



CW2144960-A010-0067_R1
1833-05-TQS-8039_0

JACOBS™

Site Technical Query - Form

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

TQ Number:		Project:	
CW2144960	-A010-	0067	Oyu Tolgoi Underground Project
A. To be completed by or on behalf of the Contractor			
Contractor/Sub-Contractor Name:	MCS International	Date Response	23/02/2022
Contract Title:	Booster Fan installations	Plant Area &	1833
Contract No.	CW2144960	Contractor TQ Number:	BF-0415-TQ-0067
Discipline Codes (Mandatory) <input type="checkbox"/> D1 (CSA) - <input checked="" type="checkbox"/> D2 (MP) - <input checked="" type="checkbox"/> D3 (E&I) - <input type="checkbox"/> D4 (Other) - <input type="checkbox"/>			
<i>Description of Technical Query (List affected drawings and specifications):</i> 1833B Fan area : Monorail hoist clash issue The hand chain wheel of monorail hoists (2ea) installed on the monorail beam is clashing with shotcrete ceiling and cable bolt. Refer to the attached field photos.			
<input type="checkbox"/> Routine <input checked="" type="checkbox"/> Urgent Refer Technical Query instructions			
<i>Proposed Action (List all attachments)</i> The contractor is proposed the following options. 1. To cut the cable bolt, to demolish the shotcrete ceiling part and push the reinforcement mesh clashing with the hoists hand chain wheel. 2. To rotate the hoist 180 degrees and install it on the monorail beam. However, it is difficult to install isolation damper because the lifting lug of the isolation damper is 350 mm from the wall. (Refer to the attached pictures) Or, The Company to advise alternative option.			
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)	19/02/2022

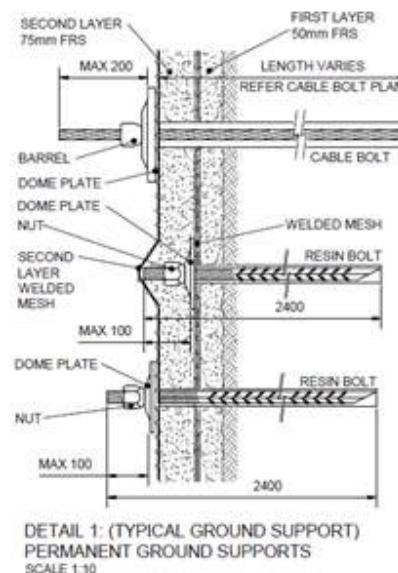
B. To be completed by Jacobs Field Engineer

Comments/recommendations by Engineering

Option #1 is acceptable subject to steps as follows:

1. Chip second layer of shotcrete up to first layer welded mesh within red highlighted area in below photo;
2. Make sure not to damage the welded mesh while chipping;
3. Push welded mesh tight against ceiling with additional Hilti anchors and small plate as required;
4. Cable bolt is to be re-tensioned by OT Geotechnical team after chipping of shotcrete. Contractor to coordinate with Worley field supervision and Geotechnical engineers;
5. Cut a cable bolt tail beyond the nut maintaining 50 mm after re-tension of the cable bolt.

Note that the following steps are to be made until there will be no clash.



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)	

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Cable bolt is
clashed with
monorail hoist.

