



Site Technical Query - Form

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

TQ Number:		Project:	
CW2148472 -A010- 0038		Oyu Tolgoi Underground Project	
A. To be completed by or on behalf of the Contractor			
Contractor/Sub-Contractor Name:	MCS International	Date Response	06/03/2022
Contract Title:	Haulage Level Truck Workshop C-004D	Plant Area &	1883
Contract No.	CW2148472	Contractor TQ Number:	TWS-0415-TQ-0038
Discipline Codes (Mandatory) D1 (CSA) - <input checked="" type="checkbox"/> D2 (MP) - <input type="checkbox"/> D3 (E&I) - <input type="checkbox"/> D4 (Other) - <input type="checkbox"/>			
<i>Description of Technical Query (List affected drawings and specifications):</i> Road train bay #2 - Overbreak and lateral support issue			
<p>As shown in Attachment#1 Survey report & 3D scan, Road train bay #2 lateral support at RL -145.320 can not be connected to target plate due to overbreak.</p>			
<input type="checkbox"/> Routine		<input checked="" type="checkbox"/> Urgent	Refer Technical Query instructions
<i>Proposed Action (List all attachments)</i>			
<p>Contractor proposing below options.</p> <ol style="list-style-type: none"> 1. Proposal 1: Replace lateral support 1500mm L11 by approx.3000mm TFC09. Demolish shotcrete wall as shown in Attachment#2 to install target plate ideally. 2. Proposal 2: Fabricate additional support as shown in Attachment#3. Install additional 1ea target plate at the location of fabricated support being 1500mm from HW06 column. Retain L11 lateral support to fabricated support. 			
<p>Attachment:</p> <ul style="list-style-type: none"> • Attachment #1 – RTB#2 Shotcrete wall survey report & 3D scan • Attachment #2 – Proposal -1 • Attachment #3 – Proposal-2 • Attachment #4 – Related drawings 			
<hr/>			
Effect on cost (USD):		Yes	
Effect on schedule (Days):		Yes	
Effect on quality:		No	
Requested by (Name):		Position: CSA Field Engineer	
Signature:		Date: (dd/mm/yyyy)	05/31/2022

B. To be completed by Jacobs Field Engineer*Comments/recommendations by Engineering*

Proposal #1 is acceptable subject to:

Hilti anchor rod is not acceptable, therefore, install $\Phi 25$ rock bolts according to design with feasible angle to the target plate's final position and inclusive of local shotcrete removal and grout thickness requirement. Adjust target plate angle up to 15° per design to minimize the thickness of shotcrete removal.

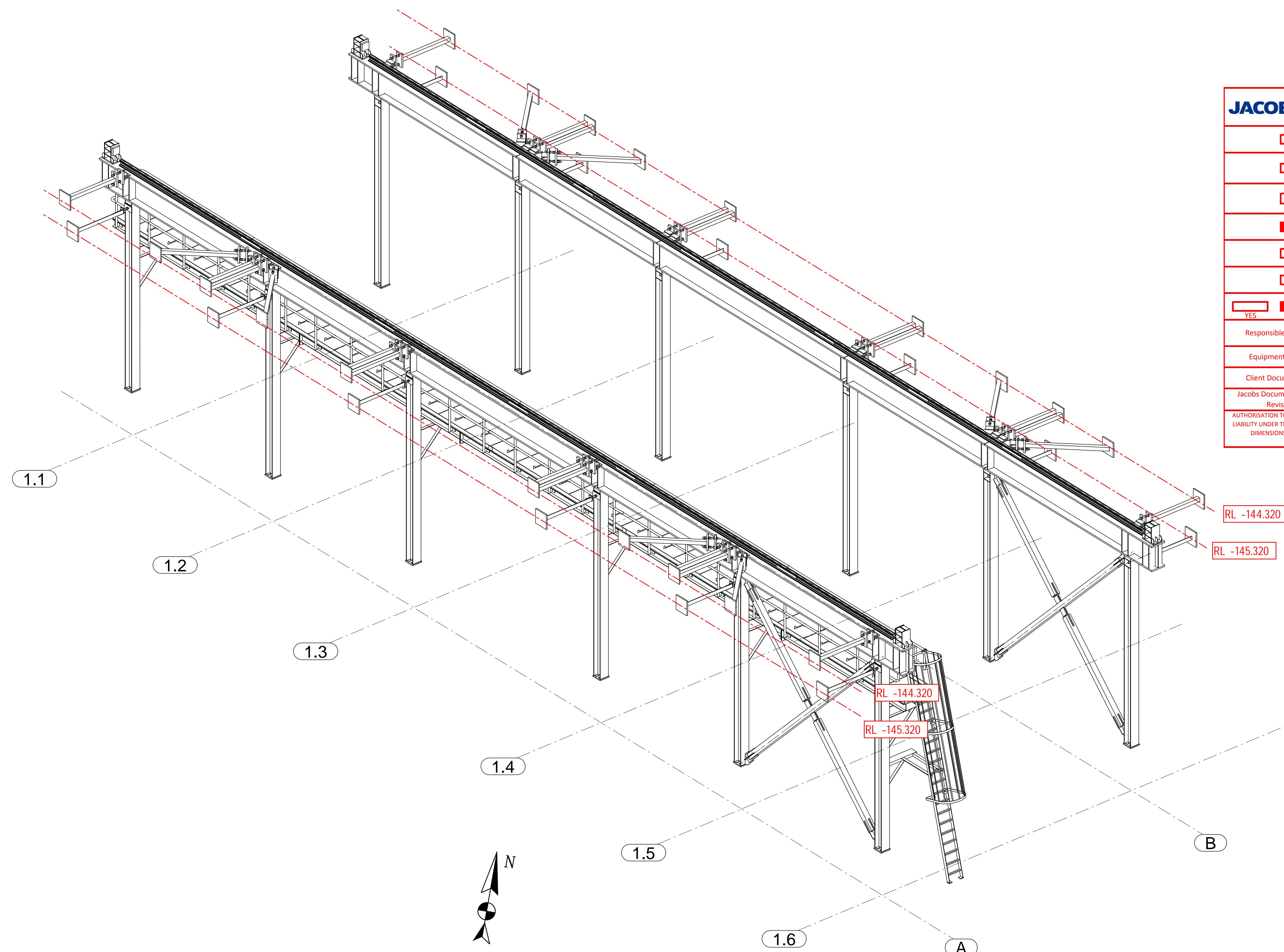
Redline the drawings accordingly.

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

**ATTACHMENT #1
SURVEY REPORT & 3D SCAN**



ISOMETRIC VIEW

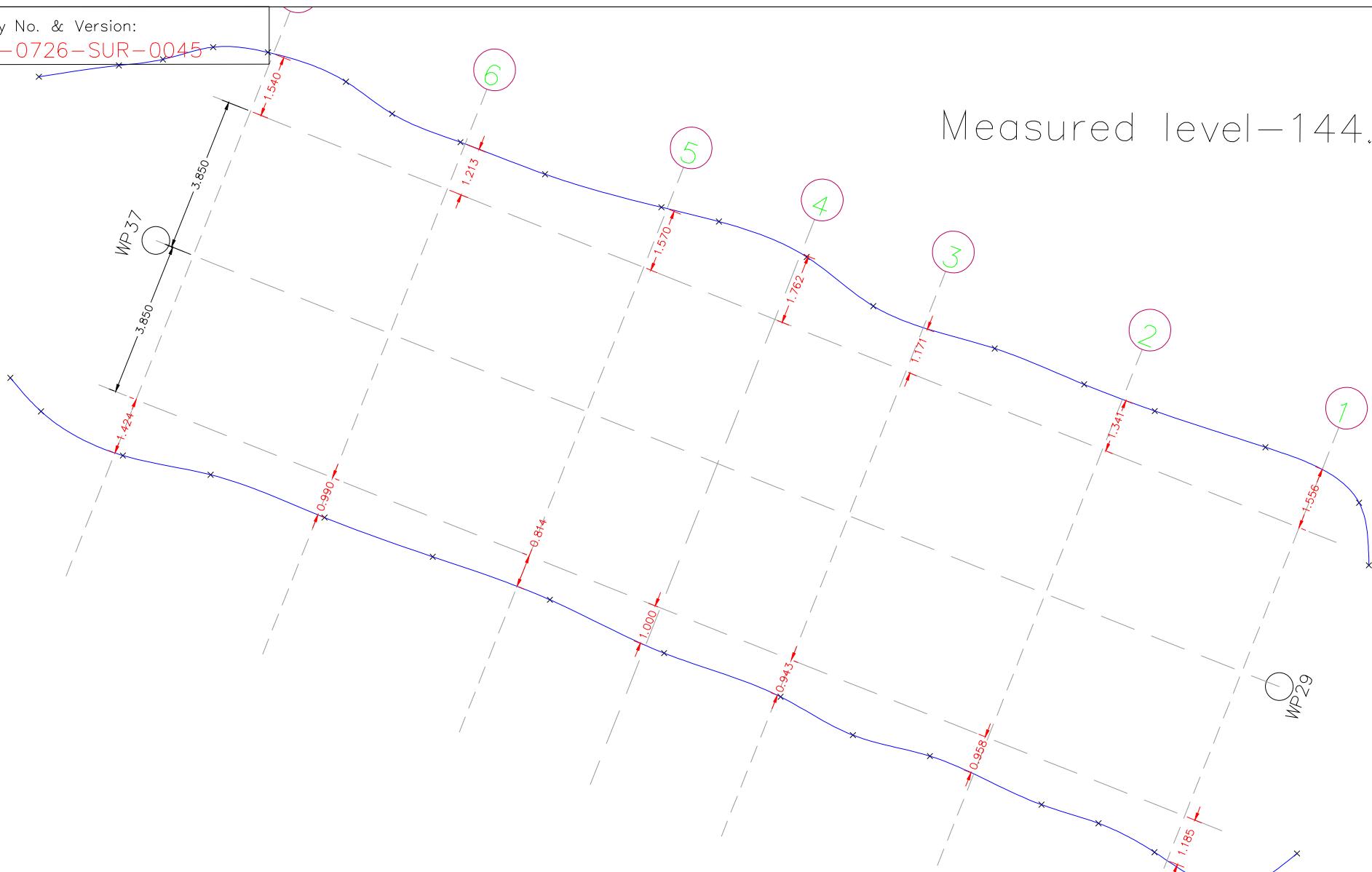
JACOBS	Contractor/Supplier/Vendor Technical Document and Drawing Review for SN1809AO - OT Underground Project	
		
<input type="checkbox"/>	1 Reviewed with No Comments. (Construction/Fabrication may Proceed)	
<input type="checkbox"/>	2 Reviewed with Minor Comments. Revise and resubmit "Final Version" 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 checked="" 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	NO	Name: Francisco Alvarez F.- Signature: _____ Date: 05-Nov-2020
Equipment Tag No.:		
Client Document No.:		
Jacobs Document No. and Revision: CW2117013-B093-0783_R1		
<small>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.</small>		

												SinoStruct							
REV.	DATE	REVISION DESCRIPTION		DES. CHK	APPROVED	REV.	DATE	REVISION DESCRIPTION		DES. CHK	APPROVED	REFERENCE DRAWING No.	REFERENCE DRAWINGS	Oyu Tolgoi LLC ОЮ ТОЛГОЙ ХХК	PRODUCED BY	DESIGNED BY	DRAWN BY	TITLE	
0	07/10/2020	ISSUED FOR CONSTRUCTION		KK SB										Disclaimer: Drawings, plans, models, designs or any other information displayed, contained in, made available or disclosed in or by this document (or part or attachment) is owned by Oyu Tolgoi LLC and is the property of Oyu Tolgoi LLC; hence they are for the internal use of Oyu Tolgoi LLC only and shall not be copied or disclosed to any third party without Oyu Tolgoi LLC's written consent or permission. Any violation (actual or attempted) of these terms and conditions will be subject to legal action and all available legal remedies.	PROJECT NO	CHECK DESIGN SB	CHECK DRAWING SB		OYU TOLGOI UNDERGROUND PROJECT UNDERGROUND WORK SHOPS TRUCK SHOP HAULAGE LEVEL - ROAD TRAIN BAYS 2 ISOMETRIC VIEW
															CONTRACT NO	LEAD ENGINEER HN	APPROVAL DATE 07/10/2020		
															DRAWING SIZE	AREA PROJECT ENGINEER ENGINEERING MANAGER			
															PLOT SCALE	PROJECT MANAGER	APPROVAL DATE 07/10/2020		
															CAD FILE NAME	CLIENT	APPROVAL DATE	SCALE NA	
																	DRAWING NUMBER 2570-1883-G016	REV. 0	

MCSI Survey No. & Version:

TWS-0726-SUR-0045

Measured level-144.320



Horizontal and Height datum origin:

Point name	Coordinate and Level		
	East	North	RL
TWS2	651136.944	4767256.175	-150.108
TWS3	651128.23	4767259.366	-149.772

Used equipment: Leica TS10

LEGEND



— Axis



— Measured point



— Measured Distance



Oyu
Tolgoi LLC
ОЮУ ТОЛГОЙ ХХК

Oyu tolgoi mine site, Khanbogd soum, Omnigove province, Mongolia
TWS project



Name of drawing:
Measurements location of shotcrete wall at Train bay-2 (-144.320)



Surveyed by: _____ Name of Area: Truck workshop - Train bay-2 Type: Set-out
WBS: 1883 Level: TWS Level

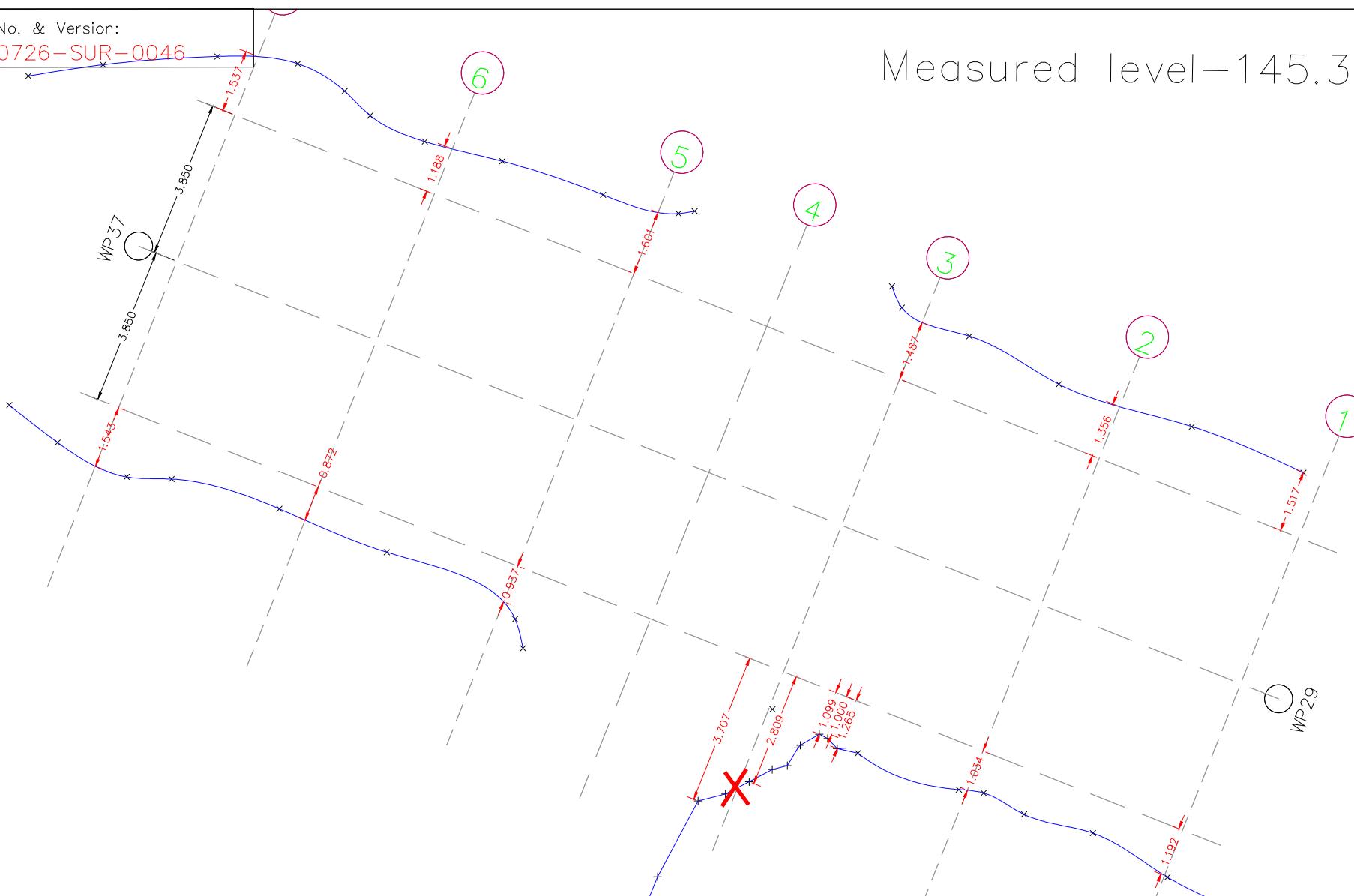


Coordinate system : OTG system SCALE : N.S.T
Approved by: _____ Previous drawing No: 1883-15-R1-1101_1 DATE : 25-May-2022

