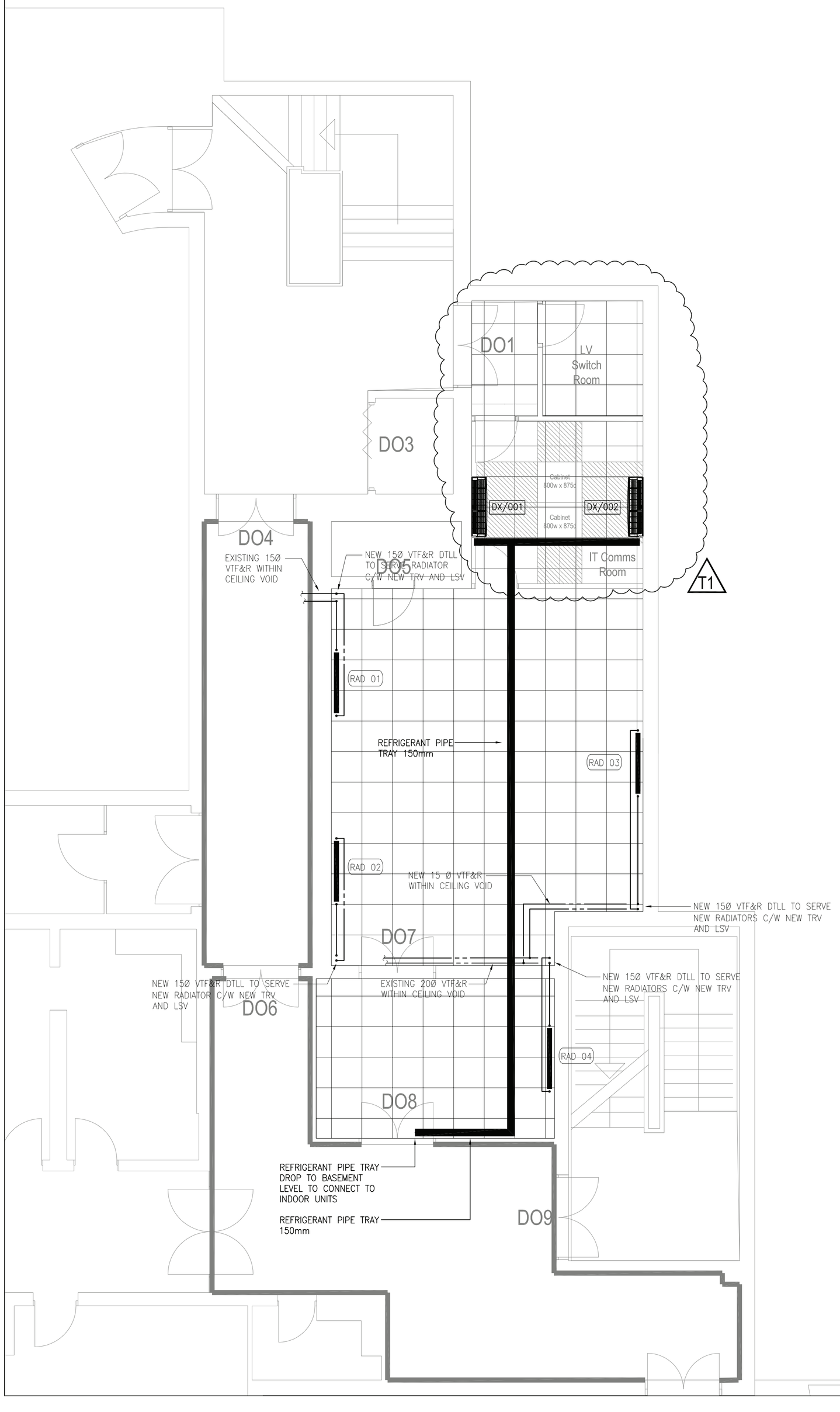


LTHW SERVICES NOTES

SUPPORTS
THE CONTRACTOR IS TO PROVIDE ALL BRACKETS AND SUPPORTS THAT ARE REQUIRED FOR THE INSTALLATION.

