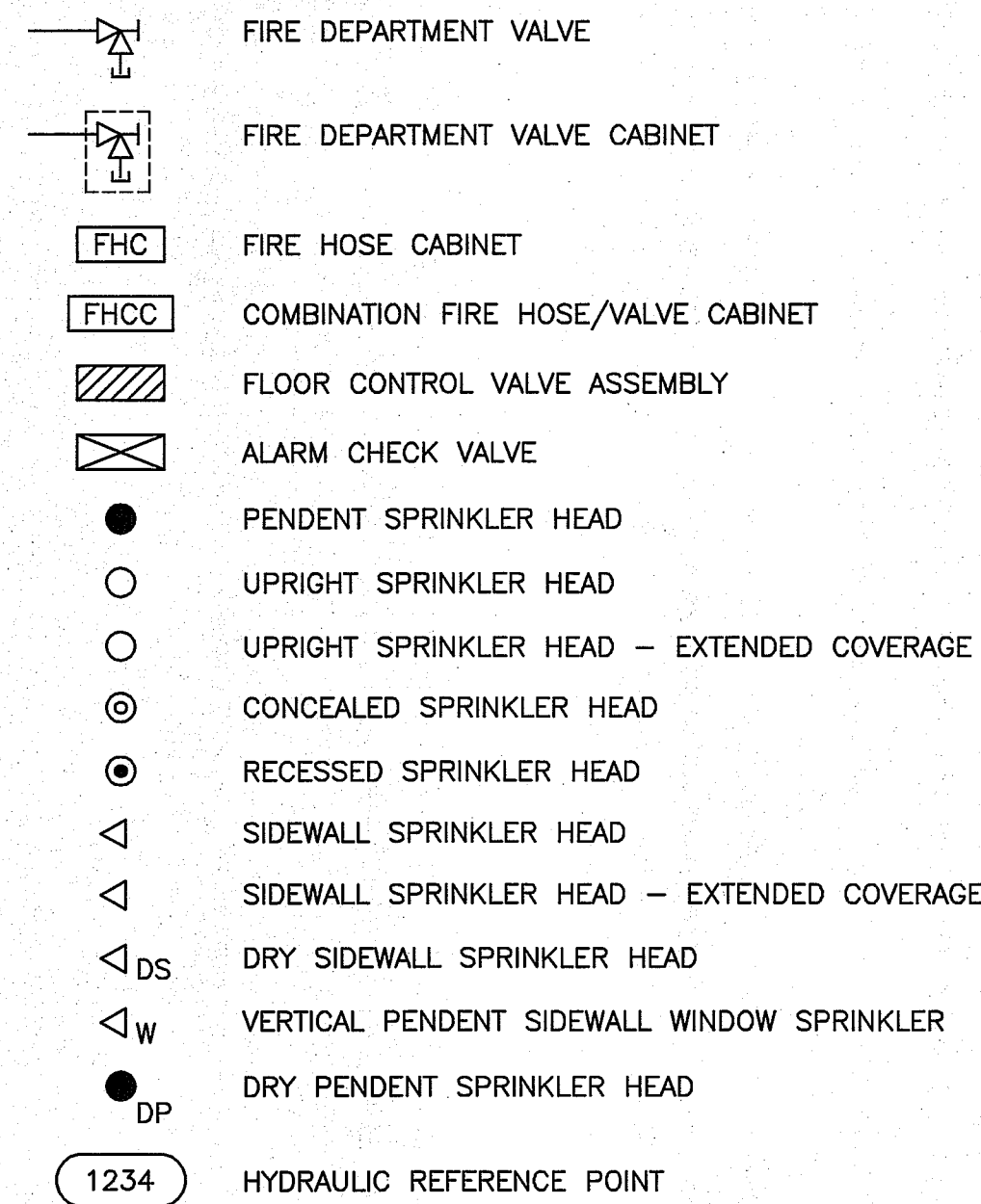
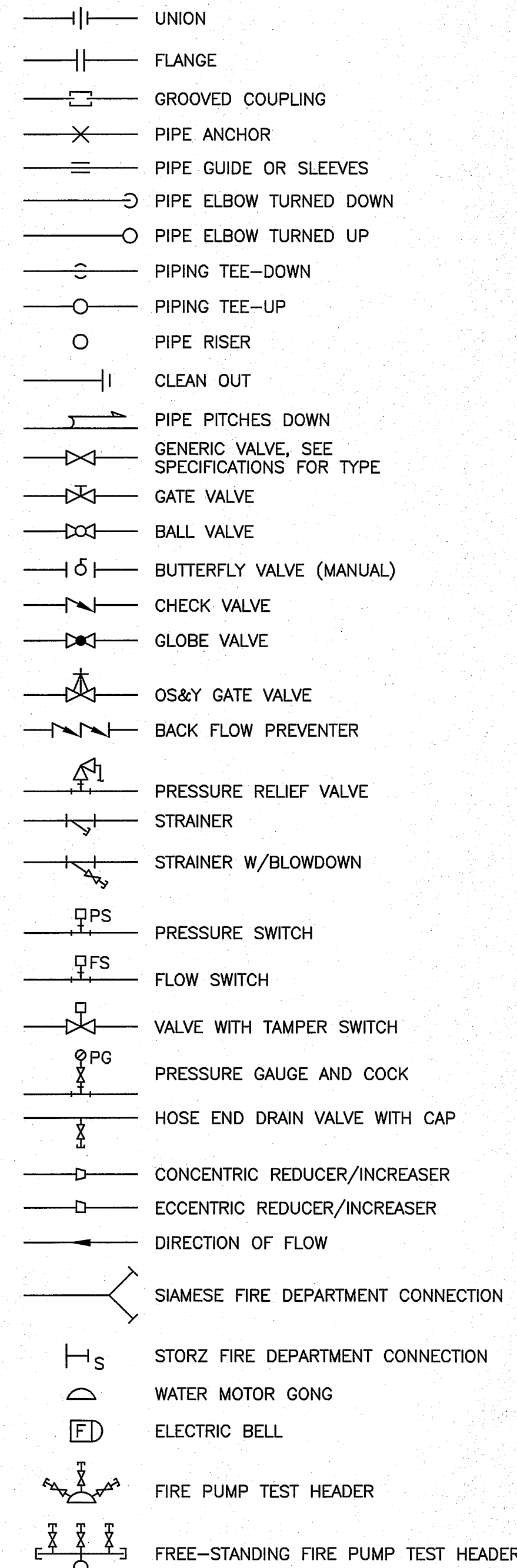