MCSI Survey No. & Version:

TWS-0726-SUR-0046

Measured level-145.320



LEGEND



– Axis



– Measured point



– Measured Distance



Oyu Tolgoi LLC
ОЮУ ТОЛГОЙ ХХК



Name of drawing:
Measurements location of shotcrete wall at Train bay-2 (-145.320)



Surveyed by: _____
Name of Area: Truck workshop - Train bay-2
WBS: 1883
Level: TWS Level

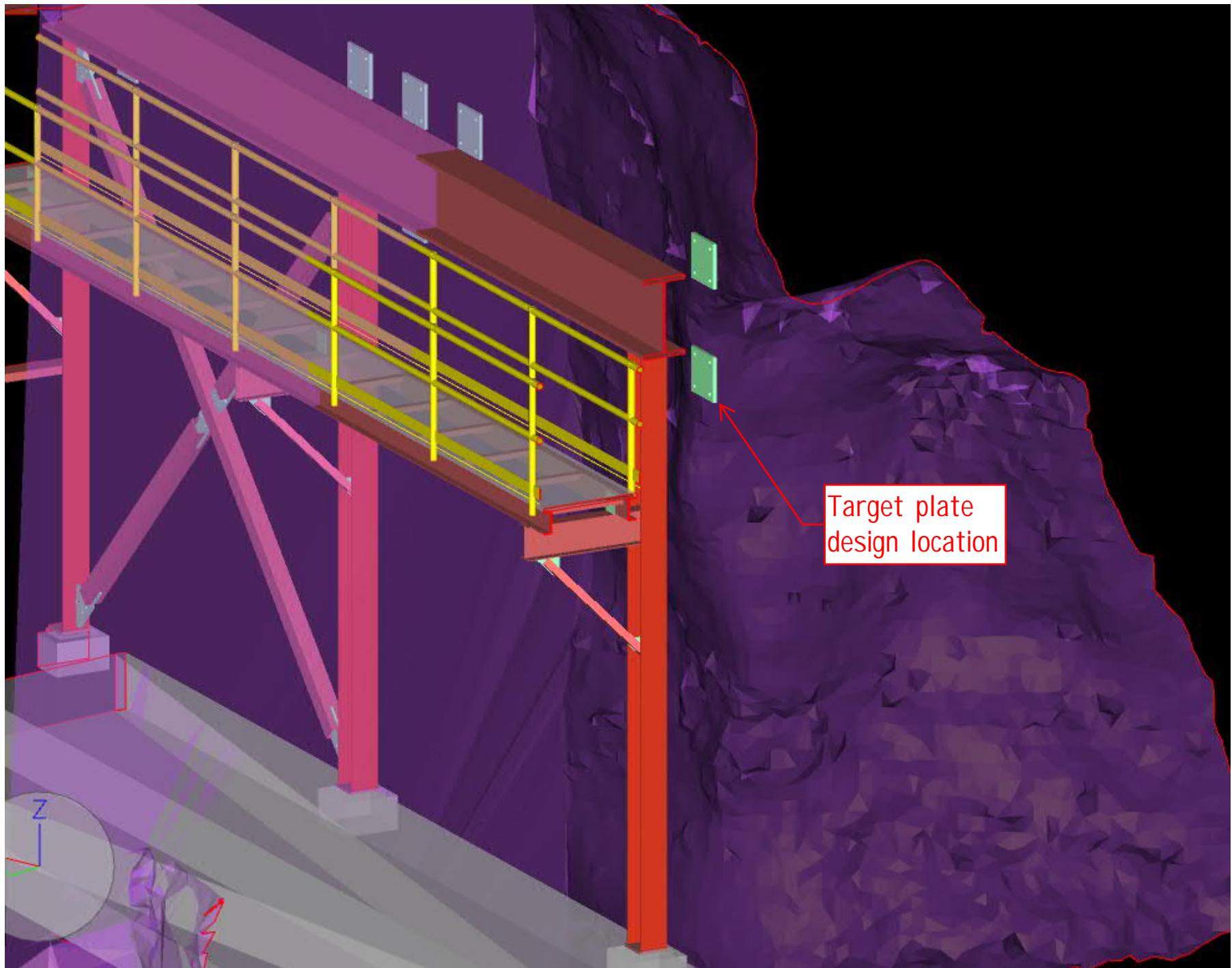


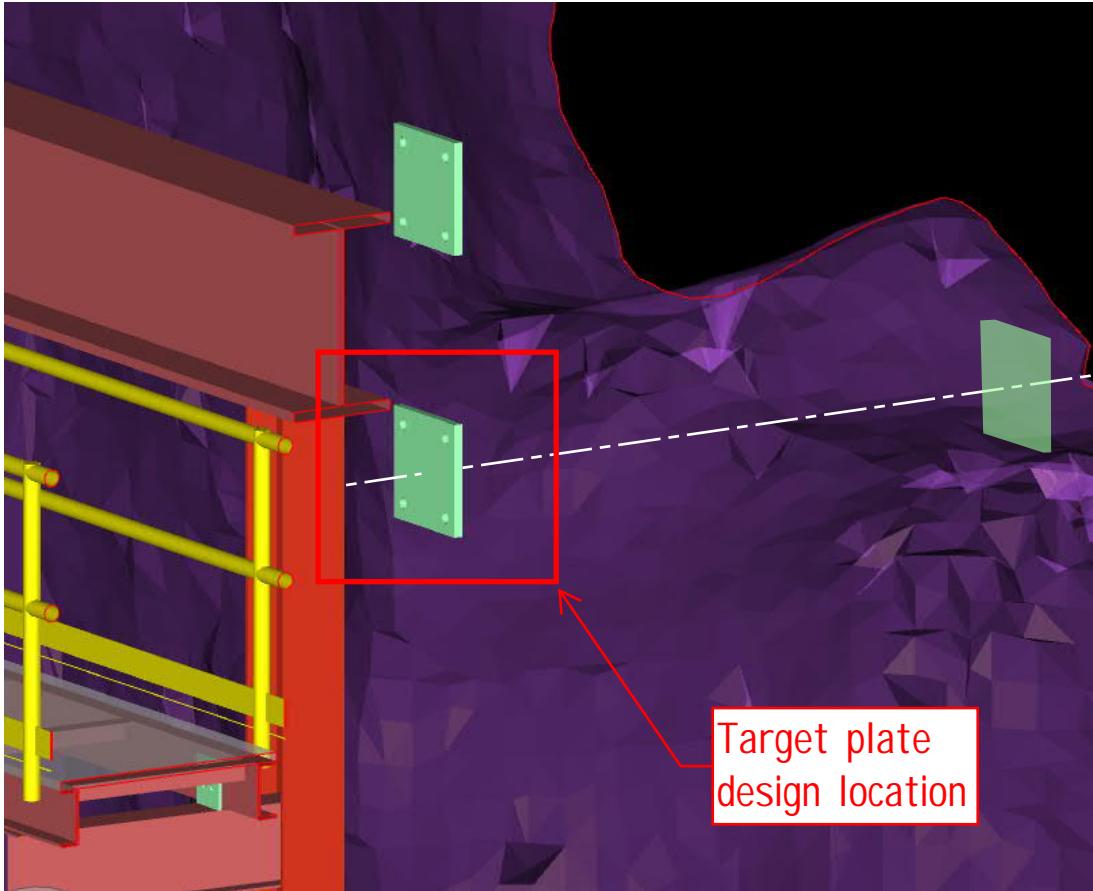
Coordinate system : OTG system
Approved by: _____
SCALE : N.S.T
Previous drawing No: 1883-15-R1-1101_1
DATE : 25-May-2022

Horizontal and Height datum origin:

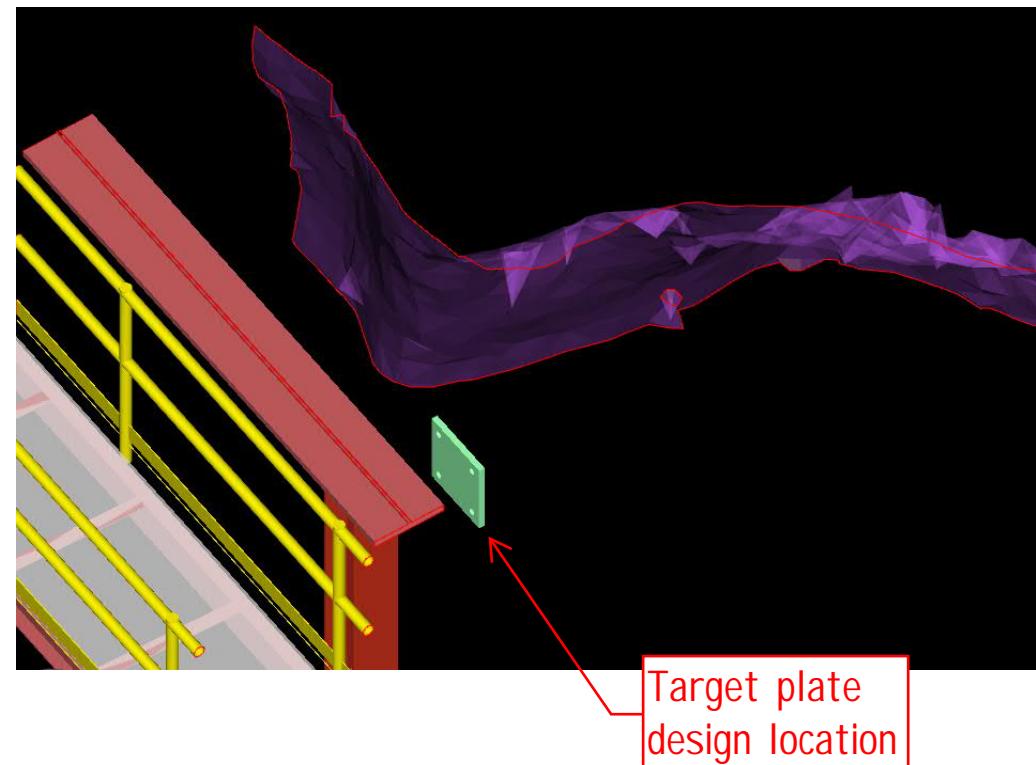
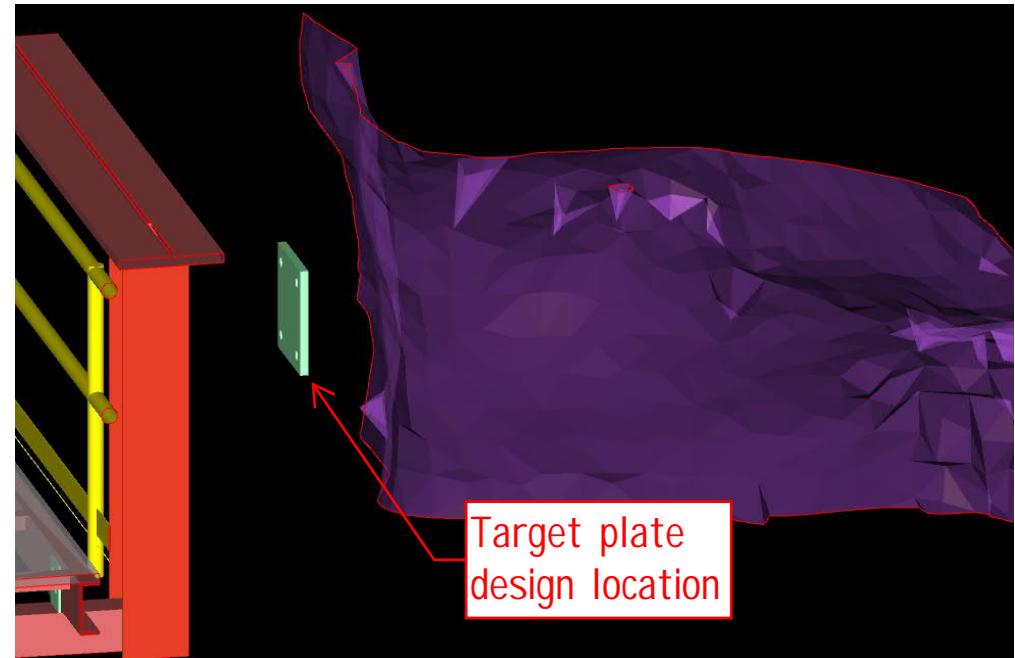
Point name	Coordinate and Level		
	East	North	RL
TWS2	651136.944	4767256.175	-150.108
TWS3	651128.23	4767259.366	-149.772

