PROJECT/ SPRINKLER SYSTEM/ STANDPIPE DESCRIPTION

BUILDING CONSTRUCTION:

THE BUILDING IS OF NEW CONSTRUCTION USE GROUP R–2 "APARTMENT HOUSES". 4 STORIES OF RESIDENTIAL UNITS ABOVE A PARKING GARAGE AT GROUND LEVEL. A TOTAL OF 57 UNITS.

BUILDING OCCUPANCY:

THE BUILDING WAS BUILT & DESIGNED FOR RESIDENTIAL LIVING USE. CONSISTING OF A PARKING GARAGE ON THE GROUND LEVEL WITH BUILDING MECHANICAL SPACES. THE FIRST FLOOR CONTAINS A LOBBY, CONFERENCE/ MEETING ROOMS, KITCHENETTE AND SOME RESIDENTIAL LIVING UNITS. THE NEXT 3 FLOORS ARE ALL LIVING UNITS. THERE IS ACCESS TO THE ROOF LEVEL WHERE THERE IS A GREENHOUSE FOR THE RESIDENCE USE.

HAZARD DESIGNATIONS BY USE:

THE PARKING GARAGE, MECHANICAL SPACES, KITCHENETTE, LAUNDRY AND MULTIPURPOSE ROOM ARE ORDINARY HAZARD 1. ALL RESIDENTIAL UNITS, CORRIDORS, GREENHOUSE, LOBBY AND CONCEALED SPACE ABOVE CEILINGS ARE LIGHT HAZARD.

SPRINKLER SYSTEM DESIGN:

THERE IS A WET SYSTEM FOR THE LIVING UNIT IN ACCORDANCE WITH NFPA 13 2010ed.

RESIDENTIAL LIVING SPACE PROTECTED WITH RESIDENTIAL PENDENTS OR SIDEWALL SPRINKLER HEADS FED FROM CPVC PIPING. CORRIDORS ON THE 2ND THRU 4TH FLOOR HAVE RESIDENTIAL PENDENTS. CORRIDORS ON THE 1ST FLOOR HAVE COMMERCIAL PENDENTS. CONCEALED SPACE UPRIGHTS ON ALL FLOORS EXCEPT THE FOURTH FLOOR WHERE THE VOID IS TO BE FILLED WITH NON–COMBUSTIBLE INSULATION PER THE CONSTRUCTION DRAWINGS.

