

MECHANICAL SPECIFICATION

1.0 GENERAL

- .1 DRAWINGS INDICATE APPROXIMATE LOCATION OF EXISTING MECHANICAL EQUIPMENT AND SERVICES. VERIFY EXACT LOCATIONS OF EXISTING MECHANICAL EQUIPMENT AND SERVICES AND ALLOW FOR NECESSARY RELOCATING OF NOTED SERVICES (OR RECONNECTION TO EXISTING SERVICES) TO SUIT NEW CONSTRUCTION.
- .2 ALL WORK SHALL CONFORM TO MANITOBA BUILDING CODE AND LOCAL AUTHORITIES. APPLY FOR, OBTAIN AND PAY FOR ALL NECESSARY PERMITS.
- .3 COORDINATE INSTALLATION WITH ALL RELATED TRADES, ARCHITECTURAL DRAWINGS, INTERIOR DESIGN PLANS AND REFLECTED CEILING PLANS. VERIFY ALL DIMENSIONS AND LOCATIONS OF EXISTING EQUIPMENT AND SERVICES PRIOR TO PROCEEDING WITH WORK.
- .4 SUBMIT SHOP DRAWINGS FOR ALL EQUIPMENT TO CONTRACT ADMINISTRATOR.
- .5 PROVIDE ONE YEAR GUARANTEE FOR ALL EQUIPMENT.
- .6 ALL CONNECTIONS TO EXISTING BUILDING MECHANICAL SERVICES SHALL BE COORDINATED WITH THE CITY'S REPRESENTATIVE.
- .7 ALL NECESSARY CUTTING AND PATCHING SHALL BE PERFORMED BY CONTRACTOR. MECHANICAL TRADE TO CO-ORDINATE ON SITE.
- .8 REFER TO INSTRUCTIONS TO BIDDERS FOR REQUIREMENTS REGARDING PROJECT PHASING, WORKING HOURS, SHUT-DOWN PROCEDURES, ACCESS, ETC.
- .9 PROVIDE MILIOR ACCESS DOORS IN DRYWALLS, CEILINGS AND WALLS FOR ACCESS TO MECHANICAL EQUIPMENT. MINIMUM SIZE 24" X 18".
- .10 PRIOR TO DRILLING HOLES AND/OR OPENINGS IN EXISTING STRUCTURE, CONTRACTOR SHALL RETAIN SERVICES OF NATIONAL TESTING LABORATORIES LIMITED TO LOCATE AND MARK ALL STRUCTURAL REINFORCING STEEL LOCATED IN AREA WHERE CUTTING OR DRILLING IS PROPOSED. AT NO TIME SHALL REINFORCING STEEL BE CUT WITHOUT PRIOR WRITTEN APPROVAL FROM A STRUCTURAL ENGINEER QUALIFIED AND LICENSED TO PRACTICE IN PROVINCE OF MANITOBA. NO HOLES OR OPENINGS WILL BE PERMITTED WITHIN AREA OF STRUCTURAL DROP PANELS LOCATED AT COLUMNS.
- .11 ALL INTERIOR SPACE POWER HAMMERING, DRILLING AND OTHER NOISY WORK SHALL BE PERFORMED BETWEEN HOURS OF 6:00 P.M. AND 8:00 A.M.
- .12 TENDER QUOTATIONS SHALL BE BASED ON THE USE OF SPECIFIED EQUIPMENT, UNLESS ACCEPTANCE FOR THE USE OF EQUAL MANUFACTURERS IS OBTAINED FROM THE CONTRACT ADMINISTRATOR PRIOR TO SUBMISSION OF TENDERS. ALTERNATE MANUFACTURERS MAY BE QUOTED AS AN INCREASE OR DECREASE AMOUNT TO THE TENDER PRICE, WITHOUT PRIOR ACCEPTANCE OF THE ENGINEER.
- .13 FURNISH TO THE CITY THREE (3) COMPLETE SETS OF MANUFACTURER'S OPERATING AND MAINTENANCE INSTRUCTIONS FOR ALL EQUIPMENT REQUIRING MAINTENANCE. REVIEW INSTRUCTIONS WITH CITY'S REPRESENTATIVE TO ENSURE A THOROUGH UNDERSTANDING OF THE EQUIPMENT AND ITS OPERATION.