Used equipment: Leica TS09

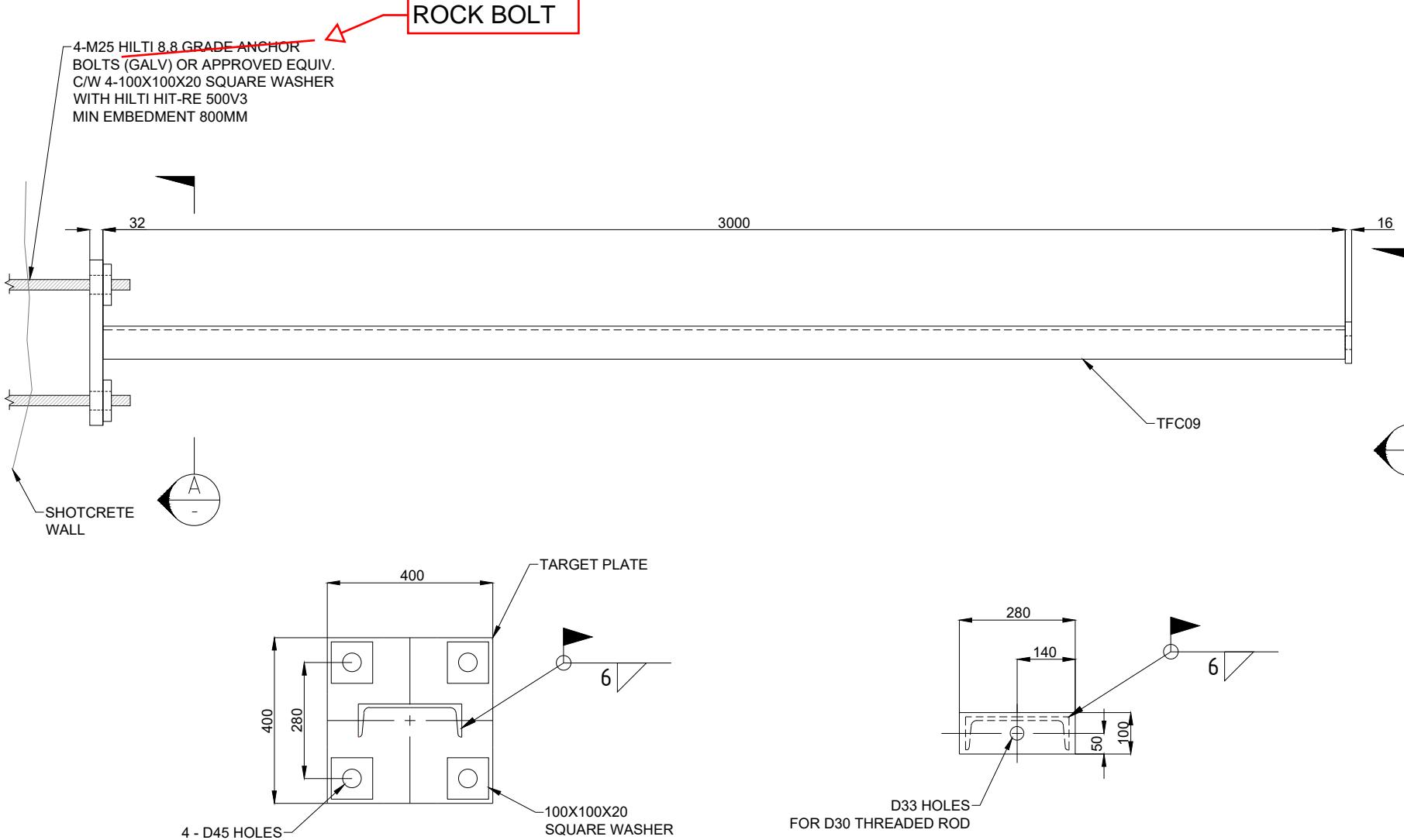




Due to overbreak, lateral support can not reach to target plate when target plate installed to overbreak shotcrete wall



**ATTACHMENT #2
PROPOSAL-1**



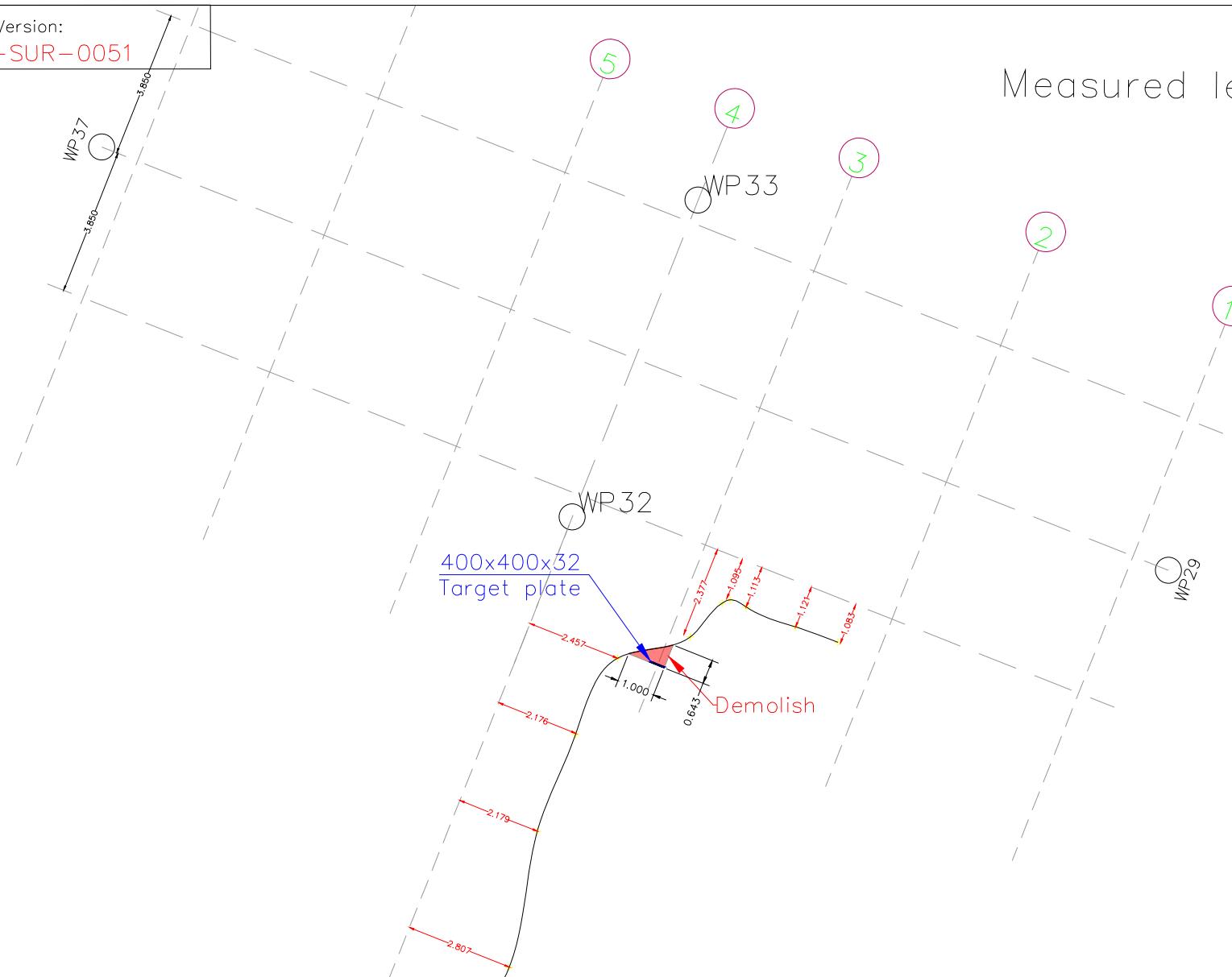
REV.	DATE	REVISION DESCRIPTION	DES. C/M	APPROVED	REV.	DATE	REVISION DESCRIPTION	DES. C/M	APPROVED	REFERENCE DRAWING No.	REFERENCE DRAWINGS	PRODUCED BY MCS INTERNATIONAL	DESIGNED BY CHECK DESIGN	DRAWN BY CHECK DRAWING	PROJEC	CONTRACT NO.	LEAD ENGINEER	APPROVAL DATE	DRAWING SIZE A1	AREA PROJECT ENGINEER	CONSTRUCTION MANAGER	PLOT SCALE 1	PROJECT MANAGER	APPROVAL DATE	CAD FILE NAME	CLIENT	APPROVAL DATE	SCALE	DRAWING NUMBER	REV.
												Oyu Tolgoi LLC	Oyu Tolgoi LLC	Oyu Tolgoi LLC																

VENDOR DOCUMENT NUMBER _____ REVISION _____
 WORLEY DOCUMENT NUMBER _____ REVISION _____
MCS international
 704, 7th floor, Shangri-La, 19A Olympic Street, Sukhbaatar district-1, Ulaanbaatar, 11241, Mongolia
 Tel: +976-77226262; Fax: +976-77226464; Web: www.international.mcs.mn

Oyu Tolgoi UNDERGROUND PROJECT

REV. A

Measured level-145.120



Horizontal and Height datum origin:

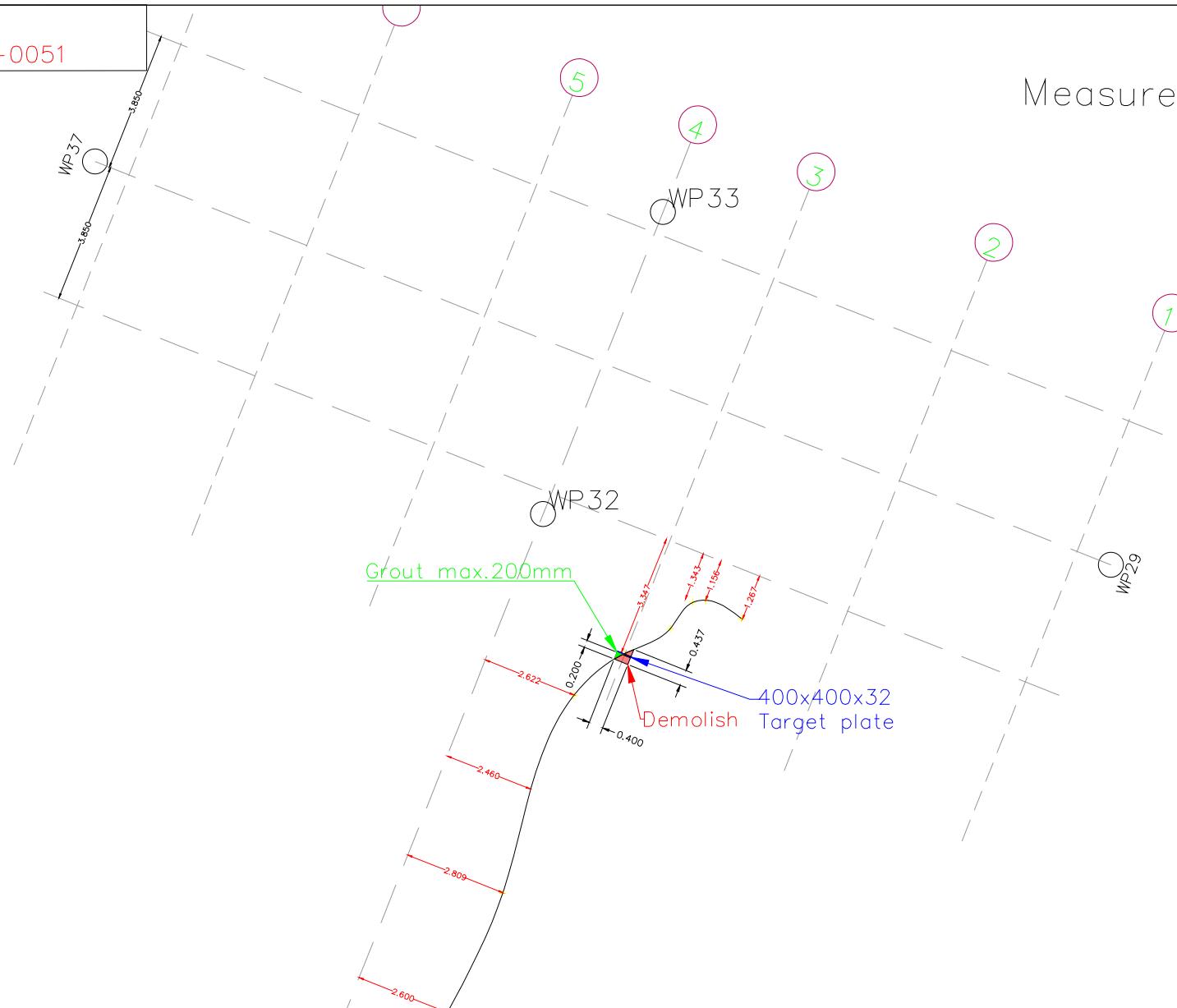
Point name	Coordinate and Level		
	East	North	RL
TWS2	651136.944	4767256.175	-150.108
TWS3	651128.23	4767259.366	-149.772

Used equipment: Leica TS10

LEGEND

- Axis
- + - Measured point
- → Measured Distance 2.622

Oyu Tolgoi LLC
ОЮУ ТОЛГОЙ ХХКOyu tolgoi mine site, Khanbogd soum, Omnigove province, Mongolia
TWS projectName of drawing:
Measurements location of shotcrete wall at Train bay-2 (-145.120)Surveyed by:
.....
Name of Area:
Truck workshop - Train bay-2
Type:
Set-out
WBS:
1883
Level:
TWS LevelApproved by:
.....
Coordinate system : OTG system
SCALE : N.S.T
Previous drawing No:
1883-15-R1-1101_1
DATE : 28-May-2022



Horizontal and Height datum origin:

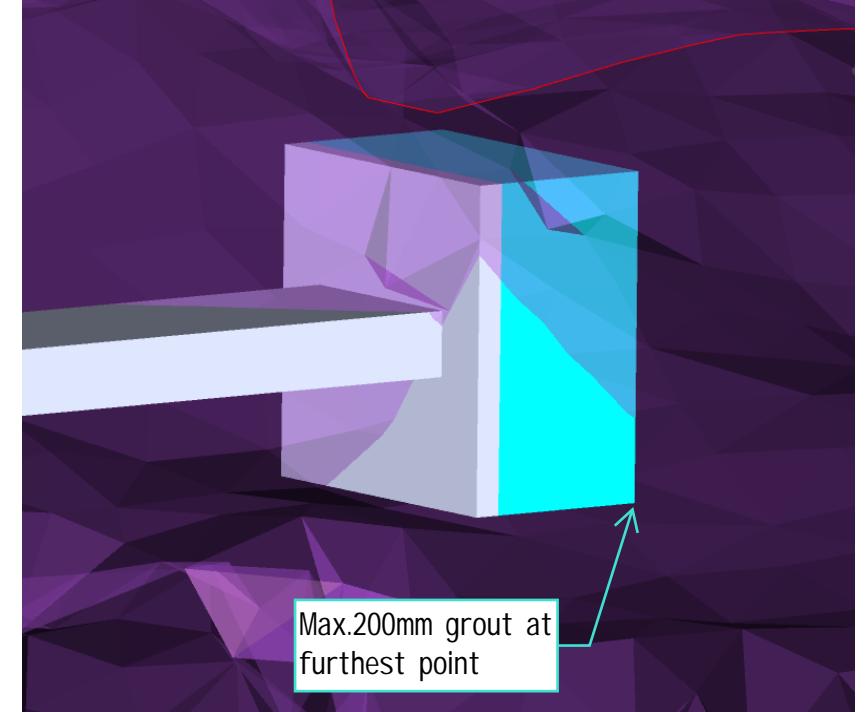
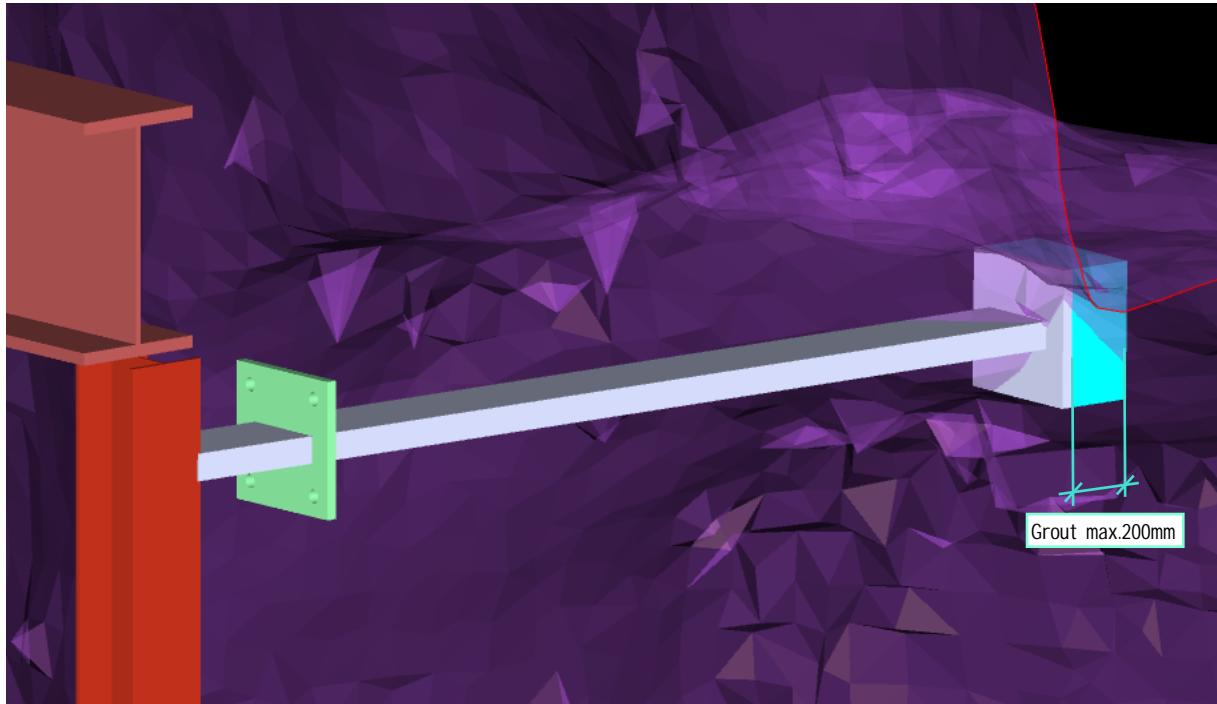
Point name	Coordinate and Level		
	East	North	RL
TWS2	651136.944	4767256.175	-150.108
TWS3	651128.23	4767259.366	-149.772

