



DATE	APPROXIMATE
DESCRIPTION	



DESIGNED BY:	Greg Jones	CAPITAL PROJECT NO.:	
CHECKED BY:	Greg Jones	SITE CODE:	
LEGACY PROJECT NO.:	KSRM	DATE:	02/07/19
BASE PROJECT MANAGER:		APPROVER:	



DEPARTMENT OF THE AIR FORCE
75TH AIR BASE WING
75TH CIVIL ENGINEER GROUP

HILL AIR FORCE BASE, UTAH - B591 REPAIR HVAC
AND OFFICE SPACE
CAPITOL PROJECT NO. 169011
FIRE SPRINKLER PLAN

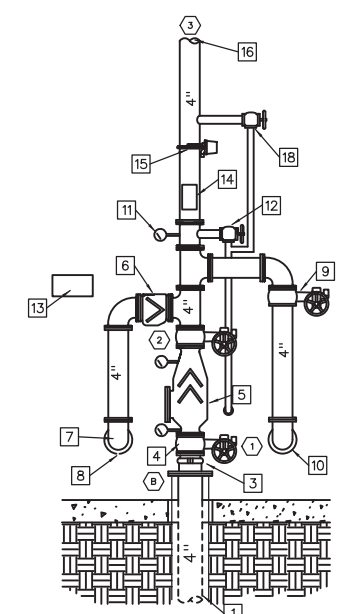
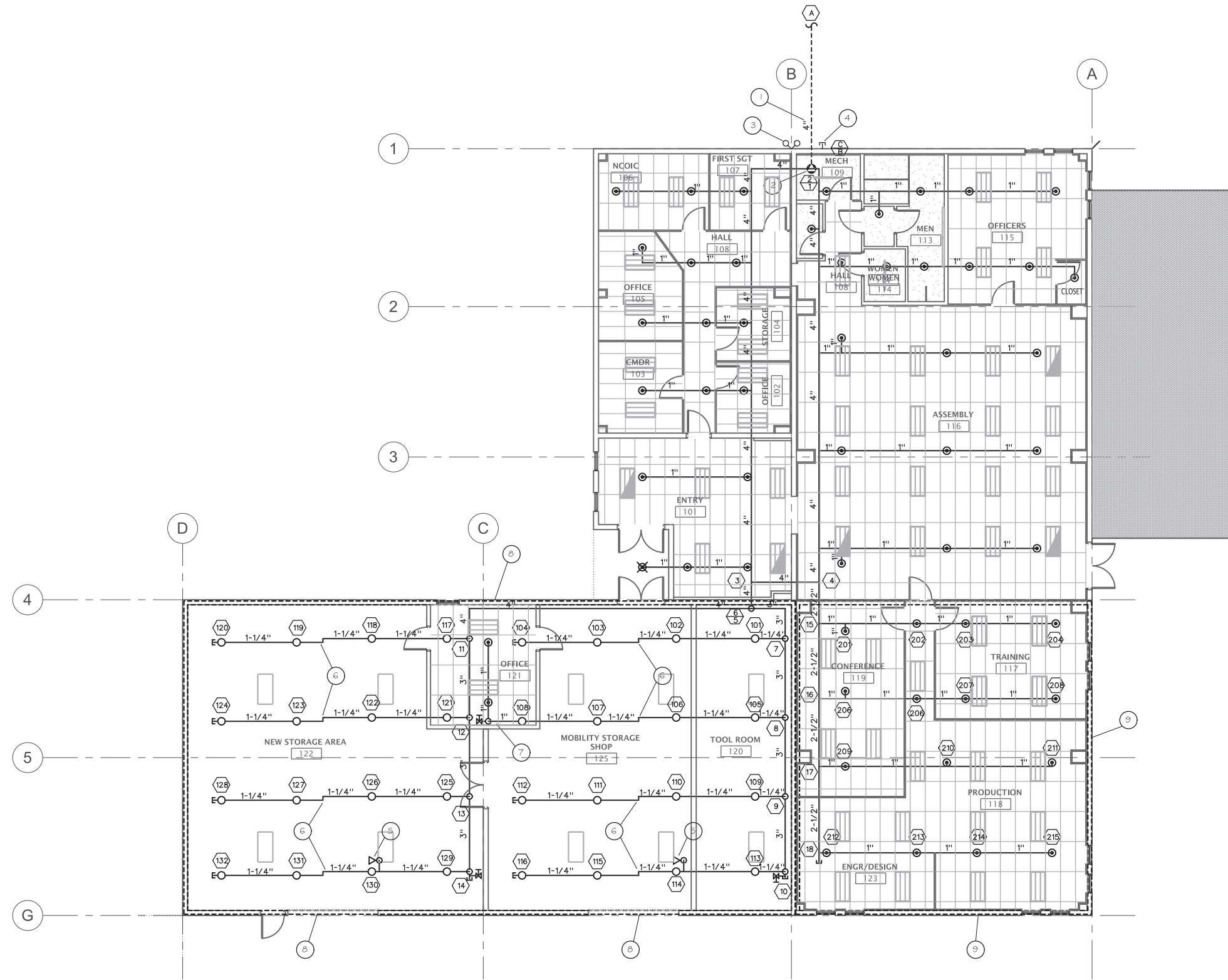
FX101
SHEET 22 OF 35

