

Site Technical Query - Form

SN1809-0000/XE.FRM/0001 Rev 4 03/02/2021

TQ Number:		Project:	
CW2144960		-A010-	0060
Oyu Tolgoi Underground Project			
A. To be completed by or on behalf of the Contractor			
Contractor/Sub-Contractor Name:	MCS International	Date Response	28/01/2022
Contract Title:	Booster Fan installations	Plant Area &	1693
Contract No.	CW2144960	Contractor TQ Number:	BF-0415-TQ-0060
Discipline Codes (Mandatory) D1 (CSA) - <input type="checkbox"/> D2 (MP) - <input checked="" type="checkbox"/> D3 (E&I) - <input type="checkbox"/> D4 (Other) - <input type="checkbox"/>			
Description of Technical Query (List affected drawings and specifications): HVAC condenser 1693-SRM-2001-AHU-CNDA Line route E-room HVAC Condenser 1693-SRM-2001-AHU-CNDA unit will be installed on top of 1693-SRM-2001-AHU-CNDB unit as per TQ-0045 (attachment 1). Therefore, to determine the line connection route the gas and liquid pipes from the outdoor unit 1693-SRM-2001-AHU-CNDA to the indoor unit as per 1693-65-IOM-1500 page 77 (attachment 2).			
<input type="checkbox"/> Routine <input checked="" type="checkbox"/> Urgent Refer Technical Query instructions			
Proposed Action (List all attachments) The contractor is proposed the following action. <ol style="list-style-type: none"> The route of the gas and liquid pipe line is marked in red on attachment (attachment 3). All changes will be marked in redline. 			
Effect on cost (USD):	NO		
Effect on schedule (Days):	NO		
Effect on quality:	NO		
Requested by (Name):	Delgersuren.N	Position:	SMP Engineer
Signature:		Date: (dd/mm/yyyy)	26/01/2022

B. To be completed by Jacobs Field Engineer

Comments/recommendations by Engineering

Proposed action is action is accepted. Please proceed.

Disclaimer:

Acceptance or rejection of this TQ is only related with technical aspects.

If Cost or Schedule Impact are associated with this TQ, it must be discussed separately with Jacobs Contract team.

C. Engineering Decision		D. Information		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accept with comments	Reject	Design Change Distribute to: Design Author DA	Cost Impact Distribute to: Contracts, Proj. Controls & Construction Manager	Schedule Impact Distribute to: Proj. Controls & Construction Manager

REVIEWER		APPROVER		CONSTRUCTION MANAGER	
Field Engineer OR Lead Engineer		Lead Engineer OR Chief of Engineering		(If Cost and/or Schedule Impact)	
Date: (dd/mm/yyyy)		Date: (dd/mm/yyyy)		Date: (dd/mm/yyyy)	

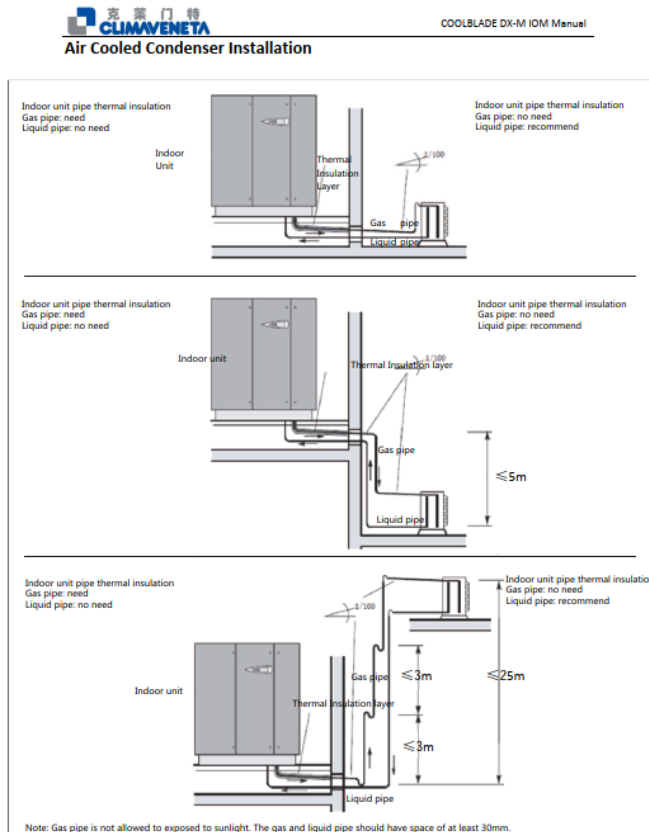
Attachment 1

B. To be completed by Jacobs Field Engineer

Comments/recommendations by Engineering

Proceed as **OPTION#2** with following comments:

- This TQ is accepted only for location of the condenser unit 1693-SRM-2001-AHU-CNDA.
- The Contractor shall be provided gas and liquid pipe route as per Manufacturer recommendation which shows Page-77 on 1693-65-IOM-1500. Prior to installation, separate TQ shall required and confirmed by Worley Reps.



- The Contractor shall be provided Mounting Detail of this relocated condenser unit. Prior to installation, separate TQ shall required and confirmed by Worley Reps.
- Changes shall be redlined on all relevant drawings.

Disclaimer:

Acceptance or rejection of this TQ is only related with technical aspects.

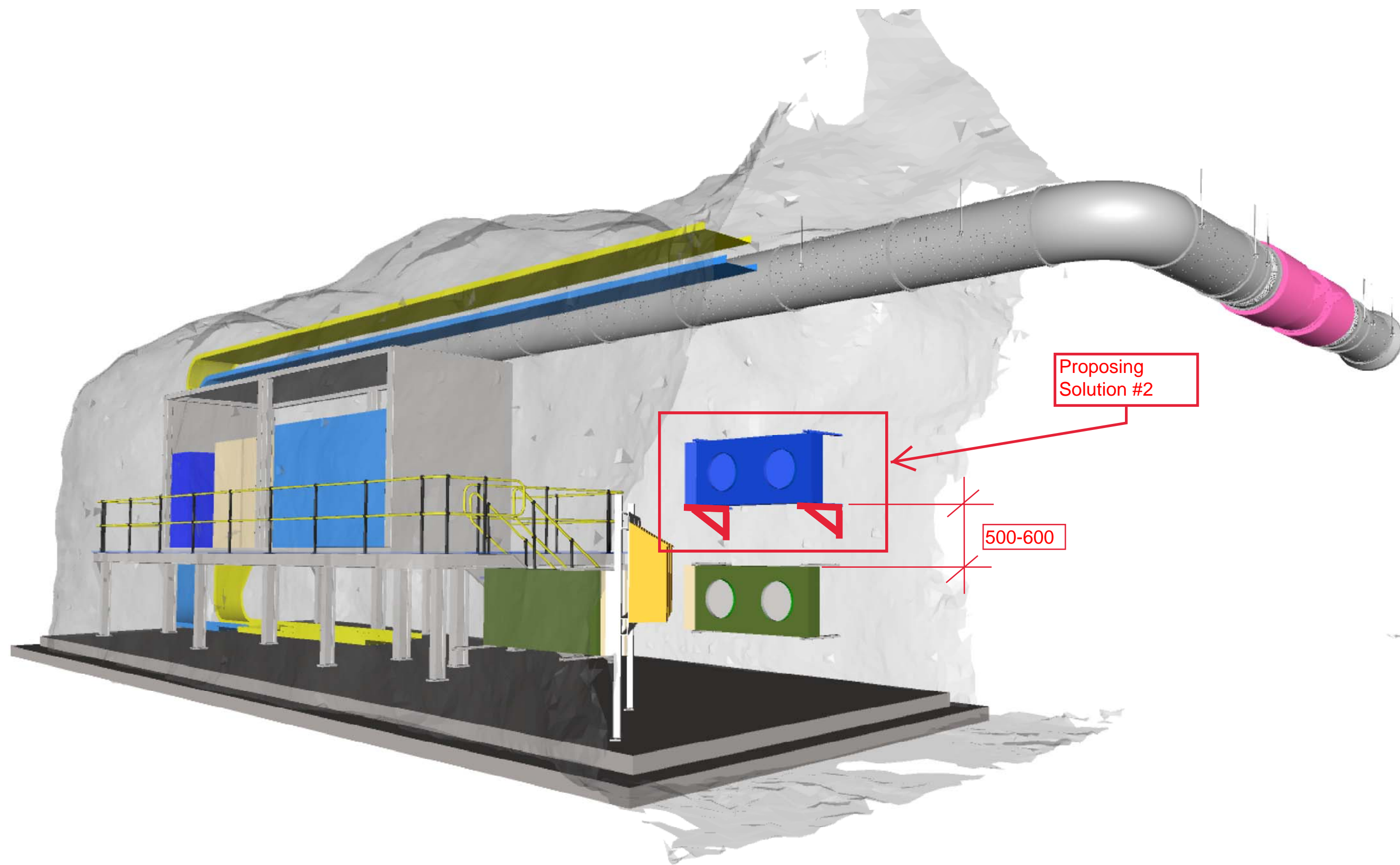
If Cost or Schedule Impact are associated with this TQ, it must be discussed separately with Jacobs Contract team.

