



MAIN FLOOR PLAN - AUXILIARY FIRE PROTECTION
SCALE: 1:100

SECTION 15500 - FIRE PROTECTION

1. ALL GENERAL CONDITIONS, SECTIONS AND GENERAL REQUIREMENTS OF THE CONTRACT DOCUMENTS SHALL GOVERN THIS SECTION OF THE SPECIFICATIONS.
2. REFER TO ARCHITECTURAL SECTIONS FOR PAINTING, ROUGH CARPENTRY, WALL CONSTRUCTION, ETC.
3. PROVIDE ALL REQUIRED LABOUR, MATERIAL, ETC. TO COMPLETE ALL WORK DESCRIBED BELOW, ON DRAWINGS, AND AS REQUIRED BY ALL AUTHORITIES HAVING JURISDICTION TO PROVIDE AN OPERATIONAL AND CODE COMPLIANT AUTOMATIC SPRINKLER SYSTEM.
4. PROVIDE COMPLETE "DESIGN-BUILT" HYDRAULICALLY DESIGNED SPRINKLER SYSTEM, AND SPRINKLER SYSTEMS MODIFICATIONS, INCLUDING ALL NECESSARY HANGERS, PIPING, VALVES, INSULATION, EQUIPMENT, TAMPER SWITCHES, FLOW SWITCHED, ETC. OF:
 - 4.1. WET PIPE AUTOMATIC FIRE SPRINKLER SYSTEM.
 - 4.2. ANTI-FREEZE SPRINKLER SYSTEM.
 - 4.3. DRY PENDANT HEAD SPRINKLER SYSTEM.
 - 4.4. DRAINS AND INSPECTOR'S TEST LINES.
 - 4.5. FLOW SWITCHES FOR CONNECTION BY DIVISION 16.
 - 4.6. WORK COMMENCES AT POINTS OF CONNECTION INDICATED ON DRAWING AND IN SPECIFICATION.
 - 4.7. PROVIDE BACKFLOW PREVENTION ASSEMBLIES AS INDICATED AND AS REQUIRED BY CODE.
5. THE SYSTEMS SHALL BE HYDRAULICALLY DESIGNED BY THE TRADE RESPONSIBLE FOR THE INSTALLATION. SUCH DESIGN SHALL BE BASED ON N.F.P.A. 13 LIGHT/ORDINARY HAZARD GROUP 1 AS REQUIRED BY MANITOBA BUILDING CODE AND REQUIREMENTS OF AUTHORITY HAVING JURISDICTION. SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE SUBMITTED FOR REVIEW PRIOR TO COMMENCEMENT OF ALL WORK.
6. SPRINKLER CONTRACTOR SHALL VERIFY ON SITE EXACT SIZE, LOCATION, ETC. OF EXISTING FIRE PROTECTION SYSTEM SERVING EXISTING BUILDING. PROVIDE ALL REQUIRED MODIFICATIONS TO EXISTING SPRINKLER TREES TO ACCOMMODATE NEW OR MODIFIED SYSTEMS. TENDER QUOTATION SHALL INCLUDE ALL ITEMS AND COMPONENTS REQUIRED TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM WHETHER SHOWN OR NOT IN THE DRAWINGS OR DESCRIBED HEREIN.
7. SPRINKLER SYSTEM PIPING SHALL BE SCHEDULE 10 FOR SIZES UNDER 8" (200 MM) AND SCHEDULE 30 FOR SIZE 8" (200 MM) AND OVER BLACK OR GALVANIZED STEEL TO ASTM A-53.
8. ALL VALVES SHALL BE OF ONE MANUFACTURER AND ALL VALVES SHALL BE UNDERWRITERS' LABORATORIES LISTED.
9. PROVIDE NECESSARY STANDARD WATERFLOW AND VALVE DEVICES AND ATTACHMENTS FOR COMPLETE CENTRAL STATION ELECTRICAL SUPERVISION OF SPRINKLER SYSTEM. THIS SECTION SHALL PROVIDE FLOW SWITCHES AND TAMPER SWITCHES FOR EACH ZONE. SWITCHES SHALL HAVE NORMALLY OPEN CONTACTS AND SHALL BE COMPATIBLE WITH VALVE TYPE. ELECTRICAL CONNECTIONS SHALL BE PROVIDED BY DIVISION 16.
10. ALARM VALVES SHALL BE EQUIPPED WITH STANDARD TRIMMINGS INCLUDING DRAIN VALVES, ALARM CONNECTIONS, WATER GAUGES, ETC. VALVES CONTROLLING WATER SUPPLY AND ALARM SHUT-OFF SHALL BE OS & Y TYPE WITH RISING STEM AND C/W TAMPER SWITCH. ALL OTHER VALVES SHALL BE OF GLOBE-TYPE WITH RENEWABLE DISCS. CHECK VALVES SHALL BE SWING-CHECK TYPE. PROVIDE EXCESS PRESSURE PUMP TO SUIT ALARM VALVE. STANDARD OF ACCEPTANCE: GRINNELL OR APPROVED EQUAL AS MANUFACTURED BY JENKINS, MILWAUKEE, KEYSTONE, CRANE, WOOLWORTH, RELIABLE OR VIKING.
