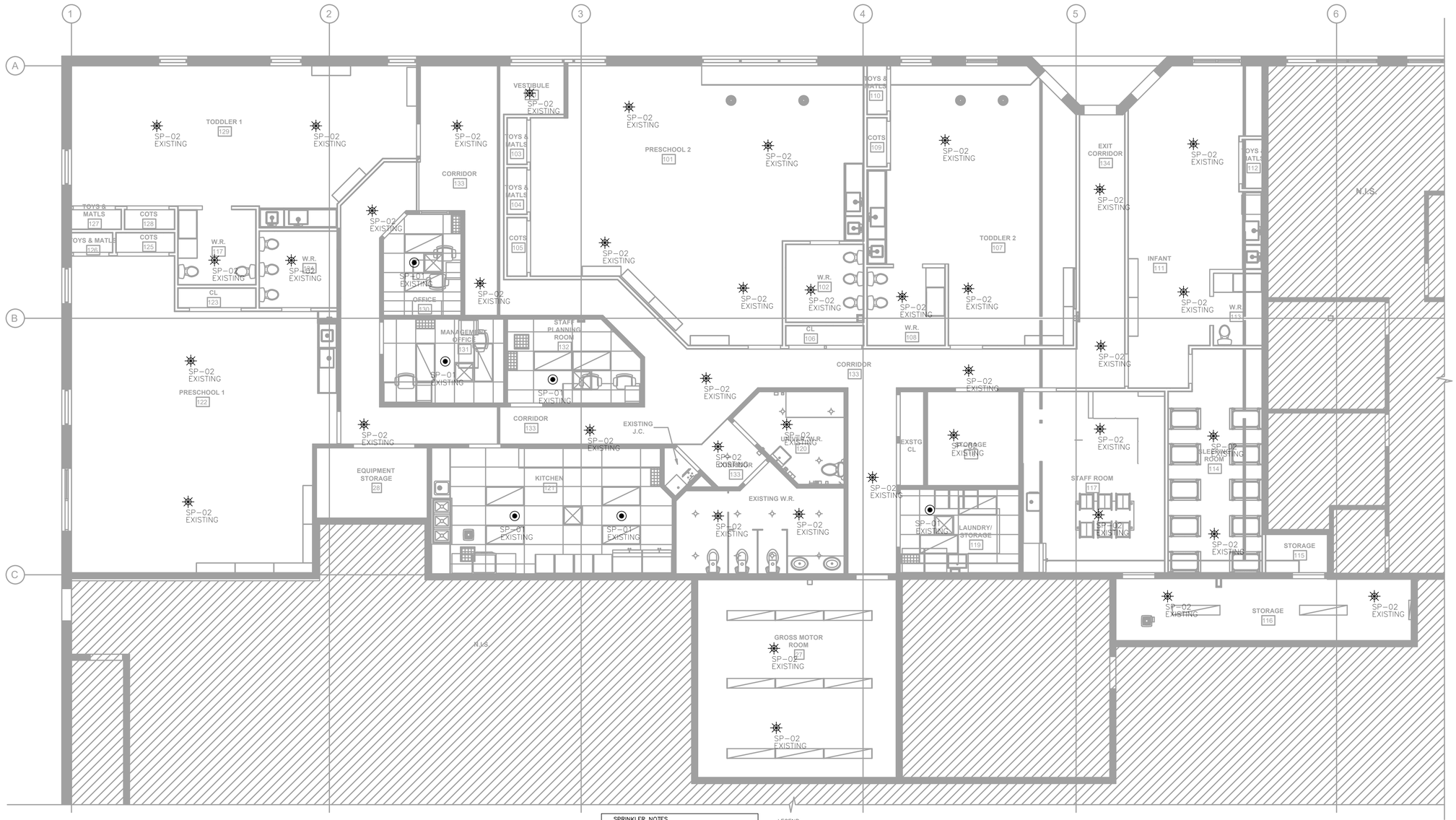


SPRINKLER PIPING and FITTINGS:

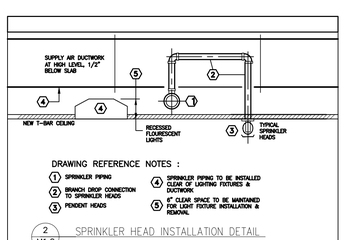
1. PIPING 2" DIA. OR SMALLER SHALL BE ASTM-A-53, SCHEDULE 10S GRADE A CARBON STEEL WITH ROLLED GROVE MECHANICAL JOINTS.
2. PIPING 2.1/2" DIA. TO 4" DIA. SHALL BE ASTM-A-53, SCHEDULE 40 GRADE A CARBON STEEL WITH THREADED OR CUT GROVE JOINTS.
3. FITTINGS SHALL BE STANDARD WEIGHT CAST IRON TO ANSI B16.4, 1206.6 KPA.
4. SCHEDULE 10 SPRINKLER PIPING WITH GROOVED AND ROLLED FITTINGS IS ACCEPTABLE WITH BUILDING STANDARDS

HANGERS and EQUIPMENT SUPPORTS:

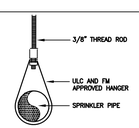
1. PIPING & EQUIPMENT PROVIDED UNDER THE MECHANICAL DIVISION SHALL BE c/w ALL NECESSARY SUPPORTS & HANGERS REQUIRED FOR A SAFE & WORKMANLIKE INSTALLATION.
2. PIPE HANGERS SHALL BE FASTENED TO ROOF JOISTS OVER WITH APPROVED TYPE CLAMP.
3. INSTALL ALL PIPE HANGERS TO PROVIDE THE FOLLOWING FUNCTIONS – SECURE PIPE IN PLACE, PREVENT VIBRATIONS, MAINTAIN PROPER GRADE & PROVIDE FOR CONTRACTION & EXPANSION.
4. ALL HANGER RODS SHALL HAVE MACHINE THREAD WITH NUTS BELOW & ABOVE YOKES FOR ADJUSTMENT. PERFORATED STRAP OR CHAIN HANGERS ARE NOT TO BE USED.
5. HANGERS SHALL BE INSTALLED AT VALVES, CLOSE TO POINTS WHERE PIPES CHANGE DIRECTION OR WHERE BRANCH PIPING DROPS OR RISES FROM THE MAIN.
6. ALL HANGERS SHALL BE DIRECTLY SUSPENDED FROM THE BUILDING STRUCTURE; PIPES OR EQUIPMENT SHALL NOT BE SUPPORTED FROM OTHER PIPES, DUCTS, EQUIPMENT, SUSPENDED CEILINGS, OTHER HANGERS ETC.
7. SUSPENDED PIPING SHALL BE SUPPORTED BY ADJUSTABLE ROD HANGERS SIZED AS FOLLOWS: (M1.2)

PIPE SIZE	HANGER ROD DIA. MAX. SPACING	
inches (mm)	inches (mm)	ft (m)
1/2" (12)	3/8 (9)	6 (2)
3/4" (20) to 1.1/4" (32)	3/8 (9)	8 (2.5)
1.1/2" (40) & 2" (50)	3/8 (9)	10 (3)

3 SPRINKLER HEAD INSTALLATION DETAIL
N.T.S.



2 M1.2 SPRINKLER HEAD INSTALLATION DETAIL
N.T.S.



1 M1.2 HANGER DETAIL
N.T.S.

SPRINKLER NOTES

1. ALL SPRINKLER PIPES ARE EXISTING AND SPRINKLERS ARE EXISTING AS SHOWN ON THE DRAWINGS
2. ALL NEW SPRINKLER HEADS SHALL BE ULC LISTED
3. CONTRACTOR SHALL PROVIDE FIRE WATCH AT ALL TIMES WHEN THE SPRINKLER SYSTEM IS NOT OPERATIONAL
4. SPRINKLER HEADS SHALL BE PENDANT IN AREAS WITH CEILING AND UP-RIGHT IN OPEN AREA
5. THE SPRINKLER LAYOUT IS BASED ON LIGHT HAZARD APPLICATION
6. SPRINKLER SYSTEM SHALL BE INSTALLED IN ACCORDANCE TO LATEST REQUIREMENTS OF NFPA 13 AMD ALL LOCAL AUTHORITIES HAVING JURISDICTION
7. SPRINKLERS SHALL BE INSTALLED BY LICENSED CONTRACTOR AND IN ACCORDANCE WITH LATEST REQUIREMENTS OF LOCAL FIRE DEPARTMENT, NATIONAL FIRE PROTECTION ASSOCIATION (N.F.P.A.) #13, AND ONTARIO BUILDING CODE BASED ON ORDINARY HAZARD. SUBMIT SHOP DRAWING WITH HYDRONIC CALCULATION, STAMPED BY PROFESSIONAL ENGINEER IF SIGNIFICANT CHANGES TAKE PLACE.
8. MECHANICAL CONTRACTOR TO PROVIDE ALL REQUIRED DOCUMENTS AND PAY ALL THE FEES TO LOCAL AUTHORITIES.
9. THE DRAWINGS ARE INTENDED TO PROVIDE THE DESIGN INTENT. SPRINKLER CONTRACTOR SHALL ASSUME FULL RESPONSIBILITIES FOR THE LAYOUT AND DETAILS OF ALL SPRINKLER WORK TO MEET THE REQUIREMENTS OF NFPA 13 AND LOCAL AUTHORITIES HAVING JURISDICTION

