ABBREVIATIONS

&	AND	GPM	GALLONS PER MINUTE
Ø	ROUND	HD	HEAD
/R	ON ROOF	H.P.	HIGH PRESSURE
A	AIR	HTG	HEATING
AB	ABOVE BASE	IN	INCH
ABV	ABOVE	INL	INLET
ACOUS	ACOUSTICAL	INSUL	INSULATION
ADD	ADDENDUM	INWG	INCHES WATER GAUGE
ADDL	ADDITIONAL	ITC	INSPECTOR TEST CONNECT
AFF	ABOVE FINISHED FLOOR	JT	JOINT
AG	ABOVE GROUND	LAB	LABORATORY
AHJ	AUTHORITY HAVING JURISDICTION		
ALT	ALTERNATE	LB	POUND
ALV	ALARM VALVE	LB/HR	POUNDS PER HOUR
ALUM	ALUMINUM	LF	LINEAL FOOT
AP	ACCESS PANEL	LOC	LOCATION
ARCH	ARCHITECT/ARCHITECTURAL	LP	LOW PRESSURE
AUTO	AUTOMATIC	MA	MIXED AIR
AUX	AUXILLARY DRAIN	MAN	MANUAL
BFF	BELOW FINISHED FLOOR	MAX	MAXIMUM
BFV	BUTTERFLY VALVE	MD	MOTORIZED DAMPER
BSMT	BASEMENT	MFR	MANUFACTURER
BTWN	BETWEEN	MIN	MINIMUM
CAP	CAPACITY	MISC	MISCELLANEOUS
CFCV	CONSTANT FLOW CNTRL. VL.	MRA	MOST HYDRAULICALY DEMANDING AREA
CFM	CUBIC FEET PER MINUTE		
CI	CAST IRON	NIC	NOT IN CONTRACT
CIS	COMMON INTELLIGEBELITY SYS.	NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
CEG	CEILING		
COL	COLUMN	NP	NOT POTABLE
COMB	COMBINATION	NTS	NOT TO SCALE
CONC	CONCRETE	O	OXYGEN
CONT	CONTINUE/CONTINUATION	OPNG	OPENING
COORD	COORDINATE	PD	PRESSURE DROP
COR	CONTRACTOR OFFICES REP.	PIV	POST INDICATOR VALVE
CTR	CENTER	PR	PAIR
CUFT	CUBIC FEET	PREL	PRELIMINARY
D/°	DEGREE	PS	PRESSURE
DCA	DETECTOR CHECK ASSY.	PRIM	PRIMARY
DCDA	DOUBLE DETECTOR CK. ASSY.	PRV	PRESS. REDUCING VALVE
DIA	DIAMETER	PSI	LBS. PER SQ. IN.
DI	DUCTILE IRON	PSIG	LBS. PER SQ. IN. GAUGE
DISCH	DISCHARGE	PW	POTABLE WATER
DMPR	DAMPER	REC	RECESSED
DN	DOWN	RED	REDUCER
DWG	DRAWING	REQD	REQUIRED
EA	EACH	SF	SQUARE FOOT
ECS	EMERGENCY COMM. SYSTEM	SD	SMOKE DAMPER
EAH	EXHAUST HOOD	SIM	SIMILAR
EX	EXISTING	SLV	SLEEVE
EXP	EXPANSION	SP	STATIC PRESSURE
EXPJT	EXPANSION JOINT	SPS	STATIC PRESSURE STATION
ESP	EXTERNAL STATIC PRESSURE	SQ	SQUARE
F°	DEGREES FAHRENHEIT	SS	STAINLESS STEEL
FD	FIRE DAMPER	STD	STANDARD
FDV	FIRE DEPARTMENT VALVE	T	THERMOSTAT
FHR	FIRE HOSE STATION	SYS	SYSTEM
FHV	FIRE HOSE VALVE	TCP	TEMP. CONTROL PANEL
FPI	FINS PER INCH	TD	TEMPERATURE DROP
FLEX	FLEXIBLE	TEMP	TEMPERATURE
FLG	FLANGE	TSP	TOTAL STATIC PRESSURE
FT	FOOT/FEET	TYP	TYPICAL
FTG	FOOTING	U/G	UNDER GROUND
FUT	FUTURE	U/S	UNDER SLAB
GAL	GALLON	UNO	UNLESS NOTED OTHERWISE
GALV	GALVANIZED	VL	VALVE

EQUIPMENT ABBREVIATIONS

DBP	DOMESTIC WATER BOOST PUMP	FDCP	F.A. ACCESS PANEL
DCA	DETECTOR CHECK ASSY.	FMCP	F.A. MASS NOTIFICATION PNL.
DDCA	DOUBLE DETECTOR CHECK ASSY.	FAA	F.A. ANNUNCIATOR PNL.
FHR	FIRE HOSE STATION	LOC	LOCAL OPERATOR CONSOLE
F.A.	FIRE ALARM	NRSV	NON-RISING STEM VALVE
FPU	FIRE PUMP	ITC	INSPECTOR'S TEST
FDC	FIRE DEPARTMENT CONTROL	PNL	PANEL

FIRE ALARM PHASING

- FACP — NEW CONSTRUCTION FIRE EQUIPMENT (TYPICAL TAG FOR ALL NEW CONSTRUCTION)
- (E)FACP — EXISTING FIRE ALARM EQUIPMENT FOR ALL EXISTING TAGS) (TYPICAL
- (D)FACP — FIRE ALARM EQUIPMENT FOR DEMOLITION (TYPICAL FOR ALL DEMOLITION TAGS)

FIRE ALARM SHEET SET NOTE

* NOTE *
ALL OF GENERAL NOTES ON THIS SHEET ARE TO BE APPLIED TO ALL OTHER DRAWINGS IN THIS SET. SYMBOLS AND ABBREVIATIONS SHOWN ON THIS SHEET MAY OR MAY NOT BE USED IN THE CONTAINED REFERENCE DRAWINGS.