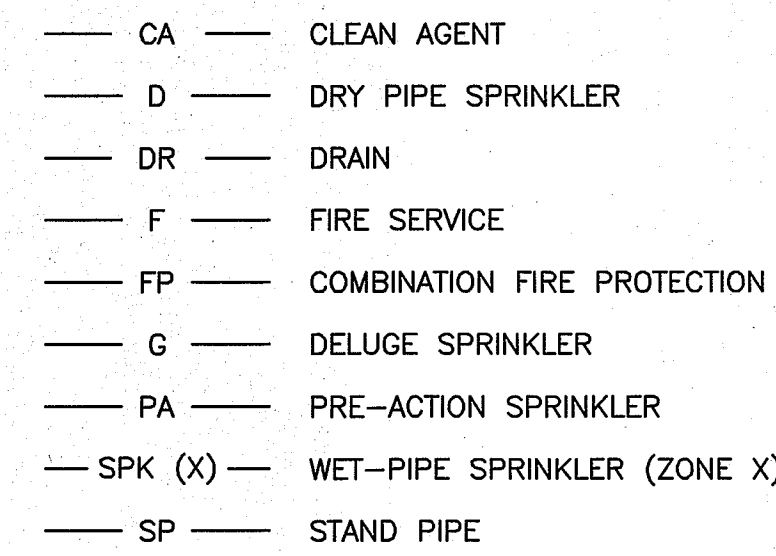


