CW2148472-A008-0033_R1
1883-05-RFI-8107_0

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CLIENT NAME: OYU TOLGOI LLC

PROJECT NAME: Oyu Tolgoi Underground Project
Rev_1

REQUEST FOR INFORMATION (RFI)

TO:	Jacobs	DATE:	07-07-2022
FROM:	MCS International LLC	RFI No:	TWS-0414-RFI-0033
PHONE #:	+976-77226262	REV #	0

SUBJECT: 1883: Unclear location of truck shop fume extraction system dampers

Reference Document No.	Rev No.	Title
1883-25-J1-1124	1	TRUCK SHOP - AXIAL VENTILATION FANS - FIRE DOORS P&ID
1883-35-C2-1102	2	EXHAUST AND VENTILATION SYSTEM – TRUCK SHOP - PLAN
1883-35-C2-1103	2	EXHAUST AND VENTILATION SYSTEM – TRUCK SHOP - PLAN
1881-55-DSH-1107	0	DATA SHEET FUME EXTRACTION SYSTEM

Discipline Codes (Mandatory) **D1** (CSA) - ☐ **D2** (MP) - ☒ **D3** (E&I) - ☐ **D4** (Other) -

Request:

Motorized dampers are mentioned in 1883-25-J1-1124, but not mentioned motorized dampers in 1883-35-C2-1102, 1883-35-C2-1103. Also, quantity of motorized dampers is 4ea in 1881-55-DSH-1107. The Contractor requests the Company to clarify location and dimension of motorized dampers.

☐ Case Specific: The requested RFI applies only to this request and cannot be applied again.

☐ Corporate: It is recommended that the RFI be incorporated into IM CWI procedures.

☐ TECHNICAL DEVIATION REQUIRED

Response Required By:

Prepared By: Delgersuren.N (SMP Engineer) Delgersuren Namkhainyamba C=MN OU=Engineering O=Field Engineer CN=Delgersuren Namkhainyamba E=delgersuren.n@mcsi.mn 2022.07.07 19:54:57 +08'00'	Date: 07-07-2022	Approved By: Dumburmaa.N Dumburmaa Namshir Digitally signed by Dumburmaa Namshir Date: 2022-07-07 20:04:33	Date: 07-07-2022

Response:

The requested information will be covered in response of the 1883-05-RFI-8109_0.

Reference Document No.	Rev No.	Title	Comment

Prepared By Saruul.B Digitally signed by Saruul.B DN: cn=Saruul.B, c=MN, o=Worley, ou=Engineering, email=Saruul.Batdorj@worley.com Date: 2022.07.13 10:36:15 +08'00'	Date	Approved By Digitally signed by Enerel.O DN: cn=Enerel.O, c=MN, o=Worley, ou=Engineering, Reason: I have reviewed this document Date: 2022.07.13 15:00:24 +08'00'	Date

DESIGN ISSUE

CAUTION - PROJECT DRAWING - NOT AS BUILT

REV.	DATE	REVISION DESCRIPTION	DES. / CHK.	APPROVED
C	06.07.18	ISSUED FOR APPROVAL	AN / LC	PC / EM
0	13.07.18	ISSUED FOR DESIGN	AN / LC	PC / EM
1	11.06.21	ISSUED FOR DESIGN	MS / GRW	GRW / RH

REFERENCE DRAWING No.	REFERENCE DRAWINGS
0000-25-E1-1105	P&ID'S MOTOR TYPICAL 1/2
0000-25-E1-1106	P&ID'S MOTOR TYPICAL 2/2
0000-25-E1-1107	P&ID'S MOTOR & EQUIPMENT TYPICAL
1883-25-J1-1117	TRUCK SHOP HAULAGE LEVEL AIR & WATER DISTRIBUTION

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Jacobs Document No. SN1809-1883/PI.PID/1114