C. Engineering Decision		D. Information		
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accept with comments	Reject	Design Change Distribute to: Design Author DA	Cost Impact Distribute to: Contracts, Proj. Controls & Construction Manager	Schedule Impact Distribute to: Proj. Controls & Construction Manager

REVIEWER		APPROVER		CONSTRUCTION MANAGER	
Field Engineer OR Lead Engineer		Lead Engineer OR Chief of Engineering		(If Cost and/or Schedule Impact)	
Delger Erdenechuluun		Boldbaatar.M			
Date:	2022.01.13	Date:	2022.01.13	Date:	
(dd/mm/yyyy)	15:25:53 +08'00'	(dd/mm/yyyy)	15:10:48 +08'00'	(dd/mm/yyyy)	

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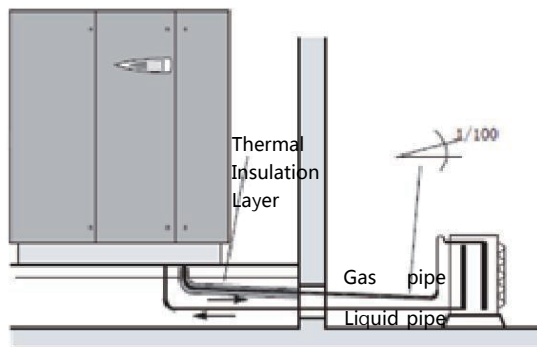
Attachment 1