INSULATION
ALL NEW AND EXISTING PIPEWORK SHALL BE INSULATED WITH REINFORCED ALUMINIUM FOIL FACED PHENOLIC FOAM WITH ALUMINIUM TAPED JOINTS
PIPES TO BE INSULATED WITH THE FOLLOWING THICKNESSES.

- 15–20mm WITH 15mm THICK INSULATION
- 25–50mm WITH 20mm THICK INSULATION
- 65–150mm WITH 25mm THICK INSULATION

THE INSULATED PIPEWORK SHALL BE IDENTIFIED BY MEANS OF INDENTIFICATION BANDING TO COLOURS AS INDICATED IN BS1710 WITH AN EXPLANITARY TEXT UPON IT, DETAILING THE CONTENTS OF THE PIPE AND BANDS INDICATING DIRECTION OF FLOW.

ALL VALVES, UNIONS AND FLANGES SHALL BE INSULATED WITH A JACKET COMPLETE WITH VELCRO AND DRAW STRING FASTENINGS. ALL JACKETS ARE TO BE AS MANUFACTURED BY ISOCLAD.

PIPEWORK
ALL HEATING PIPEWORK SHALL BE INSTALLED TO THE FOLLOWING
– UP TO 50mm – MILD STEEL, BSEN 10255, HEAVY–SCREWED–UNIONS
– 65mm AND ABOVE – MILD STEEL, BSEN 10255, HEAVY–WELDED–FLANGES
WHERE PIPEWORK IS IDENTIFIED AS BEING WELDED, ALL PIPEWORK IS TO BE PREFABRICATED OFF SITE AND SUPPLIED IN MANAGABLE SIZES TO ASSIST INSTALLATION.

PIPEWORK SUPPORTS
ALL PIPEWORK SHALL BE SUPPORTED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE.

STEEL
Nominal Interval

Bore	Vert.	Horiz.
15 mm	2.4	1.8
20 mm	3.0	2.4
25 mm	3.0	2.4
32 mm	3.0	2.4
40 mm	3.7	2.4
50 mm	3.7	2.4

VALVES
ISOLATION VALVES SHALL SHALL BE PROVIDED AT CONNECTIONS TO ALL EQUIPMENT. COMMISSIONING STATIONS ARE TO BE PROVIDED AT EACH COIL AND AS IDENTIFIED ON THE SCHEMATIC LAYOUTS.

ISOLATING VALVES UP TO 50mm
GATE TYPE: GUNMETAL BODY, SOLID TAPER WEDGE, NON–RISING STEM

REGULATING VALVES UP TO 50mm
Y TYPE: BRONZE BODY CASTING, RISING STEM, DOUBLE REGULATING DEVICE, METAL TO METAL SEAT, REGULATING DISC, INDICATOR.

NON RETURN VALVES UP TO 50mm HORIZONTAL
SWING OBLIQUE: BRONZE BODY AND CAP, BRONZE DISC AND SEAT

ALL TO BS 5154, BSEN 12288

TESTING
ALL NEW INSTALLED PIPEWORK SHALL BE PROESSURE TESTED AND WITNESSED BY THE CONSULTANT BEFORE FINAL CONNECTIONS ONTO THE EQUIPMENT. THE PIPEWORK SHALL BE TESTED AT 1.5 TIMES WORKING PRESSURE.

PIPEWORK SLEEVES
WHERE PIPEWORK PASSES THROUGH WALLS AND FLOORS PIPEWORK SLEEVES SHALL BE PROVIDED WITH 15mm CLEARANCE TO ALLOW FOR STRUCTURAL MOVEMENT.

WHERE PIPES PASS THROUGH FIRE WALLS/FLOORS PROPRIETARY FIRE PROTECTIVE PENETRATION FITTING SHALL BE PROVIDED WITH A MINIMUM OF 2 HRS FIRE RATING.