- .14 PROVIDE A MARK-UP OF THE CONTRACT DRAWINGS FOR RECORD "AS-BUILT" DRAWINGS, REVISED AS REQUIRED TO SHOW ANY CHANGES FROM THAT ORIGINALLY SHOWN.
- .15 PROVIDE AS-BUILT DRAWING IN AUTOCAD FORMAT. COMPLETE WITH DISK PAID FOR BY MECHANICAL TRADE.
- .16 ALL DUCTWORK AND PIPING TO BE INSTALLED STRAIGHT, PARALLEL TO THE BUILDING WALLS.
- .17 ALL EXTRANEOUS MATERIAL IN CEILING SPACE UNRELATED TO NEW AND REVISED WORK SHOWN, INCLUDING PIPING, CONTROL TUBING, DUCTWORK, ETC. SHALL BE REMOVED.
- .18 PROVIDE FIRESTOPPING FOR ALL OPENINGS IN FIRE SEPARATIONS FOR PASSAGES OF PIPES, DUCTS, ETC. TO MAINTAIN INTEGRITY OF FIRE SEPARATIONS AS PER MANUFACTURER'S PUBLISHED RECOMMENDATIONS.
- .19 SOME ITEMS OF MECHANICAL EQUIPMENT MAY BE AVAILABLE FROM THE CITY'S STOCK. REFER TO DRAWINGS FOR DESCRIPTION AND QUANTITY OF CITY SUPPLIED EQUIPMENT.
- .20 INSTALLATION OF WORK SHALL BE COORDINATED WITH THE PRIME CONTRACTOR AND SHALL BE SCHEDULED SO AS NOT TO ENDANGER OR DISTURB THE USERS OF THE BUILDING. SHUTDOWN OF EXISTING BUILDING SYSTEMS SHALL BE COORDINATED WITH THE CITY'S REPRESENTATIVE.
- .21 ALL WIRING FOR EQUIPMENT SPECIFIED HEREIN SHALL BE BY THE ELECTRICAL CONTRACTOR, UNLESS OTHERWISE NOTED.
- .22 CONTRACTOR SHALL REVIEW ALL EQUIPMENT REQUIRING ELECTRICAL HOOK-UP WITH ELECTRICAL CONTRACTOR AND ELECTRICAL DRAWINGS PRIOR TO ORDERING EQUIPMENT. ENSURE PROPER ELECTRICAL CHARACTERISTICS ARE DETERMINED FOR ALL AFFECTED AND RELATED WORK.
- .23 PRIOR TO INSTALLATION OF THE CEILING, NOTIFY THE CONTRACT ADMINISTRATOR AND ARRANGE FOR A FINAL REVIEW OF THE WORK. FOR UNDERTAKING THIS REVIEW, THE FOLLOWING SHALL BE COMPLETED:
 - .1 ALL SYSTEMS TO BE FULLY OPERATIONAL. AS-BUILT DRAWINGS SUPPLIED AND OPERATING AND MAINTENANCE MANUALS SUBMITTED. TWO (2) DAYS NOTIFICATION (IN WRITING) IS REQUIRED TO BE GIVEN TO THE CONTRACT ADMINISTRATOR PRIOR TO REVIEWS BEING UNDERTAKEN.
 - .2 ALL DEFICIENCIES SHALL BE COMPLETED WITHIN TWO (2) WEEKS OF AN AGREED PERIOD OF TIME AFTER FINAL REVIEW AND A LETTER SHALL BE SUBMITTED TO THE CONTRACT ADMINISTRATOR WITHIN THAT TIME ADVISING OF SUCH. FAILURE TO COMPLETE WORK MAY RESULT IN WORK BEING DONE BY THE OWNER AND THE COSTS DEDUCTED FROM FINAL PAYMENT.
- .25 WHERE MECHANICAL SERVICES ARE CONCEALED WITHIN WALLS, FLOORS OR CEILINGS AND CANNOT BE VISUALLY IDENTIFIED, PROVIDE ELECTRONIC SCANNING DEVICES OR OTHER APPROVED MEANS TO LOCATE AND IDENTIFY CONCEALED SERVICES PRIOR TO WORK START. MAKE GOOD ANY DAMAGE TO EXISTING MECHANICAL SERVICES AT NO COST TO THE CONTRACT.