Used equipment: Leica TS10

LEGEND

- [Axis icon] – Axis
- [Measured point icon] – Measured point
- [Distance icon] – Measured Distance

Oyu Tolgoi LLC
ОЮУ ТОЛГОЙ ХХКWorley
energy chemical resourcesMCS International
GEOCAD ENGINEERING SERVICE CO.,LTD
GEOCAD ENGINEERING SERVICE CO.,LTDOyu tolgoi mine site, Khanbogd soum, Omnigove province, Mongolia
TWS projectName of drawing:
Measurements location of shotcrete wall at Train bay-2 (-145.520)Surveyed by: _____ Name of Area: Truck workshop - Train bay-2 Type: Set-out
WBS: 1883 Level: TWS LevelApproved by: _____ Coordinate system : OTG system SCALE: N.S.T
Previous drawing No: 1883-15-R1-1101_1 DATE :28-May-2022

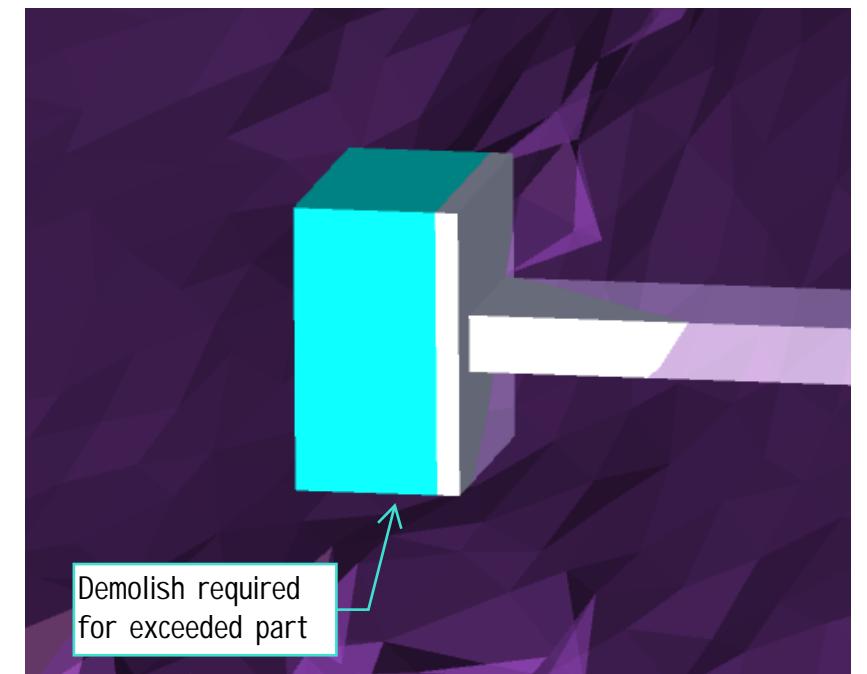
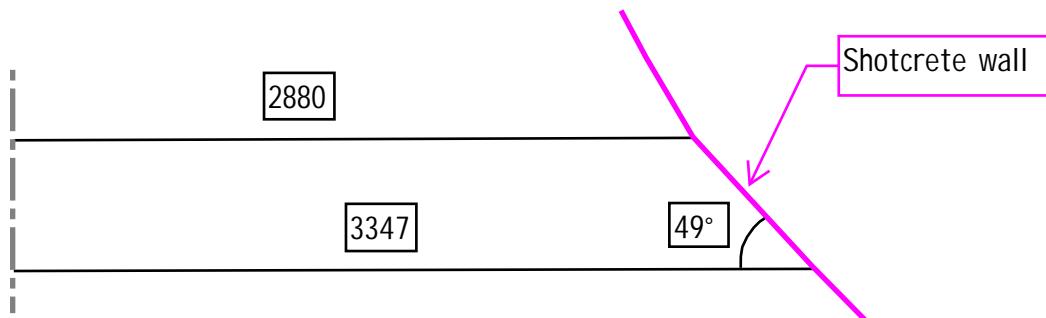


Target plate ideal installation: Parallel to crane beam & perpendicular to lateral support.

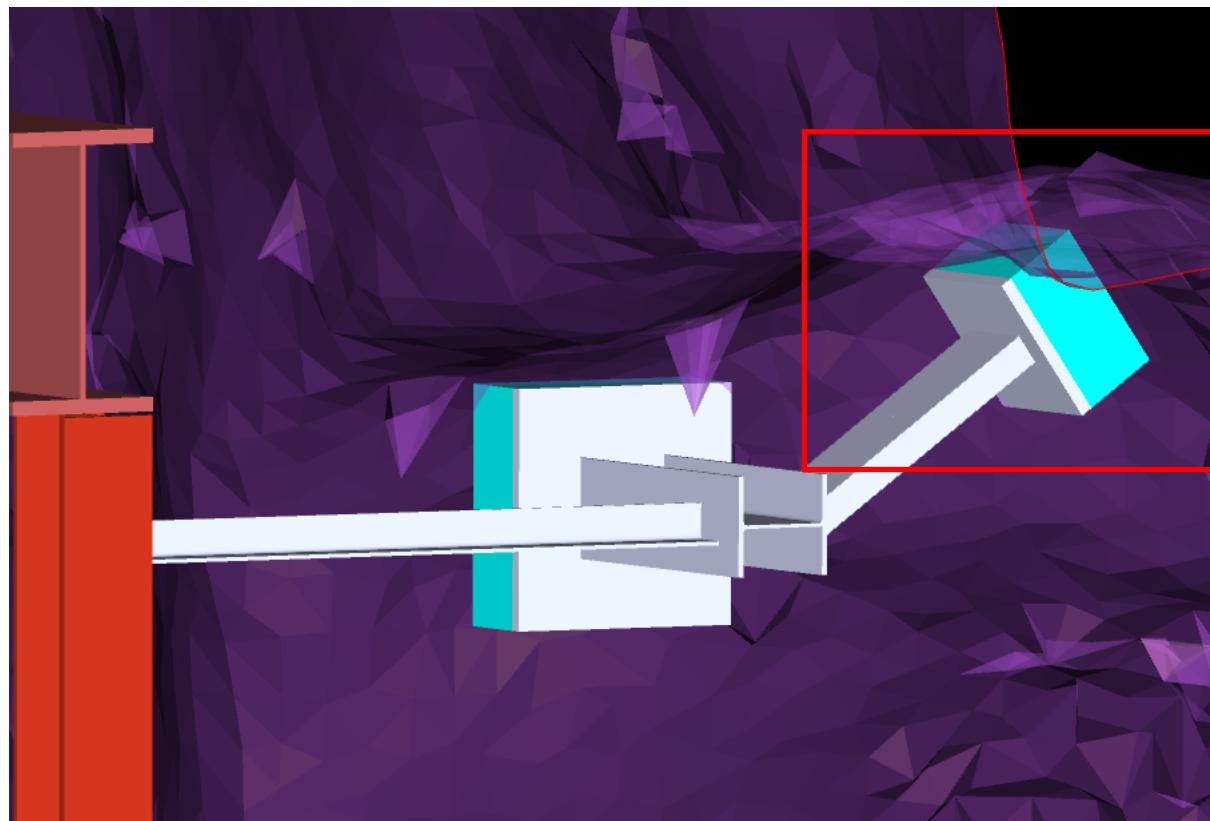
To install target plate ideally, shotcrete demolish required as shown.

To minimize shotcrete demolish, we can install target plate rotated by 15degree /design tolerance/ .

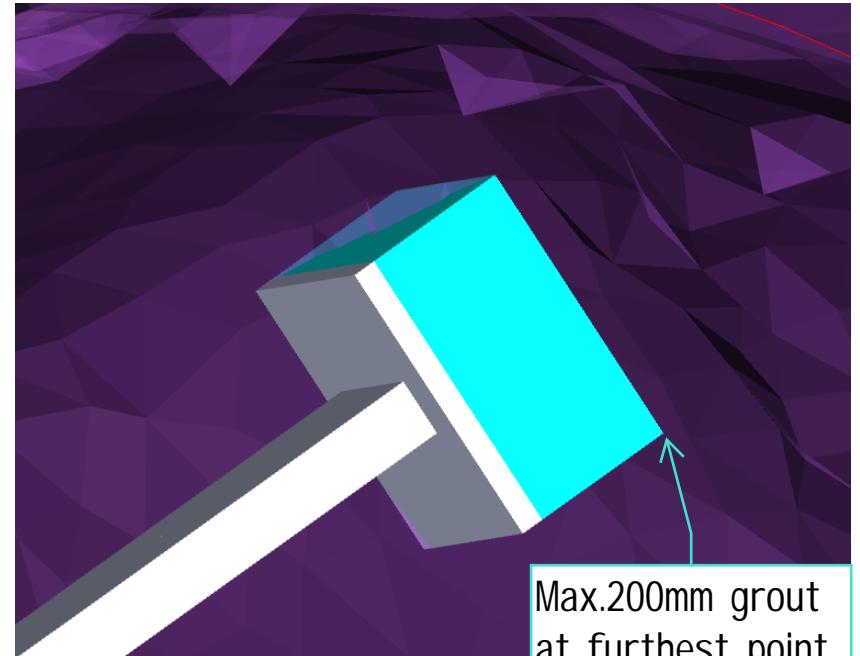
Current shotcrete wall surface slope:



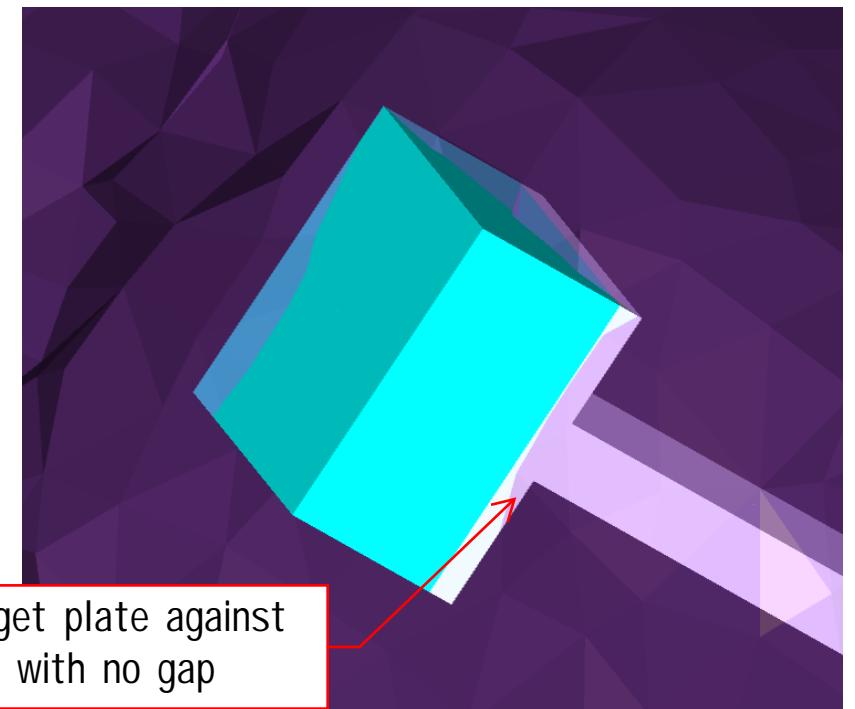
**ATTACHMENT #3
PROPOSAL-2**

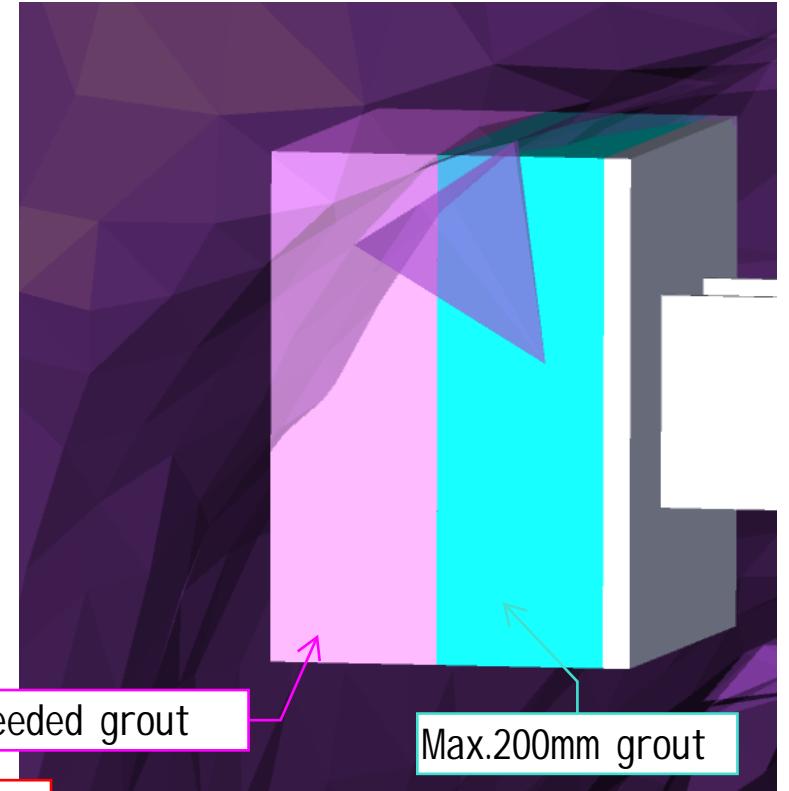
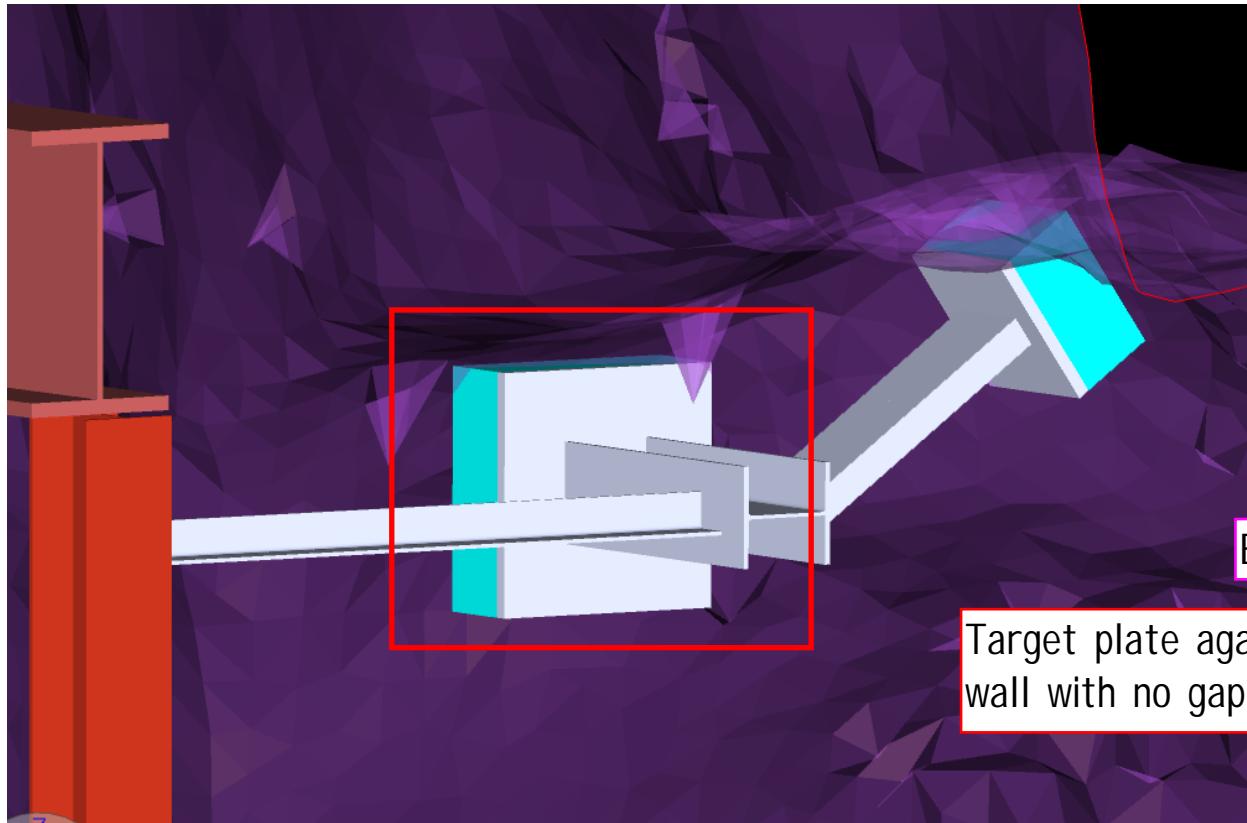


At the furthest point, grout thickness being max.200mm and install target plate against the wall as shown.

