

ART GALLERY OF BALLARAT HVAC UPGRADE

40 LYDIARD STREET, BALLARAT VIC 3350

MECHANICAL SERVICES

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 phone (03) 9646 9144 www.jba.com.au	CLIENT ART GALLERY OF BALLARAT	ARCHITECT K20 ARCHITECTURE  k20 Architecture	PROJECT ART GALLERY OF BALLARAT 40 LYDIARD STREET, BALLARAT VIC 3350	SERVICE MECHANICAL SERVICES TITLE COVER SHEET	DESIGNED T.C-LOPEZ SCALE @ A1 N.T.S DRAWN K.SCOTT COMMENCED DATE SEP 2024 PROJECT LEADER T.C-LOPEZ SHEET NUMBER 1 of 16	TENDER NOT FOR CONSTRUCTION PROJECT NUMBER 4797 DRAWING NUMBER M001 REVISION TD-A
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MECHANICAL LEGEND

DUCTWORK:

	PLAIN UNINSULATED SHEETMETAL DUCT.
	R3.0 MIN, 100mm MIN. HIGH DENSITY ACOUSTIC INTERNAL INSULATION COVERED WITH PERFORATED ALUMINUM FOIL FACING (INSULATION TO MEET CURRENT BCA SECTION J REQUIREMENTS)
	R2.0 MIN, 75mm MIN. HIGH DENSITY ACOUSTIC INTERNAL INSULATION COVERED WITH PERFORATED ALUMINUM FOIL FACING (INSULATION TO MEET CURRENT BCA SECTION J REQUIREMENTS)
	DEMOLISHED/REMOVE DUCTWORK.
	EXISTING DUCTWORK TO REMAIN.
	EXISTING FLEXIBLE DUCT TO BE REMAIN.
	ACOUSTIC INSULATED SUPPLY AIR FLEXIBLE DUCT
	EXISTING ATTENUATOR

PIPEWORK:

	EXISTING INSULATED CHILLED WATER FLOW AND RETURN PIPEWORK
	EXISTING INSULATED HEATING HOT WATER FLOW AND RETURN PIPEWORK
	EXISTING INSULATED CHILLED WATER FLOW AND RETURN PIPEWORK TO BE DEMOLISHED AND REMOVED FROM SITE.
	EXISTING INSULATED HEATING HOT WATER FLOW AND RETURN PIPEWORK TO BE DEMOLISHED AND REMOVED FROM SITE.
	NEW INSULATED CHILLED WATER FLOW AND RETURN PIPEWORK
	NEW INSULATED HEATING HOT WATER FLOW AND RETURN PIPEWORK
	CIRCUIT BALANCING VALVE
	PRESSURE RELIEF VALVE WITH DRAIN TO NEAREST WASTE
	STRAINER
	ISOLATION VALVE
	BALANCING/STAT VALVE
	CHECK VALVE
	FLEXIBLE CONNECTION
	UNION OR FLANGE
	TEMPERATURE & PRESSURE TEST POINT
	BALANCING VALVE
	3 WAY MOTORISED VALVE
	2 WAY MOTORISED VALVE
	TO THE NEAREST DRAIN, FLOOR WASTE, TUNDISH.
	AUTO AIR VENT
NOTE: PROVIDE AUTOMATICMANUAL AIR BLEED VALVES AT ALL HIGH POINTS WITHIN ROOF SPACE ON FLOW AND RETURN LINES. PROVIDE DISCHARGE TO NEAREST TUNDISH OR WASTE. CO-ORDINATE WITH HYDRAULIC TRADE CONTRACTOR FOR EXACT LOCATIONS.	

FANS:

	MIXED FLOW / INLINE TYPE FAN COMPLETE WITH FLEXIBLE DUCT CONNECTIONS (CONNECTIONS TO BE STRETCHED TAUT) ON INTAKE AND DISCHARGE SIDES LOCATED AFTER THE TRANSITIONS. FAN TO BE SUPPORTED WITH SPRING ANTI-VIBRATION ISOLATORS.
OAF-x	

AIR CONDITIONING:

AHU-x	ROOF MOUNTED VERTICAL PACKAGED AIR HANDLING UNIT WITH FILTER BOX CONNECTED TO THE AIR INTAKE PLENUM. UNIT SUPPORTED ON STEEL PLATFORM COMPLETE WITH ANTI-VIBRATION MOUNTS, NEOPRENE PAD, ETC. PROVIDE CONDENSATE DRAINS AND DISCHARGE DIRECTLY OVER NEAREST TUNDISH POINT OR AS SPECIFIED. EXACT LOCATION TO BE DETERMINED ON SITE.
R-01	CENTRAL RO SYSTEM SERVING ULTRASONIC HUMIDIFIERS.
FCU-x	CHW / HHW FAN COIL UNIT.

AIR CONDITIONING (CONTINUATION):

HUM-x	ULTRASONIC HUMIDIFIER TO BE FITTED TO AH/US AS SHOWN IN DETAIL. 4. ULTRASONIC HUMIDIFIERS TO BE INSTALLED IN STAINLESS STEEL DUCT MIN. 1200x500 WITH MIN. 1500mm LONG. S.S. LENGTH OF DUCT TO BE COMPLETE WITH DRAIN, SURGE PIPE, ACCESS PANEL, FLEXIBLE DUCT BOTH ENDS (ALL TO BE ARRANGED SO AS NO DISSIMILAR METAL ELECTROLYSIS OCCURRING). ALL TO MANUFACTURERS RECOMMENDATIONS.
H-x	RESISTIVE STEAM HUMIDIFIER COMPLETE WITH REVERSE OSMOSIS WATER TREATMENT, DUCT MOUNTED DISPERSION TUBES AND CONNECTION TO COLD WATER SUPPLY. SHALL BE INSTALLED IN STAINLESS DUCT AND TO COMPLY WITH MANUFACTURERS CLEARANCES AND REQUIREMENTS.
EX.CHILLER	EXISTING CHILLER TO REMAIN. CHW PIPEWORK TO BE RE-ROUTED FROM FCU 2.1, FCU 2.2 & FCU 2.3 TO NEW AHU-1 & AHU-2. ALL OTHER EXISTING CONNECTIONS SHALL REMAIN UNALTERED.
EX.BOILER	EXISTING BOILER TO REMAIN. HHW PIPEWORK TO BE RE-ROUTED FROM FCU 2.1, FCU 2.2 & FCU 2.3 TO NEW AHU-1 & AHU-2. ALL OTHER EXISTING CONNECTIONS SHALL REMAIN UNALTERED.
EX.FCUI	EXISTING FAN COIL UNITS TO BE DISCONNECTED AND REMOVED FROM SITE. EXISTING HHW/CHW CONNECTIONS TO BE CAPPED AND VALVED TO MAINTAIN FLOW TO OTHER FAN COIL UNITS & AIR HANDLING UNITS.
MISCELLANEOUS:	
EX.MSSB	EXISTING MSSB TO REMAIN.
	AIR FLOW INDICATION
HHWP/CHWP	INLINE PUMPS SERVING BOILER HHW & CHILLER CHW.
- G --- G ---	EXISTING GAS LINE.
	EXISTING REFILL UNIT.
	EXISTING EXPANSION TANK.
	EXISTING CHEMICAL DOSING POT.
	EXISTING HYDRAULIC SEPARATOR.
	EXISTING VOLUME CONTROL DAMPER.
	EXISTING SIDE ACCESS PANEL.
	FIRE DAMPER
AH	NEW AFTER HOURS BUTTON
AH	EXISTING AFTER HOURS BUTTON
	EXISTING TEMPERATURE SENSOR.
	NEW COMBINED AND TEMPERATURE SENSOR. TO BE MOUNTED 1500MM AFFL. REFER TO FLOOR PLANS FOR LOCATION.
	TURNING VANES IN DUCTWORK.
VCD / NRD	VOLUME CONTROL DAMPER, NON RETURN DAMPER AND MOTORISED VOLUME CONTROL DAMPER
	IN DUCT SMOKE DETECTOR BY FIRE TRADE CONTRACTOR. PROVIDE SUITABLE ACCESS PANEL TO SUIT
EX.	DENOTES EXISTING

GRILLES / LOUVRES:

RAG	RETURN AIR GRILLE EGGRATE TYPE SIZES AS NOTED. PROVIDE INSULATED CUSHION HEAD BOX AND VOLUME CONTROL DAMPER ADJUSTABLE THROUGH FACE. PAINT ALL SURFACES BEHIND GRILLE MATT BLACK
SAD 225/600 190 L/s	SUPPLY AIR DIFFUSER - ALUMINUM TYPE C/W INSULATED CUSHION HEAD BOX WITH POP (WITH OR WITHOUT DAMPER) 225 DENOTES NECK SIZE (FIRST DIMENSION), 600 DENOTES DIFFUSER SIZE (SECOND OUTLET SIZE) 190 DENOTES AIR QUANTITY L/s
	LINEAR SLOT DIFFUSER PLENUM BOX C/W POP. DRAW STRING, LENGTH AND AIR FLOW AS NOMINATED ON PLANS/SCHEDULE
	EXISTING SUPPLY AIR GRILLE AND ACOUSTIC PLENUM TO REMAIN FOR FUTURE CONNECTION TO NEW AIR HANDLING UNITS.
	EXISTING 4 SLOT LINEAR DIFFUSER C/W POP AND DAMPER.
	EXISTING SWIRL DIFFUSER TO REMAIN.
	EXISTING 4 - WAY BLOW DIFFUSER TO REMAIN.
	EXISTING RETURN AIR GRILLE

ABBREVIATIONS:

AFFL	DENOTES ABOVE FINAL FLOOR LEVEL
AHU	DENOTES AIR HANDLING UNIT
A/P	DENOTES ACCESS PANEL
CHW	DENOTES CHILLED WATER
EX.	DENOTES EXISTING
EF	DENOTES EXHAUST FAN
F/A	DENOTES FROM ABOVE
F/B	DENOTES FROM BELOW
FCU	DENOTES FAN COIL UNIT
HHW	DENOTES HEATING HOT WATER
N	DENOTES NEW
OAF	DENOTES OUTDOOR AIR FAN
PENO	DENOTES PENETRATION
RAG	DENOTES RETURN AIR GRILLE
RF	DENOTES RELIEF AIR FAN
SAD	DENOTES SUPPLY AIR DIFFUSER
SAR	DENOTES SUPPLY AIR REGISTER
SJ	DENOTES STEP UP
SD	DENOTES STEP DOWN
TA	DENOTES TO ABOVE
T/B	DENOTES TO BELOW
VCD	DENOTES VOLUME CONTROL DAMPER
MD	DENOTES MOTORISED DAMPER
CW	DENOTES COMES WITH
SB	DENOTES SWITCHBOARD
MSSB	DENOTES MECHANICAL SERVICES SWITCHBOARD
MSB	DENOTES MAIN SWITCHBOARD
FD	DENOTES FIRE DAMPER

FLEXIBLE DUCTWORK

FLOWRATE	Ø (MM)
0 - 50 L/s	Ø150
51 - 90 L/s	Ø200
91 - 180 L/s	Ø250
181 - 275 L/s	Ø300
276 - 400 L/s	Ø350
401 - 700 L/s	Ø450
701 - 900 L/s	Ø500