LEGEND:

SP-01	PENDENT SPRINKLE EXISTING LOCATION CHANGE SPRINKLER HEAD
SP-02	UPRIGHT SPRINKLE

HEAD TYPE	DISCRIPTION
R	EXISTING UP-RIGHT SPRINKLER HEAD TO BE REPLACED WITH NEW ONE AND RELOCATED TO SUIT NEW SITE LAYOUT
R	EXISTING UP-RIGHT SPRINKLER HEAD TO BE REPLACED WITH NEW PENDANT SPRINKLER HEAD AND RELOCATED TO SUIT NEW SITE LAYOUT
N	NEW PENDANT SPRINKLER HEAD
N	NEW UP-RIGHT SPRINKLER HEAD

INSTALLATION NOTES:
PROVIDE HANGER FOR ANY ARM OVER EXCEEDS 2 FEET

SPRINKLER HEAD F1-56 SERIES OR EQUAL
MAKE: RELIABLE, MODEL: F3OR56 SERIES OR

NOTES:

1. DO NOT SCALE DRAWINGS. DRAWING TO SCALE WHEN PRINTED AT 11" X 17".
2. CONTRACTOR MUST VERIFY ALL DIMENSIONS ON SITE BEFORE EXECUTING WORK AND IMMEDIATELY REPORT ANY DISCREPANCIES TO DESIGNER.
3. ALL DRAWINGS AND RELATED DOCUMENTS REMAIN THE PROPERTY OF LEEN CONSULTING INC. AND MUST BE RETURNED UPON REQUEST. REPRODUCTION FORBIDDEN WITHOUT WRITTEN PERMISSION.

No.	DATE	ISSUES / REVISIONS
1.	2025-09-09	ISSUED FOR PERMIT

APPROVE

COMPANY
LEEN CONSULTING
420 Main St E
Suite 639
Milton,Ontario L9T 5G3
www.leenconsulting.ca

PROJECT:
1720 bishop street cambridge-Little Scholar

DRAWING TITLE:
FIRE PROTECTION LAYOUT

DRAWN BY:	CHECKED BY:
M.B	M.A
DESIGNED BY:	APPROVED BY:
M.B	M.A.
SCALE:	PROJECT No:
1/2" = 1'-0"	LC25-143

DRAWING NO.:
M-04

1.0 MECHANICAL SPECIFICATIONS

1.1 GENERAL

THE RESPONSIBILITY AND SCOPE OF EACH SUB–TRADE RESTS SOLELY WITH THE CONTRACTOR. EXTRAS WILL NOT BE CONSIDERED BASED ON THE GROUNDS OF DIFFERENCE IN INTERPRETATION OF SPECIFICATIONS AND DRAWINGS AS TO WHICH TRADE INVOLVED SHALL PROVIDE CERTAIN SPECIALTIES OR MATERIALS.

SHOULD ANY CONFLICTS OCCUR BETWEEN LAYOUTS SHOWN ON DRAWING AND APPLICABLE CODES, THE CODE REQUIREMENTS SHALL BE ADHERED TO.

1.2 EXAMINATION OF WORK

DRAWINGS ARE DIAGRAMMATIC AND APPROXIMATELY TO SCALE. THE CONTRACT DOCUMENTS ESTABLISH SCOPE, MATERIAL AND QUALITY AND ARE NOT DETAILED INSTALLATION INSTRUCTIONS.

THE MECHANICAL CONTRACTOR MUST VISIT THE SITE TO PRE–QUALIFY HIS/HER TENDER SUBMISSION. FAILURE TO COMPLY WITH THIS REQUIREMENT WILL RENDER HIS/HER PORTION (DIVISION 15) OF THE WHOLE TENDER AS UNQUALIFIED AND WILL BE REJECTED.

1.3 INTENT

IT IS THE INTENT OF THIS SPECIFICATION AND DRAWINGS TO PROVIDE FOR A COMPLETE AND FULLY OPERATING SYSTEM IN COMPLETE ACCORD WITH ALL APPLICABLE CODES. THESE SPECIFICATIONS MAY NOT COVER EACH AND EVERY ITEM REQUIRED FOR THE COMPLETE MECHANICAL INSTALLATION. THEREFORE, THE CONTRACTOR SHALL MAKE HIS OWN PROVISIONS FOR ALL LABOUR, MATERIALS AND EQUIPMENT DEEMED NECESSARY TO COMPLETE THE MECHANICAL SYSTEM.

THE SPECIFICATIONS ARE INTEGRAL WITH THE DRAWINGS WHICH ACCOMPANY THEM. NEITHER IS TO BE USED ALONE. ANY ITEM OR SUBJECT OMITTED FROM ONE, BUT IMPLIED ON THE OTHER IS PROPERLY SPECIFIED.

'NOTES' ARE INCLUDED TO ASSIST THE CONTRACTOR IN UNDERSTANDING THE SCOPE OF WORK. UNLESS NOTED OTHERWISE THE NOTATIONS SHALL APPLY FOR THE ENTIRE FLOOR AREA WITHIN WHICH THE NOTATION IS LOCATED. MULTIPLE NOTES SHALL NOT BE INTERPRETED THAT AN UNNOTED ITEM IS EXCLUDED.

ALL WORK TO CONFORM TO LATEST NATIONAL, PROVINCIAL, MUNICIPAL CODES, BYLAWS, REGULATIONS AND AUTHORITIES HAVING JURISDICTION.

WHENEVER DIFFERENCES OCCUR IN THE CONTRACT DOCUMENTS, THE MAXIMUM CONDITION WILL GOVERN AND BE INCLUDED IN THE CONTRACT PRICE.

CONFORM TO MANUFACTURER'S INSTRUCTIONS, DETAILS AND PROCEDURES FOR EQUIPMENT INSTALLATIONS.

INSTALL EQUIPMENT IN LOCATIONS AND ROUTES SHOWN WITH MINIMUM INTERFERENCE WITH OTHER SERVICES OR TRADES. REMOVE AND REPLACE EQUIPMENT IMPROPERLY INSTALLED.
ALL NEW INSTALLATIONS ARE TO MEET OR EXCEED BASE BUILDING STANDARDS.

1.4 INSURANCE

THE CONTRACTOR MUST HAVE COMPREHENSIVE GENERAL LIABILITY INSURANCE COVERAGE OF NOT LESS THAN SPECIFIED IN THE TENDER DOCUMENTS INCLUDING NON OWNED CAR COVERAGE, CONTRACTUAL LIABILITY AND CONTAINING A CROSS LIABILITY CLAUSE. COVERAGE SHALL INCLUDE LOSS OR DAMAGE CAUSED BY THE CONTRACTOR.

THE CONTRACTOR SHALL CARRY FULL EMPLOYEE'S LIABILITY INSURANCE IN ACCORDANCE WITH THE WORKER'S COMPENSATION ACT.

1.5 LIABILITY

THE CONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR LAYING OUT HIS WORK AND FOR ANY DAMAGE CAUSED TO OWNER OR OTHER CONTRACTOR BY IMPROPER LOCATION OR CARRYING OUT HIS WORK.

THIS CONTRACTOR SHALL PROTECT ALL FINISHED AND UNFINISHED WORK OF HIS OWN AND OTHER CONTRACTORS, INCLUDING EXISTING FROM DAMAGE DUE TO CARRYING OUT HIS WORK.

VERIFY ALL EXISTING ELEVATIONS, DIMENSIONS, CLEARANCES AND BUILDING FEATURES PRIOR TO COMMENCING INSTALLATION.

1.6 COORDINATION AND CO–OPERATION

COORDINATE WORK WITH ALL OTHER SUBCONTRACTORS AND TRADES INVOLVED. CONFIRM IN WRITING TO GENERAL CONTRACTOR/ENGINEER ANY EXISTING SERVICES OR WORKS DEEMED TO BE UNACCEPTABLE AND/OR DEFECTIVE PRIOR TO COMMENCING WORK.

1.7 INTERRUPTION OF SERVICES

WHILE WORK IS IN PROGRESS, CONTINUITY OF SERVICES SHALL BE MAINTAINED TO ALL EXISTING SERVICES. INTERRUPTIONS SHALL BE COORDINATED WITH THE OWNER AS TO TIME AND DURATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY INTERRUPTIONS TO SERVICES AND SHALL REPAIR ANY DAMAGES TO THE EXISTING SYSTEMS CAUSED BY HIS OPERATIONS.

