

Annex 10: Warm Interconnecting Harness and SVM harness Routing

All Drawings for WIH & SVM routing and harness fixation interfaces on warm units are attached in this annex.

CAD models & drawings available on instruments ftp server.

[ftp://ftp.hp-instruments.as-b2b.com/industry_to_instruments/Warm Interconnecting Harness/](ftp://ftp.hp-instruments.as-b2b.com/industry_to_instruments/Warm%20Interconnecting%20Harness/)

- **Herschel:**

- SPIRE

[SPIRE WIH Description: HP-NXH-RP-1022_A1 \(16/04/04\)](#)

- [SPIRE WIH Length table](#)

- Drawings

- HP-NXH-DW-1022_A1 sheets 1 to 5 (30/03/04)

- CAD Models (STEP & IGES formats)

- [WIH routing: "step hrnspire.zip"; "iges hrnspire.zip" \(22/12/2003\)](#)

- [Cryoharness & SVM harness: "step SPIRE_SVMh+CryoH.zip" \(05/03/04\)](#)

- PACS

[PACS WIH Description: HP-NXH-RP-1021_A1 \(16/04/04\)](#)

- [PACS WIH Length table](#)

- Drawings

- H-P-4-NXH-DW-0021_A1 sheets 1 to 4 (30/03/04)

- CAD model:

- [WIH routing: "step hrnpacs.zip"; "iges hrnspire.zip" \(22/12/2003\)](#)

- [Cryoharness & SVM harness: "step PACS_SVMh+CryoH.zip" \(05/03/04\)](#)

- HIFI

[HIFI WIH Description: HP-NXH-RP-1020_A2 \(04/05/04\) \(updated by B. Marchand \(09/06/04\)\)](#)

- [HIFI WIH Length Table](#)

- Drawings

- H-P-NXH-DW-1023 A2 sheets 1, 2, 4/4 (03/05/04) Horizontal panel

- H-P-NXH-DW-1024 A2 sheets 1, 2, 4/4 (03/05/04) Vertical panel

- H-P-NXH-DW-1050 A2 sheets 1, 2/2 (03/05/04) Lower Closure Assembly

- Brackets drawings for lower platform harness breaks (provided by industry)

- HP-17-01-01-KT 1 (24/05/04) SVM harness bracket CBH1, CBH2

- HP-11-01-03-KT 1 (19/05/04) SVM harness bracket DBH1, DBH4

- HP-01-01-02-KT 1 (19/05/04) SVM harness bracket DBH2, DBH3
- CAD models:
 - ["WIH STEP.zip"](#) (11/06/04)
 - ["warm units STEP.zip"](#) (09/06/04)
 - ["SVM harness STEP.zip"](#) (09/06/04)
 - ["Cryoharness in SVM STEP.zip"](#) ((09/06/2004))

- **Planck**

- HFI

HFI [WIH Harness Description](#) H-P-4-NXH-RP-0023 A2 (04/05/04) [\(updated by B. Marchand for harness length \(06/09/04\)\)](#)

- [HFI WIH Length Table](#)

- Drawings

- Harness Routing drawings (included in above document)

- [hp-nxh-dw-2021_B0](#) (sheets 1, 2, 4/4) ([27/05/04](#)) HFI-DPU panel
- [hp-nxh-dw-2022_B0](#) (sheets 1,2,5/5) ([27/05/04](#)) HFI 0.1K Panel & LFI REBA
- [hp-nxh-dw-2023_B0](#) (sheets 1, 2, 5/5) ([27/05/04](#)) HFI 4K Panel
- [hp-nxh-dw-2011_B0](#) (sheets 1/2) ([01/06/04](#)) [Shear Panel](#)
- [hp-nxh-dw-2050_B0](#) (4 sheets) ([08/06/04](#)) Lower platform
- [hp-nxh-dw-2060_A0](#) (sheets 1, 2/6) ([08/03/04](#)) upper platform

- Brackets drawings for lower platform harness breaks (provided by industry)

- HP-08-02-01-KT 1 (19/05/04) SVM harness bracket DBH3
- HP-02-01-02-KT 1 (17/05/04) SVM harness bracket DBH2
- HP-04-01-03-KT 1 (19/05/04) SVM harness bracket DBH11-12

- [PAU REU Cable length details \(drawings & notes from B.Marchand 17/06/04\)](#)

- [PAU-REU harness accommodation & access PLS.A14.H025.A \(10/06/04\)](#)

- CAD Models:

- [LIST OF CAD MODELS APPLICABLE TO HFI WIH \(See separate sheet from B.Marchand 19/06/04\)](#)

- LFI / SCS

LFI WIH [Harness Description](#) H-P-4-NXH-RP-0024 A0 (18/03/04) [\(updated by B. Marchand for harness length \(02/09/04\)\)](#)

- [LFI WIH Length Table](#)

- [SCS WIH Length Table](#)

- Drawings

- [hp-nxh-dw-2024_B0](#) (6 sheets) ([27/05/04](#)) [Sorption Cooler](#)
- [hp-nxh-dw-2011_B0](#) (sheets 1/2) ([01/06/04](#)) shear web
- [hp-nxh-dw-2022_B0](#) (sheets 1, 2, 5/5) ([27/05/04](#))_HFI 0.1K Panel & LFI REBA

hp-nxh-dw-2060_ [A0](#) (sheets [1, 2/6](#)) _____(08/03/04) upper platform

- CAD Models:

- [LIST OF CAD MODELS APPLICABLE TO LFI WIH \(See separate sheet from B.Marchand issue 2 18/08/04\)](#)
- [LIST OF CAD MODELS APPLICABLE TO SCS WIH \(See separate sheet from B.Marchand 20/07/04\)](#)

DOCUMENT COMPOSITION

Pages	Annexes	Others
11	X	0



DOCUMENT IDENTIFICATION

Project	: Herschel – Planck		
N° Project	: 1680		
N° Contract	:		
Material	: Herschel-Planck SVM Harness		
Doc. Reference	: H-P-4-NXH-RP-0022	A1	
Date	: 16-04-04		

TITLE

<h1>H-P WU SPIRE Harness</h1>

Written by	Function	Date	Signature
Johan Vervliet	Engineering	16-04-04	
Checked by			
Ken Pletinckx	Project Engineer	26.04.04	
Approved by			
Stéphane Dassy	Project Manager	26.4.4.	

H-P WU SPIRE Harness	Doc Id.: H-P-4-NXH-RP-0022		
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1 Scope

The purpose of this document is to provide a description of the SPIRE WU harness of the Herschel S/C.

2 Introduction

The WU belonging to the SPIRE Experiment (DPU, FCU and DCU) are located on the -Z panel SPIRE. Also the CCU is located on this panel.

The SPIRE Panel harness is configured taking into account the different interconnection requirements of the experiment and harness design responsibility. The harness is split into 3 different main groups:

1. SVM Harness
2. Instrument WU Harness
3. Cryo Harness

The routing accomodation foreseen to have separate routing paths for each of the above harnesses as well as for main and redundant functions.

The instrument WU Harness is defined taking into account the harness data provided by Instruments as well as SVM and CRYO Harness Design in order to verify the relevant accomodation in the SVM configuration.

Additional details/drawings on the harness accomodation are reported in this document.

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3 Applicable Documents

3.1 Applicable documents

Number	Issue	Title
H-P-1-ASPI-SP-0027	4.2	General Design Interface Requirement Specification
H-P-1-ASPI-SP-0042	4.0	SVM Interface Specification
H-P-RP-AI-0025	1.0	SVM Harness Configuration and Design Description

3.2 ALS Baseline Documents

Number	Issue	Title
H-P-IC-AI-0001	04	Herschel/Planck SVM MICD
H-P-LI-AI-0022	05	List of HP SVM 3D CAD models
SPIRE-RAL-PRJ-000608	01	Herschel Spire Harness Definition
Sap-SPIRE-Cca-0106-03	0.1	DRCU Warm Harness Description

3.3 CATIA Harness Directory Status : SPIRE

ALS Part Nr.	Rev.	Description	Resp.	Date
HP-112301-22-1	A	-Z LATERAL PANEL HRN ELT ASSY (SPIRE)	HRN_	07.11.03
HP-112302-22-1	N/A	-Z LATERAL PANEL HRN MECH ASSY (SPIRE)	HRN_	N/A
HP-392001-22-1	E	-Z LATERAL PANEL HRN ELT ASSY (SPIRE)	HRN_	02.04.04
HP-392002-22-1	N/A	-Z LATERAL PANEL HRN MECH ASSY (SPIRE)	HRN_	N/A

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4 Document Organisation

4.1 General Information : Drawings

Every Drawing contains all relevant information with reference to the H-P SPIRE Harness derived from the MICD (Mech. Interface Control Doc.) and the and other data provided by instruments, such as :

Power, Signal and Sensitive Routing
 Nominal & Redundant routing
 Mil Bus lay-out
 WIU Harness lay-out
 Mechanical Items lay-out
 Mechanical Items identification

Colour codes used are

Colour	Class	Comment
Colour 30 (Dark Red)	1-/POWER	SVM Primary Power
Colour 04 (Light Blue)	2-/SIGNAL	SVM Signal
Colour 45 (Dark Green)	4-/SENS	SVM Sensitive Harness
Colour 75 (Dark Yellow)	2-/Signal	Mil Bus Harness
Colour 02 (Light Red)	1-/PWR	WIH Secondary Power
Colour 120 (Dark Blue)	2-/Signal	WIH Secondary Signal
Colour 111 (Dark Green)	N/A	Tie-base
Colour 05 (Yellow)	N/A	For Information Only

4.2 2D Drawing Numbering System

Each 2D Drawing is identified by H-P-NXH-DW-XXXX

Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DW	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.5

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4.3 2D JIG Numbering System

Each 2D JIG Drawing is identified by H-P-NXH-DR-XXXX

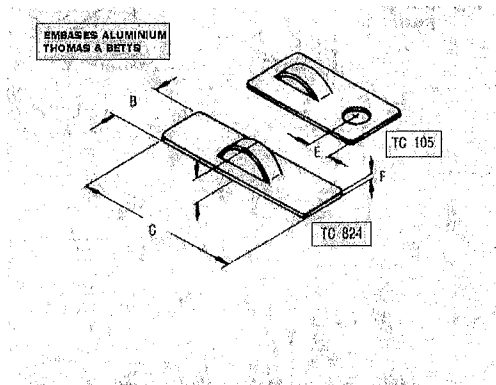
Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DR	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.5

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5 Harness Fixing

5.1 Tie-bases

The position of the tie-bases has been designed to meet the requirement to fix the harness bundles on the structure every 100mm maximum. Tiebase type used is TC-105 (Thomas & Betts). Tie-wraps sizes used, are function of bundle diameter and in accordance to the applicable process list.