PIPING SYMBOLS



PIPING SYSTEMS



ABBREVIATIONS

| | | | |
|--------|-------------------------------|--------|---|
| AD | ACCESS DOOR | GPM | GALLONS PER MINUTE |
| AHJ | AUTHORITY HAVING JURISDICTION | HVAC | HEATING, VENTILATING AND AIR CONDITIONING |
| AP | ACCESS PANEL | ITS | INSPECTOR'S TEST STATION |
| BFP | BACKFLOW PREVENTER | LFPC | LIMIT OF FIRE PROTECTION CONTRACT |
| BLDG | BUILDING | MAX | MAXIMUM |
| BOP | BOTTOM OF PIPE | MFR | MANUFACTURER |
| CA | CLEAN AGENT | MIN | MINIMUM |
| CF | CAPPED FOR FUTURE | MTD | MOUNTED |
| CLG | CEILING | NTS | NOT TO SCALE |
| CONT | CONTINUATION | PACV | PRE-ACTION ALARM CHECK VALVE |
| COORD | COORDINATE | PC | (FIRE DEPARTMENT) PUMPER CONNECTION |
| CTE | CONNECT TO EXISTING | PIV | POST INDICATING VALVE |
| CU | COPPER | PLBG | PLUMBING |
| CW | COLD WATER | PRV | PRESSURE REDUCING VALVE |
| DACV | DRY PIPE ALARM CHECK VALVE | PS | PRESSURE SWITCH |
| DIA | DIAMETER | (R) | REMOVE |
| DIC | DOWN IN CHASE | (REL.) | RELOCATED |
| DIW | DOWN IN WALL | RM | ROOM |
| DCVA | DOUBLE CHECK VALVE ASSEMBLY | RPZ | REDUCED PRESSURE ZONE BFP |
| DN | DOWN | RV | RELIEF VALVE |
| DR | DRAIN | SACV | (WET PIPE) SPRINKLER ALARM CHECK VALVE |
| DS | DOWNSPOUT | SD | SMOKE DETECTOR |
| DT | DROP AND TRANSITION | SP | STAND PIPE |
| DWG | DRAWING | SPK | SPRINKLER |
| ENC | ENCLOSURE | TH | (FIRE DEPARTMENT) TEST HEADER |
| (E) | EXISTING | TOP | TOP OF PIPE |
| EXIST. | EXISTING | TS | TAMPER SWITCH |
| FBO | FURNISHED BY OWNER | TTS | TIGHT TO STEEL |
| FC | FLEXIBLE CONNECTION | TYP | TYPICAL |
| FCVA | FLOOR CONTROL VALVE ASSEMBLY | UIC | UP IN CHASE |
| FDC | FIRE DEPARTMENT CONNECTION | UIW | UP IN WALL |
| FDV | FIRE DEPARTMENT VALVE | UL | UNDERWRITER'S LABORATORY |
| FDVC | FIRE DEPARTMENT VALVE CABINET | VCGF | VALVED AND CAPPED FOR FUTURE |
| FEX | FIRE EXTINGUISHER | W/ | WITH |
| FH | FIRE HOSE | WIV | WALL INDICATING VALVE |
| FHC | FIRE HOSE CABINET | WMG | WATER MOTOR GONG |
| FM | FACTORY MUTUAL | | |
| FS | FLOW SWITCH | | |
| GC | GENERAL CONTRACTOR | | |

