

PART 1 - ADDENDUM

1.1 TITLE

- .1 This Addendum shall be known as:

Addendum 2
TFM-044-25

- .2 The Date of the Addendum is Friday, October 31, 2025

1.2 PRECEDENCE

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- .1 This amendment to the bid documents is effective immediately.
- .2 This Addendum shall form an integral part of the original bid documents and is to be read in conjunction therewith.
- .3 The Addendum shall take precedence over previously issued bid documents with which it may prove to be at variance.

1.3 GENERAL

- .1 The General Conditions shall govern all phases of the Work covered by this Addendum.
- .2 Acknowledge receipt of this addendum in the Tender and Acceptance form.

1.4 PURPOSE

- .1 The purpose of the Addendum is to inform bidders of the changes, deletions and additions to be added to the bid documents.

1.5 CHANGES IN GENERAL

- .1 Ceiling types are generally acoustic tile, some areas have gypsum bulkheads with portions of tile. Refer to attached drawing markup. <<3451 – Mun Bruneau Centre level 1 & 2 Ceiling types markup.pdf>>

CHANGES TO SPECIFICATION

1. Specification section 23 31.13.01 Metal Ducts
1. Add attached Specification Section 23 31 13.01 METAL DUCT – LOW PRESSURE TO 500PA.

1.6 CHANGES TO DRAWINGS

- .1 Add the following general note. "Remove and reinstate ceiling as required to accommodate the work." To the following drawings:
- .1 M-1.1 - LEVEL 1 FLOOR PLAN - NEW HYDRONIC PIPING LAYOUT
- .2 M-1.2 - LEVEL 2 FLOOR PLAN - NEW HYDRONIC PIPING LAYOUT

- .3 M-2.1 - LEVEL 1 FLOOR PLAN - NEW VENTILATION LAYOUT
- .4 M-2.2 - LEVEL 2 FLOOR PLAN - NEW VENTILATION LAYOUT
- .5 M-3.1 - LEVEL 1 FLOOR PLAN - NEW CONTROLS LAYOUT
- .6 M-3.2 - LEVEL 2 FLOOR PLAN - NEW CONTROLS LAYOUT