LEGEND

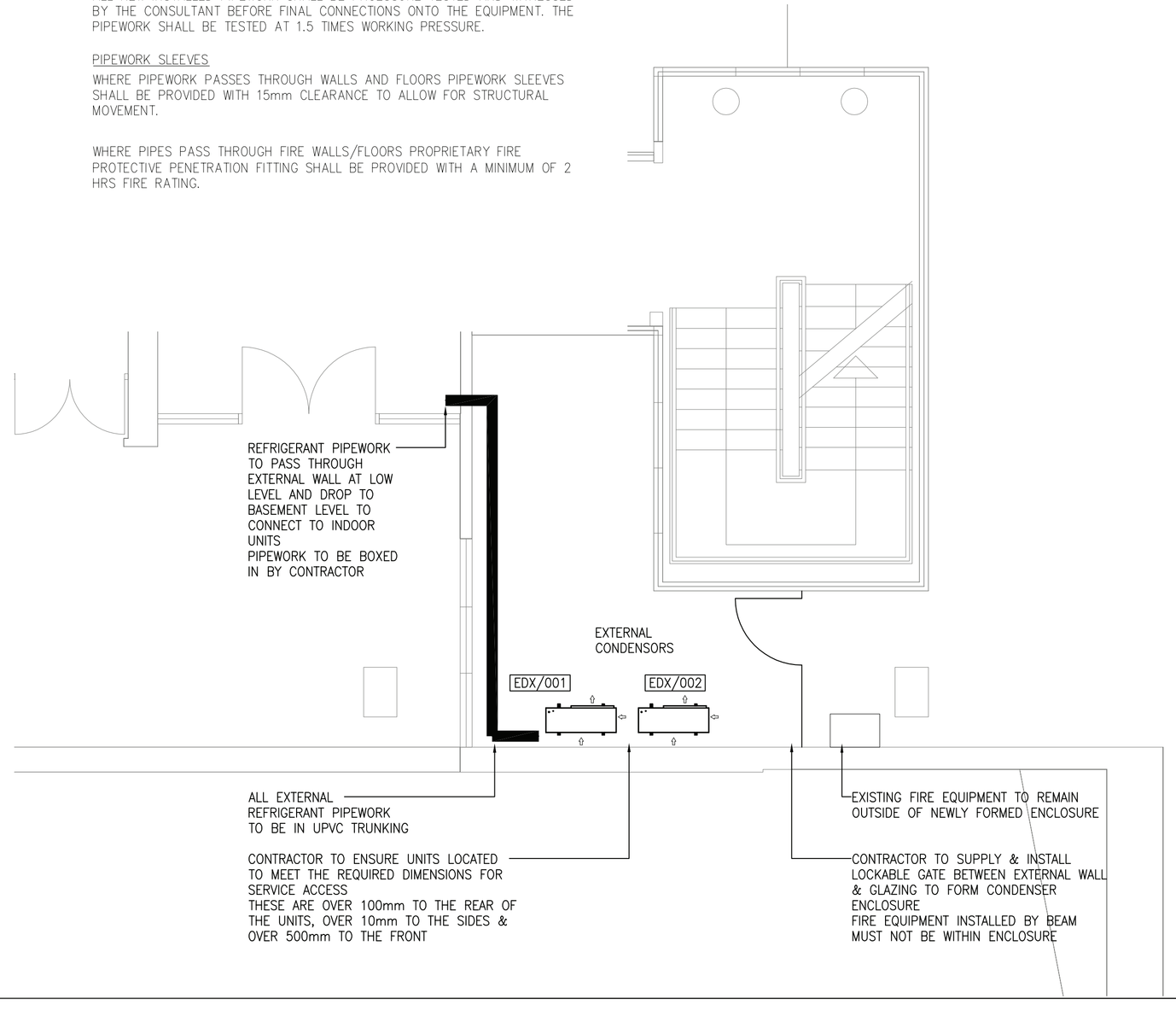
- PIPEWORK AT LOW LEVEL
- PIPEWORK AT HIGH LEVEL
- PIPEWORK WITHIN CEILING VOID
- PIPEWORK BELOW FLOOR LEVEL