2.0 FIRE PROTECTION

Z.U. FIRE PROTECTION

- .1 PROVIDE LABOUR, MATERIAL, PLANT, TOOLS, EQUIPMENT AND SERVICES NECESSARY TO COMPLETION OF SPRINKLER SYSTEM AS SHOWN ON DRAWINGS.
 - .1 COMPLY WITH ALL REQUIREMENTS OF THE CITY'S FIRE INSURANCE UNDERWRITER AND AUTHORITIES HAVING JURISDICTION. DESIGN AND INSTALLATION SHALL COMPLY WITH THE MOST RECENT EDITION OF NFPA #13 AND ALL APPLICABLE PROVINCIAL AND LOCAL LAWS AND ORDINANCES.
 - .2 SUBMIT SHOP DRAWINGS SEALED BY P. ENG. TO THE CONTRACT ADMINISTRATOR AND AUTHORITY HAVING JURISDICTION AND OBTAIN APPROVAL PRIOR TO INSTALLATION. SHOP DRAWINGS SHALL SHOW NEW PIPING AND SPRINKLER HEADS, CEILING CONSTRUCTION, HEIGHTS, LIGHTS, MECHANICAL DIFFUSERS, AND CEILING DROPS.
- .2 MATERIALS
 - .1 ALL MATERIALS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF NFPA #13 - SPRINKLER SYSTEMS.
 - .2 NO PLASTIC PIPING, SNAPLET, F.I.T. HOOKER, OR SIMILAR TYPE FITTINGS WILL BE PERMITTED.
- .3 INSTALLATION
 - .1 ADJUST, RELOCATE AND ADD SPRINKLER HEADS AND PIPING TO SUIT PARTITION LAYOUT IN ACCORDANCE WITH NFPA 13, AND CITY OF WINNIPEG REQUIREMENTS.
 - .2 THE SPRINKLER CONTRACTOR SHALL VISIT SITE TO CONFIRM SPRINKLER HEAD CHANGES AND REQUIREMENTS PRIOR TO PRICE SUBMITTAL. NO EXTRA COST SHALL BE PAID FOR WORK DONE THAT HAS TO BE RECTIFIED AS A RESULT OF THE CONTRACTOR'S FAILURE TO EITHER COORDINATE THE WORK OR IDENTIFY ANY POTENTIAL PROBLEMS PRIOR TO INSTALLATION.
 - .3 NEW SPRINKLER HEADS SHALL MATCH EXISTING (CONCEALED) SPRINKLER HEADS AND SHALL BE ULC APPROVED.
 - .4 NOTIFY OWNER PRIOR TO DRAINING AND/OR REFILLING SPRINKLER SYSTEM. DISCONNECT EXISTING SYSTEM FROM MAIN SYSTEM, PERFORM THE WORK, TEST, AND RECONNECT TO THE MAIN SYSTEM.