FIRE ALARM DEVICES

— FIRE ALARM CONTROL PANEL
FIRE ALARM PANEL TYPE

CONTROL PANELS ABBREVIATIONS:

APM	AMPLIFIER RACK
ACU	AUTONOMOUS CONTROL UNIT
BATT	BATTERY CABINET
FMCP	COMBI. FIRE ALARM/MASS NOTIFICATION CONTROL
DACT	DIGITAL ALARM COMMUNICATOR TRANSMITTER
FAA	FIRE ALARM ANNUNCIATOR
FACP	FIRE ALARM CONTROL
FSCP	FIRE SUPPRESSION CONTROL
GAP	GRAPHIC ANNUNCIATOR
LCD	LCD ANNUNCIATOR
LOC	LOCAL OPERATORS CONTROL
NAC	NOTIFICATION CIRCUIT POWER BOOSTER
PRE	PRE-ACTION SYSTEM
PRN	PRINTER
MIC	REMOTE VOICE
UPS	UINTERRUPTABLE POWER SUPPLY
EVAC	VOICE EVACUATION

F — FIRE ALARM ABORT SWITCH
— FIRE ALARM ABORT SWITCH TYPE

ABORT SWITCH ABBREVIATIONS:

AS	ABORT SWITCH
CO2	CARBON DIOXIDE
CA	CLEAN AGENT
DL	DELUGE SPRINKLER
DC	DRY CHEMICAL
EPO	EMERGENCY POWER OFF
F	FOAM
HL	HALON
PRE	PREACTION SYSTEM
WM	WATER MIST
WC	WET CHEMICAL

F — FIRE ALARM PULL STATION
— FIRE ALARM PULL STATION TYPE

PULL STATION ABBREVAITIONS:

CO2	CARBON DIOXIDE
CA	CLEAN AGENT
DL	DELUGE SPRINKLER
DC	DRY CHEMICAL
F	FOAM
HL	HALON
M	MANUAL
P	PULL STATAION
WM	WATER MIST
WC	WET CHEMICAL

SYMBOL	DESCRIPTION
S P	SPOT-TYPE SMOKE DETECTOR (P-PHOTO, I-IONIZATION, SB-SOUNDER BASE)
S S	DUCT SMOKE DETECTOR (S-SUPPLY, R-RETURN)
	HEAT DETECTOR (RATE OF RISE)
F	MANUAL PULL STATION (48" AFF UNLESS NOTED OTHERWISE)
WF	WATER FLOW SWITCH
VS	VALVE SUPERVISORY (TAMPER) SWITCH
DH	DOOR HOLD OPEN MODULE. PROVIDE FIRE ALARM LISTED HOLD-OPEN ASSEMBLY IF NOT CALLED OUT IN DOOR HARDWARE SCHEDULE.
E	ELECTRIC BELL FOR WATER FLOW. INSTALL AT 9'+/- ABOVE FINISHED GRADE OR AS DIRECTED BY FIRE MARSHAL.
AIM	ADDRESSABLE MODULE (AIM - INPUT, AOM - OUTPUT, AIO - INPUT/OUTPUT)
	UV FLAME DETECTOR

SYMBOL	DESCRIPTION
15 C	CEILING MOUNT HORN AND CLEAR STROBE, 15 CANDELA UNLESS NOTED OTHERWISE
15	WALL MOUNT HORN AND CLEAR STROBE, 15 CANDELA UNLESS NOTED OTHERWISE
15	CEILING MOUNT CLEAR STROBE, 15 CANDELA UNLESS NOTED OTHERWISE
15	WALL MOUNT CLEAR STROBE, 15 CANDELA UNLESS NOTED OTHERWISE

GENERAL SYMBOLS

1	REVISION NUMBER SHOWN ON PLANS
	POINT WHERE NEW CONNECTS TO EXISTING
	DEMOLISH TO POINT INDICATED
1 FX001	NUMBER OF DETAIL ON SHEET NUMBER OF SHEET WHERE DETAIL APPEARS
1	KEYNOTE
	PIPE CONTINUATION
SPACE TAG: OFFICE 101	SPACE NAME / SPACE NUMBER
	ITEM TO BE DEMOLISHED
	AREA NOT IN CONTRACT

FIRE ALARM DEVICE MOUNTING NOTE

WALL MOUNTED VISUAL DEVICES TO BE LOCATED SUCH THAT THE ENTIRE LENS OF THE STROBE IS BETWEEN 80" AND 96" AFF. ALL WALL MOUNTED NOTIFICATION DEVICES SHALL BE MOUNTED AT THE SAME HEIGHT AFF TO ACHIEVE A UNIFORM APPEARANCE OR AS DIRECTED BY THE A/E. WATTAGE AND CANDELA ARE GUIDELINES. CONTRACTOR RESPONSIBLE FOR FINAL SPACING AND TOTAL DEVICE POWER.

GENERAL

1. FIRE ALARM SYSTEM AND DEVICES SHALL BE INSTALLED TO THE LATEST EDITION OF NFPA 72, NFPA 70, AND LOCAL REQUIRMENTS.
2. ALL FIRE ALARM INSTALLATIONS, INCLUDING PULLING OF WIRE AND MOUNTING OF DIVICES, SHALL HAVE OVERSIGHT OF A NICET LEVEL II FIRE ALARM TECHNICIAN OR HIGHER.
3. STROBES SHALL BE SYNCHRONIZED PER NFPA 72.
4. ALL FIRE ALARM CABLE SHALL BE RUN IN RED FACTORY COLORED CONDUIT.
5. THESE DESIGN DOCUMENTS PROVIDE GENERAL SPACING, LOCATION, AND COORDINATION CRITERIA. CONTRACTOR SHALL BE RESPONSIBLE FOR CIRCUIT CONFIGURATION, SYSTEM PERFORMANCE, SOFTWARE CONFIGURATION, DEVICE PROGRAMMING, SYSTEM COMMISSIONING, AND SYSTEM WARRANTY.
6. CONTRACTOR SHALL SUBMIT FIRE ALARM, DATA CUT-SHEETS, AND VOLTAGE DROP CALCULATIONS TO AHJ AND A/E FOR REVIEW AND APPROVAL PRIOR TO BEGINNING ANY WORK ON THE FA SYSTEM.
7. NO FA DOCUMENTS/PLANS SHALL BE USED FOR INSTALLATION OF THIS SYSTEM UNLESS THEY CONTAIN A REVIEW AND APPROVAL STAMP FROM THE AHJ AND THE A/E. THE LOCAL AHJ HAS THE AUTHORITY TO STOP ANY WORK UNTIL SUCH PLANS ARE ON SITE AND IN USE.
8. SEPARATE FIRE ALARM SPECIFICATIONS CONTAIN VERY DETAILED INFORMATION ABOUT THIS SYSTEM AND SHALL BE FOLLOWED, ON-SITE AND AVAILABLE DURING ANY CONSTRUCTION.
9. SECONDARY POWER PERFORMANCE TO MEET NFPA 72. 24 HOURS OF STANDBY POWER FOLLOWED BY 15 MINUTES OF ALARM FOR ALL CONNECTED DEVICES AT MAXIMUM LOAD. SECONDARY POWER FOR THE SYSTEM SHALL ALSO BE DESIGNED TO OPERATE MAXIMUM CONNECTER ALARM LOAD FOR 60 MINUTES IMMEDIATELY FOLLOWING DISCONNECTION OF PRIMARY POWER.
10. CIRCUITS TO BE 24V TYPICAL.