GENERAL SPECIFICATION NOTES

- LOCATION OF EXISTING SERVICES HAS BEEN DETERMINED FROM SITE VISITS AND EXISTING RECORD PLANS. NO PROVING OF SERVICES HAS BEEN UNDERTAKEN. THE CONTRACTOR SHALL PROVE ALL SERVICES BEFORE COMMENCING CONSTRUCTION AND ADVISE THE ENGINEER OF ANY DISCREPANCIES BEFORE PROCEEDING. ALLOW FOR ALL SITE CONDITIONS. THIS CONTRACTOR MUST CO-ORDINATE WITH ALL OTHER SERVICES INCLUDING DRAINAGE, MECHANICAL EQUIP, STORMWATER, WATER, COMMS, ELECTRICAL SERVICES, ETC.
- ALL SURFACES AND SERVICES DAMAGED OR DISTURBED DURING THE PROGRESS OF THESE WORKS ARE TO BE MADE GOOD WITH MATERIALS OF A SIMILAR NATURE TO MATCH EXISTING CONDITIONS AND AT CONTRACTORS EXPENSE AND TO THE SUPERVISING ENGINEER'S SATISFACTION.
- ON COMPLETION OF THE WORKS THE CONTRACTOR SHALL CLEAN UP THE SITE AND CARRY AWAY ALL SURPLUS MATERIALS AND DEBRIS ARISING FROM THIS CONTRACT TO THE SATISFACTION OF THE ENGINEER.
- REFER TO THE ARCHITECTURAL DOCUMENTATION 'HVAC-A SERIES' FOR THE LOCATION OF DUCTS, FIXTURES AND THE BUILDING LAYOUT AND DIMENSIONS WHERE DRAWINGS SHOW MECHANICAL SERVICES SUPERIMPOSED ON BUILDING PLANS. USE THEM ONLY FOR MECHANICAL SERVICE PURPOSES. IF THE ULTIMATE CONDITION OF THE BUILDING NECESSITATES ANY ALTERATIONS IN ARRANGEMENT OBTAIN THE APPROVAL OF THE ENGINEER BEFORE PROCEEDING.
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL AND OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT.
- THE MECHANICAL INSTALLATION AND DISTRIBUTION INDICATED ON THESE DRAWINGS ARE GENERALLY DIAGRAMMATIC. THE MECHANICAL INSTALLATION SHALL COMPLY WITH THE REQUIREMENTS OF ALL CURRENT AUSTRALIAN CODES, REGULATIONS, NCC AND ANY OTHER AUTHORITY HAVING JURISDICTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE OVERALL CO-ORDINATION OF MECHANICAL SERVICES WHERE IN PROXIMITY TO OTHER BUILDING SERVICES AND IN COMPLIANCE WITH AUTHORITY REGULATIONS.
- IF ANY DISCREPANCY OCCURS ON THE ENGINEERS DRAWINGS OR BETWEEN DRAWINGS AND SPECIFICATION, THE CONTRACTOR SHALL DURING TENDERING ASSUME THE LARGER/GREATER. ANY DISCREPANCY SHALL BE REFERRED TO THE ENGINEER BEFORE PROCEEDING WITH THE WORK.
- ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT AUSTRALIAN CODES:
AS1688, THE USE OF VENTILATION AND A/C IN BUILDINGS
AS3666, AIR-HANDLING AND WATER SYSTEMS OF BUILDINGS
AS4740 NATURAL VENTILATORS - CLASSIFICATION AND PERFORMANCE
AS4254, DUCTWORK FOR AIR-HANDLING SYSTEMS IN BUILDINGS
AS2107 SPACE ACOUSTIC LEVELS
HB32-1995 CONTROL OF MICROBIAL GROWTH IN AIR-HANDLING AND WATER SYSTEMS OF BUILDINGS
AND THE BY-LAWS AND ORDINANCES OF THE RELEVANT BUILDING AUTHORITY.
- ALL DIMENSIONS SHOWN SHALL BE VERIFIED ON SITE. ENGINEERS DRAWINGS MUST NOT BE SCALED.
- SUBSTITUTIONS MUST BE APPROVED BY THE ENGINEER AND BE INCLUDED IN ANY TENDER.
- THE MECHANICAL CONTRACTOR SHALL SUPPLY, INSTALL AND COMMISSION ALL EQUIPMENT, COMPLETE DUCTWORK SYSTEMS, PIPEWORK, VALVES ETC. AND SHALL BE INSTALLED IN STRICT ACCORDANCE WITH CURRENT EDITION OF THE RELEVANT AUSTRALIAN STANDARDS, REGULATIONS AND ANY OTHER AUTHORITY HAVING JURISDICTION AND SHOWN ON THE DRAWINGS.
- PROVIDE ALL NECESSARY SLEEVES FOR PENETRATIONS THROUGH CONCRETE, BRICKWORK, AND BUILDING FINISHES TO ACCOMMODATE MECHANICAL EQUIPMENT, DUCTWORK SYSTEMS, PIPEWORK SUPPORTS. PENETRATIONS SHOWN ON THE DRAWINGS SHALL BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR APPROVAL PRIOR TO THEIR CONSTRUCTION. PENETRATIONS REQUIRED THROUGH CONSTRUCTED CONCRETE SHALL BE CORE DRILLED BY THE BUILDER. NO WORK SHALL COMMENCE BEFORE WRITTEN APPROVAL BY THE STRUCTURAL ENGINEER.
- ALL DIMENSIONS NOTED ARE IN MILLIMETRES AND PIPEWORK SIZES SHOWN ARE IN NOMINAL BORE DIAMETER UNLESS NOTED OTHERWISE.
- ALL PENETRATIONS THROUGH FIRE RATED ELEMENTS SHALL BE FITTED WITH AN APPROVED FIRE DAMPER COLLAR OR GAP SEALANT, IN ACCORDANCE WITH BCA CLAUSE 3.15, AS 4072.1 & AS 1503.4. ALL PENETRATIONS THROUGH WALL/ROOF, SHALL BE MADE WATERPROOF AND AIR TIGHT AT ROOF CROSSINGS BY MECHANICAL CONTRACTOR.
- BEFORE PRACTICAL COMPLETION SUBMIT ALL TEST RESULTS FROM RELEVANT AUTHORITIES. AS BUILT DRAWINGS AND MANUALS. OBTAIN CERTIFICATES OF SATISFACTORY COMPLETION FROM RELEVANT AUTHORITIES.
- ALL SERVICES AS SHOWN ARE SCHEMATIC ONLY BUT ARE CONSIDERED TO COMPLY WITH ALL AUTHORITY REQUIREMENTS. THE CONTRACTOR SHALL ALLOW FOR ALTERATION TO THE MECHANICAL DESIGN AS REQUIRED TO CONFORM WITH ALL AUTHORITY REQUIREMENTS.
- THE CONTRACTOR SHALL VISIT THE SITE AND CAREFULLY INSPECT THE PROPOSED LOCATION OF THE NEW SERVICES. IN DOING SO, THE CONTRACTOR SHALL VERIFY SITE RELATED DIMENSIONS SHOWN ON THE DRAWINGS AGAINST THE ACTUAL SITE. THE CONTRACTOR SHALL IMMEDIATELY INFORM THE PROJECT ENGINEER OF ANY DISCREPANCIES FOUND BETWEEN THE SERVICES DOCUMENT SET AND SITE CONDITIONS. SUBSTITUTIONS ARE NOT PERMITTED UNLESS APPROVAL IS GIVEN BY THE PROJECT ENGINEER.
- EXISTING CONDITIONS: PRIOR TO STARTING WORK, THE CONTRACTOR SHALL RECORD/USING PHOTOS, VIDEOS, ETC) THE CONDITION OF ALL SERVICES AND INFRASTRUCTURE IN THE VICINITY OF THE WORK TO BE CARRIED OUT. IN THE EVENT THAT THE CONTRACTOR DAMAGES ANY BUILDING STRUCTURE OR SERVICE (DURING THE COURSE OF THE PROJECT), THE CONTRACTOR SHALL BE RESPONSIBLE FOR RE-INSTATING THE DAMAGE BACK TO ORIGINAL CONDITION.
- DRAWINGS TO BE READ IN CONJUNCTION WITH MECHANICAL SERVICES SPECIFICATION AND BUILDING SERVICES SCOPE OF WORKS.
- EACH CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPROPRIATE AUTHORITIES, CODES AND STANDARDS FOR ALL WORKS ASSOCIATED WITH THIS PROJECT.
- THE AIR CONDITIONING UNIT SCHEDULE SELECTION ON DRAWINGS IS INTENDED AS A GUIDE ONLY TO ASSESS SPACE AND OTHER BUILDING COORDINATION REQUIREMENTS. THE MECHANICAL CONTRACTOR IS RESPONSIBLE TO PROVIDE A DESIGN CHECK AND PROVIDE A UNIT RECOMMENDED AND GUARANTEED BY THE UNIT MANUFACTURER TO MEET THE FINAL BUILDING REQUIREMENTS.
- SELECTION OF ALL EQUIPMENT TO SUIT CAPACITY AS NOTED IN THE EQUIPMENT SCHEDULE .
- HEAD CONTRACTOR TO PROVIDE UP-STAND, TRIMMERS, UNDERFLASHING FOR ALL DUCTWORK PENETRATING THROUGH ROOF. MECHANICAL SUBCONTRACTOR TO OVERFLASH, CAULK, SEAL AND MAKE WATER TIGHT. ALL DUCTWORK PENETRATING THROUGH ROOF BUILDER TO PROVIDE UP-STAND, TRIMMERS, UNDER FLASHING, ETC. MECHANICAL CONTRACTOR TO OVER FLASH, CAULK, SEAL AND MAKE WATER TIGHT.
- DUCTWORK SIZES ARE SHOWN AS CLEAR INTERNAL SIZES.
- ALL OUTDOOR MECHANICAL EQUIPMENT SHALL BE MOUNTED ON GALVANISED WALL BRACKETS OR UNISTRUT TYPE SUPPORTS AND INCLUDE ANTI-VIBRATION MOUNTS (SPRINGS, NEOPRENE PAD STRIPS, ETC.) TO SUIT APPLICATION.
- EXPOSED DUCTWORK (I.E. EXTERNAL, ROOF MOUNTED ETC.) TO BE WEATHERPROOF AND ARRANGED SO AS NO PONDING CAN OCCUR IN PARTICULAR WHERE LOCATED ON ROOF. ALL PIPEWORK SUPPORTS SHALL BE GALVANISED AND INCLUDE RIGID FRAMES TO SUIT ITEMS OF EQUIPMENT TO BE SUPPORTED. WHERE DUCTWORK IS INSTALLED EXTERNALLY TO BUILDING ENVELOPE, ALL SEAMS AND JOINTS TO BE SOLDERED WATER TIGHT AND FLANGED WITH SEALING GASKET. ALL TO BE WATER TIGHT.
- AIR OUTLETS MUST BE FITTED WITH INSULATED CUSHION HEAD BOXES. VOLUME CONTROL DAMPERS LOCATED AT THE CONNECTION OF ACOUSTIC FLEXIBLE DUCTS OR TO SOLID BRANCH DUCT.
- ALL DUCTWORK USED ON THIS PROJECT TO BE HOT DIPPED GALVANISED SHEET METAL CONSTRUCTED (UNLESS OTHERWISE INDICATED) AND INSTALLED TO COMPLY WITH AS1688, AS4254, SMOA/NA STANDARDS. DRAWINGS ARE DIAGRAMMATIC ONLY.
- ALL DUCTWORK TO BE SUPPORTED FROM FLOOR/ROOF STRUCTURE OVER AND TO BE FREE FROM FALSE CEILING OR STRUCTURAL CONSTRUCTION ELEMENTS.
- MAXIMUM LENGTHS OF FLEXIBLE DUCTWORK TO BE 5 METERS.
- CLOUR SELECTION FOR ALL REGISTERS SHALL BE CONFIRMED WITH THE CLIENT'S REPRESENTATIVE PRIOR TO ANY INSTALLATION ON SITE.
- ALL EXTERNAL AIR CONDITIONING TYPE DUCTWORK EXPOSED TO ATMOSPHERE SHALL BE COMPLETE WITH INTERNAL ACOUSTIC INSULATION MIN. 100mm THICK, R 3.0 RATING (FACED WITH MIN. 10% FREE OPEN AREA PERFORATED FOIL). ALL TO COMPLY WITH LATEST BCA, "SECTION J" REQUIREMENTS.
- INTERNALLY ACOUSTICALLY INSULATED DUCTWORK WHERE THERE WILL BE A MOIST CONDITIONS THE INTERNAL INSULATION SHALL BE WRAPPED WITH WITH A IMPERMEABLE PLASTIC MEMBRANE FILM TO PREVENT MOISTURE, ETC., FROM PENETRATING THE INSULATION.
- THE CONTRACTOR SHALL ALLOW FOR ALL FITTINGS & ITEMS NECESSARY FOR THE COMPLETION OF THE PROJECT.
- MECHANICAL SERVICES TO BE CO-ORDINATED WITH EXISTING SERVICES TO ELIMINATE THE POSSIBILITY FOR ANY CLASHES EACH CONTRACTOR IS RESPONSIBLE FOR COMPLYING WITH ALL APPROPRIATE AUTHORITIES . CODES FOR ALL WORKS ASSOCIATED WITH THIS PROJECT.
- ALL HEATING HOT WATER AND CHILLED WATER PIPEWORK INSULATION WHERE EXPOSED TO ATMOSPHEREVIEW, SHALL BE EXTERNALLY METAL SHEATHED WITH ALL JOINTS AND SEAMS SOLDERED WATER TIGHT. PROVIDE COMMON HOT DIPPED GALVANISED ANGLE IRON SUPPORT SYSTEM RIGIDLY FIXED TO BUILDING STRUCTURE. ALL PIPEWORK SUPPORTS SHALL BE HOT DIPPED GALVANISED AND INCLUDE RIGID FRAMES TO SUIT NUMBER OF PIPES SUPPORTED.
- CONDENSATE DRAINS FROM EQUIPMENT TO DISCHARGE DIRECTLY INTO NEAREST WASTE POINT/TUNDISH POINT COMPLETE WITH TRAPPED PVC DRAIN TO NEAREST DRAIN POINT.
- EQUIPMENT TO BE INSTALLED ON ANTI-VIBRATION MOUNTS, STURDY BASE AND ARRANGE SO AS NO VIBRATION NOR ANY NOISE TRANSMISSION THROUGH BUILDING STRUCTURE OCCURS.

GENERAL SPECIFICATION NOTES CONTINUED.

- STANDARDS AND AUTHORITY REQUIREMENTS: THE MECHANICAL AND TRADE CONTRACTOR SHALL ENSURE THAT ALL WORK AND MATERIALS ARE FULLY COMPLIANT WITH THE REQUIREMENTS OF THE RELEVANT (AND CURRENT) CODE AND REGULATIONS AND ANY OTHER AUTHORITY HAVING JURISDICTION. WORK NOT COVERED BY THE STATUTORY AUTHORITIES SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
- QUALITY: THE CONTRACTOR SHALL ENSURE THAT ALL WORKMANSHIP AND MATERIALS SHALL MEET THE INDUSTRY BEST PRACTICE STANDARD (AS DETERMINED BY THE ENGINEER) SHOULD THE ENGINEER DEEM THAT THE WORKMANSHIP OR MATERIALS ARE SUBSTANDARD THEN THE CONTRACTOR WILL BE REQUESTED TO MAKE THE APPROPRIATE CHANGES AT NO ADDITIONAL COST TO THE PROJECT.
- REMOVAL FROM SITE AND DISPOSAL OF DEBRIS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL JURISDICTIONAL AUTHORITIES. BURNING OF DEBRIS OR SELLING OF MATERIAL ON THE SITE WILL NOT BE PERMITTED.

THE DOCUMENTATION IS NOT INTENDED TO BE DETAIL DOCUMENTATION. IT IS THE TRADE CONTRACTORS RESPONSIBILITY TO ENSURE THAT DETAIL ENGINEERING IS CARRIED OUT INCLUDING THE CO-ORDINATION OF THE WORK, DETAIL DOCUMENTATION FOR CONSTRUCTION, CALCULATIONS AND THE LIKE BASED ON THIS SPECIFICATION AND THE CLIENTS REQUIREMENTS FOR THE PROJECT.

LIKewise, IT IS THIS TRADE CONTRACTOR'S RESPONSIBILITY TO CO-ORDINATE THE PROJECT WITH OTHER BUILDING SERVICES TRADES AND RESOLVE THE INSTALLATION, INCLUDING COORDINATION TO MEET THE REQUIREMENTS OF THE PROJECT FOR THE PROVISION OF THE SPECIFIED SYSTEMS, COMMISSIONING, OPERATION AND MAINTENANCE OF THE WORK PROVIDED BY THE TRADE CONTRACTOR TO THE COMPLETION OF THE DEFECTS LIABILITY PERIOD OF THE PROJECT.

