



BINDE NDT & ENGINEERING SERVICES

DESIGN & CALCULATION NOTE FOR BOP 13 5/8" LIFTING/ACCESS PLATFORM

VANTAGE DRILLING INTL .

Project: 44057766/VANTAGE DRILLING

**Asongwe Hans
10/15/2018**



ALTERATIONS

No.	DESCRIPTION	AUTHORITY	BY	DATE	PJE CHECK

REFERENCE PLANS

NO.	TITLE	PLAN NO.	PLAN BY

This document and the information which it contains are confidential and are the property of BINDE NDT. It is Loaned to you for the limited purpose of assisting you with the operation and Maintenance of the equipment which you have purchased from BINDE NDT. It remains the Property of BINDE NDT. It may not be reproduced in whole or in part without BINDE NDT Prior written consent. It may not be disclosed to persons not having need of disclosure for the loan and it is to be return to BINDE NDT & ENGEERING SERVICE upon completion of the use for which it was loaned.

PRINT RECORD



ADDRESS: BP 469, Limbe-
CAMEROON, CENTRAL AFRICA
Cell: +237-676174124,
+237656055894
Landline: +237233711104

CLIENT:
"VANTAGE DRILLING INT"

TITLE:
DESIGN & CALCULATION NOTE
FOR BOP 13 5/8" LIFTING
FRAME/ACCESS PLATFORM

PAGE 1 OF 37 PAGES

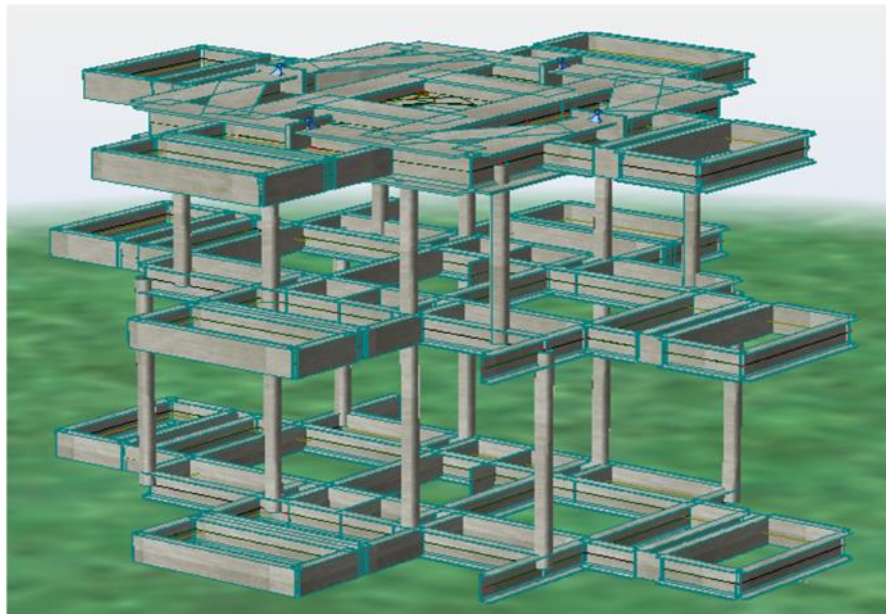
Date: 10/15/2018	SCALE : N.T.S
DESIGNED BY: BINDE NDT & ENG. SCS	HULL/JOB NO. : PO 44057766
PREPARED BY: HANS A.	COST CODE NO.: -
CHECKED BY: ATOH A.	APPROVED BY : -

APPROVED BY:	DATE :
OWNER _____	_____
OWNER _____	_____
CLASS _____	_____

BINDE NDT & ENGINEERING SERVICES	ALT. NO. 0
DOC NO: VTG-TOD-DWG-LF/AP-44057766-001	
OWNER _____	

DOC NO. - - - -

Lifting frame / Access Platform Structural Analysis



CONTRACT / PO No : 44057766	Company : BINDE NDT & ENGINEERING SERVICES.	Designed by :	Checked by :	Verified by :		
		Asongwe Hans S.	Atoh Ntumngia A.	-		
Title :	DESIGN & CALCULATION NOTE FOR BOP 13 5/8" LIFTING/ACCESS PLATFORM					
Indice	Date	Observations		Format	Scale	
0	10/15/2018	VTG-TOD-LF/AP-44057766-001		PDF		
A						
B						

Sommaire

Contents

Sommaire.....	2
I. Objective	1
II. Regulations and calculation requirements	1
III. Hypotheses	1
1. Steel.....	2
2. Design Load Case.....	2
a. Dead Load :.....	2
b. Live Load:	2
c. Wind load:.....	2
3. Load combination	2
4. Types of calculation analysis.....	2
5. Geometric characteristics	2
6. Pre Dimensioning families of profiles	3
IV. Definition and data structure model in RSA Pro 2017	3
1. Characteristics of sections.....	6
2. Material characteristics	6
3. Load Case	7
4. Combination of load cases	8
Creation of weight parameters	8
5. Profile families	9
V. Structural Analysis and Verification of FAMILY STEEL.....	9
1. LOAD REACTION RESULTS.....	9
a. Reactions to support (global extremes)	9
b. DEP Movements: Global Extremes.....	10
c. Constraints - Global Extremes	10
2. VERIFICATION AND DIMENSIONING OF PROFILE FAMILIES	11
VI. CONCLUSION.....	21

I. Objective

This calculation note is that of verification and justification of the sections constituting the Lifting frame/Access platform for BOP 13 5/8". The platform shall be designed and checked for the Load of 150 Kg/m² and assumed that the whole structure is hooked on two (02) lifting Padeyes, located on the upper part of the structure (Lifting frame) and will be supporting a total load of 40T. Below figure represents the 3D view of the BOP platform.

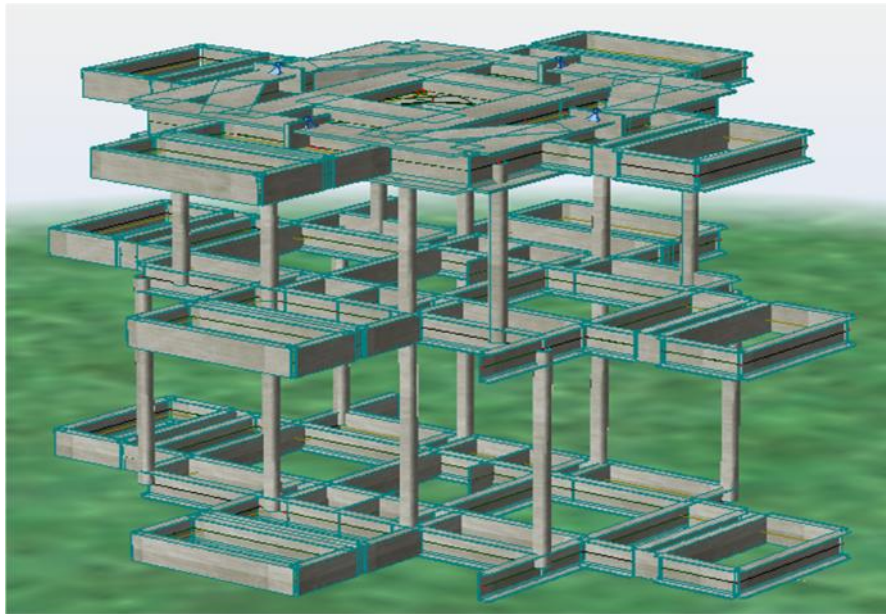


Figure 1: Model View (BOP ACCESS PLATFORM + LIFTING FRAME)

The analysis is performed using the computer program ROBOT Structural Analysis 2014 software.

II. Regulations and calculation requirements

The calculations were conducted according to the Codes and Standard below:

- ❖ Eurocode 0 (1990: 2002) for load combinations
- ❖ Eurocode 1 (1991-1-3 / 4: 2005) for combinations of wind loads
- ❖ Eurocode 3 (1993-1-1: 2005 / A1-2014) for the calculation of the structural framework.

III. Hypotheses

The following hypotheses were used throughout our study,

1. Steel

- ❖ Type S 235 steel
- ❖ Density: 7850 daN /m³
- ❖ Yield strength of steel: 235 MPa

2. Design Load Case

a. Dead Load :

- ❖ Weight of the frame: [Generated by the software.](#)
- ❖ Weight of the BOP: [30 000 kg](#)
- ❖ Weight of handrails: [1100 kg](#)

b. Live Load:

This is only the maintenance overload of the staff and their tools, so we considered a surface load of [1500 daN / m²](#) (note that this load cannot be combined with the climatic loads).

c. Wind load:

We assume that the wind of the project site is a type 1 wind in normal site and speed: [28 m / s](#)

Calculation and generation are done by the software

3. Load combination

We will treat the problem with the two usual 2 combinations according to Eurocodes 3:

- ❖ Ultimate Limit State Calculation ULS (Combinations for Resistance and Stability Calculations).
- ❖ Calculation at the ELS Service Limit State (combinations relating to the calculation of deformation checks, displacements and vibrations of the structure).

4. Types of calculation analysis

We will choose a second order analysis for security measures and all actions and/or combinations of actions will be in the form of non-linear or P-Delta

5. Geometric characteristics

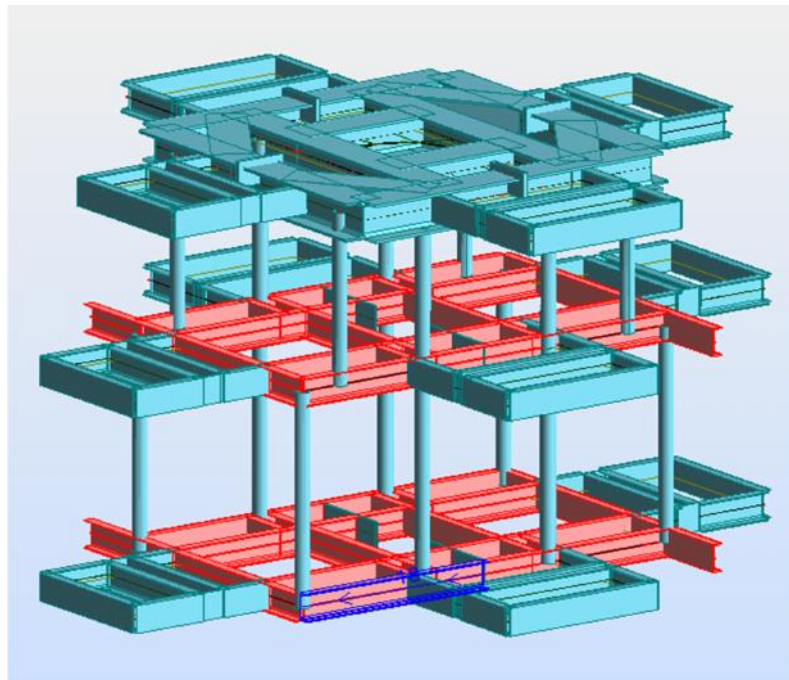
See attached Drawings

6. Pre Dimensioning families of profiles

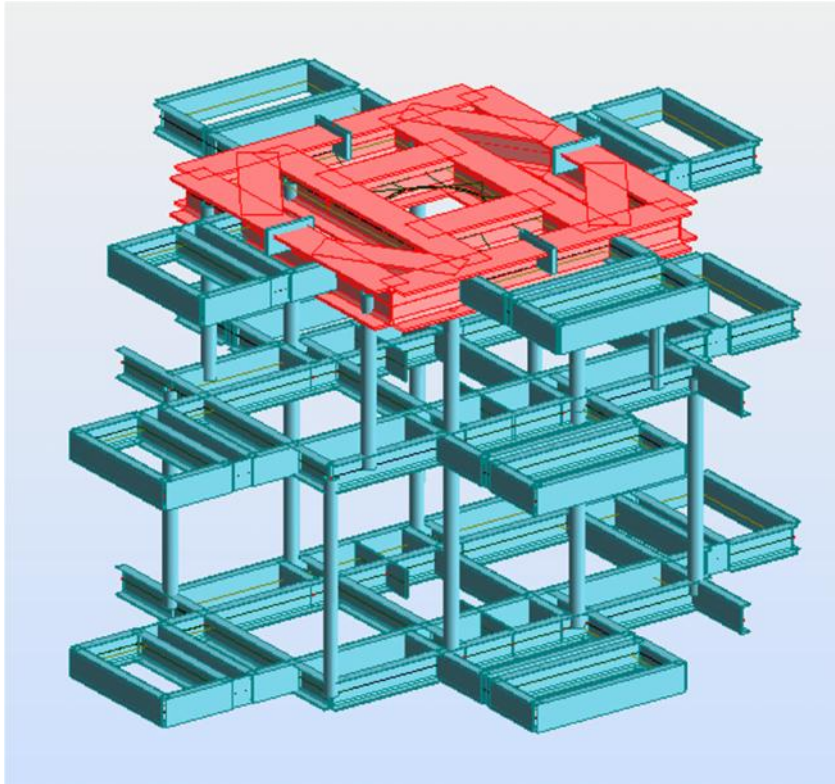
N	Description	Section	Yield Stress
1	Main platform UPN 220	C Channel	235MPa
2	BOP lifting frame HEB 300	H Channel	275MPa
3	Pillar Pipe 4" SCH. 40	Pipe Section	235MPa
4	Extensions UPN 220	C Channel	235MPa
5	Platform Clamps FB 220*15	Flat bar	235MPa
6	Ext. connections plate FB 220*15	Flat bar	235MPa
7	Lifting Padeye Plate 400*30	Steel plate	235MPa

IV. Definition and data structure model in RSA Pro 2017

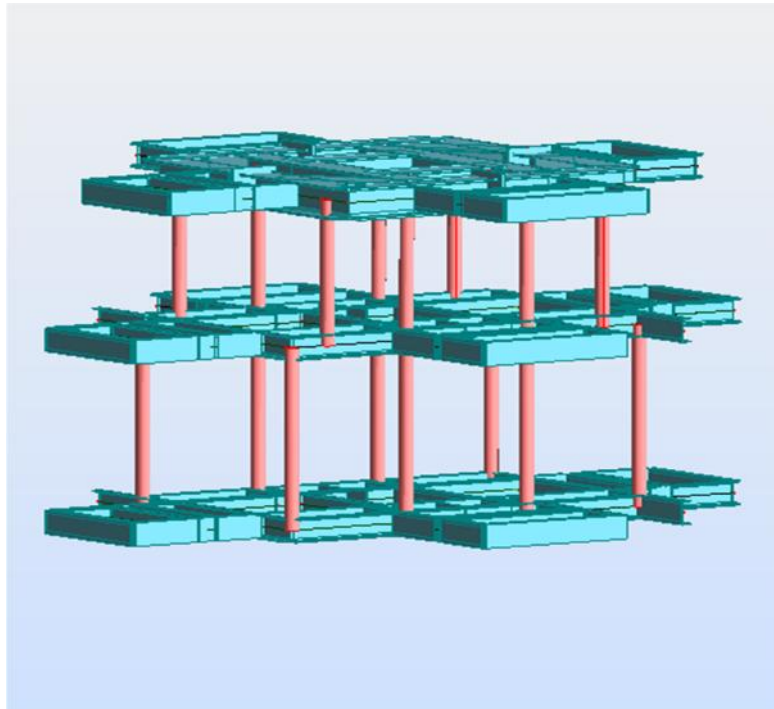
Main platform



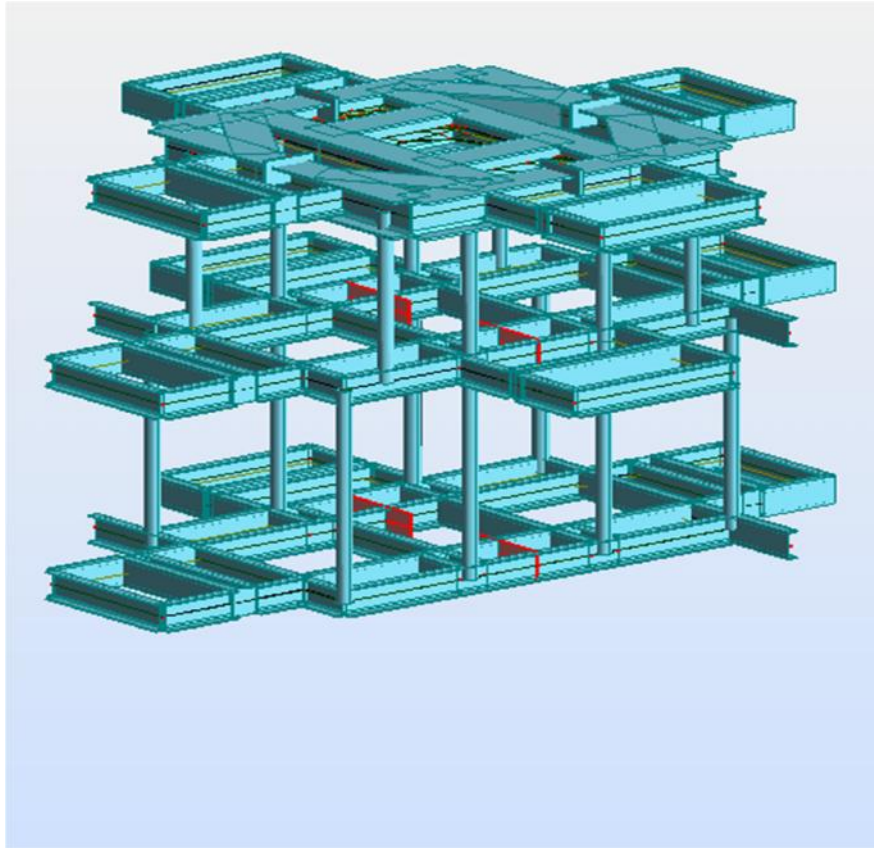
BOP lifting frame



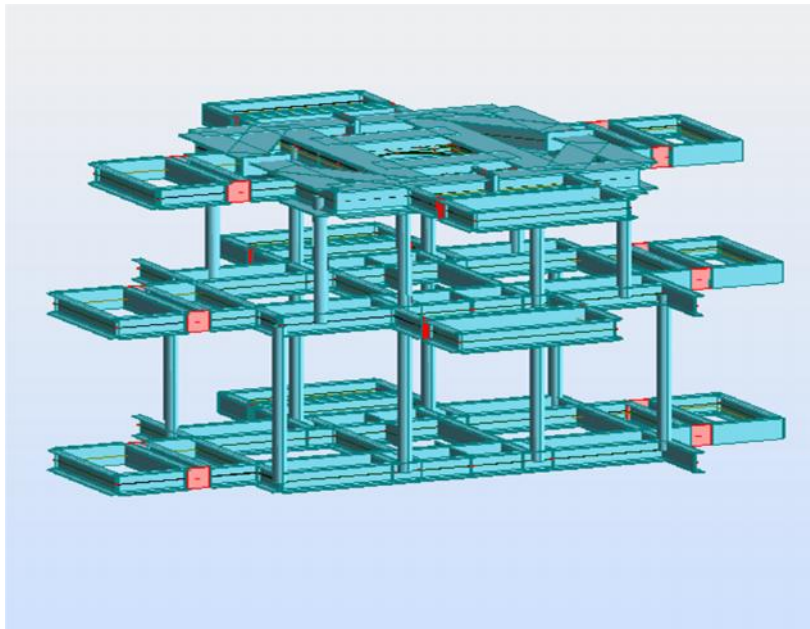
Pillars



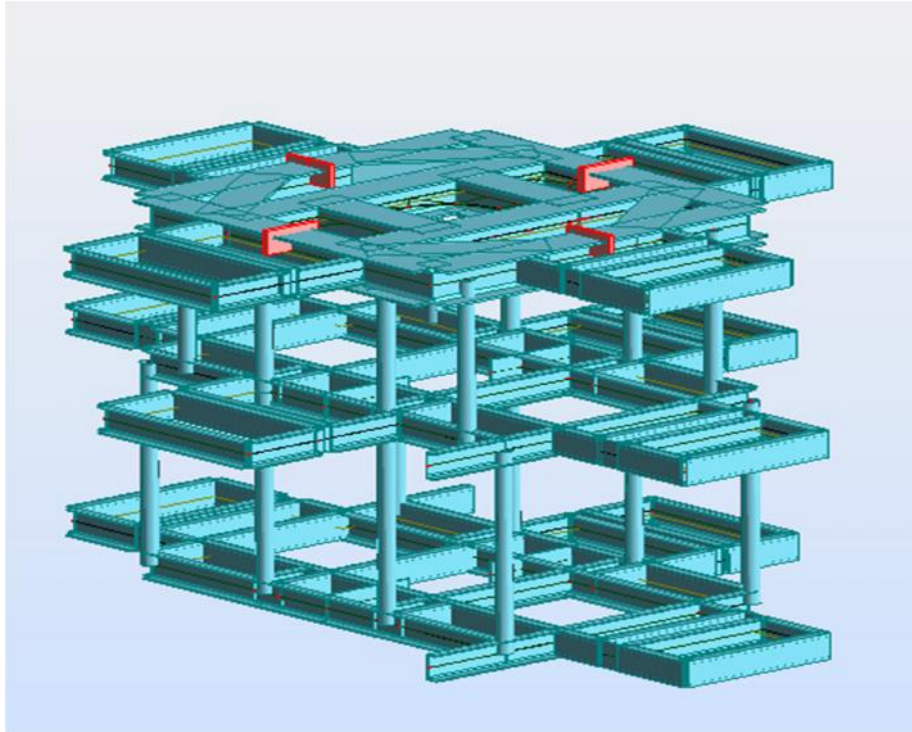
Platform Clamps



Extension Connection plate



Lifting Padeyes



1. Characteristics of sections

Section name	Bar list	AX (cm2)	AY (cm2)
HEB 300	134 135 143A146 148 150A152 262 266	149,08	118,18
PLATE 220x15	3 24 27 30 38A41 73 75 77 84A87 94 198 205 2-07 214 256A259 267 274 293A296 304A307 32-6 333	33,00	27,50
PLATE 400x30	357 358	120,00	100,00
PLATE 400x40	353 354	160,00	133,33
SECTION 114x8	103 106 107 109 110 170 336 338A340 344 34-6A350	26,72	13,36
UPN 220	1 2 4A22 25 28 29 31A37 45A47 52A72 74 76 7-8A83 88A90 93 95 199A204 206 208A213 215 249A255 268A273 275 286A292 297A303 327-A332 334	37,40	21,94