11. SPRINKLER HEADS SHALL BE U.L. LISTED, FUSIBLE LINK BRASS SPRINKLER HEADS. PROVIDE 165 DEGREES F (75 DEGREES C) HEADS UNLESS OTHERWISE SPECIFIED OR REQUIRED PER NFPA. USE STANDARD BRASS UPRIGHT TYPE IN UNFINISHED AREAS C/W FIRE GUARDS. USE RECESSED PENDANT HEAD IN AREAS WITH FINISHED CEILINGS. PROVIDE STANDARD GUARDS WHERE REQUIRED TO PROTECT HEADS FROM MECHANICAL INJURY. PROVIDE DRY SPRINKLER HEADS, EXTENSIVE SPRINKLER, SIDEWALL SPRINKLER AS REQUIRED TO SUIT APPLICATION. STANDARD OF ACCEPTANCE: GRINNELL OR APPROVED EQUAL AS MANUFACTURED BY RELIABLE OR VIKING.
12. COORDINATE ALL WORK WITH OTHER TRADES. CONFIRM EXACT LAYOUTS AND REQUIREMENTS WITH ARCHITECTURAL, STRUCTURAL, MECHANICAL AND ELECTRICAL DRAWINGS.
13. COORDINATE WITH FIRE ALARM INSTALLATION SUBTRADE AND BE PRESENTED IN SPRINKLER SYSTEM TESTING TO ASSIST FIRE ALARM INSTALLATION SUBTRADE TO COMPLETE THE SPRINKLER SYSTEM TESTING.
14. INSTALLATION SHALL BE SUBJECT TO DESIGN APPROVAL, INSPECTION AND TEST OF THE MUNICIPALITY. ALL SYSTEM COMPONENTS SHALL BE OF ONE MANUFACTURER. NORMALLY, MATERIALS AND DEVICES LISTED BY NATIONALLY RECOGNIZED FIRE TEST LABORATORIES WILL BE ACCEPTABLE.
15. SPRINKLER SYSTEM DESIGN CALCULATIONS AND SHOP DRAWINGS SHALL BEAR THE SEAL OF A PROFESSIONAL ENGINEER AND UPON SUBMITTAL TO CONSULTANTS OFFICE SHALL BEAR THE REVIEWED STAMP OF AUTHORITY HAVING JURISDICTION.
16. INCORPORATE ALL LOCAL REQUIREMENTS, CODES, REGULATIONS, ETC. AS DETERMINED THROUGH THE FIRE PREVENTION OFFICE REVIEW. SUBMITTED SHOP DRAWINGS SHALL REFLECT AN APPROVED AND ACCEPTED SPRINKLER SYSTEM DESIGN.
17. HANGERS AND SUPPORTS
 - 17.1. ALL HANGERS AND SUPPORT SHALL CONFORM TO APPROPRIATE NATIONAL FIRE ASSOCIATION STANDARDS FOR THE INSTALLATION OF FIRE PROTECTION SYSTEMS.
 - 17.2. NOTE: TOGGLE HANGERS OR STRAP HANGERS SHALL NOT BE USED.
18. ESCUTCHEONS PLATES SHALL BE PROVIDED ON PIPING RUNNING EXPOSED THROUGH FINISHED AREAS/ROOMS. ESCUTCHEON PLATES SHALL BE CHROMIUM PLATED STAINLESS STEEL OR AS EQUAL AS APPROVED BY CONSULTANTS.
19. PIPE EXPANSION
 - 19.1. ALL FIRE PROTECTION PIPING SYSTEMS, INCLUDING ALL TAKE-OFFS SHALL BE SO INSTALLED WITHIN THE BUILDING THAT THE PIPING AND CONNECTED EQUIPMENT WILL IN NO WAY BE DISTORTED BY EXPANSION, CONTRACTION OR BUILDING SETTLING.
 - 19.2. IF CIRCUMSTANCES ON THE JOB REQUIRE ADDITIONAL CHANGES IN DIRECTION FROM THOSE SHOWN ON THE DRAWINGS, THE CONFIGURATION SHALL BE ADJUSTED TO SUIT AT NO EXTRA COST.
 - 19.3. ANCHORS SHALL BE INSTALLED WHERE NECESSARY TO CONTROL EXPANSION.
20. TESTS AND INSPECTIONS
 - 20.1. FURNISH ALL LABOUR, MATERIALS, INSTRUMENTS, ETC. NECESSARY FOR ALL REQUIRED TESTS. ALL WORK SHALL BE SUBJECTED TO INSPECTION BY THE LOCAL PLUMBING INSPECTORS OR DESIGN AUTHORITY. AT LEAST FORTY-EIGHT (48) HOURS NOTICE SHALL BE GIVEN IN ADVANCE OF MAKING THE REQUIRE TEST.
 - 20.2. TESTS ON FIRE PROTECTION SYSTEMS SHALL CONSIST OF PRESSURE TESTS AND SHALL CONFORM TO STANDARDS OF INSPECTION AUTHORITY AS LISTED