Air Cooled Condenser Installation

Indoor unit pipe thermal insulation
Gas pipe: need
Liquid pipe: no need

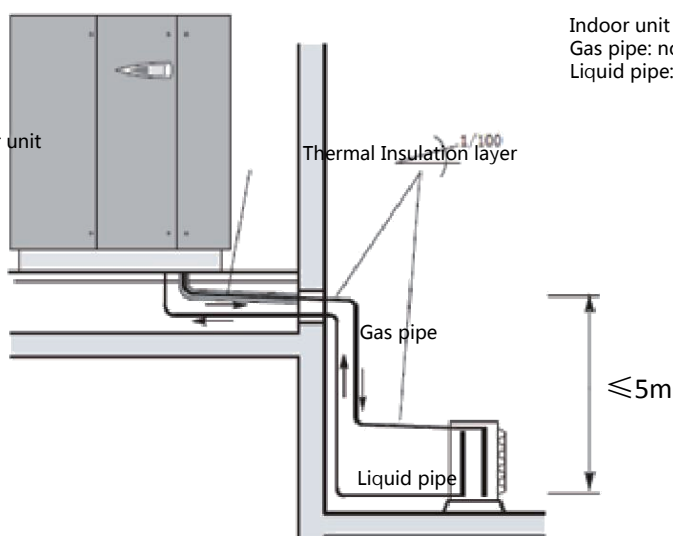
Indoor Unit



Indoor unit pipe thermal insulation
Gas pipe: no need
Liquid pipe: recommend

Indoor unit pipe thermal insulation
Gas pipe: need
Liquid pipe: no need

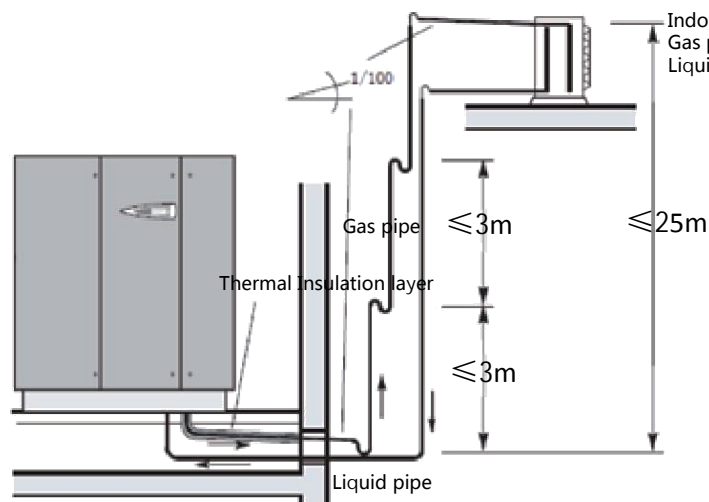
Indoor unit



Indoor unit pipe thermal insulation
Gas pipe: no need
Liquid pipe: recommend

Indoor unit pipe thermal insulation
Gas pipe: need
Liquid pipe: no need