Web: www.jacobs.com

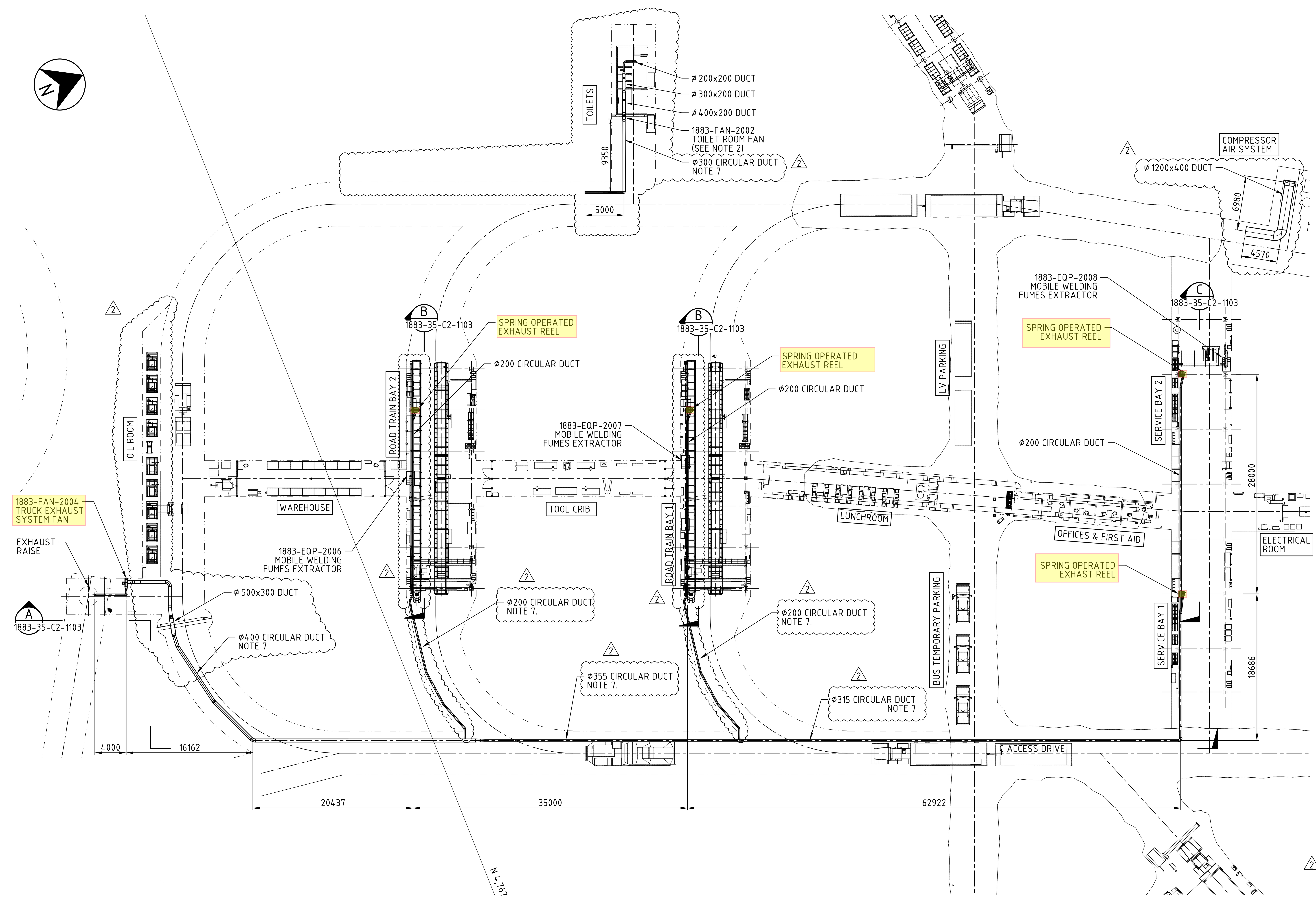
OYU TOLGOI LLC

ОЮУ ТОЛГОЙ ХХК

PRODUCED BY	DESIGNED BY: L. CESPEDES	DRAWN BY: A. NUNEZ
PROJECT NO: SN1809	CHECK DESIGN: L. CESPEDES	CHECK DRAWING: I. MONTANARES
CONTRACT NO	LEAD ENGINEER: P. CABEZAS	APPROVAL DATE: 13.07.18
DRAWING SIZE: A1	AREA PROJECT ENGINEER	ENGINEERING MANAGER: E. MARIN
PLOT SCALE	PROJECT MANAGER	APPROVAL DATE: 13.07.18
CAD FILE NAME: 1883-25-J1-1124.PID	CLIENT	APPROVAL DATE