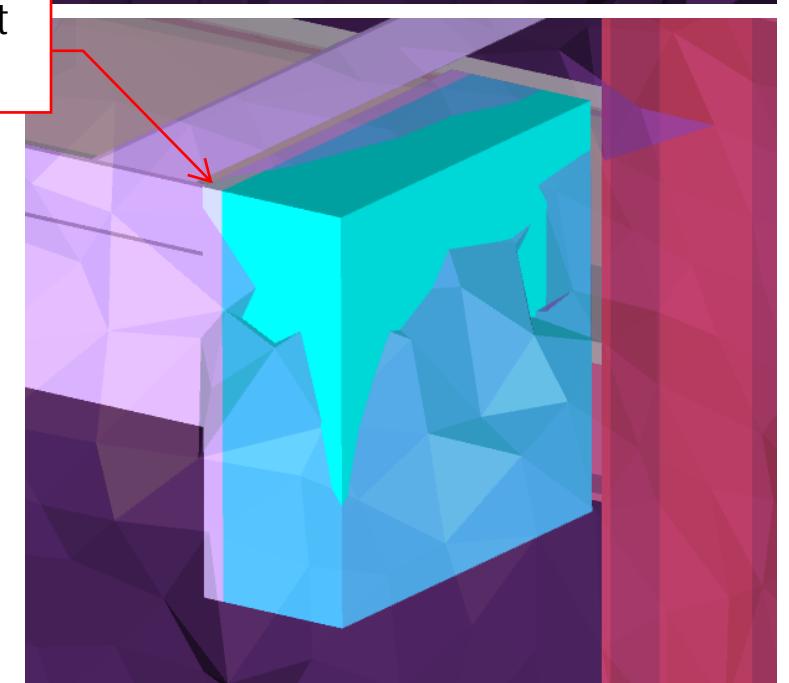


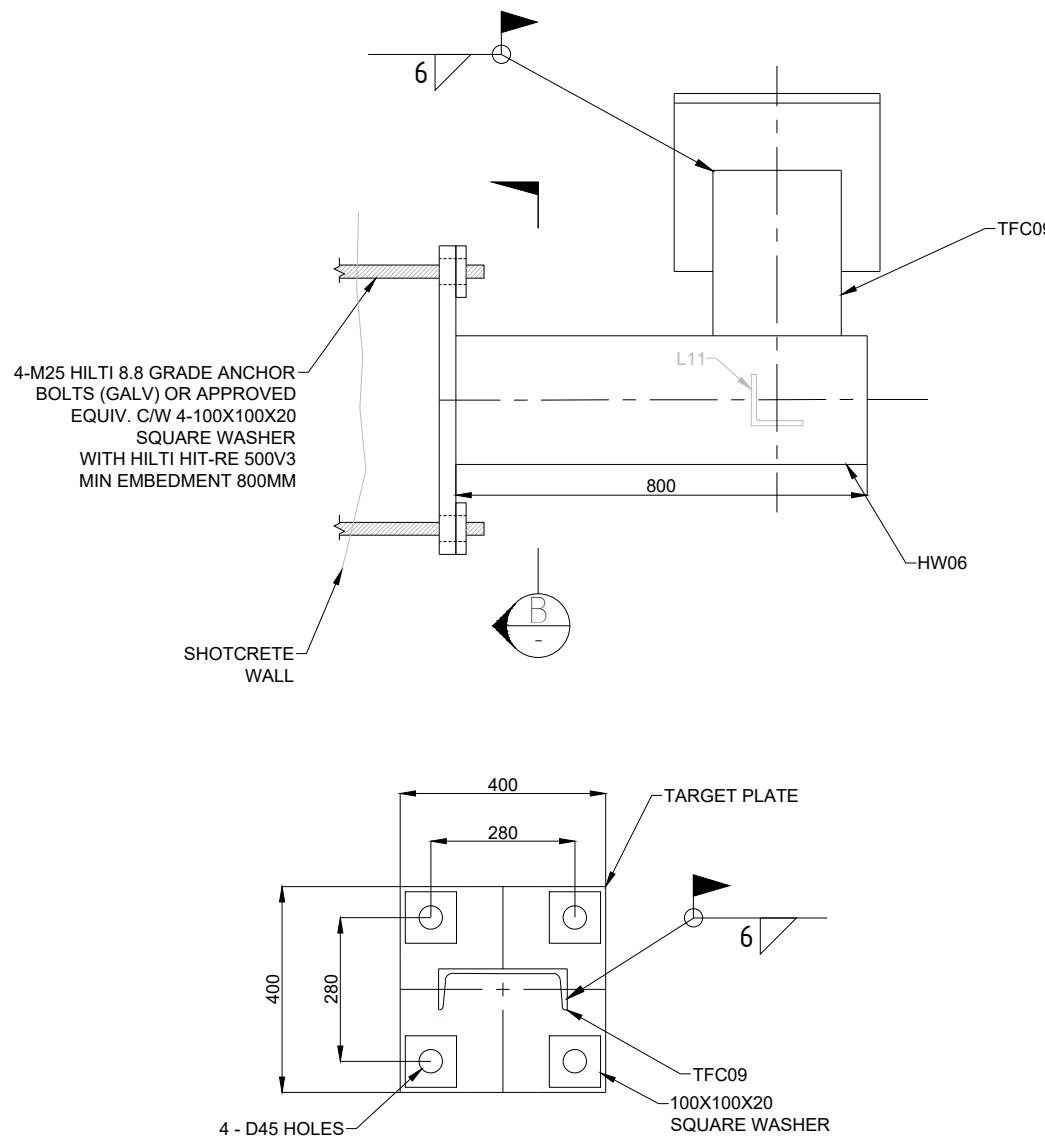
Target plate against wall with no gap



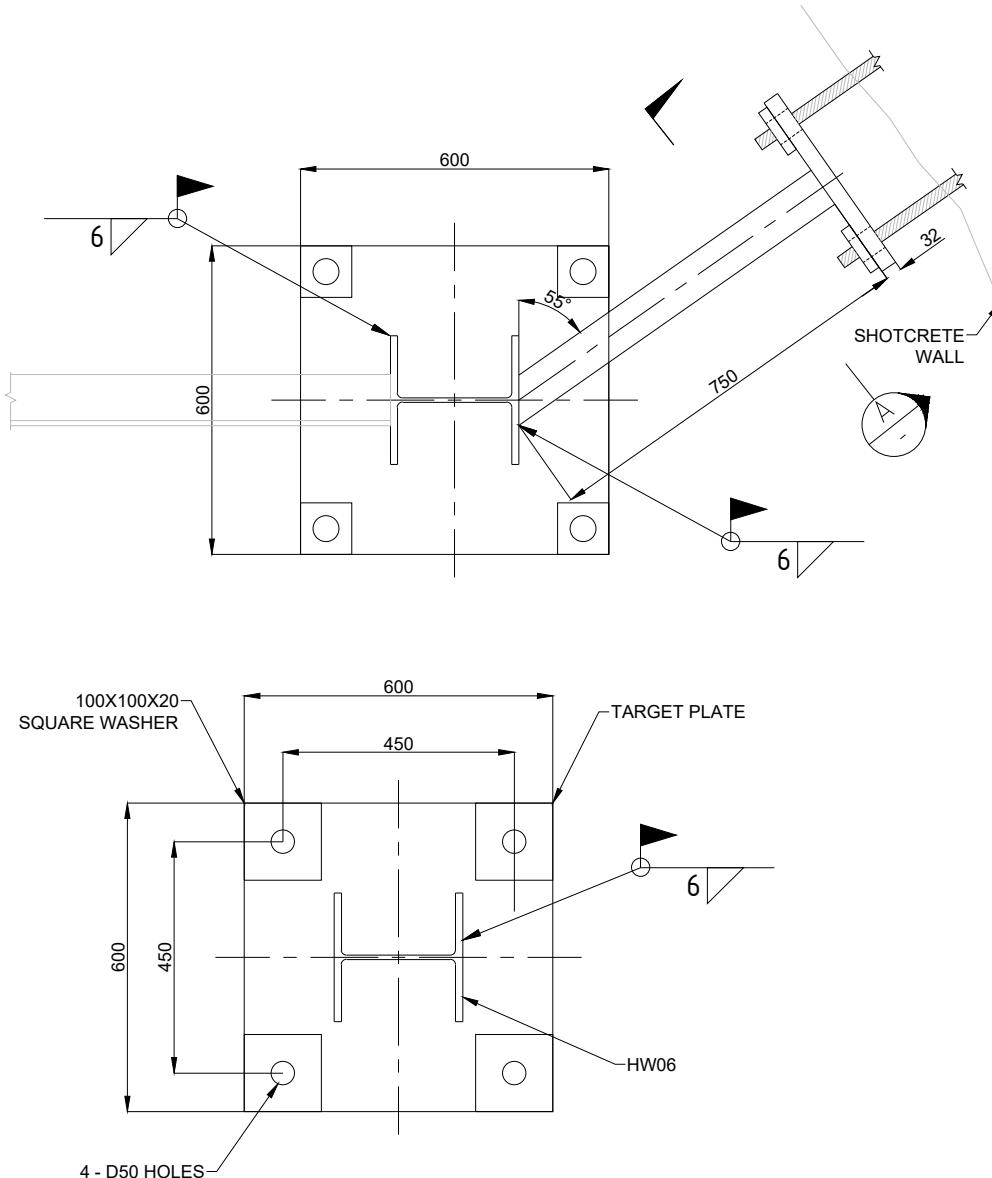


When target plate installed in the top side against wall with no gap, bottom side grout thickness exceeds max.200mm. To minimize grout thickness, we can install target plate rotated by 15 degree.





SECTION A-A



SECTION B-B

 Oyu Tolgoi LLC
ОЮУ ТОЛГОЙ ХХК

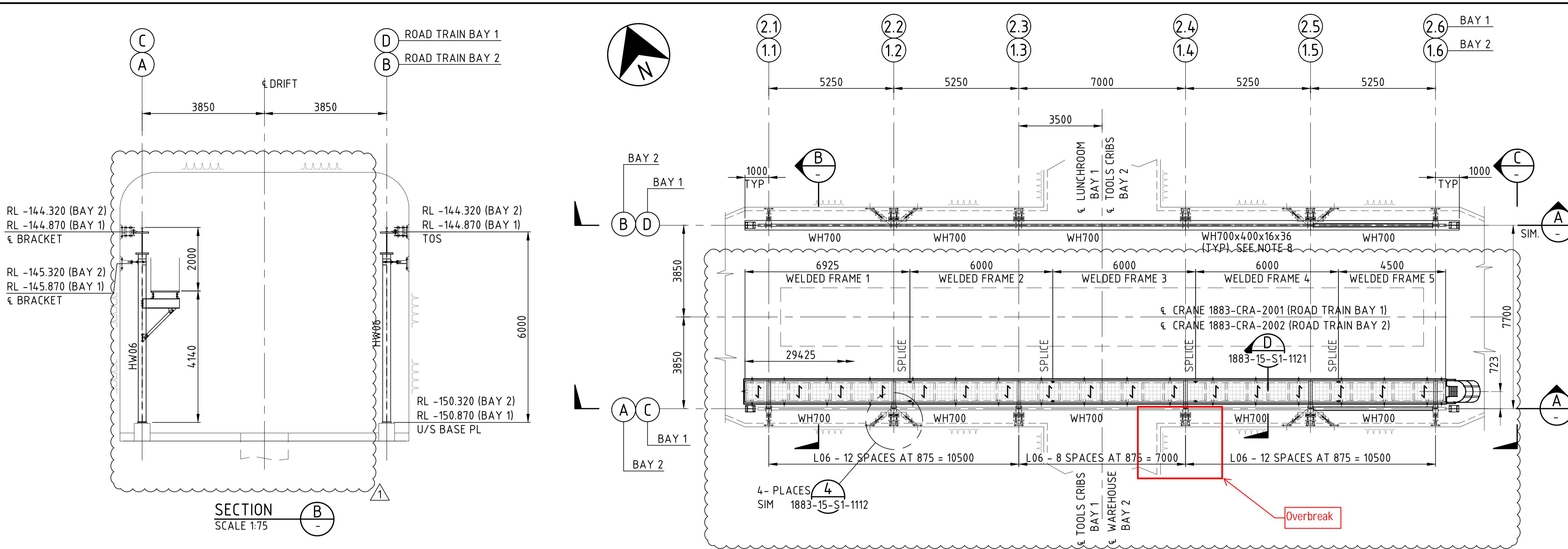
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VENDOR DOCUMENT NUMBER	REVISION
WORLEY DOCUMENT NUMBER	REVISION
 MCSinternational 704, 17th floor, Shangri-La, 198 Olympic Street, Sukhbaatar district-1, Ulanbatar, 11241, Mongolia Tel: +976-77226262; E-mail: info@international.mcs.mn	