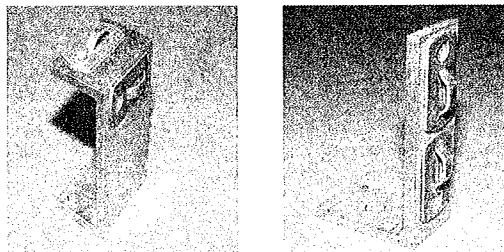
Tie-bases will be glued on the spacecraft structure and will assure harness fixation as well as electrical bonding.

5.2 Stand-off's

To maintain wire-bundles routing and minimize mechanical stress in harness, specific stand-off have been designed, which will be glued on the spacecraft structure.

The stand off designs are well approved at Kayser-Threde and will be modified to the purpose of the SVM Harness. (Pictures below)

Tie-bases will be glued to the stand-off's to allow cable fixation by using fasteners tie-wraps.



We assume 2 types of stand off will be necessary.

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6 2D Drawing Listing

6.1 SPIRE 2D Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DW-1022	SPIRE Instrument Panel Assy	30-03-04	A1

6.2 SPIRE JIG Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DR-1022	SPIRE Instrument Panel Assy	24-03-04	A1

6.3 SPIRE 2D Drawings

See Annex

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7 SPIRE Extracted Lengths

Bundle Identification	From Connector			T o Connector			Bundle						Sq. (*3)		
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	Nom / Red	Category	Diam. (mm)	Bending Radius	Mass BNL (g/m)	Conn.+Bck (g)		L Max (mm)	L (mm)
W1	HSDCU P01	DBMA 25P	557-E-113	HSDPU P07	DBMA 25S	557-102 (*1)	Nominal	2	6	30	34,2		2000	2120	2
W2	HSDCU P02	DBMA 25P	557-E-113	HSDPU P10	DBMA 25S	557-103 (*1)	Redundant	2	6	30	34,2		2000	2093	2
W3	HSFCU P03	DBMA 25P	557-E-113	HSDPU P09	DBMA 25S	557-102 (*1)	Nominal	2	6	30	34,2		2000	817	2
W4	HSFCU P04	DBMA 25P	557-E-113	HSDPU P12	DBMA 25S	557-103 (*1)	Redondant	2	6	30	34,2		2000	806	2
W5	HSFCU P01	DBMA 25P	557-E-113	HSDPU P08	DBMA 25S	557-102 (*1)	Nominal	2	6	30	34,2		2000	1037	2
W6	HSFCU P02	DBMA 25P	557-E-113	HSDPU P11	DBMA 25S	557-103 (*1)	Redundant	2	6	30	34,2		2000	1028	2
W7	HSDCU P03	DBMA 25S	557-102 (*2)	HSFCU P07	DBMA 25P	550-E-039	Nominal	1	8	40	136,29		2000	913	1
W8	HSDCU P04	DBMA 25S	557-102 (*2)	HSFCU P08	DBMA 25P	550-E-039	Redundant	1	8	40	136,29		2000	825	1