- IN SEPARATE CLAUSES OF THIS SECTION OF THE SPECIFICATION. TEST CONNECTIONS FOR STORZ OR SIAMESE CONNECTION LINES SHALL ALSO BE HYDROSTATICALLY TESTED.
- 20.3. RESPONSIBILITY FOR COMPLETING CONTRACTORS MATERIALS AND TEST CERTIFICATE IN ACCORDANCE WITH INSPECTION AUTHORITY TEST PROCEDURE IS INCLUDED IN THIS SECTION.
- 20.4. THE REGISTERED PROFESSIONAL ENGINEER OF THIS PROVINCE RESPONSIBLE FOR THE DESIGN SHALL SUBMIT TO THE AUTHORITY HAVING JURISDICTION ALL LETTERS OR SCHEDULES OF COMPLETION AND ACCEPTANCE.
21. FLUSHING OF FIRE PROTECTION SYSTEMS
 - 21.1. ALL WATER PIPING SHALL BE THOROUGHLY FLUSHED THAT SO IT IS FREE FROM ALL SCALE, SEDIMENT, ETC. AS SOON AS POSSIBLE AFTER THE SYSTEM IS FILLED. AS PER NFPA REQUIREMENT, OR MORE STRINGENT CODE REQUIREMENT.
 - 21.2. ALL OUTSIDE PIPING WHICH IS TO BE LEFT DISCONNECTED SHALL BE CALLED OR PLUGGED IMMEDIATELY AFTER LAYING TO PREVENT THE ENTRY OF SOIL AND TRASH.
22. MAINS, BRANCHES AND STORZ OR SIAMESE SUPPLY LINES SHALL BE FLUSHED BEFORE CONNECTING TO SPRINKLER MAINS. FLUSH UNTIL EFFLUENT IS CLEAR AND FREE OF DEBRIS. RATE OF FLUSH FLOWS PER N.F.P.A. #13. PROVIDE PROPER DRAINAGE FOR THIS TEST. EACH CROSS MAIN AND EACH BRANCH LINE SHALL BE FLUSHED AFTER COMPLETION OF INSTALLATION TO ENSURE THAT NO DEBRIS WILL OBSTRUCT THE ORIFICES OF THE SPRINKLER HEADS.
23. ACCESS PANELS: - SUPPLY AND INSTALLED PANELS WHERE REQUIRED TO ALLOW INSPECTION AND CHANGING OF SPRINKLER HEADS. - PANELS TO CONFORM TO ARCHITECTS REQUIREMENTS AND DECOR. - SIZE: 12" X 12" (300MM X 300MM) FOR HAND ACCESS 18" X 24" (450MM X 600MM) FOR ENTRY ACCESS.
24. FIRE PROTECTION SYSTEMS SHOP DRAWINGS
 - 24.1. SHOP DRAWINGS SHALL SHOW ALL THE NECESSARY INFORMATION REQUIRED BY THE AUTHORITY HAVING JURISDICTION. SHOW ON THE DRAWINGS, ESSENTIAL FEATURES OF BUILDING CONSTRUCTION SUCH AS DIRECTION AND SIZE OF CONCRETE BEAMS, PARTITIONS AND LIGHTING.