OYU TOLGOI UNDERGROUND PROJECT
UNDERGROUND WORKSHOPS
TRUCK SHOP - AXIAL VENTILATION FANS - FIRE DOORS
P & ID

SCALE	DRAWING NUMBER	REV.
N.T.S.	1883-25-J1-1124	1



NOTES

1.- ALL COORDINATES AND ELEVATIONS ARE DISPLAYED IN METERS, IN ACCORDANCE WITH THE OYU TOLGOI GRID SYSTEM (OTGS).
2. DIMENSIONS ARE SHOWN IN MILLIMETERS UNLESS STATED OTHERWISE.
3.- DUCTWORK AND ITS SUPPORTS SHALL BE DETAILED BY CONTRACTOR IN ACCORDANCE WITH DESIGN CRITERIA HVAC No 0000-35-DCR-0001. MATERIAL SHALL BE GALVANIZED STEEL SHEET, SELECTED FOR MEDIUM PRESSURE SERVICE.
4.- ANCHOR SYSTEM AND ROCK BOLT LENGTH SHALL BE DEFINED BY OYU TOLGOI GEOTECHNICAL SITE ENGINEER, IN ACCORDANCE WITH NOTE 5.12 IN DRAWING 1800-15-S1-1201.
5.- DUCTWORK FINAL DESIGN BY CONTRACTOR.
6.- FOR FAN REQUIREMENTS, SEE 1883-35-DSH-1101.
7.- HVAC DUCT CLEARANCE SHALL BE 4.2 M MIN. CONSIDERING DUCT SUPPORT AND THE PAVEMENT T.O.C.

CONSTRUCTION ISSUE

TRUCK SHOP - EXHAUST AND VENTILATION SYSTEM - PLAN

SCALE 1:250

SCALE 1:250 (A1) 5 4 3 2 1 0 5 10 15 20 25m

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
1	06.07.18	FOR CONSTRUCTION - SUPERSEDES 1883-55-L4-1102	CU / LA	RMR / EMR						1883-35-C2-1103	TRUCK SHOP - EXHAUST AND VENTILATION SYSTEM - SECTIONS
2	04.09.20	ISSUED FOR CONSTRUCTION	TM / AK	BM / FA						1800-15-S1-1201	STRUCTURAL STANDARD - GENERAL NOTES

OYU TOLGOI LLC
ОЮУ ТОЛГОЙ ХХК

PRODUCED BY	DESIGNED BY C. ULLOA	DRAWN BY C. ULLOA
PROJECT NO SN1809	CHECK DESIGN L. ACHA	CHECK DRAWING L. ACHA
CONTRACT NO	LEAD ENGINEER R. MERINO	APPROVAL DATE 06.07.18
DRAWING SIZE A1	AREA PROJECT ENGINEER	ENGINEERING MANAGER E. MARIN
PLOT SCALE	PROJECT MANAGER	APPROVAL DATE 06.07.18
CAD FILE NAME 1883-35-C2-1102.DWG	CLIENT	APPROVAL DATE

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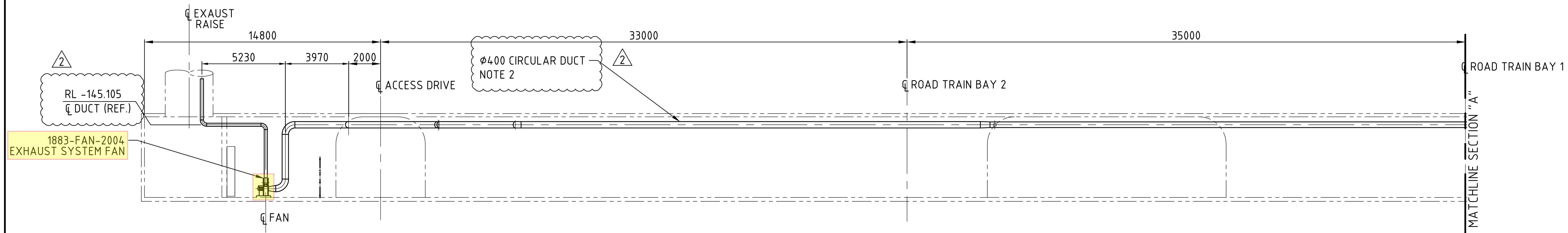
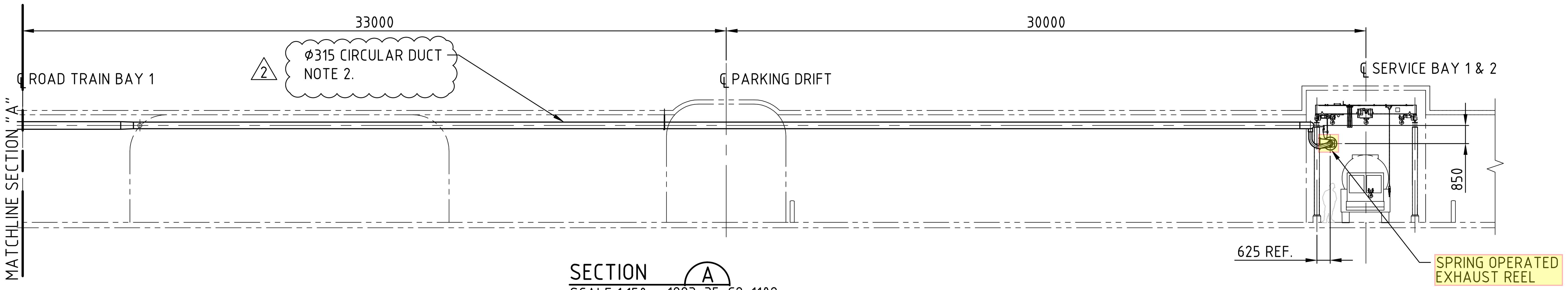
Jacobs Document No.
SN1809-1883/MH.DRG/1104