SPECIFICATIONS

21 00 00 - GENERAL REQUIREMENTS

1. THE FOLLOWING APPLIES TO FIRE PROTECTION PIPING TRADES.
2. OBTAIN ALL PERMITS AND APPROVALS TO PERFORM THE WORK.
3. VERIFY ALL MEASUREMENTS AND EXISTING CONDITIONS IN THE FIELD. ALL OFFSETS OBSTRUCTIONS, AND EXISTING CONFIGURATIONS AND CONSTRAINTS MUST BE FIELD VERIFIED.
4. INSTALL ALL NEW AND RELOCATED EXISTING COMPONENTS IN ACCORDANCE WITH MANUFACTURER RECOMMENDATIONS, APPLICABLE CODES AND STANDARDS.
5. COORDINATE WITH OWNER FURNISHED EQUIPMENT AND SYSTEMS.
6. THIS RENOVATION WORK WILL TAKE PLACE IN OCCUPIED SPACE. INSTALLATIONS SHALL NOT AFFECT ONGOING OPERATIONS. COORDINATE HOURS AVAILABLE TO PERFORM WORK WITH THE OWNER AND GENERAL CONTRACTOR.
7. SEAL INTERIOR PIPE PENETRATIONS WITH FIRE SEALANT. SEAL EXTERIOR WALL PIPE PENETRATIONS WATER TIGHT.
8. CUT AND PATCH SURFACES, RESTORING ORIGINAL FINISHES.
9. EQUIPMENT LISTED IS THE BASIS OF DESIGN, OR APPROVED EQUAL.
10. SUBMITTALS, PRE-CONSTRUCTION: SUBMIT CATALOG CUT SHEETS OF PROPOSED EQUIPMENT FOR ENGINEER REVIEW AND APPROVAL PRIOR TO PURCHASE AND INSTALLATION.
11. SUBMITTALS, DURING CONSTRUCTIONS: SUBMIT COPIES OF PIPE ROUGH-IN PRESSURE TESTS AS COMPLETED.
12. SUBMITTALS, POST CONSTRUCTION: SUBMIT COPIES OF FINAL PRESSURE TEST, FLUSHING AND PLUMBING DISINFECTION REPORTS. SUBMIT COPIES OF COMPLETED MANUFACTURER START UP REPORTS FOR EQUIPMENT.
13. OPERATIONS AND MAINTENANCE MANUALS: SUBMIT ALL TESTING DATA AND COPIES OF APPROVED PRODUCT DATA, INCLUDING MAINTENANCE INFORMATION IN A TABBED, NEATLY ORGANIZED THREE RING BINDER. INCLUDE VALVE IDENTIFICATION CHARTS PROVIDE 3 COPIES TO THE OWNER.
14. PIPE IDENTIFICATION; LABELING SHALL APPEAR AT INTERVALS OF NOT MORE THAN 20 FEET AND AT LEAST ONCE IN EACH ROOM AND EACH STORY TRAVERSED BY THE PIPING SYSTEM. ALL PIPING SHALL BE CLEARLY IDENTIFIED SPECIFICALLY FOR TYPE OF SERVICE WITH COILED PLASTIC PIPE MARKERS AND FLOW DIRECTION ARROWS.
15. VALVE IDENTIFICATION; PROVIDE A CIRCULAR BRASS TAG AND CHAIN ON EACH VALVE. TAG TO INCLUDE A DISCRETE NUMBER AND SHALL BE COORDINATED WITH ANY CURRENT FACILITY NUMBERING SCHEME OR STANDARD.
16. RECORD DRAWINGS; MAINTAIN A CURRENT SET OF MARKED UP CONSTRUCTION DRAWINGS ON SITE AT ALL TIMES. PROVIDE A COMPLETE SET OF THESE RECORD MARK-UPS TO THE ARCHITECT AT THE END OF THE PROJECT.

21 05 00 - SPRINKLER SYSTEM DESIGN AND GENERAL REQUIREMENTS

1. DESIGN AND PERFORM FIRE SPRINKLER WORK PER THE REQUIREMENTS OF THE INTERNATIONAL BUILDING CODE (WITH MAINE AMENDMENTS), NFPA 13 AND PER FACTORY MUTUAL STANDARDS.
2. DESIGN AND INSTALL COMPLETE SYSTEMS, INCLUDING BUT NOT LIMITED TO: PIPE, FITTINGS, SPRINKLERS AND ACCESSORIES (ESCUTCHEONS AT THRU-WALL PENETRATIONS). PROVIDE FLOW, PRESSURE AND SUPERVISORY DEVICES. COORDINATE SYSTEM SUPERVISION WITH THE FIRE ALARM CONTRACTOR.
3. PROVIDE SUPPORTS PER NFPA 13, INCLUDING SEISMIC BRACING.
4. PROVIDE AUTOCAD GENERATED SHOP/LAYOUT DRAWINGS FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.
5. DESIGN CRITERIA - HOSPITALS, HOSPITAL LABORATORIES AND OFFICE SPACE PER FM HC-1. SYSTEM TO BE AN EXTENSION OF AN EXISTING HYDRAULICALLY CALCULATED SYSTEM. 0.1 GPM OVER 2500 SF PLUS 250 GPM HOSE STREAM WITH A SPRINKLER K-FACTOR OF 5.6.
6. HYDRAULIC DESIGN CRITERIA, GENERAL:
 - A. MAXIMUM PIPE LINE VELOCITY: 25 FPS
7. INSTALL SYSTEM AS TIGHT TO STRUCTURE AS POSSIBLE TO MAXIMIZE AVAILABLE HEADROOM. ARRANGE SPRINKLERS IN LOGICAL PATTERNS. CENTER HEADS IN CEILING TILES WHERE APPLICABLE.
8. PROVIDE NEW SPRINKLER HEADS WITHIN SCOPE OF WORK AREA. COORDINATE BRANCH PIPE ROUTING WITH ALL MEP SYSTEMS. COORDINATE SPRINKLER HEAD LOCATION WITH CEILING MOUNTED DIFFUSERS, LIGHTS AND OTHER CEILING MOUNTED DEVICES AND PER NFPA 13 AND FM GLOBAL REQUIREMENTS.