LOCATION / SPACING

1. IN ACCORDANCE WITH 2019 NFPA 72, STROBES MAY BE MORE THAN 15 FEET FROM THE END OF A CORRIDOR WHEN ROOM SPACING CRITERIA APPLIES USING THE APPROPRIATE CANDELA.
2. WALL MOUNTED SPEAKER, STROBES, OR SPEAKER/STROBES SHALL BE AT 96" OR 6" BELOW THE CEILING, WHICHEVER IS LOWER.
3. ALL SMOKE DETECTORS SHALL BE LOCATED WHERE THEY CAN BE READILY SERVICED.
4. ALL SMOKE DETECTORS SHALL BE CEILING MOUNTED OR WITHIN 12" OF THE CEILING.
5. SMOKE DETECTORS SHALL NOT BE INSTALLED WITHIN 3' OF AN AIR-SUPPLY OR RETURN GRILLE PER MFG CRITERIA AND APPENDIX 'A' OF NFPA 72.
6. EACH POWER BOOSTER PANEL OR FIRE ALARM PANEL SHALL BE PROTECTED BY A SMOKE DETECTOR. WHEN PROVIDED, EACH DETECTOR WITHIN THE SAME SPACE WILL SATISFY THIS REQUIREMENT.
7. AIR HANDLER SYSTEMS OVER 2,000 CFM SHALL BE PROVIDED WITH MEANS TO SHUT DOWN UPON THE DETECTION OF SMOKE. THESE DETECTORS SHALL NOT INITIATE A GENERAL FIRE ALARM.
8. DAMPER AND HVAC SMOKE DETECTORS SHALL BE PROVIDED BY THE FIRE ALARM CONTRACTOR, LISTED WITH THE FIRE ALARM SYSTEM, AND INCORPORATE ADDRESSABLE MODULES.
9. WHERE APPLICABLE, SMOKE DETECTORS FOR AIR-HANDLER SHUT DOWN SHALL BE ON BOTH SUPPLY AND RETURN DUCTS.
10. WALL MOUNTED VISUAL DEVICES TO BE LOCATED SUCH THAT THE ENTIRE LENS OF THE STROBE IS BETWEEN 80" AND 96" AFF. ALL WALL MOUNTED NOTIFICATION DEVICES SHALL BE MOUNTED AT THE SAME HEIGHT AFF TO ACHIEVE A UNIFORM APPEARANCE OR AS DIRECTED BY THE A/E. WATTAGE AND CANDELA ARE GUIDELINES. CONTRACTOR RESPONSIBLE FOR FINAL SPACING AND TOTAL DEVICE POWER.

PERFORMANCE

1. ANY SMOKE DETECTOR THAT HAS BEEN INSTALLED PRIOR TO THE CONSTRUCTION CLEANUP OF ALL TRADES AND WITHOUT PRIOR WRITTEN APPROVAL OF THE ENGINEER AND LOCAL AHJ SHALL BE MARKED IN A MANNER THAT WILL IDENTIFY IT FROM RE-USE AND SHALL BE REPLACED PRIOR TO COMMISSIONING OF THE SYSTEM OR TURNING OVER TO THE OWNER. SUCH DETECTORS SHALL BE REPLACED AT THE SOLE EXPENSE OF THE INSTALLING CONTRACTOR.
2. DUCT DETECTORS SHALL BE MONITORED FOR INTEGRITY AND PROVIDE A SUPERVISORY SIGNAL AT THE FIRE ALARM PANEL. AIR HANDLER SYSTEMS SHALL BE RAN AND BLOWN OUT PRIOR TO INSTALLATION OF SMOKE DETECTORS.
3. FIRE ALARM AUDIBLE ALERT SIGNALS SHALL BE SET TO TEMPORAL CODE PER NFPA 72.
4. UNLESS OTHERWISE NOTED THE FOLLOWING MINIMUM SURVIVABILITY CRITERIA SHALL BE MET: SIGNALING LINE CIRCUITS CLASS "B", AND NOTIFICATION CIRCUITS CLASS "B".
5. INITIATING DEVICES SHALL BE INDIVIDUALLY ADDRESSABLE.