DATA ON SUPPORTS

Support name	List of nodes	List of edges	List of objects	Support conditions
Articulation	413 415 420 422			UX UY UZ

2. Material characteristics

	Material	E [MPa]	G [MPa]	NU	LX [1/°C]	RO [kN/m3]	Re [MPa]
1	STEEL	210000,00	80800,00	0,30	0,00	77,01	235,00

3. Load Case

Cas	Prefix	Name of case	Nature	Type of analysis
1	DL1	DL1	Dead load	Linear static
2	DL2	DL2	Dead load	Linear static
3	DL3	DL3	Dead load	Linear static
4	LL1	LL1	Live Load	Linear static
5	V0(+)	wind 0 deg sur.(+)	wind	Linear static
6	V90(+)	Wind 90 deg sur.(+)	wind	Linear static
7	V180(+)	Wind 180 deg sur.(+)	wind	Linear static
8	V270(+)	Wind 270 deg sur.(+)	wind	Linear static
9		ULS		Linear static
10		ULS+		Linear static
11		ULS-		Linear static
12		SLS		Linear static
13		SLS+		Linear static
14		SLS-		Linear static

LOAD VALUE

Case	Load type	List	Load values
1	Dead load	1A22 27A41 45A47 52A90 93A95 143A146 150A152 198A215 249A259 266A2- 75 286A307 24 25 103 10- 6 107 109 110 134 135 1- 48 156 170 262 326A334 336 338A340 344 346A3- 50 353 354 357A364	PZ Moins Coef=1,00
2	(EF) uniform surface	156	PZ=-300,00[kN/m2]
3	(EF) uniform surface	359A364	PZ=-1,35[kN/m2]
4	(EF) uniform surface	359A364	PZ=-1,50[kN/m2]
5	surface on object	359	PZ=0,45[kN/m2] Local=local
5	(EF) uniform surface	156	PZ=0,45[kN/m2] local
5	surface on object	360	PZ=0,45[kN/m2] Local=local
5	surface on object	361	PZ=0,45[kN/m2] Local=local
5	surface on object	362	PZ=0,44[kN/m2] Local=local
5	surface on object	363	PZ=0,45[kN/m2] Local=local
5	surface on object	364	PZ=0,45[kN/m2] Local=local
6	surface on object	359	PZ=0,45[kN/m2] Local=local
6	(EF) uniform surface	156	PZ=0,46[kN/m2] local
6	surface on object	360	PZ=0,45[kN/m2] Local=local
6	surface on object	361	PZ=0,45[kN/m2] Local=local
6	surface on object	362	PZ=0,45[kN/m2] Local=local
6	surface on object	363	PZ=0,45[kN/m2] Local=local
6	surface on object	364	PZ=0,45[kN/m2] Local=local
7	surface on object	359	PZ=0,45[kN/m2] Local=local
7	(EF) uniform surface	156	PZ=0,45[kN/m2] local
7	surface on object	360	PZ=0,45[kN/m2] Local=local
7	surface on object	361	PZ=0,45[kN/m2] Local=local
7	surface on object	362	PZ=0,45[kN/m2] Local=local
7	surface on object	363	PZ=0,45[kN/m2] Local=local
7	surface on object	364	PZ=0,45[kN/m2] Local=local

Case	Load type	List	Load values
8	surface on object	359	PZ=0,45[kN/m2] Local=local
8	(EF) uniform surface	156	PZ=0,45[kN/m2] local
8	surface on object	360	PZ=0,45[kN/m2] Local=local
8	surface on object	361	PZ=0,45[kN/m2] Local=local
8	surface on object	362	PZ=0,45[kN/m2] Local=local
8	surface on object	363	PZ=0,45[kN/m2] Local=local
8	surface on object	364	PZ=0,45[kN/m2] Local=local

4. Combination of load cases

Creation of weight parameters

Weighting type: complete

List of active cases:

1: DL1	Dead load	G1	1.33	DL1
2: DL2	Dead load	G1	1.33	DL2
3: DL3	Dead load	G1	1.33	DL3
4: LL1	Live load	Q1	1.50	LL1
5: Wind 0 deg sur.(+)	wind	W1	1.50	V0(+)
6: Wind 90 deg sur.(+)	wind	W1	1.50	V90(+)
7: Wind 180 deg sur.(+)	wind	W1	1.50	V180(+)
deg sur.(+)	wind	W1	1.50	V270(+)

Combination/Comp.	Definition
ULS/ 1	1*1.77 + 2*1.77 + 3*1.77 + 4*2.25
ULS/ 2	1*1.77 + 2*1.77 + 3*1.77
ULS/ 3	1*1.33 + 2*1.33 + 3*1.33 + 4*2.25
ULS/ 4	1*1.33 + 2*1.33 + 3*1.33
ULS/ 5	1*1.77 + 2*1.77 + 3*1.77 + 5*2.25
ULS/ 6	1*1.77 + 2*1.77 + 3*1.77 + 6*2.25
ULS/ 7	1*1.77 + 2*1.77 + 3*1.77 + 7*2.25
ULS/ 8	1*1.77 + 2*1.77 + 3*1.77 + 8*2.25
ULS/ 9	1*1.33 + 2*1.33 + 3*1.33 + 5*2.25
ULS/ 10	1*1.33 + 2*1.33 + 3*1.33 + 6*2.25
ULS/ 11	1*1.33 + 2*1.33 + 3*1.33 + 7*2.25
ULS/ 12	1*1.33 + 2*1.33 + 3*1.33 + 8*2.25
ULS/ 13	1*1.77 + 2*1.77 + 3*1.77 + 4*2.12 + 5*2.12
ULS/ 14	1*1.77 + 2*1.77 + 3*1.77 + 4*2.12 + 6*2.12
ULS/ 15	1*1.77 + 2*1.77 + 3*1.77 + 4*2.12 + 7*2.12
ULS/ 16	1*1.77 + 2*1.77 + 3*1.77 + 4*2.12 + 8*2.12
ULS/ 17	1*1.33 + 2*1.33 + 3*1.33 + 4*2.12 + 5*2.12
ULS/ 18	1*1.33 + 2*1.33 + 3*1.33 + 4*2.12 + 6*2.12
ULS/ 19	1*1.33 + 2*1.33 + 3*1.33 + 4*2.12 + 7*2.12
ULS/ 20	1*1.33 + 2*1.33 + 3*1.33 + 4*2.12 + 8*2.12
ULS/ 21	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50 + 5*2.63
ULS/ 22	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50 + 6*2.63
ULS/ 23	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50 + 7*2.63
ULS/ 24	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50 + 8*2.63
ULS/ 25	1*1.33 + 2*1.33 + 3*1.33 + 5*2.63
ULS/ 26	1*1.33 + 2*1.33 + 3*1.33 + 6*2.63

Combination/Comp.	Definition
ULS/ 27	1*1.33 + 2*1.33 + 3*1.33 + 7*2.63
ULS/ 28	1*1.33 + 2*1.33 + 3*1.33 + 8*2.63
SLS/ 1	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50
SLS/ 2	1*1.33 + 2*1.33 + 3*1.33
SLS/ 3	1*1.33 + 2*1.33 + 3*1.33 + 5*1.50
SLS/ 4	1*1.33 + 2*1.33 + 3*1.33 + 6*1.50
SLS/ 5	1*1.33 + 2*1.33 + 3*1.33 + 7*1.50
SLS/ 6	1*1.33 + 2*1.33 + 3*1.33 + 8*1.50
SLS/ 7	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50 + 5*1.50
SLS/ 8	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50 + 6*1.50
SLS/ 9	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50 + 7*1.50
SLS/ 10	1*1.33 + 2*1.33 + 3*1.33 + 4*1.50 + 8*1.50

5. Profile families

Code group	Name	Components
1	Main platform	1 2 5A22 52A58 60A71
2	BOP lifting frame	134 135 143A146 148 150A152 262 266
3	Pillars	103 106 107 109 110 170 336 338A340 344 3-46A350
4	Extensions	4 25 28 29 31A37 45A47 72 74 76 78A83 88A-90 93 95 199A204 206 208A213 215 249A255 268A273 275 286A292 297A303 327A332 334
5	Platform Clamps	3 24 73 75
6	External connections	353 354 357 358
7	Lifting Padeye	353 354 357 358

V. Structural Analysis and Verification of FAMILY STEEL

In the final part of our study, we will present the final results obtained following verification in RSA 2014. When verifying the DL, if the profiles selected during the Analysis is not suitable at ULS and SLS. In this case, we will increase or re-sizing the profiles,

We will see according to the transition to the ELU and ELS if the profile will be retained or modified

We look forward to the end of the analysis comparing the profiles chosen and the profiles finally selected.

1. LOAD REACTION RESULTS

a. Reactions to support (global extremes)

	FX [kN]	FY [kN]	FZ [kN]	MX [kNm]	MY [kNm]	MZ [kNm]
--	---------	---------	---------	----------	----------	----------

	FX [kN]	FY [kN]	FZ [kN]	MX [kNm]	MY [kNm]	MZ [kNm]
MAX	546,28	2,78	680,10	0,00	0,00	0,00
Node	413	413	413	422	413	415
Case	ULS/1	ULS/2	ULS/1	ULS/8	ULS/7	ULS/28
MIN	-556,67	-2,21	-4,14	-0,00	-0,00	-0,00
Node	415	415	422	420	415	415
Case	ULS/1	ULS/2	7	ULS/3	ULS/5	ULS/17

b. DEP Movements: Global Extremes

	UX [cm]	UY [cm]	UZ [cm]	RX [Rad]	RY [Rad]	RZ [Rad]
MAX	0,3	0,1	1,1	0,015	0,070	0,003
Node	383	383	248	375	378	411
Case	ULS/1	ULS/2	6	ULS/8	ULS/8	ULS/1
MIN	-0,0	-0,0	-8,4	-0,013	-0,009	-0,000
Node	383	4	376	248	249	275
Case	7	ULS/1	ULS/8	ULS/6	6	ULS/1

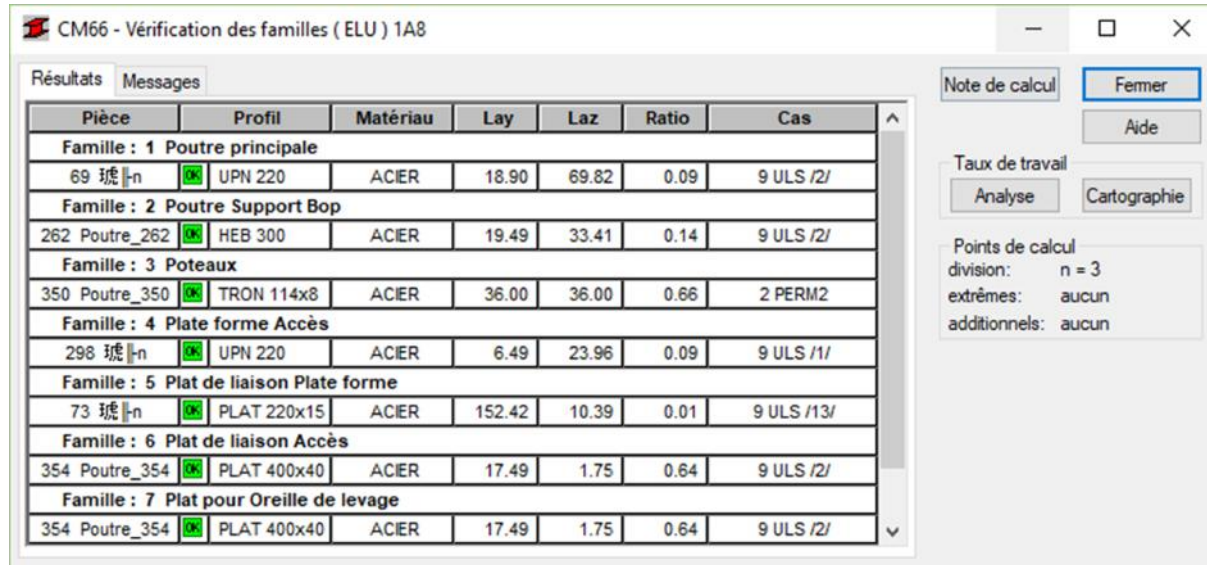
c. Constraints - Global Extremes

	S max [MPa]	S min [MPa]	S max(My) [MPa]
MAX	129,29	8,24	24,74
Bar	350	349	358
Node	405	403	421
Case	2	ULS/1	ULS/1
MIN	-42,51	-155,06	-0,00
Bar	353	350	354
Node	413	405	415
Case	ULS/1	2	2

2. VERIFICATION AND DIMENSIONING OF PROFILE FAMILIES

Generally, we will check all the profiles resized at ULS and SLS:

A. SECTION SELECTED



Pièce	Profil	Matériau	Lay	Laz	Ratio	Cas
Famille : 1 Poutre principale						
69 瓏 -n	UPN 220	ACIER	18.90	69.82	0.09	9 ULS /2/
Famille : 2 Poutre Support Bop						
262 Poutre_262	HEB 300	ACIER	19.49	33.41	0.14	9 ULS /2/
Famille : 3 Poteaux						
350 Poutre_350	TRON 114x8	ACIER	36.00	36.00	0.66	2 PERM2
Famille : 4 Plate forme Accès						
298 瓏 -n	UPN 220	ACIER	6.49	23.96	0.09	9 ULS /1/
Famille : 5 Plat de liaison Plate forme						
73 瓏 -n	PLAT 220x15	ACIER	152.42	10.39	0.01	9 ULS /13/
Famille : 6 Plat de liaison Accès						
354 Poutre_354	PLAT 400x40	ACIER	17.49	1.75	0.64	9 ULS /2/
Famille : 7 Plat pour Oreille de levage						
354 Poutre_354	PLAT 400x40	ACIER	17.49	1.75	0.64	9 ULS /2/

With the following note:

STEEL DESIGN

CODE: CM66

ANALYSIS TYPE: Code Group Verification

CODE GROUP: 1 Main platform

MEMBER: 69

POINT: 3

COORDINATE: $x = 0.34 L = 0.54 \text{ m}$

LOADS:

Governing Load Case: 9 ULS /2/ 1*1.77 + 2*1.77 + 3*1.77

MATERIAL:

ACIER $f_y = 235.00 \text{ MPa}$



SECTION PARAMETERS: UPN 220

ht=22.0 cm

bf=8.0 cm

tw=0.9 cm

tf=1.3 cm

$A_y = 20.00 \text{ cm}^2$

$I_y = 2690.00 \text{ cm}^4$

$W_{ely} = 244.55 \text{ cm}^3$

$A_z = 19.80 \text{ cm}^2$

$I_z = 197.00 \text{ cm}^4$

$W_{elz} = 33.62 \text{ cm}^3$

$A_x = 37.40 \text{ cm}^2$

$I_x = 16.00 \text{ cm}^4$

STRESSES:

$\text{SigN} = -0.33/37.40 = -0.09 \text{ MPa}$

$\text{SigFY} = -5.11/244.55 = -20.91 \text{ MPa}$

$\text{SigFZ} = -0.03/33.62 = -0.99 \text{ MPa}$



LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:

About Y axis:



About Z axis:

VERIFICATION FORMULAS:

$$\text{SigN} + \text{kD} * \text{SigFY} + \text{SigFZ} = -0.09 + 1.00 * -20.91 + -0.99 = |-21.98| < 235.00 \text{ MPa} \quad (3.731)$$

$$1.54 * \text{TauY} = |1.54 * -0.25| = |-0.38| < 235.00 \text{ MPa} \quad (1.313)$$

$$1.54 * \text{TauZ} = 1.54 * 5.38 = 8.29 < 235.00 \text{ MPa} \quad (1.313)$$

Section OK !!!**STEEL DESIGN****CODE:** CM66**ANALYSIS TYPE:** Code Group Verification**CODE GROUP:** 2 BOP lifting frame**MEMBER:** 262 Poutre_262 **POINT:** 3**COORDINATE:** x = 1.00 L = 2.53 m**LOADS:**

Governing Load Case: 9 ULS /2/ 1*1.77 + 2*1.77 + 3*1.77

MATERIAL:ACIER $f_y = 235.00 \text{ MPa}$ **SECTION PARAMETERS: HEB 300**

ht=30.0 cm

bf=30.0 cm

tw=1.1 cm

tf=1.9 cm

Ay=114.00 cm²Iy=25165.70 cm⁴Wely=1677.71 cm³Az=33.00 cm²Iz=8562.83 cm⁴Welz=570.86 cm³Ax=149.08 cm²Ix=185.77 cm⁴**STRESSES:**

$$\text{SigN} = -8.33/149.08 = -0.56 \text{ MPa}$$

$$\text{SigFY} = -1.18/1677.71 = -0.70 \text{ MPa}$$

$$\text{SigFZ} = -2.24/570.86 = -3.92 \text{ MPa}$$

**LATERAL BUCKLING PARAMETERS:**

z=1.00

ID_inf=2.53 m

B=1.00

C=1.00

D=1.11

kD=1.00

Sig D=216.96 MPa

BUCKLING PARAMETERS:

About Y axis:



About Z axis:

VERIFICATION FORMULAS:

$$\text{SigN} + \text{kD} * \text{SigFY} + \text{SigFZ} = -0.56 + 1.00 * -0.70 + -3.92 = |-5.18| < 235.00 \text{ MPa} \quad (3.731)$$

$$1.54 * \text{TauY} = 1.54 * 1.09 = 1.67 < 235.00 \text{ MPa} \quad (1.313)$$

$$1.54 * \text{TauZ} = |1.54 * -21.57| = |-33.21| < 235.00 \text{ MPa} \quad (1.313)$$

Section OK !!!**STEEL DESIGN****CODE:** CM66**ANALYSIS TYPE:** Code Group Verification

CODE GROUP: 3 Pillars**MEMBER:** 350 Poutre_350**POINT:** 1**COORDINATE:** x = 1.00 L = 1.35 m**LOADS:**

Governing Load Case: 2 PERM2

MATERIAL:

ACIER fy = 235.00 MPa

**SECTION PARAMETERS: TRON 114x8**

ht=11.4 cm

tw=0.8 cm

Ay=16.03 cm²Iy=379.49 cm⁴Wely=66.40 cm³Az=16.03 cm²Iz=379.49 cm⁴Welz=66.40 cm³Ax=26.72 cm²Ix=758.98 cm⁴**STRESSES:**

SigN = -34.42/26.72 = -12.88 MPa

SigFY = -0.02/36645.19 = -0.00 MPa

SigFZ = -9.46/66.40 = -142.54 MPa

**LATERAL BUCKLING PARAMETERS:****BUCKLING PARAMETERS:**

About Y axis:



About Z axis:

VERIFICATION FORMULAS:

SigN + kD*SigFY + SigFZ = -12.88 + 1.00*-0.00 + -142.54 = |-155.42| < 235.00 MPa (3.731)

1.54*TauY = 1.54*4.48 = 6.90 < 235.00 MPa (1.313)

1.54*TauZ = |1.54*-3.96| = |-6.10| < 235.00 MPa (1.313)

Section OK !!!**STEEL DESIGN****CODE:** CM66**ANALYSIS TYPE:** Code Group Verification**CODE GROUP:** 4 Extensions**MEMBER:** 298**POINT:** 1**COORDINATE:** x = 0.00 L = 0.00 m**LOADS:**

Governing Load Case: 9 ULS /1/ 1*1.77 + 2*1.77 + 3*1.77 + 4*2.25

MATERIAL:

ACIER fy = 235.00 MPa

**SECTION PARAMETERS: UPN 220**

ht=22.0 cm

bf=8.0 cm

tw=0.9 cm

tf=1.3 cm

Ay=20.00 cm²Iy=2690.00 cm⁴Wely=244.55 cm³Az=19.80 cm²Iz=197.00 cm⁴Welz=33.62 cm³Ax=37.40 cm²Ix=16.00 cm⁴**STRESSES:**

SigN = 0.03/37.40 = 0.01 MPa

$$\text{SigFY} = -5.24/244.55 = -21.44 \text{ MPa}$$

$$\text{SigFZ} = -0.00/33.62 = -0.10 \text{ MPa}$$

**LATERAL BUCKLING PARAMETERS:****BUCKLING PARAMETERS:**

About Y axis:



About Z axis:

VERIFICATION FORMULAS:

$$\text{SigN} + \text{kD} * \text{kFY} * \text{SigFY} + \text{kFZ} * \text{SigFZ} = 0.01 + 1.00 * 1.00 * -21.44 + 1.00 * -0.10 = |-21.54| < 235.00 \text{ MPa} \quad (3.731)$$

$$1.54 * \text{TauY} = 1.54 * 0.01 = 0.02 < 235.00 \text{ MPa} \quad (1.313)$$

$$1.54 * \text{TauZ} = 1.54 * 2.54 = 3.91 < 235.00 \text{ MPa} \quad (1.313)$$

Section OK !!!**STEEL DESIGN****CODE:** CM66**ANALYSIS TYPE:** Code Group Verification**CODE GROUP:** 5 Platform Clamps**MEMBER:** 73**POINT:** 1**COORDINATE:** x = 0.00 L = 0.00 m**LOADS:**

Governing Load Case: 9 ULS /13/ 1*1.77 + 2*1.77 + 3*1.77 + 4*2.12 + 5*2.12

MATERIAL:

