## LEGEND AND SYMBOLS

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|---|---|
| F | FIRE PIPING |
| SPR | SPRINKLER PIPING |
| | UPRIGHT/PENDENT SPRINKLER |
| | DRY/PENDENT SPRINKLER |
| | FM APPROVED / PENDENT SPRINKLER |
| H | HIGH TEMPERATURE FM APPROVED/PENDENT |
| NF | NON-FREEZE FM APPROVED/PENDENT |
| | WATERFLOW INDICATOR |
| | CHECK VALVE |
| | OS & Y VALVE OR INDICATING TYPE OF BUTTERFLY VALVE WITH TAMPER SWITCH |
| F.C. | FIRE PROTECTION CONTRACTOR |
| P.C. | PLUMBING CONTRACTOR |
| E.C. | ELECTRICAL CONTRACTOR |
| ABV CLG | ABOVE THIS CEILING |
| BLW FLR | BELOW THIS FLOOR |
| FHV | FIRE HOSE VALVE |
| FDC | FIRE DEPARTMENT CONNECTION |
| X/X | UTILITY RISER DESIGNATION |
| | AIR CHAMBER OR PULSATION DAMPER |
| | PRESSURE GAUGE |
| | CHECK VALVE |
| | GROUND FACE UNION OR FLANGES |
| | OS&Y GATE VALVE OR INDICATING TYPE BUTTERFLY VALVE |
| | AUTOMATIC BALL DRIP |
| | JOCKEY PUMP PRESSURE SWITCH |
| | GLOBE VALVES |
| | OPEN CONE AIR GAP FITTING |
| | SLEEVE THROUGH WALL OR FLOOR |
| | RELIEF VALVE |
| DRD-M | DRAIN VALVE |

## FIRE PROTECTION GENERAL NOTES

1. ALL WORK SHOWN IS NEW UNLESS OTHERWISE INDICATED.
2. ALL EXISTING SERVICES ARE SHOWN IN THEIR APPROXIMATE LOCATIONS.
3. DESIGN AND INSTALLATION SHALL BE IN ACCORDANCE WITH NFPA 13 (APPLICABLE EDITION).
4. SPRINKLER PIPE SIZES AND SPRINKLER LOCATIONS SHALL CONFORM TO I.R.I. AND NFPA REQUIREMENTS. PIPE SIZING SHALL BE BY HYDRAULIC CALCULATION.
5. VELOCITIES OF WATER IN THE HYDRAULICALLY DESIGNED SPRINKLER SYSTEM SHALL NOT EXCEED THIRTY-THREE FEET PER SECOND.
6. ALL FIRE SPRINKLERS LOCATED IN LAY-IN CEILINGS SHALL BE LOCATED IN THE CENTER OF CEILING TILES. REFER TO THE ARCHITECTS REFLECTED CEILING PLANS. IF FOR ANY REASON SPRINKLERS CANNOT BE LOCATED IN THE CENTER OF TILES OR WHERE SHOWN IN OTHER TYPES OF CEILINGS, THEN THE ARCHITECT SHALL BE CONTACTED FOR NEW LOCATIONS BEFORE INSTALLING ANY SPRINKLERS OR PIPING. COORDINATE ROUTING AND LOCATION OF SPRINKLER PIPING WITH ARCHITECTURAL DRAWINGS.
7. ALL CONTROL VALVES SHALL BE EQUIPPED WITH TAMPER SWITCHES.
8. ALL WATERFLOW SWITCHES MUST BE ISOLATED BY MEANS OF A FITTING OR UNION ON BOTH SIDES TO FACILITATE REMOVAL AND SERVICE OF THE FLOW SWITCH.
9. INSPECTORS TEST CONNECTIONS SHALL TERMINATE WITH A FULL PORT BALL VALVE AND A SMOOTH BORE CORROSION RESISTANT OUTLET GIVING FLOW EQUIVALENT TO ONE SPRINKLER HEAD.
10. COORDINATE COLOR OF SPRINKLER HEAD COVER PLATES WITH CEILINGS THROUGHOUT PROJECT. MATCH CEILING COLOR AS REQUIRED.