OYU TOLGOI UNDERGROUND PROJECT
UNDERGROUND INFRASTRUCTURE AND MINING
UNDERGROUND WORKSHOPS
EXHAUST AND VENTILATION SYSTEM - TRUCK SHOP - PLAN

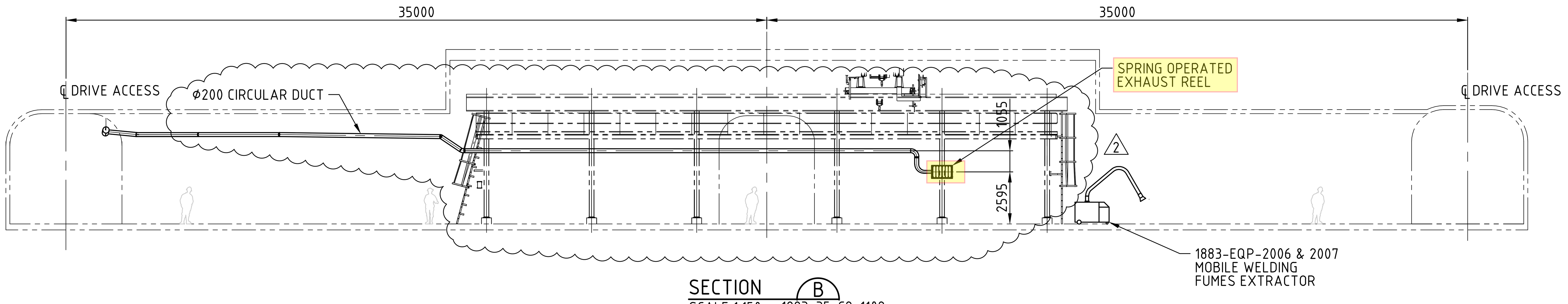
SCALE	DRAWING NUMBER	REV.
1:250	1883-35-C2-1102	2



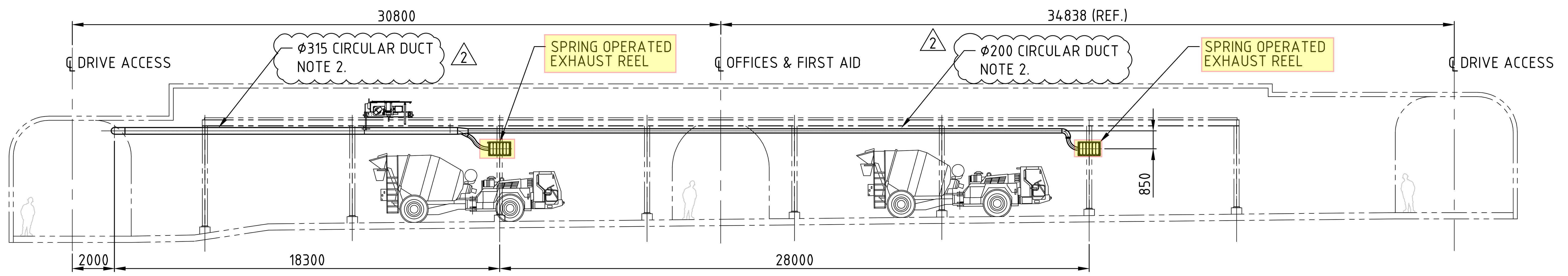
SECTION A
SCALE 1:150 1883-35-C2-1102



SECTION A
SCALE 1:150 1883-35-C2-1102



SECTION B
SCALE 1:150 1883-35-C2-1102



SECTION C
SCALE 1:150 1883-35-C2-1102

NOTES

1.- SEE NOTES ON 1883-35-C2-1102.
2.- HVAC DUCT CLEARANCE SHALL BE 4.2M MIN. CONSIDERING THE DUCT SUPPORT AND THE PAVEMENT T.O.C