ACIER fy = 235.00 MPa

**SECTION PARAMETERS: PLAT 220x15**

ht=1.5 cm

bf=22.0 cm

tw=0.8 cm

tf=0.8 cm

Ay=30.89 cm²Iy=6.19 cm⁴Wely=8.25 cm³Az=2.11 cm²Iz=1331.00 cm⁴Welz=121.00 cm³Ax=33.00 cm²Ix=23.69 cm⁴**STRESSES:**

SigN = -0.00/33.00 = -0.00 MPa

SigFY = -0.00/8.25 = -0.10 MPa

SigFZ = -0.29/121.00 = -2.36 MPa

**LATERAL BUCKLING PARAMETERS:****BUCKLING PARAMETERS:**

About Y axis:



About Z axis:

VERIFICATION FORMULAS:

$$\text{SigN} + \text{kD} * \text{SigFY} + \text{SigFZ} = -0.00 + 1.00 * -0.10 + -2.36 = |-2.47| < 235.00 \text{ MPa} \quad (3.731)$$

$$1.54 * \text{TauY} = 1.54 * 0.24 = 0.37 < 235.00 \text{ MPa} \quad (1.313)$$

$$1.54 * \text{TauZ} = |1.54 * -0.01| = |-0.02| < 235.00 \text{ MPa} \quad (1.313)$$

Section OK !!!**STEEL DESIGN**

CODE: CM66**ANALYSIS TYPE:** Code Group Verification**CODE GROUP:** 6 Ext. connections plate**MEMBER:** 354 Poutre_354 **POINT:** 1**COORDINATE:** x = 0.00 L = 0.00 m**LOADS:**

Governing Load Case: 9 ULS /2/ 1*1.77 + 2*1.77 + 3*1.77

MATERIAL:

ACIER fy = 235.00 MPa

**SECTION PARAMETERS: PLAT 400x40**

ht=4.0 cm

bf=40.0 cm

tw=2.0 cm

tf=2.0 cm

Ay=145.45 cm²Iy=213.33 cm⁴Wely=106.67 cm³Az=14.55 cm²Iz=21333.30 cm⁴Welz=1066.67 cm³Ax=160.00 cm²Ix=799.57 cm⁴**STRESSES:**

SigN = -674.55/160.00 = -42.16 MPa

SigFY = -0.45/106.67 = -4.19 MPa

SigFZ = -112.23/1066.67 = -105.22 MPa

**LATERAL BUCKLING PARAMETERS:****BUCKLING PARAMETERS:**

About Y axis:



About Z axis:

VERIFICATION FORMULAS:

SigN + kD*SigFY + SigFZ = -42.16 + 1.00*-4.19 + -105.22 = |-151.57| < 235.00 MPa (3.731)

1.54*TauY = |1.54*-38.20| = |-58.82| < 235.00 MPa (1.313)

1.54*TauZ = |1.54*-1.52| = |-2.34| < 235.00 MPa (1.313)

Section OK !!!**STEEL DESIGN****CODE:** CM66**ANALYSIS TYPE:** Code Group Verification**CODE GROUP:** 7 Lifting Padeyes**MEMBER:** 354 Poutre_354 **POINT:** 1**COORDINATE:** x = 0.00 L = 0.00 m**LOADS:**

Governing Load Case: 9 ULS /2/ 1*1.77 + 2*1.77 + 3*1.77

MATERIAL:

ACIER fy = 235.00 MPa

**SECTION PARAMETERS: PLAT 400x40**

ht=4.0 cm

bf=40.0 cm

tw=2.0 cm

Ay=145.45 cm²Iy=213.33 cm⁴Wely=106.67 cm³Az=14.55 cm²Iz=21333.30 cm⁴Welz=1066.67 cm³Ax=160.00 cm²Ix=799.57 cm⁴

tf=2.0 cm Wely=106.67 cm³ Welz=1066.67 cm³

STRESSES:
 SigN = -674.55/160.00 = -42.16 MPa
 SigFY = -0.45/106.67 = -4.19 MPa
 SigFZ = -112.23/1066.67 = -105.22 MPa



LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:



About Y axis:



About Z axis:

VERIFICATION FORMULAS:

SigN + kD*SigFY + SigFZ = -42.16 + 1.00*-4.19 + -105.22 = | -151.57 | < 235.00 MPa (3.731)
 1.54*TauY = |1.54*-38.20| = |-58.82| < 235.00 MPa (1.313)
 1.54*TauZ = |1.54*-1.52| = |-2.34| < 235.00 MPa (1.313)

Section OK !!!

STEEL DESIGN

CODE: CM66

ANALYSIS TYPE: Code Group Verification

CODE GROUP: 8 Lifting Padeyes

MEMBER: 354 Poutre_354 **POINT:** 1

COORDINATE: x = 0.00 L = 0.00 m

LOADS:

Governing Load Case: 9 ULS /2/ 1*1.77 + 2*1.77 + 3*1.77

MATERIAL:

ACIER fy = 235.00 MPa



SECTION PARAMETERS: PLAT 400x40

ht=4.0 cm
 bf=40.0 cm Ay=145.45 cm² Az=14.55 cm² Ax=160.00 cm²
 tw=2.0 cm Iy=213.33 cm⁴ Iz=21333.30 cm⁴ Ix=799.57 cm⁴
 tf=2.0 cm Wely=106.67 cm³ Welz=1066.67 cm³

STRESSES:
 SigN = -674.55/160.00 = -42.16 MPa
 SigFY = -0.45/106.67 = -4.19 MPa
 SigFZ = -112.23/1066.67 = -105.22 MPa



LATERAL BUCKLING PARAMETERS:

BUCKLING PARAMETERS:



About Y axis:



About Z axis:

VERIFICATION FORMULAS:

SigN + kD*SigFY + SigFZ = -42.16 + 1.00*-4.19 + -105.22 = | -151.57 | < 235.00 MPa (3.731)
 1.54*TauY = |1.54*-38.20| = |-58.82| < 235.00 MPa (1.313)
 1.54*TauZ = |1.54*-1.52| = |-2.34| < 235.00 MPa (1.313)

Section OK !!!

B. At ELS

Pièce	Profil	Matériau	Ratio(uy)	Cas (uy)	Ratio(uz)	Cas (uz)
Famille : 1 Poutre principale						
68 78-n	UPN 220	ACIER	0.00	2 PERM2	0.01	12 SLS /2/
Famille : 2 Poutre Support Bop						
145 Poutre_145	HEB 300	ACIER	0.00	12 SLS /1/	0.02	12 SLS /1/
Famille : 3 Poteaux						
336 Poutre_336	TRON 114x8	ACIER	0.01	12 SLS /2/	0.00	2 PERM2
Famille : 4 Plate forme Accès						
298 78-n	UPN 220	ACIER	0.00	12 SLS /3/	0.01	12 SLS /1/
Famille : 5 Plat de liaison Plate forme						
3	PLAT 220x15	ACIER	0.00	1 PERM1	0.00	2 PERM2
Famille : 6 Plat de liaison Accès						
358 Poutre_358	PLAT 400x30	ACIER	0.00	12 SLS /1/	0.02	12 SLS /1/
Famille : 7 Plat pour Oreille de levage						
358 Poutre_358	PLAT 400x30	ACIER	0.00	12 SLS /1/	0.02	12 SLS /1/
Famille : 8 Plat pour Oreille de levage						
358 Poutre_358	PLAT 400x30	ACIER	0.00	12 SLS /1/	0.02	12 SLS /1/

With the following notes:

STEEL DESIGN

CODE: **CM66**

ANALYSIS TYPE: **Code Group Verification**

CODE GROUP: **1 Main platform**

MEMBER: **68**

POINT:

COORDINATE:



SECTION PARAMETERS: UPN 220

ht=22.0 cm

bf=8.0 cm

tw=0.9 cm

tf=1.3 cm

Ay=20.00 cm²

Iy=2690.00 cm⁴

Wely=244.55 cm³

Az=19.80 cm²

Iz=197.00 cm⁴

Welz=33.62 cm³

Ax=37.40 cm²

Ix=16.00 cm⁴

LIMIT DISPLACEMENTS



Deflections

uy = 0.0 cm < uy max = L/200.00 = 0.8 cm

Verified

Governing Load Case: 2 PERM2

uz = 0.0 cm < uz max = L/200.00 = 0.8 cm

Verified

Governing Load Case: 12 SLS /2/ 1*1.33 + 2*1.33 + 3*1.33



Displacements Not analyzed

Section OK !!!

STEEL DESIGN

CODE: CM66**ANALYSIS TYPE:** Code Group Verification**CODE GROUP:** 2 BOP lifting frame**MEMBER:** 145 Poutre_145**POINT:****COORDINATE:**

**SECTION PARAMETERS: HEB 300**

ht=30.0 cm

bf=30.0 cm

tw=1.1 cm

tf=1.9 cm

Ay=114.00 cm²Iy=25165.70 cm⁴Wely=1677.71 cm³Az=33.00 cm²Iz=8562.83 cm⁴Welz=570.86 cm³Ax=149.08 cm²Ix=185.77 cm⁴

LIMIT DISPLACEMENTS**Deflections**

uy = 0.0 cm < uy max = L/200.00 = 1.3 cm

Verified

Governing Load Case: 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50

uz = 0.0 cm < uz max = L/200.00 = 1.3 cm

Verified

Governing Load Case: 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50**Displacements** Not analyzed

Section OK !!!

STEEL DESIGN

CODE: CM66**ANALYSIS TYPE:** Code Group Verification**CODE GROUP:** 3 Pillars**MEMBER:** 336 Poutre_336**POINT:****COORDINATE:**

**SECTION PARAMETERS: TRON 114x8**

ht=11.4 cm

tw=0.8 cm

Ay=16.03 cm²Iy=379.49 cm⁴Wely=66.40 cm³Az=16.03 cm²Iz=379.49 cm⁴Welz=66.40 cm³Ax=26.72 cm²Ix=758.98 cm⁴

LIMIT DISPLACEMENTS**Deflections**

uy = 0.0 cm < uy max = L/200.00 = 0.7 cm

Verified

Governing Load Case: 12 SLS /2/ 1*1.33 + 2*1.33 + 3*1.33

uz = 0.0 cm < uz max = L/200.00 = 0.7 cm

Verified

Governing Load Case: 2 PERM2**Displacements** Not analyzed

Section OK !!!

STEEL DESIGN

CODE: **CM66**ANALYSIS TYPE: **Code Group Verification**CODE GROUP: **4 Extensions**MEMBER: **298**

POINT:

COORDINATE:

SECTION PARAMETERS: **UPN 220**

ht=22.0 cm

bf=8.0 cm

tw=0.9 cm

tf=1.3 cm

Ay=20.00 cm²Iy=2690.00 cm⁴Wely=244.55 cm³Az=19.80 cm²Iz=197.00 cm⁴Welz=33.62 cm³Ax=37.40 cm²Ix=16.00 cm⁴

LIMIT DISPLACEMENTS



Deflections

uy = 0.0 cm < uy max = L/200.00 = 0.3 cm Verified**Governing Load Case:** 12 SLS /3/ 1*1.33 + 2*1.33 + 3*1.33 + 5*1.50uz = 0.0 cm < uz max = L/200.00 = 0.3 cm Verified**Governing Load Case:** 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50Displacements *Not analyzed***Section OK !!!**

STEEL DESIGN

CODE: **CM66**ANALYSIS TYPE: **Code Group Verification**CODE GROUP: **5 Platform Clamps**MEMBER: **3**

POINT:

COORDINATE:

SECTION PARAMETERS: **PLAT 220x15**

ht=1.5 cm

bf=22.0 cm

tw=0.8 cm

tf=0.8 cm

Ay=30.89 cm²Iy=6.19 cm⁴Wely=8.25 cm³Az=2.11 cm²Iz=1331.00 cm⁴Welz=121.00 cm³Ax=33.00 cm²Ix=23.69 cm⁴

LIMIT DISPLACEMENTS



Deflections

uy = 0.0 cm < uy max = L/200.00 = 0.3 cm Verified**Governing Load Case:** 1 PERM1uz = 0.0 cm < uz max = L/200.00 = 0.3 cm Verified**Governing Load Case:** 2 PERM2Displacements *Not analyzed***Section OK !!!**

STEEL DESIGN

CODE: **CM66**ANALYSIS TYPE: **Code Group Verification**CODE GROUP: **6 Ext. connections plate**MEMBER: **358 Poutre_358** POINT:

COORDINATE:

SECTION PARAMETERS: **PLAT 400x30**

ht=3.0 cm

bf=40.0 cm

tw=1.5 cm

tf=1.5 cm

Ay=111.63 cm²Iy=90.00 cm⁴Wely=60.00 cm³Az=8.37 cm²Iz=16000.00 cm⁴Welz=800.00 cm³Ax=120.00 cm²Ix=342.99 cm⁴

LIMIT DISPLACEMENTS



Deflections

uy = 0.0 cm < uy max = L/200.00 = 0.1 cm Verified**Governing Load Case:** 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50uz = 0.0 cm < uz max = L/200.00 = 0.1 cm Verified**Governing Load Case:** 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50Displacements *Not analyzed***Section OK !!!**

STEEL DESIGN

CODE: **CM66**ANALYSIS TYPE: **Code Group Verification**CODE GROUP: **7 Lifting Padeyes**MEMBER: **358 Poutre_358** POINT:

COORDINATE:

SECTION PARAMETERS: **PLAT 400x30**

ht=3.0 cm

bf=40.0 cm

tw=1.5 cm

tf=1.5 cm

Ay=111.63 cm²Iy=90.00 cm⁴Wely=60.00 cm³Az=8.37 cm²Iz=16000.00 cm⁴Welz=800.00 cm³Ax=120.00 cm²Ix=342.99 cm⁴

LIMIT DISPLACEMENTS



Deflections

uy = 0.0 cm < uy max = L/200.00 = 0.1 cm Verified**Governing Load Case:** 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50uz = 0.0 cm < uz max = L/200.00 = 0.1 cm Verified**Governing Load Case:** 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50Displacements *Not analyzed***Section OK !!!**

STEEL DESIGN

CODE: **CM66**ANALYSIS TYPE: **Code Group Verification**CODE GROUP: **8 Lifting Padeyes**MEMBER: **358 Poutre_358** POINT:

COORDINATE:

SECTION PARAMETERS: **PLAT 400x30**

ht=3.0 cm

bf=40.0 cm

tw=1.5 cm

tf=1.5 cm

Ay=111.63 cm²Iy=90.00 cm⁴Wely=60.00 cm³Az=8.37 cm²Iz=16000.00 cm⁴Welz=800.00 cm³Ax=120.00 cm²Ix=342.99 cm⁴

LIMIT DISPLACEMENTS



Deflections

uy = 0.0 cm < uy max = L/200.00 = 0.1 cm

Verified

Governing Load Case: 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50

uz = 0.0 cm < uz max = L/200.00 = 0.1 cm

Verified

Governing Load Case: 12 SLS /1/ 1*1.33 + 2*1.33 + 3*1.33 + 4*1.50
Displacements *Not analyzed*

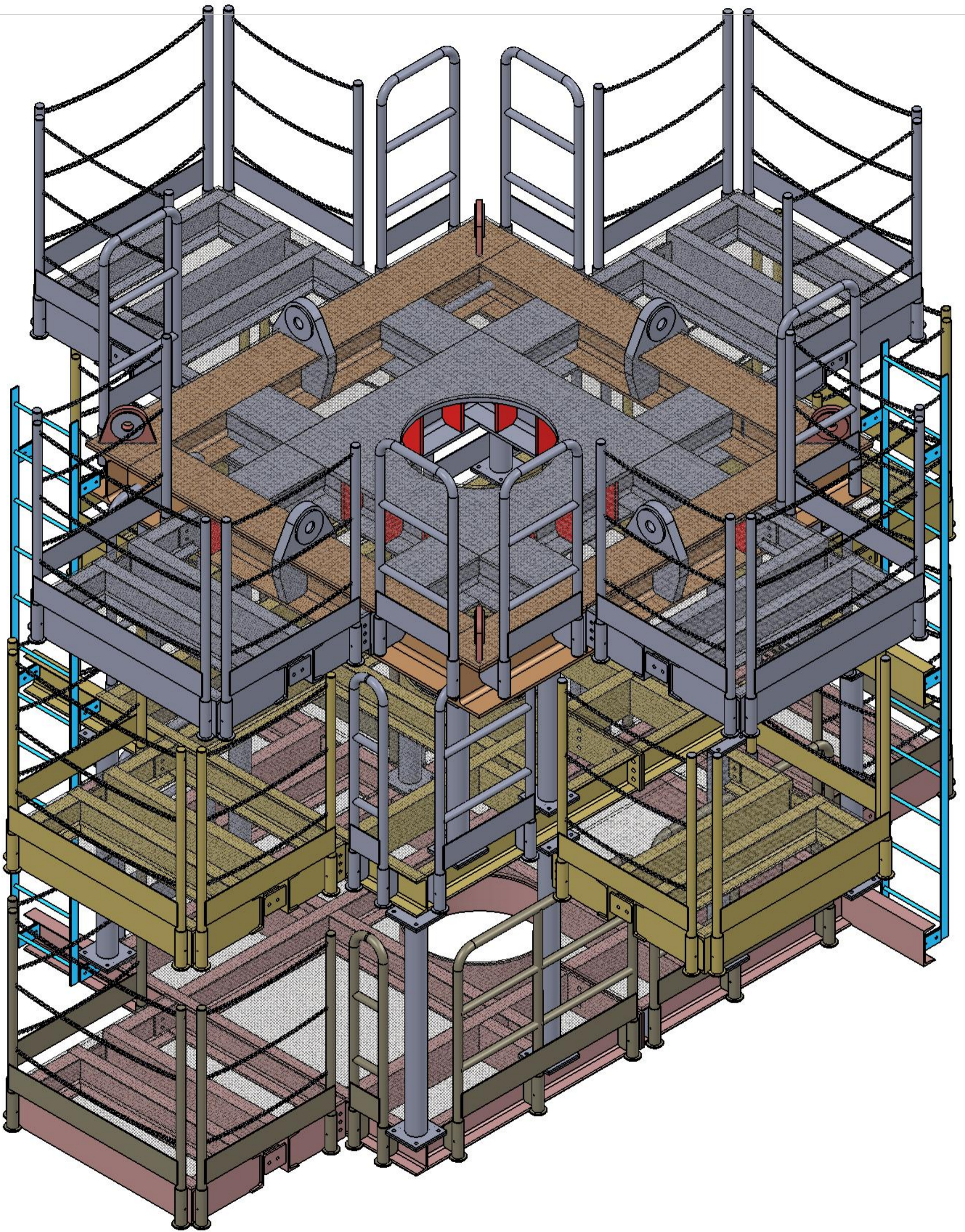
Section OK !!!

VI. CONCLUSION

Considering the calculations we have made based on initial hypotheses set out at the start, we have noticed that the profiles chosen at the beginning satisfy the different requests to which they will be subjected.

However, the four (04) lifting Padeyes that had a thickness of 30 mm plate at the beginning were modified to 50 mm after the calculation; the following table summarizes the different profiles that can support the solicitations

N	Description	Section	Yield Stress
1	Main platform UPN 220	C Channel	235MPa
2	BOP lifting frame HEB 300	H Channel	275MPa
3	Pillar Pipe 4" SCH. 40	Pipe Section	235MPa
4	Extensions UPN 220	C Channel	235MPa
5	Platform Clamps FB 220*15	Flat bar	235MPa
6	Ext. connections plate FB 220*15	Flat bar	235MPa
7	Lifting Padeye Plate 400*50	Steel plate	275MPa



	NAME	SIGNATURE	DATED
DRAWN	HANS A.		10/18/2018
CHECK			
APPR.			
FAB.			
QUAL.			