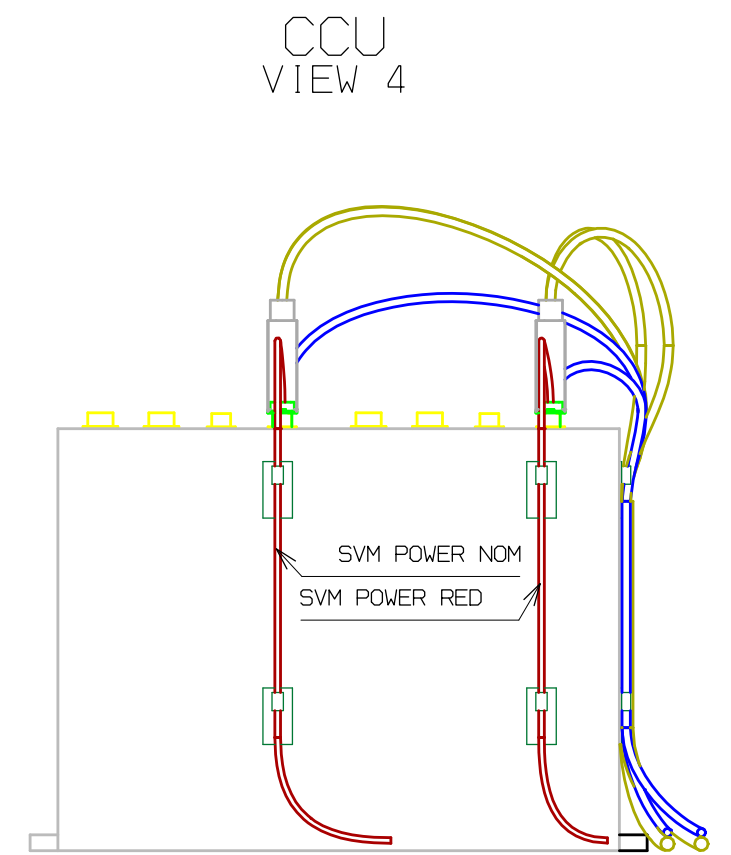
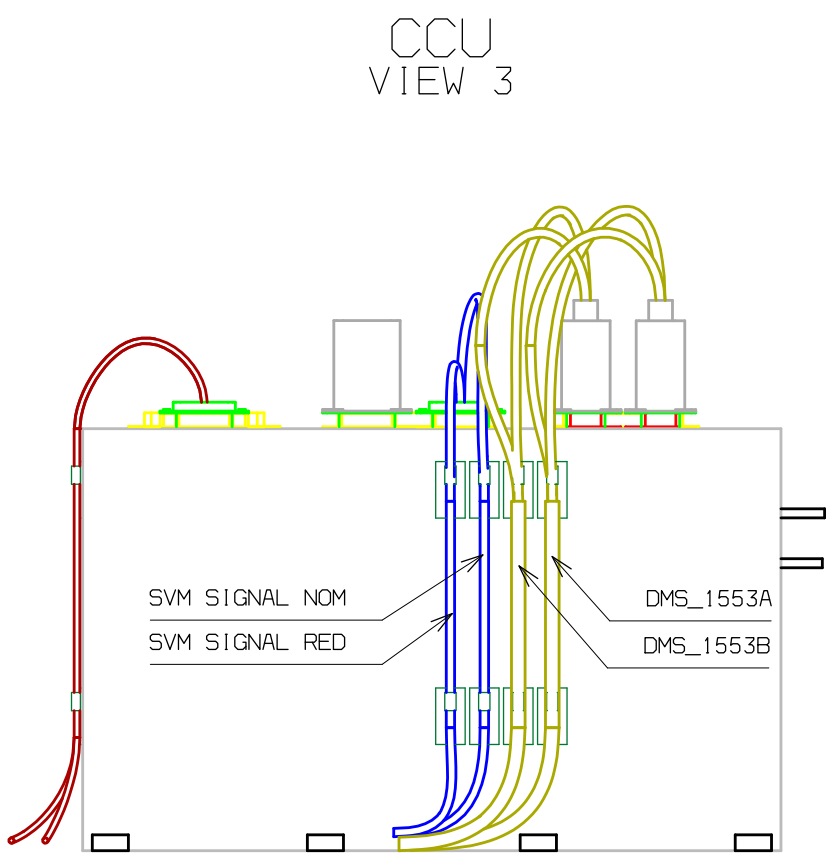
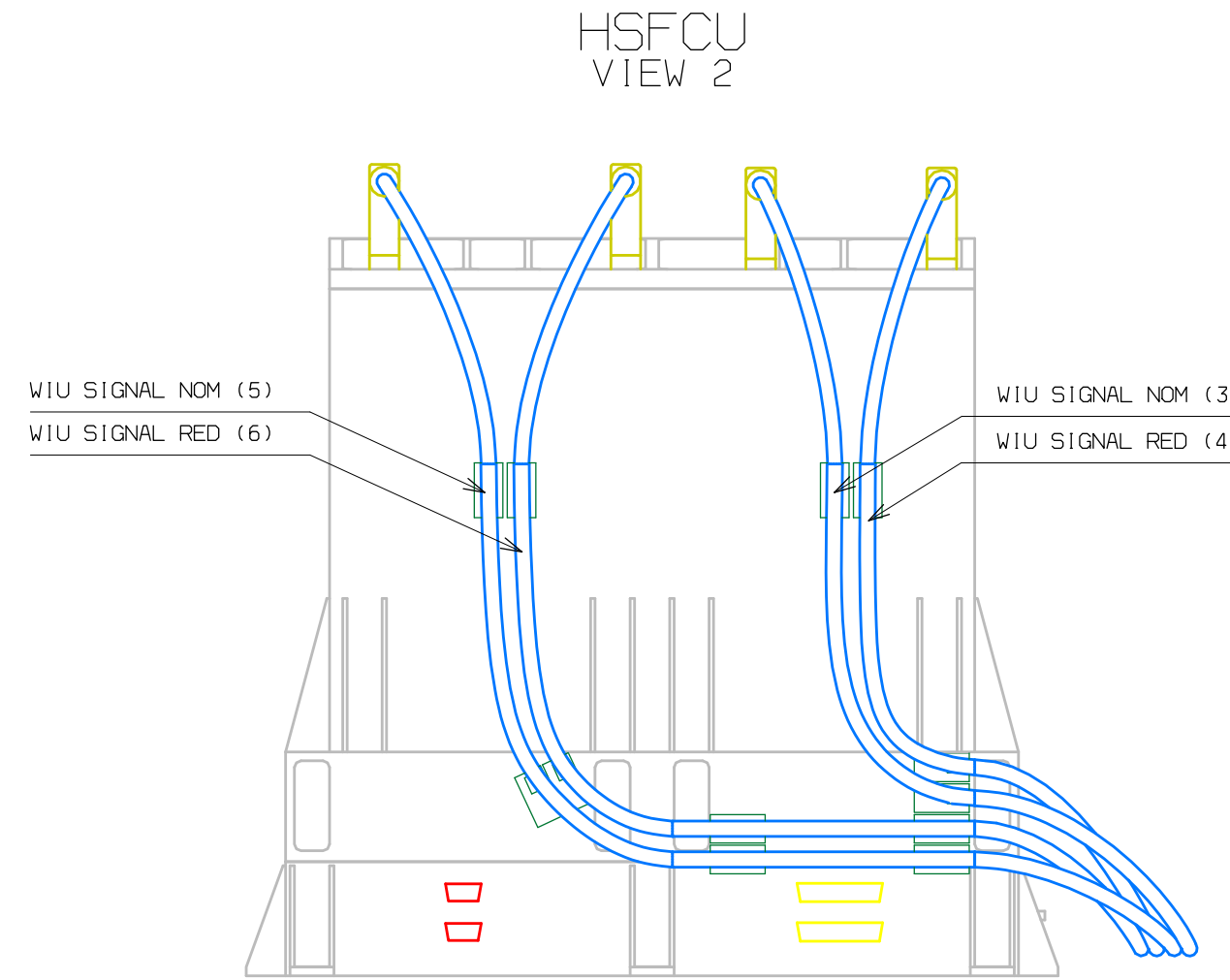
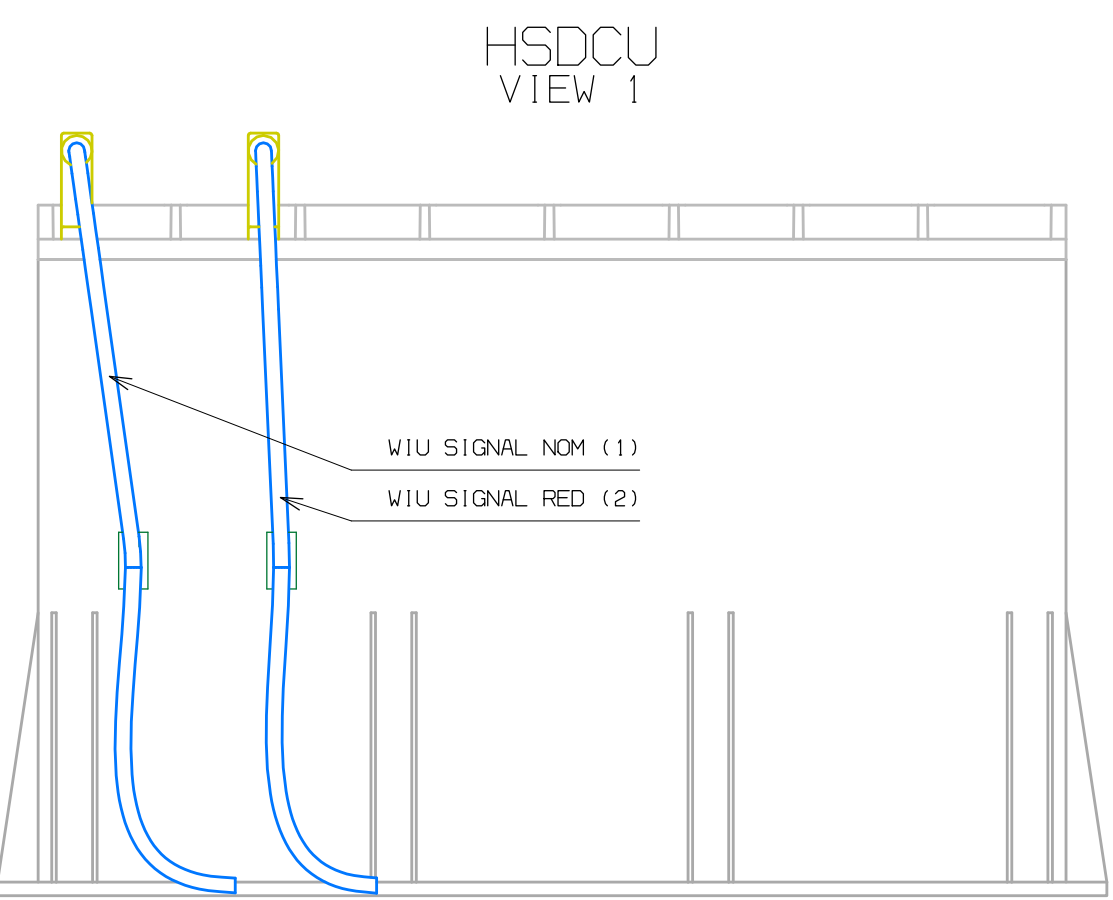
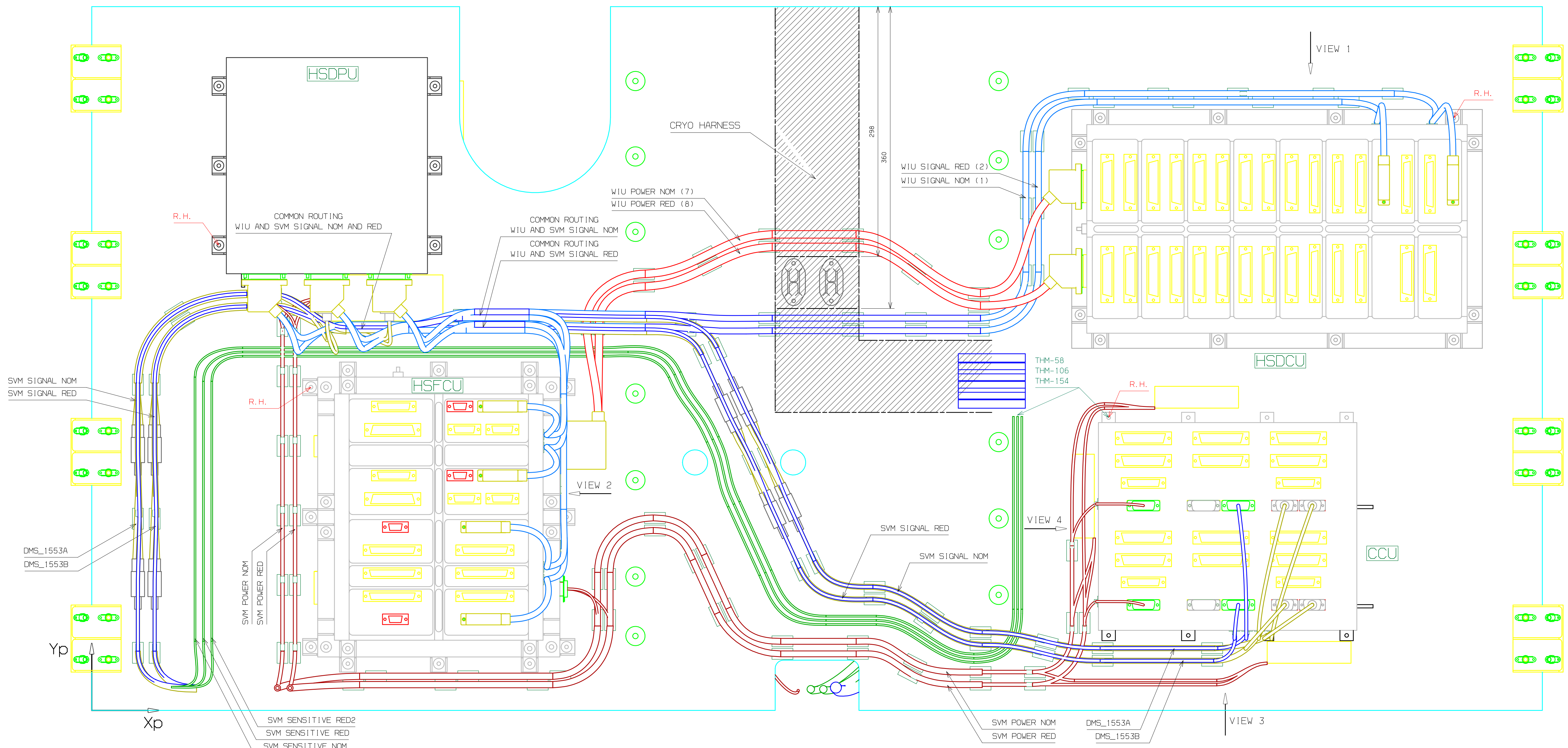
Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG.
Lengths are measured from connector front face to connector front face.

