FIRE PROTECTION RISER ISOMETRIC DIAGRAM (NTS)

SAFETY MARGIN: 0.3 Bars

DESIGN CRITERIA

-Zone : BOOK STORE -Design Area No: 3
-Occupancy : OH2
-Density : 8.1 lpm/sq.m. (0.2 gpm per sq.ft.) -Design Area : 84 sq.m. (900 sq.ft.)
-Area / Sprinkler :10 sq.m. (108 sq. ft.)max.
-"K" Factor : 80
-Hose Allowance : Outside 946 L/m
-Number of Sprinklers Calculated : 11
-Demand at Upstream of Spk. Valve : 970L/m @ 3.04 Bars BR1

-Deluge Open Sprinklers
-Min. Flow per Sprinkler: 68 L/m
-"K" Factor : 80
-Number of Sprinklers Calculated : 16
-Demand at Upstream of Deluge Valve : 1140 L/m @ 1.46 Bars DV1

-Total Demand Ceiling Spk. + Deluge Spk.+ Hose Allow. at Water Main Supply : 4003 L/m @ 3.02 Bars TEST

WATER FLOW TEST

-Date : 2020-06-18 -Static Pressure : 3.79 bars (55 psi)
-Flow : 3384 lpm (893 usgpm) -Residual Pressure : 50 psi

- DELUGE VALVES C/W ELECTRIC RELEASE TRIM.
- FIRE DETECTION SYSTEM AND RELEASE PANEL TO BE PROVIDED BY FIRE ALARM CONTRACTOR.
- THE RELEASE PANEL TO BE CROSS ZONED DETECTION WITH SMOKE AND HEAT DETECTION DEVICES.

PHASING NOTES:
1. THE PROJECT IS DIVIDED INTO PHASE 4A AND 4B.
2. PHASE 4A WILL BE COMPLETED FIRST.
3. ALLOW 20 UPRIGHT SPRINKLERS FOR TEMPORARY PROTECTION WHERE THE CEILING IS NOT READY WITHIN PHASE 4A AND PROVIDE PROPER COVERAGE ALONG THE HOARDING.
4. REMOVE TEMPORARY SPRINKLERS AND PIPE THAT WILL NOT BE REQUIRED IN PHASE 4B. CAPPED UNUSED OPENINGS.
5. PROVIDE UNIT COST OF EXTRA SPRINKLER INCLUDING PIPING FOR TEMPORARY PROTECTION FOR PHASING.

LEGEND
- NEW OPEN SPRINKLER FOR DELUGE SYSTEM
- NEW SPRINKLER
- NEW SPRINKLER INSIDE STUDENT POD (REFER FIRE PROTECTION NOTE 3.11)
- EXISTING SPRINKLER TO REMAIN
- NEW SPRINKLER PIPE
- EXISTING SPRINKLER PIPE TO REMAIN