QYU TOI GOI UNDERGROUND PROJECT

ER		
SCALE	DRAWING NUMBER	REV.
	-	A

**ATTACHMENT #4
RELATED DRAWINGS**



LEGEND

— — — — — MECHANICAL ENVELOPE.
— — — — — MINING EXCAVATION MODEL R.23

STP = DENOTED STOPPER

NOTES

1. COORDINATES AND ELEVATIONS IN METRES IN ACCORDANCE WITH OYU TOLGOI GRID SYSTEM (OTGS)
 2. DIMENSIONS EN MILLIMETRES
 3. REFER TO GENERAL NOTES ON DRG N° 1883-15-S1-1101
 4. CRANE RUNWAY GIRDERS WELD INSPECTION SHALL BE PERFORMED IN ACCORDANCE WITH SECTION 5.17 OF AISE TECHNICAL REPORT N°13
 5. CRANE RUNWAY GIRDER AND RAIL ALIGNMENT SHALL COMPLY WITH SECTION 5.18.6 OF AISE TECHNICAL REPORT N°13 AND VENDOR REQUIREMENTS
 6. RAILS JOINTS ON ONE SIDE OF A CRANE RUNWAY SHOULD BE STAGGERED SO THAT THEY DO NOT LINE UP WITH THOSE ON THE OPPOSITE SIDE. THE AMOUNT OF THE STAGGER SHOULD BE AT LEAST 300mm, AND SHOULD NOT BE THE SAME AS THE SPACING OF THE CRANE WHEELS
 7. GANTREX CLIPS BG15/AI OR APPROVED EQUIVALENT; DISTANCE BETWEEN CLIPS 600 mm MAX (UNO) TO BE SUPPLIED BY STEEL FABRICATOR
 8. SECTION IN ACCORDANCE WITH CHINESE STANDARD YB 3301 "THE WELDED STEEL H-SECTION"
 9. SEE RAILS SPLICE AND FIXING CLIPS ON DRG N°1883-15-S1-1108 TO BE SUPPLIED BY STEEL FABRICATOR. MAXIMUM RAIL LENGTH 6 M
 10. STOPPER DETAIL ON DRG N°1883-15-S1-1118

CONSTRUCTION ISSUE

JACOBS ENGINEERING SINGAPORE PTE LTD
(Registration number 199803266M),
a company incorporated in Singapore and
having its registered office at 50 Raffles
Place #32-01 Singapore Land Tower,
Singapore, 048623 (the offshore Contractor)

CAUTION - PROJECT DRAWING - NOT AS BUILT

REV.	DATE	REVISION DESCRIPTION	DES.	APPROVED	REV.	DATE	REVISION DESCRIPTION	DES.	APPROVED	REFERENCE DRAWING No.	REFERENCE DRAWINGS
			CHK.					CHK.			
0	26.06.18	ISSUED FOR CONSTRUCTION	MLF MPL	FAF EMR						1883-55-L8-1154	TRUCK SHOP HAULAGE LEVEL - MECHANICAL ENVELOPE - STAGE
1	03.08.20	ISSUED FOR CONSTRUCTION	MS AK	BB FA						1883-55-L8-1155	TRUCK SHOP HAULAGE LEVEL - MECHANICAL ENVELOPE - STAGE
										1883-55-L4-1102	TRUCK SHOP - GENERAL ARRANGEMENT - SHEET 1 OF 4
										1883-55-L4-1103	TRUCK SHOP - GENERAL ARRANGEMENT - SHEET 2 OF 4
										1883-55-L4-8481	GA DRAWING 1883-CRA-2001,2002 (KONECRANES)
										1883-15-S1-1121	ROAD BAY #1, #2 MAINTENANCE PLATFORM, LADDER DETAIL



OYU TOLGOI LLC
ОЮУ ТОЛГОЙ ХХК

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Мэдэгдэл: Энэхүү баримт бичиг [схул түүний хэсэг, хавсралт] түүзүүслэн, хуруулсан, агуулагдсан, мөн энэхүү баримт бичиггээ тавьсан зураг, төлөвлөгөө, зөвгар, дизайн болон бусад аливаа мэдээллийг Оюу Толгой ХХК өмчлөх бөгөөд Оюу Толгой ХХК-ийн өмч мөн. Иймээс эдээр мэдээлэл нь зөвхөн Оюу Толгой ХХК-ийн дотоод хэрэгжээд зориулагдсан бөгөөд Оюу Толгой ХХК-ийн бичигч зөвхөөрөлжлийг эдээр мэдээллийг аливаа хэлбэрээр хуульбарлах, хувилан олшруулах эсвэл эдээр мэдээлэлд нэвтрэх эхийг аливаа бусад этгээдэд агхийг хуудасын хуулианд зориулах. Эдээр нэхцлийн (бодитоор зөрчсан схул зөрчийн оролцсон) аливаа зөрчилд хуулийн хариуцлагын хуулзаж бөгөөд боломжийг хүхүү эрх зүйн арга хэмжээ авах эрхээ

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PROJECT NO	SN1809		CHECK DESIGN E. GONZALEZ	CHECK DRAWING M. PARADA		
CONTRACT NO			LEAD ENGINEER F. ALVAREZ	APPROVAL DATE 26.06.18		
DRAWING SIZE	A1	AREA PROJECT ENGINEER	ENGINEERING MANAGER E. MARIN			
PLOT SCALE		PROJECT MANAGER	APPROVAL DATE 26.06.18			
CAD FILE NAME	1883-15-S1-1114.DWG	CLIENT	APPROVAL DATE	SCALE	DRAWING NUMBER	REV.
				AS SHOWN	1883-15-S1-1114	1

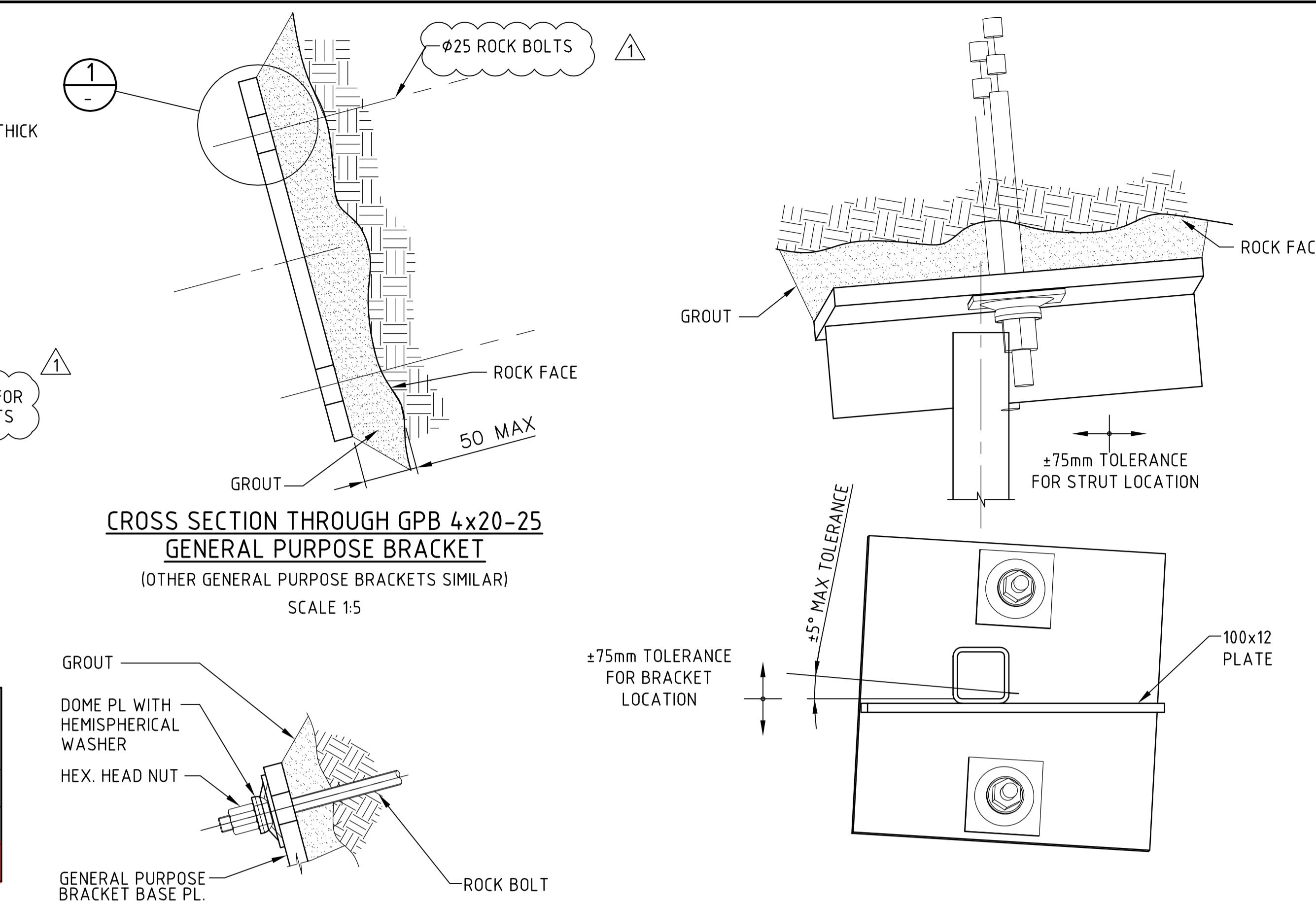
WLL (t) (NOTE 7.)	BRACKET DESIGNATION	DIMENSIONS		WEIGHT (kg)	MINIMUM PROOF TEST LOAD (kN) (NOTES 3 & 5)
		A (mm)			
5.5	GPB 4x20-25	25	32	80	
7.5	GPB 4x20-28	28	35	105	
9.5	GPB 4x20-32	32	40	135	

WLL (t) (NOTE 7.)	BRACKET DESIGNATION	DIMENSIONS		WEIGHT (kg)	MINIMUM PROOF TEST LOAD (kN) (NOTES 3 & 5)
		A (mm)			
2	GPB 2x20-16	16	20	60	
3.5	GPB 2x20-20	20	25	100	
4.5	GPB 2x20-25	25	32	145	

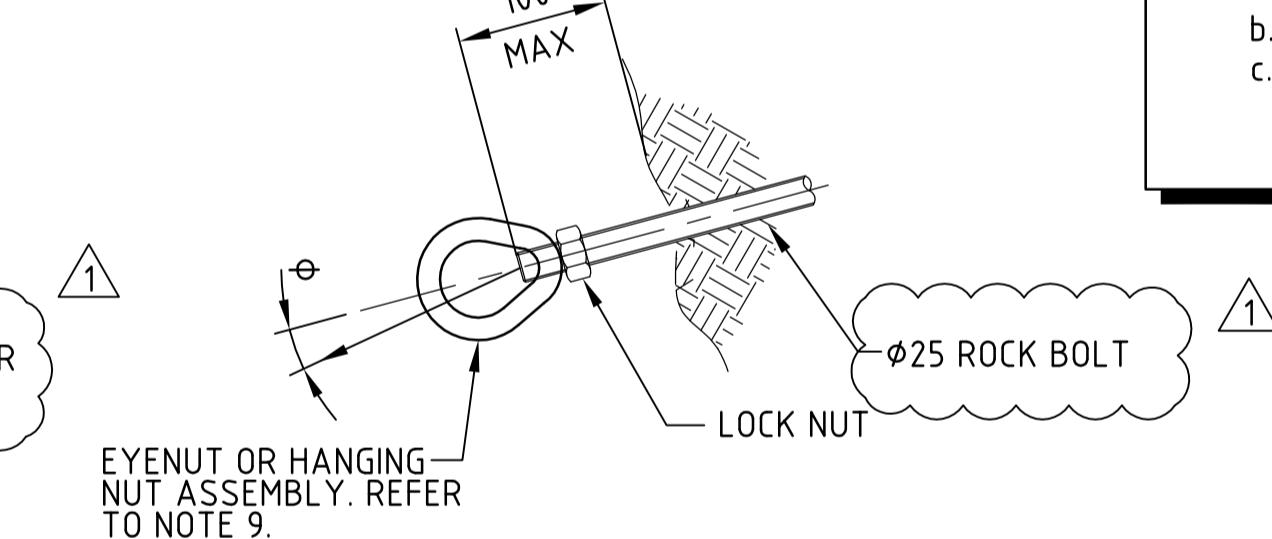
CAUTION - PROJECT DRAWING - NOT AS BUILT

REV.	DATE	REVISION DESCRIPTION	DES. CHK	APPROVED	REV.	DATE	REVISION DESCRIPTION	DES. CHK	APPROVED	REFERENCE DRAWING No.	REFERENCE DRAWINGS
0	27/03/17	ISSUED FOR CONSTRUCTION	NM JDL	DR EB						1800-15-S1-1204	ROCK BOLTING DETAILS SHEET 2 OF 2
1	05/03/18	DIMENSIONS AMENDED	SN DG	PS BP						1800-15-S1-1201	GENERAL NOTES

WLL (t) (NOTE 7.)	BRACKET DESIGNATION	DIMENSIONS		WEIGHT (kg)	MINIMUM PROOF TEST LOAD (kN) (NOTES 3 & 5)
		A (mm)			
2	GPB 2x20-16	16	20	60	
3.5	GPB 2x20-20	20	25	100	
4.5	GPB 2x20-25	25	32	145	



TYPICAL ROCK BOLT DETAILS
SCALE 1:5



TYPICAL EYEBOLT DETAIL
SCALE 1:5

THE USE OF THE GENERAL PURPOSE BRACKETS IS ILLUSTRATED IN THE ABOVE VIEWS FOR A TYPICAL APPLICATION WHERE A STRUT APPLIES AN AXIAL FORCE TO THE BRACKET VIA A 100x12 FLAT PLATE.

- THE BRACKET IS FIRST BOLTED TO THE ROCK AND GROUTED IN PLACE. THE BRACKET IS DESIGNED TO ALIGN WITH THE ROCK FACE, WITH APPROXIMATELY 50mm THICK GROUT. THE ROCK BOLTS ARE INSTALLED APPROXIMATELY NORMAL TO THE ROCK FACE. THE BRACKETS MAY BE OFFSET UP TO 75mm FROM THE CORRECT POSITION AND HAVE 5° ROTATION ABOUT ANY AXIS, AS INDICATED.
- THE 100x12 FLAT PLATE IS THEN SITE WELDED TO THE BRACKET AT THE CORRECT LEVEL IN A HORIZONTAL PLANE.
- THE STRUT, WHICH IS SUPPLIED OVER-LENGTH, IS TRIMMED TO SUIT, RESTED ON THE FLAT PLATE AND CORRECTLY ALIGNED THEN SITE WELDED TO IT.

100

MAX

φ25 ROCK BOLT

LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

100

MAX

φ25 ROCK BOLT

LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

100

MAX

φ25 ROCK BOLT

LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

100

MAX

φ25 ROCK BOLT

LOCK NUT

EYENUT OR HANGING
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TO NOTE 9.

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NUT ASSEMBLY. REFER
TO NOTE 9.

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MAX

φ25 ROCK BOLT

LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

100

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φ25 ROCK BOLT

LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

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TO NOTE 9.

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TO NOTE 9.

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TO NOTE 9.