ACCEPTANCE TESTING

1. A COMPLETED AND SIGNED RECORD (CERTIFICATE) OF COMPLETION FORM SHALL BE PROVIDED BY THE CONTRACTOR TO THE AHJ, OWNER, AND A/E PRIOR TO COMMISSION TESTING. THIS CERTIFICATE SHALL CERTIFY THAT THE CONTRACTOR HAS PRE-TESTED EVERY DEVICE AND FUNCTION OF THE SYSTEM AND REPAIRED ANY DEFICIENCIES PRIOR TO THE COMMISSIONING TEST.
2. ALL SMOKE DETECTORS SHALL BE COMMISSIONED USING CANNED SMOKE OR A METHOD THAT WILL FUNCTIONALLY TEST THE SMOKE CHAMBER. THE USE OF MAGNETS FOR COMMISSION TESTING OF SMOKE DETECTORS IS STRICTLY PROHIBITED.
3. EACH AND EVERY DEVICE SHALL BE TESTED DURING COMMISSIONING AND PRIOR TO BEING TURNED OVER TO THE OWNER.
4. EACH NOTIFICATION CIRCUIT SHALL BE TESTED UNDER STANDBY/BATTERY POWER. ANY CIRCUIT THAT MEASURES LESS THAN 20 VOLTS DC OR THE NAMEPLATE VOLTAGE, WHICHEVER IS HIGHER, SHALL BE CONSIDERED AS FAILING THE DESIGN. NOTE: SOME SYSTEMS INCORPORATING SYNCHRONIZING MODULES CAN IMPAIR RESULTS. IF THE MODULE CANNOT BE BYPASSED FOR VOLTAGE READINGS, THE MANUFACTURER SHOULD BE CONTACTED FOR GUIDANCE. WHEN VOLTAGE CANNOT BE MEASURED, CIRCUIT WIRE RESISTANCE READINGS AND DEVICE LOAD MAY BE COMPARED TO DESIGN CALCULATIONS (MAKE SURE CIRCUIT IS REMOVED FROM POWER SUPPLY WHEN OBTAINING WIRE RESISTANCE). ONLY A QUALIFIED TECHNICIAN EMPLOYED BY THE INSTALLING CONTRACTOR SHOULD PERFORM THIS FUNCTION.
5. EACH CIRCUIT'S END-OF-LINE VOLTAGE SHALL BE DOCUMENTED FOR COMPARISON TO THE DESIGN END-OF-LINE CALCULATIONS.

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501.372.2900 cromwell.com

Project
AEROJET ROCKETDYNE A17 CONTROL BUILDING EAST CAMDEN, ARKANSAS

Design Phase
CONSTRUCTION DOCUMENTS

Revisions

No.	Date	Description

Stamp

CERTIFICATE OF AUTHORIZATION CROMWELL ARCHITECTS/ ENGINEERS #5 ARKANSAS ENGINEERS

STATE OF ARKANSAS REGISTERED PROFESSIONAL ENGINEER No. 19823

02-20-2025

Notes

2. THIS SHEET DESIGNED FOR COLOR PRINTING. CRITICAL INFORMATION MAY BE LOST WITH BLACK AND WHITE PRINTING.

Project Number 2024-210

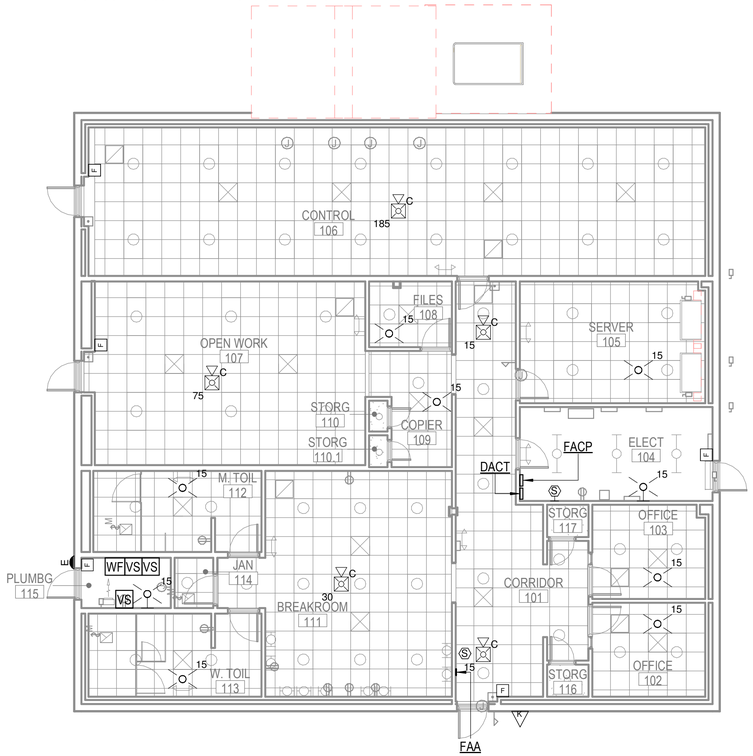
Issue Date 02-20-2025

Sheet Title
FIRE ALARM LEGEND AND NOTES

Sheet Number
FA001

NOTE:

THE FIRE ALARM TRANSMITTER SHALL BE FULLY COMPATIBLE WITH THE EXISTING PROPRIETARY SUPERVISING STATION RECEIVING EQUIPMENT. THE CONTRACTOR IS RESPONSIBLE FOR ALL ASSOCIATED HARDWIRE AND COMPONENTS FOR THE COMPLETE INSTALLATION INCLUDING SOFTWARE PROGRAMMING. FIRE ALARM SHALL BE MONITORED REMOTELY FROM GUARD POST 1 IN ADDITION TO THE REMOTE SUPERVISING STATION.



1 FIRE ALARM CEILING PLAN

1/8" = 1'-0"

0 4 8 16

NORTH

CROMWELL

1300 East 6th Street Little Rock, AR 72202
501.372.2900 cromwell.com

Project

AEROJET ROCKETDYNE
A17 CONTROL BUILDING
EAST CAMDEN,
ARKANSAS

Design Phase

CONSTRUCTION DOCUMENTS

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STATE OF ARKANSAS
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No. 19823
JOHN W. OSSIAN

02-20-2025

Notes

1. **CROMWELL ARCHITECTS ENGINEERS, INC. ALL RIGHTS RESERVED**
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Project Number **2024-210**

Issue Date **02-20-2025**

Sheet Title

FIRE ALARM CEILING PLAN

Sheet Number

FA101

ABBREVIATIONS

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Ø	ROUND	HD	HEAD
/R	ON ROOF	H.P.	HIGH PRESSURE
A	AIR	HTG	HEATING
AB	ABOVE BASE	IN	INCH
ABV	ABOVE	INL	INLET
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COMB	COMBINATION		
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CONT	CONTINUE/CONTINUATION	NTS	NOT TO SCALE
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CTR	CENTER	PD	PRESSURE DROP
CUFT	CUBIC FEET	PIV	POST INDICATOR VALVE
D/°	DEGREE	PR	PAIR
DCA	DETECTOR CHECK ASSY.	PREL	PRELIMINARY
DCDA	DOUBLE DETECTOR CK. ASSY.	PS	PRESSURE
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FUT	FUTURE	TYP	TYPICAL
GAL	GALLON	U/G	UNDER GROUND
GALV	GALVANIZED	U/S	UNDER SLAB
GEN	GENERATOR	UNO	UNLESS NOTED OTHERWISE
GENL	GENERAL	VL	VALVE
		VOL	VOLUME