UPPER LEVEL

GENERAL SPECIFICATIONS

1. CONTRACT
1.1. JURISDICTION: ARCHITECTURAL GENERAL INSTRUCTIONS SHALL BE READ IN CONJUNCTION WITH AND FORM PART OF THIS CONTRACT. THE DRAWINGS FOR WORK ARE DIAGRAMATIC PERFORMANCE DRAWINGS, AND INTENDED TO CONVEY THE SCOPE OF WORK. EXACT LOCATIONS OF ALL EQUIPMENT, PIPING AND DUCTWORK SHALL BE OBTAINED FROM GENERAL CONSTRUCTION DRAWINGS AND DETAILS, OR SITE MEASUREMENTS.
1.2. CONTRACTOR'S RESPONSIBILITY: THE CONTRACTOR SHALL PROVIDE EQUIPMENT, TOOLS, SCAFFOLDS AND OTHER INCIDENTALS NECESSARY AND REQUIRED FOR THE COMPLETE INSTALLATION AS SHOWN ON THE DRAWINGS), OR AS OTHERWISE DETAILED. BASE BUILDING DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THESE DOCUMENTS SUCH THAT IN CASE OF CONFLICT OR OMISSION THE QUALITY OF BASE BUILDING CONSTRUCTION IS MAINTAINED.
1.3. EXAMINATION OF SITE: THE CONTRACTOR SHALL VISIT THE SITE AND OBTAIN ALL BASE BUILDING INFORMATION AS TO EXISTING CONDITIONS AFFECTING HIS WORK. BEFORE COMMENCING WORK, OBTAIN ALL APPROVALS AND VERIFY THE LOCATION AND SIZE FOR ALL EXISTING SERVICES.
1.4. CO-ORDINATION: THE CONTRACTOR SHALL BE RESPONSIBLE FOR CO-ORDINATING HIS WORK WITH THAT OF OTHER TRADES. COMPLY WITH ALL GOVERNMENT, MUNICIPAL, PROVINCIAL, FEDERAL AND UNDERWRITER'S REGULATIONS AND LOCAL BY-LAWS. CARRY OUT ALL CHANGES REQUIRED BY INSPECTORS OR AUTHORITIES HAVING JURISDICTION WITHOUT EXTRA EXPENSE TO THE OWNER.
1.5. PREMIUM TIME: PROVIDE IN THE TENDER PRICE ANY COSTS FOR PREMIUM TIME OUTSIDE OF NORMAL WORKING HOURS TO COMPLETE THE WORK ON SCHEDULE AND TO MAINTAIN ALL BUILDING MECHANICAL SYSTEMS IN OPERATION.
1.6. TAXES, DUTIES & PERMITS: THE CONTRACTOR SHALL PAY FOR ALL TAXES, DUTIES, AND OBTAIN AND PAY FOR ALL PERMITS AND INSPECTIONS NECESSARY IN THE PERFORMANCE OF HIS WORK.
1.7. EXISTING CONDITIONS: NO PART OF THE EXISTING INSTALLATION SHALL BE RELOCATED OR OTHERWISE MODIFIED UNLESS SPECIFICALLY SHOWN ON THE DRAWINGS, AND WRITTEN PERMISSION HAS BEEN OBTAINED FROM THE BUILDING OWNER. ADVISE THE BUILDING OWNER 48 HOURS IN ADVANCE OF ANY SHUTDOWN REQUIRED TO TIE-IN NEW WORK.
1.8. REUSE OF EXISTING: REUSE AND RELOCATE EXISTING MATERIALS SUCH AS PIPING, FITTINGS, EQUIPMENT DEEMED TO BE SOUND AND MATCHING NEW INSTALLATION. CAP AND DISCONNECT ALL EXISTING FIRE PROTECTION PIPING NOT REQUIRED AT CEILING, WALLS OR FLOOR, AT LOCATION AS DIRECTED BY LANDLORD. MAINTAIN INTEGRITY OF THE SYSTEM WHILE CONNECTING TO EXISTING SERVICES.