END OF ADDENDUM

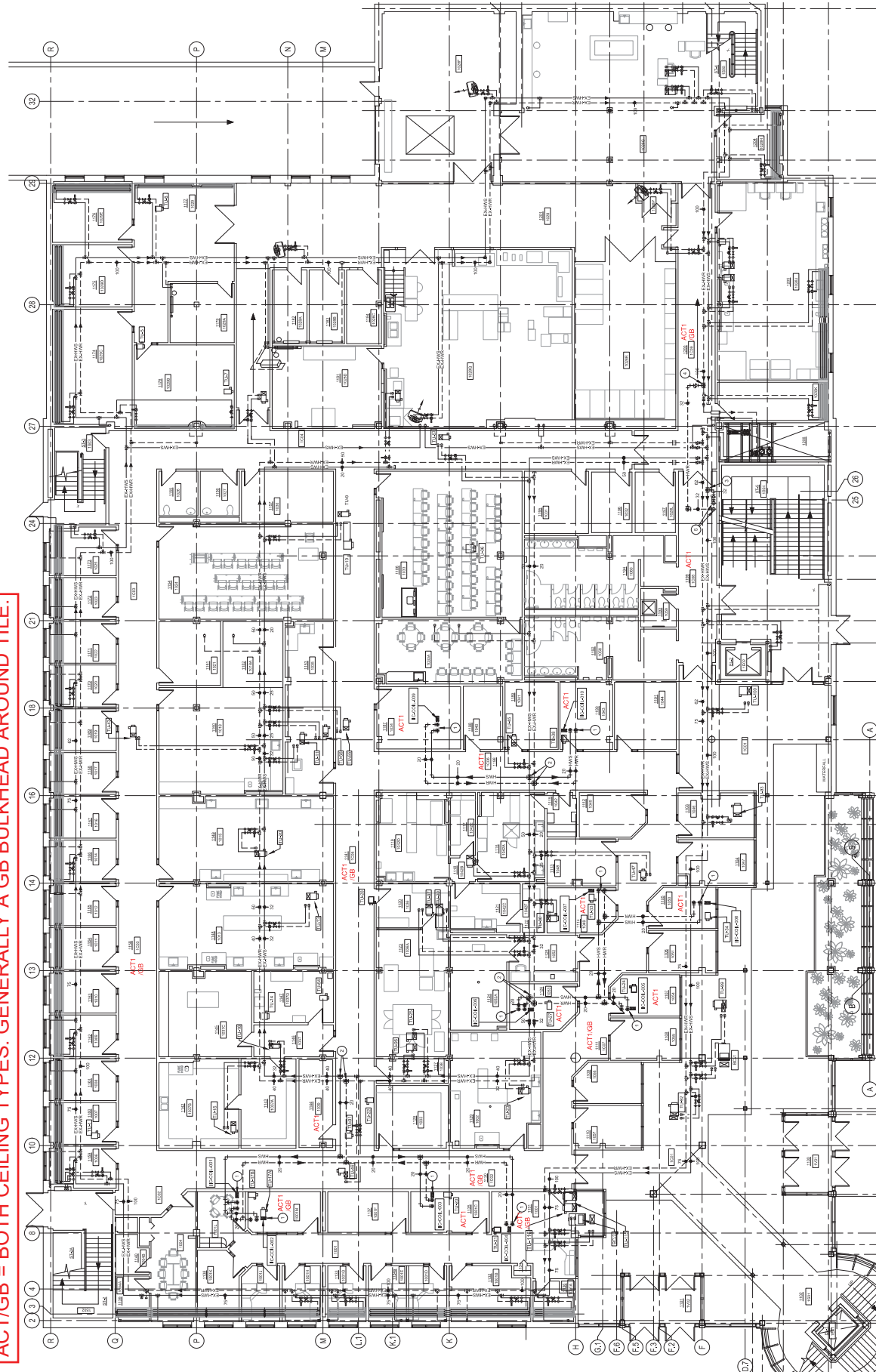
LEVEL 1 FLOOR PLAN - HYDRO-PIPING LAYOUT			
ITEM NO.	DESCRIPTION	QUANTITY	UNIT
1	ACT - ACTUATOR	1	EA
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ACT = ACTUATOR
GB = GYPSUM BOARD
ACT/GB = BOTH CEILING TYPES. GENERALLY A GB BULKHEAD AROUND TILE.

- GENERAL NOTES:**
1. PROVIDE NECESSARY OFFSETS AS REQUIRED TO RUN ALL PIPING NEARBY TO THE APPROXIMATE LOCATION.
 2. PROVIDE THE TOP OF ALL PIPING BULKHEADS.
 3. BRACKET OFFERS SERVING PIPING CABLES TO BE SHOWN IN RED.
 4. SHOWN IN RED.
- DRAWING NOTES:**
1. CONNECT NEW PIPING TO EXISTING PIPING.
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GENERAL NOTES

1. DO NOT SCALE FROM DRAWINGS.
2. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND LOCATIONS OF ALL EQUIPMENT AND PIPING TO BE INSTALLED AT THE COMMENCEMENT OF THE PROJECT. ANY DISCREPANCIES SHOULD BE REPORTED TO THE ARCHITECT IMMEDIATELY.
3. ALL DIMENSIONS ARE TO FACE UNLESS OTHERWISE NOTED.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF CHICAGO AND THE STATE OF ILLINOIS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE CITY OF CHICAGO AND THE STATE OF ILLINOIS.
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LEVEL 1 FLOOR PLAN - HYDRO-PIPING LAYOUT

SCALE: 1/8" = 1'-0"

CORE ENGINEERING
CONSULTANT
317 West Lake Street, Suite 1000
Chicago, IL 60601
Tel: (312) 555-1234
Fax: (312) 555-5678
Email: info@core-engineering.com
Website: www.core-engineering.com

UNIVERSITY OF CHICAGO
Department of Facilities Management
1100 East 58th Street, Suite 1000
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Fax: (773) 936-5678
Email: info@uchicago.edu
Website: www.uchicago.edu

MUN BRUNEAU CENTER FOR RESEARCH AND INNOVATION (IC)
HEATING UPGRADES

LEVEL 1 FLOOR PLAN - NEW HYDRONIC PIPING LAYOUT

DESIGNED BY	AS
APPROVED BY	DE
DATE	2023.10.08
PROJECT NAME	IC-516-19
PROJECT NUMBER	M-1.1

ACT = ACOUSTIC TILE
GB = GYPSUM BOARD
ACT/GB = BOTH CEILING

GENERAL NOTES:

1. PROVIDE NECESSARY PIPING SYSTEMS, COORDINATE WITH OTHERS.
2. PROVIDE AUTOMATIC AIR RELEASE VALVES.
3. PROVIDE FIRE STOP AT PENETRATIONS.
4. BRANCH PIPING SERVING THIS AREA SHALL BE SHOWN OTHERWISE.