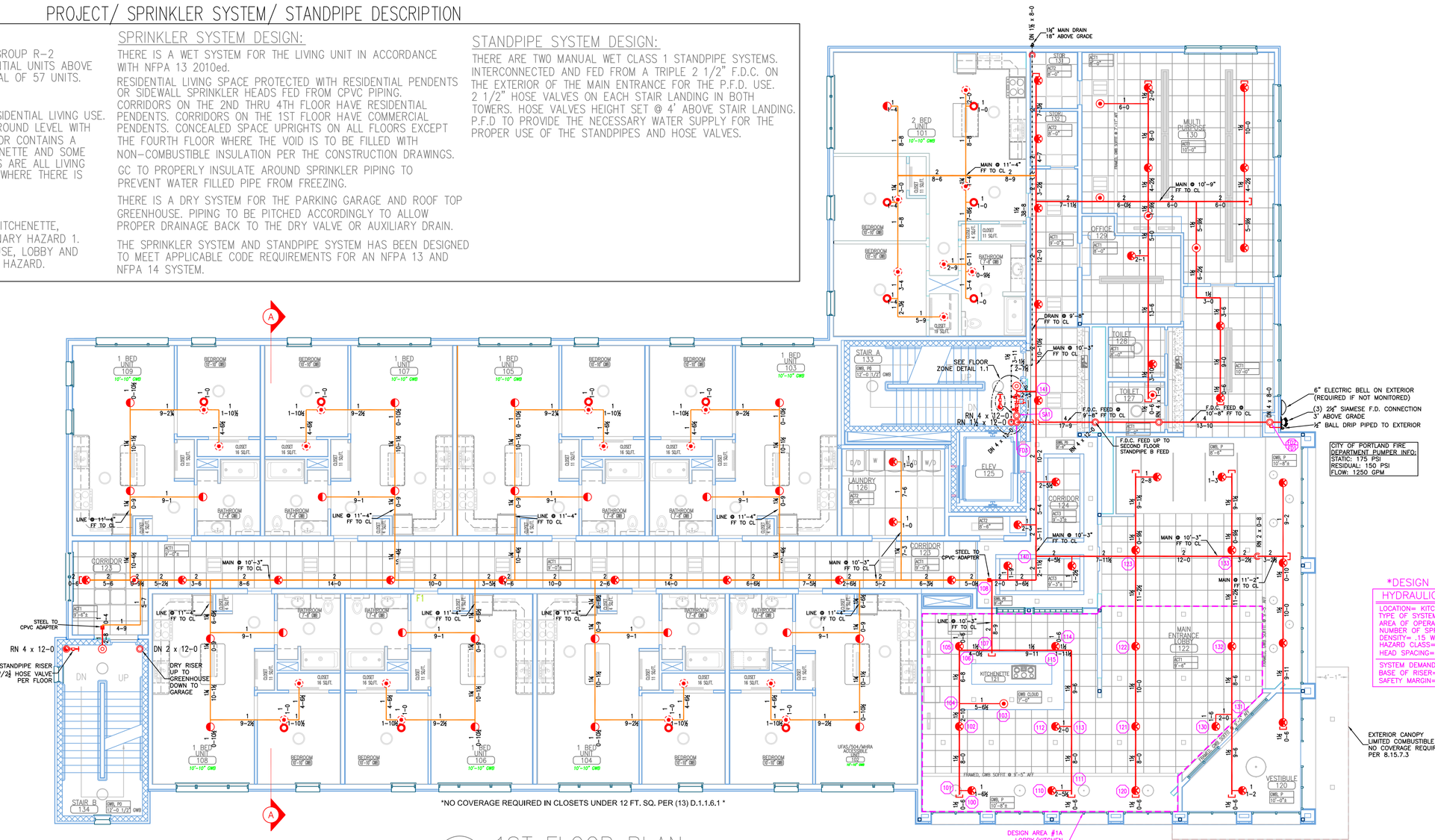
GC TO PROPERLY INSULATE AROUND SPRINKLER PIPING TO PREVENT WATER FILLED PIPE FROM FREEZING.

THERE IS A DRY SYSTEM FOR THE PARKING GARAGE AND ROOF TOP GREENHOUSE. PIPING TO BE PITCHED ACCORDINGLY TO ALLOW PROPER DRAINAGE BACK TO THE DRY VALVE OR AUXILIARY DRAIN.

THE SPRINKLER SYSTEM AND STANDPIPE SYSTEM HAS BEEN DESIGNED TO MEET APPLICABLE CODE REQUIREMENTS FOR AN NFPA 13 AND NFPA 14 SYSTEM.

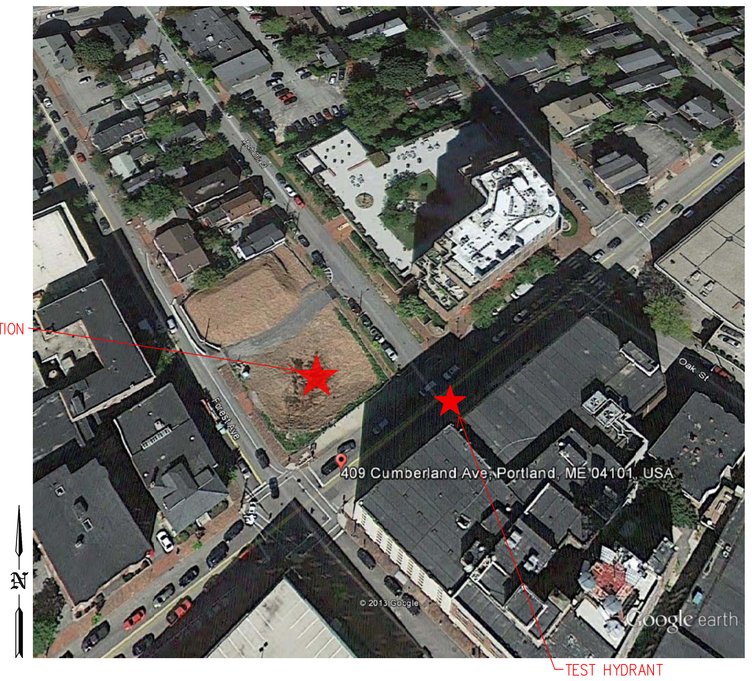
STANDPIPE SYSTEM DESIGN:

THERE ARE TWO MANUAL WET CLASS 1 STANDPIPE SYSTEMS. INTERCONNECTED AND FED FROM A TRIPLE 2 1/2" F.D.C. ON THE EXTERIOR OF THE MAIN ENTRANCE FOR THE P.F.D. USE. 2 1/2" HOSE VALVES ON EACH STAIR LANDING IN BOTH TOWERS. HOSE VALVES HEIGHT SET @ 4' ABOVE STAIR LANDING. P.F.D TO PROVIDE THE NECESSARY WATER SUPPLY FOR THE PROPER USE OF THE STANDPIPES AND HOSE VALVES.

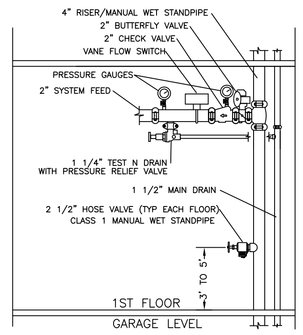


1 1ST FLOOR PLAN
TOTAL PROTECTED AREA 10,900 SQ.FT.
SCALE 1/8" = 1'–0"

DESIGN AREA NUMBER 1A
HYDRAULIC DESIGN CRITERIA
LOCATION= KITCHENETTE/ LOBBY
TYPE OF SYSTEM= NFPA 13 WET
AREA OF OPERATION= 900–SQ.FT.
NUMBER OF SPRINKLERS= 12
DENSITY=.15 W/ HOSE DEMAND OF 250 GPM
HAZARD CLASS= ORDINARY HAZARD GROUP 1
HEAD SPACING= 130 SQ.FT.
SYSTEM DEMAND INCLUDING HOSE @
BASE OF RISER= 50#–0PM 71–PSI
SAFETY MARGIN= 7–PSI



1.2 PLOT PLAN
SCALE: N.T.S.



1.1 FLOOR ZONE DETAIL
SCALE: N.T.S.

NOTES FOR NFPA 13 2010ed. SYSTEM

SPRINKLERS SHALL BE INSTALLED IN ALL AREAS.