JOB:

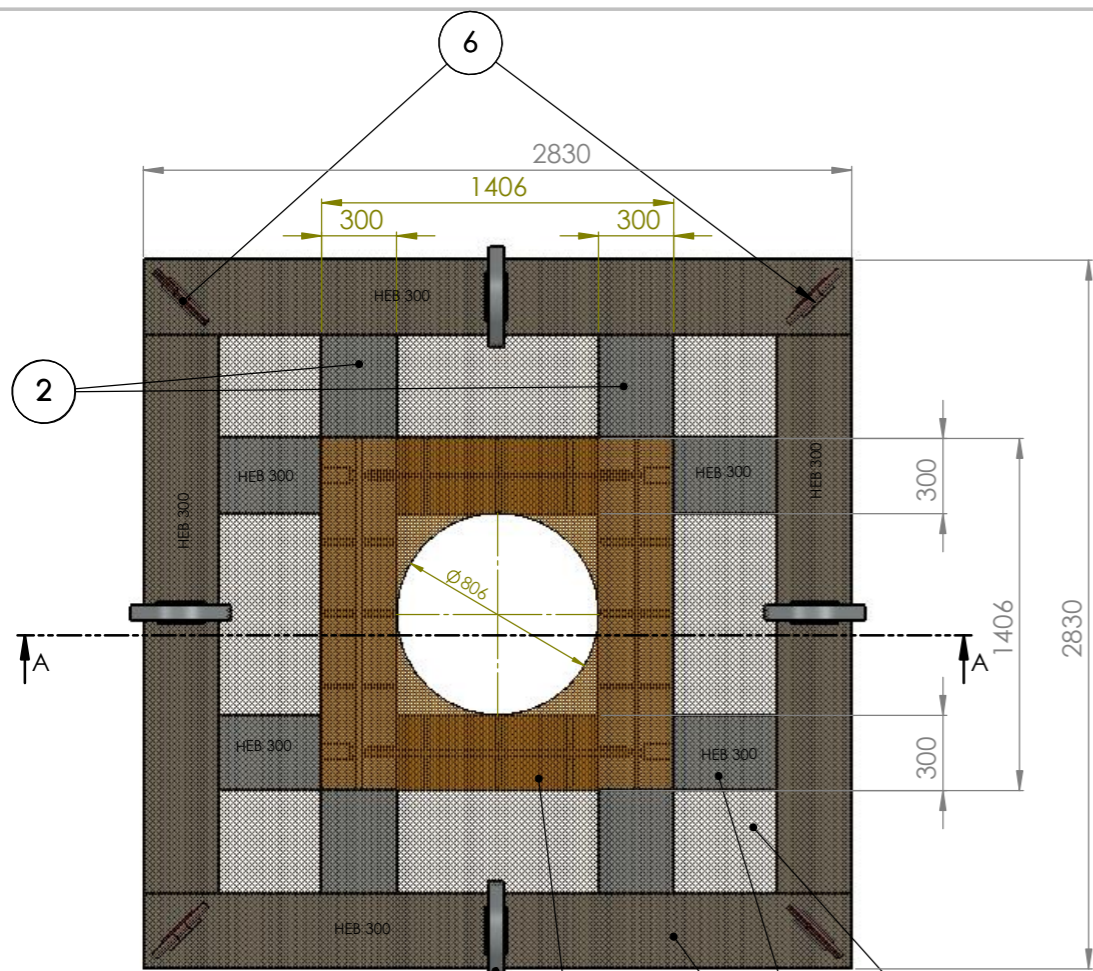
VANTAGE INTL.MANAGEMENT

WORKING PLATFORM

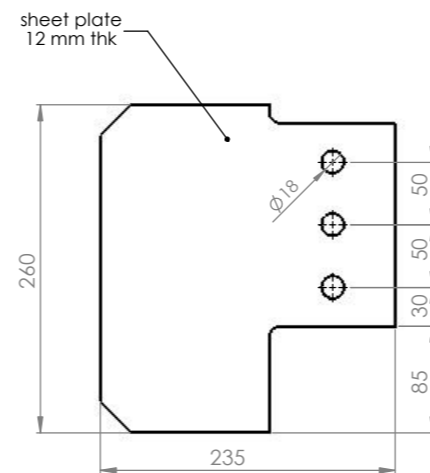
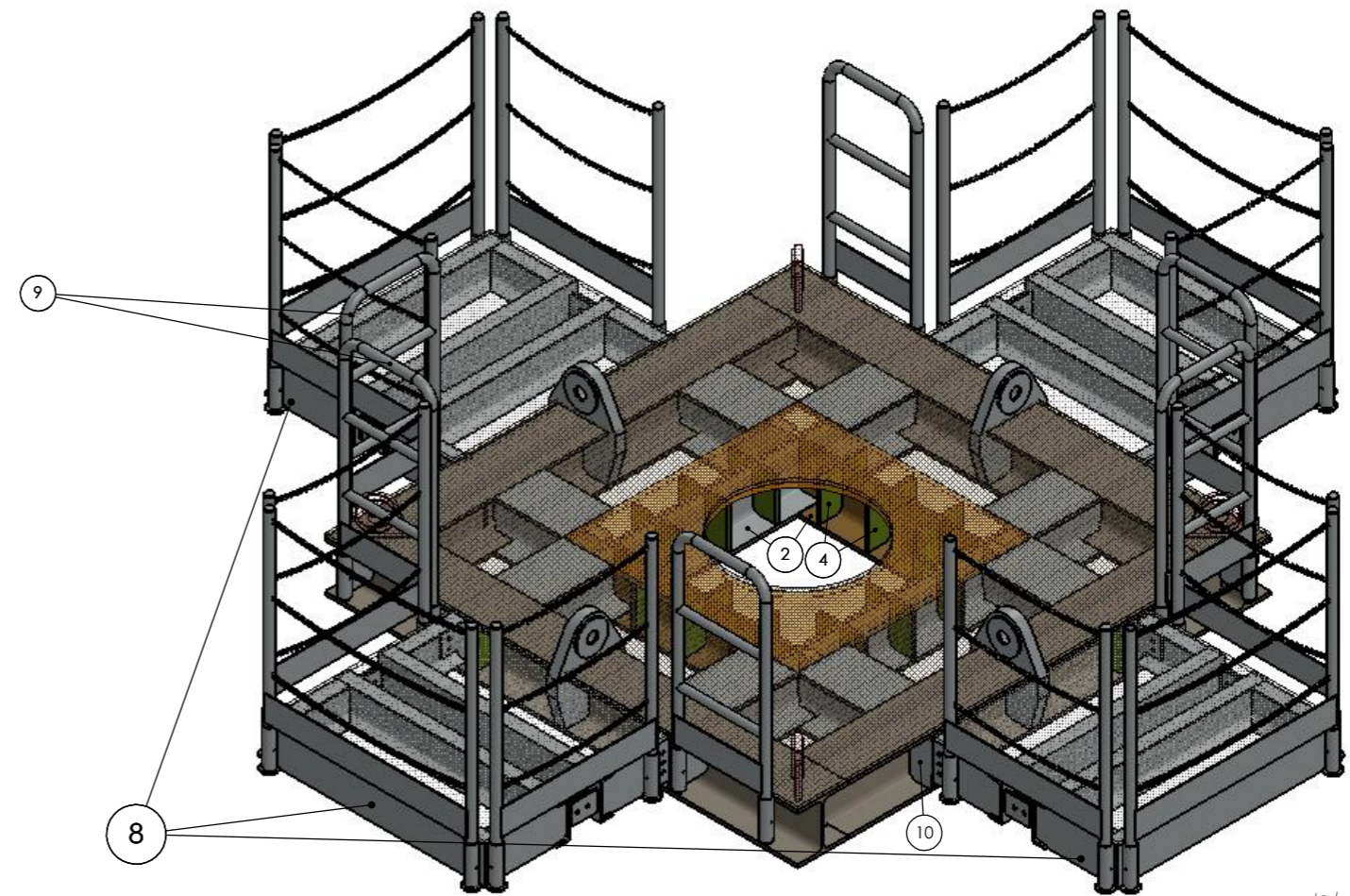
A3

REV:

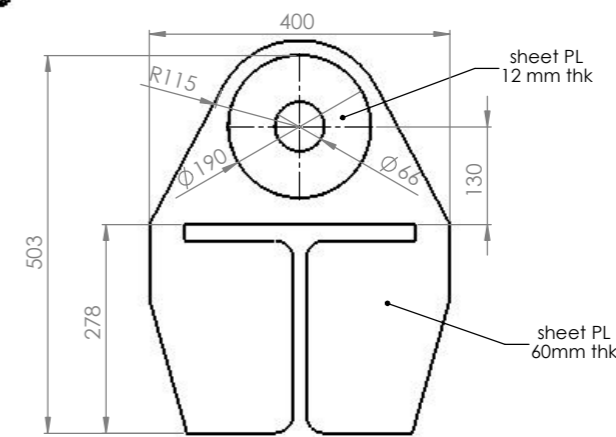
sheet /



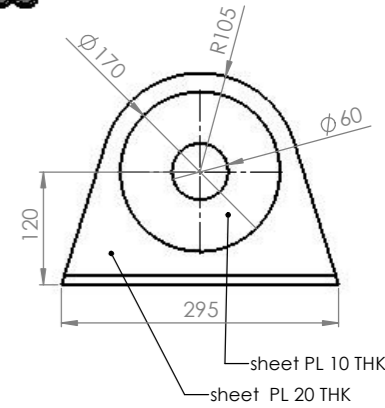
PLAN VIEW
Scale 1 : 15



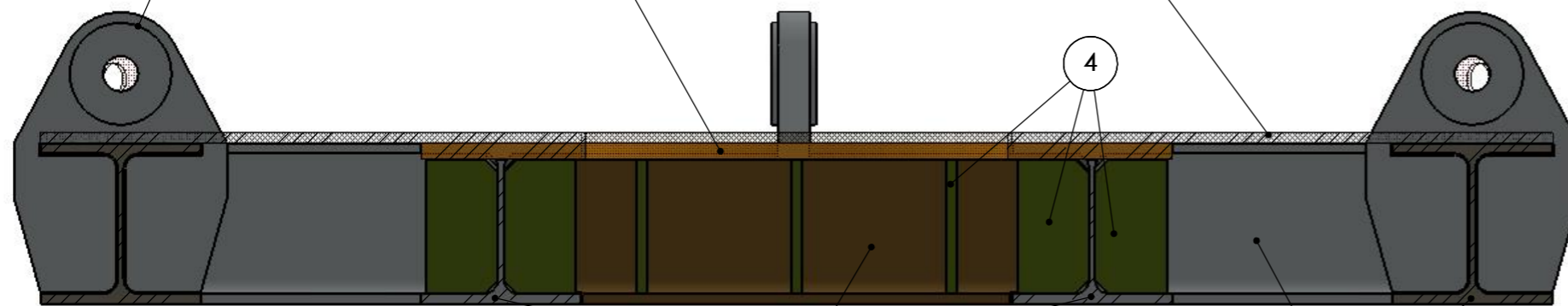
DETAIL NBER 10
Qty: 08



LIFTING FRAME PADEYE
SWL 4.5T - Qty: 04



ORIENTATION PADEYE
SWL 4.75T - Qty: 04



SECTION A-A
Scale 1 : 6

NBER	DESCRIPTION	MAT'L	SIZE	QTY	WEIGHT (kg)		REMARK
					unit	total	
1	HEB 300	A570Gr40	/	/	/	1425	
2	PART OF HEB 300	A570Gr40	/	/	/	450	
3	SHEET PLATE 30 THK	A570Gr40	1400x1400	01	459 kg	459	
4	REINFORCEMENT PLATE 20THK	A570Gr40	250x135	28	5 kg	140	
5	PADEYE LF 1/2	A570Gr40	/	04	75 kg	300	see detail
6	PADEYE LF 2/2	A570Gr40	/	04	14 kg	56	see detail
7	DUCKBOARD	A570Gr40	/	04	120 kg	120	
8	REMOVABLE EXTENSION (with handrail & duckboard)	A570Gr40	1300x1110	04	280 kg	1120	SEE DETAIL
9	REMOVABLE HANDRAIL	A570Gr40	/	06	20 kg	120	SEE DETAIL
10	FIXATION PLATE OF REMOVABLE EXTENSION	A570Gr40	/	08	5 kg	40	SEE DETAIL
SUMMARY							
TOTAL WEIGHT OF LLIFTING FRAME (with 4 extensions)						4110 kg	
WEIGHT OF ONLY LLIFTING FRAME (without extension & handrails)						2990 kg	

NOTE:
1- complete handrailing to be removable
2- handrailing on removable platform to be of chain railing

NAME: HANS A.
SIGNATURE: [Signature]
DATE: 18/18/2018
DRAWN: [Signature]
CHECKED: [Signature]
APPR: [Signature]
ISSUED: [Signature]

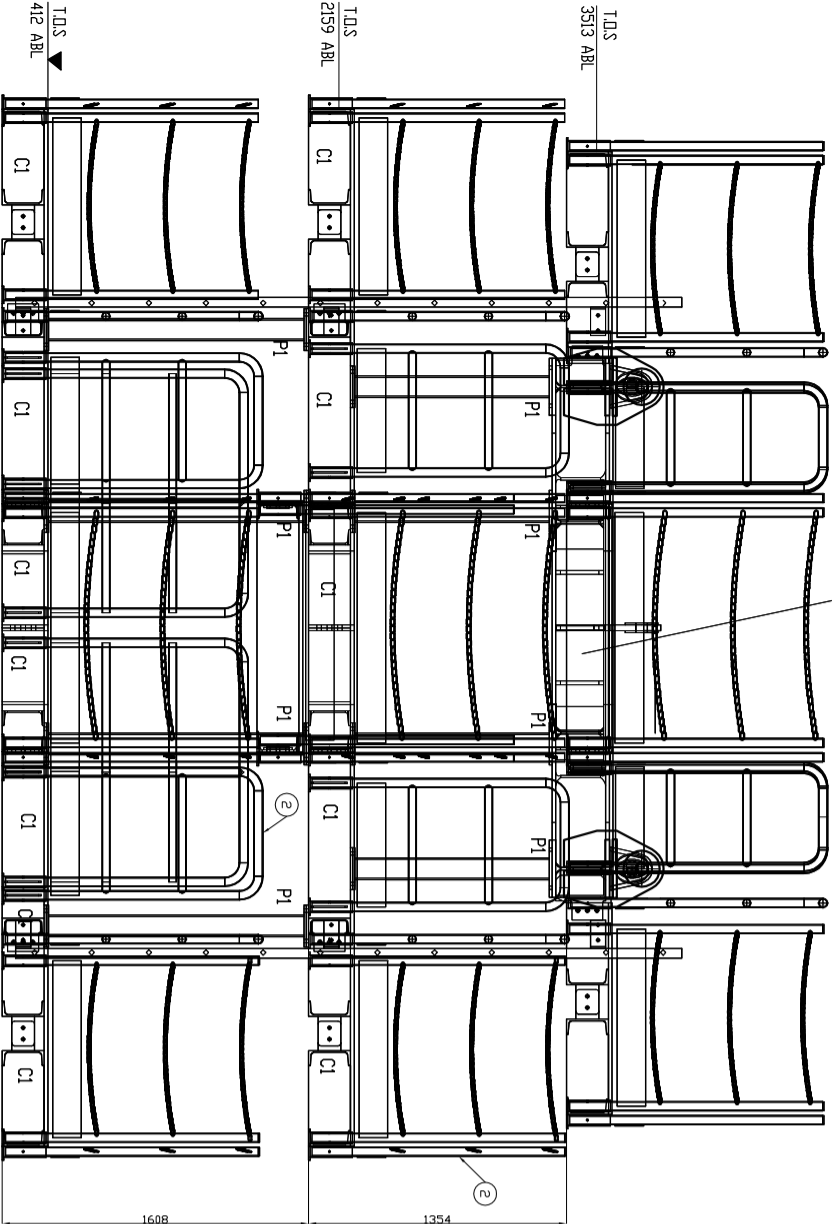


VINTAGE INTL. MANAGEMENT

LIFTING FRAME DETAIL
FOR 13 5/8" BOP

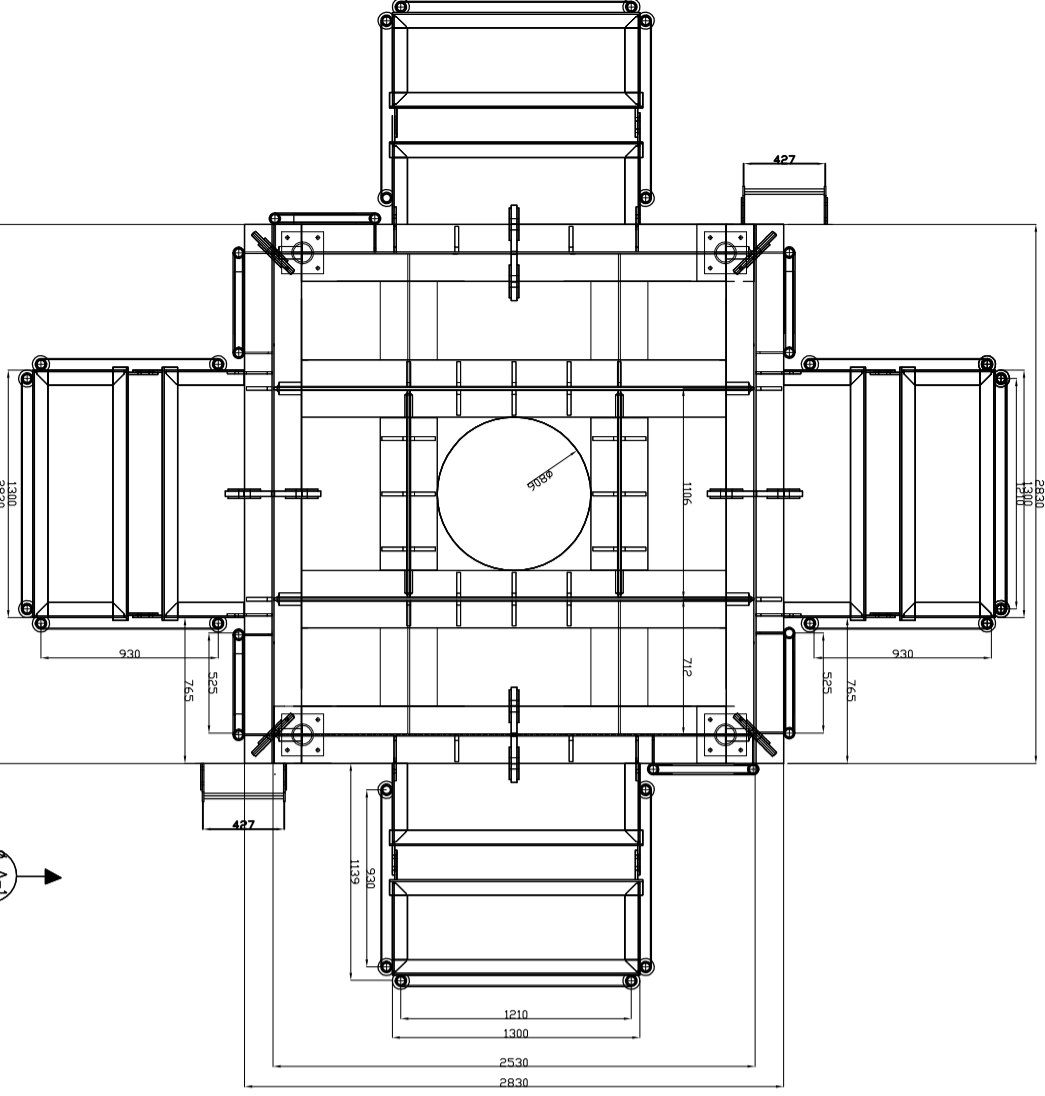
A1

SCALE: 1:30

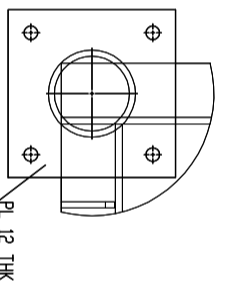


LIFTING FRAME(see detail Sht 3/3)

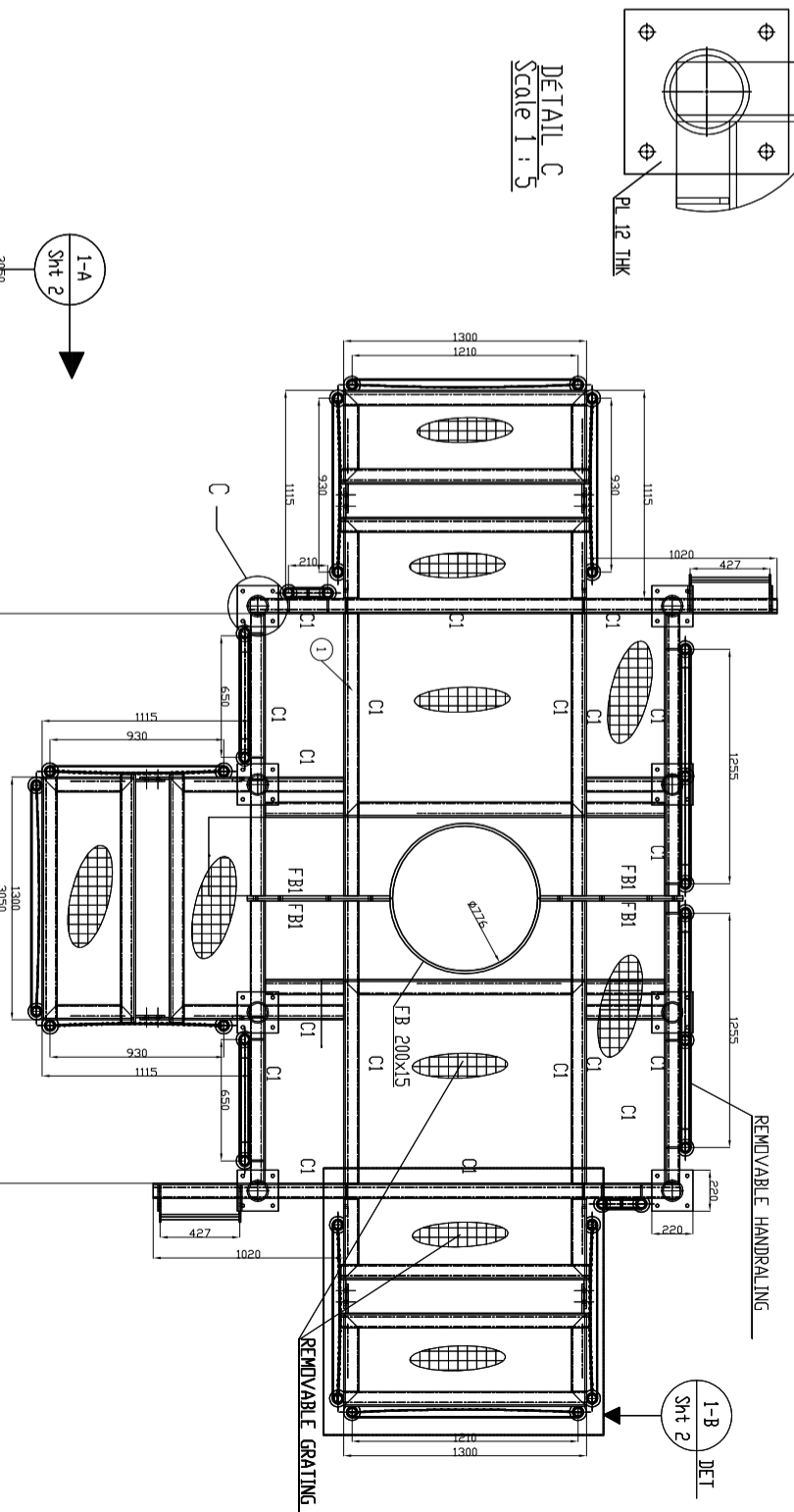
ELEVATION VIEW WORKING PLATFORM
Scale : 1/20