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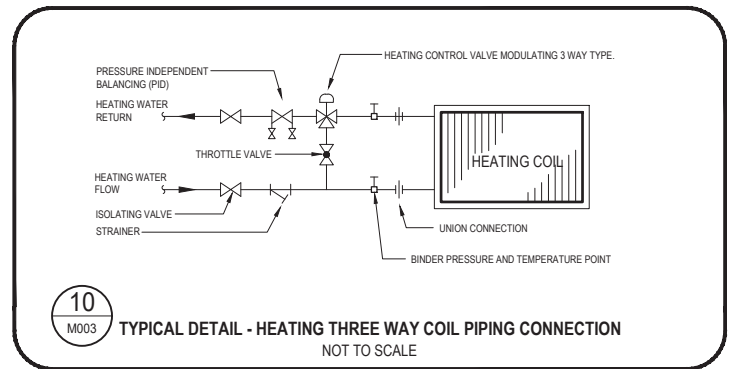
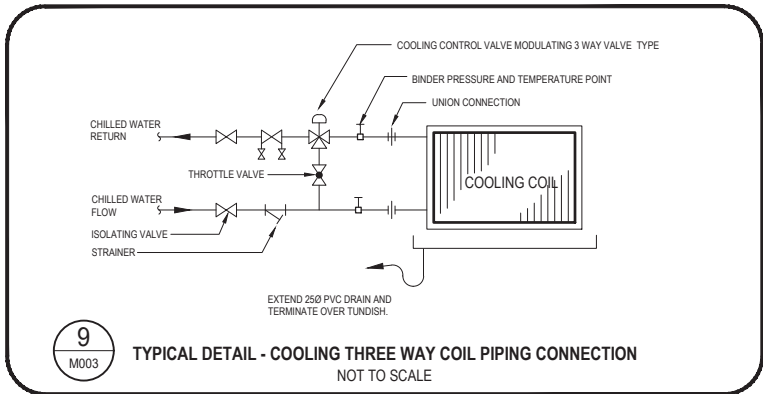
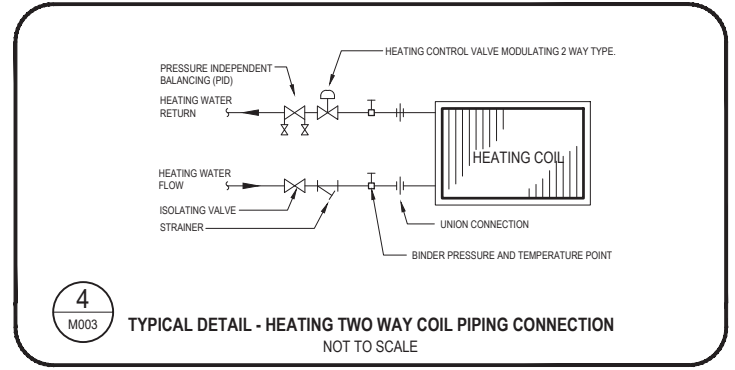
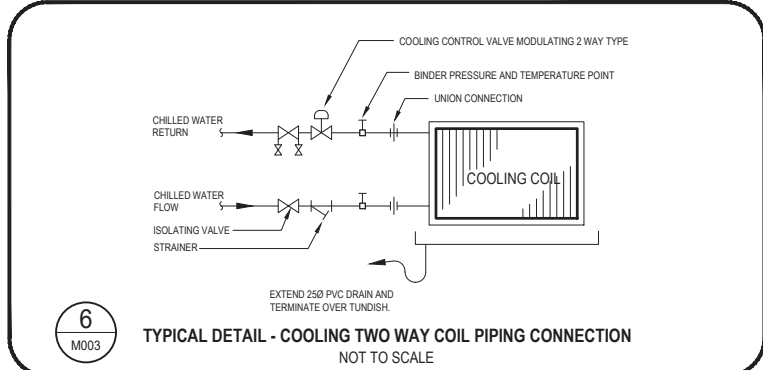
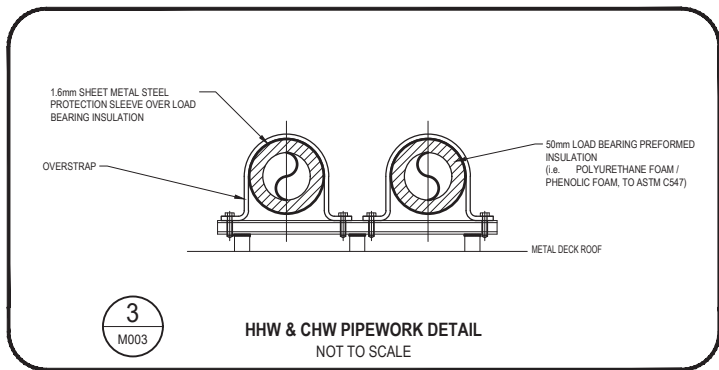
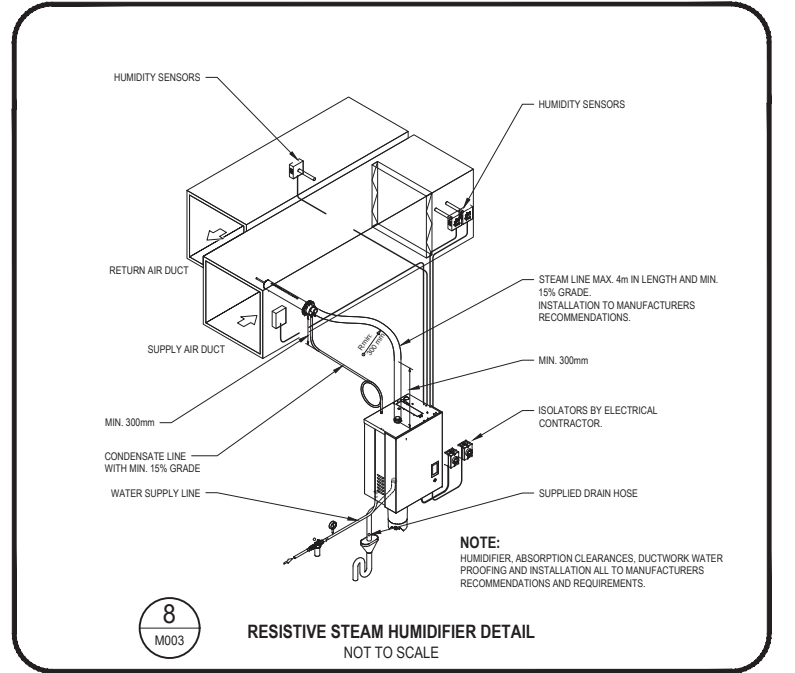
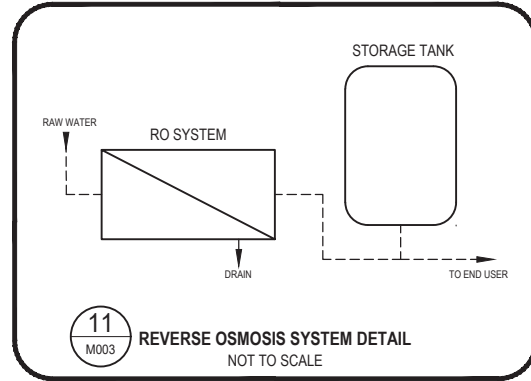
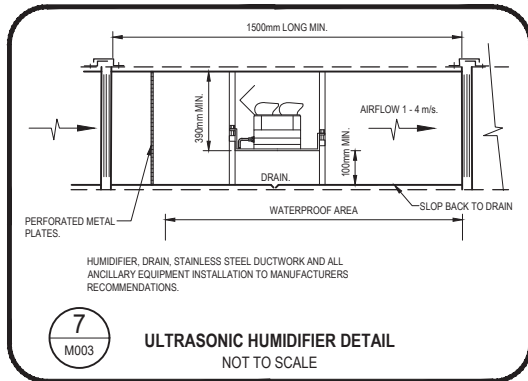
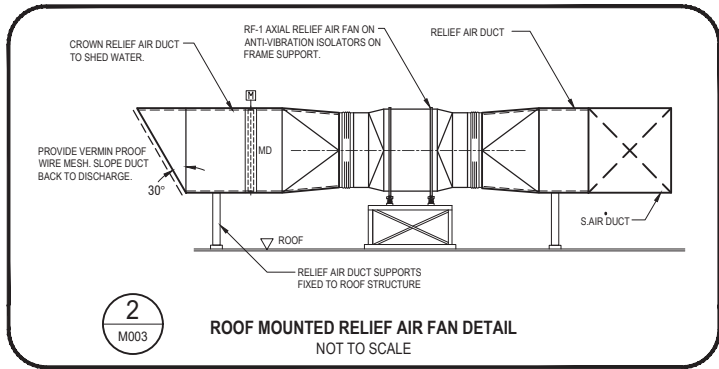
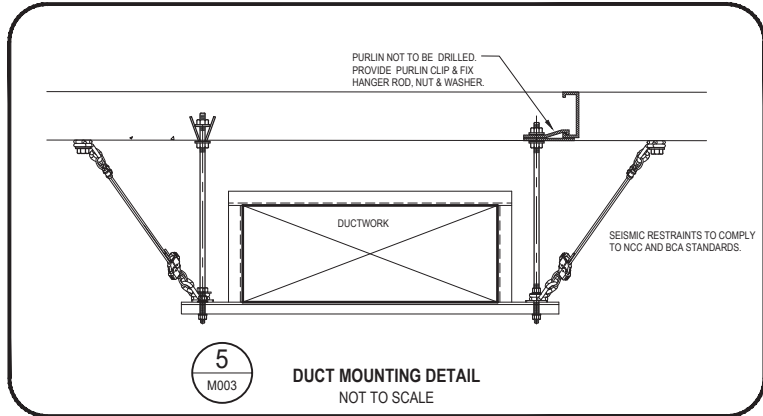
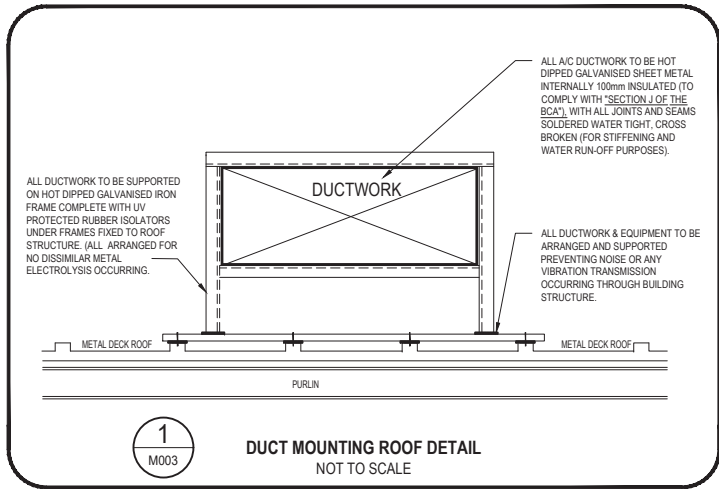


PROJECT
**ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350**

SERVICE
MECHANICAL SERVICES

TITLE
GENERAL NOTES AND LEGEND

DESIGNED T.C-LOPEZ	DRAWN K.SCOTT	PROJECT LEADER T.C-LOPEZ	TENDER NOT FOR CONSTRUCTION		
SCALE @ A1 N.T.S	COMMENCED DATE SEP 2024	SHEET NUMBER 2 of 16			
			PROJECT NUMBER 4797	DRAWING NUMBER M002	REVISION TD-A



REV.	DATE	DESCRIPTION	INITIAL
TD-A	22.04.2025	TENDER ISSUE	O.K
DD-A	07.02.2025	DESIGN DEVELOPMENT ISSUE	T.BR.
DD-B	21.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-C	28.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-D	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K

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ART GALLERY OF BALLARAT

ARCHITECT
K20 ARCHITECTURE

k20 Architecture

PROJECT
**ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350**

SERVICE
MECHANICAL SERVICES

TITLE
MECHANICAL DETAILS

DESIGNED
T.C-LOPEZ

DRAWN
K.SCOTT

PROJECT LEADER
T.C-LOPEZ

SCALE @ A1
N.T.S

COMMENCED DATE
SEP 2024

3 of 16

**TENDER
NOT FOR CONSTRUCTION**

PROJECT NUMBER	DRAWING NUMBER	REVISION
4797	M003	TD-A

FAN COIL UNIT SCHEDULE

	FCU-0-1	FCU-0-2	FCU-1	FCU-2	FCU-3	FCU-5	FCU-1-1	FCU-1-2	FCU-1-4	FCU-1-6	FCU-06	FCU-07	FCU-08	FCU-09	FCU-10	FCU-11	FCU-12	FCU-13	
AREA SERVED	ART STORE	WORKROOM	TIMKEN / MARS	EDUCATION STUDIO	MINNE / PROJECT	BACKSPACE	McCAIN FUNCTION	McCAIN FUNCTION	SELKIR FAMILY	GALLERY SHOP	SKEWES & GRIFFITH	CROUCH GALLERY	FERRY GALLERY	ODDIE GALLERY	WILLIAM & RENE	LIBRARY	ARCHIVES PAPERS	JAMES A. POWELL	
UNIT LOCATION	BASEMENT	BASEMENT	GROUND FLOOR	GROUND FLOOR	GROUND FLOOR	GROUND FLOOR	GROUND FLOOR	GROUND FLOOR	GROUND FLOOR	GROUND FLOOR	ROOF LEVEL	ROOF LEVEL	ROOF LEVEL	ROOF LEVEL	ROOF LEVEL	ROOF LEVEL	ROOF LEVEL	ROOF LEVEL	
SUPPLY AIR L/s	975	280	1300	600	1025	300	1250	1250	1000	400	1350	1350	800	2100	1200	530	975	720	
OUTDOOR AIR L/s	200	50	250	150	150	80	300	300	200	120	200	200	200	200	200	50	190	125	
RETURN AIR L/s	TBC	230	1050	450	875	220	950	950	800	280	1150	1150	600	1900	1000	480	785	595	
MANUFACTURER	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	COLAIR	
MODEL No.	DBFU-25-130	DBFU-25-030	DBFU-25-130	DBFU-25-075	DBFU-25-110	DBFU-25-030	DBFU-25-110	DBFU-25-130	DBFU-25-110	DBFU-25-053	ESCS3H-50MM TTB-AH048-EC	ESCS3H-50MM TTB-AH048-EC	ESCS3H-50MM TTB-AH022-EC	ESCS3H-50MM TTB-AH048-EC	ESCS3H-50MM TTB-AH030-EC	ESCS3H-50MM TTB-AH012-EC	ESCS3H-50MM TTB-AH018-EC	ESCS3H-50MM TTB-AH012-EC	
FILTER TYPE	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	F7	
COOLING CAPACITY (TOTAL) kW	14.33	4.19	21.47	11.96	16.09	4.46	14	14	12.9	7.52	24.4	26.3	17	26.5	17.2	6.56	14.1	10.3	
COOLING CAPACITY (SENSIBLE) kW	12.38	3.91	18.65	9.97	14.02	3.69	11.4	11.4	10.9	6.38	21.6	22.9	14.3	24.9	15.1	6.05	12.5	9.07	
HEATING CAPACITY kW	22.18	3.7	24.04	8.24	17.97	4.19	12.8	12.8	13.8	7.4	16.7	20.6	12.8	22.8	16.8	7.01	15.3	10.6	
AIR ON °CDB / °CWB	24.30/17.10	25.30/17.40	25.50/17.10	25.30/17.40	24.70/17.20	26.6/17.9	26.3/17.8	26.3/17.8	25.9/17.7	26.5/17.9	25.4/16.9	25.4/16.9	24.80/17.20	24.9/17.3	25.0/17.6	24.8/17.3	25.8/17.6	25.7/17.6	
AIR OFF °CDB / °CWB	13.91/12.67	13.91/12.95	13.29/12.29	13.54/12.52	13.18/12.31	15.9/13.4	18.6/14.5	18.6/14.5	16.4/13.7	14.4/12.8	11.5/11.1	11.5/11.1	11.5/11.1	14.9/13.4	14.6/13.1	14.8/13.4	14.7/13.2	14.7/13.1	
WATER FLOW RATE (COOLING) L/s	0.55	0.17	0.89	0.48	0.68	0.19	0.91	0.91	0.7	0.34	1.04	1.12	0.72	1.17	0.72	0.29	0.58	0.44	
WATER FLOW RATE (HEATING) L/s	0.27	0.05	0.3	0.13	0.22	0.05	0.28	0.28	0.22	0.09	0.32	0.32	0.26	0.5	0.18	0.15	0.25	0.15	
MAX. RUNNING AMPS / PHASE	6.94	3.47	6.94	6.94	6.94	3.47	6.94	6.94	6.94	3.47	4	4	4	8.4	4	4	4	4	
UNIT DIMENSIONS (L x W x H)	800 x 1950 x 500	800 x 700 x 450	800 x 1950 x 500	800 x 1350 x 450	800 x 1950 x 500	800 x 1950 x 500	800 x 1650 x 500	800 x 1650 x 500	800 x 800 x 450	800x1050x450	3000x1050x1000	3000x1470x1000	3000x1470x900	3000x2080x1200	3000x1470x1000	3000x1200x900	3000x1470x900	3000x1200x900	
UNIT WEIGHT (kg)	174	79	190	138	166	79	182	182	166	106	580	580	505	760	565	435	545	440	
UNIT SOUND LEVEL dB(A)	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	
MECHANICAL MSSB	EX.MSSB-0-1	EX.MSSB-0-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-0-1	EX.MSSB-0-1	EX.MSSB-0-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1	
POWER V/Ph/Hz	240/1/50	240/1/50	240/1/50	240/1/50	240/1/50	240/1/50	240/1/50	240/1/50	240/1/50	240/1/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	415/3/50	
RATED CURRENT (A)	6.94	3.47	6.94	6.94	6.94	3.47	6.94	6.94	6.94	3.47	8	8	4.9	9.8	9.8	4.9	4.9	4.9	
HUMIDIFIER UNIT NO.	H-01	H-0-2	H-1 (EXISTING TO RETAIN)	H-2 (EXISTING TO RETAIN)	H-3	H-5	H-1-1	H-1-2	H-1-4	NOT REQUIRED	H-06	H-07	H-08	H-09	REFER SEPARATE SCHEDULE			H-12	H-13
MANUFACTURER	DriSteem	DriSteem			DriSteem	DriSteem	DriSteem	DriSteem	DriSteem		DriSteem	DriSteem	DriSteem	DriSteem	DriSteem			DriSteem	DriSteem
MODEL No.	RX-12-1	RX-12-1			RX-12-1	RX-12-1	RX-12-1	RX-12-1	RX-12-1		BA-12	BA-12	BA-12	BA-12				BA-12	BA-06
CALCULATED HUMIDIFICATION LOAD kg/h	2.0	1.0			2.99	1.6	4.5	4.5	4.0		4.12	4.12	4.11	4.10				3.91	2.58
UNIT CAPACITY kg/h	5.45	5.45			5.45	5.45	5.45	5.45	5.45		7.21	7.21	7.21	7.21				7.21	3.6
UNIT DIMENSIONS (L x W x H)	630 x 417 X 632	630 x 417 X 632			630 x 417 X 632	630 x 417 X 632	630 x 417 X 632	630 x 417 X 632	630 x 417 X 632		279 x 431 x 228	279 x 431 x 228	279 x 431 x 228	279 x 431 x 228				279 x 431 x 228	279 x 279 x 228
UNIT WEIGHT (kg)	62.86	62.86			62.86	62.86	62.86	62.86	62.86		15.27	15.27	15.27	15.27				15.27	11.59
POWER V/Ph/Hz	400/3/50	400/3/50			400/3/50	400/3/50	400/3/50	400/3/50	400/3/50		48/1/60	48/1/60	48/1/60	48/1/60				48/1/60	48/1/60
RATED CURRENT (FLA)	8.7	8.7			8.7	8.7	8.7	8.7	8.7		9.3	9.3	9.3	9.3				9.3	4.6
TYPE	RESISTIVE	RESISTIVE			RESISTIVE	RESISTIVE	RESISTIVE	RESISTIVE	RESISTIVE		ULTRASONIC	ULTRASONIC	ULTRASONIC	ULTRASONIC				ULTRASONIC	ULTRASONIC