1.9. GUARANTEES: ALL MECHANICAL WORK AND MATERIALS SHALL BE GUARANTEED IN WRITING FOR ONE YEAR FROM THE DATE OF ISSUANCE OF THE CERTIFICATE OF SUBSTANTIAL PERFORMANCE.
1.10. SHOP DRAWINGS: PROVIDE PROPER SHOP DRAWINGS OF ALL SPECIFIED PRODUCTS AND SUBMIT FOR APPROVAL TO THE ARCHITECT AND ENGINEER. REVIEW ALL SHOP DRAWINGS PRIOR TO SUBMITTAL AND CLEARLY CERTIFY AS 'CORRECT FOR REVIEW BY CONSULTANT'. SHOW COMPANY NAME AS WELL AS NAME OF THE APPROVER. CONSULTANT REVIEW OF SHOP DRAWINGS DOES NOT RELIEVE THE CONTRACTOR OF FULL RESPONSIBILITY FOR ACCURACY OF DIMENSIONS, SIZES, QUANTITIES, MATERIALS AND EQUIPMENT AND PERFORM WORK REQUIRED BY THE CONTRACT DOCUMENTS.
1.11. ALTERNATE PRODUCTS: ALTERNATE PRODUCTS MAY BE SUBMITTED TO CONSULTANT FOR REVIEW PROVIDED THAT THE CONTRACTOR CAN SHOW SIGNIFICANT COST SAVINGS AND/OR THE SPECIFIED PRODUCT IS UNAVAILABLE. IF ALTERNATE PRODUCTS ARE BEING USED AS PART OF TENDER BIDDING, THEY MUST SUBMITTED AND APPROVED BEFORE TENDER CLOSE. CONTRACTOR SHALL PAY ALL ENGINEERING AND ARCHITECTURAL FEES ASSOCIATED WITH REVIEW OF ALTERNATE PRODUCTS, EVEN IF ALTERNATE IS REJECTED.
1.12. "AS-BUILT" DRAWINGS: PROVIDE "AS-BUILT" DRAWINGS AS ELECTRONIC FILES IN AUTOCAD COMPATIBLE FORMAT ALONG WITH 3 WHITE PRINTS FOR REVIEW. CONTRACTOR MAY OBTAIN CONSULTANT'S AUTOCAD FILES AT A CHARGE OF $50.00 PER FILE; MINIMUM CHARGE IS $150.00 PER PROJECT.
1.13. MAINTENANCE MANUALS: PROVIDE 'MAINTENANCE MANUALS' TO ENGINEER FOR REVIEW. MAINTENANCE MANUALS SHALL INCLUDE: COMPLETE SETS OF LETTER SIZE EQUIPMENT SHOP DRAWINGS, EQUIPMENT MANUFACTURER'S INSTALLATION, START UP AND OPERATION MANUALS, EQUIPMENT MANUFACTURER'S RECOMMENDED SPARE PARTS LISTS, EQUIPMENT WIRING DIAGRAMS, MANUFACTURER'S LITERATURE, SHOP DRAWINGS, SEQUENCES OF OPERATION, CONTROL DRAWINGS, SEQUENCES OF OPERATION, EQUIPMENT WARRANTY DOCUMENTATION, EXTENDED WARRANTY DOCUMENTATION IF APPLICABLE.
1.14. PROGRESS REVIEWS: FOR THE PURPOSE OF PROGRESS BILLING APPLICATIONS THE CONTRACTOR SHALL SUBMIT A PROPER STATEMENT OF THE PRICES FOR VARIOUS PORTIONS OF THE WORK, INCLUDING LABOUR, MATERIALS AND EQUIPMENT SHOWN SEPARATELY. PERCENTAGES OF COMPLETION ALONE ARE NOT ACCEPTABLE. THE BREAKDOWN SHALL BE IN SUFFICIENT DETAIL TO ENABLE THE CONSULTANT TO EVALUATE THE PROGRESS OF WORK AND SHALL IDENTIFY ALL MAJOR EQUIPMENT, COMPONENTS AND SUB TRADES INVOLVED.