DRAWING NOTES:

1. CONNECT NEW INDS & HWIR PIPING TO NEW HYDRONIC SYSTEM. REFER TO THE APPROPRIATE LOCATION. $\frac{3}{3.71}$ REFER TO DETAIL.
2. NEW INDS & HWIR PIPING UP THROUGH FLOOR FROM LEVEL BELOW AT THIS LOCATION. REFER TO DETAIL. $\frac{5}{5.7}$
3. NEW GROUP SETTER BALANCING VALVE. SET AT 0.47 US.



GENERAL NOTES

1. DO NOT SCALE FROM DRAWINGS.
2. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO SUBMISSION OF TENDERS.
3. ALL DEFICIENCIES FOUND IN THE DRAWING IS TO BE BROUGHT TO THE ATTENTION OF THE FACILITIES ENGINEERING AND MAINTENANCE OFFICE OF THE UNIVERSITY OF NEWFONDLANDS. THE CONTRACTOR IS TO OBTAIN A WRITTEN SOLUTION AND APPROVAL FROM THE FACILITIES ENGINEERING AND MAINTENANCE OFFICE OF THE UNIVERSITY OF NEWFONDLANDS PRIOR TO THE SUBMISSION OF THE TENDERS.

PERMITS REQUIRED FOR ELECTRICAL WORK AT MEMORIAL UNIVERSITY OF NEWFOUNDLAND SHALL BE OBTAINED FROM SERVICE NL EFFECTIVE JANUARY 1, 2009 AND MADE AVAILABLE TO MAIN REPRESENTATIVES UPON REQUEST. SEE STIPULATED PRICE CONTRACT GENERAL CONDITIONS SECTION 2.18.0 LAWS, NOTICES, PERMITS AND FEES.

CONSULTANT:
CORE
ENGINEERING INC.
37 Piny Place
St. John's, N.L., Canada A1B 4H5

 UNIVERSITY

Department of Facilities Management

This University was ranked by the people of North Carolina as a memorial to the fallen in two prior years, 1914-1916, 1959-1960. This year, in the spirit of honoring a tradition and service that we can all appreciate,

PROJECT NAME: **MUN
BRUNEAU CENTER FOR
RESEARCH AND INNOVATION (IIC)
HEATING UPGRADES**

DRAWING TITLE:
LEVEL 2 FLOOR PLAN -
NEW HYDRONIC PIPING
LAYOUT

DECLARED:	DE	DRAWN:	JS
REVIEWED:	DE	APPROVED:	DE
SIGNATURE	AS NOTED	DATE:	2025.10.09

DRAWING NO. **M-1.2**
 SHEET PROJECT NO. **IIC-516-19**
 OF

ACT=ACOUSTIC TILE
GB = GYPSUM BOARD
ACT/GB = BOTH CEILING TYPES. GENERALLY A GB BULKHEAD AROUND TILE.

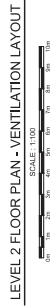
DRAWING NOTES:

1. INSTALL NEW HYDROK HEATING COIL IN EXISTING SUPPLY AIR DUCT. LOCATE EXISTING SUPPLY AIR DUCT AND EXISTING EXHAUST DUCT. MARK EXISTING EXHAUST DUCT LOCATION ON NEW DUCT. MARK THE CONFIRM EXHAUST DUCT SIZE AND LOCATION ON SITE. REFER TO DETAIL.
2. SUBMIT PHOTO OF AIR DUCT TO BE REMOVED TO ALLOW FOR INSTALLATION OF NEW DUCT.
3. CONNECT NEW SUPPLY AIR DUCT TO EXISTING IN-THE-APPROPRIATE LOCATION. EXISTING EXHAUST LOCATION ON SITE.
4. EXISTING TERMINAL UNIT TO REMAIN. TYPICAL CONTROLS (W/STP) ARE TO REMAIN. EXISTING EXHAUST AIR FLOW (W/STP) ARE TO REMAIN. MINIMUM MAXIMUM FLOWS ON EXISTING TERMINAL UNITS.
5. RE-BALANCE EXISTING SUPPLY AIR GIBLE TO VALUES INDICATED (TYPICAL)
6. EXISTING DIFFUSERS ARE NOW TO BE MEASURED PRIOR TO CONSTRUCTION. THE FOLLOWING CONSTRUCTION AIR FLOWS