CONSTRUCTION ISSUE

CAUTION - PROJECT DRAWING - NOT AS BUILT

REV.	DATE	REVISION DESCRIPTION	DES. / CHK.	APPROVED	REFERENCE DRAWING No.	REFERENCE DRAWINGS
1	06.07.18	FOR CONSTRUCTION - SUPERSEDES 1883-35-L4-1103	CU / LA	RMR / EMR	1883-35-C2-1102	TRUCK SHOP - EXHAUST & VENTILATION SYSTEM - PLAN
2	04.09.20	ISSUED FOR CONSTRUCTION	TM / AK	BM / FA		

OYU TOLGOI LLC
ОЮУ ТОЛГОЙ ХХК

PRODUCED BY	DESIGNED BY	DRAWN BY
	C. ULLOA	C. ULLOA
PROJECT NO: SN1809	CHECK DESIGN: L. ACHA	CHECK DRAWING: L. ACHA
CONTRACT NO	LEAD ENGINEER: R. MERINO	APPROVAL DATE: 06.07.18
DRAWING SIZE: A1	AREA PROJECT ENGINEER	ENGINEERING MANAGER: E. MARIN
PLOT SCALE	PROJECT MANAGER	APPROVAL DATE: 06.07.18
CAD FILE NAME: 1883-35-C2-1103.DWG	CLIENT	APPROVAL DATE

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Jacobs Document No.
SN1809-1883/MH.DRG/1105

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OYU TOLGOI UNDERGROUND PROJECT
UNDERGROUND INFRASTRUCTURE AND MINING
UNDERGROUND WORKSHOPS
EXHAUST AND VENTILATION SYSTEM - TRUCK SHOP - PLAN

SCALE	DRAWING NUMBER	REV.
AS SHOWN	1883-35-C2-1103	2

DATA SHEET FUME EXTRACTION SYSTEM

Client:	Oyu Tolgoi LLC	**Jacobs Document no.:**	SN1809-1881/MP.DST/1107
Project:	Oyu Tolgoi Underground Project	**Client Document no.:**	1881-55-DSH-1107
Location:	Mongolia	**Revision:**	0
Area:	1883	**Contractor:**	
Equipment no./s:	1883-FAN-2004	**Supply Contract no.:**	
Equipment name/s:	Truck Shop Fume Exhausting System	**Quantity:**	1

	Parameters	Units	Data by Company	Data by Contractor	Rev
1.0	**DESCRIPTION**				
1.1	Manufacturer / Model		By Contractor		
1.2	Service		Vehicle exhaust		
1.3	Application elevation	m.a.s.l.	150		
1.4	Air Density	kg/m^3	1.2		
1.5	Operating temperature (gas)	°C	400-600		
1.6	Design temperature (exterior)	°C	2 - 45		
1.8	Noise level, 1.0 m from source		Less than 80 dBA		
2.0	**HOSE REEL ASSEMBLY**				
2.1	**Arm**				
	Quantity	ea	4		
	Mounting brackets	Describe	By Supplier		
	Boom type / size	Describe	By Supplier		
	Swivels	Describe	By Supplier		
2.2	**Reel**				
	Quantity	ea	4		
	Type / model		Self coiling reel		
	Drum diameter	mm	By supplier		
	Drum width	mm	By supplier		
	Drum material	mm / type	By supplier		
	Drum end flanges material	mm / type	By supplier		
	Coating		By supplier		
	Driver motor	kW	0.37		
	Push button switch		Wired to the hose		
2.3	**Hose**				
	Quantity	ea	4		
	Design temperature	°C	Suitable for intermitent operation in a range of 400 - 600 °C		
	Hose diameter	mm	150 (Note 1)		
	Hose lenght	m	10 (Note 1)		
	Hose construction		Helical wound spring inbedded w/ double ply liner		
	Hose material	Describe	By Supplier		
2.4	**Nozzle**				
	Quantity	ea	By Supplier		
	Type / model		By Supplier		
	Mounting type		Vertical or undercarriage stack exhaust		
	Nozzle size		By Supplier		
	Nozzle material		By Supplier		
	Mounting brackets		Included		
	Damper		shut-off damper		
3.0	**EXHAUST FAN AND MOTOR**				
3.1	Quantity		1		
3.2	Fan type		Centrifugal fan, impeller backward curved blades		
3.3	Fan mounting		AMCA B		
3.4	Material		By Supplier		
3.5	Bearing life L-10	hr	100 000		
3.6	Fan housing material		By Supplier		
3.7	Impeller material		By Supplier		
3.8	Fan air flow (actual)	m^3/hr	4500 Note 1)		
3.9	Static pressure	Pa (iwg)	2800 (Note 1)		
3.10	Motor Voltage, phases, frequency	(V/ph/Hz)	400/3/50		
3.11	Fan motor size	kW	6 (Note 1)		
3.12	VDF		By Supplier		
4.0	**DUCTING**				
4.1	Duct material		Design Criteria HVAC 0000-35-DCR-0001		
4.2	Flexible connections		Design Criteria HVAC 0000-35-DCR-0000		
4.3	Instruments test ports		Design Criteria HVAC 0000-35-DCR-0001		
4.4	Painting		Protective Coating Specification 0000-00-SPE-0002		
5.0	**INSTRUMENTATION**				
5.1	**Motorised Damper**				

