B.14.

PRE-ACTION SYSTEMS NOTES

1) FIRE SPRINKLER CONTRACTOR IS TO PROVIDE COMPLETE AND SEPERATE DOUBLE INTERLOCK PRE-ACTION SYSTEMS IN THE 3 VAULTS AS SHOWN, INCLUDING ALL COMPONENTS OF THE DELUGE VALVE ELECTRONIC ACTIVATION SYSTEM-INCLUDING INSIDE VAULT HEAT DETECTORS, ELECTRICAL PANELS, CONDUIT AND WIRING, AND VAULT FA NOTIFICATION DEVICES. POWER TO THE PANELS WILL BE PROVIDED BY THE ELECTR CONTRACTOR. CONTACT ALARM DESIGNER FOR POWER SUPPLIES AND INTERFACES WITH THE BLDG FIRE ALARM SYSTEM. .

2) PROVIDE NITROGEN-BASED CORROSION CONTROL FOR ALL PRE-ACTION DRY SYSTEMS PIPING (NOT SHOWN).

3) PROVIDE INTERNALLY AND EXTERNALLY GALVANIZED PIPING AND FITTINGS FOR ALL PRE-ACTION DRY SYSTEMS PIPING

4) PROVIDE SRKLR GUARDS FOR ALL HEADS LESS THAN 7' ABOVE F.F.

5) PROVIDE MODULE IN EACH PREACTION PANEL THAT WILL NOTIFY THE BLDG MAIN FA PANEL AS TO WHICH VAULT SYSTEM IS IN ALARM, SO THAT INFO IS ANNUNCIATED BY THE MAIN PANEL

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VAULTS FIRE SYSTEM DETAILS

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