GENERAL NOTES

1. DO NOT SCALE FROM DRAWINGS.
2. THE CONTRACTOR IS TO VERIFY ALL DIMENSIONS AND SITE CONDITIONS PRIOR TO SUBMISSION OF TENDERS.
3. ALL DEFICIENCIES FOUND IN THIS DRAWING IS TO BE BROUGHT TO THE ATTENTION OF THE CLIENT PRIOR TO THE SUBMISSION OF TENDERS. THE CLIENT IS THE DEPARTMENT OF FACILITIES MANAGEMENT, MEMORIAL UNIVERSITY OF NEWFOUNDLAND, PRIOR TO THE SUBMISSION OF THE TENDERS.

PERMITS REQUIRED FOR ELECTRICAL WORK AT MEMORIAL UNIVERSITY OF NEWFOUNDLAND SHALL BE OBTAINED FROM SERVICE NL EFFECTIVE FEBRUARY 1, 2020 AND MADE AVAILABLE TO MAIN REPRESENTATIVES UPON REQUEST. SEE STIPULATED PRICE CONTRACT GENERAL CONDITIONS SECTION 2.10.0 LAWS, NOTICES, PERMITS AND FEES.



PART 1 **GENERAL**

1.1 **SUMMARY**

- .1 Section includes:
 - .1 Materials and installation of low-pressure metallic ductwork, joints and accessories.

1.2 **RELATED SECTIONS**

- .1 Section 01 33 00 – Submittal Procedures.
- .2 Section 01 35 29.06 – Health and Safety Requirements
- .3 Section 01 74 21 – Construction/Demolition Waste Management and Disposal.
- .4 Section 01 91 13.13 – Commissioning (Cx) Requirements.
- .5 Section 07 84 00 – Firestopping
- .6 Section 23 05 29 – Hangers and Supports for HVAC Piping and Equipment.
- .7 Section 23 05 94 – Pressure Testing of Ducted Air Systems.
- .8 Section 23 40 00 – HVAC Air Filtration

1.3 **REFERENCES**

- .1 American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE).
- .2 American Society for Testing and Materials International, (ASTM).
 - .1 ASTM A 480/A480M, Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet and Strip.
 - .2 ASTM A635/A635M, Standard Specification for Steel, Sheet and Strip, Heavy-Thickness Coils, Hot-Rolled, Alloy, Carbon, Structural, High-Strength Low-Alloy, and High-Strength Low-Alloy with Improved Formability, General Requirements for.
 - .3 ASTM A 653/A653M, Standard Specification for Steel Sheet, Zinc Coated (Galvanized) or Zinc-Iron Alloy Coated (Galvannealed) by the Hot-Dip Process.

- .3 Department of Justice Canada (Jus).
 - .1 Canadian Environmental Protection Act (CEPA).
- .4 Health Canada/Workplace Hazardous Materials Information System (WHMIS).
 - .1 Safety Data Sheets (SDS).
- .5 National Fire Protection Association (NFPA).
 - .1 NFPA 90A, Standard for the Installation of Air-Conditioning and Ventilating Systems.
 - .2 NFPA 90B, Standard for the Installation of Warm Air Heating and Air-Conditioning Systems.
 - .3 NFPA 96, Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations.
- .6 Sheet Metal and Air Conditioning Contractors' National Association (SMACNA).
 - .1 SMACNA HVAC Duct Construction Standards - Metal and Flexible.
 - .2 SMACNA HVAC Air Duct Leakage Test Manual.
 - .3 IAQ Guideline for Occupied Buildings Under Construction, 1st Edition.
- .7 Transport Canada (TC).
 - .1 Transportation of Dangerous Goods Act (TDGA).

1.4 SUBMITTALS

- .1 Submit shop drawings and product data in accordance with Section 01 33 00 - Submittal Procedures.
- .2 Product Data: submit WHMIS SDS - Safety Data for the following:
 - .1 Sealants.
 - .2 Tape.
 - .3 Proprietary Joints.