2. WORKMANSHIP
2.1. THE SPRINKLER CONTRACTOR SHALL BE INSURED. THE CONTRACTOR SHALL BE LICENSED BY THE ONTARIO COLLEGE OF TRADE TO PERFORM INSTALLATION, TESTING AND COMMISSIONING OF SPRINKLER SYSTEMS.
2.2. INSPECTION OF WORK: THE MECHANICAL CONTRACTOR SHALL INFORM THE TENANT AND OWNER PRIOR TO WALLS OR CEILINGS BEING CLOSED UP TO ALLOW FOR THE INSPECTION OF THE WORK. CONTRACTOR TO CALL THE EBAL ENGINEERING AT 647-963-3225 TO ARRANGE FOR FINAL INSPECTION OF SPACE A MINIMUM OF 72 HOURS BEFORE CLOSING OF CEILINGS.
2.3. WORKMANSHIP AND MATERIALS: ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF ALL AUTHORITIES AND CODES HAVING JURISDICTION. WHERE THE DRAWINGS AND SPECIFICATIONS STIPULATE A HIGHER STANDARD THAN THE REMAINDER OF THE SPECIFICATIONS, THE CODES AND REGULATIONS CONSTITUTE AN INTEGRAL PART OF THESE DOCUMENTS. IN NO INSTANCE SHALL THE CODES REDUCE THE STANDARD OR QUALITY ESTABLISHED BY THE DRAWINGS AND SPECIFICATIONS. ALL NEW WORK SHALL BE EQUAL TO AND MATCH BASE BUILDING. ALL NEW EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2.4. CUTTING, PATCHING AND SLEEVES: PERFORM ALL X-RAYING AND CORE DRILLING REQUIRED FOR THE PROPER INSTALLATION OF WORK. CUT, THREAD, BEND AND PLUMB PIPE PASSING THROUGH OR BUILT INTO A ROOF, OUTSIDE WALL OR WATERPROOF FLOOR, FACE AND SLEEVES WITH RESILIENT PACKING OR FIRE RATED PACKING AS REQUIRED. IF ANY FIRE PROOFING MATERIAL OR INSULATION ON BUILDING STRUCTURE IS DAMAGED WHERE EQUIPMENT (i.e. V.A.V.'s, DUCTWORK) HAS BEEN REMOVED OR ADDED, CONTRACTOR TO REAPPLY. PATCH OPENINGS AROUND DUCTWORK AND PIPING PASSING THROUGH WALLS AND FLOORS. PATCH ALL OPENINGS LEFT DUE TO REMOVAL OF EXISTING DUCTWORK AND PIPING. FOR FIRE RATED WALLS AND FLOORS, USE APPROVED FIRE STOPPING.
2.5. ACCESS DOORS: PROVIDE ACCESS DOORS TO ALL CONCEALED EQUIPMENT REQUIRING OPERATION OR MAINTENANCE. SIZES TO BE APPROVED BY THE ARCHITECT AND SHALL AGREE WITH MANUFACTURER RECOMMENDATIONS. INDICATE ACCESS PANELS ON 'AS-BUILT' DRAWINGS).
2.6. CONTROLS: ALL CONTROL WORK TO BE PERFORMED BY BASE BUILDING CONTROLS CONTRACTOR UNLESS PRIOR APPROVAL TO USE AN ALTERNATE CONTRACTOR IS GIVEN BY BUILDING OWNER'S REPRESENTATIVE. ALL CONTROL WIRING ACCORDING TO APPLICABLE CODE AND CONTROL SETTING RELATED TO MECHANICAL EQUIPMENT TO BE CARRIED OUT BY MECHANICAL CONTRACTOR. THE CONTROLS CONTRACTOR SHALL BE RESPONSIBLE FOR CONDITION AND FUNCTIONALITY OF ALL CONTROLS EXISTING AND NEW, AT END OF WORK.
2.7. ELECTRICAL WORK: MECHANICAL CONTRACTOR SHALL PROVIDE ALL STARTERS, DISCONNECT SWITCHES FOR MECHANICAL EQUIPMENT. READ TOGETHER WITH DIV. 16 AND ADHERE TO ITS REQUIREMENTS.
2.8. SURPLUS MATERIAL: ANY SURPLUS BASE BUILDING MATERIALS ARE TO BE RETURNED TO THE LANDLORD OR REMOVED FROM SITE AT LANDLORDS REQUEST UNLESS OTHERWISE SPECIFIED.
2.9. FIRE STOPPING: PROVIDE FIRE STOP FOR ALL PENETRATIONS THROUGH RATED PARTITIONS AND SLABS WHERE NECESSARY TO MEET APPLICABLE CODE. IF EXISTING CONDITIONS DO NOT MEET CODE, CONTRACTOR SHALL INFORM CONSULTANT. FIRE STOP MATERIAL SHALL BE ULC APPROVED AND CONFORM TO BASE BUILDING STANDARDS.
2.10. FIRE PROTECTION: KEEP ALL SPRINKLER, STANDPIPE AND OTHER FIRE AND LIFE SAFETY PROTECTION SYSTEMS IN OPERATION AT ALL TIMES.
2.11. PENETRATIONS: PROVIDE PROPER PACKING AROUND OR BUILT INTO A ROOF, OUTSIDE WALL OR WATERPROOF FLOOR AS NEEDED. CONTRACTOR MUST USE LANDLORD APPROVED ROOFING CONTRACTOR.
2.12. LANDLORD COORDINATION: THIS CONTRACTOR SHALL COMPLY WITH LANDLORD'S GENERAL REQUIREMENTS FOR WORK TO BASE BUILDING SYSTEMS. CONTRACTOR SHALL PROVIDE THE LANDLORD WRITTEN NOTICE 72 HOURS PRIOR TO ACCESS AREAS WHICH IS REQUIRED WITHIN OTHER TENANT SPACE. IF CONTRACTOR REQUIRES SHUT DOWN OF ANY BASE BUILDING SYSTEMS, THE CONTRACTOR SHALL PROVIDE THE LANDLORD WRITTEN NOTICE. SHUTDOWN OF SYSTEMS SHALL OCCUR AT A TIME THAT IS CONVENIENT AND APPROVED BY LANDLORD.
2.13. PROTECTION OF BASE BUILDING SYSTEMS: THE CONTRACTOR SHALL TAKE REASONABLE CARE TO PROTECT ALL BASE BUILDING EQUIPMENT FROM DAMAGE. CONSTRUCTION DUST AND FUMES. CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OR REFURBISHING OF ANY DAMAGED MECHANICAL EQUIPMENT DURING CONSTRUCTION. CONTRACTOR SHALL VACUUM CLEAN ALL MECHANICAL EQUIPMENT EXPOSED TO CONSTRUCTION DUST AND PROVIDE NEW FILTERS UPON COMPLETION OF WORK.
2.14. DEMOLITION: THE CONTRACTOR DURING DEMOLITION SHALL REMOVE ALL REDUNDANT SERVICES AS INDICATED ON DRAWINGS. ABANDONING OF EQUIPMENT, PIPES, DUCTWORK IS UNACCEPTABLE EXCEPT FOR INACCESSIBLE PIPING OR DUCTWORK IN FURRED-IN SPACE, WITH THE CONSULTANTS APPROVAL. THE CONTRACTOR MAY CUT AND CAP AT FINISHED SURFACES.