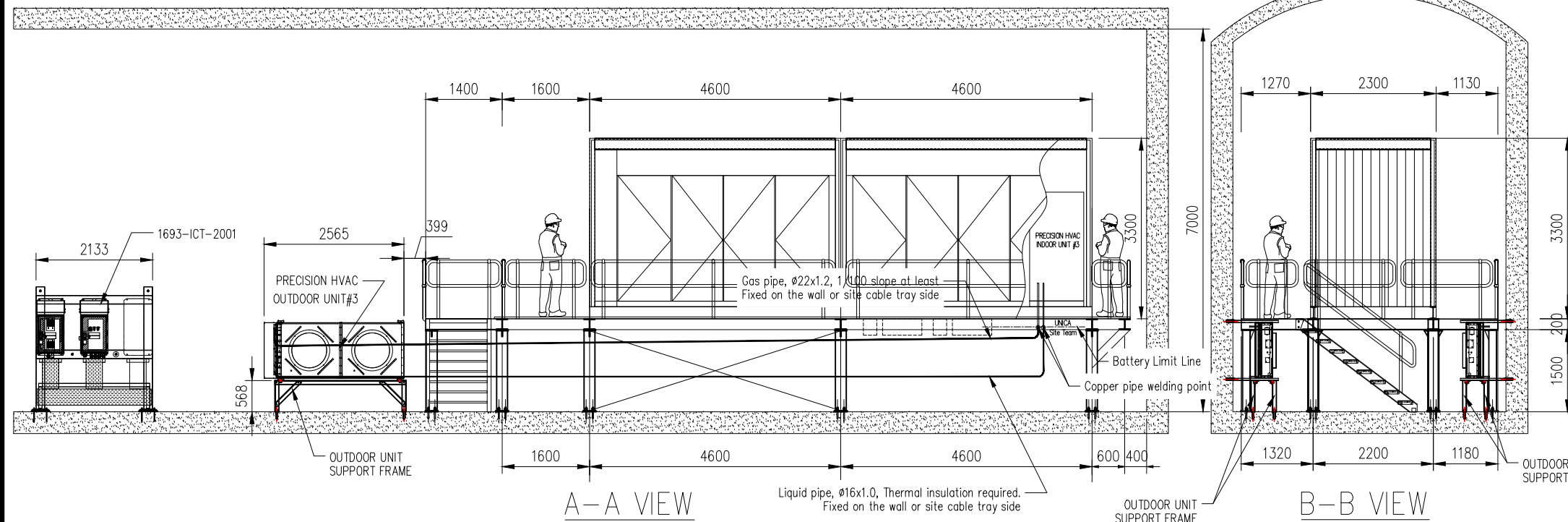
Indoor unit



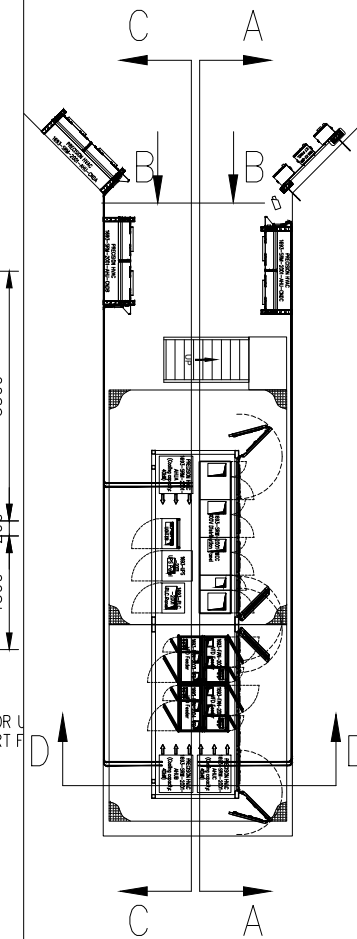
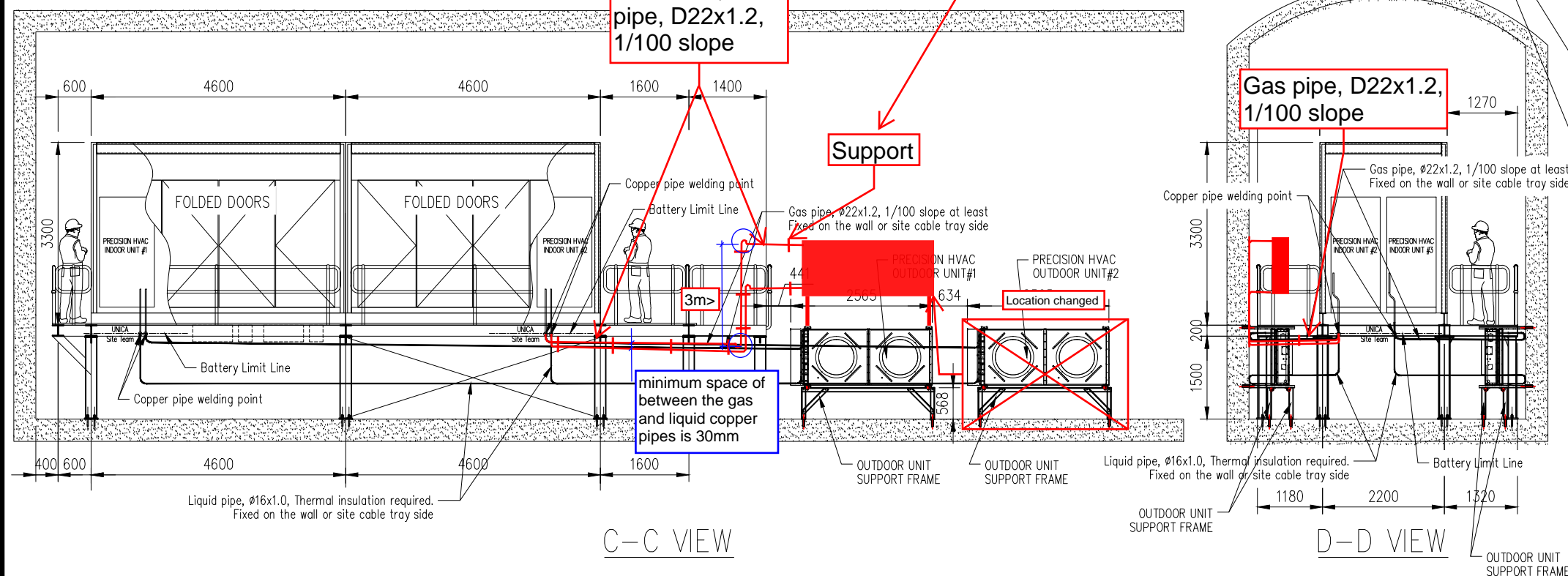
Indoor unit pipe thermal insulation
Gas pipe: no need
Liquid pipe: recommend

Note: Gas pipe is not allowed to exposed to sunlight. The gas and liquid pipe should have space of at least 30mm.

Attachment 3





The pipes use PU insulation clips to fix on the wall or site cable tray side. the distance between 2 clips should be not more 1.5m, and the distance from the pipe end should be not more than 0.5m.