1.5 QUALITY ASSURANCE

- .1 Certification of Ratings:
 - .1 Catalogue or published ratings shall be those obtained from tests carried out by manufacturer or independent testing agency signifying adherence to codes and standards.
- .2 Health and Safety:

- .1 Do construction occupational health and safety in accordance with Section 01 35 29.06 - Health and Safety Requirements.
- .2 During construction meet or exceed the requirements of SMACNA IAQ Guideline for Occupied Buildings under Construction.
- .3 Installers to be certified to journeyperson level in sheet metal work.

1.6 DELIVERY, STORAGE AND HANDLING

- .1 Protect on site stored or installed absorptive material from moisture damage.
- .2 Waste Management and Disposal:
 - .1 Separate waste materials for reuse and recycling in accordance with Section 01 74 21 - Construction/Demolition Waste Management and Disposal.
 - .2 Remove from site and dispose of packaging materials at appropriate recycling facilities.
 - .3 Collect and separate for disposal, paper, plastic, polystyrene, corrugated cardboard, packaging material in appropriate on-site bins for recycling in accordance with Waste Management Plan.
 - .4 Separate for reuse and recycling and place in designated containers steel, metal, plastic waste in accordance with Waste Management Plan.
 - .5 Place materials defined as hazardous or toxic in designated containers.
 - .6 Handle and dispose of hazardous materials in accordance with CEPA, TDGA, Regional and Municipal regulations.
 - .7 Fold up metal and plastic banding, flatten and place in designated area for recycling.

PART 2 PRODUCTS

2.1 SEAL CLASSIFICATION

- .1 Classification as follows:

Maximum Pressure Pa	SMACNA Seal Class
> 1000	A
750	B
500	C
250	C
125	C
- .2 Seal classification:

- .1 Class A: longitudinal seams, transverse joints, duct wall penetrations and connections made airtight with sealant and tape.

2.2 SEALANT

- .1 Sealant: oil resistant, polymer type flame resistant duct sealant. Temperature range of minus 30°C to plus 93°C.

2.3 TAPE

- .1 Tape: polyvinyl treated, open weave fiberglass tape, 50 mm wide.

2.4 DUCT LEAKAGE

- .1 In accordance with SMACNA HVAC Duct Leakage Test Manual.

2.5 FITTINGS

- .1 Fabrication: to SMACNA.
- .2 Radiused elbows:
 - .1 Rectangular: Centreline radius: 1.5 times width of duct.
 - .2 Round: smooth radius or five piece. Centreline radius: 1.5 times diameter.
- .3 Mitred elbows, rectangular:
 - .1 To 400 mm: with single thickness turning vanes.
 - .2 Over 400 mm: with double thickness turning vanes.
- .4 Branches:
 - .1 Rectangular main and branch: with radius on branch 1.5 times width of duct or 45° entry on branch.
 - .2 Round main and branch: enter main duct at 45° with conical connection.
 - .3 Provide volume control damper in branch duct near connection to main duct.
 - .4 Main duct branches: with volume control damper.
- .5 Transitions:
 - .1 Diverging: 20° maximum included angle.
 - .2 Converging: 30° maximum included angle.
- .6 Offsets:
 - .1 Full short radiused elbows as indicated.

- .7 Obstruction deflectors: maintain full cross-sectional area. Maximum included angles: as for transitions.

2.6 FIRESTOPPING

- .1 Retaining angles around duct, on both sides of fire separation in accordance with Section 07 84 00 – Firestopping.
- .2 Firestopping material and installation must not distort duct.

2.7 GALVANIZED STEEL

- .1 Lock forming quality: to ASTM A653, G90 zinc coating.
- .2 Thickness, fabrication and reinforcement: to SMACNA.
- .3 Joints: to SMACNA or proprietary manufactured duct joint. Proprietary manufactured flanged duct joint to be considered to be a class A seal.