	Quantity		4		
	Manufacturer		Note 3		
	Model		Note 3		
	Type		Motorised		
	Power Supply		24 VDC		
	Body material		By Supplier		
	IP Rating		IP65		
	Area classification		Non-Hazardous area		
5.2	**Hose Reels Switch**				
	Quantity		4		
	Manufacturer		Note 3		
	Model		Note 3		
	Type		Position Switch		
	Contacts Capacity		24 VDC @ 3A		
	Body material		By Supplier		
	IP Rating		IP65		
	Area classification		Non-Hazardous area		
5.3	**Operation Local Station (Up/Down)**				
	Quantity		4		
	Manufacturer		Note 3		
	Model		Note 3		
	Type		Two (2) Switch NO / NC		
	Contacts Capacity		24 VDC @ 3A		
	Body material		By Supplier		
	IP Rating		IP65 S.S.		
	Area classification		Non-Hazardous area		
5.4	**Local Control**				
5.5	**Control System (Manufacturer / Model)**		Allen-Bradley / CompactLogix		
	CPU		Compact Logix 1768-L45		
	PLC Power Supply		Compact Logix 1768-PB3		
	Digital Input Module		Compact Logix 1769-IQ16		
	Interface module and cable for digital input module		1492-IFM20F-F24A-2 + 1492-CAB025B69		
	Individual Isolated Relay Output Module		Compact Logix 1769-OW8I		
	Interface module and cable for relay output module		1492-IFM20F-FS24-2 + 1492-CAB025D69		
	Interface module and cable for analog current output module		1492-AIFM4I-F-5 + 1492-ACAB025AE69		
	Ethernet Communication Module		Compact Logix 1768-ENBT / One (1)		
	Instrument Power Supply		Allen-Bradley		
	Body material		S.S.		
	IP Rating		IP65		
5.6	**Push buttons**		Star / Stop		
5.7	**Pilot Lights**		Running / Fault / Stop		
5.8	**Multivariable indication (voltage, current, power, power factor)**		No		
5.9	**Remote monitoring by means of Ethernet/IP Control Network (note 4)**				
	Fume Extraction System Failure	Yes/No	Yes		
	Fume Extraction System Stopped	Yes/No	Yes		
	Fume Extraction System Running	Yes/No	Yes		
6.0	**WEIGHTS AND DIMENSIONS**				
6.1	Arm	kg	By Supplier		
6.2	Hose & Reel assembly	kg	By Supplier		
6.3	Exhaust fan & motor	kg	By Supplier		
6.4	Ducting	kg	By Supplier		
6.5	Panel	kg	By Supplier		
7.0	**NOTES:**				
1	Dimensions shall be confirmed by supplier				
2	The tenderer shall complete data sheet for each motor include in supplied. See attached motor data sheet .				
3	The brand and model are shown in a Preferred Electrical, Instrumentation and Controls Equipment List 000-65-LST-1102., Models not included in this list must be defined by the supplier.				
4	Data transfer table must be programmed and enabled in the PLC for transfer data to the PLC area controller.				