1693-SRM-2001
PLAN



PU Insulation Pipe Clips,
suitable to fixed on the C
type steel

		Contractor/Supplier/Vendor Technical Document and Drawing Review for SN180940 - OT Underground Project			
<input checked="" type="checkbox"/>		1	Reviewed with No Comments. (Construction/Fabrication may Proceed)		
<input type="checkbox"/>		2	Reviewed with Minor Comments. Revise and resubmit. "Final Version" incorporating comments. (Construction/Fabrication may proceed thereafter)		
<input type="checkbox"/>		3	Rejected with Major Comments. Correct and resubmit "For Review" incorporating comments. (DO NOT PROCEED with Construction or Fabrication)		
<input type="checkbox"/>		4	Not Reviewed - Received For Information Only. No further submission is required.		
<input type="checkbox"/>		5	Received Certified/Equipment Package Vendor Document. Received As Built - Contractor Document.		
<input type="checkbox"/>		6	Cancelled.		
<input type="checkbox"/>		Submit Certified Document.			
YES <input type="checkbox"/> NO <input type="checkbox"/>		Signature _____ Date _____		Digitally signed by Andrew Borenstein, DN: cn=Andrew Borenstein, o=Jacobs dn=Andrew Borenstein and Associates Date: 2020.05.21 09:21:40 +1000	
Responsible Engineer		_____			
Equipment Tag No.		_____			
Client Document No.		1693-5-10022-1500			
Jacobs Document No. and Revision		CW21C00223-1690-B005-0146_R4			
AUTHORIZATION TO PROCEED DOES NOT RELIEVE THE VENDOR/CONTRACTOR OF ANY RESPONSIBILITY, OBLIGATION OR LIABILITY UNDER THE PURCHASE ORDER/CONTRACT, NO RESPONSIBILITY IS ASSUMED BY JACOBS FOR CORRECTNESS OF DIMENSIONS OR DETAILS. SHOP DRAWINGS ARE ACCEPTED AS FOR INFORMATION ONLY (NOT REVIEWED). VENDOR/CONTRACTOR IS FULLY RESPONSIBLE FOR SHOP DRAWINGS.					

NOTE:
Refrigerant piping shall be seamless copper alloy tubing conforming to applicable ASTM B280 and ANSI B315 or equivalent. Refrigerant piping shall be installed in accordance with ASHRAE 15



UNICA (SHANGHAI)
Integrated Electrical Equipment Co., Ltd.

Tag No.	1693-SRM-2001
Vendor Drawing No.	1693-SRM-2001_HVAC-PIPING
Jacobs Document No. and Revision	CW2100223-1690-B005-0146_3
Howden Document No	L000916-6209
VDRS Code:	B005

O'UY TOLGOI UNDERGROUND PROJECT		
UNDERGROUND ELECTRICAL AND INSTRUMENTATION		
HIGH SPEED NORTH INTAKE BOOSTER FAN ELECTRICAL ROOM		
HVAC LAYOUT DRAWINGS(1693-SRM-2001-AHUA/AHUB/AHUC)		
SCALE	DRAWING NUMBER	REV.
1:100@A3	1693-35-C2-1500	1

REV.	DATE	REVISION DESCRIPTION	DES. CHK. CC YB CC YB	APPROVED	REV.	DATE	REVISION DESCRIPTION	DES. CHK. CC YB CC YB	APPROVED	REFERENCE DRAWING No.	REFERENCE DRAWINGS
0	03/02/2021	ISSUED_FOR_CONSTRUCTION	ZYZ	/					/	1693-65-G2-1513	GENERAL_ARRANGEMENTS_&_LAYOUT_DRAWINGS
1	04/15/2021	ISSUED_FOR_CONSTRUCTION	ZYZ	/					/	1693-65-K2-1503	ELECTRICAL_RACKING_&_ROUTING_DIAGRAM
				/					/	1693-65-Q1-1500	LIGHTING_LAYOUT_DIAGRAM
				/					/	1693-IOM-1500	IOM
				/					/		
				/					/		

[illegible]

PRODUCED BY UNICA	DESIGNED BY UNICA	DRAWN BY YB
PROJECT NO —	CHECK DESIGN ZYZ	CHECK DRAWING ZYZ
CONTRACT NO —	LEAD ENGINEER KJ	APPROVAL DATE —
DRAWING SIZE A3	AREA PROJECT ENG —	ENG MANAGER —
PLOT SCALE 1:800A3	PROJECT MANAGER DSH	APPROVAL DATE —
CAD FILE NAME SHAF\384-UG_XS	CLIENT OYUTOLGOLLIC	APPROVAL DATE —