AIR HANDLING UNIT SCHEDULE

UNIT No.	AHU-1	AHU-2
AREA SERVED	IAN POTTER GALLERY	HUGH OT WILLIAMSON GALLERY
SUPPLY AIR L/s	1800	3300
OUTDOOR AIR L/s	525	525
EXTERNAL STATIC Pa	400	400
MANUFACTURER	COLAIR	COLAIR
FILTER TYPE	F7	F7
MODEL	CBU 2015	CBU 2520
COIL DUTY	COOLING	HEATING
TUBE / FIN MATERIAL	COPPER / ALUMINIUM	COPPER / ALUMINIUM
AIR SIDE		
AIR ENTERING °CDB / °CWB	27 / 18.1	12
AIR LEAVING °CDB / °CWB	14.7 / 13.5	25.9
TOTAL CAPACITY kW	28.2	54.3
SENSIBLE CAPACITY kW	27.61	48.01
AIR PRESSURE DROP Pa	84	22
WATER SIDE		
WATER FLOW L/s	1.11	0.36
ENTERING WATER °C	6	80
LEAVING WATER °C	12	60
WATER PRESSURE kPa	11.3	24.5
FAN DATA		
TYPE	EC PLUG FAN	EC PLUG FAN
FULL LOAD AMPS	8	9
VOLTAGE / PHASE / FREQUENCY	415V / 3 / 50Hz	415 / 30 / 50Hz
MECHANICAL MSSB	EX.MSSB-2-1	EX.MSSB-2-1

FAN SHEDULE

UNIT No.	OAF-1	OAF-2	OAF-3
AREA SERVED	FCU-0-1 & FCU-0-2 SUPPLY AIR	FCU 1, 2, & 3 SUPPLY AIR	FCU-1-6 SUPPLY AIR
AIR QUANTITY L/s	250	550	120
EXTERNAL STATIC PRESSURE Pa	120	120	80
TYPE	MIXED FLOW	MIXED FLOW	MIXED FLOW
FANTECH MODEL No.	JETLINE-315	PUE354ER	TD-800/200SIL
REVISEC	33	18	32
dB(A (INLET / OUTLET)	46 / 48 @ 3m	38 / 42 @ 3m	34 / 34 @ 3m
MOTOR POWER / POWER SUPPLY	0.22 kW / 240V 1ph 50Hz	0.37 kW / 240V 1ph 50Hz	0.09 kW / 240V 1ph 50Hz
MOTOR AMPS (FLC / START)	0.90 / 2.7	1.85 / 5.55	0.43 / 1.29
ANTI-VIBRATION MOUNTS	YES	YES	YES
FLEX CONNECTIONS	YES	YES	YES
SPEED CONTROLLER	YES	YES	YES
MECHANICAL MSSB	EX.MSSB-1	EX.MSSB-1	EX.MSSB-1

HUMIDIFIER SCHEDULE - ULTRASONIC

UNIT No.	H-2-1 FOR AHU-1	H-2-2 FOR AHU-2	H-10
HUMIDIFICATION LOAD (TOTAL) kg/h	16.1	16.3	4.12
DUCT SIZE mm	1300x500	1300x800	1300x500
TOTAL AIR VOLUME L/s	1800	3300	1200
HUMIDITY INCREASE g/kg	7.3	7.3	7.3
AIR VELOCITY m/s	3.1	3.4	2.1
MANUFACTURER	CONDAIR	CONDAIR	CONDAIR
MODEL	NKBD-30	NKBD-30	NKBD-12
POWER CONSUMPTION (VA)	915	915	915
PRIMARY POWER CIRCUIT	230/1/50-60 V/Ph/Hz	230/1/50-60 V/Ph/Hz	230/1/50-60 V/Ph/Hz
SECONDARY POWER CIRCUIT	48/1/50 V/Ph/Hz	48/1/50 V/Ph/Hz	48/1/50 V/Ph/Hz
RATED CURRENT (MCA)	20	20	20
SUPPLY WATER CONNECTION	10mm	10mm	10mm
DIMENSIONS mm (H x W x L)	241 x 885 x 288	241 x 885 x 288	241 x 435 x 288
MECHANICAL MSSB	EX.MSSB-2-1	EX.MSSB-2-1	EX.MSSB-1

RO WATER SYSTEM SCHEDULE

RO Unit Serving Humidifiers of The Following FCUs/AHUs	FCU-0-1 & 0-2	FCU- 1, 2, 3, 5, 1-1, 1-2, 1-4	FCU-06, 07 & 08	FCU-09, 12 & 13	AHU-1, 2 & FCU-10	Comments
RO System	RO-01	RO-02	RO-03	RO-04	RO-05	1- Provide a VapourLogic controller. 2- RO unit shall be BACnet compatible.
Flow Rate (lpm)	0.19	0.65	0.34	0.3	0.49	
RO Model	RO-201	RO-201	RO-201	RO-201	RO-201	
Max. Capacity (lph)	45.45	45.45	45.45	45.45	45.45	
Max. Capacity (lpm)	0.76	0.76	0.76	0.76	0.76	
Pump Power (kW)	0.25	0.25	0.25	0.25	0.25	
Pump Motor Type	ODP	ODP	ODP	ODP	ODP	
Inlet Press. (kPa)	275.6 TO 413.4	275.6 TO 413.4	275.6 TO 413.4	275.6 TO 413.4	275.6 TO 413.4	
V/Phase/Hz	220 / 1 / 60	220 / 1 / 60	220 / 1 / 60	220 / 1 / 60	220 / 1 / 60	
Max. Amps (FLA)	2.8	2.8	2.8	2.8	2.8	
Overall Dim. (HxWxD)	610 X 508 X 940	610 X 508 X 940	610 X 508 X 940	610 X 508 X 940	610 X 508 X 940	
Operating & Shipping wgt (kg.)	70.45 / 53.64	70.45 / 53.64	70.45 / 53.64	70.45 / 53.64	70.45 / 53.64	
RO Storage Tank Model	PRESSURISED-80	PRESSURISED-80	PRESSURISED-80	PRESSURISED-80	PRESSURISED-80	
RO Storage Tank Material	FRP WITH RUBBER BLADDER	FRP WITH RUBBER BLADDER	FRP WITH RUBBER BLADDER	FRP WITH RUBBER BLADDER	FRP WITH RUBBER BLADDER	
RO Storage Tank Dim. (HxWxD)	609 X 1379	609 X 1379	609 X 1379	609 X 1379	609 X 1379	
Operating Mode	ON / OFF	ON / OFF	ON / OFF	ON / OFF	ON / OFF	
Input Signal	FLOAT SWITCH OR PRESSURE SWITCH	FLOAT SWITCH OR PRESSURE SWITCH	FLOAT SWITCH OR PRESSURE SWITCH	FLOAT SWITCH OR PRESSURE SWITCH	FLOAT SWITCH OR PRESSURE SWITCH	
RO Unit location	BASEMENT	GROUND FLOOR MEZZANINE	ROOF	ROOF	ROOF	
Mechanical MSSB	EX.MSSB-1	EX.MSSB-1	EX.MSSB-2-1	EX.MSSB-2-1	EX.MSSB-2-1	

NOTE:

- ALL NEW AND REPLACED FANs/AHUs/FCUs/HUMIDIFIERs SHALL HAVE A MINIMUM THE SAME CONTROLS, AOM SWITCHES AND GRAPHIC UPDATE ON THE BMS AS EXISTING.
- ALL EXTERNAL FANs/AHUs/FCUs/HUMIDIFIERs SHALL BE RATED FOR EXTERNAL INSTALLATION

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DD-D	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K
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K20 ARCHITECTECTURE



PROJECT
ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350

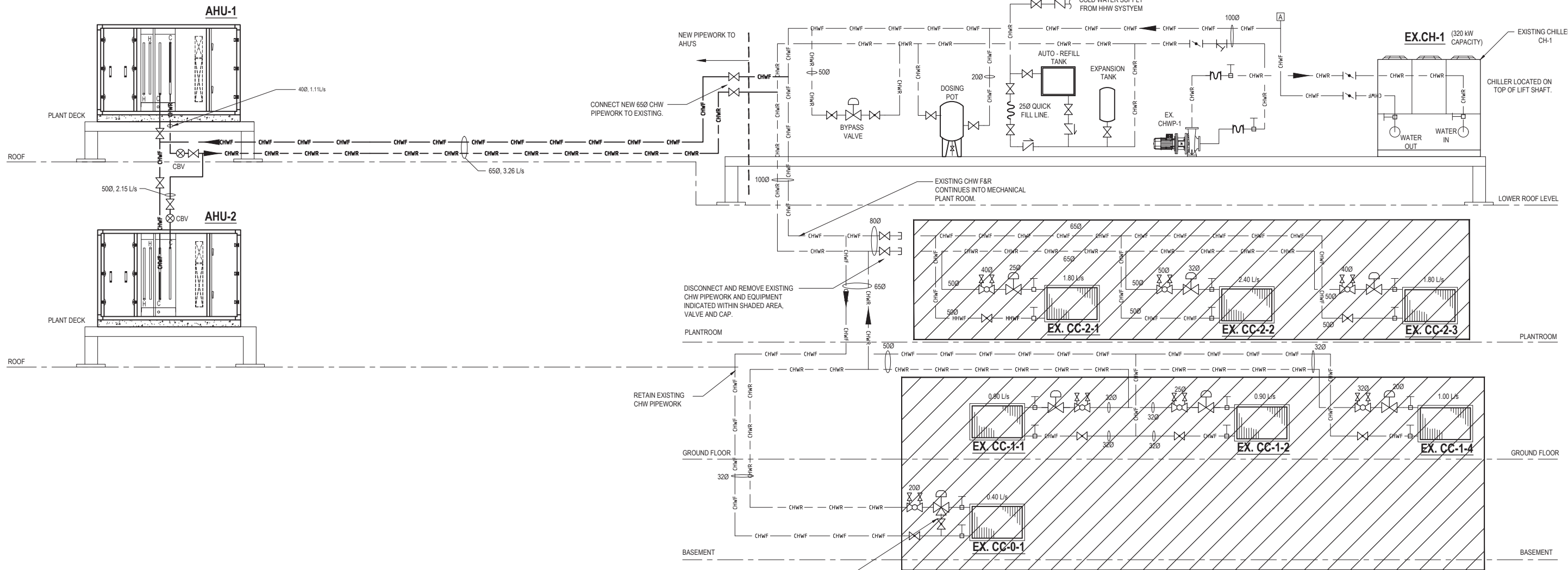
SERVICE

MECHANICAL SERVICES

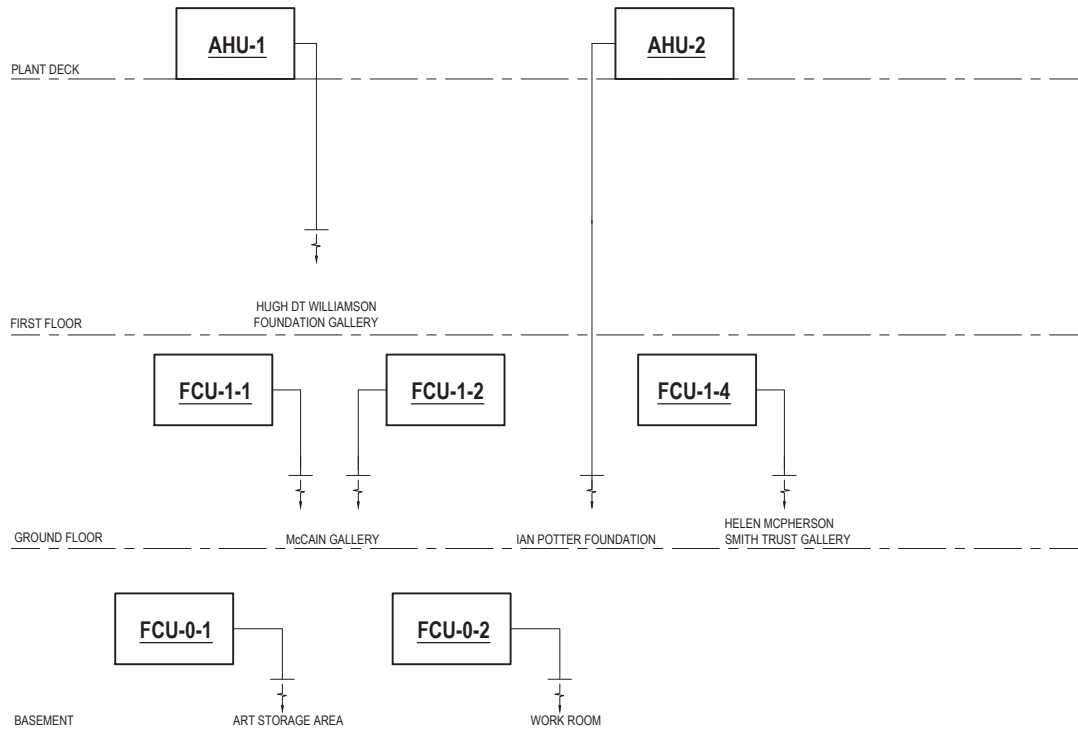
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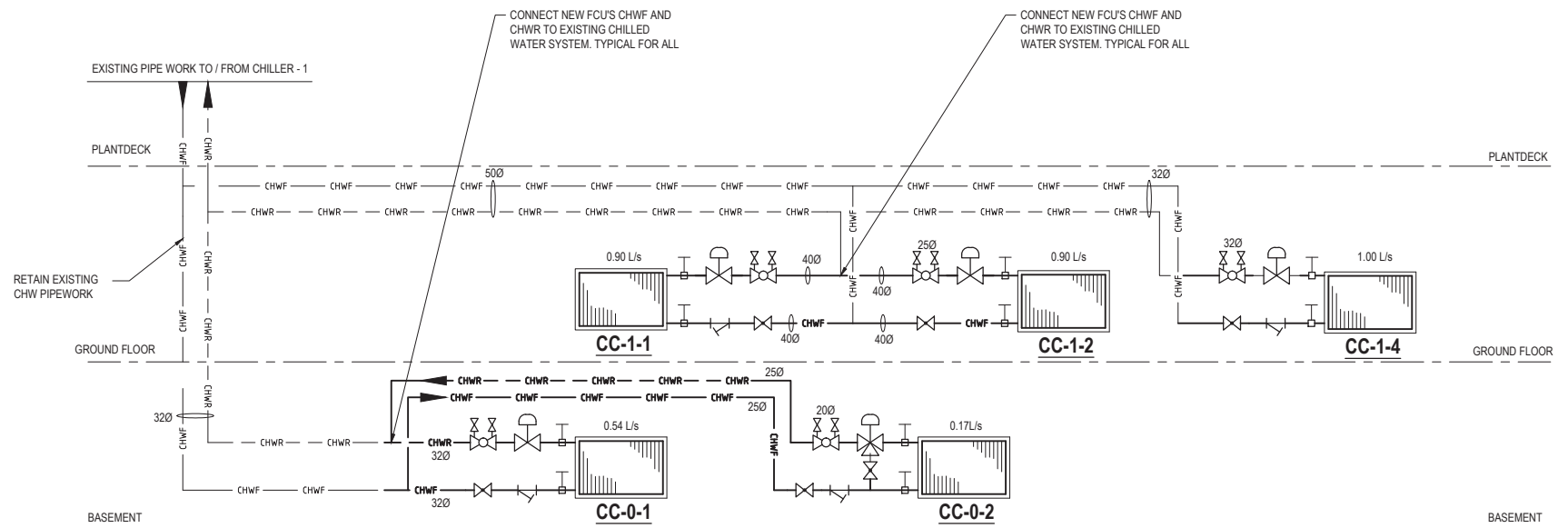
DESIGNED T.C-LOPEZ	DRAWN K.SCOTT	PROJECT LEADER T.C-LOPEZ	TENDER NOT FOR CONSTRUCTION		
SCALE @ A1 N.T.S	COMMENCED DATE SEP 2024	SHEET NUMBER 4 of 16			
			PROJECT NUMBER 4797	DRAWING NUMBER M004	REVISION TD-A