Option 1

Remove
the washer

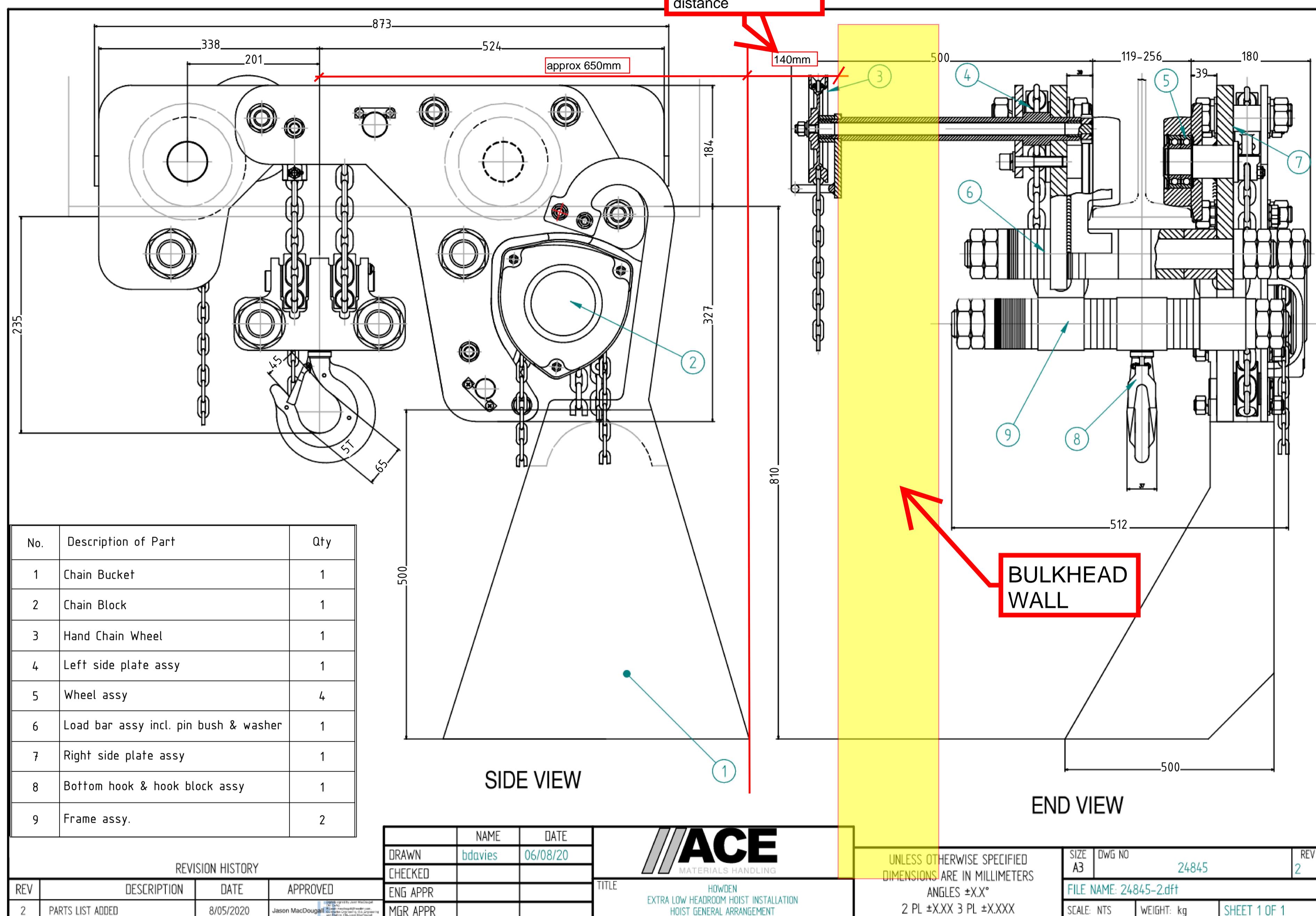
To cut the
cable bolt

To demolish the
shotcrete ceiling
part and push the
reinforcement
mesh

Shotcrete ceiling
clashed with hoist

Option 2

3 4 Bulkhead to monorail 6 7 8 9 10 11 12

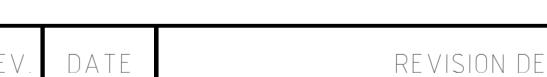


CM HOIST SPECIFICATIONS

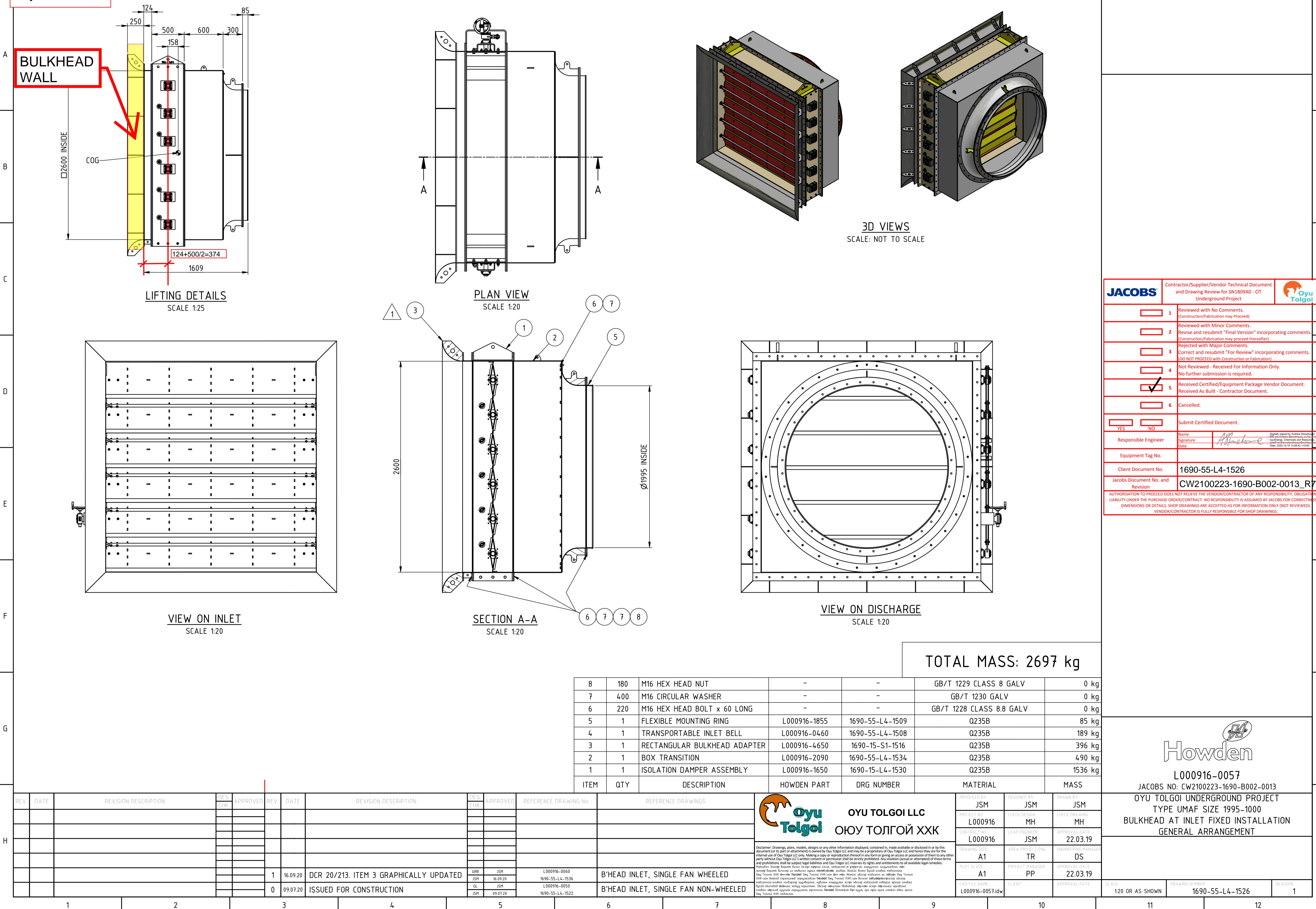
- Supplier "ACE Materials Handling"
 - Model EMCBT5A
 - Manufacturer "JDN" (J.D. Neuhaus)
 - Rated Capacity 5 Tonnes
 - Lifting Height 8 mtrs
 - Fitted with overload limiting device
 - Headroom 235mm
 - Load Chain Galvanized 8x24mm
 - Fitted with a chain bucket
 - Trolley Geared Trolley with 500mm extension shaft
 - Hand Chain Galvanized 5mm, 8m chain length
 - Beam Width 119mm- 256mm
 - Designed and built to Australian Standards 1418.2