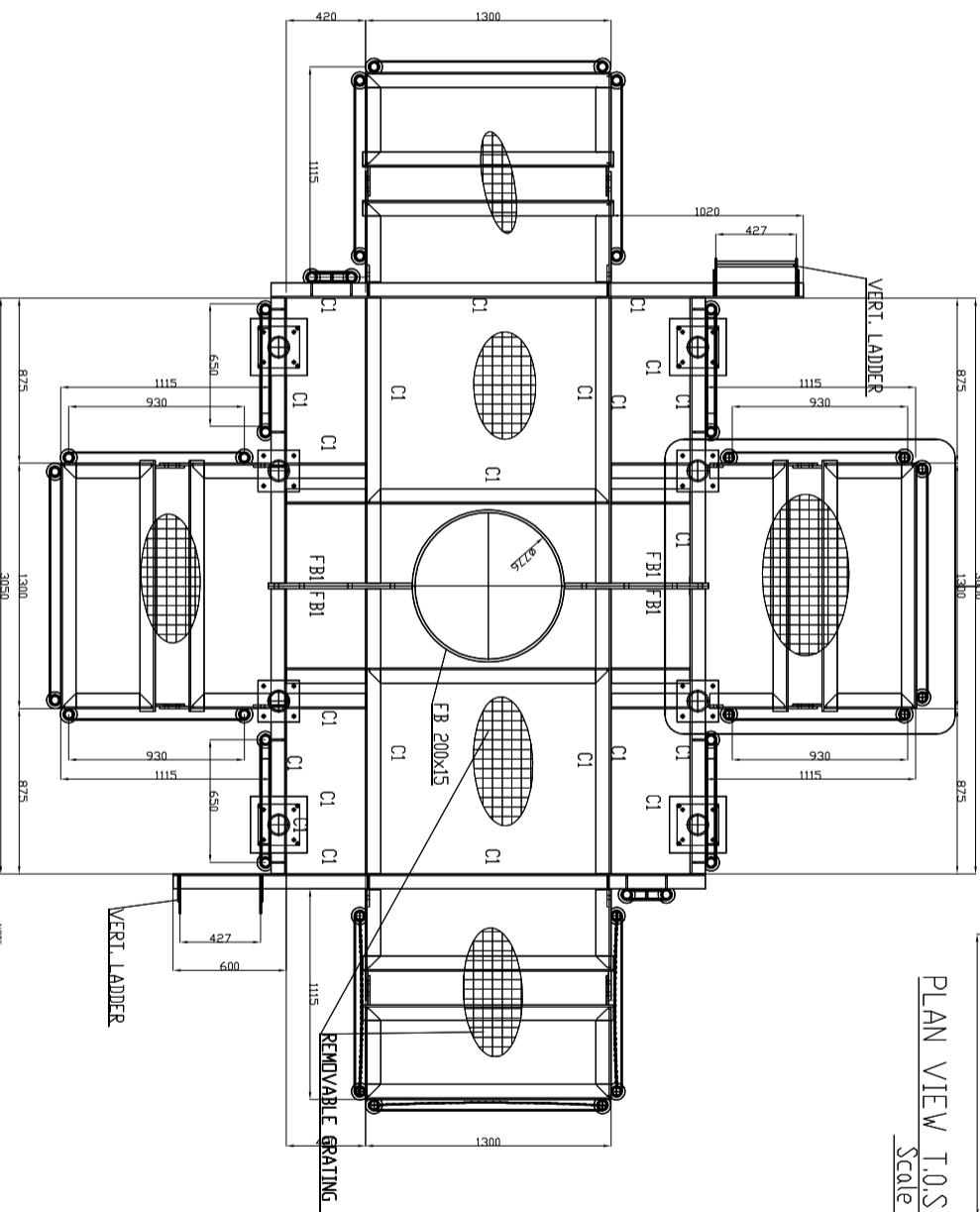
PLAN VIEW LIFTING FRAME
Scale : 1/20



DETAIL C
Scale 1 : 5



PLAN VIEW T.O.S EL. +2725 T.O.S
Scale : 1/20



PLAN VIEW T.O.S EL. +2725 T.O.S
Scale : 1/20

- NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETERS.
 2. ALL MATERIAL GRADINGS TO FOLLOW AS PER BOM.
 3. LENGTH OF THE FILLET WELDS TO BE WELDED OR SHIM, WHICHEVER IS GREATER UNDO.
 4. ALL SHEARVAIN HOLES TO BE 23mm X 23mm MAO UNDO.
 5. ALL WELDING TO BE IN ACCORDANCE WITH AWS D11.10 U.S.
 7. MEMBER ADJUSTMENT TO BE DONE AT SITE.
 8. 2. ALL FELT WELD TO BE MIN.
 9. ALL FULL PENETRATION WELDS TO BE ULTRASONICALLY TESTED & MIN

MATERIAL DATA FOR ACCESS PLATFORM

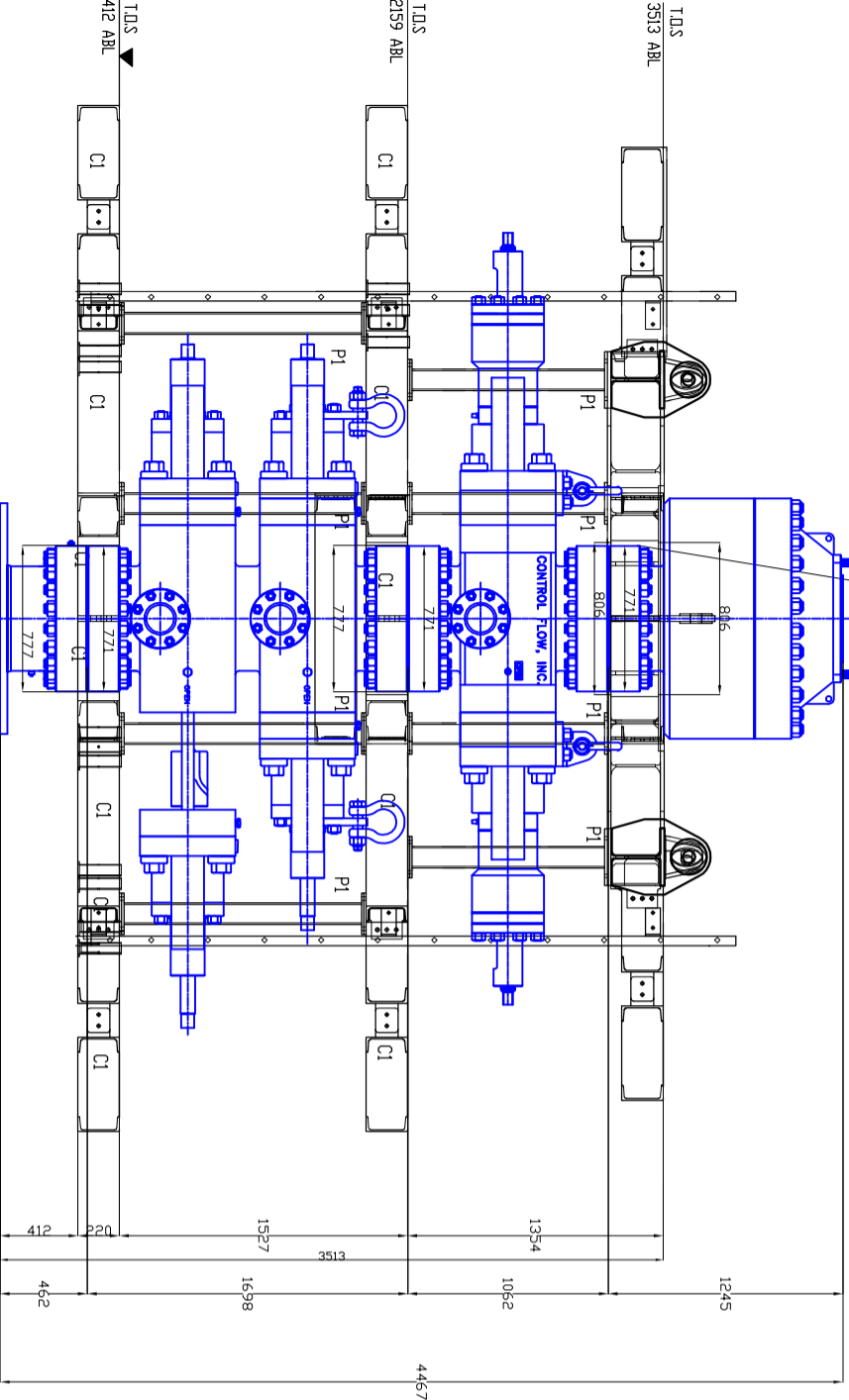
S.NO	DESCRIPTION	MATERIAL
1	C1- UPM 220X60	GR. S235JR/EGV
2	PIPE 1 1/2" SCH40	A 106 GR. B/ EGV
3	PIPE 1 1/4" SCH40	A 106 GR. B/ EGV
4	PIPE 2" SCH80	A 106 GR. B/ EGV
5	FB 250X15	GR. S235JR/EGV
6	PLATE 12mm THK	GR. S235JR/EGV
7	PLATE 8mm THK	GR. S235JR/EGV
8	PLATE 6mm THK	GR. S235JR/EGV
9	GRATING FRP	FRP
10	GRATING SECURING M CLAMPS	SS304
11	FB 65 X 12	GR. A1 EGV
12	SQUARE BAR 25 X 25mm	GR. A1 EGV
13	CHAIN Ø6mm	SS304
14	Ø16 X 75 SECURING PIN C/W Ø5mm SHUT PIN & Ø5mm CHAIN	SS316
15	Ø3mm SECURING PIN C/W 3MM CHAIN	SS316
16	STUD BOLT & 2H NUT M20X60	ASTM A193 B7 A194 2H
17	STUD BOLT & 2H NUT M16X55	ASTM A193 B7 A194 2H
18	STUD BOLT & 2H NUT M12X45	ASTM A193 B7 A194 2H
19	RUBBER 200X5 MM THK	RUBBER
20	FB 150X6	GR. S235JR/EGV

MATERIAL DATA LIFTING FRAME

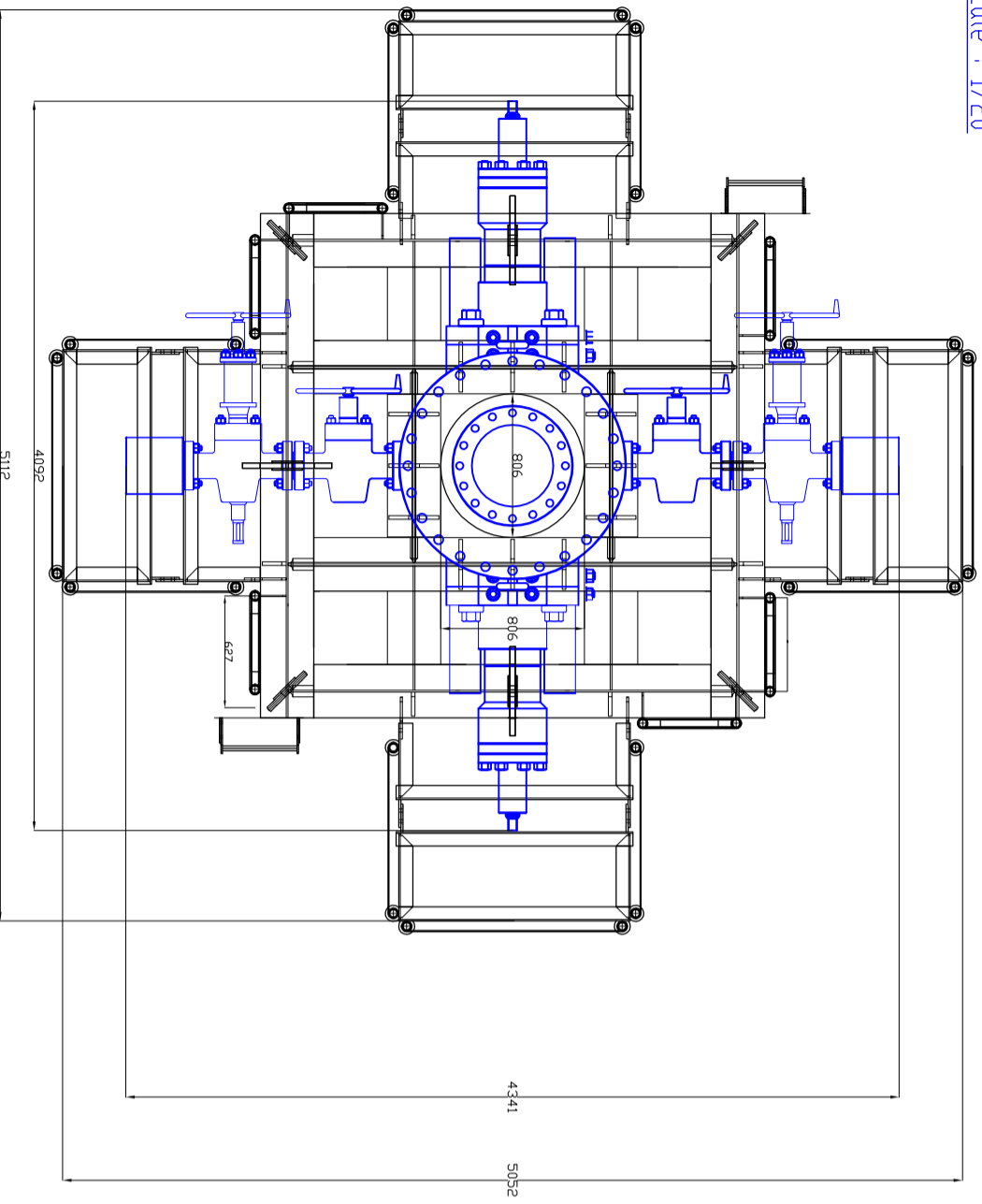
S.NO	DESCRIPTION	MATERIAL
21	HEB 300	GR. S235JR/EGV
22	STEEL PLATE 60mm THK	GR. S275JR/EGV
23	STEEL PLATE 20mm THK	GR. S235JR/EGV
24	STEEL PLATE 10mm THK	GR. S235JR/EGV

NO	REV	DATE	DESCRIPTION
1			

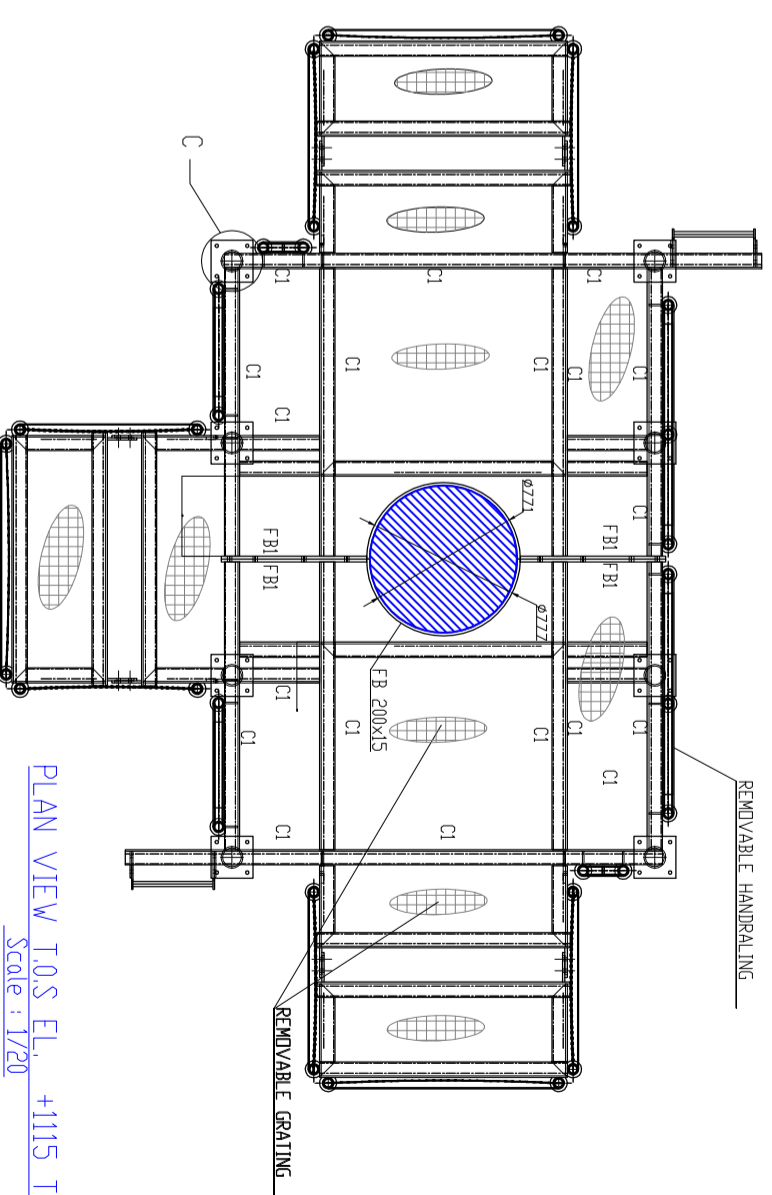
WORKING PLATFORM FOR 13 5/8" BOP - 10M VANTAGE DRILLING INTL



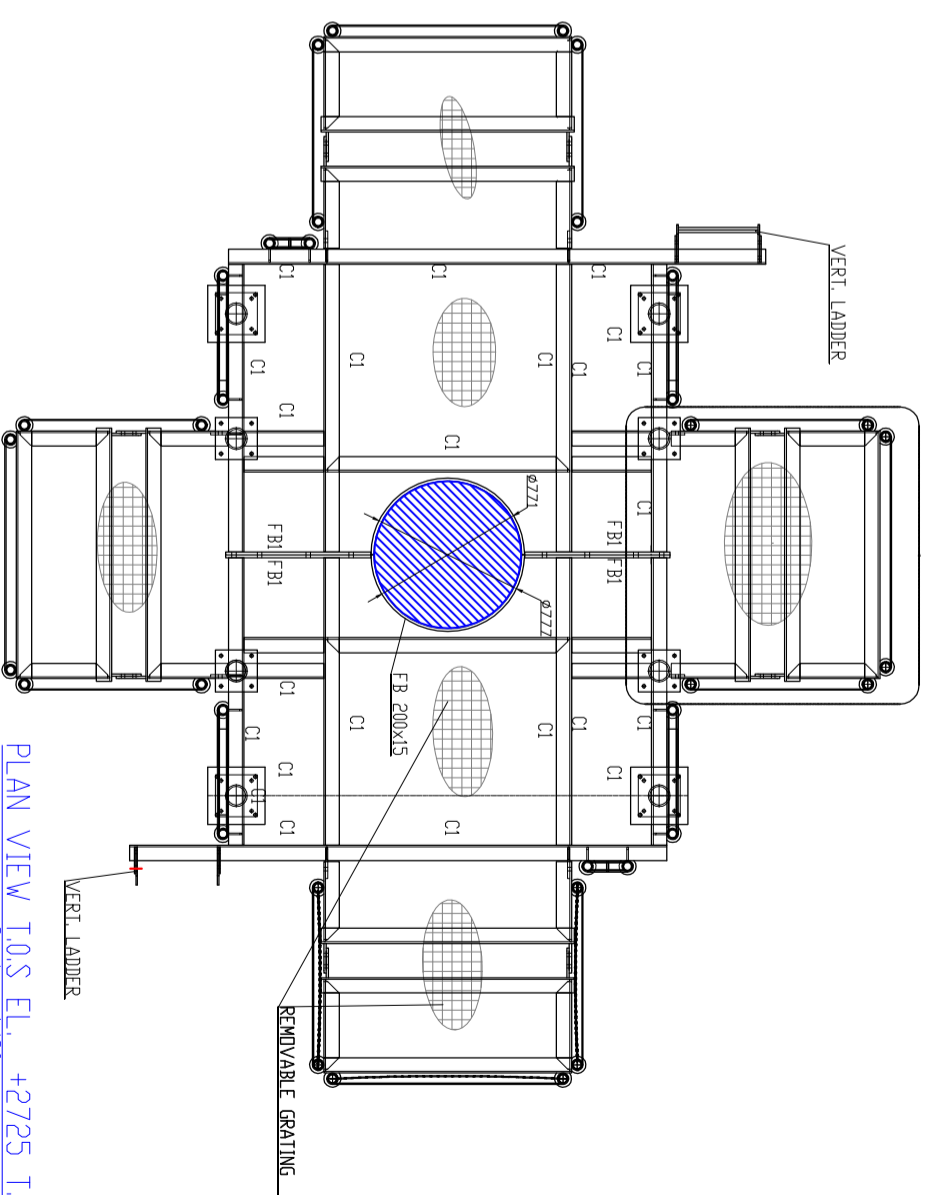
ELEVATION VIEW
WORKING PLATFORM
Scale : 1/20



PLAN VIEW
LIFTING FRAME
Scale : 1/20



PLAN VIEW T.O.S EL. +1115 T.O.S
Scale : 1/20



PLAN VIEW T.O.S EL. +2725 T.O.S
Scale : 1/20

This document and the information which it contains are confidential and are property of BINDENT. It is loaned to you for limited purpose of assisting you with the operation and maintenance of equipment which you have purchased from BINDENT. It may not be reproduced in whole or in part without BINDENT prior written consent. It may not be disclosed to persons not having of disclosure for the loan and it is to return to BINDENT upon completion of the use for which it was loaned.

- NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETERS
 2. ALL MATERIAL GRADES TO FOLLOW AS REFERED
 3. LEG LENGTH ON THE TIE-BEAMS TO BE WELDED SHOWN WHEN REFERED
 4. ALL DIMENSIONS SHOULD BE 25MM X 25MM MIN. DIA. UNLESS SPECIFIED
 5. ALL WELDING TO BE IN ACCORDANCE WITH AWS D1.1 BUILDS
 6. ALL GRATING SHALL BE REMOVABLE TYPE
 7. MINOR ADJUSTMENT TO BE DONE AT SITE.