(*1) In CATIA model bck type 557-B-113 is represented which is interchangeable with both bck types 557-102 and 557-103.

(*2) In contradiction with document SPIRE-RAL-PRJ-000608 iss.: 1.0 we have chosen to use 557-102 (*1) (45° entry bck) instead of 557-E-039 (end entry bck) for routing reasons.

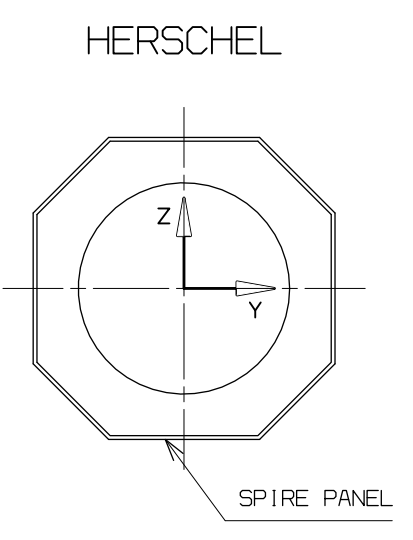
(*3) This table indicates the sequence in which the different cables must be integrated.

ORTHOGNAL VIEW FROM INSIDE S/C

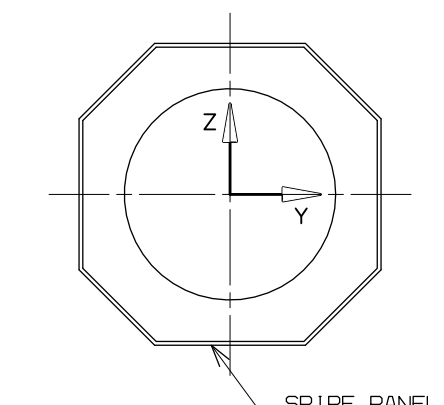
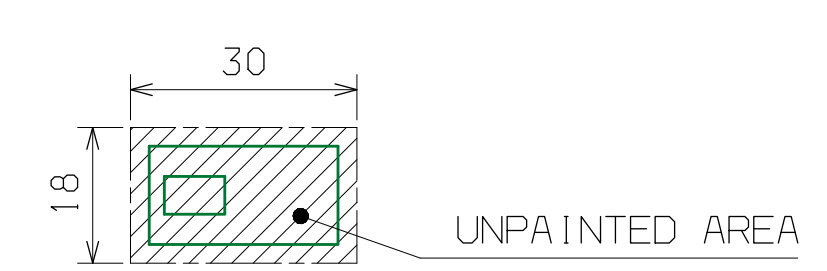
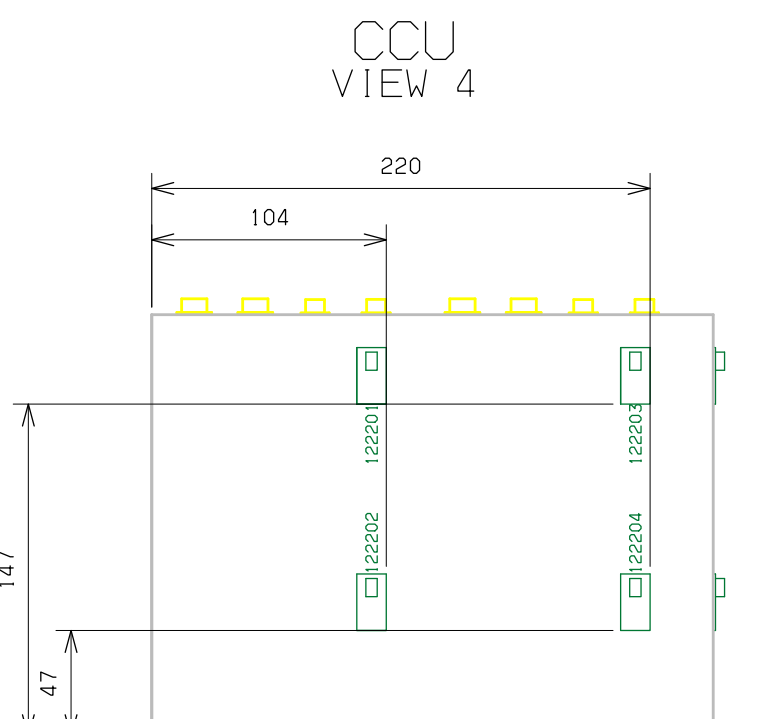
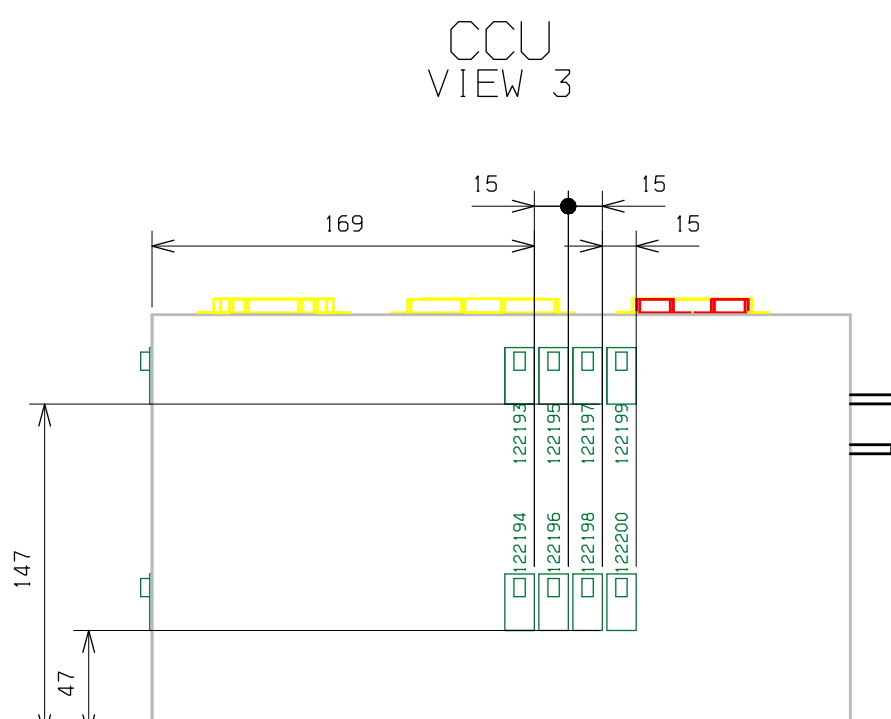
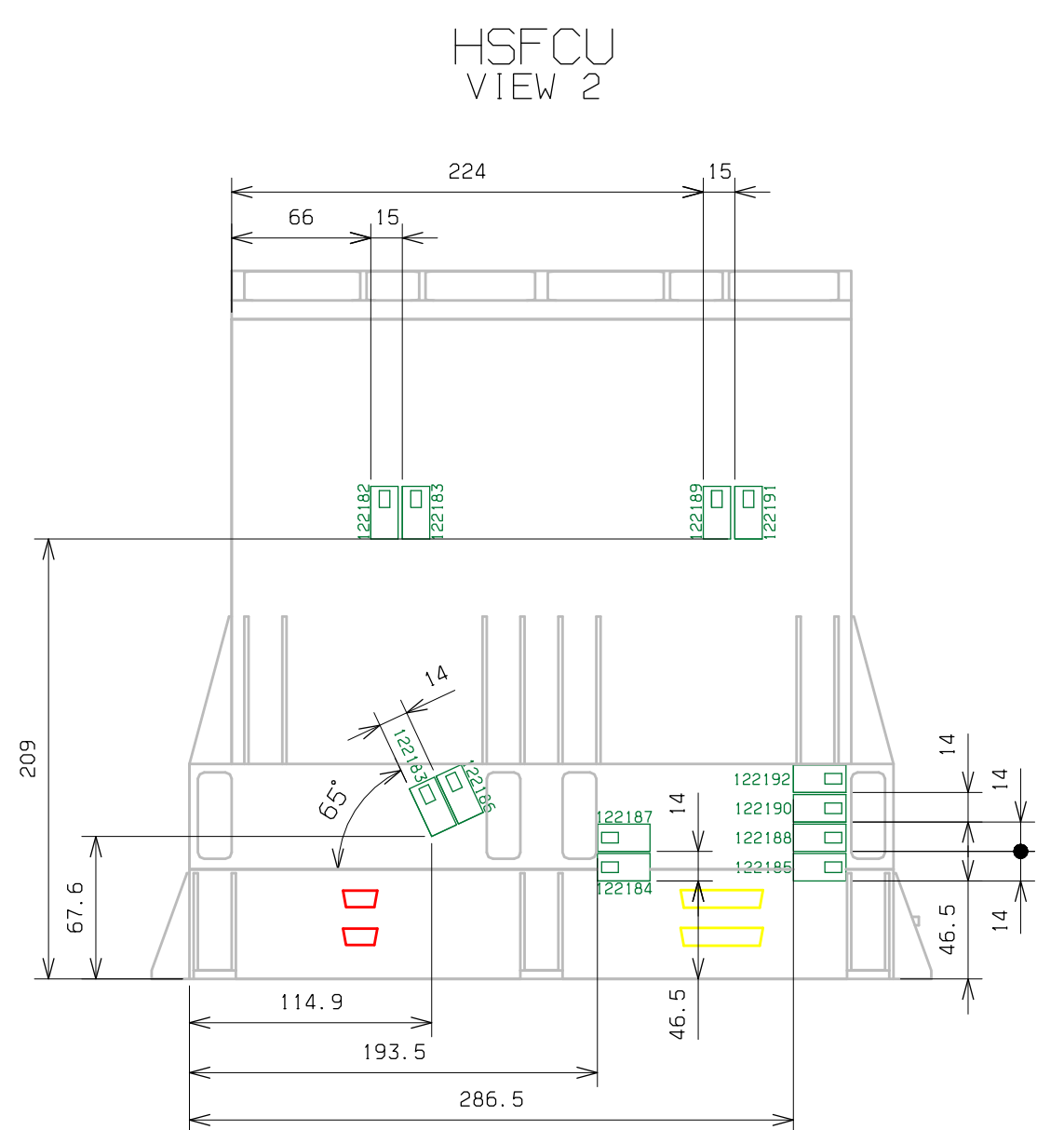
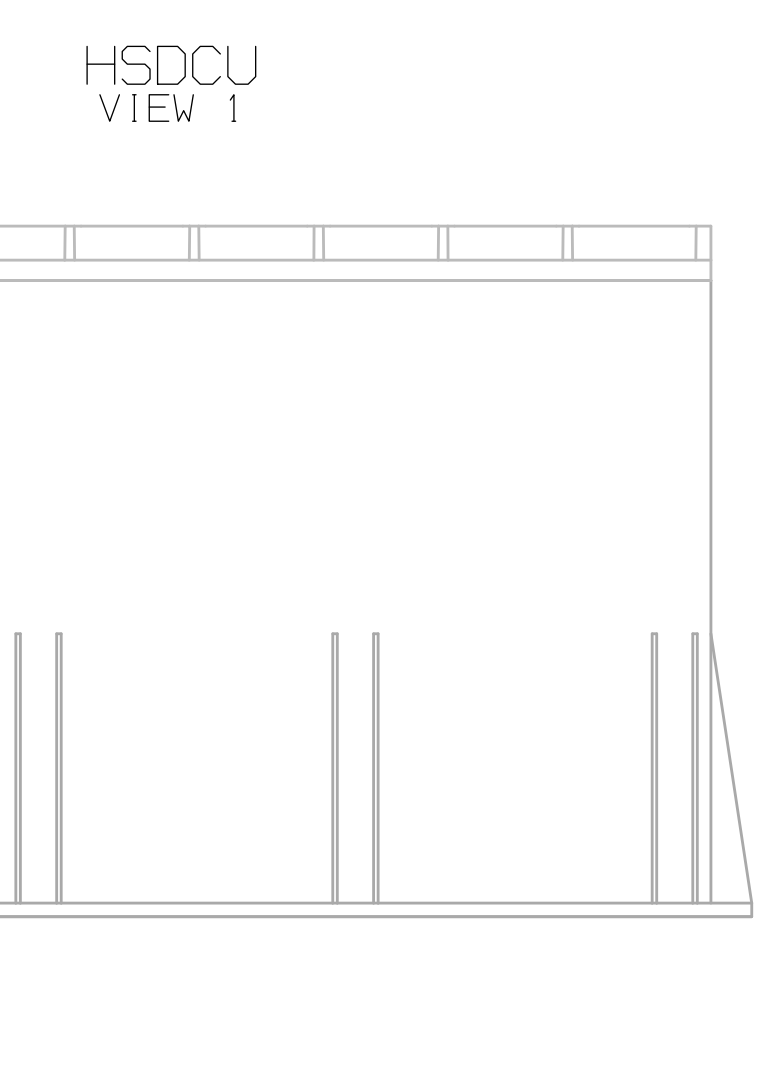
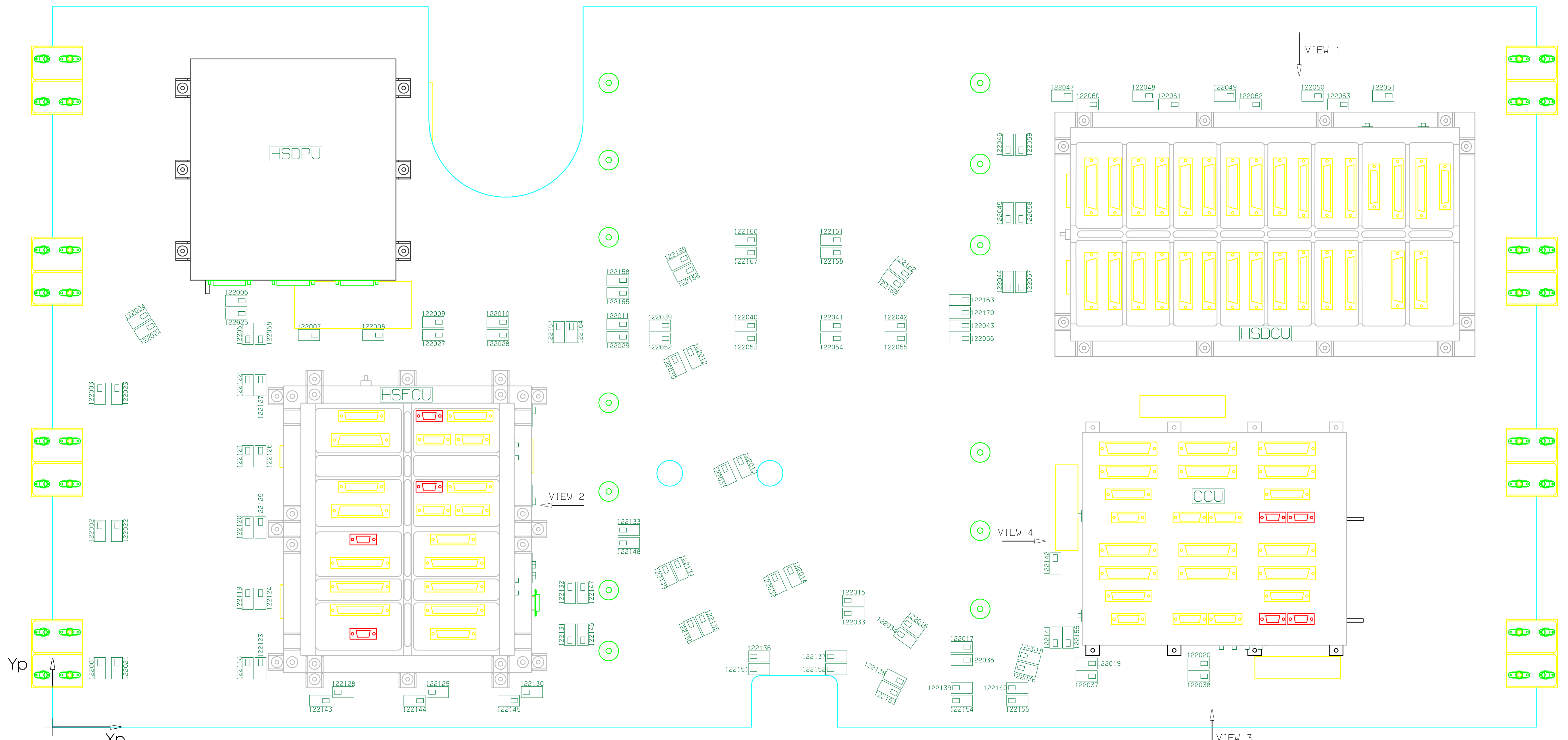