2.8 HANGERS AND SUPPORTS

- .1 Strap hangers: of same material as duct but next sheet metal thickness heavier than duct. Maximum size duct supported by strap hanger: 500 mm.
- .2 Hanger configuration: to SMACNA.
- .3 Hangers: galvanized steel angle with black steel rods to ASHRAE or SMACNA following table:

Duct Size (mm)	Angle Size (mm)	Rod Size (mm)
up to 750	25x25x3	6
751 to 1050	40x40x3	6
1051 to 1500	40x40x3	10
1501 to 2100	50x50x3	10
2101 to 2400	50x50x5	10
2401 and over	50 x 50 x 6	10

- .4 Upper hanger attachments:
 - .1 For concrete: manufactured concrete inserts.
 - .2 For steel joist: manufactured joist clamp steel plate washer.
 - .3 For steel beams: manufactured beam clamps:

PART 3 **EXECUTION**

3.1 **GENERAL**

- .1 Do work in accordance with SMACNA.
- .2 Do not break continuity of insulation vapour barrier with hangers or rods. Insulate strap hangers 100 mm beyond insulated duct.
- .3 Support risers in accordance with SMACNA.
- .4 Install breakaway joints in ductwork on sides of fire separation. Do not place fire stopping material in expansion space between damper sleeve and fire partition.
- .5 Install proprietary manufactured flanged duct joints in accordance with manufacturer's instructions.
- .6 Manufacture duct in lengths and diameter to accommodate installation of acoustic duct lining.

3.2 **HANGERS**

- .1 Strap hangers: install in accordance with SMACNA.
- .2 Angle hangers: complete with locking nuts and washers.
- .3 Hanger spacing: in accordance with SMACNA or as follows:

Duct Size (mm)	Spacing (mm)
to 1500	3000
1501 and over	2500

3.3 **SEALING AND TAPING**

- .1 Apply sealant to outside of joint to manufacturer's recommendations.
- .2 Bed tape in sealant and recoat with minimum of one coat of sealant to manufacturers recommendations. Sealant and tape to be applied to full perimeter of duct.

3.4 **LEAKAGE TESTS/COMMISSIONING**

- .1 Seal ducting and call for review prior to insulating. Re seal areas noted by Engineer or Owners representative.

END OF SECTION

PART 1 - ADDENDUM

1.1 TITLE

- .1 This Addendum shall be known as:

Addendum 1
TFM-044-25

- .2 The Date of the Addendum is Tuesday, October 22, 2025

1.2 PRECEDENCE

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- .1 This amendment to the bid documents is effective immediately.
- .2 This Addendum shall form an integral part of the original bid documents and is to be read in conjunction therewith.
- .3 The Addendum shall take precedence over previously issued bid documents with which it may prove to be at variance.

1.3 GENERAL

- .1 The General Conditions shall govern all phases of the Work covered by this Addendum.
- .2 Acknowledge receipt of this addendum in the Tender and Acceptance form.

1.4 PURPOSE

- .1 The purpose of the Addendum is to inform bidders of the changes, deletions and additions to be added to the bid documents.

1.5 CHANGES IN GENERAL

- .1 No changes in General.

CHANGES TO SPECIFICATION

1. Specification section 01 21 00 ALLOWANCE

1. Replace 1.1.1 as follows:

1.1.1 Include in Contract Price, cash allowances as stated herein:

- .1 \$50,000.00 Cash allowance for Honeywell Controls

1.6 CHANGES TO DRAWINGS

- .1 No changes to drawing.

END OF ADDENDUM

PART 1 - GENERAL

1.1 CASH ALLOWANCES

- .1 Include in Contract Price, cash allowances as stated herein:
- \$50,000.00 Cash allowance for Honeywell Controls.
- .2 Expend each allowance as directed by Owner.
- .3 Cash allowances, unless otherwise specified, cover net cost to Contractor of services, products, construction machinery and equipment, freight, handling, unloading, storage installation and other authorized expenses incurred in performing Work.
- .4 Each cash allowance will be adjusted to actual cost as defined hereunder and contract price will be amended accordingly by written order.
- .5 Contract Price will be adjusted by written order to provide for an excess or deficit to each cash allowance.
- .6 Progress payments for work and material authorized under cash allowances will be made in accordance with contract terms of payment.
- .7 The Contract Price and not cash allowance, includes contractor's overhead and profit in connection with such cash allowance.
- .8 Progress payments on accounts of work authorized under cash allowances shall be included in monthly certificate for payment.
- .9 Schedule shall be prepared jointly by Owner and Contractor to show when items called for under cash allowances must be authorized by Owner for ordering purposes so that progress of work will not be delayed.

PART 2 PRODUCTS (NOT APPLICABLE)

PART 3 EXECUTION (NOT APPLICABLE)

END OF SECTION