EQUIPMENT ABBREVIATIONS

AFMS	AIR FLOW MEASURING STATION	FDC	FIRE DEPARTMENT CONTROL
CF	CABINET FAN	FDCP	F.A. ACCESS PANEL
CF	CHEMICAL FEEDER	FMCP	F.A. MASS NOTIFICATION PNL.
DBP	DOMESTIC WATER BOOST PUMP	FAA	F.A. ANNUNCIATOR PNL.
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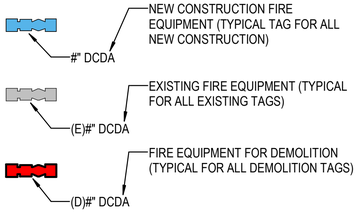
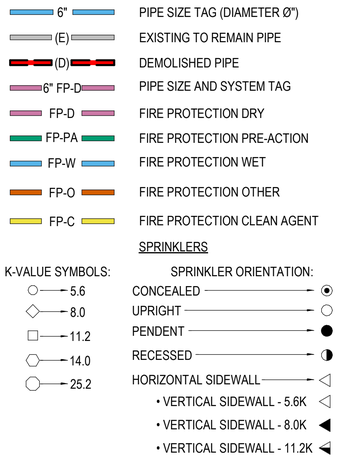
FHR	FIRE HOSE STATION	ITC	INSPECTOR'S TEST
F.A.	FIRE ALARM	PNL	PANEL
FPU	FIRE PUMP		

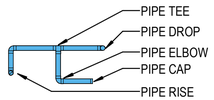
FIRE PROTECTION PHASING



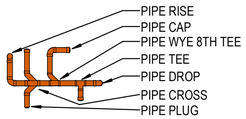
FIRE PROTECTION PIPING LEGEND



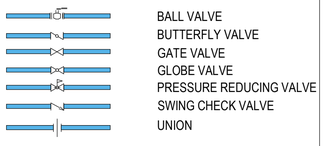
METALLIC PIPE SYMBOLS



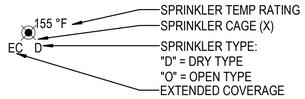
PLASTIC PIPE SYMBOLS



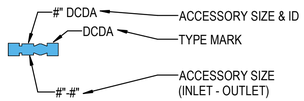
PIPE ACCESSORIES



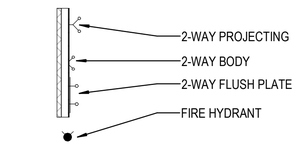
SPRINKLER TAGS



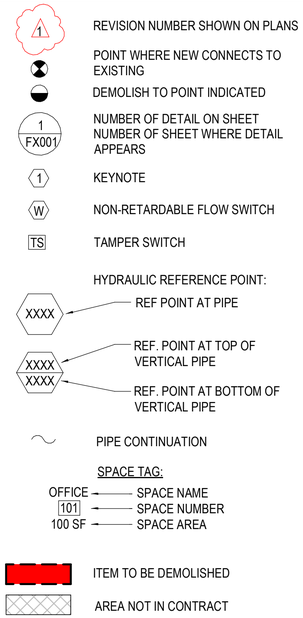
PIPE ACCESSORY TAGS



FIRE DEPARTMENT CONNECTIONS



GENERAL SYMBOLS



FIRE PROTECTION HAZARD LEGEND

FIRE PROTECTION SHEET SET NOTE

* NOTE *

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GENERAL NOTES

1. THE CONTRACTOR SHALL PROVIDE AND INSTALL AN AUTOMATIC FIRE SPRINKLER SYSTEM TO FULLY PROTECT THIS FACILITY. THE FIRE SPRINKLER SYSTEM SHOWN THESE DRAWINGS IS BASED ON PRESCRIPTIVE DESIGN AND CONCEPTUAL ONLY.
2. THE SPRINKLER CONTRACTOR SHALL SUBMIT COMPLETE FIRE SPRINKLER SYSTEM SHOP DRAWINGS BASED ON NFPA 13 AND SPECIFICATION REQUIREMENTS AND SUBMIT FOR APPROVAL PRIOR TO INSTALLATION.
3. THE EQUIPMENT SHOWN ARE SUGGESTED LOCATIONS HOWEVER FINAL LAYOUT SHALL BE IN ACCORDANCE WITH APPLICABLE CODES, MANUFACTURER'S RECOMMENDATIONS, AND EQUIPMENT LISTINGS. CONTRACTOR SHALL COORDINATE BRANCH LINE AND SPRINKLER HEAD LOCATIONS WITH CEILING PANELS, LIGHTING FIXTURES, HVAC DUCTS AND AIR DEVICES, PLUMBING AND OTHER TRADES NOT SPECIFICALLY NAMED.
4. ALL EQUIPMENT SHALL BE UL LISTED AND FM APPROVED IN ACCORDANCE WITH NFPA 13 AND PROJECT SPECIFICATIONS.
5. CONTRACTOR SHALL SUBMIT SETS OF FIRE SUPPRESSION PLANS, DATA CUT-SHEETS, AND HYDRAULIC CALCULATIONS TO A/E AND AHJ FOR REVIEW AND APPROVAL PRIOR TO BEGINNING ANY WORK ON THE FIRE SUPPRESSION SYSTEM.
6. THE CONTRACTOR SHALL CONDUCT WATER SUPPLY HYDRANT TEST FOR THIS PROJECT BASED ON NFPA 291 REQUIREMENTS AND UTILIZE THIS DATA TO DESIGN THE SPRINKLER SYSTEM. THE HYDRANT LOCATIONS, FLOW TESTS, AND DATE SHALL BE INDICATED ON THE SHOP DRAWINGS. AUTOMATIC SPRINKLER PROTECTION SYSTEM IS REQUIRED TO PROTECT THIS ENTIRE FACILITY. A MINIMUM 10% SAFETY FACTOR IS REQUIRED BETWEEN THE AVAILABLE WATER SUPPLY AND THE SPRINKLER SYSTEM DEMAND.
7. PROVIDE EARTHQUAKE PROTECTION (SWAY BRACING), END OF BRANCH LINE AND SEISMIC BRACING CALCULATION IN ACCORDANCE WITH NFPA 13 REQUIREMENTS . MINIMUM Cp TO BE DETERMINED BASED ON STRUCTURAL DESIGN DOCUMENTS OR USGS DATA FOR SITE SPECIFIC SHORT PERIOD SPECTRAL RESPONSE (Ss).
8. FIRE PROTECTION DEVICES AND PIPING ON PLANS ARE NOT FOR CONSTRUCTION, THEY ARE FOR COST ESTIMATING ONLY.
9. THE CONTRACTOR SHALL CONFORM TO THE SYMBOLS INDICATED IN NFPA 170 TO DEVELOP THE AS-BUILT DRAWINGS FOR THIS PROJECT.
10. ALL AUTOMATIC SPRINKLER DRAIN VALVES FOR FIRE DEPARTMENT CONNECTIONS SHALL BE INSTALLED IN THE HORIZONTAL POSITION.
11. FLEXIBLE COUPLINGS SHALL BE INSTALLED IN ACCORDANCE WITH NFPA 13.
12. ALL DRAIN PIPING SHALL BE COORDINATED WITH AND APPROVED BY A/E FOR ARRANGEMENT, LOCATION (DOWNSPOUT, DOCK PARKING LOT, ETC.) AND APPROPRIATENESS OF THE MEANS OF DISCHARGE (STORM SEWER, SANITARY SEWER, BIOSWALE, ETC,) THAT WILL HANDLE THE FULL FLOW OF THE DRAIN WITHOUT SPECIAL TOOLS OR EQUIPMENT AND WITH DAMAGE TO LANDSCAPING OR PAVEMENT.
13. INSPECTOR'S TEST CONNECTION SHALL BE NOT LARGER THAN 1/2" ORIFICE AND BE LOCATED ON THE REMOTE BRANCH LINE.