NOTE: (1) Bundle id: W1 *
(2) Bundle id: W2 *
(3) Bundle id: W3 *
(4) Bundle id: W4 *
(5) Bundle id: W5 *
(6) Bundle id: W6 *
(7) Bundle id: W7 *
(8) Bundle id: W8 *
* In reference with H-P-4-NXH-RP-0022 iss. A0

REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY		DRAWN BY	CHECKED BY	APPROVED BY	QUALITY
N/A		VERVL IET J.	PLETINCKX K.	--	--
Rev.	A1	Date	30/03/04	Scale	N/A
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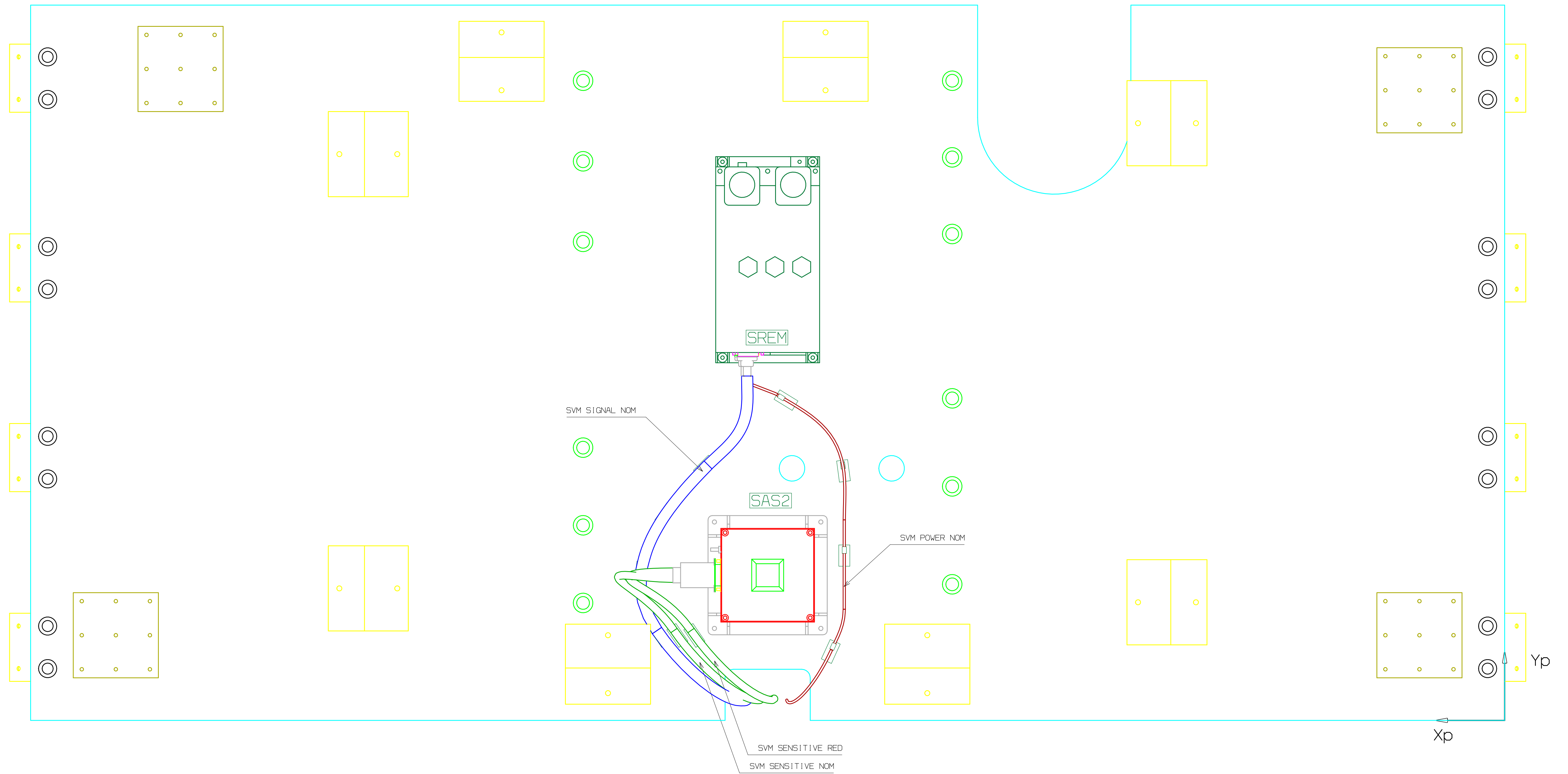