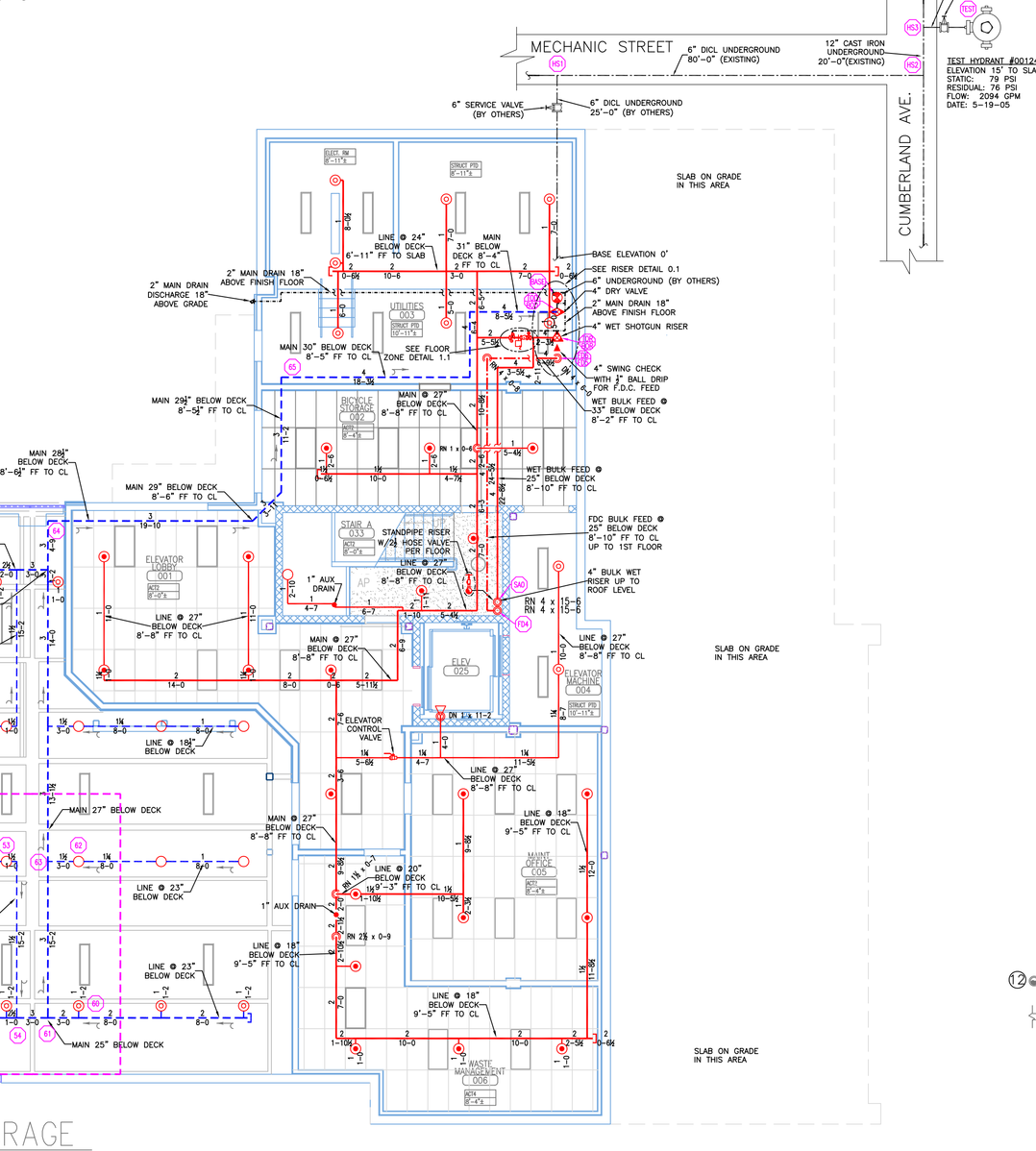
(13) 3.3.17 SMALL ROOMS
A ROOM OF LIGHT HAZARD OCCUPANCY CLASSIFICATION HAVING UNOBSTRUCTED CONSTRUCTION AND FLOOR AREAS NOT EXCEEDING 800 SQ FT THAT ARE ENCLOSED BY WALLS AND A CEILING ARE PERMITTED TO HAVE A HEAD SPACED 9' OFF ONE WALL