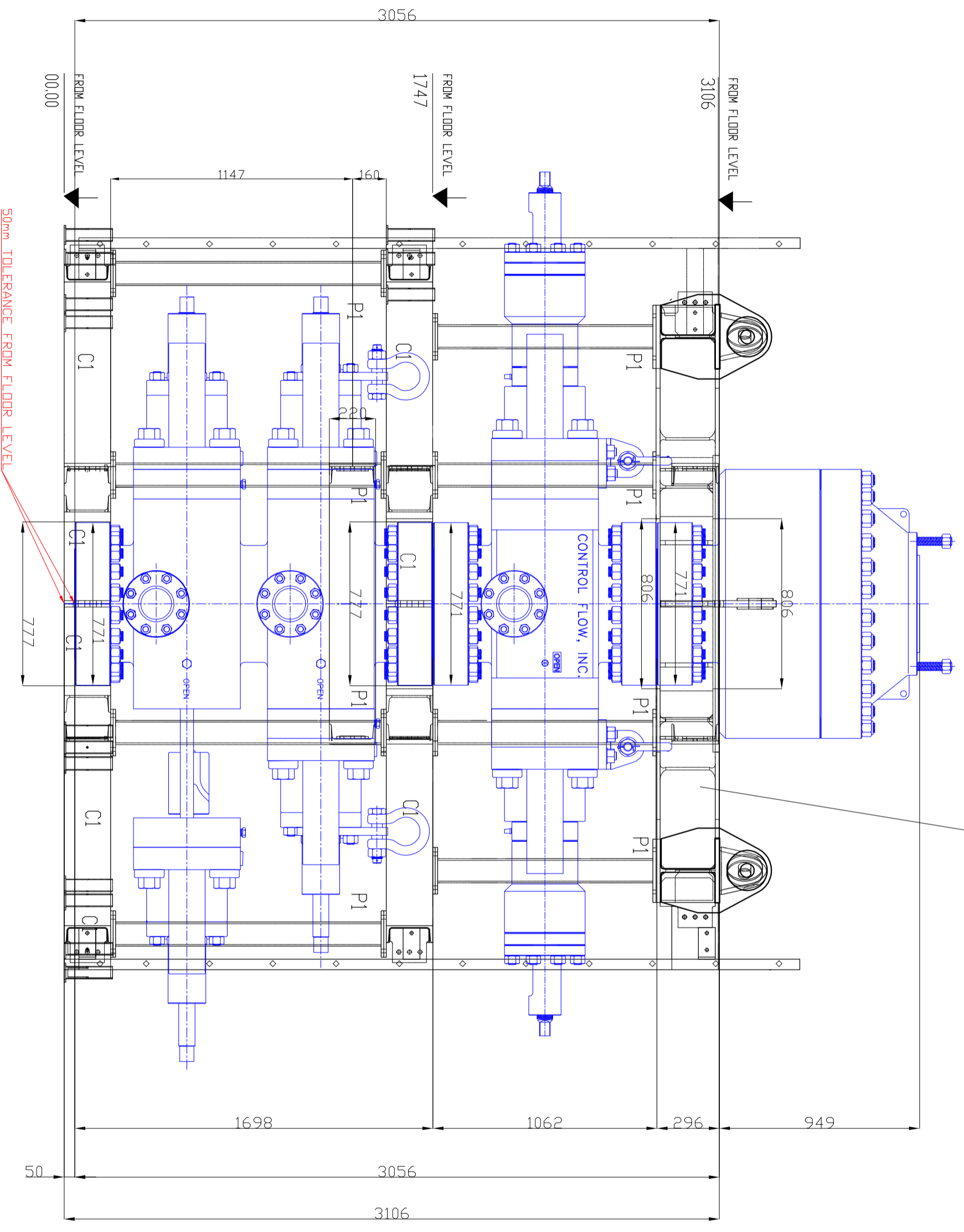
NO.	REV.	DATE	DESCRIPTION
1	1	10/27/19	ISSUED FOR PERMIT
2	2	08/27/20	ISSUED FOR PERMIT

BINDE
CONSTRUCTION EQUIPMENT

UNITED STATES PATENT & TRADEMARK OFFICE
REGISTERED TRADEMARK

SCALE	1:8
TITLE	BOP 13 5/8' SUPERIMPOSE VIEW ON PLATFORM
SHEET	VANTAGE DRILLING INTL A3

LIFTING FRAME(see detail Sht 3/3)



IMPORTANT NOTE:
 A SEPARATED DESIGNED
 LEGS WILL BE FABRICATED
 IF THE TOLERANCE FROM
 FLOOR DOESNT MATCHES
 AS PER DESIGN

- NOTE:
1. ALL DIMENSION ARE IN MILLIMETERS
 2. ALL MATERIAL GRADES TO FOLLOW AS PER MTO.
 3. LEG LENGTH OF THE FILT VEDIOS TO BE WELDED ON SMM.
 4. WINDCHILL SENSATION TO BE WELDED ON SMM.
 5. ALL WELDING TO BE ACCORDING WITH AWS D1.1
 6. ALL GRATING SHALL BE REMOVABLE TYPE
 7. MINOR ADJUSTMENT TO BE DONE AT SITE

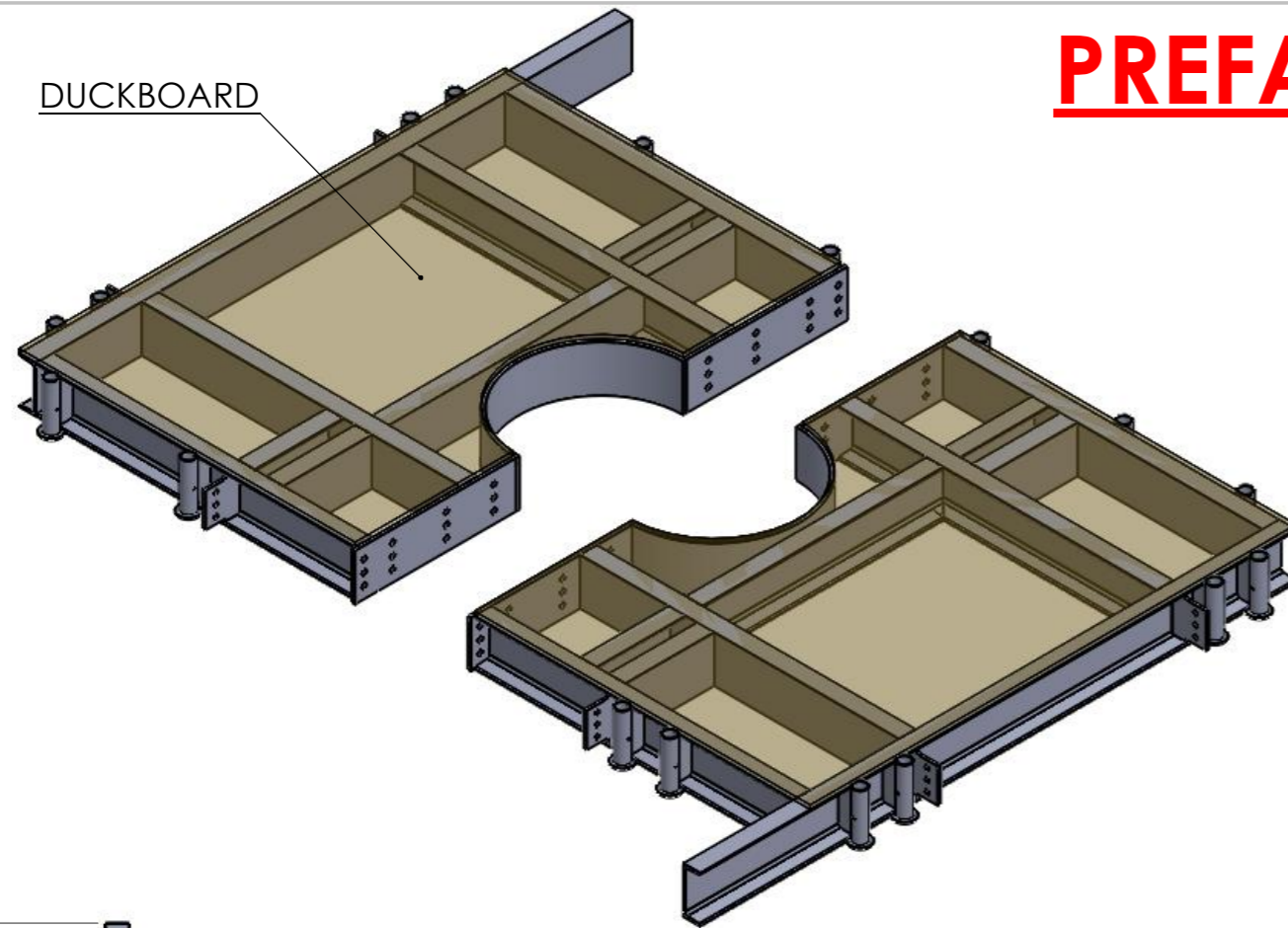
BOP 13 5/8' AT REST POSITION ON FLOOR
 (FREE FROM DISMOUNTED EXTENSIONS AND
 HANDRAILS)

This document and the information which it contains are confidential and are property of BINDER. It is loaned to you for limited purpose of assisting you with the operation and maintenance of equipment which you have purchased from BINDER. It may not be reproduced in whole or in part without BINDER's prior written consent. It may not be disclosed to persons not authorized for the loan and it is to return to BINDER upon completion of the use for which it was loaned.

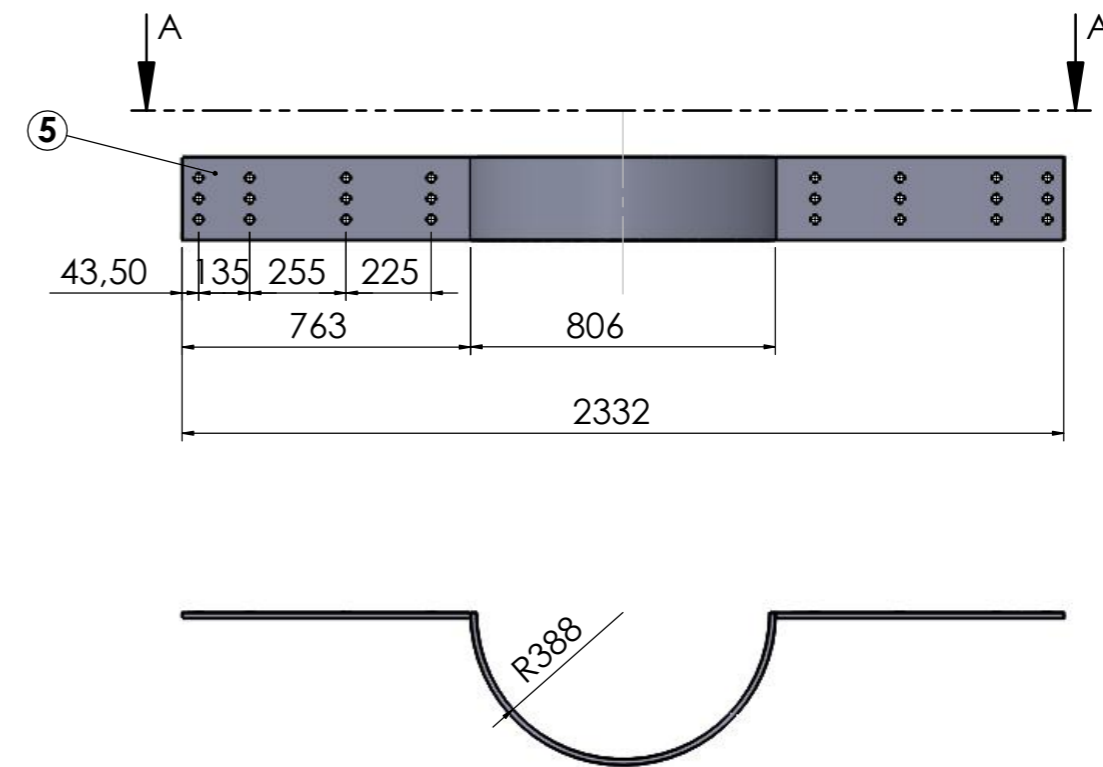
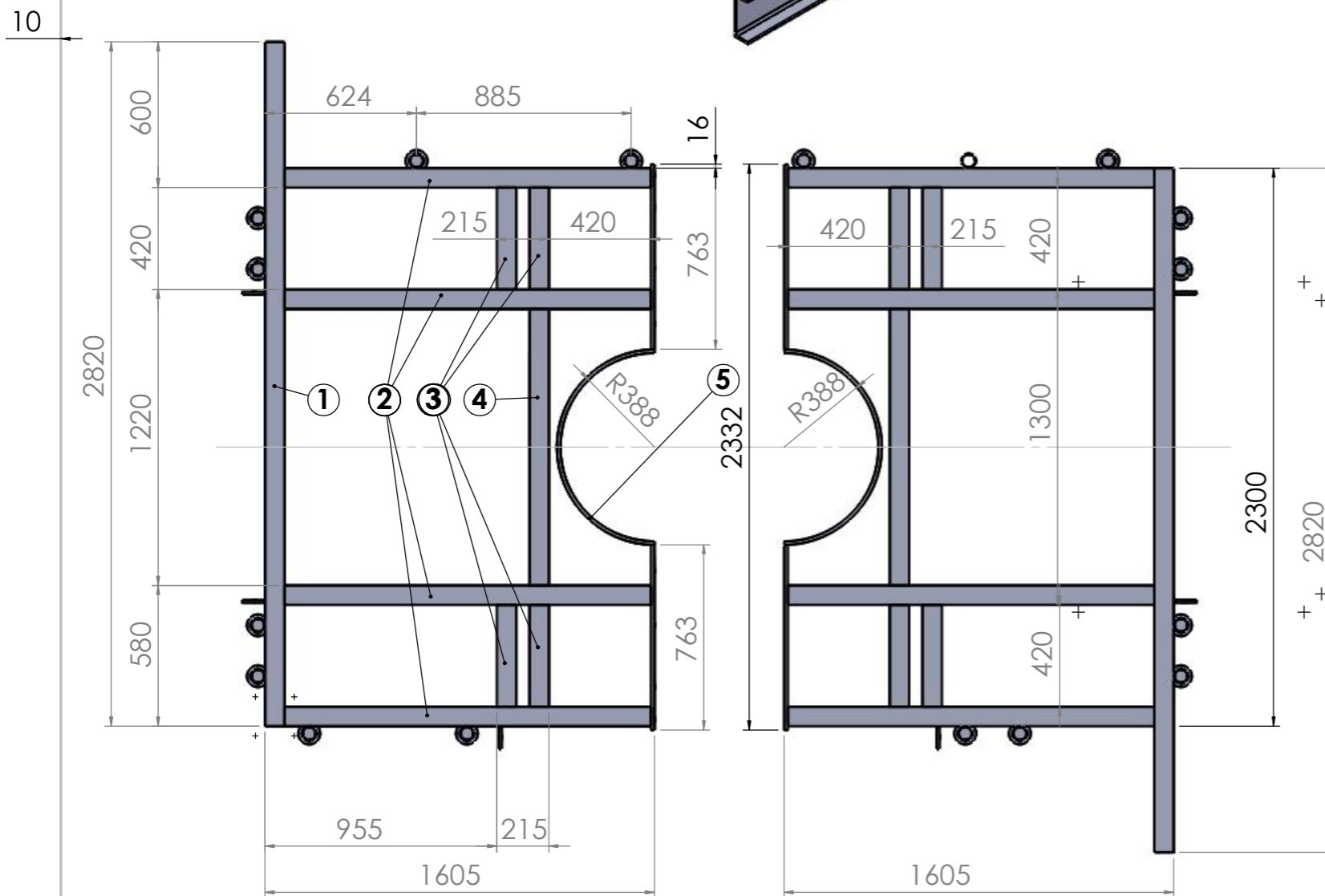
NO.	DATE	DESCRIPTION	BY