FIRE PROTECTION SPECIFICATIONS

1. SCOPE:
1.1. SCOPE OF WORK: PROVIDE ALL LABOUR, MATERIALS, TOOLS AND EQUIPMENT REQUIRED FOR THE FIRE PROTECTION, INCLUDING PIPING TO THE BUILDING. ALL SPRINKLER WORK SHALL CONFORM TO N.F.P.A.-13 AND ALL REQUIREMENTS OF THE AUTHORITIES. ALL FIRE STANDPIPE WORK SHALL CONFORM TO O.B.C. N.F.P.A.-14 AND ALL REQUIREMENTS OF THE AUTHORITIES. ALL EXISTING LIFE SAFETY, STANDPIPE, SPRINKLERS AND FIRE PROTECTION SERVICES MUST BE MAINTAINED IN OPERATION.
1.2. SYSTEMS: THE SYSTEMS SHOWN ON THE PLANS ARE FOR ON DRAWINGS TO AID IN PRICING PURPOSES ONLY. SPRINKLER CONTRACTOR IS RESPONSIBLE FOR PROVIDING ADEQUATE COVERAGE AND CONFORMANCE WITH APPROPRIATE CODES.
1.3. APPROVALS: ALL WORKING PLANS AND CALCULATIONS SHALL BE SUBMITTED TO CONSULTANT AS WELL AS LANDLORD'S AND TO TENANTS INSURERS (FM, IAO) AND TO FIRE DEPARTMENT FOR APPROVAL PRIOR TO CONSTRUCTION.
1.4. APPROVED CONTRACTORS: ALL FIRE PROTECTION SYSTEM WORK IN THIS CONTRACT SHALL BE PERFORMED BY A CONTRACTOR HAVING SUFFICIENT EXPERIENCE IN THE PROPOSED WORK. CONTRACTOR SHALL BE INSURED. THE CONTRACTOR SHALL BE LICENSED BY THE ONTARIO COLLEGE OF TRADE TO PERFORM INSTALLATION, TESTING AND COMMISSIONING OF FIRE PROTECTION SYSTEM.
1.5. SEPARATE PRICING: SUBMIT A SEPARATE PRICE FOR THE ADDITION/OR DELETION OF ONE(1) SPRINKLER HEAD OF EACH TYPE SPECIFIED. ANY NUMBER OF HEADS MAY BE INCORPORATED AT THE UNIT PRICE DURING THE CONSTRUCTION PERIOD.