THE CONTRACTOR SHALL INCLUDE IN HIS PRICE ANY COST FOR PREMIUM TIME OUTSIDE OF NORMAL WORKING HOURS TO COMPLETE THE WORK ON SCHEDULE AND TO MAINTAIN ALL EXISTING SYSTEMS IN OPERATION.

1.8 CERTIFICATES, FEES, ETC.

GIVE ALL NOTICES, OBTAIN ALL PERMITS AND PAY ALL FEES SO THAT THE WORK SPECIFIED MAY BE CARRIED OUT. FURNISH ANY CERTIFICATES AT THE OWNER'S REQUEST AS EVIDENCE THAT WORK INSTALLED CONFORMS TO THE LAWS AND REGULATIONS OF ALL AUTHORITIES HAVING JURISDICTIONS. CERTIFICATES/PERMITS ARE TO BE PROVIDED FOR QUALITY OF WORKMANSHIP AND WORKMAN QUALIFICATIONS.

INSPECTIONS SHALL BE MADE PROMPTLY. IF ANY WORK IS COVERED UP WITHOUT CONSENT, IT SHALL, IF REQUIRED, BE UNCOVERED FOR EXAMINATION AND MAKE GOOD AT NO EXTRA COST TO OWNER.

1.9 IDENTIFICATION

PROVIDE FOR IDENTIFICATION OF PIPING AND DUCTWORK WITH MARKERS SHOWING SERVICE AND DIRECTION OF FLOW. APPLY LABELS AT MAXIMUM 50–FT INTERVALS, BEFORE AND AFTER PASSING THROUGH WALLS, AT ACCESS DOOR OPENINGS, AT EACH SHUT OFF VALVE AND ADJACENT TO EACH PIECE OF EQUIPMENT. LABELS SHALL BE WATERPROOF AND HEAT RESISTANT WITH YELLOW BACKGROUND, MINIMUM 1–INCH LETTERING AND DRY ADHESIVE BACKING. PROVIDE 3M #76 ADHESIVE MINIMUM 1–INCH LETTERING AND DRY ADHESIVE BACKING. PROVIDE 3M #76 ADHESIVE IN ADDITION TO DRY ADHESIVE BACKING. PROVIDE 2–INCH WIDE COLOUR BAND OF PLASTIC PRESSURE SENSITIVE TAPE FOR PIPING LAMICOID LABELS WITH 1/2–INCH LETTERS AND KEY WITH CONTROL SCHEMATICS.

1.10 CUTTING AND PATCHING

UNLESS BUILDER'S WORK IS EXCLUDED FROM HIS SCOPE OF WORK, THE MECHANICAL CONTRACTOR SHALL INCLUDE AND BE RESPONSIBLE FOR CUTTING, PATCHING AND MAKE GOOD ALL OPENINGS REQUIRED FOR THE MECHANICAL SERVICES. PROTECT EXISTING BUILDING, STRUCTURE AND FINISHES.

LOCATE HOLES AND PROVIDE SLEEVES, CUTTING AND FITTING REQUIRED FOR MECHANICAL WORK. RELOCATE IMPROPERLY LOCATED HOLES AND REPAIR WORK ACCORDINGLY.

PROVIDE EXPANSION BOLTS, HANGER RODS, BRACKETS AND SUPPORTS.

DO NOT ALTER STRUCTURAL MEMBERS OF BUILDING WITHOUT OBTAINING APPROVAL FROM CONSULTANT.

PERFORM PATCHING OF FINISHED WORK IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF SPECIFICATIONS.

1.11 FLASHING

DO ALL FLASHING AND COUNTER FLASHING WHERE DUCTS AND OTHER MECHANICAL PARTS ARE PASSING THROUGH WEATHER AND/OR WATER PROOF WALLS, FLOORS AND ROOFS, ALL TO THE SATISFACTION OF THE OWNER.

1.12 PIPE HANGERS, SUPPORTS AND SLEEVES

HANGERS AND SUPPORTS SHALL SECURE PIPES IN PLACE, PREVENT VIBRATION, MAINTAIN GRADE BY ADJUSTMENT, PROVIDE FOR EXPANSION AND CONTRACTION AND SHALL BE DIRECTLY FROM THE STRUCTURE.

1.13 TESTING

TEST ALL EQUIPMENT AND MATERIALS WHERE REQUIRED BY SPECIFICATIONS OR AUTHORITIES HAVING JURISDICTION, TO DEMONSTRATE ITS PROPER OPERATION AND FUNCTIONALITY TO THE OWNER'S REPRESENTATIVE. TEST PROCEDURES SHALL BE IN ACCORDANCE WITH APPLICABLE PORTIONS OF THE ASME, ASHRAE, SMACNA, NFPA, CSA AND OTHER RECOGNIZED TEST CODES AS FAR AS FIELD CONDITIONS PERMIT.

ALL LOW VELOCITY DUCT SYSTEMS, INCLUDING SUPPLY, RETURN AND EXHAUST SHALL BE CHECKED FOR TIGHTNESS. ALL LEAKS SHALL BE REPAIRED BEFORE DUCTS ARE FURRED IN TO ENSURE TOTAL OUTLET CAPACITY IS WITHIN 5% OF THE QUANTITY BEING SUPPLIED BY THE AIR SYSTEMS.

1.14 ELECTRIC MOTORS AND WIRING

CONTRACTOR TO REVIEW ALL EQUIPMENT REQUIRING ELECTRICAL HOOK–UP WITH ELECTRICAL CONTRACTOR AND ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT. CONFIRM ALL ELECTRICAL CHARACTERISTICS AS REQUIRED.

SUPPLY ALL MECHANICAL EQUIPMENT WITH ELECTRIC MOTORS AS REQUIRED.

THE ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE TO SUPPLY ALL MOTOR STARTERS AND DISCONNECT SWITCHES FOR ALL MOTORS FOR THE PROJECT, ALL LINE VOLTAGE WIRING TO STARTERS AND STARTERS TO MOTORS EXCEPT ON PREWIRED PACKAGED EQUIPMENT.

1.15
CONTROLS (FAN SWITCHES) CONNECTED TO MECHANICAL EQUIPMENT SHALL BE SUPPLIED BY THE MECHANICAL TRADE AND SHALL BE INSTALLED, WIRED IN AND CONNECTED BY THE DIVISION 15 TRADES.

1.16 RECORD "AS–BUILT" DRAWINGS

KEEP IN THE JOB OFFICE AN EXTRA SET OF WHITE PRINTS AND SPECIFICATIONS ON WHICH ALL CHANGES AND DEVIATIONS SHALL BE RECORDED DAILY. AT COMPLETION OF THE PROJECT, TURN OVER TO THE ENGINEER THREE SETS OF NEAT AS–BUILT DRAWINGS AND SPECIFICATIONS. THESE EXTRA SETS OF WHITE PRINT AND SPECIFICATIONS SHALL BE PROVIDED BY THE ARCHITECT.

1.17 SHOP DRAWINGS

BEFORE FABRICATION OF ANY MATERIALS OR EQUIPMENT, SUBMIT A MINIMUM OF SIX (6) COMPLETE SETS OF DRAWINGS AND DATA SHEETS COVERING ALL ITEMS OF EQUIPMENT FURNISHED AND INTENDED FOR INSTALLATION.

THE ENGINEER'S REVIEW SHALL NOT RELIEVE THIS CONTRACTOR FROM RESPONSIBILITY TO PROVIDE MATERIALS AND EQUIPMENT IN ACCORDANCE WITH THE DESIGN INTENT AND CONTRACT DOCUMENTS. ALL DIMENSIONS AND SUITABILITY FOR SITE CONDITIONS ARE THE RESPONSIBILITY OF THE CONTRACTOR, ALL ELECTRICAL CHARACTERISTICS MUST BE COORDINATED WITH THE ELECTRICAL SUB–CONTRACTOR.

REPAIR ANY TEMPORARY EQUIPMENT USED FOR TEMPORARY HEAT, TO THE FULL SATISFACTION OF THE OWNER.

1.18 STANDARD OF WORKMANSHIP AND MATERIALS

MAKE AND QUALITY OF MATERIALS USED ARE SUBJECT TO APPROVAL BY THE SHALL BE FULLY OPERATIONAL AND ANY DEFICIENCIES SHALL BE IDENTIFIED TO ENGINEER.

ALL DEFICIENCIES SHALL BE COMPLETED WITHIN 2 WEEKS AFTER SUBSTANTIAL COMPLETION. FAILURE TO COMPLETE WORK WITHIN THE TIME FRAME WILL RESULT IN WORK BEING DONE BY THE OWNER AND THE COST BORNE BY THE CONTRACTOR.