SYSTEM NOTES

1. ALL SYSTEM PIPING SHALL BE HYDROSTATICALLY TESTED @ 200 PSI FOR TWO HOURS OR AT 50 PSI ABOVE THE OPERATIONAL STATIC PRESSURE OF THE SYSTEM, WHICHEVER IS GREATER.
2. EACH VALVE SHALL HAVE A PERMANENTLY AFFIXED SIGN INDICATING ITS FUNCTION. ALL VALVE HANDLES MUST BE ACCESSIBLE.
3. A STOCK OF SPARE SPRINKLERS, NOT LESS THAN 6, CONSISTING OF A REPRESENTATIVE MIX OF EACH STYLE AND TEMPERATURE RATING SHALL BE PROVIDED WITH A WRENCH AND BE LOCATED NEAR THE RISER. SPARE SPRINKLER CABINET WILL BE MOUNTED WHERE THE SPRINKLERS WILL NOT BE SUBJECTED TO TEMPERATURES ABOVE 100 DEG. F.
4. SPRINKLERS SHALL BE A MINIMUM OF 1/2" NPT 1/2" ORIFICE K-5.6 QUICK RESPONSE. PENDENT SPRINKLERS SHALL BE INSTALLED IN THE CENTER POINTS OF THE CEILING TILES. CONCEALED SPRINKLERS WITH WHITE COVER PLATES SHALL BE INSTALLED THROUGHOUT FINISHED CEILINGS. OTHER SPRINKLERS SHALL BE GLASS BULB, BRONZE FINISHED WITH AN ORIFICE AND THREAD SIZE APPROPRIATE FOR THE HAZARD AND DENSITY.
5. BRANCH LINE CONNECTIONS TO THE MAIN SHALL BE PRE-DRILLED, SHOP WELDED OUTLETS OR OTHER CONNECTIONS AS APPROVED, MECHANICAL TEES SHALL NOT BE USED ON NEW SYSTEMS. MAIN PIPING FOR THE SYSTEMS SHALL BE SCHEDULE 40. BRANCH LINE PIPING FOR THIS PROJECT SHALL BE SCHEDULE 40 PIPE WITH SCREWED AND/OR WELDED FITTINGS. IF A HISTORY OF CORROSION IS KNOWN TO EXIST, SCHEDULE 10 PIPING MAY BE USED.
6. THREADABLE THINWALL, ENGINEERED PIPE SIZING, IE DYNATHREAD/DYNAFLOW, AND CPVC MAY NOT BE USED.
7. ALL MATERIALS USED IN THE INSTALLATION OF THIS SYSTEM(S) SHALL BE NEW AND OF CURRENT ISSUE. ALL MATERIALS SHALL BE APPROVED BY UL AND BE IN CONFORMANCE WITH SPECIFICATIONS, CURRENT EDITION OF NFPA-13 AS WELL AS THE AUTHORITY HAVING JURISDICTION.
8. SYSTEM PIPING WILL BE SUPPORTED AND BRACED WITH HANGERS AND LISTED EARTHQUAKE BRACE ASSEMBLIES IN ACCORDANCE PER NFPA-13.
9. PAINTING OF THE SYSTEM PIPING AND COMPONENTS SHALL BE DONE PER A/E SPECIFICATIONS.
10. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN THE INTEGRITY OF THE SPRINKLER SYSTEM DURING CONSTRUCTION.
11. ELEVATIONS AND DIMENSIONS SHOWN ON THESE DRAWINGS ARE NOMINAL.
12. THE VERTICAL DISTANCE BETWEEN THE SPRINKLER DEFLECTOR AND THE CEILINGS AND/OR ROOF DECK SHALL BE A 1" MIN AND 12" MAX PER NFPA 13.
13. THE SMALL-ROOM RULE MAY BE USED IN ROOMS UNDER 800 SQUARE FEET. THIS RULE ALLOWS THAT SPRINKLERS TO BE SPACED UP TO 9' FROM ONE WALL, UP TO 225sq ft PER SPRINKLER, PROVIDED THERE IS AN 8" LINTEL AT THE DOORS/OPENINGS.
14. WATER VELOCITIES SHALL NOT EXCEED 20-FPS.
15. SPRINKLER AREAS WILL BE LIMITED IN ACCORDANCE WITH NFPA 13.
16. ALL PIPE UP TO 4" SHALL HAVE AN ANTIBACTERIAL PROTECTIVE COATING EQUIVALENT TO ALLIED TUBE AND CONDUIT M-COTE, AND BE SHOWN TO NOT BE INCOMPATIBLE WITH CPVS. CONTRACTOR TO VERIFY.
17. AUTOMATIC SPRINKLER SYSTEMS SHALL BE SUPERVISED AND INTERFACE WITH NEW FIRE ALARM SYSTEM.
18. THE CONTRACTOR SHALL PROVIDE THE INSPECTOR WITH COPY OF: THE "CONTRACTOR'S MATERIAL & TEST CERTIFICATE FOR ABOVEGROUND PIPING" IN ACCORDANCE WITH NFPA 13; AND THE "RECORD OF COMPLETION" FOR FIRE ALARM SYSTEMS IN ACCORDANCE WITH NFPA 72. THESE DOCUMENTS SHALL BE PRESENTED UPON SUCCESSFUL COMPLETION ON THE SYSTEM TEST AND PRIOR TO ACCEPTANCE OF THE SYSTEM.
19. ONE SET OF STAMPED, APPROVED DRAWINGS SHALL BE ON SITE AT ALL TIMES AND MADE AVAILABLE TO INSPECTORS ON DEMAND.
20. FIRE DEPARTMENT VEHICLE ACCESS ROADWAYS SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION. REQUIRED WATER FLOW SHALL BE PROVIDED AND MAINTAINED THROUGHOUT CONSTRUCTION AND PRIOR TO ANY COMBUSTIBLES BEING BROUGHT ON SITE.
21. FIRE PROTECTION SYSTEMS SHALL BE INSTALLED BY A CONTRACTOR LICENSED TO PERFORM SUCH WORK IN THE PROJECT JURISDICTION.