EXISTING CH-1 CHILLED WATER PIPING SCHEMATIC



AREAS SERVED BY PROPOSED REPLACEMENT FCU'S



PROPOSED CH-1 CHILLED WATER PIPING SCHEMATIC

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ART GALLERY OF BALLARAT



PROJECT
**ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350**

SERVICE
MECHANICAL SERVICES

TITLE
**EXISTING & PROPOSED CH-1 CHILLED
WATER PIPING SCHEMATIC**

DESIGNED
T.C-LOPEZ

DRAWN
K.SCOTT

PROJECT LEADER
T.C-LOPEZ

SCALE @ A1
N.T.S

COMMENCED DATE
SEP 2024

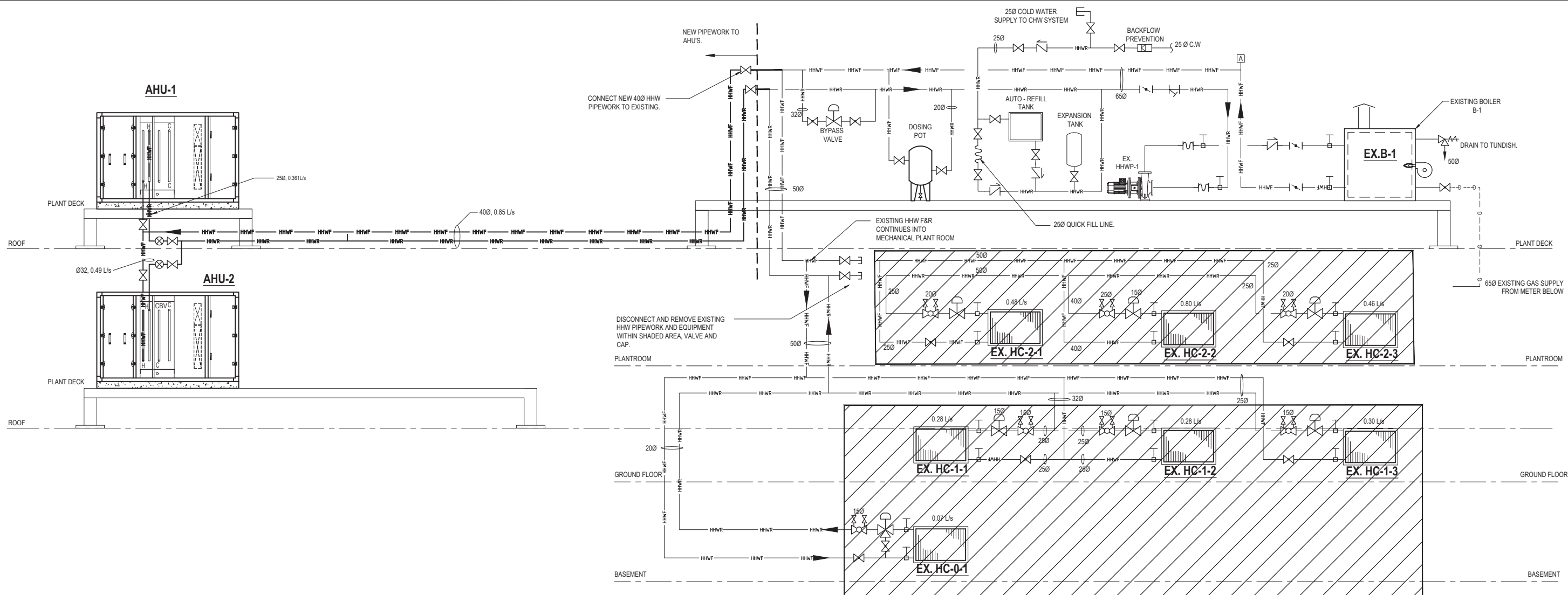
SHEET NUMBER
5 of 16

**TENDER
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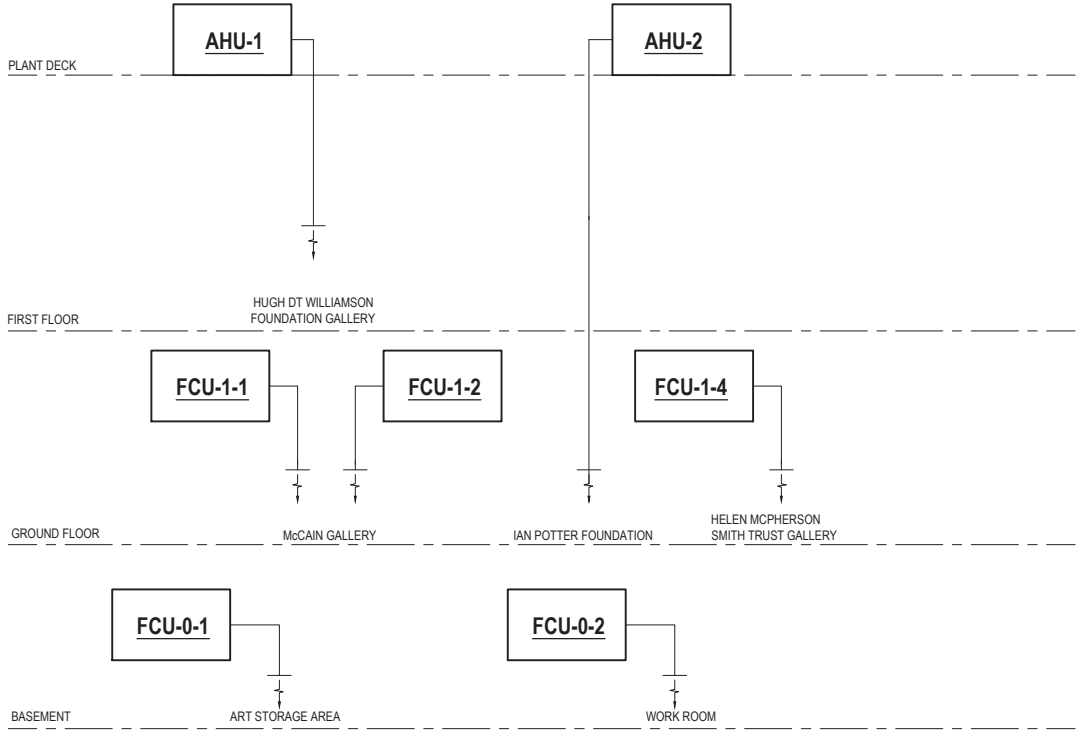
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4797

DRAWING NUMBER
M005

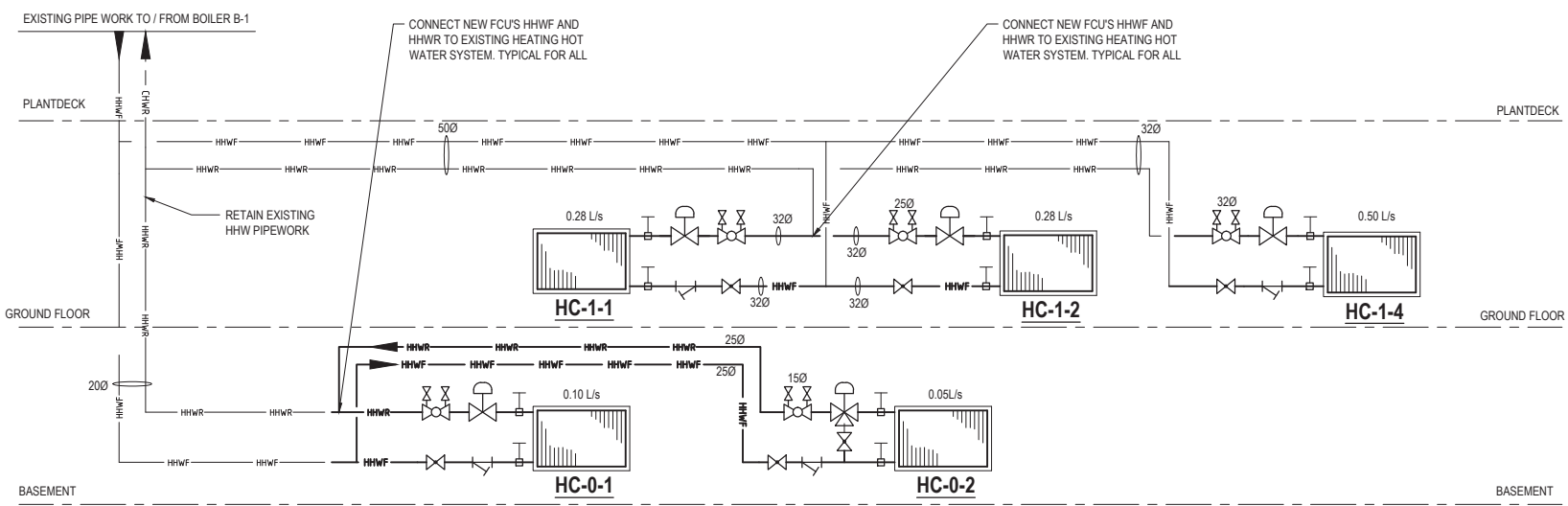
REVISION
TD-A



EXISTING B-1 HEATING HOT WATER PIPING SCHEMATIC



AREAS SERVED BY PROPOSED REPLACEMENT FCU'S



PROPOSED B-1 HEATING HOT WATER WATER PIPING SCHEMATIC

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ART GALLERY OF BALLARAT

ARCHITECT
K20 ARCHITECTURE

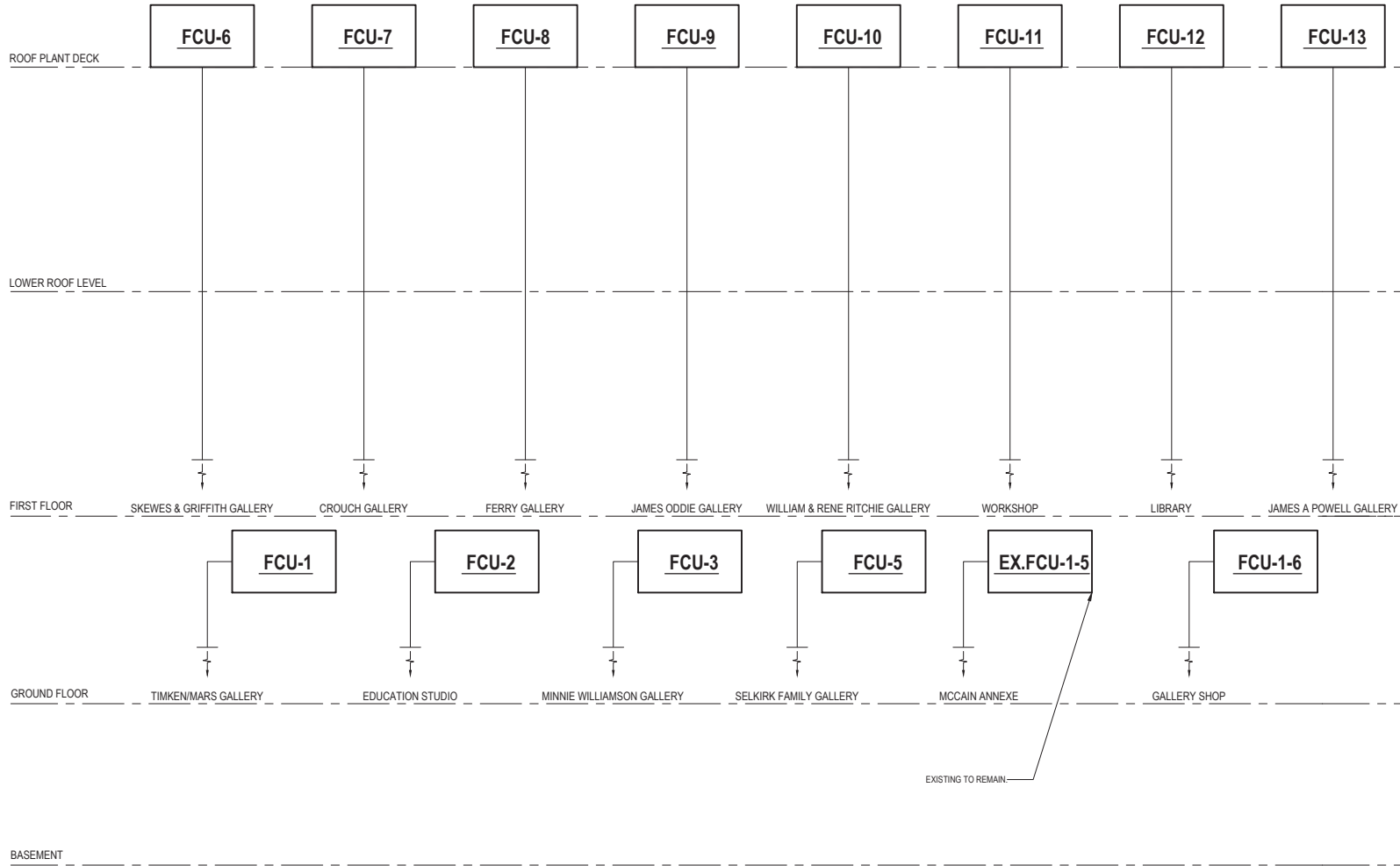
PROJECT
**ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350**