1.19 EQUIPMENT CLEANUP

DUCTS AND EQUIPMENT SHALL BE THOROUGHLY CLEANED OF DIRT, CUTTINGS AND OTHER FOREIGN SUBSTANCES. DISCONNECT, CLEAN AND RECONNECT WHENEVER NECESSARY FOR THE PURPOSE OF LOCATING AND REMOVING OBSTRUCTIONS. REPAIR WORK DAMAGED IN THE CAUSE OF REMOVING OBSTRUCTIONS.

ALL MECHANICAL (DIVISION 15) MATERIALS TO BE DEMOLISHED SHALL BE REMOVED AND DISPOSED OF OFF–SITE BY THIS DIVISION 15. ACCORDANCE WITH ALL LOCAL, PROVINCIAL AND FEDERAL ENVIRONMENTAL REGULATIONS.

1.20 GUARANTEE

THE MECHANICAL SUBCONTRACTOR, AS A CONDITION PRECEDENT TO FINAL PAYMENT AFTER COMPLETION OF HIS WORK, SHALL GIVE OWNER A WRITTEN GUARANTEE WARRANTING ALL APPARATUS FURNISHED UNDER THE CONTRACT FOR A PERIOD OF ONE YEAR FROM THE DATE OF FINAL ACCEPTANCE OF HIS WORK BY THE ARCHITECT AND ENGINEER.

ATTEND IMMEDIATELY, AT NO COST TO OWNER, TO ANY AND ALL DEFECTS OCCURRING DURING THE WARRANTEE PERIOD.

1.21 OPERATION AND MAINTENANCE DATA

FURNISH THREE SETS OF OPERATING AND MAINTENANCE DATA FOR ALL EQUIPMENT AND SYSTEMS. DATA SHALL BE ASSEMBLED IN BOOK FORM WITH HARD COVER AND INDEX, IDENTIFY FRONT COVER WITH NAME AND LOCATION OF THE PROJECT, CONSULTING ENGINEER AND CONTRACTOR. PRIOR TO SUBSTANTIAL COMPLETION SUBMIT ONE COPY TO ENGINEER FOR APPROVAL.

1.22 APPROVALS

THE PRICE SUBMITTED FOR THIS CONTRACT SHALL BE BASED ON THE USE OF MATERIALS AND EQUIPMENT SPECIFIED. IF THIS CONTRACTOR WISHES TO QUOTE ON EQUIVALENT MATERIALS AND EQUIPMENT, HE MUST QUOTE ON PRODUCTS APPROVED BY THE ENGINEER IN WRITING, AS AN EQUIVALENT TO THE PRODUCT SPECIFIED.

THIS CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY ADDITIONAL WORK OR MATERIALS REQUIRED BY THE MECHANICAL TRADE OR OTHER CONTRACTORS TO ACCOMMODATE APPROVED EQUIVALENT MATERIALS OR EQUIPMENT. EXTRAS SHALL NOT BE APPROVED TO COVER SUCH WORK.

1.23 VALUATION OF CHANGES

FOR EACH CHANGE, SUBMIT A COMPLETE, ITEMIZED BREAKDOWN OF LABOUR AND MATERIAL AT NET COST, SHOWING QUANTITIES, UNIT COST, HOURS PER EACH ITEM INSTALLED, PROFIT, OVERHEAD ETC., ONLY THE NET DIFFERENCE BETWEEN AN EXTRA AND A CREDIT WILL BE SUBJECT TO OVERHEAD AND PROFIT MARK UP.

2.0 LANDLORD APPROVAL

2.1. CONFORM TO SCHEDULE 'C' OF LANDLORD I TENANT LEASE AGREEMENT.

2.2 CONFORM TO BASE BUILDING STANDARDS AND SPECIFICATIONS AND ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF ALL GOVERNING AUTHORITIES AND LOCAL BYLAWS.

2.3 ALL WORK MUST COMPLY WITH THE LANDLORDS GUIDELINES WHERE APPLICABLE.

2.4 OBTAIN APPROVAL FROM THE LANDLORD BEFORE CUTTING ANY STRUCTURAL WALLS OR FLOORS. CUTTING AND DRILLING SHALL ONLY BE AT TIMES ALLOWED BY THE LANDLORD. CHECK AND VERIFY THE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL SERVICES IN WALLS AND BELOW THE FLOOR SLAB IN ALL AREAS REQUIRING CORE DRILLING AND CUTTING. PROTECT ALL TENANT AREAS WHERE CORE DRILLING OCCURS. PROVIDE X–RAY STUDY BEFORE DRILLING OR CUTTING WHERE REQUIRED BY THE LANDLORD.

2.5 SEAL TO BE AIR–TIGHT AROUND ALL DUCTWORK AND PIPING PENETRATIONS THROUGH PARTITIONS, BAFFLES ABOVE CEILINGS, AND THROUGH FLOORS THAT ARE NOT FIRE RATED.ALL SHUTDOWN, DRAINING AND FILLING OF ANY PORTION OF THE EXISTING BASE BUILDING SYSTEMS SHALL BE PERFORMED BY THE LANDLORD'S BUILDING OPERATIONS STAFF AND SHALL BE CO–ORDINATED WITH THE LANDLORD FOR TIME AND DURATION OF INTERRUPTIONS. COMPLY WITH ALL OF THE LANDLORD'S INSTRUCTIONS, AND INCLUDE FOR ALL COSTS FOR THIS WORK IN THE TENDER PRICE.

2.6. PROVIDE TEMPORARY FILTERS, 1 IN. THICK DISPOSABLE MEDIA TYPE, OVER ALL RETURN AIR OPENINGS IN THE BASE BUILDING H.V.A.C. SYSTEMS THAT REMAIN IN OPERATION DURING CONSTRUCTION.

MAINTAIN AND REPLACE THE TEMPORARY FILTER MEDIA AS REQUIRED TO PREVENT CONSTRUCTION DUST FROM FOULING THE BASE BUILDING EQUIPMENT. REMOVE SAME AT THE COMPLETION OF CONSTRUCTION. FILTERS IN ALL BASE BUILDING AIR HANDLING EQUIPMENT I.E., AIR HANDLING UNITS, INDUCTION UNITS, FAN COIL UNITS, ETC., SHALL BE REPLACED AFTER CONSTRUCTION IS COMPLETED.

2.7. PRIOR TO OPERATING ANY EXISTING OR NEW EQUIPMENT DURING ANY STAGE OF CONSTRUCTION,
APPROVAL FROM THE LANDLORD MUST BE RECEIVED IN WRITING.

2.8 ALL EXISTING EQUIPMENT, MATERIALS AND ASSOCIATED CONTROLS NOT USED IN THIS CONTRACT SHALL BE PACKAGED AND TURNED–OVER TO THE LANDLORD.

2.9 PROVIDE DUCT SEALER ON ALL NEW DUCT JOINTS. TAPE IS NOT PERMITTED.

2.10 CONTRACTOR IS RESPONSIBLE TO COORDINATE BETWEEN MECHANICAL, ELECTRICAL AND ARCHITECTURAL DRAWINGS.

3.0 PLUMBING

3.1 PIPE AND FITTINGS

ALL PLUMBING WORK TO CONFORM TO OBC, ONTARIO WATER REGULATION ACT NO. 615/64, CONSTRUCTION SAFETY ACT AND REGULATIONS OF THE CITY AND LOCAL AUTHORITIES.

COORDINATE PIPE INSTALLATION WITH ELECTRICAL CONDUITS, DUCTS AND STRUCTURAL MEMBERS. OFFSET PIPE AS REQUIRED. ALL REVISIONS SHALL BE MARKED ON AS–BUILT DRAWINGS. CONTRACTOR SHALL FIELD VERIFY EXISTING PLUMBING AND DRAINAGE INVERTS BEFORE PROCEEDING WITH THE WORK. ALL EXISTING BURIED SERVICE LOCATIONS ON DRAWINGS ARE APPROXIMATE ONLY. REPORT ANY DISCREPANCIES TO THE MECHANICAL ENGINEER IMMEDIATELY.

CONTRACTOR TO CARRY OUT IN HIS PRICE A PIPING SYSTEM TEST PRIOR TO INSULATION OR COVERING OF PIPING SYSTEM. PROVIDE TEST REPORT.

DRAINAGE AND VENT PIPING ABOVE GRADE SHALL BE DWV COPPER OR CAST IRON WITH MECHANICAL JOINTS.

SANITARY DRAINS 1 1/2–INCH AND SMALLER MAY BE HARD TEMPERED COPPER DRAINAGE TUBE (DWV).