VTF&R	VARIABLE TEMPERATURE FLOW & RETURN
CWS	COLD WATER SERVICE
HWSF	HOT WATER SERVICE FLOW
HWSR	HOT WATER SERVICE RETURN
L TO R	LEFT TO RIGHT
T TO B	TOP TO BOTTOM
HL	HIGH LEVEL
LL	LOW LEVEL
RFB	RISE FROM BELOW
RTA	RISE TO ABOVE
DTB	DROP TO BELOW
DFA	DROP FROM ABOVE
	ISOLATING VALVE
LSV	LOCKSHEILD VALVE
	AUTOMATIC AIR VENT
	PRESSURE TEST POINT
	UNION
DC	DRAIN OFF COCK

NOTES

1) DRAIN COCKS SHALL BE PROVIDED AT ALL LOW POINTS IN THE SYSTEM

2) AUTOMATIC AIR VENTS SHALL BE PROVIDED AT ALL HIGH POINTS IN THE SYSTEM



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NOTES

1. DO NOT SCALE FROM THIS DRAWING.
2. ALL MEASUREMENTS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
3. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATION AND ALL RELEVANT ARCHITECTURAL, ELECTRICAL, MECHANICAL AND STRUCTURAL DRAWINGS.

IN ADDITION TO THE HAZARDS/RISKS NORMALLY ASSOCIATED WITH THE TYPES OF WORK DETAILED ON THIS DRAWING, NOTE THE FOLLOWING SIGNIFICANT RESIDUAL RISKS :-

Item	Hazard	Risk
1.	MANUAL HANDLING OF MATERIALS OVER 20 kg/m WEIGHT THE CONTRACTOR SHALL ENSURE THEY ADOPT SAFE WORKING PRACTICES WHEN LIFTING HEAVY PLANT AND EQUIPMENT.	CAUTION Heavy
2.	MANUAL HANDLING OF MATERIALS UP/DOWN STAIRS THE CONTRACTOR SHALL ENSURE THEY ADOPT SAFE WORKING PRACTICES WHEN MANOEUVRING HEAVY PLANT AND EQUIPMENT AROUND THE BUILDING.	
3.	WORKING AT HEIGHT OFF ACCESS EQUIPMENT ONLY THE CORRECT ACCESS SYSTEM TO BE USED AND APPROVED BY THE UNIVERSITY OF MANCHESTER. MINIMISE THE FREQUENCY OF WORK ON THE ACCESS SYSTEMS AS MUCH AS POSSIBLE. ENSURE THAT THE WORKING AT HEIGHT REGULATIONS ARE ADHERED TO.	
4.	FIRE STOPPING OF PENETRATIONS THROUGH WALLS AND FIREWALLS. AGREE AN EFFECTIVE PROPRIETARY FIRE SEALING MATERIAL FOR THE MECHANICAL SERVICE PASSING THROUGH THE WALL INCLUDING THE METHOD AND SUITABILITY AND MEANS OF INSTALLATION.	
5.	DRILLING OF HOLES THROUGH BRICKWORK AND PLASTERED WALLS. ENSURE THAT THE WORKS IS CARRIED OUT IN ACCORDANCE WITH THE HSE AND THE APPROPRIATE PPE IS USED FOR THE ACTIVITY BEING CARRIED OUT.	
6.	THE PRESENCE OF ASBESTOS CAUTION SHOULD BE TAKEN WHEN REMOVING EXISTING SERVICES AS IT HAS BEEN KNOWN THAT ASBESTOS CAN BE FOUND IN EXISTING PIPEWORK FLANGES ETC.	

Rev	Description	By	Date	Chk'd	Auth
01	EXTERNAL CONDENSER LOCATIONS AMENDED PIPEWORK MODIFIED TO SUIT	DE	31.05.13		
T1	DRAWING UPDATED INLINE WITH NEW ARCHITECTURAL LAYOUT	MR	14.05.13		

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Drawing Status
TENDER ISSUE

Project
UNIVERSITY OF MANCHESTER

Building Name
ROSCOE BUILDING

Sub Site Name
-

Site Name
-

Drawing Title
PROPOSED HEATING & COOLING SERVICES
BASEMENT LEVEL

PM	Drawn	Checked	Authorised
JA	DE	JA	JA
Scale	Date	Date	Date
1:50 @A1	APR 2013	APR 2013	APR 2013

Drawing No.
M4174-56-02

Revision
01