SERVICE
MECHANICAL SERVICES
TITLE
**EXISTING & PROPOSED B-1 HEATING HOT
WATER PIPING SCHEMATIC**

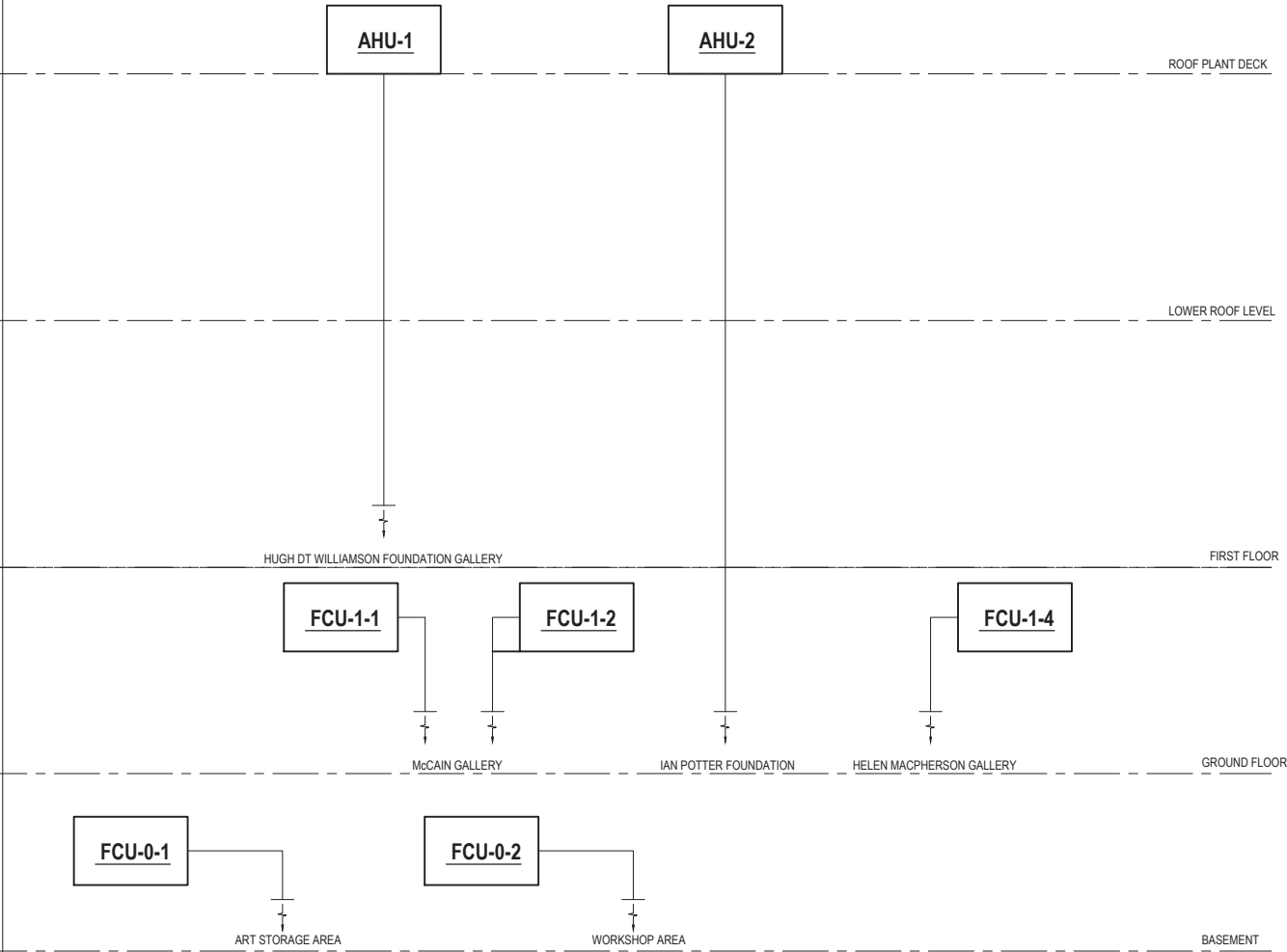
DESIGNED T.C-LOPEZ	DRAWN K.SCOTT	PROJECT LEADER T.C-LOPEZ
SCALE @ A1 N.T.S	COMMENCED DATE SEP 2024	SHEET NUMBER 6 of 16

TENDER NOT FOR CONSTRUCTION		
PROJECT NUMBER	DRAWING NUMBER	REVISION
4797	M006	TD-A

AC UNITS SERVED BY BOILER AND CHILLER (B-2 & CH-2) - OLD CHW PLANT



AC UNITS SERVED BY BOILER AND CHILLER (B-1 & CH-1) - ROOF CHW PLANT



CHILLER - 2 AND BOILER - 2 PLANT DECK

CHILLER - 1 AND BOILER - 1 PLANT DECK



REV.	DATE	DESCRIPTION	INITIAL
DD-A	30.06.2023	DESIGN DEVELOPMENT ISSUE	T.B.R.
DD-B	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K.
TD-A	22.04.2025	TENDER ISSUE	O.K.
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CLIENT
ART GALLERY OF BALLARAT

ARCHITECT

K20 ARCHITECTURE

 k20 Architecture

PROJECT
ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350

SERVICE

MECHANICAL SERVICES

TITLE

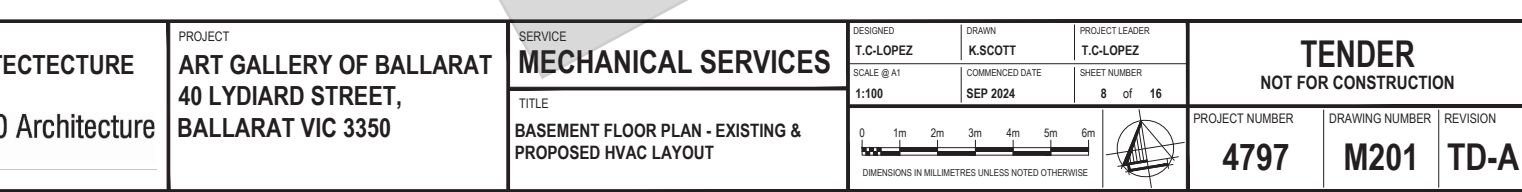
PROPOSED CHILLER & BOILER AC CONNECTIONS

DESIGNED T.C-LOPEZ	DRAWN K.SCOTT	PROJECT LEADER T.C-LOPEZ
SCALE @ A1 N.T.S	COMMENCED DATE SEP 2024	SHEET NUMBER 7 of 16

TENDER NOT FOR CONSTRUCTION		
PROJECT NUMBER 4797	DRAWING NUMBER M007	REVISION TD-A

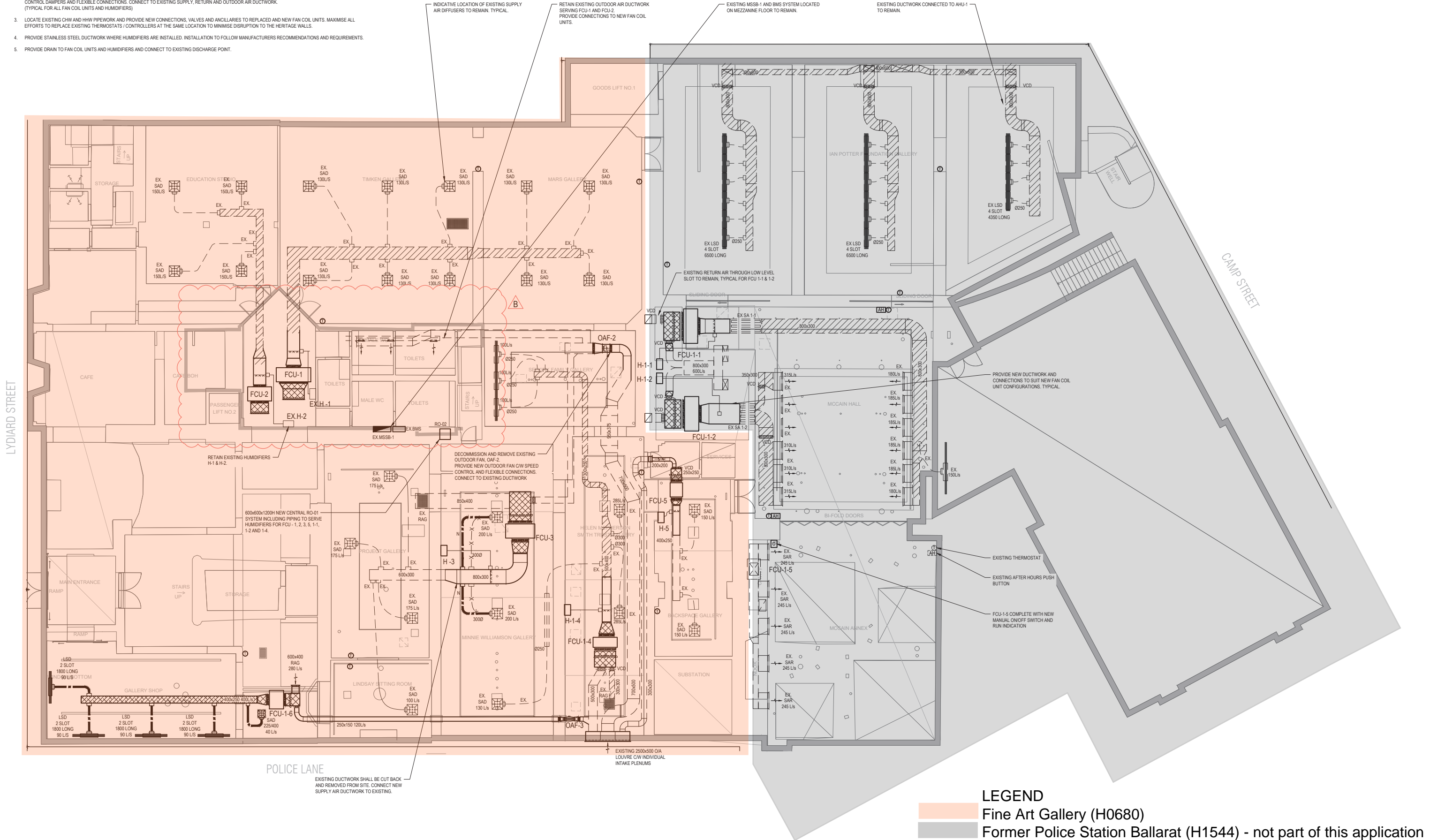
Fine Art Gallery (H0680)

Former Police Station Ballarat (H1544) - not part of this application



NOTES

- DECOMMISSION AND REMOVE FROM SITE EXISTING FAN COIL UNITS AND HUMIDIFIERS LOCATED WITHIN CEILING SPACE. CAP AND VALVE EXISTING CHW & HHW PIPE WORK FOR CONNECTION OF NEW UNITS. CUT BACK AND REMOVE EXISTING DUCTWORK TO SUIT. (TYPICAL FOR ALL EXISTING FAN COIL UNITS AND HUMIDIFIERS EXCLUDING EXISTING H-1 & H-2 UNITS TO REMAIN)
- PROVIDE NEW FAN COIL UNITS AND HUMIDIFIERS COMPLETE WITH POWER & CONTROLS AND SUPPLY AIR DUCTWORK, PLENUM, FILTERS, INSULATION, VOLUME CONTROL DAMPERS AND FLEXIBLE CONNECTIONS. CONNECT TO EXISTING SUPPLY, RETURN AND OUTDOOR AIR DUCTWORK. (TYPICAL FOR ALL FAN COIL UNITS AND HUMIDIFIERS)
- LOCATE EXISTING CHW AND HHW PIPEWORK AND PROVIDE NEW CONNECTIONS, VALVES AND ANCILLARIES TO BE REPLACED AND NEW FAN COIL UNITS. MAXIMISE ALL EFFORTS TO REPLACE EXISTING THERMOSTATS / CONTROLLERS AT THE SAME LOCATION TO MINIMISE DISRUPTION TO THE HERITAGE WALLS.
- PROVIDE STAINLESS STEEL DUCTWORK WHERE HUMIDIFIERS ARE INSTALLED. INSTALLATION TO FOLLOW MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
- PROVIDE DRAIN TO FAN COIL UNITS AND HUMIDIFIERS AND CONNECT TO EXISTING DISCHARGE POINT.



LEGEND

- Fine Art Gallery (H0680)
- Former Police Station Ballarat (H1544) - not part of this application

REV.	DATE	DESCRIPTION	INITIAL
TD-A	22.04.2025	TENDER ISSUE	O.K.
TD-B	29.04.2025	TENDER ISSUE	O.K.
DD-B	21.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-C	28.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-D	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K.

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CLIENT

ART GALLERY OF BALLARAT

ARCHITECT

K20 ARCHITECTURE

 k20 Architecture

PROJECT

ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350

SERVICE

MECHANICAL SERVICES

TITLE

GROUND FLOOR PLAN - EXISTING & PROPOSED HVAC LAYOUT

DESIGNED T.C-LOPEZ	DRAWN K.SCOTT	PROJECT LEADER T.C-LOPEZ
SCALE @ A1 1:100	COMMENCED DATE SEP 2024	SHEET NUMBER 9 of 16

0 1m 2m 3m 4m 5m 6m

DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE

TENDER
NOT FOR CONSTRUCTION

PROJECT NUMBER 4797	DRAWING NUMBER M202	REVISION TD-B
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NOTES

- DECOMMISSION AND REMOVE FROM SITE EXISTING FAN COIL UNITS AND HUMIDIFIERS LOCATED WITHIN CEILING SPACE. CAP AND VALVE EXISTING CHW & HHW PIPE WORK FOR CONNECTION OF NEW UNITS. CUT BACK AND REMOVE EXISTING DUCTWORK TO SUIT.
- PROVIDE NEW FAN COIL UNITS AND HUMIDIFIERS COMPLETE WITH POWER & CONTROLS AND SUPPLY AIR DUCTWORK, PLENUM, FILTERS, INSULATION, VOLUME CONTROL DAMPERS AND FLEXIBLE CONNECTIONS. CONNECT TO EXISTING SUPPLY, RETURN AND OUTDOOR AIR DUCTWORK. (TYPICAL FOR ALL FAN COIL UNITS AND HUMIDIFIERS)
- LOCATE EXISTING CHW AND HHW PIPEWORK, AND PROVIDE NEW CONNECTIONS, VALVES AND ANCILLARIES TO REPLACED AND NEW FAN COIL UNITS. MAXIMISE ALL EFFORTS TO REPLACE EXISTING THERMOSTATS/CONTROLLERS AT THE SAME LOCATION TO MINIMISE DISRUPTION TO THE HERITAGE WALLS.
- REFER M207 FOR DUCTWORK CONTINUATION
- PROVIDE STAINLESS STEEL DUCTWORK WHERE HUMIDIFIERS ARE INSTALLED. INSTALLATION TO FOLLOW MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
- PROVIDE DRAIN TO FAN COIL UNITS AND HUMIDIFIERS AND CONNECT TO EXISTING DISCHARGE POINT.

EXISTING FAN COIL UNIT TO BE DEMOLISHED AND REMOVED FROM SITE. REMOVE ALL ASSOCIATED DUCTWORK, HUMIDIFICATION, SUPPORTS AND FITTINGS. ELECTRICAL WIRING AND CONTROLS TO BE REMOVED BACK TO EXISTING MISS-1. EXISTING DIFFUSERS, REGISTERS AND GRILLES TO REMAIN.

GOODS LIFT NO.1

REFER TO M205 FOR MECHANICAL LAYOUT

EXISTING OUTSIDE AIR INTAKE FOR FCU 1-1 & 1-2 TO REMAIN. 600L/s

TYPICAL: EXISTING THERMOSTAT TO BE REPLACED WITH NEW.

LEGEND

Fine Art Gallery (H0680)

Former Police Station Ballarat (H1544) - not part of this application

LYDIARD STREET

REV.	DATE	DESCRIPTION	INITIAL
TD-A	22.04.2025	TENDER ISSUE	O.K.
DD-A	07.02.2025	DESIGN DEVELOPMENT ISSUE	T.B.R.
DD-B	21.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-C	28.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-D	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K.