2. MATERIALS:
2.1. PIPING: PIPING SHALL BE BLACK STEEL SCHEDULE 40 PIPING C/W THREADED COUPLINGS AND FITTINGS UP TO 2" DIA. AND WELDED FOR 2-1/2" DIA. AND UP. VICTAULIC BRAND COUPLINGS ON SPRINKLER SYSTEMS MAY BE USED WHEN ACCEPTABLE TO THE AUTHORITIES AND LANDLORD. ALTERNATE MANUFACTURERS ARE NOT ACCEPTABLE. LIGHTWALL PIPING FOR DIA. OF 2" AND OVER MAY ALSO BE USED WHEN ACCEPTABLE TO THE AUTHORITIES AND LANDLORD. VICTAULIC COUPLINGS MAY BE USED ON FIRE STANDPIPE SYSTEMS, PROVIDED THEY MEET LANDLORD REQUIREMENTS.
2.2. SPRINKLER HEADS: WHERE POSSIBLE SPRINKLER HEADS SHALL BE AS PER BASE BUILDING, IF EXISTING FIRE HOSE CABINETS ARE NOT AVAILABLE, FIRE HOSE CABINETS SHALL BE SEMI RECESSED TYPE. BODY SHALL BE DIE-CAST BRASS WITH HEX-SHAPED WRENCH BOSS CAST INTO THE BODY. TEMPERATURE RATINGS OF SPRINKLER HEADS SHALL BE SUITABLE FOR THE PARTICULAR LOCATION, I.E. IN GENERAL 75°C (167°F) HEADS SHALL BE USED, WITH HIGHER TEMPERATURE HEADS ADJACENT TO KITCHEN HOODS, UNIT HEATERS OR OTHER SOURCES OF HEAT. SPRINKLER HEADS SHALL BE AS FOLLOWS:
- PROVIDE TYCO MODEL TY-FRB PENDANT AUTOMATIC SEMI-RECESSED SPRINKLERS COMPLETE WITH ESCUTCHEON PLATE FOR CEILINGS WITH ACOUSTIC TILE CEILINGS.
- PROVIDE TYCO MODEL WPU CONCEALED CLEAN LINE SPRINKLER HEADS IN ALL DRYWALL CEILINGS. PLATE COVER COLOUR TO BE SELECTED BY ARCHITECT.
- PROVIDE TYCO MODEL TY-FRB ROUGH BRASS UPRIGHT OR PENDANT SPRINKLER HEADS IN AREAS WITHOUT SUSPENDED CEILINGS.
- SIDEWALL SPRINKLER HEADS SHALL BE TYCO MODEL TY-FRB, ALL CHROME PLATED.
- SPRINKLER HEADS FOR KITCHEN WALK-IN COOLERS AND FREEZERS SHALL BE TYCO MODEL DS-1 WITH WIRE GUARDS, WHITE COLOUR.
- WINDOW SPRINKLER HEADS SHALL BE TYCO MODEL WS, VERTICAL PENDENT ARRANGEMENT, POLYESTER COATED, WHITE COLOUR.
2.3. SPRINKLER GUARDS: PROVIDE SPRINKLER GUARDS FOR SPRINKLER HEADS IN STORAGE AREAS, MECHANICAL ROOMS, COMPUTER ROOMS AND SHIPPING/RECEIVING AREAS. SPRINKLERS GUARDS SHALL BE LISTED, SUPPLIED, AND APPROVED FOR USE WITH THE SPRINKLER MANUFACTURER.
2.4. FIRE HOSE CABINETS: WHERE POSSIBLE FIRE HOSE CABINETS SHALL BE SELECTED TO MATCH BASE BUILDING. IF EXISTING FIRE HOSE CABINETS ARE NOT AVAILABLE, FIRE HOSE CABINETS SHALL CONFORM TO APPLICABLE CODES AND BUILDING REQUIREMENTS. WHERE REQUIRED PRESSURE RESTRICTING VALVES (NATIONAL FIRE #-1962) OR PRESSURE REDUCING VALVES (NATIONAL FIRE UR225) SHALL BE INCLUDED.
2.5. FIRE EXTINGUISHERS: PROVIDE FIRE EXTINGUISHERS AS SHOWN ON PLANS AND AS REQUIRED TO MEET COVERAGE AND MAXIMUM TRAVEL DISTANCE REQUIREMENTS PER THE ONTARIO FIRE CODE. FIRE EXTINGUISHERS SHALL BE AS FOLLOWS:
- PROVIDE MODEL ABC-10-G, 4.5KG (10 LBS) MULTI PURPOSE DRY CHEMICAL FIRE EXTINGUISHER WITH ANODIC RATING IN MECHANICAL ROOMS, ELECTRICAL ROOMS, DIESEL ROOMS, U.P.S. BATTERY ROOMS, SWITCHGEAR ROOMS, AND TRANSFORMER VAULTS. MOUNT EXTINGUISHER NEAR THE DOOR WITH AN APPROVED ALUMINUM WALL BRACKET.
- PROVIDE MODEL PDC-10, 4.5 KG (10 LBS) STANDARD DRY CHEMICAL TYPE FIRE EXTINGUISHER, WITH ANODIC RATING IN GENERAL AREAS. MOUNT EXTINGUISHER IN RECESSED CABINET WITH ALUMINUM CABINET WITH MODEL #CD-999 OR EQUAL. CABINETS SHALL BE COMPLETE WITH CRUNDER LOCK AND BREAK GLASS MECHANISM.
- PROVIDE MODEL F260 6 LITERS (1.6 US GALLONS) CLASS 'K' EXTINGUISHER WITH 1BC RATING COMPLETE WITH WALL BRACKET FOR KITCHEN AREAS.
2.6. DI-ELECTRIC COUPLINGS: USE DI-ELECTRIC CONNECTIONS WHEREVER PIPES OF DISSIMILAR MATERIAL ARE CONNECTED TOGETHER.