TITLE: BOP 13 5/8' AT REST POSITION
 VANTAGE DRILLING INTL
 SCALE: AS SHOWN
 SHEET: A3

PREFABRICATION PLAN OF FRAME



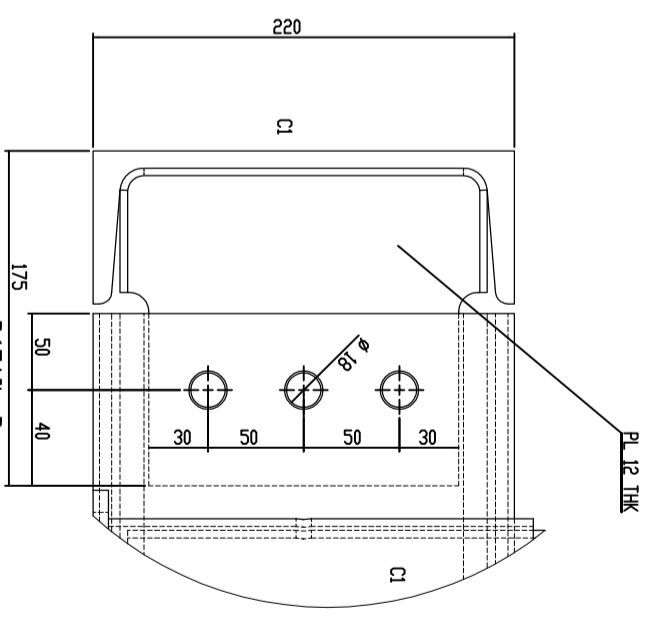
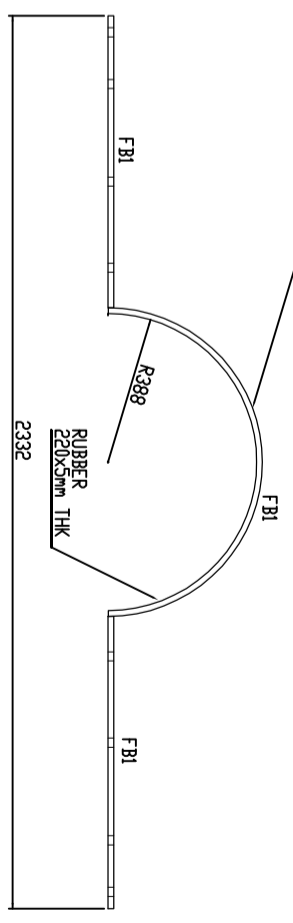
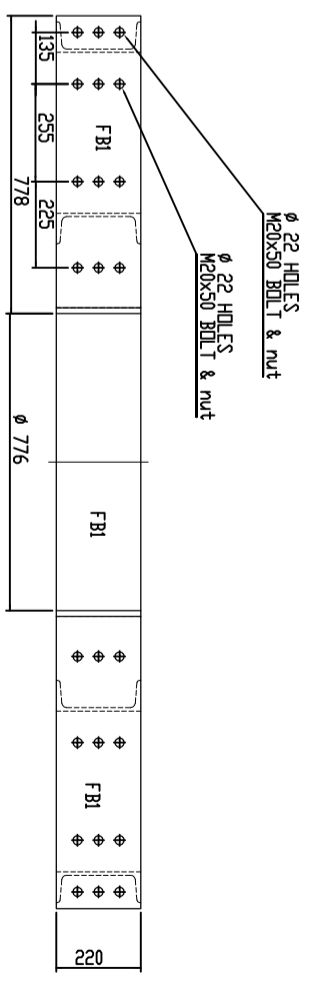
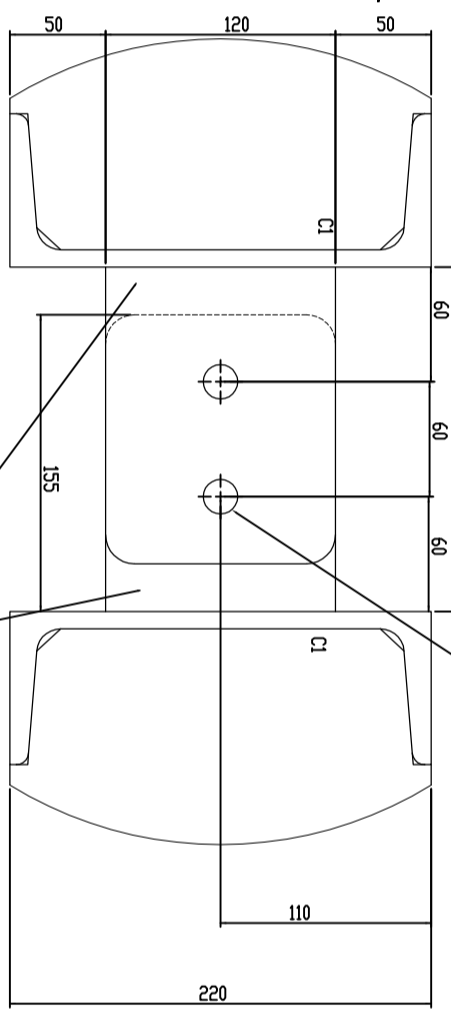
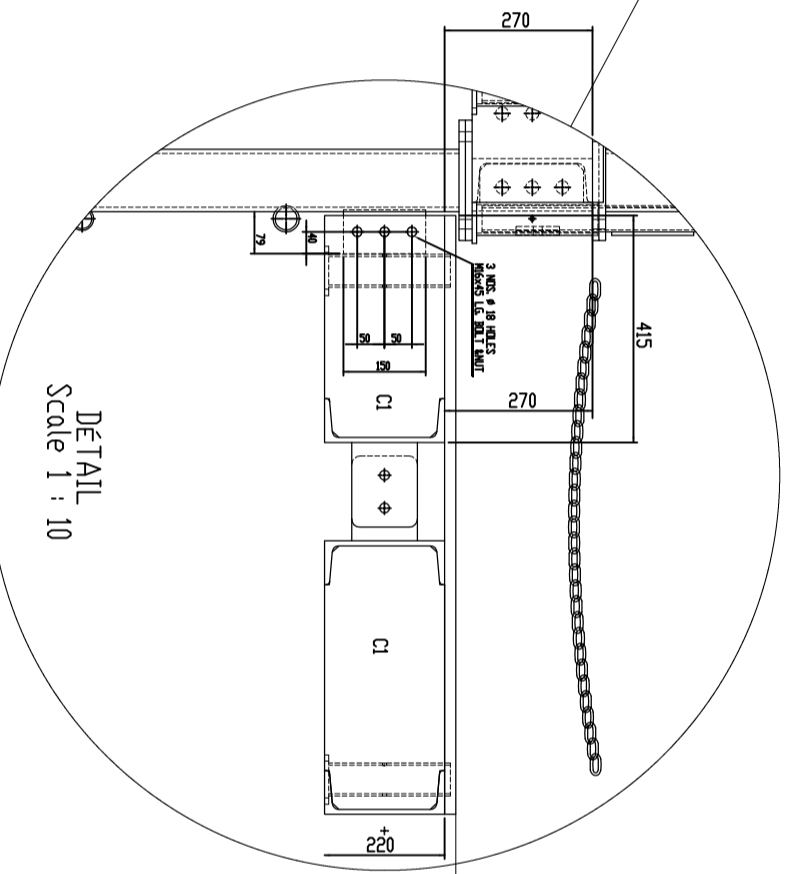
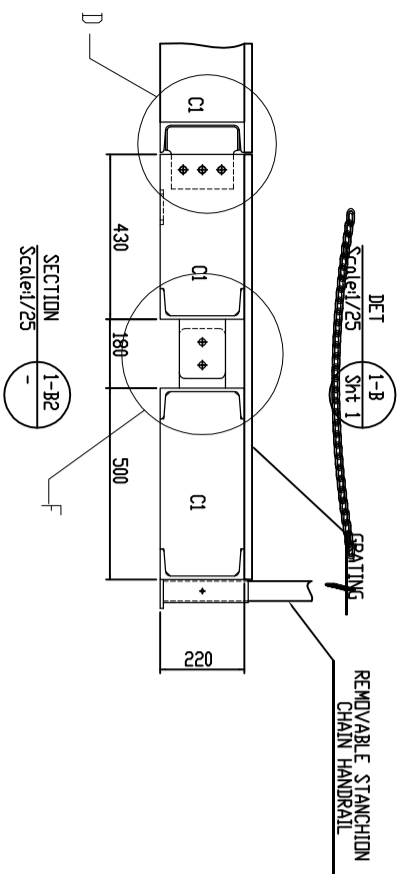
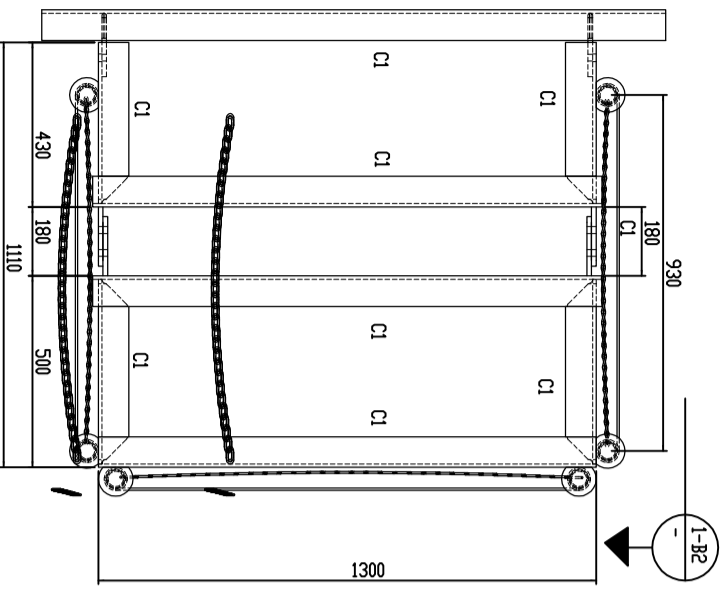
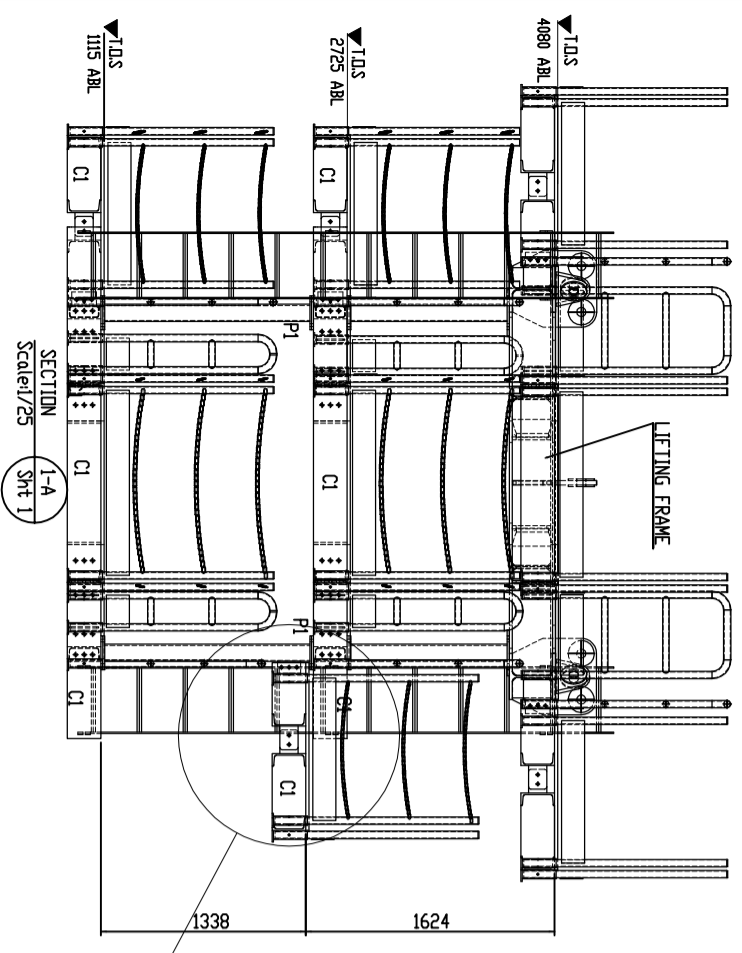
CUTTING NOMENCLATURE OF 2 FRAME			
REP	PROFILE	LONG/mm	QTE
1	UPN 220x80	2820	04
2	UPN 220x80	1510	16
3	UPN 220x80	420	16
4	UPN 220x80	1270	4
5	PL 15 THK	--	4



**SECTION A-A
ECHELLE 1 : 20**

PLAN VIEW T.O.S EL. +2725 T.O.S & PLAN VIEW T.O.S EL. +115 T.O.S

DWG NO: 44057766-008



- NOTE:
1. ALL DIMENSIONS ARE IN MILLIMETRE U.N.O
 2. ALL MATERIAL GRADES TO FOLLOW AS PER M.F.O.
 3. LEG LENGTH OF THE FILLET WELDS TO BE WELDED OR 5MM, WHICHEVER IS GREATER U.N.O.
 4. ALL SHEAR/HOT HOLES TO BE 25MM X 25MM RAD. U.N.O
 5. ALL WELDING TO BE IN ACCORDANCE WITH AWS D11.1 RULES.
 6. ALL GRATING SHALL BE REMOVABLE TYPE.
 7. MINOR ADJUSTMENT TO BE DONE AT SITE.

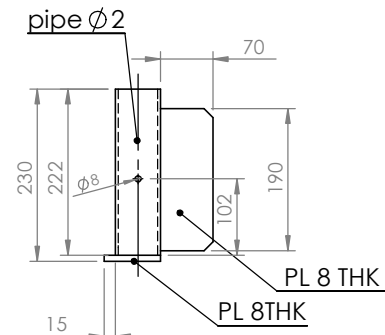
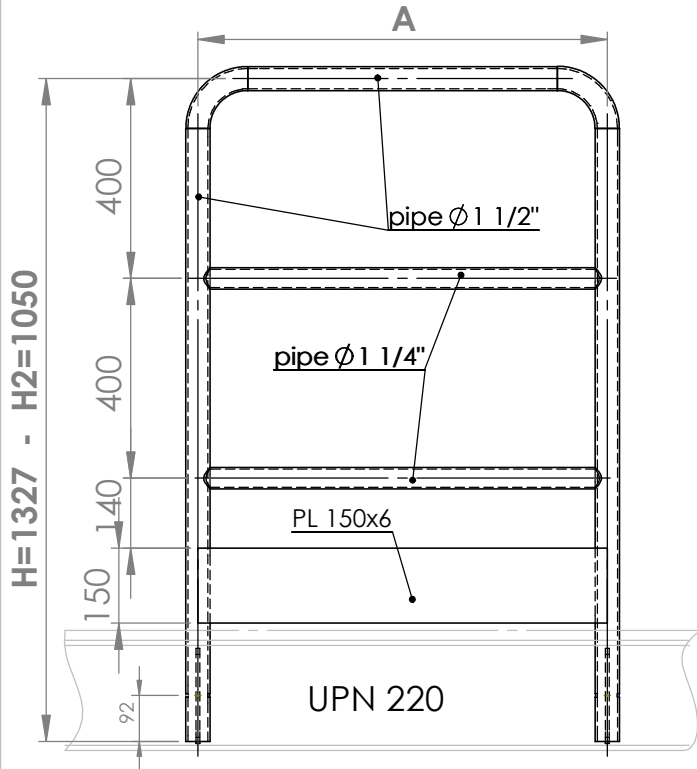
This document and the information which it contains are confidential and are property of BINDENOT. It is loaned to you for limited purpose of assisting you in the design and construction of equipment which you have purchased from BINDENOT. It may not be reproduced or made public in any form without the prior written consent of BINDENOT. The design and construction of the equipment shall be the responsibility of the user. BINDENOT is not responsible for any damage or loss of information resulting from the use of this document.

NO.	DATE	DESCRIPTION
1	27/07/25	ISSUED FOR DESIGN
2		
3		
4		
5		
6		
7		
8		
9		
10		

TITLE: EXTENSION CONNECTING DETAILS
 WORKING PLATFORM
 VANTAGE DRILLING INTL.
 ALL

DWG NO: 4405786-004
 BINDE
 SHEET 2/3

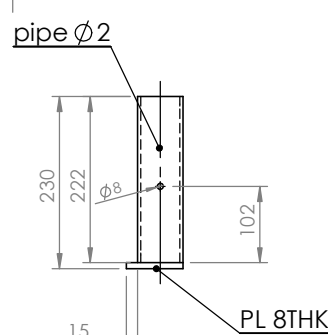
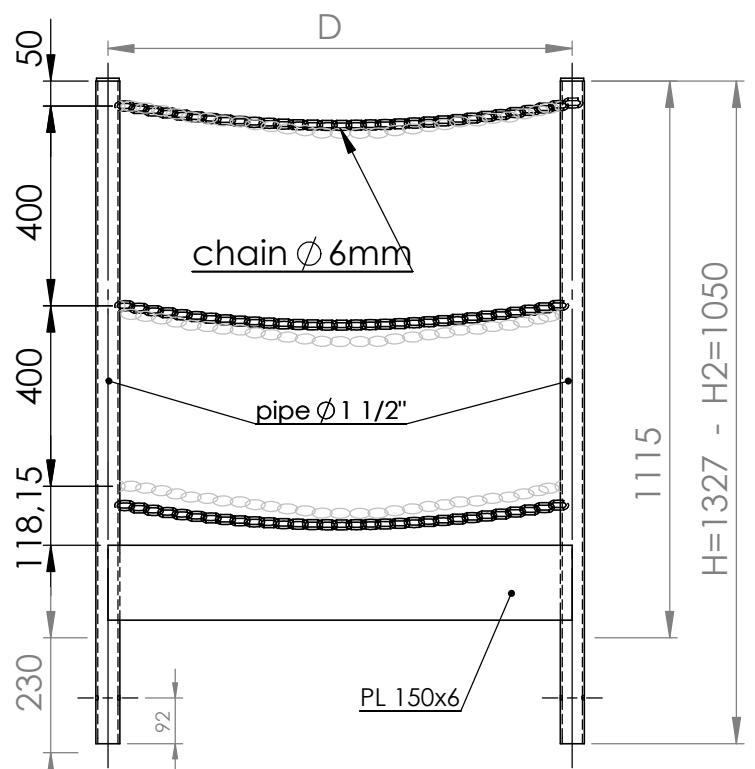
HANDRAIL MODEL 1/2



DETAIL OF STANCHION CONNECTION 1/2

HANDRAIL MODEL 1						
A	Long/mm	H1	QTY	H2	Long/m	QTY
A1	210	1327	02	1050	210	02
A2	525		6		650	04
A3	650		02		/	/
A4	1255		02		/	/

HANDRAIL MODEL 2/2



DETAIL OF STANCHION CONNECTION 2/2

HANDRAIL MODEL 2						
D	H1	Long/m	QTY	H2	Long/m	QTY
D1	1327	930	16	1150	930	06
D2		1210	8		1210	3

NOTE:

1. ALL DIMENSIONS ARE IN MILLIMETERS UNLESS STATED OTHERWISE.
2. ALL MATERIALS SHALL BE TO THE QUALITY SPECIFIED IN THE DRAWING.
3. THE FINISH OF THE STEEL SHALL BE TO THE QUALITY SPECIFIED IN THE DRAWING.
4. ALL SPRESSES SHALL BE TO BE 25MM X 25MM RADIUS.
5. ALL WELDING TO BE IN ACCORDANCE WITH AWS D1.1 BUILDS.
6. ALL COATING SHALL BE REMOVABLE TYPE.
7. MEMBER SHALL BE TYPED TO BE DONE AT SITE.

	NOM	SIGNATURE	DATE
AUTEUR			
VERIF.			
APPR.			
FAB.			
QUAL.			



REV : 00

TITLE:

**WORKING PLATFORM FOR
13 5/8" BOP-10M STACK UP
(HANDRALING)**

reference drawing: DWG NO: VTG-TOD-DWG-LF-44057766-001

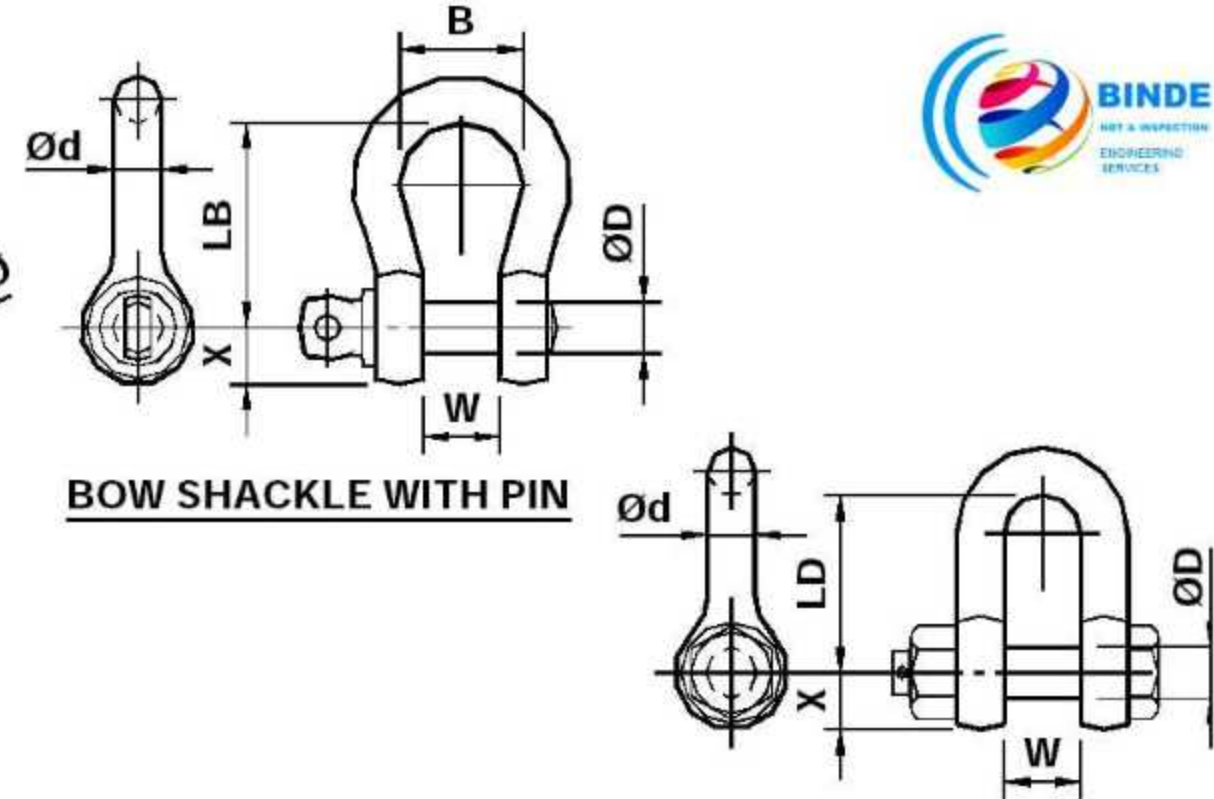
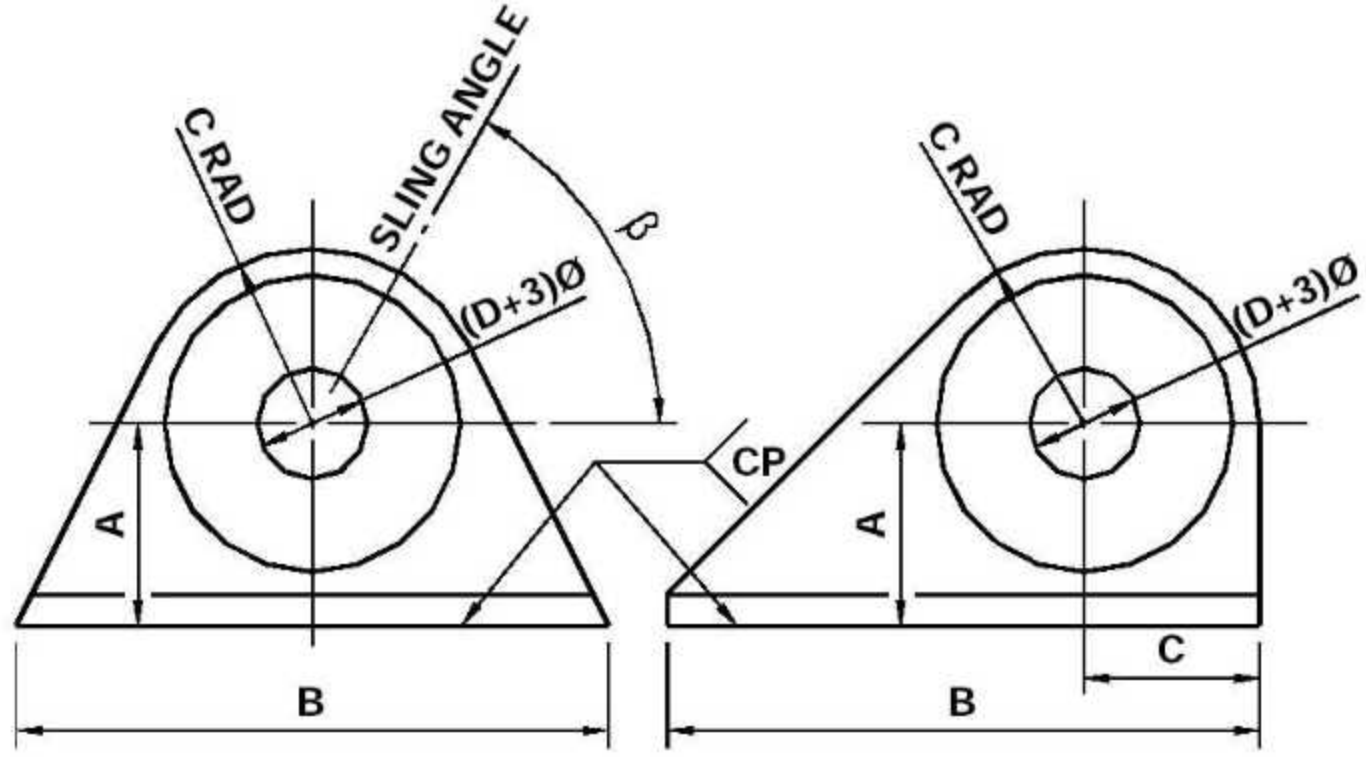
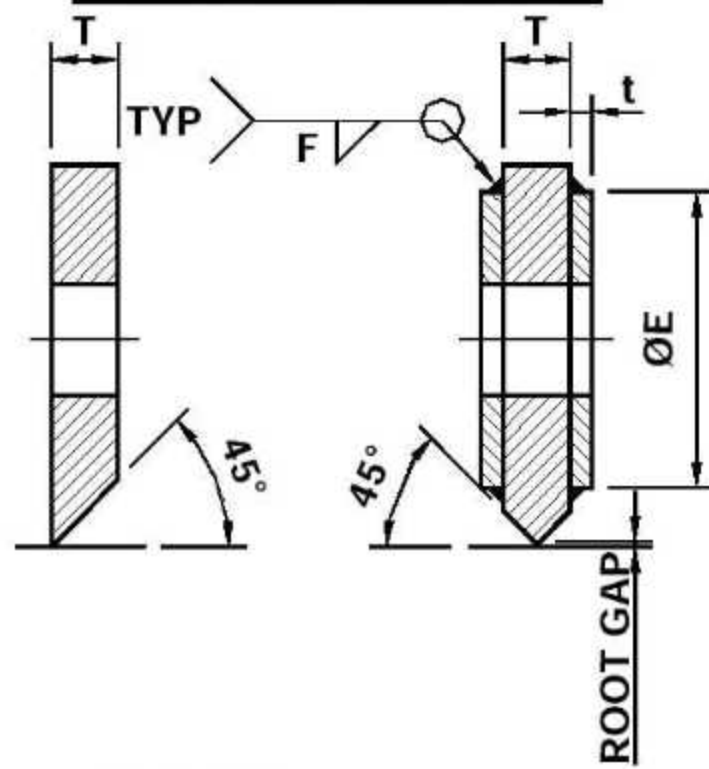
A3

DWG NO: 44057766-005

Sheet: 6/6

This document and the information which it contains are the intellectual property of BINDE. It is loaned to you for limited purposes of assisting you with the operation and maintenance of equipment which you have purchased from BINDE. It may not be reproduced, in whole or in part, without the prior written consent of BINDE. It may not be disclosed to persons not having authority for the loan and it is to return to BINDE upon completion of the use for which it was loaned.