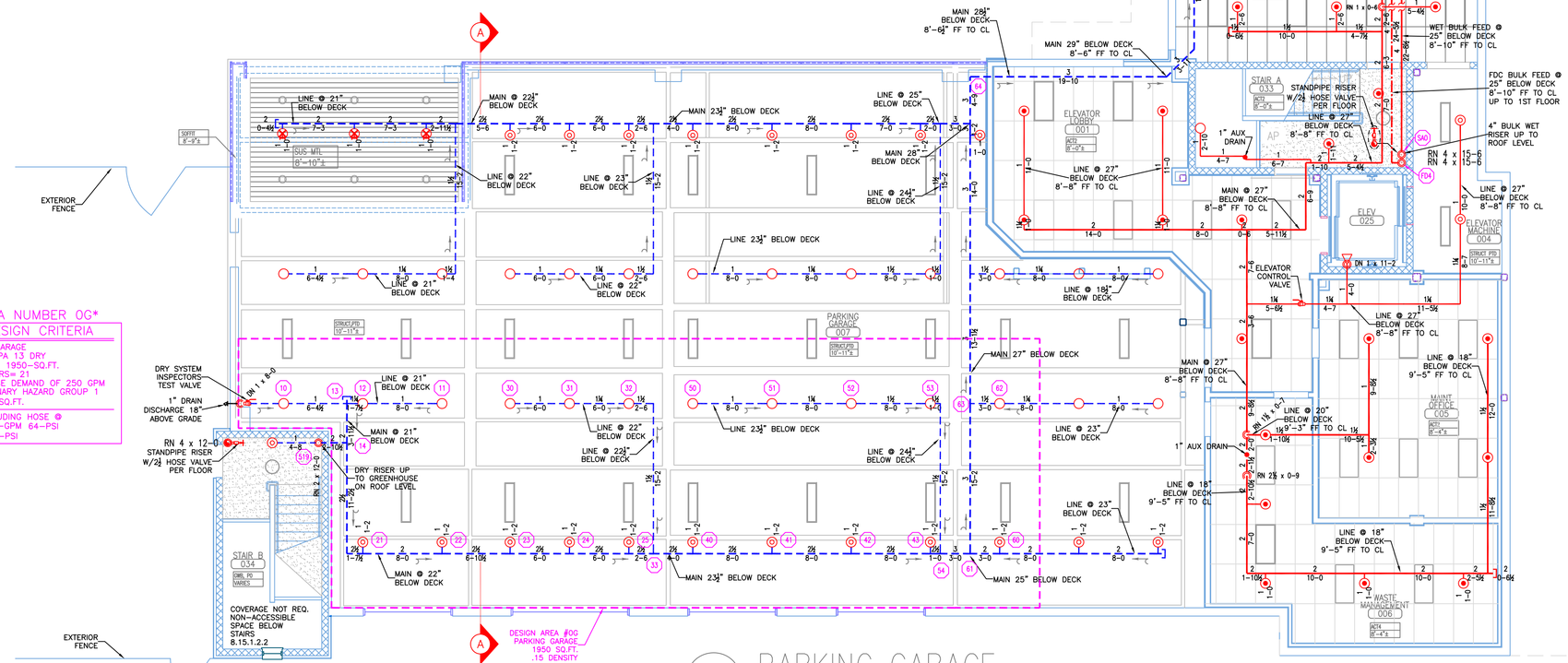
(13) 8.15.10.3 ELECTRICAL EQUIPMENT ROOM OMISSION
SPRINKLERS SHALL NOT BE REQUIRED IN ELECTRICAL EQUIPMENT ROOMS WHERE ALL OF THE FOLLOWING CONDITIONS ARE MET:
(1) THE ROOM IS DEDICATED TO ELECTRICAL EQUIPMENT ONLY.
(2) ONLY DRY -TYPE ELECTRICAL EQUIPMENT IS USED.
(3) EQUIPMENT IS INSTALLED IN A 2-HOUR FIRE RATED ENCLOSURE INCLUDING PROTECTION FOR PENETRATIONS.
(4) NO COMB. STORAGE IS PERMITTED TO BE STORED IN THE ROOM.

(13) 8.15.5 ELEVATOR HOIST WAYS
SIDEWALL SPRAY SPRINKLERS SHALL BE INSTALLED AT THE BOTTOM OF EACH ELEVATOR HOIST WAY NOT MORE THAN 18" ABOVE THE FLOOR PIT.

(13) D.1.1.6.1 IN NEW APARTMENT BUILDINGS SPRINKLERS SHALL NOT BE REQUIRED IN CLOTHES CLOSETS LESS THEN 12 SQ.FT. CLOSETS THAT CONTAIN EQUIPMENT SUCH AS WASHER AND DRYERS, FURNACES, OR WATER HEATERS SHALL BE SPRINKLED REGARDLESS OF SIZE.

(13 2013) 8.5.5.4 IN ALL CLOSETS AND COMPARTMENTS, INCLUDING THOSE CLOSETS HOUSING MECHANICAL EQUIPTMENT, THAT ARE NOT LARGER THAN 400 SQ.FT. IN SIZE, A SINGLE SPRINKLER AT THE HIGHEST CEILING SPACE SHALL BE SUFFICIENT WITHOUT REGARD TO OBSTRUCTIONS OR MINIMUM DISTANCE TO THE WALL.