FLOW DATA

DATE OF TESTING: 01-23-2025

STATIC PRESSURE: 75.00 psi **RESIDUAL PRESSURE:** 60.00 psi **FLOW:** 1,300 GPM

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Project

AEROJET ROCKETDYNE
A17 CONTROL BUILDING
EAST CAMDEN,
ARKANSAS

Design Phase

CONSTRUCTION DOCUMENTS

Revisions

No.	Date	Description

Stamp

CERTIFICATE OF AUTHORIZATION
CROMWELL ARCHITECTS/ ENGINEERS #5
ARKANSAS ENGINEER

STATE OF ARKANSAS
REGISTERED PROFESSIONAL ENGINEER
No. 19823
JOHN W. OSSIN

02-20-2025

Notes

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Project Number **2024-210**

Issue Date **02-20-2025**

Sheet Title

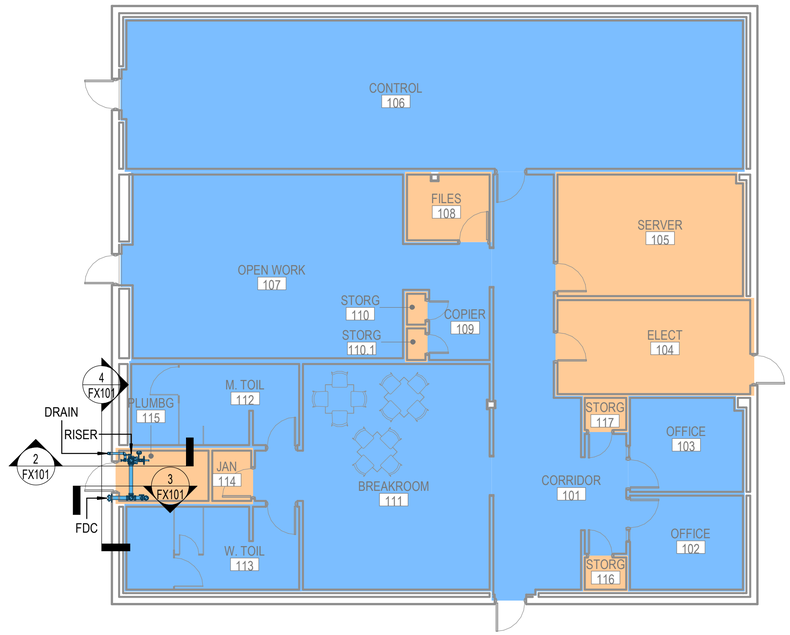
FIRE PROTECTION LEGEND AND NOTES

Sheet Number

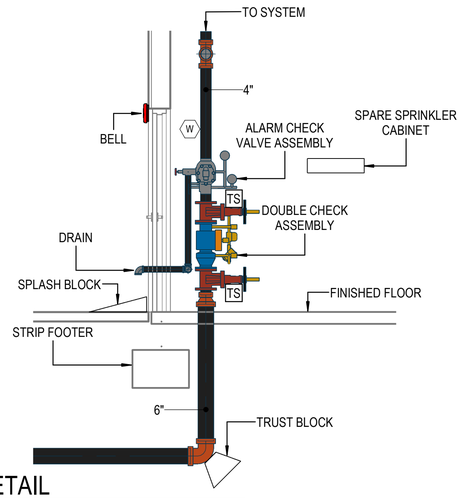
FX001

Hazard Zones

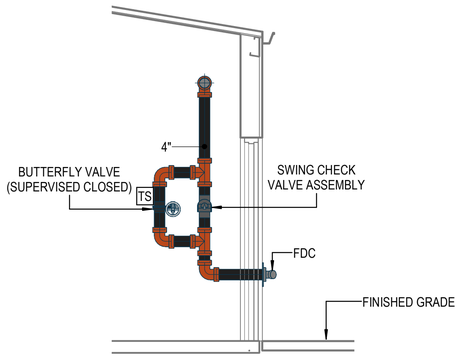
- LIGHT HAZARD
- ORDINARY HAZARD 1



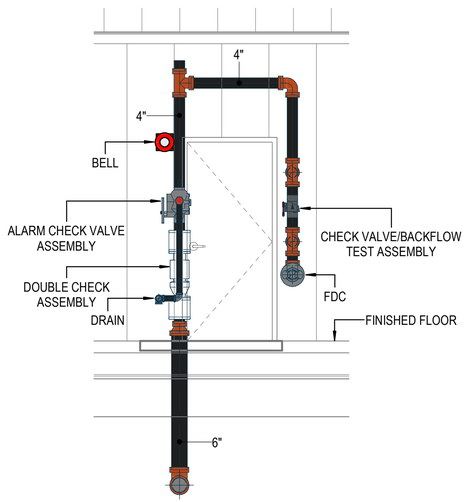
1 FIRE PROTECTION FLOOR PLAN
1/8" = 1'-0"
0 4 8 16
NORTH