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LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

100

MAX

φ25 ROCK BOLT

LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

100

MAX

φ25 ROCK BOLT

LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

100

MAX

φ25 ROCK BOLT

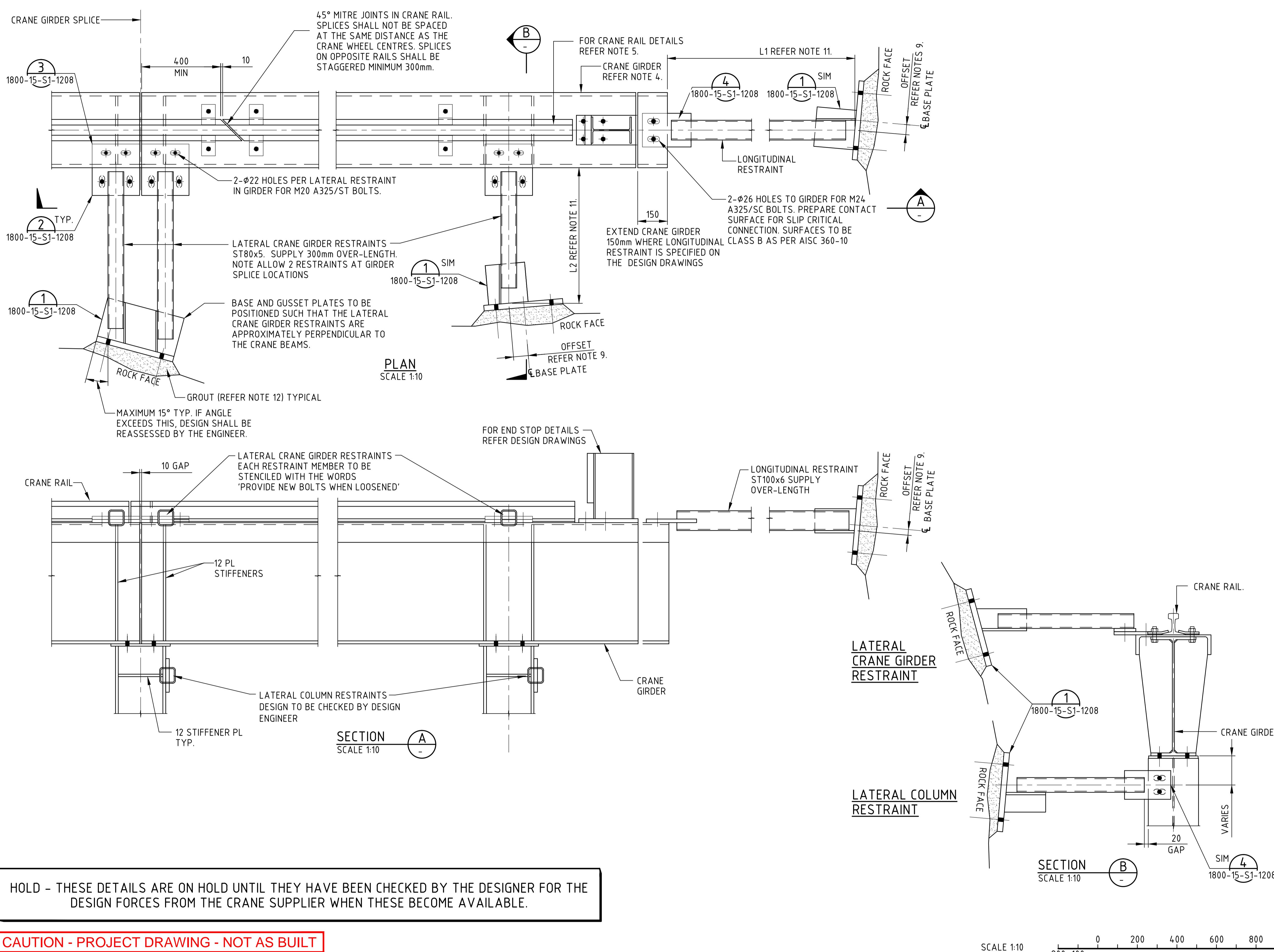
LOCK NUT

EYENUT OR HANGING
NUT ASSEMBLY. REFER
TO NOTE 9.

100

MAX

φ25 ROCK BOLT



HOLD - THESE DETAILS ARE ON HOLD UNTIL THEY HAVE BEEN CHECKED BY THE DESIGNER FOR THE DESIGN FORCES FROM THE CRANE SUPPLIER WHEN THESE BECOME AVAILABLE.

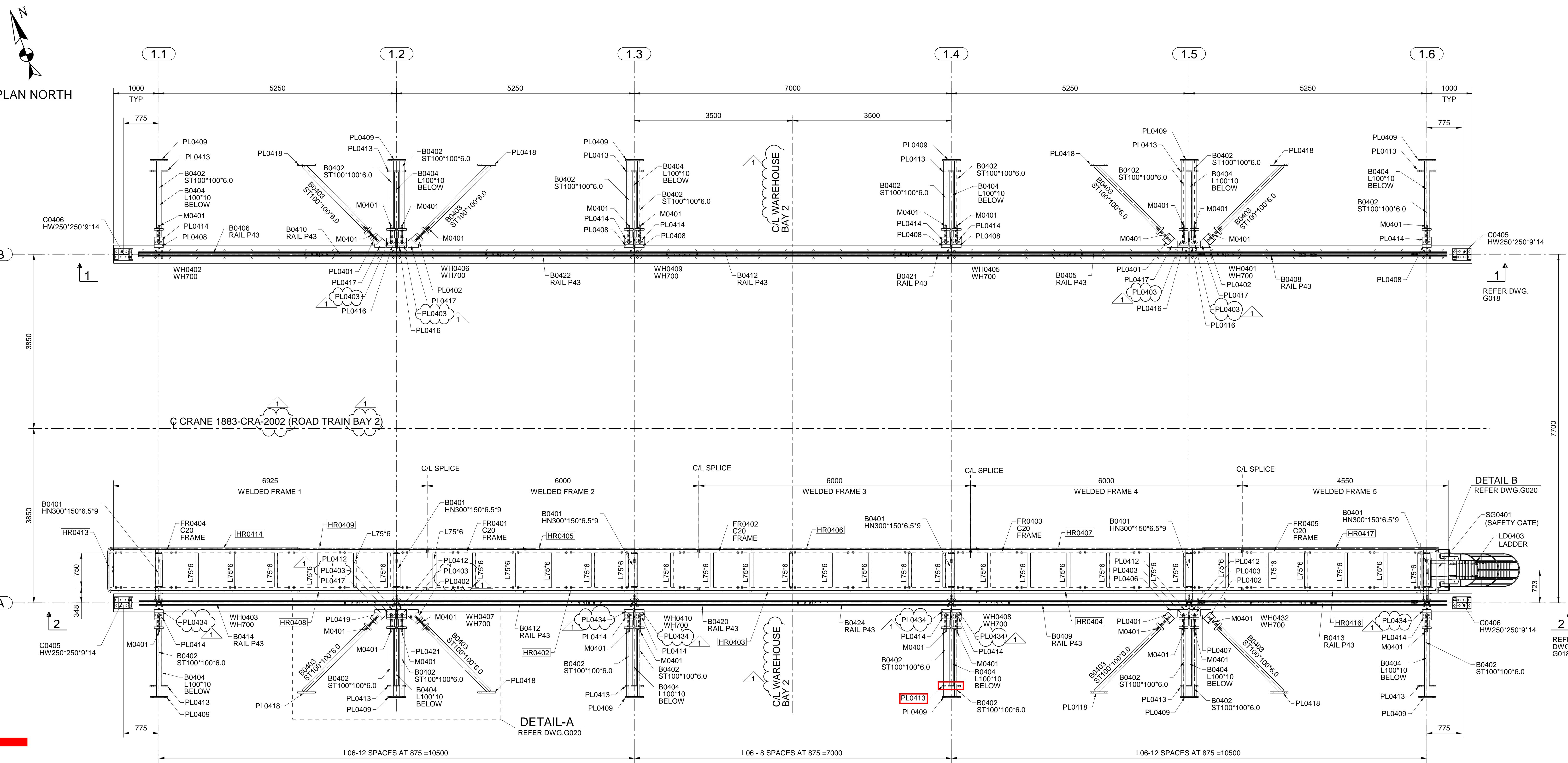
CAUTION - PROJECT DRAWING - NOT AS BUILT



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C XXK	PRODUCED BY ---	DESIGNED BY D.GARLAND	DRAWN BY W.SCORER	OYU TOLGOI UNDERGROUND PROJECT UNDERGROUND INFRASTRUCTURE AND MINING STRUCTURAL STANDARD DRAWING STANDARD OVERHEAD CRANE LAYOUT		
	PROJECT NO SN1809	CHECK DESIGN J.D.LAMAGNERE	CHECK DRAWING W.SCORER			
	CONTRACT NO ---	LEAD ENGINEER D.RANKIN	APPROVAL DATE 14/09/2017			
	DRAWING SIZE A1	AREA PROJECT ENGINEER ---	ENGINEERING MANAGER S. CRAWFORD			
	PLOT SCALE ---	PROJECT MANAGER ---	APPROVAL DATE 14/09/2017			
CAD FILE NAME 1800-15-S1-1211 DWG	CLIENT ---	APPROVAL DATE ---	SCALE AS SHOWN	DRAWING NUMBER 1800-15-S1-1211	REV. 0P1	



ROAD TRAIN BAY 2 CRANE BEAMS RL-144.320 TOS PLAN
REF. DESIGN DWG : PLAN/1883-15-S1-1114

WH700 = WH700X400X16X36

FIELD NOTE :

1. LATERAL SUPPORT TO BE CUT ON SITE AS REQUIRED

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. Francisco Alvarez F.- Revise and resubmit "Final Version" incorporating comments. 22-Nov-2020 (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.		
REV	DATE	REVISION DESCRIPTION			DES.
		Submit Certified Document.			CHK.
YES	NO				KK
0	07/10/2020	ISSUED FOR CONSTRUCTION			SB
Responsible Engineer		Name	Signature		KK
1	12/11/2020	REVISED	FOR CONSTRUCTION		SB
Equipment Tag No.					
Client Document No.					
Jacobs Document No. and Revision		CW2117013-B093-0784_R2			
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.					



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	DRAWING SIZE	AREA PROJECT ENGINEER	ENGINEERING MANAGER
	PLOT SCALE	PROJECT MANAGER	APPROVAL DATE 12/11/2020
CAD FILE NAME 2570-1883-G017.DWG	CLIENT	APPROVAL DATE	SCALE NA
			DRAWING NUMBER 2570-1883-G017

The logo for SinoStruct features a stylized red and grey geometric icon resembling a heart or a pair of interlocking shapes on the left, followed by the company name "SinoStruct" in a bold, sans-serif font.

TITLE

OYU TOLGOI UNDERGROUND PROJECT UNDERGROUND WORK SHOPS

TRUCK SHOP HAULAGE LEVEL - ROAD TRAIN BAYS 2
PLAN AT TOS RL-144.320

SCALE

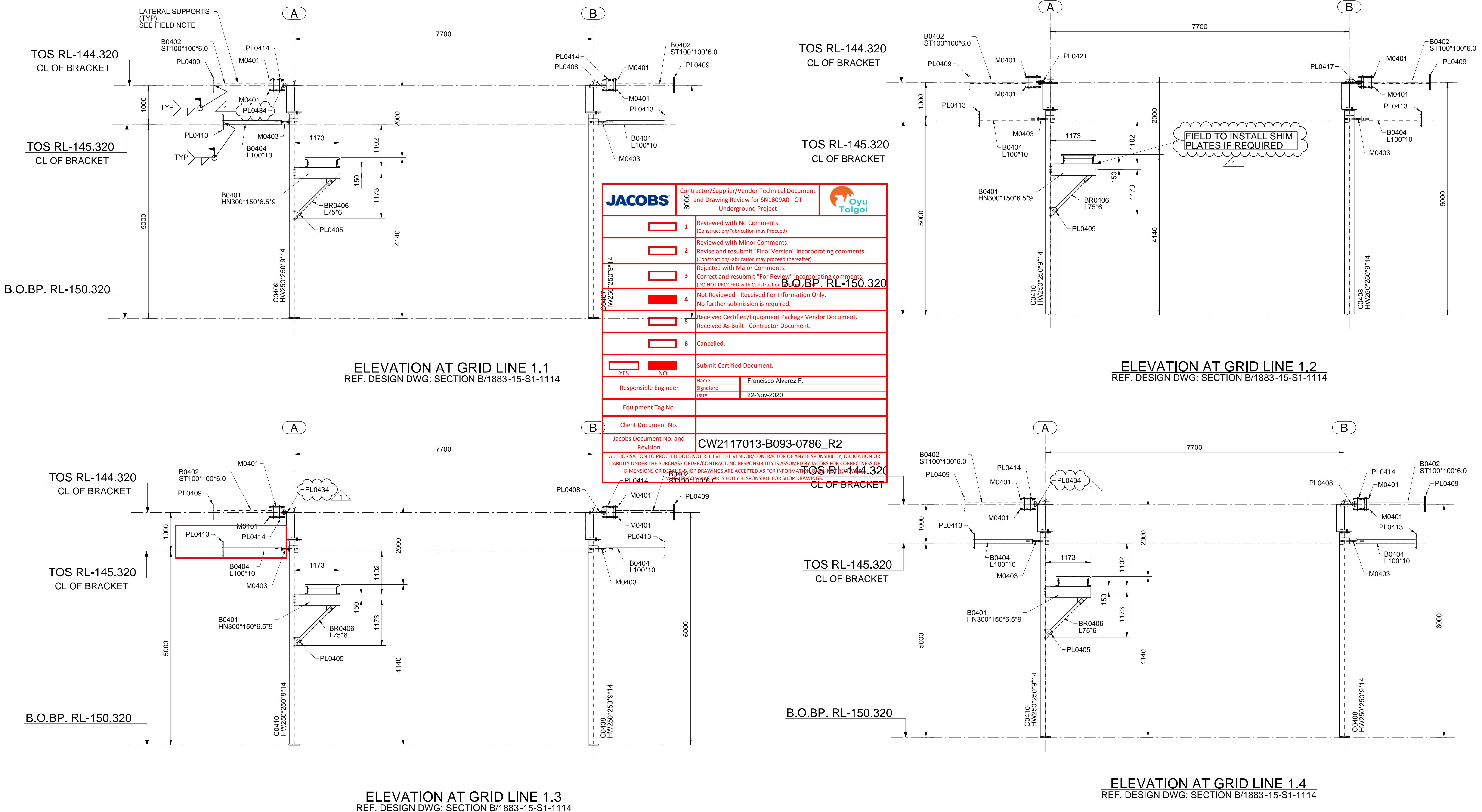
NA

DRAWING NUMBER

2570 1883 G017

REV.