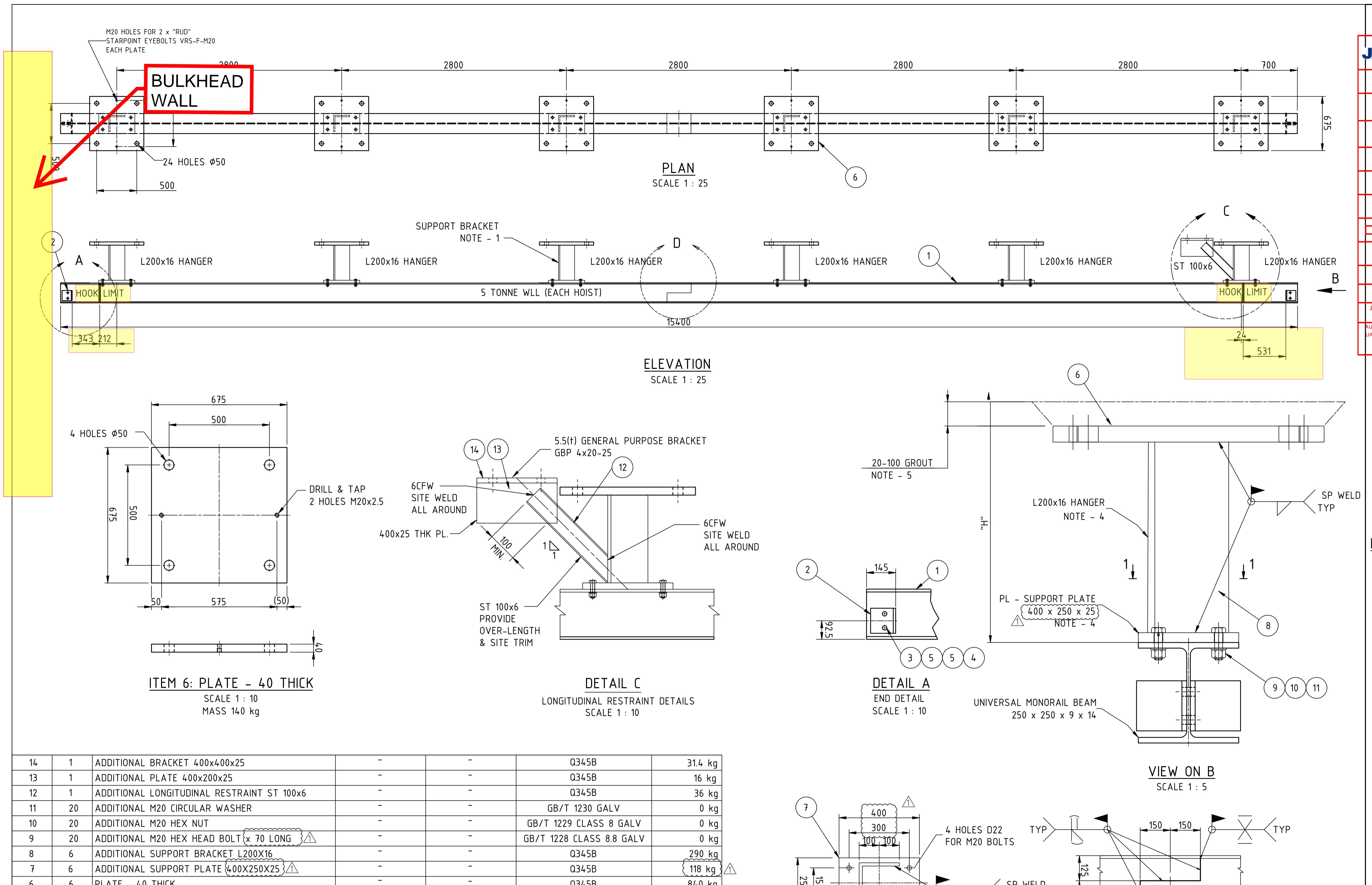
JACOBS	Contractor/Supplier/Vendor Technical Document and Drawing Review for SN1809A0 - OT Underground Project		
	1	Reviewed with No Comments. (Construction/Fabrication may Proceed)	
	2	Reviewed with Minor Comments. Revise and resubmit "Final Version" incorporating comments. (Construction/Fabrication may proceed thereafter)	
	3	Rejected with Major Comments. Correct and resubmit "For Review" incorporating comments. (DO NOT PROCEED with Construction or Fabrication)	
	4	Not Reviewed - Received For Information Only. No further submission is required.	
	5	Received Certified/Equipment Package Vendor Document. Received As Built - Contractor Document.	
	6	Cancelled.	
YES	NO	Submit Certified Document.	
Responsible Engineer		Name Signature Date	 Digitally signed by Andrew Stonehouse DN: cn=Andrew Stonehouse, o=AU, o=World ou=Energy, Chemicals and Resources, email=andrew.stonehouse@worley.com Date: 2021.02.08 16:11:04 +10'00'
Equipment Tag No.			
Client Document No.	1690-55-L4-1544		
Jacobs Document No. and Revision	CW2100223-1690-B091-0014_R4		
AUTHORISATION 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			

Hook limit changes to approx. 800mm from bulkhead wall
However, lifting lug of isolation damper (which is the closest part of the fan from the bulkhead wall) is 374mm from the bulkhead wall.