KEYNOTE - FIRE SPRINKLERS

- EXISTING 4" FIRE SPRINKLER LATERAL TO REMAIN. BEGIN INSTALLATION OF NEW FIRE SPRINKLER RISER AT 4" FLANGE ABOVE FLOOR SLAB. WATER SUPPLY AVAILABLE FROM WATER SYSTEM UNDER BALMER AVE.
STATIC PRESSURE: 74 PSI
RESIDUAL PRESSURE: 68 PSI
FLOW: 1,321 GPM
TEST DATE: 12/17/18
TEST BY: GREG JONES - PCI
- DEMOLISH EXISTING FIRE SPRINKLER SYSTEM IN ITS ENTIRETY INCLUDING EXISTING FIRE SPRINKLER RISER. REMOVE ALL EXISTING PIPING, FITTINGS, COUPLINGS, VALVES, FDC, FIRE SPRINKLERS (UP-FIGHT AND PENDENT), PIPE SUPPORTS AND BRACES. REMOVE SYSTEM BACK TO EXISTING 4" FLANGE ABOVE FLOOR SLAB. INSTALL NEW FIRE SPRINKLER RISER CONFORMING TO HAFB STANDARDS WITH BACKFLOW PREVENTER, FDC & FORWARD FLOW TEST OUTLET. SEE DETAIL 2 ON SHEET FX101.
- 2-WAY, WALL MOUNTED FIRE DEPARTMENT CONNECTION. MOUNT AT 36" ABOVE FINISHED EXTERIOR GRADE. LOCATE WITHIN 150' OF NEAREST FIRE HYDRANT. SEE DETAIL 2 ON SHEET FX101.
- FORWARD FLOW TEST OUTLET FOR BACKFLOW PREVENTER. 4" PIPING FROM RISER (DOWNSTREAM SIDE OF BACKFLOW PREVENTER) THROUGH EXTERIOR WALL. PROVIDE NORMALLY CLOSED BUTTERFLY VALVE. TERMINATE WITH 4" X 6" INCREASER AND DIFFUSER (PER HAFB FIRE SUPPRESSION SHOPS) ON EXTERIOR OF BUILDING. SEE DETAIL 2 ON SHEET FX101.
- INSTALL FIRE SPRINKLER TO PROTECT BELOW OVERHEAD DOOR. A SINGLE SIDEWALL FIRE SPRINKLER (MAXIMUM SPACING OF 14' X 14' PER NFPA 13 8.7.3.1.7) WILL BE SUFFICIENT TO PROTECT BELOW 12' WIDE DOOR.
- INSTALL PIPING IN OPEN STORAGE BAYS APPROXIMATELY 1'-0" BELOW SLOPED ROOF DECK. PROVIDE SWING JOINT AT PEAK TO TRANSITION PIPING UP/DOWN ROOF SLOPE.
- 1" DROP TO SUPPLY FIRE SPRINKLERS BELOW STORAGE PLATFORM. COORDINATE LOCATION OF DROP WITH STORAGE FIXTURES AND RELOCATE AS REQUIRED. INSTALL HORIZONTAL PIPING BELOW PLATFORM CONCEALED ABOVE CEILING.
- HYDRAULIC DESIGN AREA #1 - ORDINARY HAZARD STORAGE BAYS. 0.28 GPM/SQ FT OVER ENTIRE AREA (NORMAL 2,500 SQ FT DESIGN AREA INCREASED BY 30% PER NFPA 13 11.2.3.2.4) WITH 250 GPM HOSE ALLOWANCE. DESIGN AREA REQUIRES 62.1 PSI WITH 1087.1 GPM FLOWING AT POINT OF CONNECTION TO EXISTING WATER SYSTEM. WATER SYSTEM SUPPLIES 69.8 PSI AT 1087.1 GPM.
- HYDRAULIC DESIGN AREA #2 - LIGHT HAZARD OFFICE SPACE. 0.10 GPM/SQ FT OVER 1,500 SQ FT WITH 250 GPM HOSE ALLOWANCE. DESIGN AREA REQUIRES 47.0 PSI WITH 377.1 GPM FLOWING AT POINT OF CONNECTION TO EXISTING WATER SYSTEM. WATER SYSTEM SUPPLIES 73.4 PSI AT 377.1 GPM.