2 RISER DETAIL
3/8" = 1'-0"
0 2 4 8



3 FDC & BACKFLOW TEST ASSEMBLY DETAIL
3/8" = 1'-0"
0 2 4 8



4 FDC & BACKFLOW TEST PIPING DETAIL
3/8" = 1'-0"
0 2 4 8

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REGISTERED PROFESSIONAL ENGINEER
No. 19823
JAY WOBSER

02-20-2025

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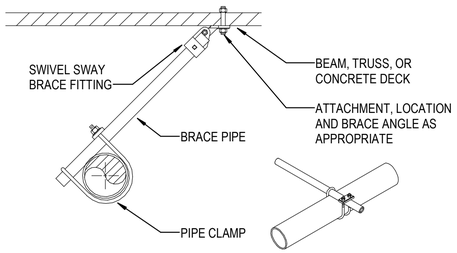
Sheet Title

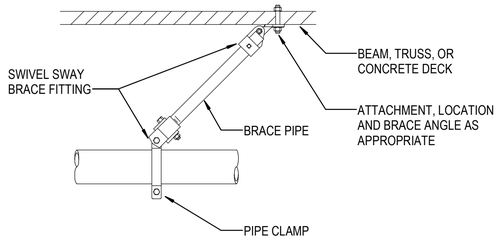
FIRE PROTECTION FLOOR PLAN

Sheet Number

FX101



1 LATERAL SWAY BRACE
NOT TO SCALE



2 LONGITUDINAL SWAY BRACE DETAIL
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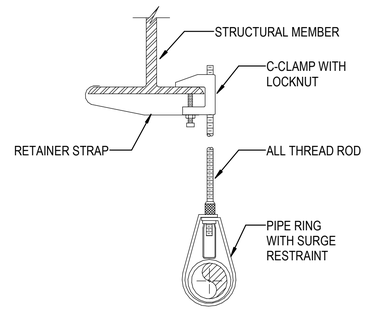
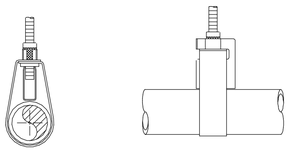
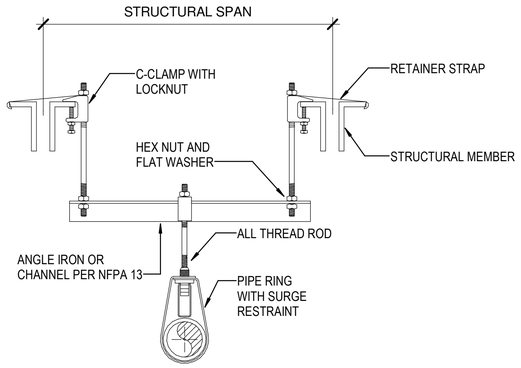


3 BEAM CLAMP HANGER
NOT TO SCALE

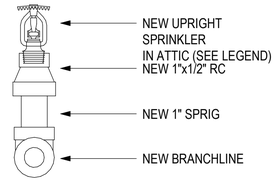


NOTE: SURGE RESTRAINERS ARE TO BE USED ONLY WITH BAND HANGERS TO RESTRAIN THE UPWARD MOVEMENT OF PIPE AS IT OCCURS DURING SPRINKLER HEAD ACTIVATION OR SEISMIC ACTIVITY. INSTALL AT ENDS OF LINES AND AT 30' INTERVALS ON BRANCH LINES.

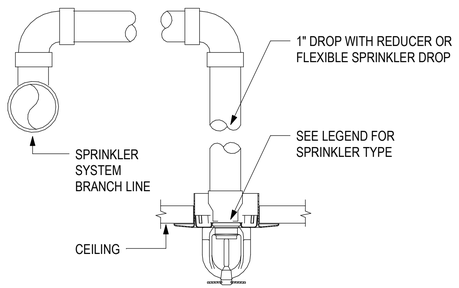
4 HANGER SURGE
NOT TO SCALE



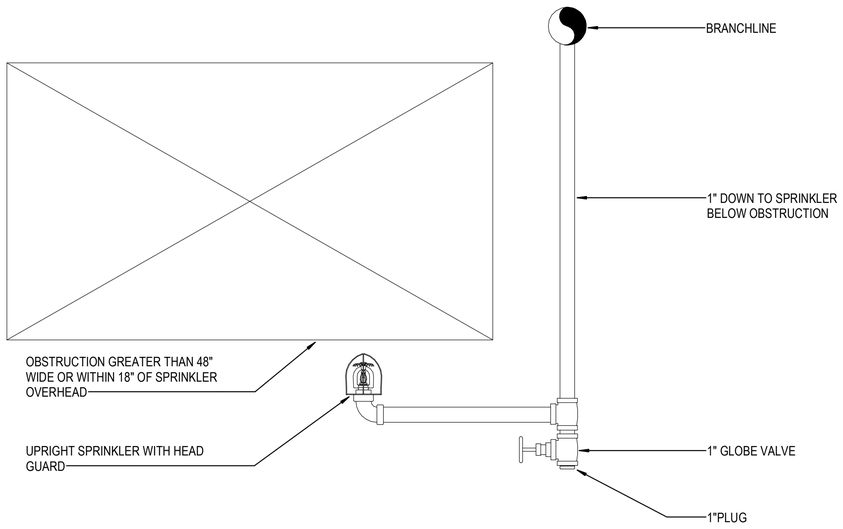
5 TRAPEZE HANGER
NOT TO SCALE



6 UPRIGHT SPRINKLER DETAIL
NOT TO SCALE



7 RETURN BEND
NOT TO SCALE



8 SPRINKLER UNDER OBSTRUCTION
NOT TO SCALE

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FIRE PROTECTION DETAILS

Sheet Number
FX501