DOMESTIC HOT AND COLD WATER PIPING ABOVE GRADE AND INSIDE BUILDING SHALL BE TYPE L HARD COPPER. DO NOT INSTALL HOT AND COLD WATER PIPES IN EXPOSED EXTERIOR WALLS.
DOMESTIC PIPING SOLDER SHALL BE LEAD FREE.
PROVIDE PIPE SLEEVES FOR ALL PIPING PASSING THROUGH FLOOR SLAB. PIPE SLEEVES WILL PROJECT 2–INCH ABOVE FINISHED FLOOR LEVEL AND BE CAULKED TO MAKE WATER TIGHT PENETRATION.
WHERE DISSIMILAR METALS ARE JOINED OR SUPPORTED, THE PIPING SHALL HAVE NON CONDUCTING TYPE CONNECTIONS OR HANGERS TO PREVENT GALVANIC CORROSION.
ALL PIPING PASSING THROUGH FIRE SEPARATIONS TO BE FIRE STOPPED TO MAINTAIN ORIGINAL FIRE RATING.
ALL PLUMBING ROUGH–INS SHALL BE INSPECTED BY THE ENGINEER.
CONTRACTOR TO INFORM ENGINEER PRIOR TO CONCEALING.

3.2 PIPE INSULATION

PROVIDE INSULATION C/W VAPOUR BARRIER TO ALL DOMESTIC HOT AND COLD WATER LINES, PIPE INSULATION SHALL BE 1–INCH THICK, EXCEPT FOR 3/4–INCH PIPE SIZES OR LESS, USE 1/2–INCH THICK INSULATION. COVER EXPOSED PIPES WITH PVC JACKETS.

FINISH INSULATION NEATLY AT HANGERS, SUPPORTS AND OTHER PROTRUSIONS.
INSULATE FITTINGS AND VALVES.

3.3 CLEANOUTS

PROVIDE CLEANOUTS WHERE SHOWN AND AT ALL LOCATIONS AS REQUIRED BY THE ONTARIO CODE AND GUIDELINE FOR PLUMBING

3.4 UNIVERSAL ACCESS DOOR FOR WALLS AND CEILINGS

ACUDOR SERIES UF–5000 ACCESS DOORS, 14 GA. (1.7MM) STEEL, RUST RESISTANT, CONTINUOUS CONCEALED HINGE, WITH POSITIVE AND SELF–OPENING SCREWDRIVER OPERATED LOCK. DOORS IN TILE WALLS SHALL BE STAINLESS STEEL AND SHALL SUIT TILE PATTERN. ALL OTHER PANELS SHALL BE PRIME PAINTED STEEL. MINIMUM SIZE OF PANELS SHALL BE 12" X 18" (300MM X 450MM). WHEREVER POSSIBLE 24" X 24" (600MM X 600MM) PANELS SHALL BE USED.

4.0 HVAC

4.1 DUCTWORK

DUCTWORK SHALL BE GALVANIZED STEEL AND SHALL BE LOCK FORMING QUALITY. ALL DUCTWORK SHALL BE CONSTRUCTED, BRACED, CONNECTED AND JOINTED AS RECOMMENDED IN THE LATEST ISSUE OF ASHRAE GUIDE AND THE DUCT CONSTRUCTION STANDARDS ISSUED BY THE SHEET METAL AND AIR CONDITIONING CONTRACTORS NATIONAL ASSOCIATION INC. (SMACNA). ALL DUCTWORK SHALL BE INSTALLED TO CONFORM TO THE ONTARIO BUILDING CODE, NFPA PAMPHLETS 90A AND 91 AND IN ACCORDANCE WITH APPLICABLE CODES. THE MINIMUM SHEET METAL THICKNESS FOR DUCTS SHALL BE AS FOLLOWS:

RECTANGULAR DUCTS

MAXIMUM WIDTH	GAUGE
UP TO 12–INCH	26
12 TO 30–INCH	24
31 TO 55–INCH	22

ROUND DUCTWORK SHALL BE SUSPENDED BY BAND IRON HANGERS.

RECTANGULAR DUCTWORK SHALL BE SUPPORTED AT MAXIMUM 8–FT SPACING.

ALL DUCTS ASSOCIATED WITH FANS AND OTHER MACHINERY SHALL BE INSTALLED WITH CANVAS FLEXIBLE CONNECTIONS ON INLET AND OUTLET OPENINGS.

ALL FANS AND AIR HANDLING UNITS SHALL BE MOUNTED WITH VIBRATION ISOLATORS.

4.2 VOLUME DAMPERS

INSTALL VOLUME DAMPERS AT ALL AIR INLETS AND OUTLETS AND WHERE REQUIRED FOR BALANCING, SINGLE BLADE WITH LOCKING QUADRANT FOR DUCTS LESS THEN 12–INCH DEEP. PROVIDE MULTI–BLADE OPPOSED BLADE DAMPERS FOR DUCTS GREATER THEN 12–INCH DEEP.

PROVIDE MULTI–BLADE OPPOSED BLADE BALANCING DAMPERS WHERE SHOWN.

4.3 AIR OUTLETS

PROVIDE ALL AIR OUTLETS COMPLETE WITH ACCESSORIES AS SPECIFIED HEREIN AND INDICATED ON THE DRAWINGS. COORDINATE LOCATIONS OF ALL AIR OUTLETS WITH LIGHTING AND CEILING GRID. THE POSITIONS INDICATED ARE APPROXIMATE ONLY. THIS CONTRACTOR SHALL CHECK THE LOCATION OF ALL OUTLETS AND SHALL MAKE SUCH ADJUSTMENTS IN POSITION AS NECESSARY TO CONFORM WITH ARCHITECTURAL FEATURES AT NO EXTRA COST TO OWNER.

PROVIDE BALANCING DAMPERS NEAR EACH SUPPLY AIR OUTLET.
SIZES AND AIR VOLUME AS SCHEDULED.

4.4 AIR SYSTEM TESTING , BALANCING AND COMMISSIONING

BALANCE SYSTEM FOR RATED AIR FLOW, ROOM TEMPERATURE CONTROL AND CURRENT DRAW AFTER INSTALLATION IS COMPLETE AND IN FULL WORKING ORDER. ADJUST CONTROL FOR CONTINUOUS AIR CIRCULATION AND MINIMUM ENERGY CONSUMPTION. ADJUST FAN SPEED AS REQUIRED TO OBTAIN SPECIFIC PERFORMANCES. CONTRACTOR TO BALANCE SYSTEM FOR OUTSIDE AIR AS GIVEN IN UNIT PERFORMANCE.

COMMISSION ENTIRE MECHANICAL SYSTEM INCLUDE START UP REPORT IN MAINTENANCE MANUAL

THE BALANCING CONTRACTOR SHALL MAKE NECESSARY ADJUSTMENTS, REPLACE MOTOR AND FAN SHEAVES AND BELTS UPON BALANCING OF EXISTING AND NEW AIR SYSTEMS.
SYSTEMS.

4.5 CONTROLS BY MECHANICAL CONTRACTOR

PROVIDE SYSTEM COMPONENTS CONSISTING OF THERMOSTATS, INDICATING DEVICES, INTERFACE EQUIPMENT AS REQUIRED TO OPERATE MECHANICAL SYSTEM AND TO PERFORM FUNCTIONS SPECIFIED.

PROVIDE TEMPERATURE SENSORS WHERE SHOWN ON THE DRAWINGS.

VERIFY LOCATION OF ALL THERMOSTATS AND SENSORS BEFORE INSTALLATION.
LOCATE THERMOSTAT AT 47–INCHES AFF.

CONTRACTOR TO PROVIDE ALL CONTROL COMPONENTS AND LOW VOLTAGE WIRING TO ENSURE A COMPLETE AND OPERATIONAL SYSTEM.

NOTES:

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APPROVE

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DRAWING TITLE:

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DRAWN BY:	CHECKED BY:
M.B	M.A
DESIGNED BY:	APPROVED BY:
M.B	M.A.
SCALE:	PROJECT No:
N.T.S	LC25-143

DRAWING NO.:

M-05

HVAC DRAWING NOTES

MANAGEMENT DISTRICTS WITH SIMILAR REQUIREMENTS FOR LOW NO

HVAC DRAWING NOTES

1. MAINTAIN EXISTING HVAC SYSTEM INCLUDING DIFFUSERS AND RETURN AIR GRILLES.
2. BALANCE THE SUPPLY AIR SYSTEM TO THE AIRFLOW RATES SHOWN ON THE DRAWINGS. FLOWS SHOWN ARE IN CFM.
3. FLEXIBLE DUCT SHALL NOT BE USED FOR HOOD SUPPLY AND EXHAUST SYSTEM.
4. PROVIDE BALANCING DAMPER TO EACH DUCT BRANCH FOR BALANCING. THE BALANCING DAMPER SHALL BE ACCESSIBLE.
5. COORDINATE THE DIFFUSERS' LOCATIONS WITH OTHER SERVICES (E.G. LIGHTS).
6. MAKE UP AIR SYSTEM SHALL BE SUPPORTED IN THE CEILING. PROVIDE PROPER SUPPORT AS REQUIRED BY THE UNIT MANUFACTURER. THE FINAL SUPPORT DEPENDS ON THE ACTUAL WEIGHT OF THE UNIT.
7. CONNECT GAS LINE WITH SHUT OFF VALVE TO THE MAU.
8. CONNECT GAS TO EACH APPLIANCES WITH SHUT OFF VALVE. CONNECTION SIZE TO MATCH THE UNIT CONNECTION AND AS PER GAS CODE.