3. INSTALLATION:
3.1. HYDRAULIC CALCULATIONS: PIPING SYSTEM WITHIN THE SPACE SHALL BE HYDRAULICALLY DESIGNED TO MATCH SYSTEM MAINS BY A LICENSED PROFESSIONAL ENGINEER.
3.2. DRAWING SHOWS THE GENERAL ARRANGEMENT OF SPRINKLER SYSTEM. CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS AND CONDITIONS ON THE JOB AND REPORT DISCREPANCIES TO THE ENGINEER BEFORE COMMENCING WORK.
3.3. WHEN THERE ARE CHANGES, CONTRACTOR SHALL PROVIDE SPRINKLER DRAWINGS WITH CALCULATIONS AS ELECTRONIC FILES IN AUTOCAD COMPATIBLE FORMAT FOR REVIEW. CONTRACTOR MAY OBTAIN CONSULTANTS AUTOCAD FILES IF DESIRED AT A CHARGE OF $50.00 PER FILE; MINIMUM CHARGE IS $150.00 PER PROJECT.
3.4. CERTIFICATION LETTERS: FINAL NFPA CERTIFICATION LETTER SHALL BE PROVIDED BEFORE MECHANICAL COMPLIANCE LETTER IS ISSUED. CERTIFICATION LETTER SHALL CONTAIN CONTRACTOR'S NAME AND ADDRESS, THE BUILDING PERMIT NUMBER, CERTIFICATION STATEMENT IN REGARD TO NFPA COMPLIANCE AND BE STAMPED BY A LICENSED PROFESSIONAL ENGINEER.
3.5. LOCATIONS: FINAL LOCATION OF ALL PIPING AND SPRINKLERS SHALL BE CO-ORDINATED ON SITE WITH ALL TRADES.
3.6. BULB PROTECTOR: THE SPRINKLER BULB PROTECTOR MUST REMAIN IN PLACE UNTIL THE SPRINKLER IS COMPLETELY INSTALLED AND BEFORE THE SYSTEM IS PLACED IN SERVICE. REMOVE BULB PROTECTORS CAREFULLY BY HAND AFTER INSTALLATION. DO NOT USE ANY TOOLS TO REMOVE BULB PROTECTORS.
3.7. FIRE SEPARATIONS: MAINTAIN ALL FIRE SEPARATIONS. ALL FIRE RATED WALL AND FLOOR OPENINGS SHALL BE PACKED WITH AN APPROVED FIRE BARRIER MINERAL WOOL TO 25MM (1") FROM END SIDE OF OPENING ON BOTH SIDES OF FLOOR OR WALL. REMAINING PORTION SHALL BE SEALED WITH AN APPROVED AND LISTED FIRE BARRIER SILICONE.
3.8. WELDING: ALL WELDING SHALL BE DONE BY C.W.B. LICENSED WELDERS.
3.9. SHUT DOWNS: INFORM OWNER, OWNER'S INSURER AND AUTHORITIES HAVING JURISDICTION DURING SHUT DOWN OF FIRE PROTECTION SYSTEM. PROVIDE ADEQUATE TEMPORARY PROTECTION DURING THE SHUT DOWN PERIOD AS PER CODE REQUIREMENTS.
3.10. ACCESS DOORS: PROVIDE ACCESS DOORS TO CONSULTANT AND ARCHITECT IF EQUIPMENT REQUIRES ACCESS DOORS NOT SHOWN ON PLAN FOR SERVICEABLE ITEMS AND COMPONENTS.
3.11. CO-ORDINATE COLOR OF EXPOSED SPRINKLER DROP THAT PENETRATES THE SUSPENDED CEILING AND STUDENT POD WITH THE ARCHITECT.

PIPE IDENTIFICATION

1. STENCILING:
1.1. STENCILING TO BE PERFORMED IN A NEAT, QUALITY MANNER.
1.2. USE CAPITAL LETTERS MINIMUM 51MM (2") HIGH FOR DN80 (3") DIAMETER PIPING OR LARGER, INCLUDING INSULATION, AND 19MM (3/4") SIZE CAPITAL LETTERS ON SMALLER DIAMETERS.
1.3. ARROWS: PROVIDE ARROWS TO INDICATE DIRECTION OF FLOW. ARROW WHERE FLOW IS REVERSIBLE. ARROW SHALL BE SOLID BLACK OR WHITE, MINIMUM 150MM LONG BY 50MM (2") WIDE FOR DN80 (3") DIAMETER PIPING OR LARGER, INCLUDING INSULATION, AND 75MM (4") LONG BY 19MM (3/4") WIDE ON SMALLER DIAMETERS.
1.4. USE WORDING SHOWN ON THE LEGEND ON THE DRAWINGS OR AS INSTRUCTED BY THE CONSULTANT. SPECIAL SYSTEM DESIGNATIONS AND ABBREVIATIONS SHALL BE SUBMITTED TO CONSULTANT FOR APPROVAL PRIOR TO USE.
1.5. COLOUR CODING TO BE AS PER THE FOLLOWING SCHEDULE. FOR ALL OTHER SERVICES, PROVIDE COLOUR CODING IN CONFORMANCE WITH CAN/CGSB-24.3, AND AND MANUFACTURER'S RECOMMENDATIONS.