1



FIELD NOTE :
1. LATERAL SUPPORT TO BE CUT ON SITE AS REQUIRED

REV.	DATE	REVISION DESCRIPTION	DES. CHK	APPROVED	REV.	DATE	REVISION DESCRIPTION	DES. CHK	APPROVED	REFERENCE DRAWING No.	REFERENCE DRAWINGS
0	07/10/2020	ISSUED FOR CONSTRUCTION	KK SB								
1	11/12/2020	REVISED FOR CONSTRUCTION	KK SB								



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SinoStruct		
OYU TOLGOI UNDERGROUND PROJECT UNDERGROUND WORK SHOPS TRUCK SHOP HAULAGE LEVEL - ROAD TRAIN BAYS 2 ELEVATIONS		
PRODUCED BY	DESIGNED BY	DRAWN BY
PROJECT NO	CHECK DESIGN SB	CHECK DRAWING SB
CONTRACT NO	LEAD ENGINEER HN	APPROVAL DATE 11/12/2020
DRAWING SIZE	AREA PROJECT ENGINEER	ENGINEERING MANAGER
PLOT SCALE	PROJECT MANAGER	APPROVAL DATE 11/12/2020
CAD FILE NAME	CLIENT	APPROVAL DATE
2570-1883-G019.DWG		
REV. 1	SCALE NA	DRAWING NUMBER 2570-1883-G019

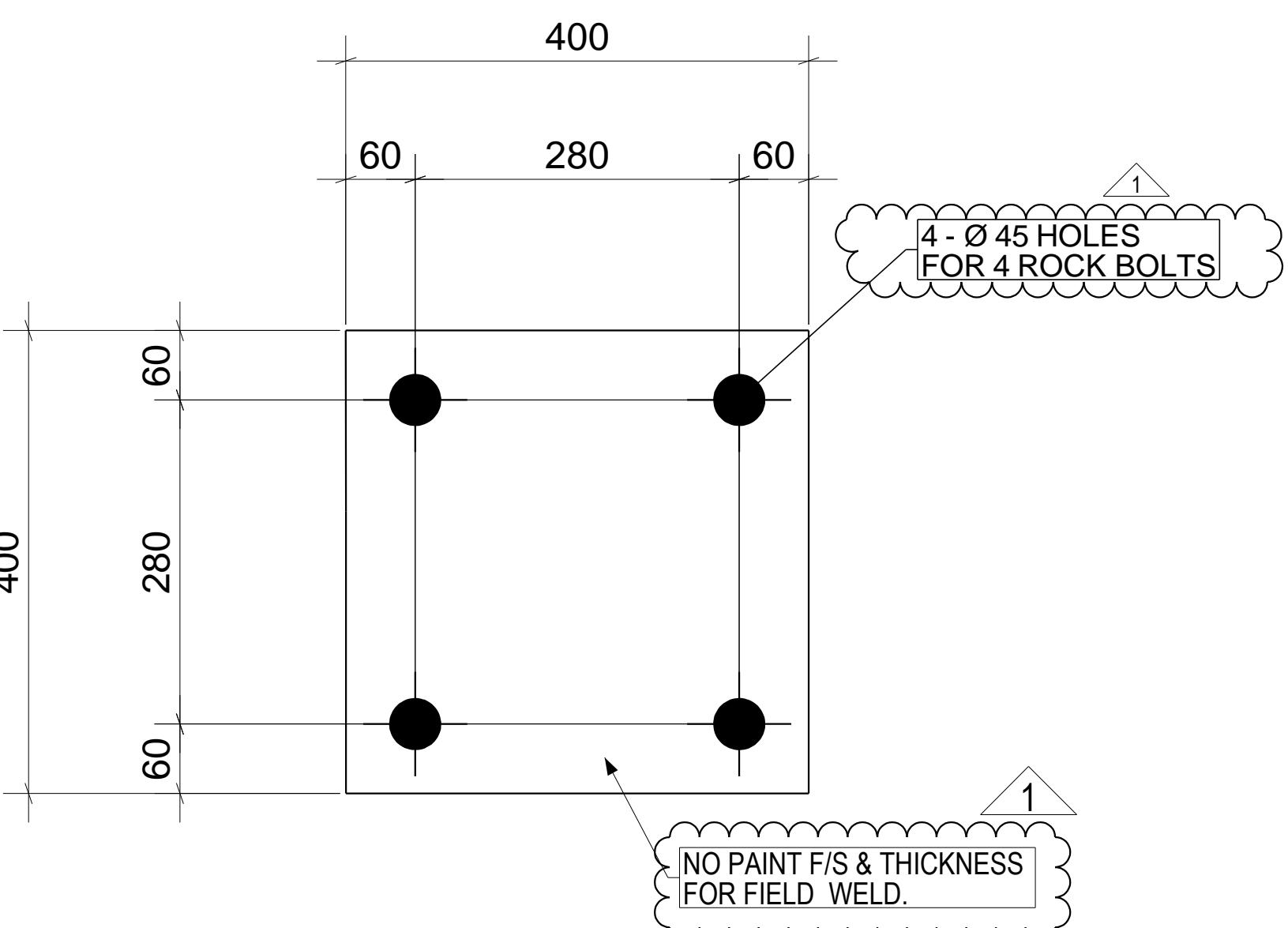
GRID
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1.1B/1.1***
1.2A>/1.***
1.2B/1.2***
1.3A>/1.***
1.3B/1.3***
1.4A>/1.***
1.4B/1.4***
1.5A>/1.***
1.5B/1.5***
1.6A>/1.***
1.6B/1.6***
2.1C>/2.***
2.1D/2.1***
2.2C>/2.***
2.2D/2.2***
2.3C>/2.***
2.3D/2.3***
2.4C>/2.***
2.4D/2.4***
2.5C>/2.***
2.5D/2.5***
2.6C>/2.***
2.6D/2.6***

BILL OF MATERIALS

Mark	Quantity	Profile	Length (MM)	Area (Sq. M)	Material	Weight (Kg)		Remarks
						Unit.	Total	
2570-1883-02-PL0413	24	PLATE	400			40.19	964.47	
f726	24	PL32X400	400	0.16	Q345B	40.19	964.47	
TOTAL :								964.47 Kg

TOTAL: 964.47 Kg.

JACOBS	Contractor/Supplier/Vendor Technical Document and Drawing Review for SN1809A0 - OT Underground Project		
<input 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"/> YES	<input type="checkbox"/> NO	Submit Certified Document.	
Responsible Engineer		Name	Francisco Alvarez F.-
		Signature	
		Date	22-Nov-2020
Equipment Tag No.			
Client Document No.			
Jacobs Document No. and Revision		CW2117013-B040-8051_R2	
<p>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).</p> <p>VENDOR/CONTRACTOR IS FULLY RESPONSIBLE FOR SHOP DRAWINGS.</p>			



NOTE : Mark Number To Be Stamped On The Side Nominated With Triangle Symbol

GENERAL NOTES

1. ALL EDGES AND CORNERS TO BE ROUNDED WITH MINIMUM RADIUS OF 2MM (ALL HOLES INCLUDED).
 2. ALL WELDS 6MM CONTINUOUS FILLET U.N.O IN CONFORMANCE WITH AWS D1.1 (or JGJ81)
 3. SNIPE TO BE SEAL WELDED AROUND THE SNIPE TO THE FLANGE AND WEB FOR THE PAINTED STEELWORK. FOR THE GALVANISED STEELWORK THE ENLARGED SNIPE OR VENT HOLES ARE PERMISSIBLE
 4. STEEL MEMBERS TO BE PAINTED WITH MARKED TREATMENT AS PER PAINT SPEC. 0000-00-SPE-0002.
 5. INTERNAL CORNERS OF MEMBER TO HAVE 11MM RADIUS TYPICAL

2570-1883-02-PL0413

Qty. : 24 Off GA REF. No. : 2570-1883-02-G011,13,14,17,19 & 20

PAINT TREATMENT :



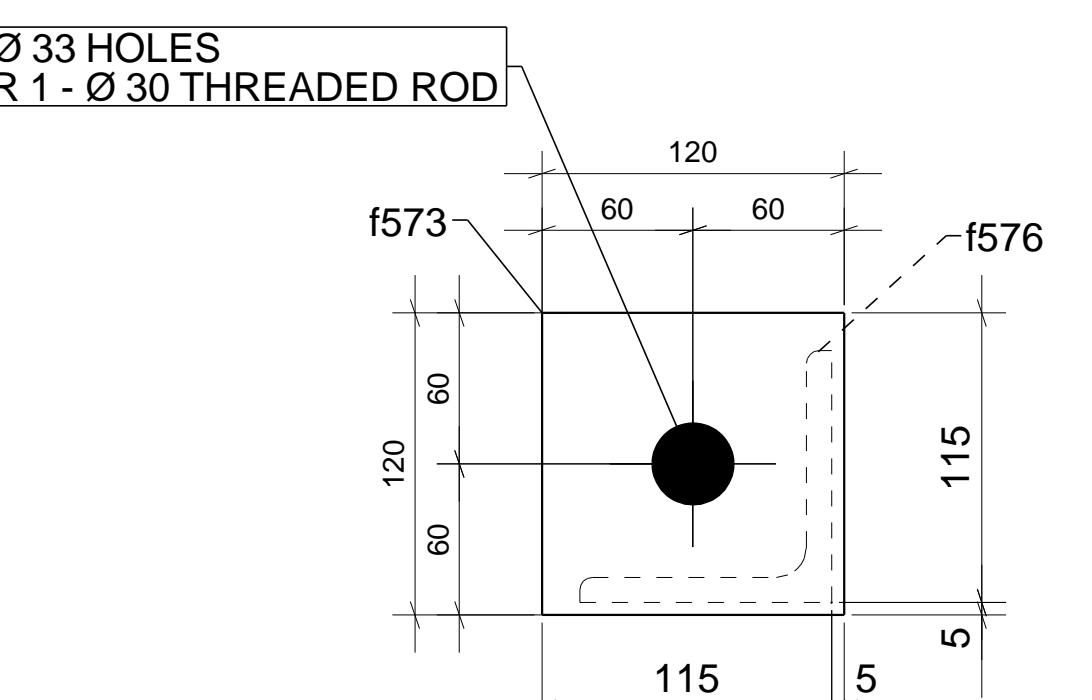
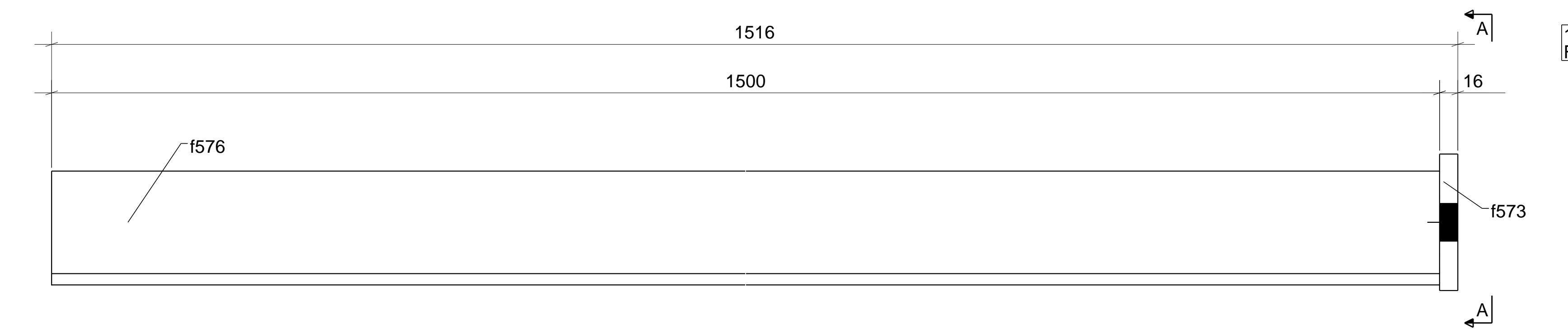
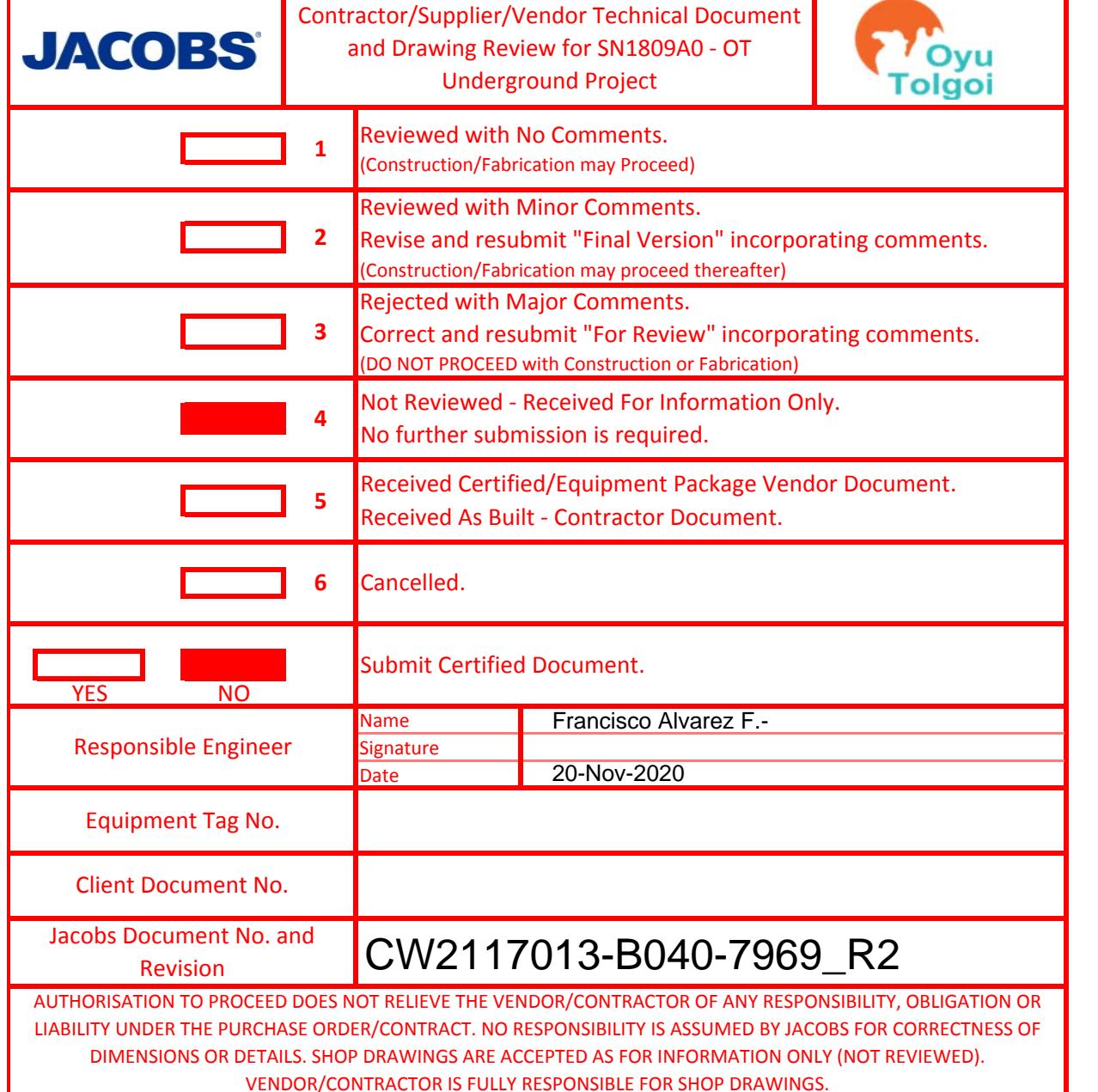
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COLOUR CODE	
1. STRUCTURAL STEEL	BLUE RAL5015
2. LADDERS, HANDRAILS & MONORAILS	SAFETY YELLOW RAL1021

SinoStruct

GRID
1.1A>/1. ***
1.1B/1.1***
1.2A>/1. ***
1.2B/1.2***
1.3A>/1. ***
1.3B/1.3***
1.4A>/1. ***
1.4B/1.4***
1.5A>/1. ***
1.5B/1.5***
1.6A>/1. ***
1.6B/1.6***
2.1C>/2. ***
2.1D/2.1***
2.2C>/2. ***
2.2D/2.2***
2.3C>/2. ***
2.3D/2.3***
2.4C>/2. ***
2.4D/2.4***
2.5C>/2. ***
2.5D/2.5***
2.6C>/2. ***
2.6D/2.6***



**LATERAL SUPPORT SHALL BE SUPPLIED
ON THE MARKED LENGTHS AND CUT ON
SITE AS PER REQUIREMENT**

TE : Mark Number To Be Stamped On The Side Nominated With Triangle Symbol

GENERAL NOTES

1. ALL EDGES AND CORNERS TO BE ROUNDED WITH MINIMUM RADIUS OF 2MM (ALL HOLES INCLUDED).
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 4. STEEL MEMBERS TO BE PAINTED WITH MARKED TREATMENT AS PER PAINT SPEC. 0000-00-SPE-0002.
 5. INTERNAL CORNERS OF MEMBER TO HAVE 11MM RADIUS TYPICAL

2570-1883-02-B0404

Qty. : 24 Off GA REF. No. : 2570-1883-02-G011,G014,G013,G017,G019&G020

INT TREATMENT : System- 1



COLOUR CODE	
STRUCTURAL STEEL	BLUE RAL5015
LADDERS, HANDRAILS & MONORAILS	SAFETY YELLOW RAL1021



ОЮУ ТОЛГОЙ LLC

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	PLOT SCALE	PROJECT MANAGER	APPROVAL DATE 11/11/2020	
	CAD FILE NAME 2570-1883-02-B0404.DWG	CLIENT	APPROVAL DATE	SCALE NA
				DRAWING NUMBER 2570-1883-02-B0404