PLUMBING DRAWING NOTES:

1. CONNECT TO THE EXISTING DRAINAGE PIPE AS SHOWN. VERIFY THE EXACT LOCATION ON SITE PRIOR TO CUTTING THE FLOOR. FIX THE FLOOR AND MAKE GOOD AFTER INSTALLATION THE DRAINAGE PIPES.
2. CONNECT TO EXISTING DOMESTIC COLD WATER LINE TO THE UNIT.
3. RUN DOMESTIC WATER PIPES ABOVE THE CEILING. ALL CONNECTION SHALL BE WITHIN THE INTERNAL WALL.
4. INSTALL SHUT OFF VALVE ON THE TAKEOFF OF THE DCW AND DHW CONNECTIONS. DOMESTIC WATER PIPES BE COPPER OR PEX PIPES.
5. DRAINAGE PIPES AND FITTINGS SHALL BE PVC OR ABS. ALL MATERIALS SHALL MEET THE OBC REQUIREMENTS FOR STRENGTH AND SMOKE RATING. ALL VENT PIPES, DRAINAGE PIPES OR STORM PIPES ABOVE THE CEILING SHALL BE COPPER, CAST IRON OR XFR.
6. INSTALL SHUT OFF VALE FOR EACH PIPE TO EACH FIXTURE. RUN PIPES TO THE FIXTURES IN THE WALL.
7. SERVICES ON THE DRAWINGS ARE TO SHOW THE DESIGN INTENT AND REQUIREMENTS. FINAL ROUTING AND SITE CONDITIONS IS CONTRACTOR RESPONSIBILITY.
8. ALL PIPES SHALL BE TESTED AS PER OBC REQUIREMENTS. CONTRACTOR IS RESPONSIBLE FOR NECESSARY INSPECTIONS TO COMPLETE THE WORK.
9. INSTALL SOLENOID VALVE ON THE MAIN GAS TO APPLIANCE UNDER THE HOOD. INTERLOCK VALVE WITH KITCHEN HOOD SUPPRESSION SYSTEM. SHUT VALVE WHEN SUPPRESSION SYSTEM ACTIVATED.
10. INSTALL NEW VENTING SYSTEM FOR ALL PLUMBING FIXTURES AS PER OBC. ALL VENT PIPES SHALL BE MADE OF NON-COMBUSTIBLE MATERIALS OR XFR.
11. ALL TRAPS SHALL BE PRIMED. INSTALL TRAP SEAL PRIMER TO SERVE TRAPS.
12. CONNECT TO EXISTING DOMESTIC WATER LINES IN THE BUILDING FOR COLD WATER.

14. PLUMBING FIXTURES:

IV. WC: FLOOR MOUNTED TOILET – VITREOUS CHINA – TANK TYPE AMERICAN STANDARD ESTATE VORMAX RIGHT HEIGHT ELONGATED #207AA.104.020 LOW CONSUMPTION TOILET, 3070A.101, 4570A.104, 419 MM HIGH, VITREOUS CHINA WITH EVERCLEAN ANTIMICROBIAL SURFACE WHICH INHIBITS THE GROWTH OF STAIN AND ODOR CAUSING BACTERIA MOLD AND MILDEW, ELONGATED BOWL, WHITE FINISH, FLOOR MOUNTED, SIPHON JET FLUSH ACTION AND POWERWASH RIM SIPHON FLUSHING SYSTEM WHICH SCRUBS BOWL WITH EVERY FLUSH, 4.8 L (1.28 US GAL) PER FLUSH, CLEANCURVE RIM ELIMINATES RIM AREA WHERE DIRT AND BUILDUP HIDE, 229 MM X 203 MM (9" X 8") WATER SURFACE, TWO (2) PIECE, VORMAX FLUSHING TECHNOLOGY, SIPHON JET FLUSH ACTION AND POWERWASH RIM SIPHON FLUSHING SYSTEM WHICH SCRUBS BOWL WITH EVERY FLUSH, CLEANCURVE RIM ELIMINATES RIM AREA WHERE DIRT AND BUILDUP HIDE, UNLINED TANK, LEFT HAND TRIPLEVER, DUAL INJECTION FLUSH VALVES, 305 MM (12") ROUGH-IN, ELONGATED BOWL, 55 MM (2-3/16") FULLY GLAZED INTERNAL TRAPWAY, FLOOR OUTLET, BOLT CAPS, TOILET SEAT NOT INCLUDED. CENTOCO #820STS.001 TOILET SEAT, EXTRA HEAVY DUTY, FOR ELONGATED BOWL, OPEN FRONT, SOLID PLASTIC, WITH COVER, STAINLESS STEEL CHECK HINGES, METAL FLAT WASHERS STAINLESS STEEL POSTS AND NUTS. MCGUIRE #LFH172BV TOILET SUPPLY, CHROME PLATED FINISH POLISHED BRASS, COMMERCIAL DUTY 1/4 TURN BALL VALVE ANGLE STOPS, 13 MM (1/2") I.D. INLET X 127 MM (5") LONG RIGID HORIZONTAL INTEGRAL COPPER SWEAT TUBE NIPPLES, COMBINATION V.P. LOOSE KEY HANDLES, ESCUTCHEON AND FLEXIBLE COPPER RISERS. PROVIDE FLOOR FLANGE, (SAME MATERIAL AS THE CONNECTING PIPE DRAIN), WITH ALL BRASS BOLTS AND WITH RUBBER GASKET.

IV. WC– BARRIER FREE: FLOOR MOUNTED TOILET – VITREOUS CHINA – TANK TYPE AMERICAN STANDARD ESTATE VORMAX RIGHT HEIGHT ELONGATED #207AA.104.020 LOW CONSUMPTION TOILET, 3070A.101, 4570A.104, 419 MM HIGH, VITREOUS CHINA WITH EVERCLEAN ANTIMICROBIAL SURFACE WHICH INHIBITS THE GROWTH OF STAIN AND ODOR CAUSING BACTERIA MOLD AND MILDEW, ELONGATED BOWL, WHITE FINISH, FLOOR MOUNTED, SIPHON JET FLUSH ACTION AND POWERWASH RIM SIPHON FLUSHING SYSTEM WHICH SCRUBS BOWL WITH EVERY FLUSH, 4.8 L (1.28 US GAL) PER FLUSH, CLEANCURVE RIM ELIMINATES RIM AREA WHERE DIRT AND BUILDUP HIDE, 229 MM X 203 MM (9" X 8") WATER SURFACE, TWO (2) PIECE, VORMAX FLUSHING TECHNOLOGY, SIPHON JET FLUSH ACTION AND POWERWASH RIM SIPHON FLUSHING SYSTEM WHICH SCRUBS BOWL WITH EVERY FLUSH, CLEANCURVE RIM ELIMINATES RIM AREA WHERE DIRT AND BUILDUP HIDE, UNLINED TANK, LEFT HAND TRIPLEVER, DUAL INJECTION FLUSH VALVES, 305 MM (12") ROUGH-IN, ELONGATED BOWL, 55 MM (2-3/16") FULLY GLAZED INTERNAL TRAPWAY, FLOOR OUTLET, BOLT CAPS, TOILET SEAT NOT INCLUDED. PROVIDE BOLTED TANK COVER IF REQUIRED – TO MEET LOCAL CODES. PROVIDE TRIP LEVER ON OPEN SIDE OF TOILET (WIDE SIDE) IF REQUIRED – TO MEET LOCAL CODES.CENTOCO #820STS.001 TOILET SEAT, EXTRA HEAVY DUTY, FOR ELONGATED BOWL, OPEN FRONT, SOLID PLASTIC, WITH COVER, STAINLESS STEEL CHECK HINGES, METAL FLAT WASHERS STAINLESS STEEL POSTS AND NUTS. MCGUIRE #LFH16GN3 TOILET SUPPLY, CHROME PLATED FINISH POLISHED BRASS, HEAVY DUTY ANGLE STOPS, 13 MM (1/2") I.P.S. INLET X 76 MM (3") LONG RIGID HORIZONTAL NIPPLES, WHEEL HANDLES, ESCUTCHEON AND FLEXIBLE COPPER RISERS. PROVIDE FLOOR FLANGE, (SAME MATERIAL AS THE CONNECTING PIPE DRAIN), WITH ALL BRASS BOLTS AND WITH RUBBER GASKET.