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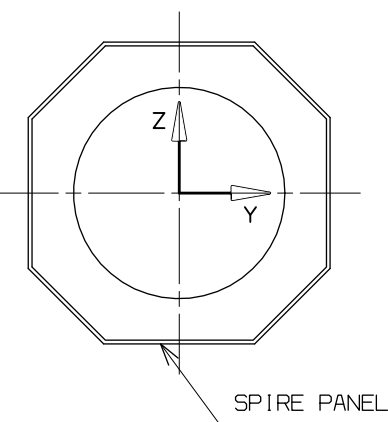



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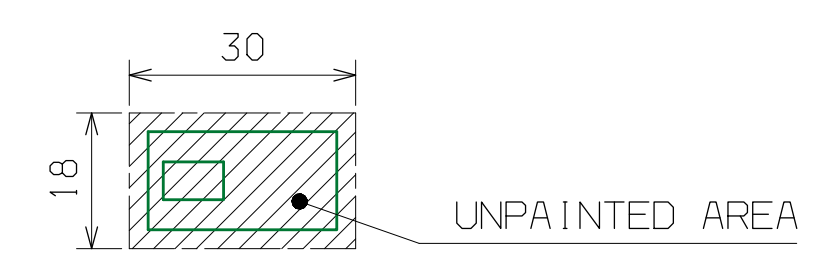
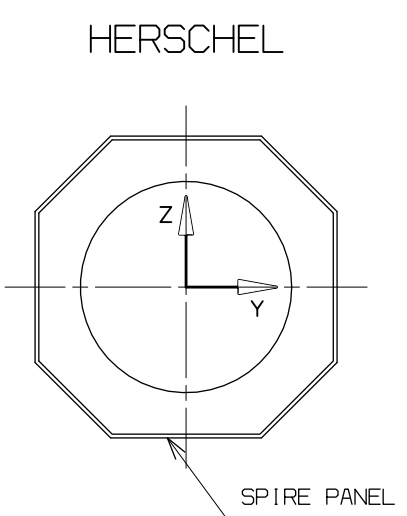
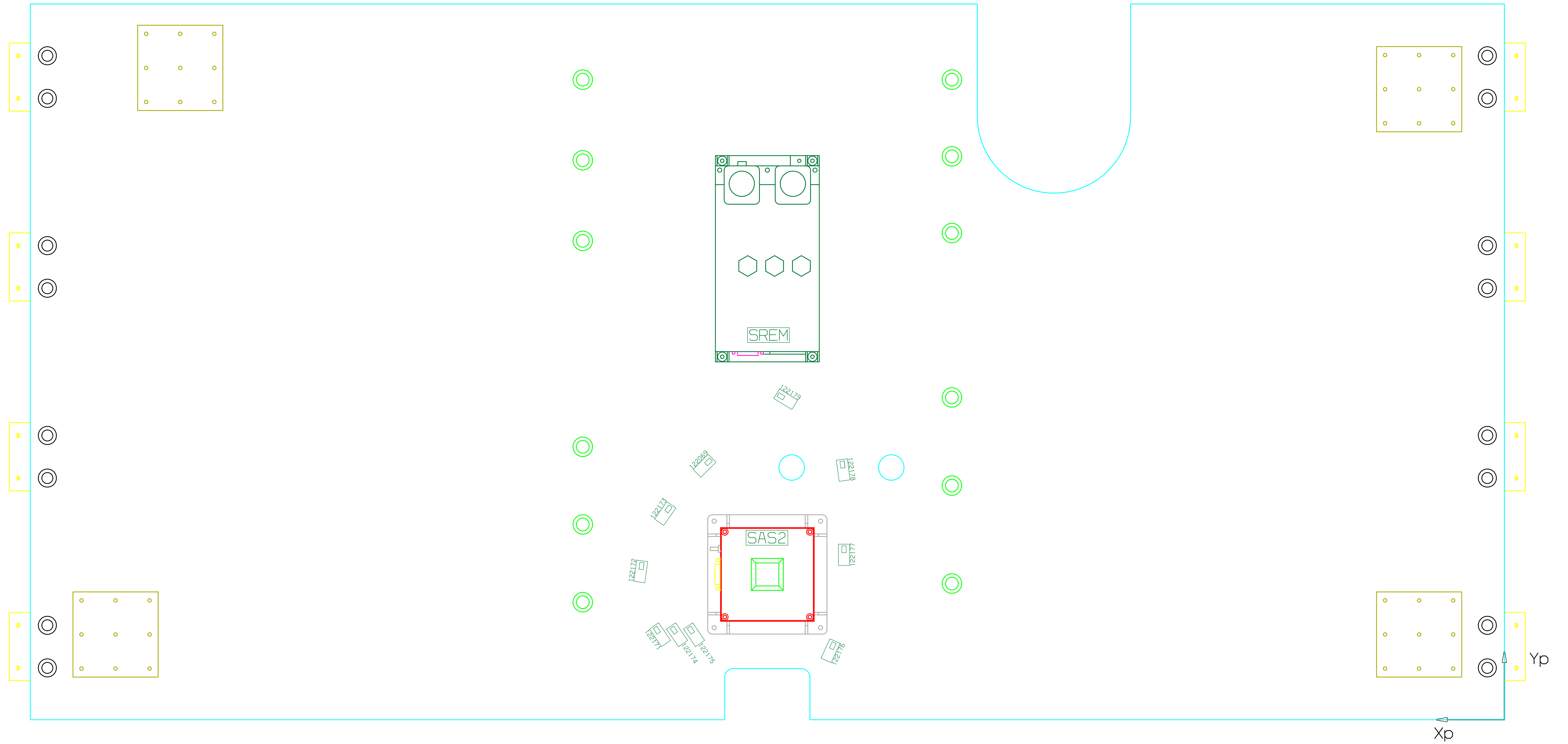