GENERAL NOTES - FIRE SPRINKLER

- THE FIRE SPRINKLER SYSTEM IS DESIGNED TO COMPLY WITH THE APPLICABLE PROVISIONS OF THE FOLLOWING CODES AND STANDARDS:
A. UNIFORM FACILITIES CRITERIA (UFC) 3-600-01
B. NFPA 13 INSTALLATION OF FIRE SPRINKLER SYSTEMS 2016 EDITION
C. HAFB FACILITY DESIGN STANDARD
- THE DESIGN OF THE FIRE SPRINKLER SYSTEM CONTAINED ON THIS DRAWING IS CONCEPTUAL IN NATURE. THE LOCATIONS SHOWN ON THESE DRAWINGS FOR SPRINKLERS, PIPING AND OTHER FIRE PROTECTION EQUIPMENT ARE APPROXIMATE AND MUST BE ADJUSTED WHERE REQUIRED TO MATCH ACTUAL BUILDING CONDITIONS. THE FIRE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS, DEVELOP THE FINAL DESIGN FOR FIRE SPRINKLER SYSTEM, PREPARE SHOP DRAWINGS, HYDRAULIC CALCULATIONS AND OBTAIN APPROVAL FROM AUTHORITY HAVING JURISDICTION.
- FURNISH ALL MATERIALS, EQUIPMENT AND SUPPLIES AND PERFORM ALL WORK AND OPERATIONS TO INSTALL AND MAKE FUNCTIONAL A NEW FIRE SPRINKLER ZONE TO PROTECT ALL AREAS OF THE BUILDING. THE SYSTEM DESIGN SHALL MEET THE REQUIREMENTS OF UFC 3-600-01, NFPA 13 2016 EDITION AND BE IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS.
- FIRE SPRINKLER DESIGN DENSITY: LIGHT HAZARD, 0.10 GPM/SQ FT OVER 1,500 SQ FT WITH 250 GPM HOSE ALLOWANCE.
- MAXIMUM COVERAGE PER SPRINKLER HEAD.
A. ORDINARY HAZARD: 130 SQ. FT.
B. LIGHT HAZARD: 225 SQ. FT.
- ALL DEVICES AND MATERIALS USED FOR THE INSTALLATION OF THE FIRE SPRINKLER SYSTEM SHALL BE U.L. LISTED AND/OR FM APPROVED FOR USE IN FIRE PROTECTION SYSTEMS.
- NEW FIRE SPRINKLER PIPING SHALL BE STEEL PIPE CONFORMING TO ANSI/ASTM A53, ASTM A135 OR A795. PIPING SHALL BE DOMESTIC, BLACK STEEL, SCHEDULE 40 PIPING.
- FITTINGS:
A. PIPING 2" AND SMALLER IN NOMINAL DIAMETER SHALL BE JOINED WITH THREADED JOINTS USING CAST IRON FITTINGS AND COUPLINGS.
B. PIPING 2-1/2" AND LARGER IN NOMINAL DIAMETER SHALL BE JOINED WITH ROLL GROOVED JOINTS USING RUBBER GASKETED VICTAULIC STYLE FITTINGS AND COUPLINGS.
C. PLAIN END FITTINGS MAY NOT BE USED.
- HANGERS:
A. 1-1/4" AND SMALLER PIPE: MINIMUM ONE HANGER PER LENGTH OF PIPE AND MAXIMUM 12'-0" BETWEEN HANGERS.
B. 1-1/2" AND LARGER: MINIMUM ONE HANGER PER LENGTH OF PIPE AND MAXIMUM 15'-0" BETWEEN HANGERS.
- SWAY BRACING:
INSTALL SWAY BRACING IN ACCORDANCE WITH NFPA 13 ON ALL FIRE SPRINKLER SYSTEM RISERS, FEED MAINS AND CROSS MAINS.
- FIRE SPRINKLERS - STANDARD ORIFICE (K-5,6), WHITE PAINTED, GLASS BULB, PENDENT, ORDINARY TEMPERATURE RATED WITH WHITE, RECESSED TYPE ESCUTCHEONS.
- CONTRACTOR SHALL PREPARE AND SUBMIT COMPLETE SHOP DRAWINGS AND HYDRAULIC CALCULATIONS IN ACCORDANCE WITH NFPA 13 FOR REVIEW AND APPROVAL TO THE PROJECT ENGINEER AND THE GOVERNMENT PRIOR TO ORDERING, FABRICATING OR INSTALLING ANY EQUIPMENT.
- CONTRACTOR SHALL PERFORM ALL TESTING AND COMMISSIONING REQUIRED BY NFPA 13 AND NFPA 72 AND RECOMMENDED BY EQUIPMENT MANUFACTURERS. ALL TESTING SHALL BE WITNESSED AND APPROVED BY THE HAFB FIRE DEPARTMENT.