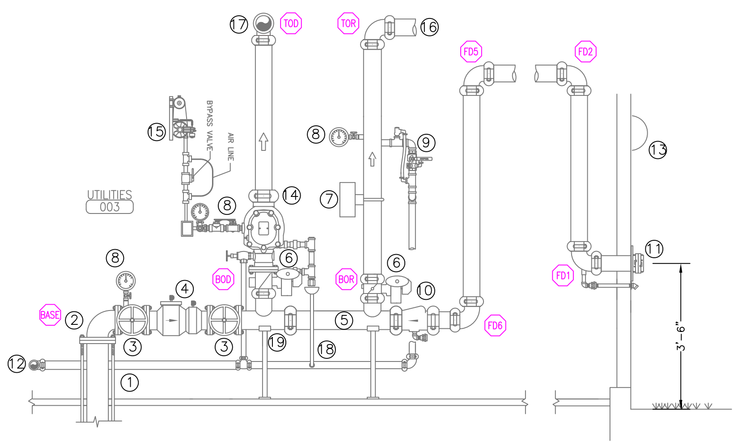




0 PARKING GARAGE
TOTAL PROTECTED AREA 8,200 SQ.FT.
SCALE 1/8" = 1'–0"

SPRINKLER SYSTEM RISER DETAIL DESCRIPTIONS

1. 6" DICL UNDERGROUND (BY OTHERS) 1'–6" ABOVE GRADE MINIMUM
2. 6" X 4" FLANGED DUCTILE IRON 90°
3. 4" OS&Y GATE VALVE WITH PRESSURE GAUGE & POTTER OSYSU–1 TAMPER SWITCH
4. 4" WILKINS 350 BACKFLOW PREVENTER.
5. 4" HEADER TO FEED DRY AND WET SYSTEM
6. BUTTERFLY VALVE WITH TAMPER SWITCH
7. POTTER VSR VANE FLOW SWITCH
8. WATER PRESSURE GAUGE
9. INSPECTORS TEST N DRAIN VALVE WITH RELIEF VALVE
10. 4" SWING CHECK VALVE FOR F.D.C. FEED 48" MINIMUM FROM EXTERIOR W BALL DRIP
11. (3) 2 1/2" SIAMESE F.D.C. FOR SPRINKLER & STANDPIPE SYSTEM (SEE PLAN FOR LOCATION)
12. 2" MAIN DRAIN PIPED TO EXTERIOR
13. 6" ELECTRIC BELL FOR SPRINKLER SYSTEM ON EXTERIOR OF BUILDING
14. 4" RELIABLE DRY VALVE
15. GAST AIR COMPRESSOR 1/2 HP RISER MOUNT (146 GALLON SYSTEM VOLUME.)
16. 4" WET FEED TO STANDPIPES, SPRINKLER SYSTEM AND ALL HEATED AREAS.
17. 4" DRY FEED TO GARAGE AND GREENHOUSE ON ROOF.
18. 1" DRIP CUP DRAIN WITH CHECK VALVE
19. 4" STANDARD TEE WITH VIC FLANGE



0.1 RISER DETAIL
SCALE: N.T.S.

HIGH TECH FIRE PROTECTION
P.O. BOX 156
MINOT, ME. 04258–0258
TEL:(207) 998–2551 FAX:(207) 998–4187
MAINE LICENSE # 102

GENERAL CONTRACTOR ON RECORD:
WRIGHT RYAN CONSTRUCTION
10 DANFORTH STREET PORTLAND, ME
P.M. CRAIG HILL 207–773–3625

SPECIAL APPLICATIONS:
FIRE CAULK SPRINKLER PIPING PENETRATIONS THROUGH RATED WALLS PER HILTI SPECIFICATIONS.

LEGEND:
- RN/DN PIPE RISER UP OR DOWN
- AUXILIARY DRAIN
- PROPOSED WET STEEL PIPE
- PROPOSED WET CPVC PIPE
- PROPOSED DRY STEEL PIPE
- SYSTEM COMPONENTS
- PIPE PITCH ¼ MAINS ½ LINES
- HYDRAULIC CALC. POINT

DESIGN & SYSTEM NOTES:

ALL PIPING 2" & LARGER TO BE SCHEDULE 10 WITH GROOVED DUCTILE IRON FITTING OR CPVC.

ALL PIPING 1 1/2" & SMALLER TO BE SCHEDULE 40 WITH APPROPRIATE FITTING OR CPVC.

POSITION, LOCATION, SPACING, AND USE OF SPRINKLERS SHALL BE IN ACCORDANCE WITH NFPA 13.

POSITION, LOCATION, SPACING, AND USE OF HANGERS SHALL BE IN ACCORDANCE WITH NFPA 13.

HYDRAULIC CALCULATION PROCEDURES HAVE BEEN DONE IN ACCORDANCE WITH NFPA 13. (SEE PLANS FOR LOCATION OF REMOTE AREAS, HYDRAULIC REFERENCE POINTS, AND SYSTEM DEMANDS.)