HERSCHEL

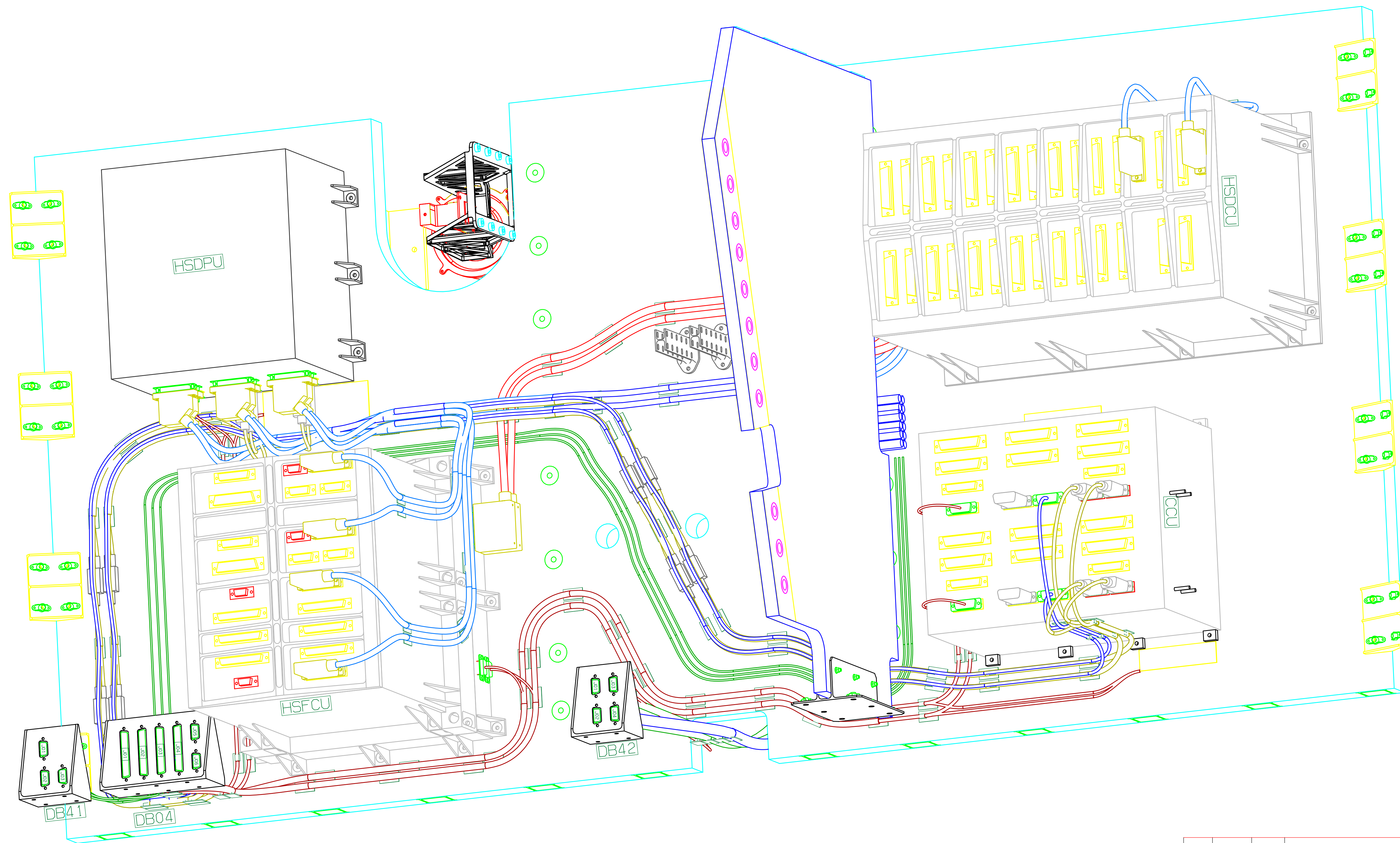



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			DWG N° HP-NXH-DW-1022		

ORTHOGNAL VIEW FROM OUTSIDE S/C



REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
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Rev.	A1	Date	30/03/04	Scale	N/A
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			DWG N° HP-NXH-DW-1022		



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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVL IET J.	PLETINCKX K.	--	--	
Rev.	A1	Date	30/03/04	Scale	N/A
		Format	A1	Sht	5/5
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			DWG N° HP-NXH-DW-1022		

DOCUMENT COMPOSITION

Pages	Annexes	Others
11	X	0



DOCUMENT IDENTIFICATION

Project	: Herschel – Planck		
N° Project	: 1680		
N° Contract	:		
Material	: Herschel-Planck SVM Harness		
Doc. Reference	: H-P-4-NXH-RP-0021	A1	
Date	: 16-04-2004		

TITLE

H-P WU PACS Harness

Written by	Function	Date	Signature
Johan Vervliet	Engineering	16-04-04	
Checked by			
Ken Pletinckx	Project Engineer	26.04.04	
Approved by			
Stéphane Dassy	Project Manager	26.04.04	

H-P WU PACS Harness	Doc Id.: H-P-4-NXH-RP-0021		
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	Logistic		François Didden
	Engineering		Ken Pletinckx
	Sales & Contract		Eric Leurquin
ALENIA SPA	Technical Responsible ALS	X	Bottaro Giovanni
	Programatics Responsible	X	Silvestri Renato
ALCATEL SPACE	Technical Responsible	X	Baptiste Marchand
	Programatics Responsible	X	Gian Maria Canaparo

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1 Scope

The purpose of this document is to provide a description of the PACS WU harness of the Herschel S/C.

2 Introduction

The WU belonging to the PACS Experiment (BOLC, DECMEC, DPU and SPU1/2) are located on the +Y-Z Panel PACS of Herschel.

The PACS Panel harness is configured taking into account the different interconnection requirements of the experiment and harness design responsibility. The harness is split into 3 different main groups:

1. SVM Harness
2. Instrument WU Harness
3. Cryo Harness

The routing accommodation foreseen to have separate routing paths for each of the above harnesses as well as for main and redundant functions.

The instrument WU Harness is defined taking into account the harness data provided by Instruments as well as SVM and CRYO Harness Design in order to verify the relevant accommodation in the SVM configuration.

Additional details/drawings on the harness accommodation are reported in this document.

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3 Applicable Documents

3.1 Applicable documents

Number	Issue	Title
H-P-1-ASPI-SP-0027	4.2	General Design Interface Requirement Specification
H-P-1-ASPI-SP-0042	4.0	SVM Interface Specification
H-P-RP-AI-0025	1.0	SVM Harness Configuration and Design Description

3.2 ALS Baseline Documents

Number	Issue	Title
H-P-IC-AI-0001	04	Herschel/Planck SVM MICD
H-P-LI-AI-0022	05	List of HP SVM 3D CAD models
SCI-PT-IIDB/PACS-02126	2.1	/
PACS-CL-RS-010	1	Specifications for the Warm Interconnecting Harness (and DEC/MEC Harness)

3.3 CATIA Harness Directory Status : PACS

ALS Part Nr.	Rev.	Description	Resp.	Date
HP-113301-21-1	A	+Y-Z LATERAL PANEL HRN ELT ASSY (PACS)	HRN_	07.11.03
HP-113302-21-1	N/A	+Y-Z LATERAL PANEL HRN MECH ASSY (PACS)	HRN_	N/A
HP-392001-21-1	E	+Y-Z LATERAL PANEL HRN ELT ASSY (PACS)	HRN_	02.04.04
HP-392002-21-1	B	+Y-Z LATERAL PANEL HRN MECH ASSY (PACS)	HRN_	02.04.04

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4 Document Organisation

4.1 General Information : Drawings

Every Drawing contains all relevant information with reference to the H-P PACS Harness derived from the MICD (Mech. Interface Control Doc.) and the and other data provided by instruments, such as :

Power, Signal and Sensitive Routing
 Nominal & Redundant routing
 Mil Bus lay-out
 WIU Harness lay-out
 Mechanical Items lay-out
 Mechanical Items identification

Colour codes used are

colour	Class	Comment
Colour 30 (Dark Red)	1-/POWER	SVM Primary Power
Colour 04 (Light Blue)	2-/SIGNAL	SVM Signal
Colour 45 (Dark Green)	4-/SENS	SVM Sensitive Harness
Colour 75 (Dark Yellow)	2-/Signal	Mil Bus Harness
Colour 02 (Light Red)	1-/PWR	WIH Secondary Power
Colour 120 (Dark Blue)	2-/Signal	WIH Secondary Signal
Colour 111 (Dark Green)	N/A	Tie-base
Colour 05 (Yellow)	N/A	For Information Only

4.2 2D Drawing Numbering System

Each 2D Drawing is identified by H-P-NXH-DW-XXXX

Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DW	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.5

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4.3 2D JIG Numbering System

Each 2D JIG Drawing is identified by H-P-NXH-DR-XXXX

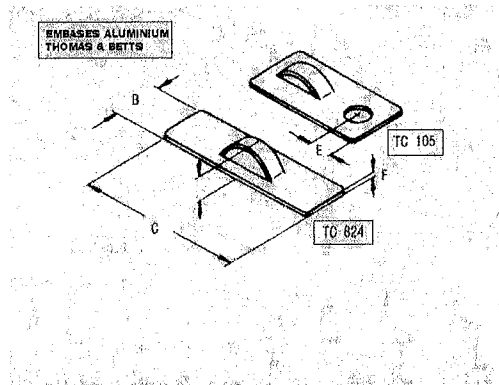
Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DR	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.5

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5 Harness Fixing

5.1 Tie-bases

The position of the tie-bases has been designed to meet the requirement to fix the harness bundles on the structure every 100mm maximum. Tiebase type used is TC-105 (Thomas & Betts). Tie-wraps sizes used, are function of bundle diameter and in accordance to the applicable process list.



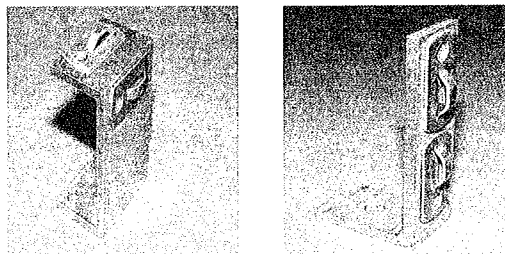
Tie-bases will be glued on the spacecraft structure and will assure harness fixation as well as electrical bonding.

5.2 Stand-off's

To maintain wire-bundles routing and minimize mechanical stress in harness, specific stand-off have been designed, which will be glued on the spacecraft structure.

The stand off designs are well approved at Kayser-Threde and will be modified to the purpose of the SVM Harness. (Pictures below)

Tie-bases will be glued to the stand-off's to allow cable fixation by using fasteners tie-wraps.



We assume 2 types of stand off will be necessary.