## DESIGN CRITERIA

A. THE DESIGN, MATERIALS, EQUIPMENT, INSTALLATION, INSPECTION, AND TESTING OF THE AUTOMATIC SPRINKLER SYSTEM SHALL BE IN ACCORDANCE WITH THE REQUIRED ADVISORY PROVISIONS OF NFPA 13, 14, 20, 25, 75, 82, AND 231C. EXCEPTION TO NFPA FIRE CODES ARE AS FOLLOWS:
1. STANDPIPE SYSTEM SHALL BE SIZED TO MEET VOLUME REQUIREMENTS OF NFPA 14 BUT NOT PRESSURE REQUIREMENTS.
2. SPRINKLERS ARE NOT REQUIRED IN INTERSTITIAL AREAS, EXCEPT ALONG AGV TRACK SYSTEMS IF THE VEHICLE IS COMBUSTIBLE.

B. BASE SYSTEM DESIGN HYDRAULIC CALCULATIONS USING THE AREA/DENSITY METHOD ON THE FOLLOWING CRITERIA AND IN ACCORDANCE WITH NFPA 13.
1. SPRINKLER PROTECTION:
A. ALL PATIENT CARE, SLEEPING, TREATMENT, OFFICE, WAITING AREAS, EDUCATIONAL AREAS, DINING AREAS, CORRIDORS AND ATTICS: LIGHT HAZARD, (0.10 GPM/SQ. FT.) OVER THE HYDRAULICALLY MOST REMOTE 140 M2 (1500 SQ. FT.).
B. PATIENT SLEEPING ROOMS/AREAS: SPRINKLERS WITH A RESIDENTIAL LISTING SHALL BE INSTALLED IN ACCORDANCE WITH THEIR LISTED FLOWS AND PRESSURES. (1500 SQ. FT.). $^2$ (0.15 GPM/SQ. FT.) OVER THE HYDRAULICALLY MOST REMOTE 140 M $^2$ (100 AND 250 SQ. FT.): ORDINARY HAZARD, GROUP 1, 6.1 L/MINUTE/M $^2$
C. KITCHEN, MECHANICAL EQUIPMENT ROOMS, TRANSFORMER ROOMS, ELECTRICAL SWITCHGEAR ROOMS, ELECTRIC CLOSETS, ELEVATOR SHAFTS (IF REQUIRED), ELEVATOR MACHINE ROOMS, REFRIGERATION SERVICE ROOMS, AND STORAGE BETWEEN 9 AND 23 M (1500 SQ. FT.). $^2$ (0.15 GPM/SQ. FT.) OVER THE HYDRAULICALLY MOST REMOTE 140 M $^2$ (250 SQ. FT.), BOILER PLANTS, LOADING DOCKS, WAREHOUSE SPACES, ENERGY CENTERS, PHARMACY AND SPD AREAS: ORDINARY GROUP 1, 8.1 L/MINUTE/M $^2$
D. CLEAN AND SOILED LINEN ROOMS, TRASH ROOMS, CLEAN AND SOILED UTILITY ROOMS, LAUNDRY, LABORATORIES, RETAIL SALES AND STORAGE ROOMS, STORAGE ROOM OVER 23 M (1500 SQ. FT.) AREA OF SPRINKLER OPERATION. $^2$ RACKS: ORDINARY GROUP 2 FOR THE ENTIRE AREA OF THE SPACE UP TO 140 M " ROLLING FILES "
E. FILE STORAGE AREAS WITH
F. SUPPLY WAREHOUSE WITH STORAGE LESS THAN 3650 MM (12 FT. HIGH): ORDINARY HAZARD GROUP 2. STORAGE HEIGHT EXCEEDING 3650 MM (12 FT.), PER NFPA 231 AND 231C.
G. PROVIDE SPRINKLERS IN ACCESSIBLE SHAFTS PER NFPA 13.
H. PROVIDE SPRINKLERS IN GRAVITY TYPE METAL CHUTES PER NFPA 82.
2. ADD WATER ALLOWANCE OF 15 L/S (250 GPM) FOR INSIDE AND OUTSIDE HOSE STREAMS TO THE SPRINKLER REQUIREMENTS AT THE CONNECTION TO THE DISTRIBUTION MAIN.
3. HYDRAULIC CALCULATIONS: THE CALCULATED DEMAND INCLUDING HOSE STREAM REQUIREMENTS SHALL FALL NO LESS THAN 10 PERCENT BELOW THE AVAILABLE SUPPLY CURVE.
4. WATER SUPPLY:
A. ELEVATION OF STATIC AND ELEVATION OF RESIDUAL TEST GAGE: 600 MM (2 FT.) ABOVE SITE GRADE
B. STATIC PRESSURE: 35 PSI
C. RESIDUAL PRESSURE: 30 PSI
D. FLOW: 710 GPM
E. DATE: 5/13/09 TIME:_____