V. LAVATORY: COUNTER MOUNTED SELF-RIMMING / DROP-IN BASIN – SINGLE HANDLE FAUCET – BELOW DECK MECHANICAL WATER MIXING VALVE AMERICAN STANDARD STUDIO CARRE #0642.001.020 BASIN, CENTER HOLE ONLY, 415 MM X 415 MM X 172 MM (16-5/16" X 16-5/16" X 6-3/4") HIGH, SQUARE, VITREOUS CHINA, WHITE FINISH, SELF-RIMMING / DROP-IN, REAR OVERFLOW, FAUCET LEDGE. PROVIDE BASIN RIM SEALANT. AMERICAN STANDARD SERIN #2064101.002 SINGLE HANDLE FAUCET, POLISHED CHROME FINISH, CENTER HOLE ONLY, BRASS, WASHERLESS CERAMIC DISC VALVE CARTRIDGES, 4.5 L/MIN (1.2 GAL/MIN) AERATOR OUTLET, CAST BRASS SPOUT, 112 MM (4-7/16") PROJECTION REACH, METAL LEVER HANDLE, SPEED CONNECT CABLE OPERATED METAL POP-UP DRAIN ASSEMBLY WITH 32 MM (1-1/4") TAILPIECE. LAWLER #TMM-1070, BELOW DECK MECHANICAL WATER MIXING VALVE, BRONZE BODY, TEMPERATURE ADJUSTING DIAL, 10 MM (3/8") INLETS AND OUTLET COMPRESSION FITTINGS, HIGH TEMPERATURE THERMOSTATIC LIMIT STOP, SHUT-OFF WITH AUTOMATIC RESET WHEN TEMPERATURE EXCEEDS 120 °F (48.8 °C), INTEGRAL CHECKS, OFFER TEMPERATURE RANGE FROM FULL COLD THROUGH 46 °C (114.8 °F). PROVIDE TEE, ADAPTORS AND FLEX. COPPER TUBING TO SUIT INSTALLATION. PROVIDE TEMPERED WATER TO HOT SIDE OF FAUCET. MCGUIRE #LFH165LKN3 FAUCET SUPPLIES, CHROME PLATED FINISH POLISHED BRASS, HEAVY DUTY ANGLE STOPS, 10 MM (3/8") I.P.S. INLET X 76 MM (3") LONG RIGID HORIZONTAL NIPPLES, V.P. LOOSE KEYS, ESCUTCHEON AND FLEXIBLE COPPER RISERS. MCGUIRE #8872C P-TRAP, HEAVY CAST BRASS ADJUSTABLE BODY, WITH SLIP NUT, 32 MM (1-1/4") SIZE, SHALLOW WALL FLANGE AND SEAMLESS TUBULAR WALL BEND.

VI. LAVATORY– BARRIER FREE: WALL HUNG BASIN – SINGLE HANDLE FAUCET– BELOW DECK MECHANICAL WATER MIXING VALVE AMERICAN STANDARD MURRO WITH EVERCLEAN #0954.004EC.020/0059.020EC.020 BASIN, 3 HOLES, 4" (102 MM) CENTER, 540 MM X 520 MM X 165 MM (21-1/4" X 20-1/2" X 6-1/2") HIGH, VITREOUS CHINA, WHITE FINISH, FOR CARRIER WITH CONCEALED ARMS, REAR OVERFLOW, RECESSED SELF-DRAINING FAUCET LEDGE. AMERICAN STANDARD 0059.020EC.020 SEMI-PEDESTAL P-TRAP COVER AMERICAN STANDARD SEVA #1480100.002 SINGLE HANDLE FAUCET, POLISHED CHROME FINISH, ESCUTCHEON FOR MOUNTING ON 102 MM (4") CENTERS, BRASS, 4.5 L/MIN (1.2 GAL/MIN) AERATOR OUTLET, 114 MM (4-1/2") PROJECTION REACH, METAL LEVER HANDLE, ADJUSTABLE HOT LIMIT SAFETY STOP. LAWLER #TMM-1070, BELOW DECK MECHANICAL WATER MIXING VALVE, BRONZE BODY, TEMPERATURE ADJUSTING DIAL, 10 MM (3/8") INLETS AND OUTLET COMPRESSION FITTINGS, HIGH TEMPERATURE THERMOSTATIC LIMIT STOP, SHUT-OFF WITH AUTOMATIC RESET WHEN TEMPERATURE EXCEEDS 120 °F (48.8 °C), INTEGRAL CHECKS, OFFER TEMPERATURE RANGE FROM FULL COLD THROUGH 46 °C (114.8 °F). PROVIDE TEE, ADAPTORS AND FLEX. COPPER TUBING TO SUIT INSTALLATION. PROVIDE TEMPERED WATER TO HOT SIDE OF FAUCET. MCGUIRE #155A OPEN GRID DRAIN, CAST BRASS ONE PIECE TOP, 17 GA. (1.5 MM) TUBULAR 32 MM (1-1/4") TAILPIECE. MCGUIRE #LFH170BVRB FAUCET SUPPLIES, CHROME PLATED FINISH POLISHED BRASS, COMMERCIAL DUTY 1/4 TURN BALL VALVE ANGLE STOPS, 13 MM (1/2") I.D. INLET X 127 MM (5") HORIZONTAL EXTENSION TUBES, CONVERTIBLE 1/4 TURN/LOOSE KEY HANDLES, ESCUTCHEON AND STAINLESS STEEL BRAIDED FLEXIBLE RISERS. MCGUIRE #8872C P-TRAP, HEAVY CAST BRASS ADJUSTABLE BODY, WITH SLIP NUT, 32 MM (1-1/4") SIZE, SHALLOW WALL FLANGE AND SEAMLESS TUBULAR WALL BEND. WATTS #WCA-411-CA-481 BASIN CARRIER, CONCEALED ARMS, WALL FLANGES TO ATTACH TO BACKING PLATE SECURED IN WALL WITH LOCKING DEVICE AND LEVELLING SCREWS, HEAVY GAUGE STEEL UPRIGHTS WITH INTEGRAL WELDED FEET. FOR ONE UNIT: 102 MM (4") FOR TWO TO SIX UNITS IN A ROW: 152 MM (6") FINISHED METAL STUD WALL TO BACK OF PIPE SPACE.

V. CLEANOUT – FLOOR CLEANOUT BWATTS #CO-203P-R-1-34G CLEANOUT– EPOXY COATED, CAST IRON BODY, 5" (127 MM) ROUND ADJUSTABLE GASKETED NICKEL BRONZE TOP, ABS PLUG WITH NEOPRENE GASKET, 3"Ø (76 MM), PUSH ON OUTLET.

XI. FLOOR DRAIN – FINISHED AREA BWATTS #FD-103P-C-A5-1-7 FLOOR DRAIN – EPOXY COATED CAST IRON BODY, REVERSIBLE FLASHING CLAMP WITH PRIMARY AND SECONDARY WEEPHOLES, TRAP PRIMER CONNECTION WITH PLUG, 3"Ø (76 MM) PUSH ON OUTLET WATTS –A5-1 5" (127 MM) DIAMETER, NICKEL BRONZE, ADJUSTABLE ROUND STRAINER.

XII. FLOOR DRAIN – FINISHED AREA BWATTS #FD-103P-C-EG-50-7 FLOOR DRAIN – EPOXY COATED CAST IRON BODY, REVERSIBLE FLASHING CLAMP WITH PRIMARY AND SECONDARY WEEPHOLES, 5" (127 MM) DIAMETER NICKEL BRONZE, ADJUSTABLE ROUND STRAINER, 4" X 9" (102 MM X 229 MM) OVAL CAST IRON FUNNEL TRAP PRIMER CONNECTION WITH PLUG, 3"Ø (76 MM) PUSH ON OUTLET.

XIII. TRAP SEAL PRIMER P.P.P. #PR01-500/DU-4 TRAP SEAL PRIMER – LEAD-FREE BRASS BODY FLOW SENSING ACTIVATION WITH MINIMUM FLOW RATE OF 0.5 GPM AT 20 PSIG, 1/2" (13 MM) DIAMETER CONNECTION EQUIPPED WITH VACUUM BREAKER PORTS AND INTERNAL BACKFLOW PROTECTION.