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CLIENT
ART GALLERY OF BALLARAT


ARCHITECT
K20 ARCHITECTURE

 k20 Architecture

PROJECT
**ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350**

SERVICE
MECHANICAL SERVICES

TITLE
**FIRST FLOOR PLAN - EXISTING &
PROPOSED HVAC LAYOUT**

DESIGNED T.C-LOPEZ	DRAWN K.SCOTT	PROJECT LEADER T.C-LOPEZ
SCALE @ A1 1:100	COMMENCED DATE SEP 2024	SHEET NUMBER 10 of 16
 DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE		

TENDER NOT FOR CONSTRUCTION		
PROJECT NUMBER 4797	DRAWING NUMBER M203	REVISION TD-A

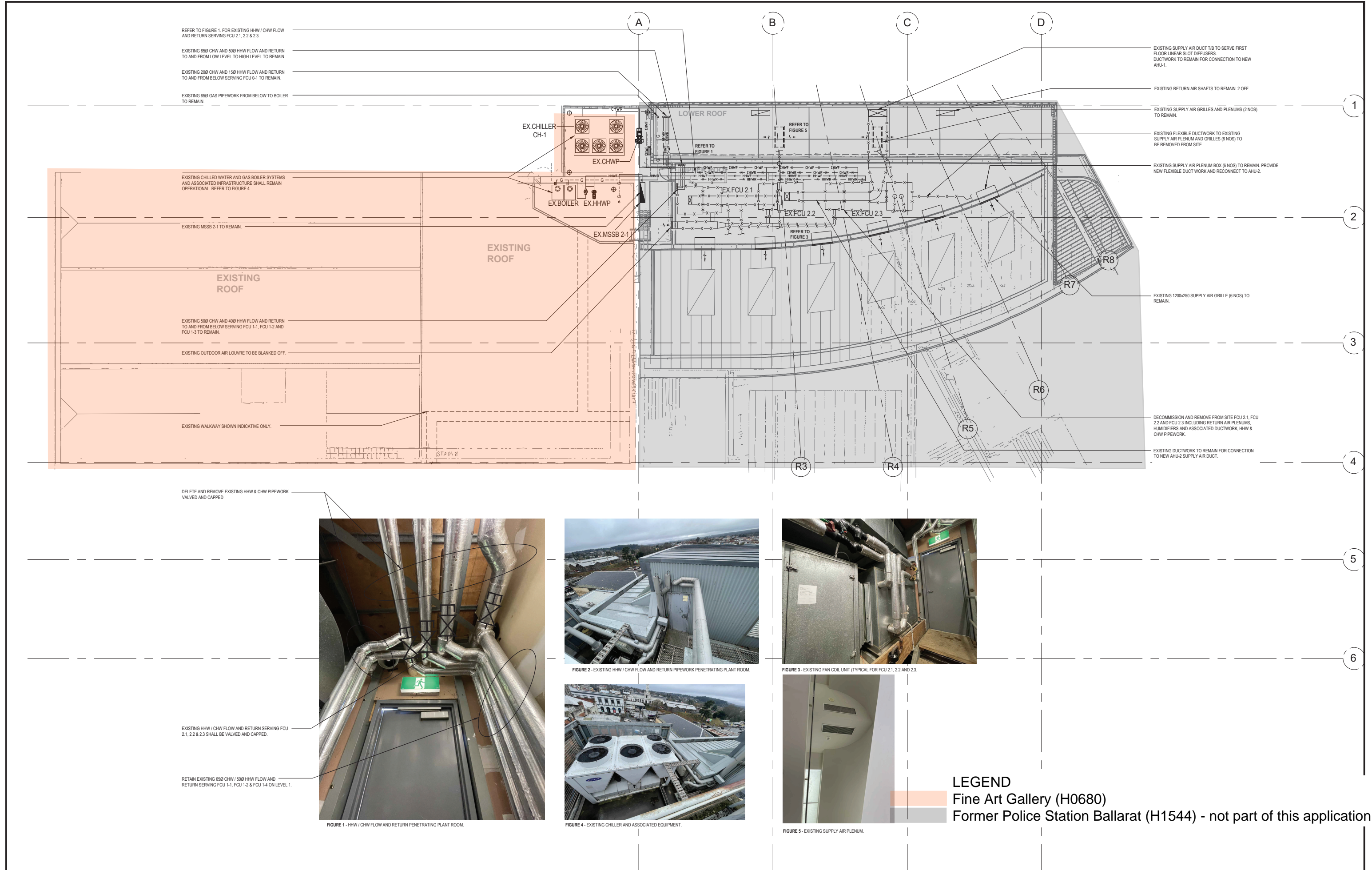


FIGURE 1 - HHW / CHW FLOW AND RETURN PENETRATING PLANT ROOM.



FIGURE 2 - EXISTING HHW / CHW FLOW AND RETURN PIPEWORK PENETRATING PLANT ROOM.



FIGURE 4 - EXISTING CHILLER AND ASSOCIATED EQUIPMENT.



FIGURE 3 - EXISTING FAN COIL UNIT (TYPICAL FOR FCU 2.1, 2.2 AND 2.3).



FIGURE 5 - EXISTING SUPPLY AIR PLENUM.

LEGEND

Fine Art Gallery (H0680)

Former Police Station Ballarat (H1544) - not part of this application

REV.	DATE	DESCRIPTION	INITIAL
TD-A	22.04.2025	TENDER ISSUE	O.K.
DD-A	07.02.2025	DESIGN DEVELOPMENT ISSUE	T.B.R.
DD-B	21.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-C	28.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-D	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K.

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CLIENT
ART GALLERY OF BALLARAT

ARCHITECT
K20 ARCHITECTURE
 k20 Architecture


PROJECT
ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350

SERVICE
MECHANICAL SERVICES
TITLE
ROOF PLAN - FCU 1.2, 2.2, 2.3 & PIPEWORK
EXISTING & DEMOLITION

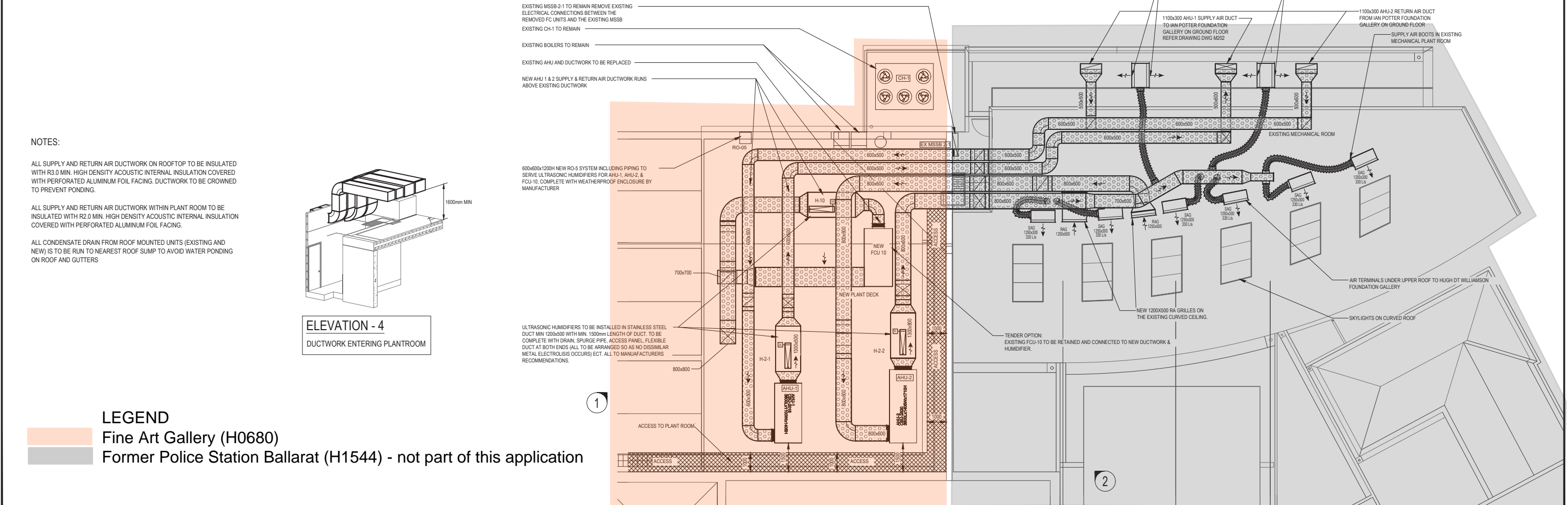
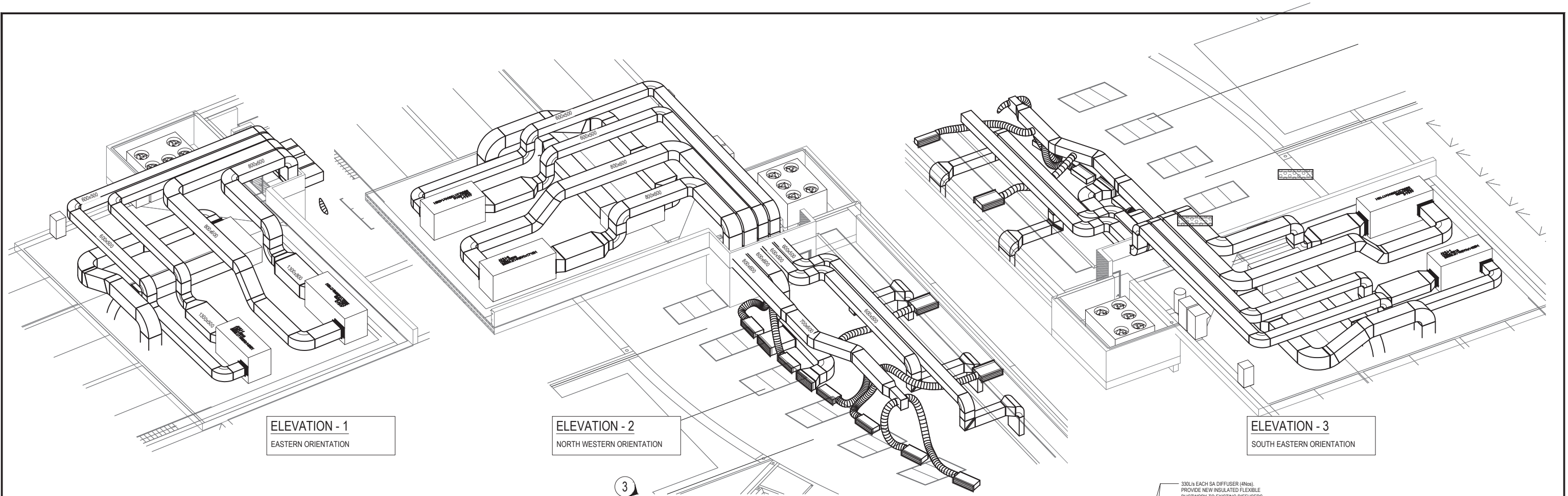
DESIGNED	DRAWN	PROJECT LEADER
T.C-LOPEZ	K.SCOTT	T.C-LOPEZ
SCALE @ A1	COMMENCED DATE	SHEET NUMBER
1:100	SEP 2024	11 of 16

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DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE



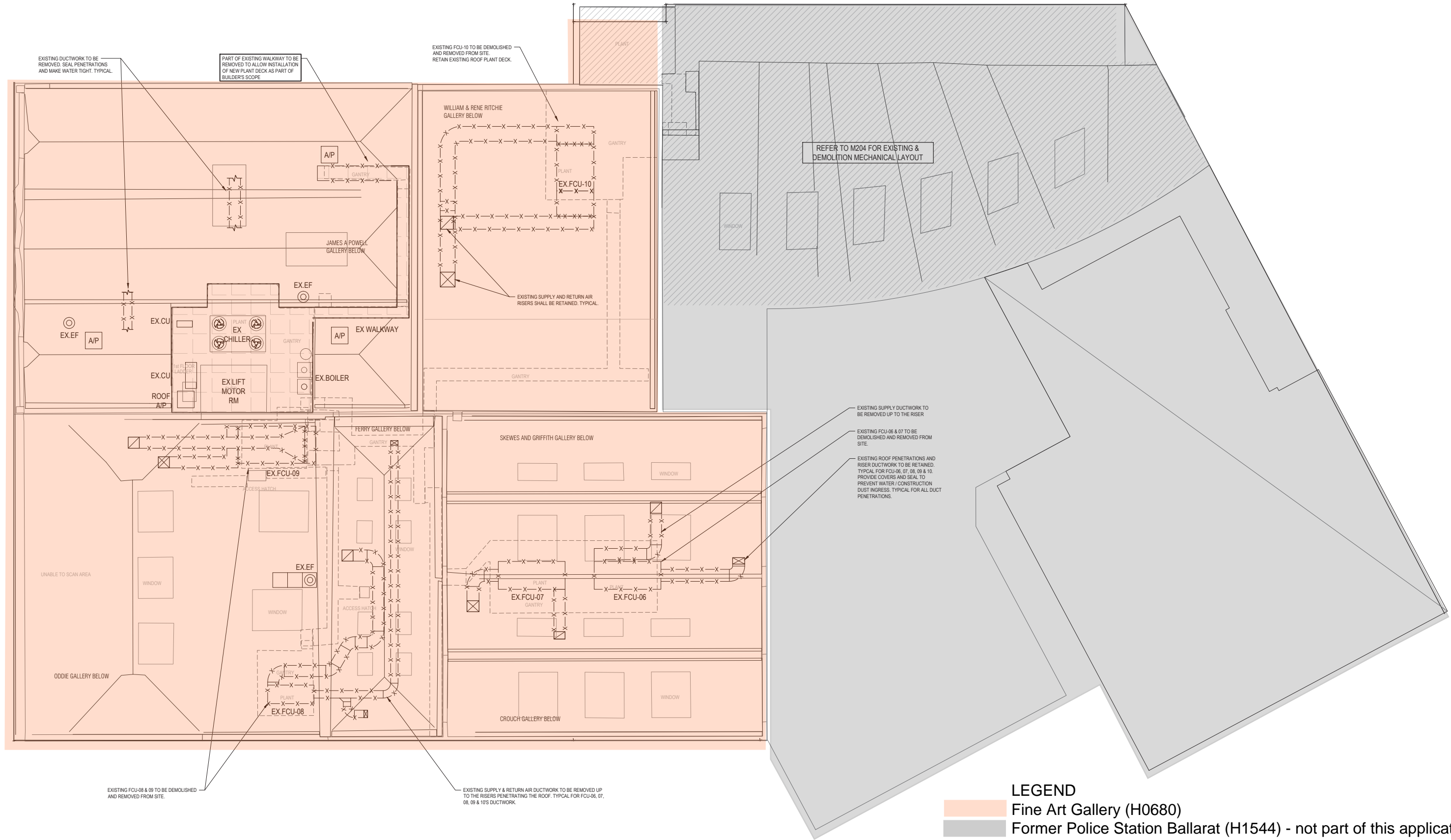
TENDER NOT FOR CONSTRUCTION		
PROJECT NUMBER	DRAWING NUMBER	REVISION
4797	M204	TD-A



REV. DATE DESCRIPTION INITIAL			CLIENT		ARCHITECT		PROJECT		SERVICE		DESIGNED		DRAWN		PROJECT LEADER		TENDER NOT FOR CONSTRUCTION		
TD-A 22.04.2025 TENDER ISSUE O.K.			ART GALLERY OF BALLARAT		 K20 ARCHITECTURE		ART GALLERY OF BALLARAT 40 LYDIARD STREET, BALLARAT VIC 3350		MECHANICAL SERVICES		T.C-LOPEZ		K.SCOTT		T.C-LOPEZ				
DD-A 07.02.2025 DESIGN DEVELOPMENT ISSUE T.B.R.											SCALE @ A1		COMMENCED DATE		SHEET NUMBER				
DD-B 21.02.2025 DESIGN DEVELOPMENT ISSUE K.S.											1:100		SEP 2024		12 of 16				
DD-C 28.02.2025 DESIGN DEVELOPMENT ISSUE K.S.											TITLE		ROOF PLAN - PROPOSED AHU 1 & 2 AND DUCTWORK LAYOUT		 DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE				
DD-D 31.03.2025 DESIGN DEVELOPMENT ISSUE O.K.																			
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											4797		M205		TD-A				

NOTES

1. DECOMMISSION AND REMOVE FROM SITE EXISTING FAN COIL UNITS AND HUMIDIFIERS LOCATED ON THE ROOF.
CAP AND VALVE EXISTING CHW & HHW PIPE WORK FOR CONNECTION OF NEW UNITS.
(TYPICAL FOR ALL EXISTING FAN COIL UNITS FCU-06, 07, 08, 09 & 10 AND HUMIDIFIERS)
2. EXISTING SUPPLY AND RETURN AIR DUCTWORK TO BE REMOVED UP TO EXISTING ROOF PENETRATIONS.
3. EXISTING DUCTWORK PENETRATIONS SHALL BE PROVIDED WITH TEMPORARY WATER AND DUST PROOFING UNTIL NEW DUCTWORK IS INSTALLED.
4. EXISTING EQUIPMENT TO REMAIN UNALTERED AND OPERATIONAL UNLESS OTHERWISE NOTED.