2. LOCATION:
2.1. LOCATE IDENTIFICATION AND FLOW ARROWS AS FOLLOWS:
- BEHIND EACH ACCESS DOOR.
- AT EACH CHANGE OF DIRECTION AND TAKE-OFF.
- ON PIPES SMALLER THAN 140 FT2 APART ON ALL PIPES EXPOSED AND/OR LOCATED BEHIND ACCESSIBLE CEILING.
- ON BOTH SIDES OF SLEEVES.
- ADJACENT TO VALVES.
- ABOVE EACH FLOOR OR PLATFORM FOR VERTICAL EXPOSED PIPES APPROXIMATELY 1,524MM (5 FT.) ABOVE FLOOR.

3. MARKER LEGEND:

DESCRIPTION AND SERVICE		CLASSIFICATION COLOR
DOMESTIC COLD WATER		GREEN
DOMESTIC HOT WATER		GREEN
DOMESTIC HOT WATER	RECIRCULATION	GREEN
STORM WATER		GREEN
SANITARY WASTE		GREEN
NATURAL GAS		YELLOW
FIRE LINE		RED

3

ALLOWANCES

MECHANICAL CONTRACTOR SHALL MAKE THE FOLLOWING ALLOWANCES PER FLOOR, FOR WORK NOT SHOWN ON THE MECHANICAL DRAWINGS:

1. PROVIDE FIVE (5) ADDITIONAL SPRINKLER HEADS COMPLETE WITH ALL BRANCH PIPING.

ACQUIRE WRITTEN APPROVAL FROM CONSULTANT PRIOR TO COMPLETING WORK OUTLINED UNDER ALLOWANCES

LOWER LEVEL

PROJECT NORTH

IMPORTANT
OWNERS TO SUPPLY SUFFICIENT HEAT (MIN. 4.5°C) THROUGHOUT AREAS WHERE WET SYSTEMS ARE INSTALLED TO PREVENT FREEZING OF WATER UNLESS ANTI-FREEZE SYSTEM IS PROVIDED.

NOTES:

Symbols

Symbol	Description
○ (+ m)	Hydraulic Reference Points Elev. Below Top of Steel
(+#)	Elev. Above Finished Floor
+ (TOS 20-0)	Elev. of Top of Steel
	Ceiling Height
	Denotes Hanger Location
o	Rise up or down

Sprinkler Head Schedule

Symbol	Count	Thread	K-Factor	Description	Note
	16	15mm	80	OPEN PENDENT SPRK WITH CHROME FRAME	ON DROP
	29	15mm	80	Q.R. 68C BRASS UPRIGHT	ON SPRIG
	111	15mm	80	Q.R. 68C CONCEALED SPRK	ON DROP

156 = Total Number of Heads This Floor

COORDINATE THE COLOR OF CONCEALED SPRINKLER PLATE WITH ARCHITECT / INTERIOR DESIGN

HIDI

EBAL Engineering Ltd.
www.ebalengineering.ca

Drawing Title	SPRINKLER LAYOUT
Project No.	20-C813
Drawn By	RL
Scale	AS-SHOWN
Date	FEB-2022
Approval By	

Revisions:		Date:
0	50% CD ISSUED FOR COORDINATION	2022-03-01
1	90% CD ISSUED FOR COORDINATION	2022-04-22
1	100% CD	2022-05-13
2	ISSUED FOR TENDER	2022-05-27
3	REVISED FOR ADDENDUM #3	2022-06-21

Job: HUMBER COLLEGE - RETAIL / FOOD SERVICE STUDY
205 HUMBER COLLEGE BLVD
TORONTO, ON.

ISSUED FOR COORDINATION
NOT FOR CONSTRUCTION

SP1