22 10 00 - FIRE PROTECTION SPRINKLER PIPING SYSTEMS

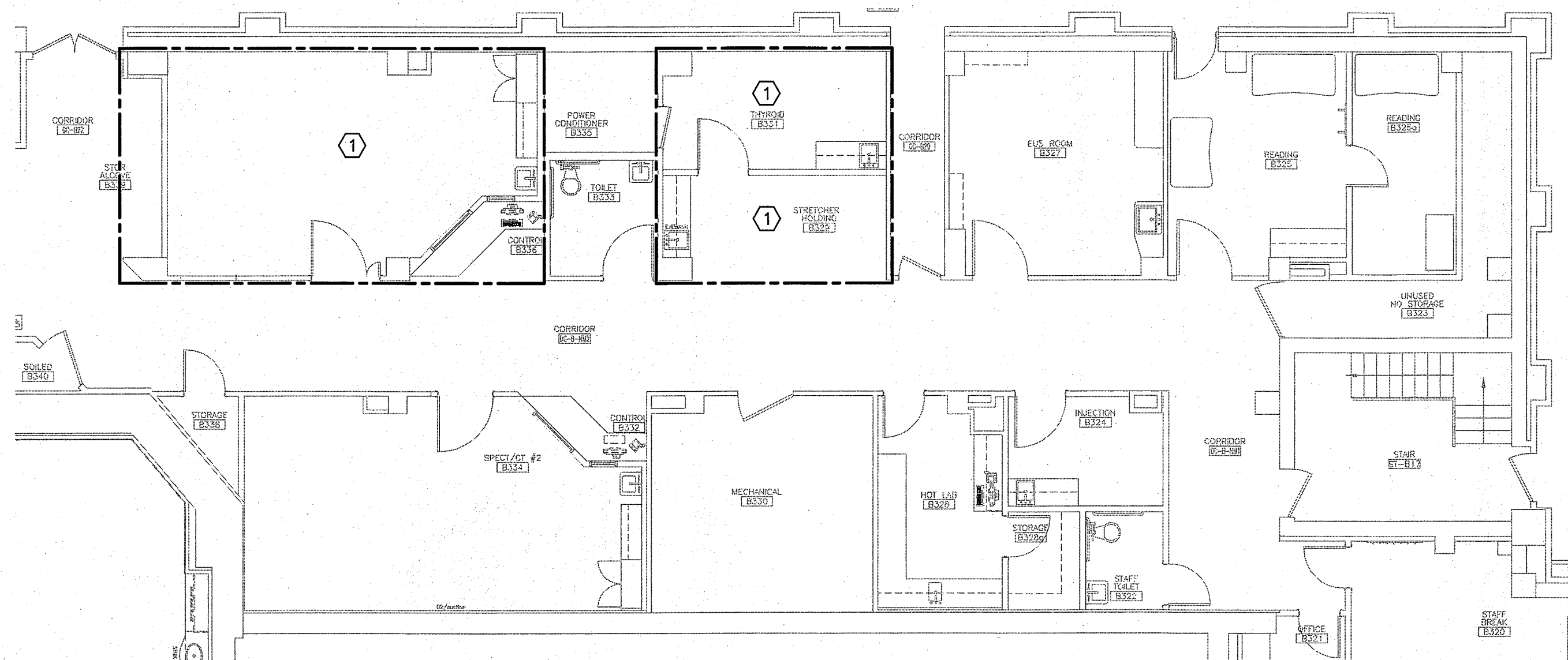
1. PROVIDE COMPONENTS AND INSTALLATIONS CAPABLE OF PRODUCING PIPING SYSTEMS WITH THE FOLLOWING MINIMUM WORKING PRESSURE RATINGS, UNLESS OTHERWISE NOTED:
 - A. FIRE PROTECTION SPRINKLER SYSTEMS: 175 PSIG.
2. SYSTEM COMPONENTS TO BE UL LISTED AND FM APPROVED.
3. ABOVE GRADE WET SYSTEM SPRINKLER PIPING (SPK)
 - A. PIPING 2-INCH AND SMALLER: SCHEDULE 40 STEEL WITH THREADED IRON FITTINGS.
 - B. PIPING 2-1/2-INCH AND LARGER: SCHEDULE 10 STEEL WITH GROOVED FITTINGS.
4. SPRINKLER SYSTEM VALVES AND SPECIALTIES: PROVIDE VALVES, INSPECTOR'S TEST STATIONS AND TRIM AS NECESSARY.
 - A. INCLUDE HYDRAULIC PLACCARDS AND OTHER SIGNAGE AS REQUIRED BY NFPA 13.
 - B. BUTTERFLY CONTROL VALVES UP TO 2-1/2" VICTAULIC #706 - 300 PSI SERIES.
5. FIRE SPRINKLERS: RELIABLE QUICK RESPONSE, FM APPROVED SPRINKLERS THROUGHOUT. NON QUICK RESPONSE SPRINKLERS MUST BE APPROVED BY FM GLOBAL.
 - A. ROOMS WITH SUSPENDED CEILING: SEMI-RECESS TYPE SPRINKLERS WITH WHITE FINISH.
 - B. ROOMS WITHOUT CEILING: UPRIGHT WITH SPRINKLER GUARDS FOR SPRINKLERS SUBJECT TO MECHANICAL DAMAGE.
 - C. ROOMS WITH HARD DRYWALL CEILING: CONCEALED TYPE SPRINKLERS.
 - D. PROVIDE SPRINKLERS WITH TEMPERATURE RATINGS IN ACCORDANCE WITH NFPA 13.
6. FIRE SPRINKLER SYSTEM TESTING: TEST SYSTEMS PER NFPA 13 AND FM REQUIREMENTS, AND AS DIRECTED BY THE AHJ. MAKE CORRECTIONS AND RETEST AS NECESSARY. PROVIDE NFPA 13 AND FM STANDARD ABOVE-GRADE TEST REPORTS.