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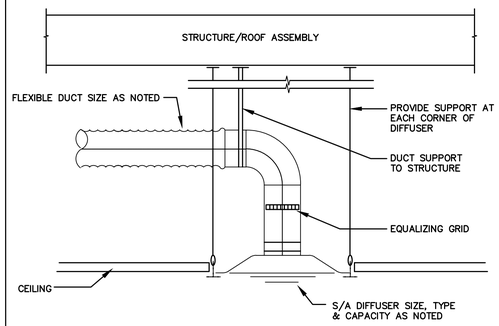
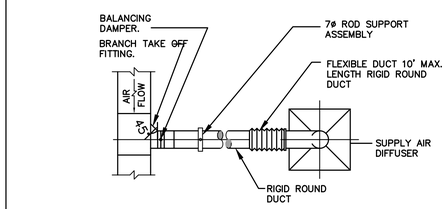
M.B	M.A
DESIGNED BY:	APPROVED BY:
M.B	M.A.
SCALE:	PROJECT No:
N.T.S	LC25-143

DRAWING NO.:

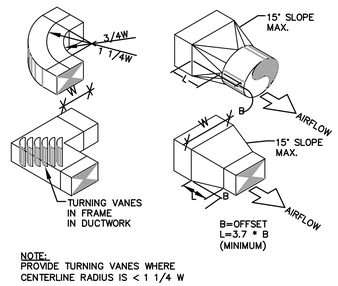
M-06



1 M3.1 TYP. DIFFUSER DETAIL
SCALE : NTS

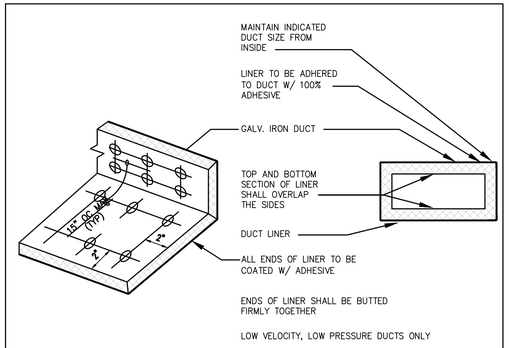


2 M3.1 SUPPLY AIR DUCT TAKE OFF
SCALE : NTS

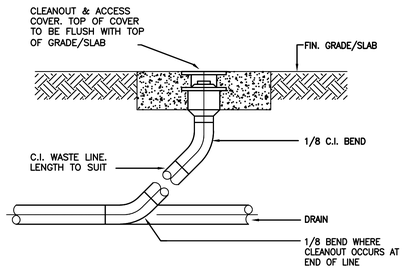


NOTE:
PROVIDE TURNING VANES WHERE CENTERLINE RADIUS IS < 1 1/4 W

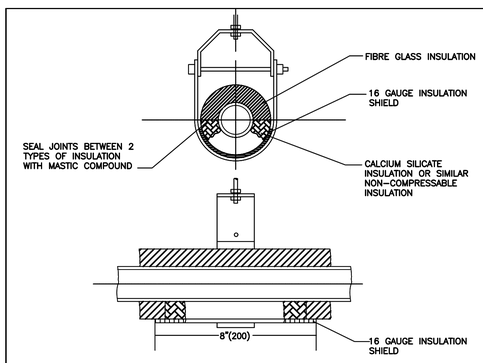
3 M3.1 DUCT ELBOWS & TRANSITIONS
SCALE : NTS



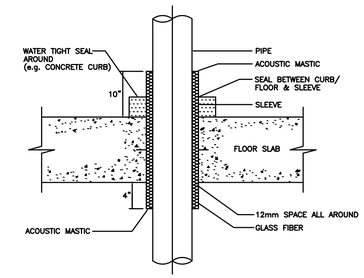
4 M3.1 DUCT LINEAR DIAGRAM
SCALE : NTS



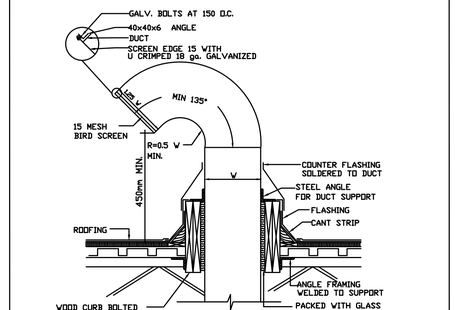
5 M3.1 GROUND CLEANOUT DETAIL
SCALE : NTS



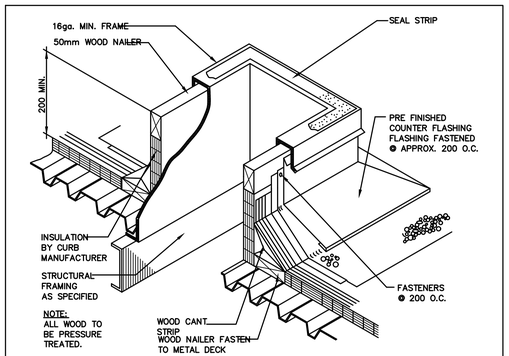
6 M3.1 COLD PIPE HANGER
SCALE : NTS



7 M3.1 PENETRATION THROUGH MECHANICAL RM. FLOOR SLAB



8 M3.1 GOOSE NECK AIR INTAKE
N.T.S.



7 M3.1 ROOF TOP UNIT / MAKE UP AIR UNIT CURB DETAIL
SCALE :N.T.S.

DIFFUSER, REGISTER & GRILLE SCHEDULE

TAG	TYPE	SIZE (IN)	MANUFACTURER	REMARKS
S-1	SQUARE SUPPLY DIFFUSER	24"X24" 6"ø NECK SIZE	KRUEGER 1400	NOTE 1, 2 AND 3
S-2	SQUARE SUPPLY DIFFUSER	24"X24" 8"ø NECK SIZE	KRUEGER 1400	NOTE 1, 2 AND 3
S-3	ROUND SUPPLY DIFFUSER	24"X24" 12"ø NECK SIZE	KRUEGER 1400	NOTE 1, 2 AND 3
S-4	SQUARE SUPPLY DIFFUSER	DIAMETER 16" 8"=NECK SIZE	EH PRICE #ARCD	NOTE 1, 2 AND 3
R-1	RETURN	24"X24"	KRUEGER EG5	NOTE 1, 2 AND 3
R-2	RETURN	24"X8"	KRUEGER EG5	NOTE 1, 2 AND 3
E-1	EXHAUST GRILLE	12"X12"	KRUEGER S85	NOTE 1, 2 AND 3

NOTE: 1 EQUAL BY TITUS, EH PRICE, NAILOR ALSO ACCEPTABLE
2 CONFIRM CEILING/WALL TYPES
3 S/A AND R/A GRILLES COLOUR TO MATCH CEILING/WALL COLOUR.

FANS SCHEDULE

TAG	TYPE	MANUFACTURER	MODEL	CFM	SP(IN)	VOLT	PHASE	POWER	WEIGHT	RPM	REMARKS
EF-1,2,3 4,5,6,7	CEILING	COOK	GC-146	75	0.25	115	1 PH	1/6 HP	30 LB	1556	TO BE CONTROLLED BY TIMER SWITCH

PLUMBING FIXTURE SCHEDULE

TAG	DESCRIPTION	MINIMUM ROUGH-IN CONNECTION SIZE (mm)			
		DRAIN	VENT	HW	CW
HS	HAND SINK	1 1/2"	1 1/4"	1/2"	1/2"
F.D.	FLOOR DRAIN	3"	–	–	–
3CS	THREE COMPARTMENT SINK	2"	1 1/4"	1/2"	1/2"
GI	GREASE INTERCEPTOR	4"	–	–	–
MOP	MOP SINK / SERVICE SINK	1 1/2"	1 1/4"	1/2"	1/2"
WC	WATER CLOSET	3"	1 1/2"	–	1/2"
LAV	LAVATORY	1 1/4"	1 1/4"	1/2"	1/2"

REFERENCE LEGEND
W.M. = WALL MOUNTED
R.I. = ROUGH IN
B.F. = BARRIER FREE
S.C. = SEMI-COUNTER MOUNTED
O.E.D. = OPEN END DRAIN

NOTE:
1. CONFIRM SERVICE ROUGH IN WITH SHOP DRAWINGS BEFORE INSTALLATION OF ALL FIXTURES/EQUIPMENT

SOFT CONV. PIPE SIZES
1/2" = 15mm
3/4" = 20
1" = 25
1 1/4" = 32
1 1/2" = 40
2" = 50
2 1/2" = 65
3" = 75

TYPE	DESCRIPTION	CW	HW	DRAIN	VENT	SPECIFICATION
FD	FLOOR DRAIN T.P.T.	1/2"	–	2"	3"	IN FINISHED AREAS: (CONC. / STEEL) SMITH SERIES #2005A FLOOR DRAIN WITH 5" NICKEL BRONZE STRAINER; (WOOD FLOORS) SMITH 2010WF1ANB OR 2051XYLSP (FOR ONE-PIECE FLOORING)
CO	CLEANOUT	–	–		–	IN FINISHED AREAS: SMITH SERIES #4000 WITH TOP TO SUIT FLOOR FINISH; IN UNFINISHED AREAS: SMITH SERIES #4220M, WITH HEAVY DUTY DUCTILE IRON TOP.

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M.B	M.A.
SCALE:	PROJECT No:
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