Oyu Tolgoi Underground Project 5 Tonne Lifting Equipment Ultra Low Height Hoist												Drawing No: CW2100225-1090-D091-0014		
Rev.	Date	Revision Description		DES CHK.	Approved	Rev.	Date	Revision Description		DES CHK.	Approved	Reference Drawing No.	Reference Drawings	 <p>Oyu Tolgoi LLC ОЮУ ТОЛГОЙ ХХК</p>

Option 2





ITEM	QTY	DESCRIPTION	HOWDEN PART	DRG NUMBER	MATERIAL	MASS
14	1	ADDITIONAL BRACKET 400x400x25	-	-	Q345B	31.4 kg
13	1	ADDITIONAL PLATE 400x200x25	-	-	Q345B	16 kg
12	1	ADDITIONAL LONGITUDINAL RESTRAINT ST 100x6	-	-	Q345B	36 kg
11	20	ADDITIONAL M20 CIRCULAR WASHER	-	-	GB/T 1230 GALV	0 kg
10	20	ADDITIONAL M20 HEX NUT	-	-	GB/T 1229 CLASS 8 GALV	0 kg
9	20	ADDITIONAL M20 HEX HEAD BOLT x 70 LONG	{1}	-	GB/T 1228 CLASS 8.8 GALV	0 kg
8	6	ADDITIONAL SUPPORT BRACKET L200X16	-	-	Q345B	290 kg
7	6	ADDITIONAL SUPPORT PLATE 400X250X25	{1}	-	Q345B	118 kg
6	6	PLATE - 40 THICK	-	-	Q345B	840 kg
5	8	M20 CIRCULAR WASHER	-	-	GB/T 1230 GALV	0 kg
4	4	M20 HEX NUT	-	-	GB/T 1229 CLASS 8 GALV	0 kg
3	4	M20 HEX HEAD BOLT x 70 LONG	-	-	GB/T 1228 CLASS 8.8 GALV	0 kg
2	4	END STOPS	L000916-2571-02	-	Q345B	11 kg
1	1	FABRICATED MONORAIL	L000916-2571-01	-	Q345B	796 kg





Oyu Tolgoi LLC
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Мэдээлэг. Энэхүү баримт болцогч (эсхүл түүхийн хэсэг, хөвстрэлт-т үзүүлсэн, харуулсан, агуулалтадан, мөн энэхүү баримт дүчигээр ил тавьсан зураг, төвлөгөөний засгард, дэшиж болон дусад алтиваа мэдээллийг Июу Толгой ХХК Өмчилгээний дээрээд Июу Толгой ХХК-ийн Өмчийн Мэдээлэл эзлэхэд Июу Толгой

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JACOBS		Contractor/Supplier/Vendor Technical Document and Drawing Review for SN1809A0 - OT Underground Project		
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<input type="checkbox"/>	5	Received Certified/Equipment Package Vendor Document. Received As Built - Contractor Document.		
<input type="checkbox"/>	6	Cancelled.		
<input type="checkbox"/> YES	<input type="checkbox"/> NO	Submit Certified Document.		
Responsible Engineer		Name Signature Date	Delger Erdenechuluun 2022.01.09 15:23:47 +08'00' 	
Equipment Tag No.				
Client Document No.		1693-15-S1-8002		
Jacobs Document No. and Revision		CW2144960-B089-0002_R3		
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NOTES:

1. THE CONTRACTOR TO SUPPLY 1000mm SUPPORT BRACKETS L200x16, TO BE CUT ON SITE AS PER REQUIRED.
 2. ADDITIONAL BOLT HOLES ON THE MONORAIL SHALL BE DRILLED ON SITE.
 3. MONORAIL BEAMS AND SUPPORT BRACKETS SHALL BE PAINTED IN SAFETY YELLOW COLOUR (RAL 1021).
 4. FOR MONORAIL PAINTING SPECIFICATION REFER TO DRAWING 1800-15-S1-1205, 1800-15-S1-1206 AND 1800-15-S1-1207.
 5. MONORAIL PLATES LEVEL TO BE CONFIRMED WITH MINING EXCAVATION AND SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE CEILING.
 6. MONORAIL BEAM REFERENCE LEVEL SHALL BE ADJUSTED WITH SUPPORT BRACKETS TO THE DESIGN LEVEL.
 7. LONGITUDINAL RESTRAINT SHALL BE LOCATED ON HIGHEST HEADROOM SUPPORT BRACKET.
 8. TO BE USED WHEN DIMENSION "H" IS LESS THAN 675mm.

CONSTRUCTION ISSUE

NDOR DOCUMENT NUMBER -0413-DWG-55-L4-8011	REVISION: 1
RLEY DOCUMENT NUMBER V2144960-B089-0002	REVISION: 3

MCS international

INCLINE CONVEYORS - INCLINE CONVEYOR PANS BULKHEAD AT INLET MONORAIL ASSEMBLY		
ALE AS SHOWN	DRAWING NUMBER 1693-15-S1-8002	REV. 1