GENERAL NOTE:

1. PROVIDE SPRINKLER COVERAGE THROUGHOUT AREA OF RENOVATION IN ACCORDANCE WITH NFPA 13.

KEYED NOTES:

- ① EXTEND EXISTING SPRINKLER SYSTEM INTO AREA OF RENOVATION AND PROVIDE SPRINKLER PROTECTION.

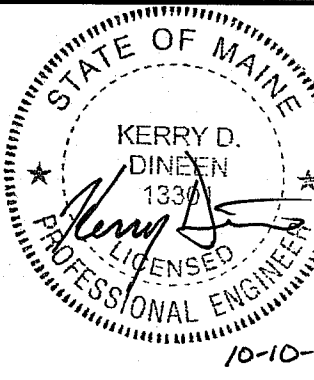
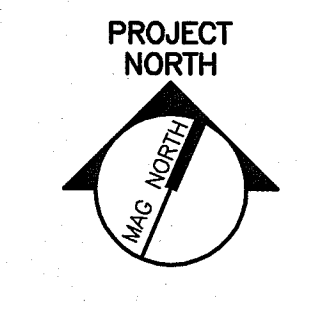
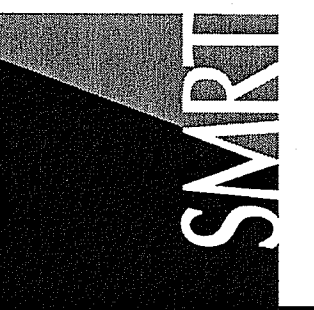


A1 FIRE PROTECTION NEW WORK PLAN

1/8"=1'-0"

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ISSUED FOR CONSTRUCTION
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CURRENT ISSUE STATUS:

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| 10 | ISSUED FOR CONSTRUCTION | 10-10-14 |

GRAPHIC SCALE:
0" 1"

SCALE: 1/4"=1'-0"
PROJECT MANAGER: DJV
JC/DRAWN BY: JPB
A/E OF RECORD: KDD
CAD FILE: FP101-14113
PROJECT NO: 14113
DATE: 10-10-14
SHEET TITLE:

FIRE PROTECTION
LEGEND, PLAN
AND SPECIFICATIONS

SHEET No.
FP101