 - 24.2. SHOW ON THE DRAWINGS THE POSITION AND ELEVATION OF THE SPRINKLER HEADS WITH RESPECT TO THE FLOOR ELEVATION, TEMPERATURE RATING OF SPRINKLERS, SPACING AND TYPES OF HANGERS, DRAIN, TEST AND FLUSING CONNECTIONS, TYPES OF SPRINKLER ALARM, LOCATION AND TYPE OF SPRINKLER CONTROL VALVE, AND ALL OTHER ESSENTIAL FEATURES OF THE PIPING SYSTEM.
 - 24.3. ONLY THOSE SHOP DRAWINGS WHICH HAVE BEEN APPROVED AND STAMPED BY THE AUTHORITY HAVING JURISDICTION SHALL BE SUBMITTED TO THE ENGINEER FOR REVIEW.
 - 24.4. BEFORE FIRE PROTECTION SYSTEM INSTALLATION COMMENCES, SUBMIT TO THE MUNICIPALITY FOR THEIR APPROVAL, COMPLETE SHOP DRAWINGS FOR EACH AREA.
 - 24.5. IN ADDITION TO THE FOREGOING SUBMIT SHOP DRAWINGS FOR THE FOLLOWING ITEMS: - FIRE PROTECTION SPRINKLER HEAD TYPES - VALVES - PRESSURE SWITCHES - SUPERVISORY SWITCHES - EXCESS PRESSURE PUMPS.
 - 24.6. NOTE: - SUBMISSION TO THE OWNER OF A COMPLETES CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ALL FIRE PROTECTION SYSTEMS IS THE RESPONSIBILITY OF THIS SECTION OF WORK.
 - 24.7. BEFORE FIRE PROTECTION SYSTEM INSTALLATION COMMENCES, SUBMIT TO THE AUTHORITY FOR THEIR APPROVAL, COMPLETE SHOP DRAWINGS FOR EACH AREA.
 - 24.8. THE ENGINEER RESPONSIBLE FOR THE DESIGN DRAWINGS AND HYDRAULIC CALCULATIONS SHALL PROVIDE A LETTER TO THE CONSULTANT THAT SYSTEM INSTALLATION IS IN CONFORMANCE WITH N.F.P.A. AUTHORITY HAVING JURISDICTION AND OWNER INSURANCE COMPANY.
25. CONTRACTORS MATERIALS AND TEST CERTIFICATE
 - 25.1. NOTE: SUBMISSION TO THE OWNER OF A COMPLETES CONTRACTOR'S MATERIAL AND TEST CERTIFICATE FOR ALL FIRE PROTECTION SYSTEMS IS THE RESPONSIBILITY OF THIS SECTION OF THE WORK.
26. SPECIAL REQUIREMENTS REGARDING LOW WATER PRESSURE/FLOW CAPACITY
 - 26.1. EXISTING WATER PRESSURE/FLOW CAPACITY AVAILABLE FOR THE SPRINKLER SYSTEM SHALL BE VERIFIED. PIPE SIZING INSIDE THE BUILDING SHALL BE SIZED TO SUIT PRESSURE/FLOW CAPACITY CONDITION. ALL CONFIRMATION OF EXISTING PRESSURE/ FLOW CAPACITY AVAILABLE IS THE RESPONSIBILITY OF THE INSTALLER. IF DETERMINED LOW PRESSURE/ FLOW CAPACITY EXISTS PROVIDE A COMPLETE SUPERVISED N.F.P.A. COMPLIANT FIRE PUMP ASSEMBLY. ALLOW FOR ALL REQUIRED ELECTRICAL CONNECTIONS.