- EXISTING 4" FIRE SPRINKLER SUPPLY LINE TO REMAIN. BEGIN INSTALLATION OF NEW FIRE SPRINKLER RISER AT 4" FLANGE ABOVE FLOOR SLAB
- NOT USED
- 4" FLEXIBLE COUPLING WITHIN 24" OF FLOOR
- 4" BUTTERFLY PATTERN CONTROL VALVE WITH BUILT-IN SUPERVISORY SWITCH. VALVE SHALL BE PART OF USC APPROVED BACKFLOW PREVENTER
- 4" DOUBLE CHECK ASSEMBLY
- 4" SWING CHECK VALVE
- 4" OUT TO 2-WAY FIRE DEPT. CONNECTION. WALL MOUNT FDC APPROXIMATELY 36" ABOVE EXTERIOR GRADE.
- 1/2" AUTO BALL DRIP
- 4" BUTTERFLY PATTERN CONTROL VALVE WITHOUT SUPERVISORY SWITCH FOR FORWARD FLOW TEST OF BACKFLOW PREVENTER (NORMALLY CLOSED).
- 4" THROUGH WALL, BACKFLOW PREVENTER FORWARD FLOW TEST OUTLET. TERMINATE WITH 4" X 6" INCREASER AND DIFFUSER (PER HAFB FIRE SUPPRESSION SHOPS) ON EXTERIOR OF BUILDING.
- PRESSURE GAUGE
- 2" ANGLE VALVE FOR MAIN DRAIN DISCHARGE TO BUILDING EXTERIOR.
- SPARE SPRINKLER CABINET. STOCK WITH 6 SPRINKLERS
- HYDRAULIC DESIGN INFORMATION PLACARD
- VANE TYPE WATER FLOW SWITCH
- 4" SUPPLY TO FIRE SPRINKLERS
- NOT USED
- INSPECTOR'S TEST VALVE. CONNECT DISCHARGE TO MAIN DRAIN PIPING

1 FIRE SPRINKLER PLAN
FX101 1/8" = 1'-0"

2 FIRE SPRINKLER RISER SCHEMATIC
FX101 1/8" = 1'-0"