REV.	DATE	DESCRIPTION	INITIAL
TD-A	22.04.2025	TENDER ISSUE	O.K.
DD-A	07.02.2025	DESIGN DEVELOPMENT ISSUE	T.B.R.
DD-B	21.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-C	28.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-D	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K.

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CLIENT
**ART GALLERY OF
BALLARAT**

ARCHITECT
K20 ARCHITECTURE
 **k20 Architecture**


PROJECT
**ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350**

SERVICE
MECHANICAL SERVICES
TITLE
**ROOF PLAN 2 - EXISTING & DEMOLITION
HVAC LAYOUT**

DESIGNED	DRAWN	PROJECT LEADER
T.C-LOPEZ	K.SCOTT	T.C-LOPEZ
SCALE @ A1	COMMENCED DATE	SHEET NUMBER
1:100	SEP 2024	13 of 16

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DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE

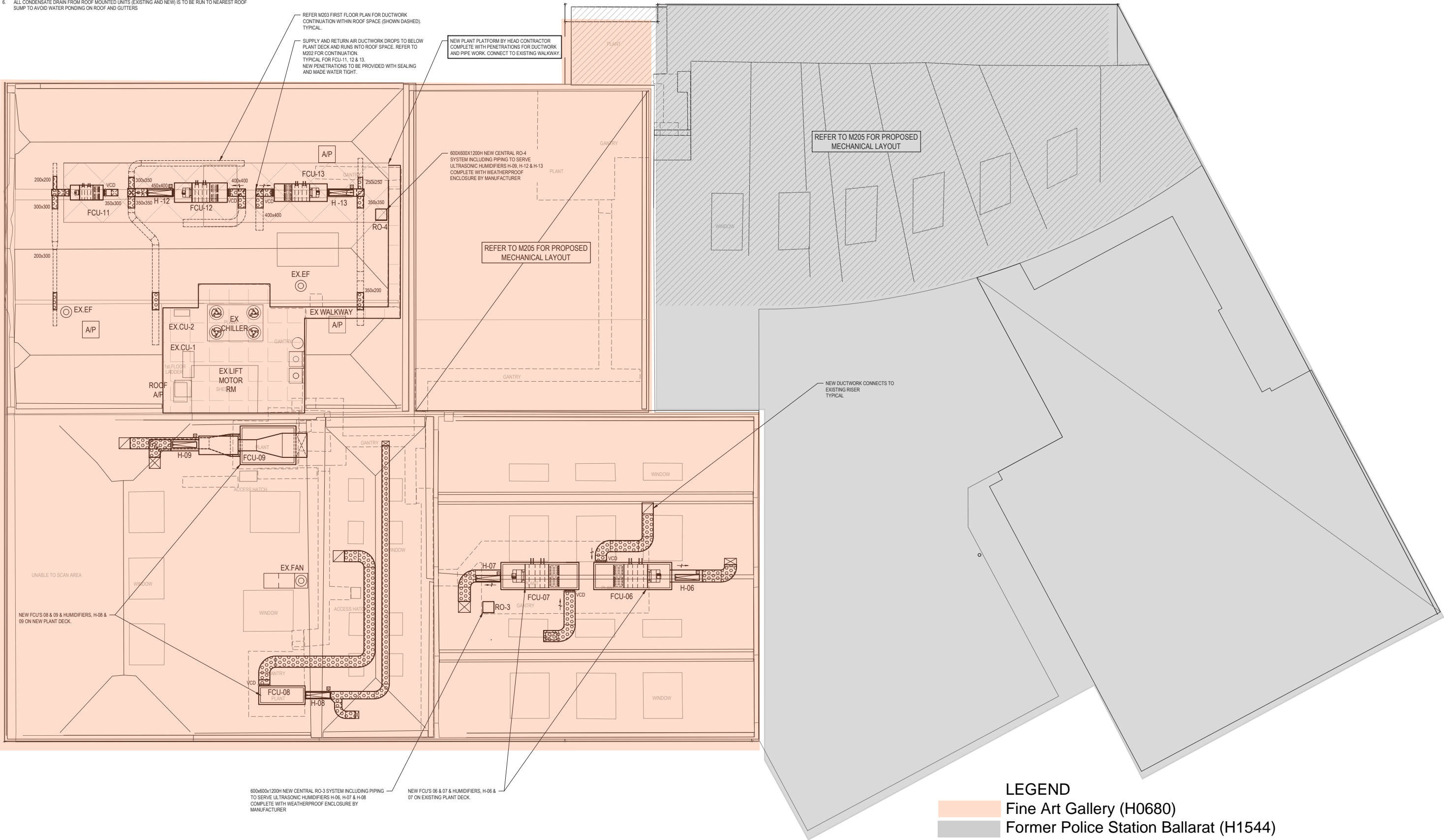


**TENDER
NOT FOR CONSTRUCTION**

PROJECT NUMBER	DRAWING NUMBER	REVISION
4797	M206	TD-A

NOTES

1. PROVIDE ROOF MOUNTED FAN COIL UNITS FCU-6, 7, 8, 9, 12 & 13 AND HUMIDIFIERS AS PER MECHANICAL SCHEDULE COMPLETE WITH POWER & CONTROLS AND PLENUMS, DAMPERS, VALVES, FILTERS, INSULATION AND PIPE WORK.
2. PROVIDE NEW INSULATED SUPPLY AND RETURN AIR DUCTWORK AND CONNECT TO EXISTING DUCTWORK PENETRATIONS. TYPICAL FOR FCU- 6, 7, 8 & 9.
3. LOCATE EXISTING INSULATED CHW & HHW PIPE WORK AND PROVIDE NEW TO FCUS AND CONNECT TO EXISTING. MAXIMISE ALL EFFORTS TO REPLACE EXISTING THERMOSTATS/CONTROLLERS AT THE SAME LOCATION TO MINIMISE DISRUPTION TO THE HERITAGE WALLS.
4. PROVIDE EXTENSION TO EXISTING COLD WATER PIPE WORK AND CONNECT TO NEW HUMIDIFIERS.
5. PROVIDE STAINLESS STEEL DUCTWORK WHERE HUMIDIFIERS ARE INSTALLED. INSTALLATION TO FOLLOW MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
6. ALL CONDENSATE DRAIN FROM ROOF MOUNTED UNITS (EXISTING AND NEW) IS TO BE RUN TO NEAREST ROOF SUMP TO AVOID WATER PONDING ON ROOF AND GUTTERS



LEGEND

Fine Art Gallery (H0680)

Former Police Station Ballarat (H1544)

REV.	DATE	DESCRIPTION	INITIAL
TD-A	22.04.2025	TENDER ISSUE	O.K
DD-B	21.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-C	28.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-D	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K


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CLIENT
ART GALLERY OF
BALLARAT

ARCHITECT
K20 ARCHITECTURE
 k20 Architecture

PROJECT
ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350

SERVICE
MECHANICAL SERVICES
TITLE
ROOF PLAN 2 - PROPOSED HVAC LAYOUT

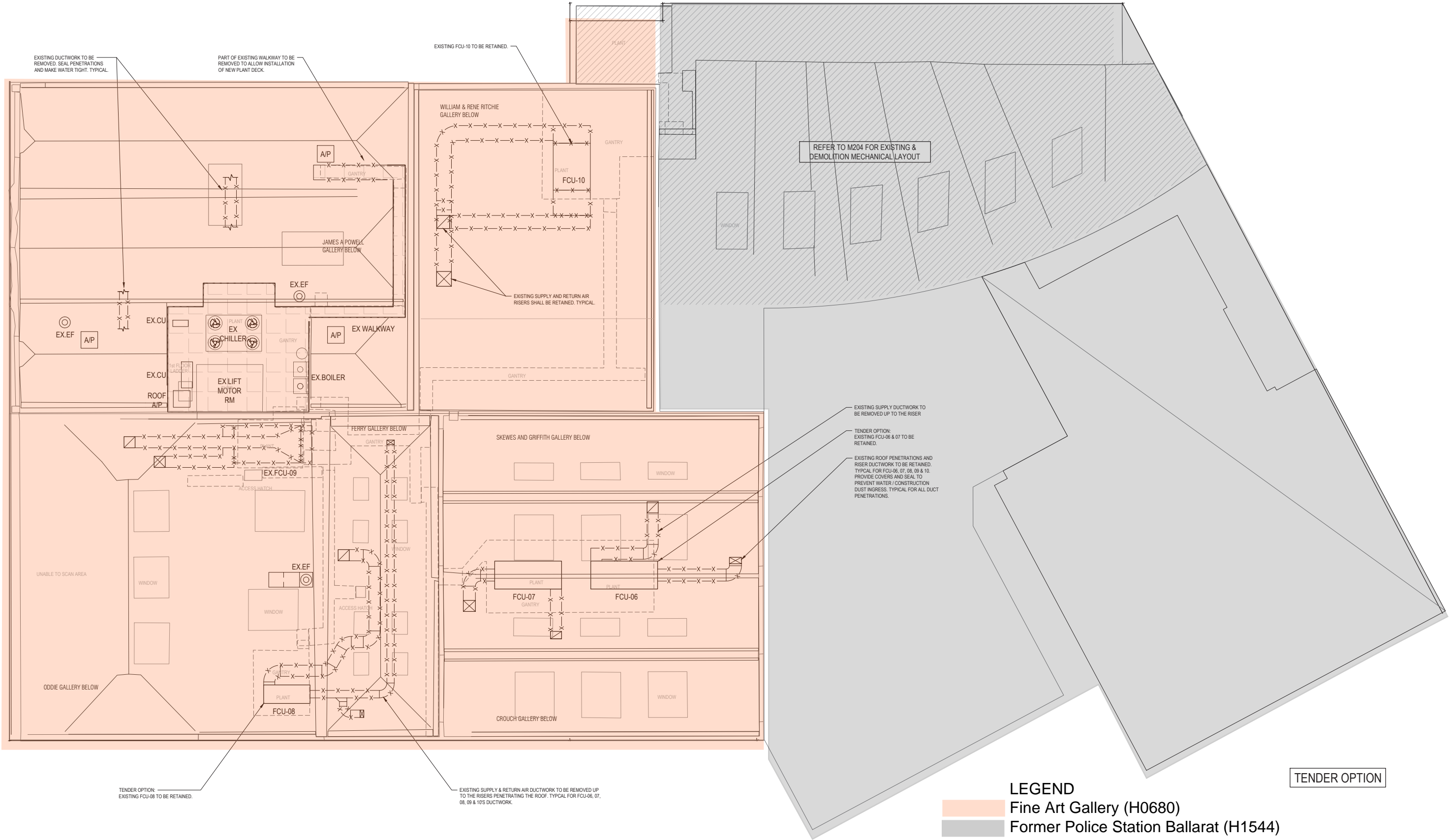
DESIGNED	DRAWN	PROJECT LEADER
T.C-LOPEZ	K.SCOTT	T.C-LOPEZ
SCALE @ A1	COMMENCED DATE	SHEET NUMBER
1:100	SEP 2024	14 of 16
 DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE		

TENDER
NOT FOR CONSTRUCTION

PROJECT NUMBER	DRAWING NUMBER	REVISION
4797	M207	TD-A

NOTES

- TENDER OPTION: EXISTING FAN COIL UNITS FCU-06, 07, 08, & 10 TO REMAIN
- EXISTING SUPPLY AND RETURN AIR DUCTWORK TO BE REMOVED UP TO EXISTING ROOF PENETRATIONS.
- EXISTING DUCTWORK PENETRATIONS SHALL BE PROVIDED WITH TEMPORARY WATER AND DUST PROOFING UNTIL NEW DUCTWORK IS INSTALLED.
- EXISTING EQUIPMENT TO REMAIN UNALTERED AND OPERATIONAL UNLESS OTHERWISE NOTED.



REV.	DATE	DESCRIPTION	INITIAL
DD-A	28.02.2025	DESIGN DEVELOPMENT ISSUE	K.S.
DD-B	31.03.2025	DESIGN DEVELOPMENT ISSUE	O.K
TD-A	22.04.2025	TENDER ISSUE	O.K
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CLIENT
ART GALLERY OF
BALLARAT

ARCHITECT
K20 ARCHITECTURE
k20 Architecture

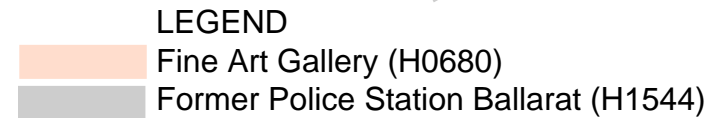
PROJECT
ART GALLERY OF BALLARAT
40 LYDIARD STREET,
BALLARAT VIC 3350

SERVICE
MECHANICAL SERVICES
TITLE
TENDER OPTION - ROOF PLAN 2 - EXISTING
& DEMO HVAC LAYOUT

DESIGNED	DRAWN	PROJECT LEADER
T.C-LOPEZ	K.SCOTT	T.C-LOPEZ
SCALE @ A1	COMMENCED DATE	SHEET NUMBER
1:100	SEP 2024	15 of 16
0 1m 2m 3m 4m 5m 6m		
DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE		

TENDER NOT FOR CONSTRUCTION		
PROJECT NUMBER	DRAWING NUMBER	REVISION
4797	M306	TD-A

1. EXISTING ROOF MOUNTED FAN COIL UNITS FCU-06, 07, 08 & 10 TO BE RETAINED. NEW HUMIDIFIERS & DUCTWORK COMPLETE WITH PLenums, DAMPERS, VALVES, FILTERS, INSULATION AND PIPE WORK TO BE PROVIDED.
2. PROVIDE NEW INSULATED SUPPLY AND RETURN AIR DUCTWORK AND CONNECT TO EXISTING DUCTWORK PENETRATIONS. TYPICAL FOR FCU-7, 8 & 9.
3. PROVIDE EXTENSION TO EXISTING COLD WATER PIPE WORK AND CONNECT TO NEW HUMIDIFIERS.
4. PROVIDE STAINLESS STEEL DUCTWORK WHERE HUMIDIFIERS ARE INSTALLED. INSTALLATION TO FOLLOW MANUFACTURERS RECOMMENDATIONS AND REQUIREMENTS.
5. ALL CONDENSATE DRAIN FROM ROOF MOUNTED UNITS EXISTING AND NEW IS TO BE RUN TO NEAREST ROOF SUMP TO AVOID WATER PONDING ON ROOF AND GUTTERS.



4797_M307_TENDER OPTION ROOF PLAN 2 - PROPOSED HVAC LAYOUT.dwg 22 Apr 2025 3:52pm