PADEYE DATA



Material
S235JR / S275JR / S355JR

PADEYE TYPE 'X'

PADEYE TYPE 'Y'

ALLOY SHACKLES GRADE "S"-TO AS2741

PADEYES - FOR ALL VALUES OF β									
SHACKLE WLL (tonne)	A	B	RADIUS C	PIN HOLE D+3mm	WITHOUT CHK.PLS. T	WITH CHK.PLS. T	CHEEK PLATES		
							THICK. t	DIA. E	WELD F
3.2	45	115	35	22	20	12	6	50	6
4.7	55	135	40	25	25	16	6	60	6
6.5	55	150	45	28	32	20	6	70	6
8.5	60	160	50	32		25	6	80	6
9.5	65	185	55	35		25	8	90	6
12	70	200	60	38		25	10	100	6
13	75	220	65	41		25	10	110	6
17	85	230	70	44		32	10	120	6
25	105	280	85	54		40	12	150	8
35	120	295	105	60		50	10	170	8
45	130	340	115	66		50	16	190	8
55	150	360	130	73		50	20	220	10

SHACKLES ALLOY GRADE "S" - TO AS2741						
WLL (tonne)	NOM SIZE d	PIN DIA. D	W	BOW SHACKLE LB	DEE SHACKLE LD	X
3.2	16	19	27	70	60	20
4.7	19	22	32	83	71	24
6.5	22	25	37	96	83	27
8.5	25	29	43	109	95	30
9.5	29	32	46	124	106	34
12	32	35	52	136	117	38
13	35	38	57	152	132	42
17	38	41	60	166	145	46
25	44	51	73	203	171	55
35	51	57	83	225	199	64
45	57	63	95	253	212	72
55	63	70	105	302	238	76

**ADDRESS: BP 469, Limbe-
CAMEROON, CENTRAL AFRICA**
Cell: +237-676174124, +237656055894
Landline: +237233711104

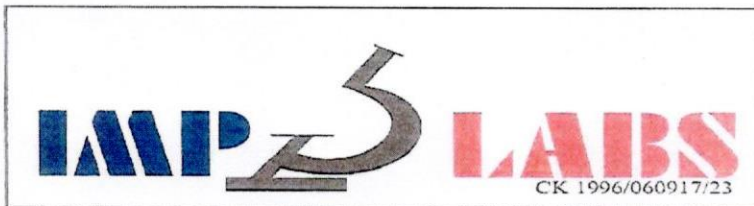


RegNo:TPPRR/RC/LBE/2014/B/0645
Tax No:M051412091175B
Website: www.bindendt.com
Admin: info@bindendt.com
Service: bindendt@gmail.com

Welding Inspection/ NDT procedures for BOP Lifting frame & Platform construction.

Inspection & NDT

- ❖ **Welding to be carried out using attached certified WPS.**
- ❖ **Welder/ fitter follow up & welding parameter recording to be done by Level II TWI welding Inspector.**
- ❖ **100% Visual inspection to be done after welding.**
- ❖ **NDT including; 100% MPI, UT on Butt welds for BOP Lifting frame, 100% Visuals & 10% MPI for BOP Platform.**
- ❖ **Pull testing (1.25 x designed load) for Lifting frame Padeyes , post load MPI done for certification.**



P.O. Box 6850
 Dunswart, 1508
 Tel: 011 421 9026
 Fax: 011 422 6581
 25 Moore Ave
 Benoni Ext 7
 1501
 www.implabs.co.za
 e-mail: implabs@lantic.net

MATERIALS TESTING LABORATORY

ISO 9001: 2008 CERTIFIED – INTERTEK CERTIFICATE NUMBER: QMS 3091-04

CERTIFICATE OF TEST No: 16 – 0488 C

Horizon 7 Company Ltd. / Binde NDT Douala Cameroon	DATE: 4 March 2016
Attention: Atoh	ORDER No: COD

Description :		15mm Thick Carbon Manganese Plate Butt Weld								
	Units	Specification								
Sample Identification		Transverse Weld Tensiles								
Machined Dimensions	mm	20,02 x 15,10	20,33 x 15,17							
Cross Sectional Area	mm ²	302,30	308,41							
Gauge Length 80,0	mm	50,0	50,0							
Yield / Proof Load	kN	83,8	93,3							
Maximum Load	kN	124,5	127,4							
Extension	mm	15,8	14,5							
Yield / Proof Stress	MPa	277,2	302,5							
Ultimate Tensile Strength	MPa	411,8	413,1							
Elongation	%	31,6	29,0							
Fracture Location		Parent Metal			Parent Metal					
Impact Resistance	-20°C	J	SH %	L.E. mm	J	SH %	L.E. mm	J	SH %	L.E. mm
		286			300					
Charpy V Notch		292			300					
		288			300					
Notch Location		Weld			HAZ					
Size (mm)		10 x 10			10 x 10					
Bends :	SIDE	180°	Acceptable (4 off) 40mm Ø Former							
NO SPECIFICATION PROVIDED										

M.GERTZEN
 SECTION HEAD
 MECH/TEST

CT 9 Rev 6



The results relate only to the items tested.

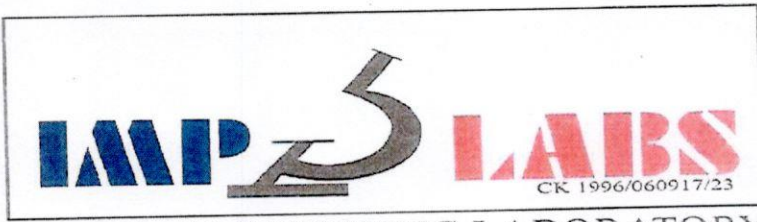
Witnessed By :

Authorised Signatory :

DISCLAIMER: Whilst making every effort to ensure the accuracy of our results, they are without guarantee or warranty.
 PLEASE NOTE: SAMPLES WILL BE DISCARDED AFTER 30 DAYS.

MEMBERS: P. Heintzberger BSc (Hons) M.Gertzen





MATERIALS TESTING LABORATORY

ISO 9001: 2008 CERTIFIED - INTERTEK CERTIFICATE NUMBER: QMS 3091-04

CERTIFICATE OF TEST No: 16 - 0488 B

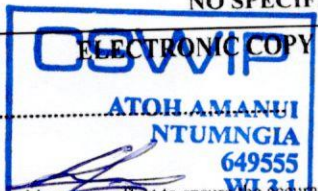
P.O. Box 6850
 Dunswart, 1508
 Tel: 011 421 9026
 Fax: 011 422 6581
 25 Moore Ave
 Benoni Ext 7
 1501
 www.implabs.co.za
 e-mail: implabs@lantic.net

Horizon 7 Company Ltd. / Binde NDT Douala Cameroon	DATE: 4 March 2016
Attention: Atoh	ORDER No: COD

Description :		8" NB 13,5mm Wall Thickness Pipe Butt Weld									
	Units	Specification									
Sample Identification		Transverse Weld Tensiles									
Machined Dimensions	mm	20,25 x 13,37		20,05 x 13,32							
Cross Sectional Area	mm ²	270,74		267,07							
Gauge Length 80,0	mm	50,0		50,0							
Yield / Proof Load	kN	96,3		89,4							
Maximum Load	kN	131,2		133,1							
Extension	mm	13,3		12,7							
Yield / Proof Stress	MPa	355,7		334,7							
Ultimate Tensile Strength	MPa	484,6		498,4							
Elongation	%	26,6		25,4							
Fracture Location		Parent Metal					Parent Metal				
Impact Resistance	-20°C	J	SH %	L.E. mm	J	SH %	L.E. mm	J	SH %	L.E. mm	
		145			186						
Charpy V Notch		121			154						
		138			193						
Notch Location		Weld				HAZ					
Size (mm)		10 x 10				10 x 10					
Bends :	SIDE	180°	Acceptable		(4 off) 40mm Ø Former						
M.GERTZEN SECTION HEAD MECH TEST											

NO SPECIFICATION PROVIDED

CT 9 Rev 6



The results relate only to the items tested.

Witnessed By :

Authorised Signatory :

DISCLAIMER: Whilst making every effort to ensure the accuracy of our results, they are without guarantee or warranty.
 PLEASE NOTE: SAMPLES WILL BE DISCARDED AFTER 30 DAYS.
 MEMBERS: P. Heintzberger BSc (Hons) M.Gertzen





Email: bindendt@gmail.com
www.bindendt.com

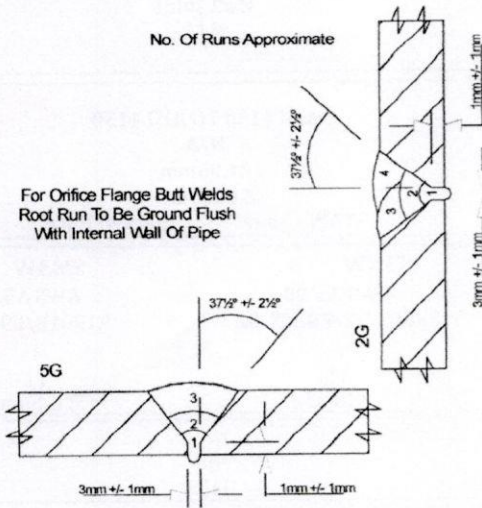
WELDER QUALIFICATION TEST

Supporting WPS/WPQ No: TP02/02

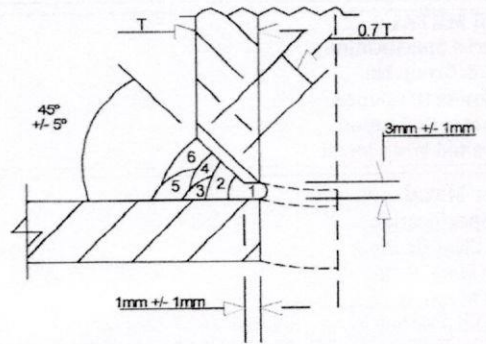
Revision No: 00

Joint Designs & Sequence Of Runs

Butt Welds (Including Orifice Flanges)

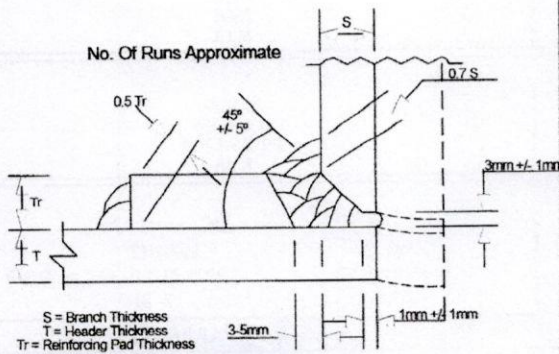


Branch Welds



No. of Runs Approximate

Branch Welds c/w Compensating Pads



Compiled By: Atoh Ntumngia Amanui

QUAL: CSWIP 3.1 II # 649555.

Date: 02/01/17

PCN II # 325318.






WELDING PROCEDURE SPECIFICATION

Company Name	BINDE NDT & ENGINEERING	
Procedure Qualification Record No.	BINDENDT-WPQ-6G-4130-001	
WPS No.	BINDENDT-WPS-4130-001	
Welding Process(es)	GTAW + SMAW	
Type (Manual, Automatic, Semi-Auto)	MANUAL	
Applicable Code	ASME IX	
JOINTS		
Joint Design	Butt Joint	
Backin / Backing Material	N/A	
Joint Details		
BASE METAL		
Material Specification	AISI 4130 TO AISI 4130	
P No. & Group No.	N/A	
Thickness Of Coupon	21.95mm	
Diameter Of Coupon	6.625" OD	
Deposited Weld Metal	GTAW : 5mm	SMAW: 8mm
Filler Metal		
SFA Specification	GTAW	SMAW
AWS Classification	AWS A5-28	AWS A5.5
Filler Metal F-No.	ER80S-D2/ER80S-B2	E10018/E9018
Weld Metal Analysis A-No.	6	4
Size Of Filler Metal	11 2-3mm	11 2.5-5mm
POSITION		
Position Of Groove	All	
Welding Progress (Uphill / Downhill)	Uphill	
PRE-HEAT		
Pre-heat Temperature	165°C - 230°C	
Interpass Temperature	285°C	
Pre-heat Maintenance	Propane Or Electric Heating	
PWHT		
Temperature	N/A	
Time Range	N/A	
Others	N/A	
GAS		
Shielding Gas	Argon	
Percentage Composition	99.99%	
Flowrate	14-25 LPM	
Backing	N/A	
ELECTRICAL CHARACTERISTICS		
Current (DC or AC)	DC	
Polarity	GTAW: EN	SMAW: EP
Amps	Root/Cap: 60 - 75	Root: 80 - 110 Fill/Cap: 90 - 140
Voltage	25 - 28	2 - 28
QUALIFICATIONS		PREPARED BY:
Inspection Authority		Name: ATOH NTUMNGIA AMANUI
Atoh Ntumngia Amanui		Date: 21/03/2017
PCN LEVEL II - N°: 325318		



	ADDRESS: BP 469, Limbe-CAMEROON, CENTRAL AFRICA Cell: +237-676174124, +237656055894 Email: bindendt@gmail.com Web: www.bindendt.com	MAGNETIC PARTICLE INSPECTION REPORT FOR BOP PLATFORM	REPORT NUMBER
			MT 25102018- 1

Client:	VANTAGE DRILLING		Code
Project Name:	BOP FRAME CONSTRUCTION		
Project N°	1		ASME V-ARTICLE 7
INSPECTION SITE	SIMS INTL. YARD - LIMA BASE		AWSD1.1
IMO #	N/A		

FEATURES OF MAGNETIZING APPARATUS		SERIAL NUMBER OF MAGNET	B013	FEATURES OF TEST MATERIAL		
APPARATUS USED		MAKE OF APPARATUS	J. A. M	MATERIAL TYPE	CARBON STEEL	
PULL UP FORCE	PERMANENT MAG. 20lb (9kg)	MODEL OF APPARATUS	JONHSON & ALLEN LTD			
MAGNETIZING METHOD	Continuous system	AMBIENT TESTING CONDITIONS			SERIAL NUMBER	LF/PF44057766
POLE SPACING OF MAGNET	75-150mm	LIGHT SOURCE	Artificial			
LIFTING POWER	40lb(18kg)	LIGHT INTENSITY	1500lux		APPROX. WEIGHT	09 TON
CURRENT TYPE	N/A	WEATHER CONDITION	Drought			
Testing Surface:	BARE METAL		INSPECTION INK USED			
Surface Condition:	SAND BLASTED		MAKE	PRODUCT CODE		
			ARDROX -800/3	BATCH-17J018		
			ARDROX-8903W	BATCH-17H155		

MPI ON THE BOP FRAME PRIOR LOAD TESTING				
ITEM #	ITEM LOCATION	DESCRIPTION OF TESTED AREA	PARTS TESTED	Remarks
01	SIMS YARD	HAZ-WELD-HAZ	ALL THE WELDS ON THE BOP FRAME; BUTTS AND FILLET WELDS	ACCEPTED



SAMPLE PICTURES ILLUSTRATING MPI ON ALL FRAMES LATTICE

Comment:	NO INDICATION DETECTED AT THE TIME OF INSPECTION. THE PARTS INSPECTED HEREIN ARE SAFE FOR USE.		
Executed and Interpreted by:	CIDEON MENGOTAH	CLIENT REPRESENTATIVE:	
Level:		POSITION:	
Date:	25/10/2018	DATE:	
Approved	NSAMI ROLAND : ASNT Level II	VISA	

BP 469, LIMBE-CAMEROON

Tel:+237-676174124, +237656055894

Admin: bindendt@gmail.com

Service: info@bindendt.com

Website: www.bindendt.com

Reg:TPRR/RC/LBE/2014/B/0645



Examination Results of Lifting

Equipment

LOLER 1998 Art:R233-11

Code of Practice 2004

Report No: LFPT27102018-01

CLIENT

SITE

VANTAGE DRILLING

SIMS YARD-LIMA BASE

Identification No:	Quantity	Description of Equipment	Date	PROOF LOAD TEST	SWL
LFPE 01	01	BOP LIFTING FRAME PADEYE	27/10/2018	56T	45 T
LFPE 02	01	BOP LIFTING FRAME PADEYE	27/10/2018	56T	45 T
LFPE 03	01	BOP LIFTING FRAME PADEYE	27/10/2018	56T	45 T
LFPE 04	01	BOP LIFTING FRAME PADEYE	27/10/2018	56T	45 T



EQUIPMENT SAFE FOR USE

X

MAGNETIC PARTICLE INSPECTION		VISUAL INSPECTION	LIQUID PENETRANT INSPECTION	
MPI	100%		LPI	N/A
Area	WELD		Area	N/A
Procedure	PRT-BINDE-MT 001		Procedure	PRT-BINDE-LPI 001
Specification	ASTM 709		Specification	ASTM 709
Acceptable	YES	ACCEPTABLE	Acceptable	N/A

Executed By: NSAMI ROLAND

Approved by: ATOH NTUMNGIA AMANUI

Client Visa

Qualification: ASNT Level II

Qualification: LLOYDS British Lifting
Equipment Inspector / CSWIP 3.2 / PCN II
Certs #: TC000439-D006981

Date: 27/10/2018

Visa		Visa	
------	--	------	--



BINDE NDT & ENGINEERING SERVICES
 Email: bindendt@gmail.com
 Tel: 00237676174124

ULTRASONIC & VISUAL INSPECTION REPORT

IMO	8769743	Report No.	UT24102018-01
PROJECT	BOP FRAME CONSTRUCTION Page 1 of 1		
CLIENT:	VANTAGE DRILLING		PROCEDURE: UT 0001 / ASME V Art. 4
DESTINATION	TOPAZ DRILLER RIG		CONSTRUCTOR: BINDE NDT & ENGINEERING SERVICES
MATERIAL DIMENSIONS	S275JR LIFTING FRAME - 2830 X 2830mm	MATERIAL TYPE	CARBON STEEL
LOCATION	SIMS INLT. YARD - LIMA BASE - DOUALA		Project No.: 44057766/VANTAGE DRILLING
AREA INSPECTED	HEAT AFFECTED ZONE ONE AND HEAT AFFECTED ZONE TWO AND WELD METAL		

Ultrasonic equipment

APPARATUS	TRADE MARK	SONATEST	<input type="checkbox"/>	ULTRASONIC	<input checked="" type="checkbox"/>
	TYPE	D -10+	<input type="checkbox"/>		<input type="checkbox"/>
	SERIAL NUMBER:	1010668			

PROBES:	WAVES	TRADE MARK	REFERENCE	ELEMENT	ANGLE THROUGH STEEL	FREQUENCY	INPUT PULSE AREA
	L* T*	K* S*		Q* TB*			
<input type="checkbox"/>		S <input type="checkbox"/> <input type="checkbox"/>	SA5-70	PZT <input type="checkbox"/> <input type="checkbox"/>	70°	4.3MHZ	8X10mm
<input type="checkbox"/>		S <input type="checkbox"/> <input type="checkbox"/>	SA5-60	PZT <input type="checkbox"/> <input type="checkbox"/>	60°	4.3MHZ	8X10mm
<input type="checkbox"/>		s <input type="checkbox"/> <input type="checkbox"/>	SA5-45	PZT <input type="checkbox"/> <input type="checkbox"/>	45°	4.3MHZ	8X10mm
<input type="checkbox"/>		s <input type="checkbox"/> <input type="checkbox"/>	CD5-10	PZT <input type="checkbox"/> <input type="checkbox"/>	0°	5MHZ	8X4mm

MANUAL **CONDITIONS D'EXAMEN / Examination conditions**

SURFACE CONDITION: ROUGH: SANDED: SHOTTED: BRUSHED:

GROUND: MACHINED: POLISHED: ROUGHNESS:

COUPLANT PRODUCT: NATURE: CONTACT PASTE: GREASE: WATER:

ORIENTATION: ON PART ON PERIPHERY: ON END: ON WELD:

2 PERPENDICULAR WAYS:

Equipement calibration.

WAVES	SEARCH UNIT	Calibration		PROBE FREQ.(MHz)	CALIBRATION FREQUENCY		CERTIFICATE #
		ON DISTANCE	ON AMPLIFICATION		YEARLY		
T	SA5-70	125mm	40 - 60 dB	4.3	X		T044177
T	SA5-60	125mm	35-52 db	4.3	X		T044947
T	SA5-45	125mm	35-52db	4.3	X		T044265
L	CD5-10	100mm	42db	5	X		T044876

RESULT : NO DEFECT DETECTED AT THE MOMENT OF INSPECTION.

REMARKS : SAFE FOR USE.

ULTRASONIC EXAMINATION OF WELDS

THE 45° PROBE CAN NOT BE USED TO SCAN THE WELD ROOT AT HALF SKIP, THEREFORE THE 70° PROBE MUST BE USED:

FIXED STAND-OFF SCAN OF WELD ROOT USING THE 70° PROBE

SAMPLE PICTURE ILLUSTRATING THE SCANNING PROCEDURE OF ALL PLATE-TO-PLATE SINGLE-V BUTT WELDS ON THE 45 TON SWL BOP FRAME.

Date of Examination	Name of Operator	Signature of Operator	Client
24/10/2018	NAME: NSAMI ROLAND QUALIFICATION: ASNT LEVEL II		