3.0 VENTILATION

- .1 DUCTWORK
 - .1 GALVANIZED IRON SCHEDULE:

MAX. SIZE GAUGES (USSG) BRACING	
UP TO 24"	24 NONE
25 TO 30"	24 1" X 1" X 1/8" ANGLE, 4" FROM JOINT.
31 TO 40"	22 1" X 1" X 1/8" ANGLE, 4" FROM JOINT.
 - .2 ROUND DUCT UP TO 19"26 NONE
 - .3 WHERE DUCT WIDTH EXCEEDS 18" IN LARGEST DIMENSION, STIFFEN BY BREAKING SHEETS DIAGONALLY.
 - .4 DUCT SIZES SHOWN ARE INSIDE DIMENSIONS. IF DUCTS ARE ACOUSTICALLY LINED, OUTSIDE DUCT SIZE TO BE INCREASED TO SUIT.
 - .5 DUCTWORK SHALL BE CONSTRUCTED AS RECOMMENDED IN ASHRAE GUIDE.
 - .6 SEAL ALL JOINTS (NEW AND EXISTING) AIRTIGHT WITH DURO-DYNE S-2 DUCT SEALER OR EQUAL, IN STRICT ACCORDANCE WITH MANUFACTURER'S PUBLISHED RECOMMENDATIONS. PRIOR TO APPLICATION, DUCTWORK TO BE DRY AND FREE OF GREASE, ETC. USE 1/4" BEAD OF MATERIAL ALONG JOINTS. MATERIAL WHEN DRY, TO HAVE 1/8" DEPTH EXTENDING 1" ON EACH SIDE OF JOINT OR SEAM.
 - .7 PRIOR TO FABRICATION OF DUCTWORK, CHECK ALL CEILING SPACES AND HEIGHTS FOR CONFLICTION WITH OTHER TRADES.
 - .8 MANUAL VOLUME DAMPERS TO BE #16 GA. GALV. STEEL, STIFFENED. DAMPERS HARDWARE TO BE DURO-DYNE KS-145, KS-385 OR KS-12 AS RECOMMENDED BY MANUFACTURER.
 - .9 EXISTING VAV BOXES SHALL BE SET FOR MAXIMUM CFM QUANTITY FOR INTERIOR ZONE BOXES SHALL BE SET AT 10% AND FOR EXTERIOR ZONE BOXES SHALL BE SET AT 30% OF MAXIMUM CFM QUANTITY. REFURBISH EXISTING VAV BOXES TO A NEW CONDITION, IF REQUIRED, OR REPLACE WITH NEW VAV BOXES.
 - .10 FLEXIBLE AIR DUCTS SHALL CONFORM TO UL-181, NFPA 90A AND SHALL HAVE A FIRE RATING TO SUIT WALL RATING. USE MAXIMUM OF 18" LENGTH STRAIGHT RUN TO EACH BOOT CONNECTION.

4.0 TESTING AND BALANCING

- .1 AIR SYSTEMS SHALL BE BALANCED AND TESTED BY AN INDEPENDENT AIR BALANCE AGENCY (AABO) TO PROVIDE AIR QUANTITIES AS SHOWN. PROVIDE AIR BALANCE REPORT FOR REVIEW BY THE CONTRACT ADMINISTRATOR. SUBMIT TWO COPIES FOR REVIEW UPON COMPLETION. PROVIDE DAMPER STICKER UPON FINAL BALANCING COMPLETION.

5.0 CONTROLS

- .1 PROVIDE ALL LABOUR, MATERIAL, PLANT, TOOLS, EQUIPMENT, AND SERVICES NECESSARY AND REASONABLY INCIDENTAL TO COMPLETION OF TEMPERATURE CONTROLS SYSTEMS AS NOTED HEREIN AND/OR SHOWN ON DRAWINGS.
- .2 ALL NEW WORK RELATED TO NEW AND EXISTING CONTROLS SHALL BE PERFORMED BY A QUALIFIED CONTROLS CONTRACTOR.
- .3 CONTROL CONTRACTOR SHALL SUPPLY AND INSTALL ALL CONDUIT, WIRE, ELECTRIC RELAYS, CONNECTIONS AND OTHER DEVICES REQUIRED FOR CONTROL CIRCUIT WIRING FOR SYSTEMS AS SPECIFIED HEREIN WHETHER LINE OR LOW VOLTAGE. ELECTRICAL WIRING SHALL BE INSTALLED IN CONFORMANCE WITH CSA, ULC, MANITOBA BUILDING CODE AND DIVISION 16 ELECTRICAL REQUIREMENTS.