C. FOR EACH SPRINKLER ZONE PROVIDE A CONTROL VALVE, FLOW SWITCH, SELF-CONTAINED TEST AND DRAIN ASSEMBLY AND PRESSURE GAGE.

D. PROVIDE A SEPARATE SPRINKLER VALVE FOR EACH TRACTION ELEVATOR MACHINE ROOM AND OTHER AREAS AS REQUIRED BY NFPA 13.

E. PROVIDE A GUARD FOR EACH SPRINKLER IN THE JANITORS CLOSETS, THE ELEVATOR MACHINE ROOM AND SPRINKLERS WITHIN 2100 MM (7 FT.) OF THE FLOOR AND OTHER AREAS AS REQUIRED BY NFPA 13.

F. LOCATE SPRINKLERS IN PATIENT BEDROOMS ASSUMING ALL PRIVACY CURTAINS HAVE 13 MM (1/2 IN.) OPENINGS IN MESH EXTENDING 450 MM (18 IN.) FROM CEILING.

G. SEISMIC PROTECTION: SEISMICALLY BRACE ALL NEW AND EXISTING PIPING SYSTEMS IN ACCORDANCE OF NFPA 13.
5. STANDPIPE DESIGN CRITERIA: CLASS 1 PIPING SHALL BE SIZED FOR 500 GPM FOR THE FIRST STANDPIPE PLUS 250 GPM FOR EACH ADDITIONAL STANDPIPE UP TO A TOTAL OF 1000 GPM.

### Fire Pump Schedule - Basis of Design

| TAG No. | GPM | T.D.H (FEET) | H.P. | RPM | ELECTRICAL VOLT/PH/HZ | REMARKS |
|---|---|---|---|---|---|---|
| FP-1 | 750 | 323 | 100 | 3575 | 480-3-60 | PATTERSON MODEL 6x6 VIP |

### Jockey Pump Schedule - Basis of Design

| TAG No. | GPM | T.D.H (FEET) | H.P. | RPM | ELECTRICAL VOLT/PH/HZ | REMARKS |
|---|---|---|---|---|---|---|
| JP-1 | 15 | 362 | 3 | 3450 | 480-3-60 | GRUNDFOS MODEL CR3-15033646-T |

### Fire Storage Tank - Basis of Design

| TAG No. | LENGTH | DIAMETER | VOLUME/GALLONS | MODEL |
|---|---|---|---|---|
| ST-1 | 17'-5" | 10'-0" | 10,000 | MASS TANK AG10120 |

FOR CONSTRUCTION
FULLY SPRINKLERED

| Revisions: | Date |
|---|---|
| | |

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