HIGH TECH FIRE PROTECTION IS TO BEGIN WORK AT 6" MAIN 1' AFF INSIDE OF BUILDING.

DIMENSIONS AND LOCATIONS GIVEN FOR SPRINKLER HEADS AND PIPE MAY VARY TO ACCOMMODATE ACTUAL FIELD CONDITIONS.

OWNER TO PROVIDE ADEQUATE HEAT THROUGHOUT BUILDING TO PROTECT WATER FILLED PIPING AND EQUIPMENT FROM FREEZING TEMPERATURES.

ONLY TRI–SEAL TYPE COUPLINGS TO BE INSTALLED ON DRY AND OR PRE–ACTION SYSTEMS.

OWNER IS RESPONSIBLE TO MAINTAIN THE SPRINKLER SYSTEM IN ACCORDANCE WITH THE LATEST EDITION OF NFPA 25, "INSPECTION, TESTING, & MAINTENANCE OF WATER–BASED FIRE PROTECTION SYSTEMS" AND/ OR ALL APPLICABLE FEDERAL, STATE, AND/OR LOCAL LAWS, CODES AND ORDINANCES.

ALL MECHANICAL, ELECTRICAL AND PLUMBING TRADES TO COORDINATE THEIR WORK WITH SPRINKLER CONTRACTOR.

ALL ELECTRIC WORK IS TO BE DONE BY OTHERS.

HEAD LEGEND:

ON A SPRIG — RELIABLE* MODEL F1FR56 (61 /200° K=5.6) — ON THE LINE
1/2" BRASS UPRIGHT ON THE LINE OR SPRIG DEFLECTORS 1" TO 12" BELOW NON–COMBUSTIBLE CEILINGS

RELIABLE* MODEL F3QR (3 /155° K=5.6)
1/2" DRY PENDENT WHITE SEMI–RECESSED ESC. 18" MINIMUM

RELIABLE* MODEL F1FR56 & KFR–CCS (48 /155°&212° K=5.6)
1/2" COMMERCIAL WHITE SEMI–RECD PENDENT & BRASS CCS UPRIGHT 14' X 14' MAX SPACING UPR. DEFLECTORS 1 1/2" TO 4" BELOW COMBUSTIBLE JOIST 14' X 14' MAX SPACING

RELIABLE* MODEL KFR–CCS (13 /212° K=5.6)
1/2" CONCEALED SPACE UPRIGHT UPR. DEFLECTORS 1 1/2" TO 4" BELOW COMBUSTIBLE JOIST 14' X 14' MAX SPACING

RELIABLE* MODEL F1RES 58 CCP & KFR–CCS (25 /155°&212° K=5.8/ K=5.6)
1/2" RESIDENTIAL WHITE CONCEALED PENDENT & BRASS CCS UPRIGHT 16' X 14' MAX SPACING UPR. DEFLECTORS 1 1/2" TO 4" BELOW COMBUSTIBLE JOIST 14' X 14' MAX SPACING

RELIABLE* MODEL F1FR56 (1 /200° K=5.6)
1/2" BRASS HORIZONTAL SIDEWALL NO ESC. DEFLECTOR 18" ABOVE ELEVATOR PIT FLOOR

RELIABLE* MODEL F1FR56 (27 /155° K=5.6)
1/2" COMMERCIAL WHITE PENDENT SEMI–RECESSED ESC. 14' X 14' MAX SPACING

RELIABLE* MODEL F1RES 58 CCP (22 /155° K=5.8)
1/2" RESIDENTIAL WHITE CONCEALED PENDENT. 16' X 14' MAX SPACING

OR APPROVED EQUAL

TOTAL HEADS ON THIS SHEET: 180

SCALE: 1/8"=1'–0"

REVISIONS:
NO. DATE: DESCRIPTION:

DATE: FEBRUARY 20, 2014
DESIGNER: ED POULIN (RMS# 515)
NICET LEVEL: IV CERT # 108534
CHECKED BY: J. FOSS

LOCATION:
409 CUMBERLAND AVE.
PORTLAND, ME

DRAWING TITLE:
409 CUMBERLAND AVE. APARTMENTS
GARAGE AND 1ST FLOOR FIRE PROTECTION PLAN (NFPA 13 2010ed.)

DRAWING NO.:
FP–01