6.0 FORCE FLOW HEATER

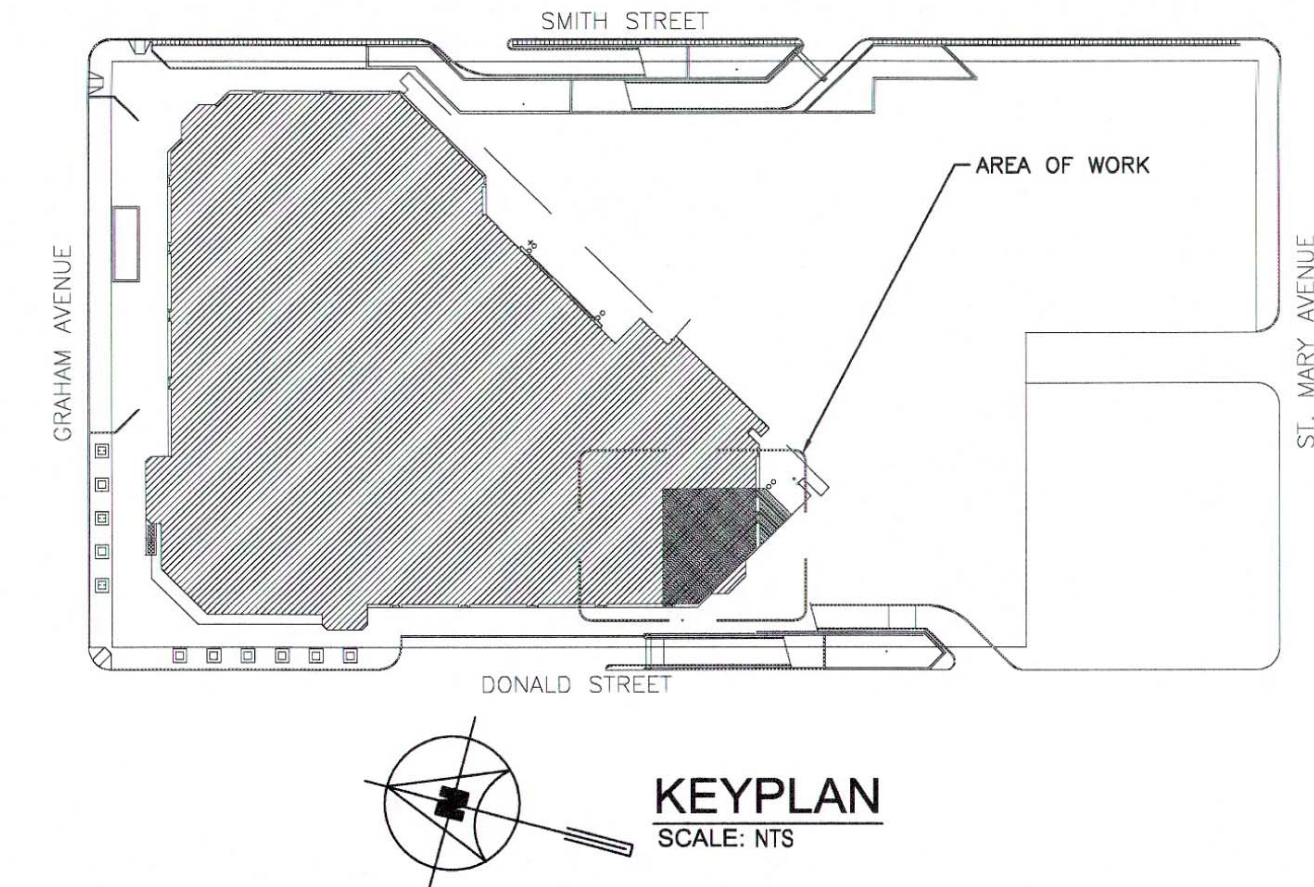
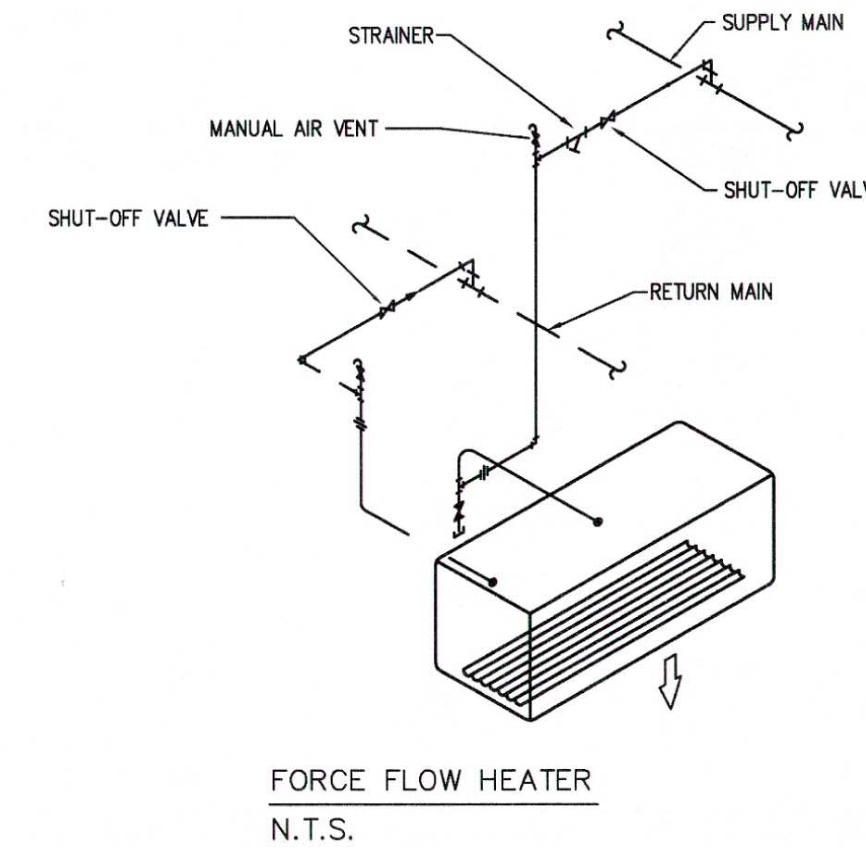
- .1 FF-1 - ENG. A CUH SERIES FULLY RECESSED CEILING CABINET HORIZONTAL ARRANGEMENT 24 MODEL CUH-5.

PROVIDE FACTORY INSTALLED OPTIONS:

- .1 3-SPEED PLUS OFF FAN SWITCH
- .2 MODULATING SPEED CONTROL
- .3 INTERNAL INSULATION
- .4 FUSED STARTER WITH TOGGLE SWITCH
- .5 LINE VOLTAGE THERMOSTAT

7.0 PIPING AND INSULATION

- .1 SCH 40 TO ASTM A53 GRADE B
- .2 INSULATE PIPING WITH 1" FIBERGLASS PIPE INSULATION WITH ASJ.



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1.	ISSUED FOR 99% REVIEW	12.06.25

NO.	REVISIONS	BY	YR/M/DY

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Southwest Entrance Development - Millenium Library

251 Donald Street, Winnipeg, MB

DRAWING TITLE
Mechanical Specification



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