LEGEND-FIRE SUPPRESSION	
— SP —	FIRE PROTECTION LINE
▽	SIDEWALL HEAD

GENERAL NOTES: SPRINKLER

1. SPRINKLER CONTRACTOR SHALL DELETE OR ADD SPRINKLER HEADS AS REQUIRED BY N.F.P.A. 13.
2. LAYOUT OF HEADS SHALL NOT CONFLICT WITH LIGHTING, GRILLE & DUCTWORK, INCLUDING RIDGES & VALLEYS.
3. SPRINKLER CONTRACTOR SHALL OBTAIN ELECTRICAL PLANS & SHALL SUPPLY & INSTALL ALL VALVES FLOW SWITCHES ETC. TO MATCH FIRE ALARM ZONING.
4. LAYOUT SHALL BE UNIFORM, SYMMETRICAL, ETC.

DRAWING NOTES

1. SPRINKLER LINE TO BE LOCATED AT HIGH LEVEL AS SHOWN. EXACT LOCATION TO BE CONFIRMED ON SITE.
2. REFER TO ARCHITECTURAL FOR EXACT PLACEMENT OF SPRINKLER LINE.
3. SPRINKLER HEAD COVERAGE TO SERVE GLAZING AREA AS SHOWN. SPRINKLER CONTRACTOR TO VERIFY FINAL REQUIREMENTS AND PROVIDE SHOP DRAWINGS.
4. SPRINKLER CONTRACTOR TO VERIFY WINDOW DIMENSIONS AND POSITION, MEMBER OF HEADS, AND SPACING.
5. REFER TO M6.0R FOR INCOMING WATER SERVICE DETAIL.

THIS DRAWING TO BE USED AS A GUIDE ONLY. SPRINKLER SYSTEM TO BE INSTALLED AS PER N.F.P.A. #13 AND IN STRICT ACCORDANCE WITH ALL LOCAL CODES AND REGULATIONS. COORDINATE ALL REQUIREMENTS WITH ALL AUTHORITIES HAVING JURISDICTION.

SPRINKLER SYSTEM SHALL MEET TYCO MODEL WS HORIZONTAL SIDEWALL APPLICATION FOR WINDOW SPRINKLERS. 5.6 K-FACTOR INSTALLATION AND MAINTENANCE TO BE IN STRICT ACCORDANCE WITH MANUFACTURERS REQUIREMENTS AND ALL LOCAL CODES.

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Project
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