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6 2D Drawing Listing

6.1 PACS 2D Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DW-1021	PACS Instrument Panel Assy	30-03-04	A1

6.2 PACS JIG Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DR-1021	PACS Instrument Panel Assy	24-03-04	A1

6.3 PACS 2D Drawings

See annex

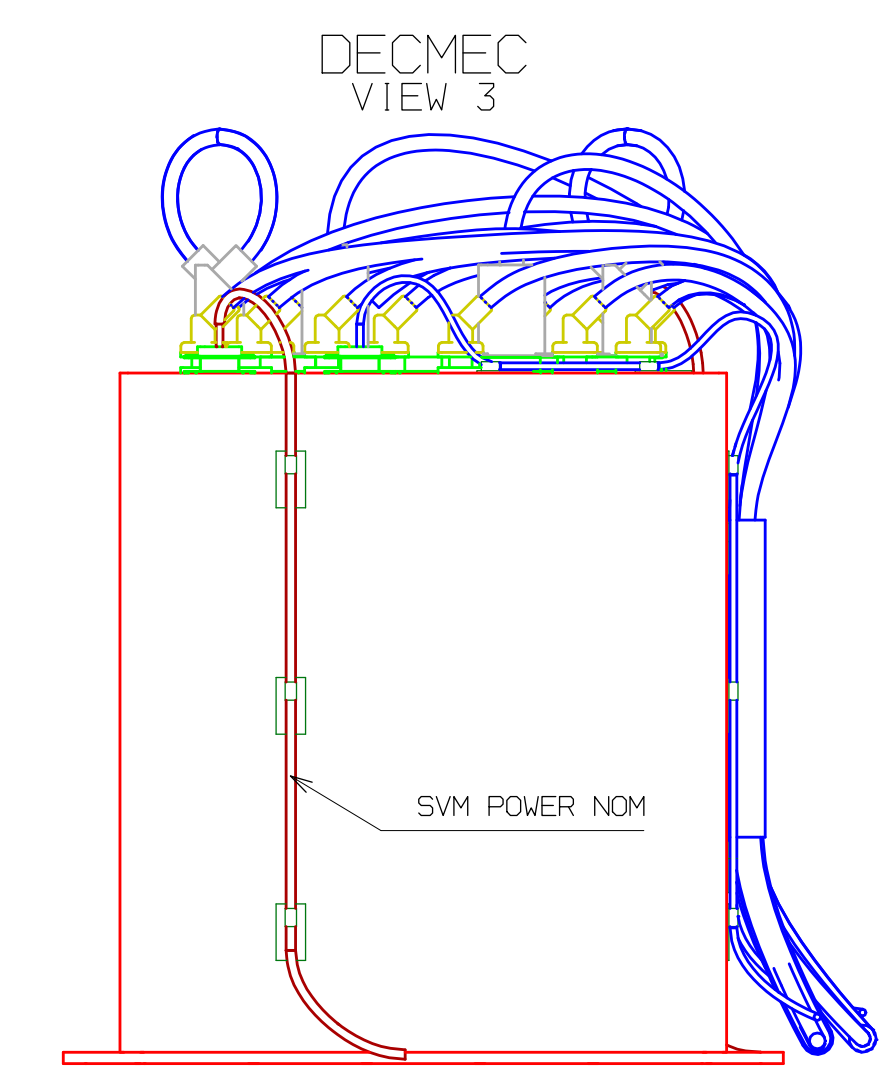
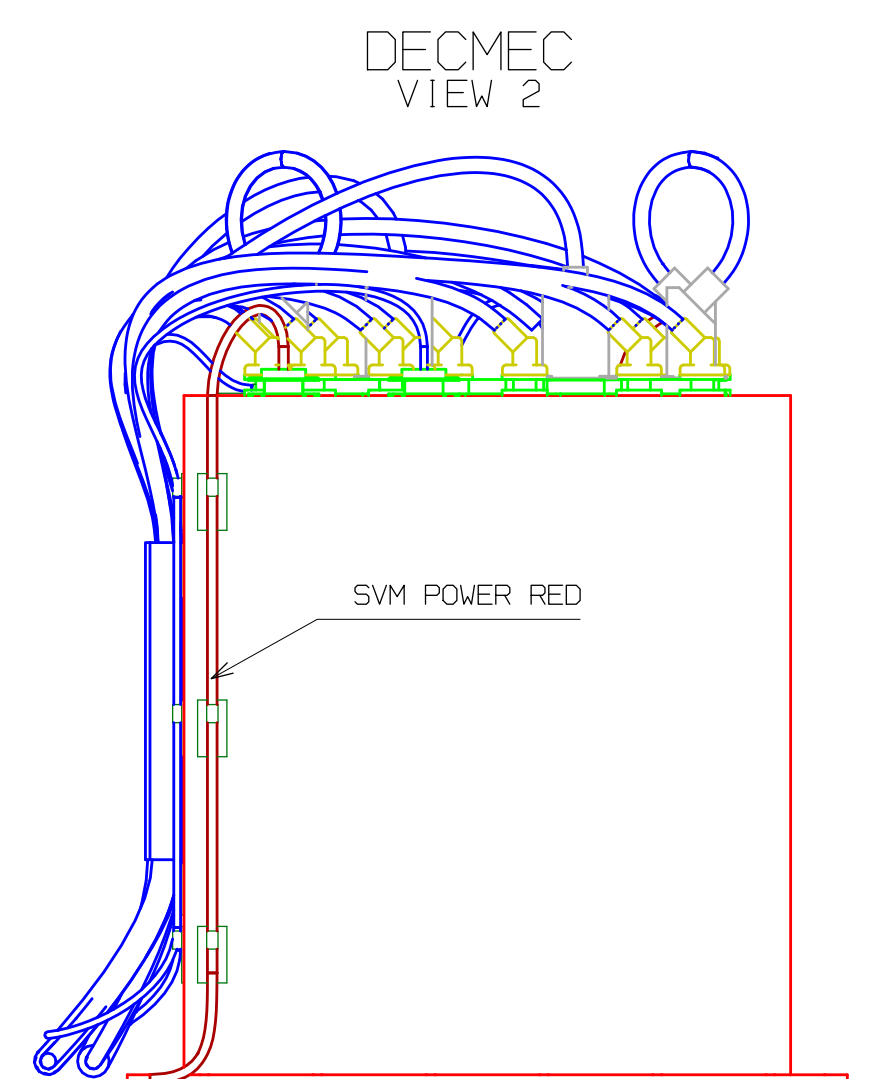
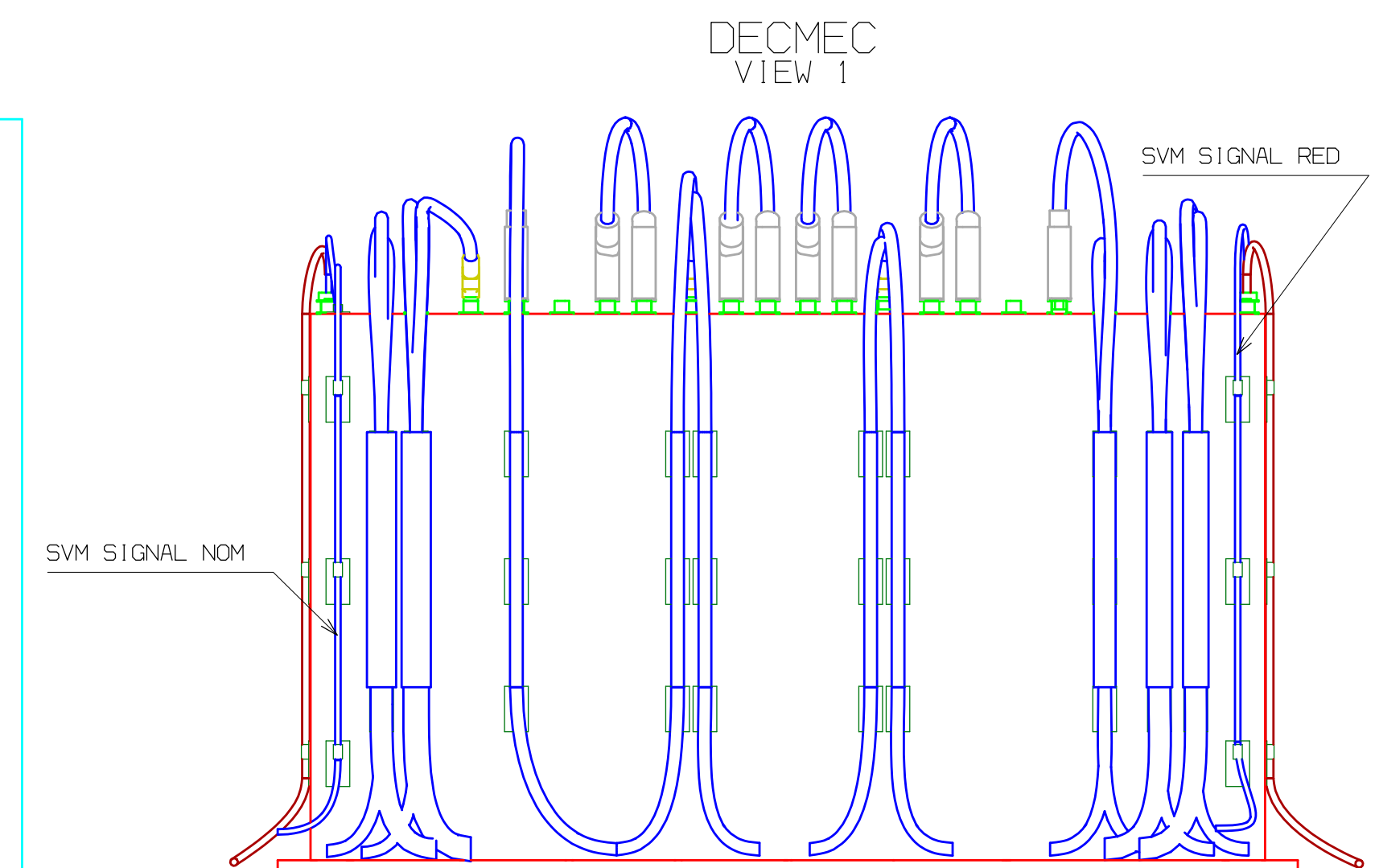
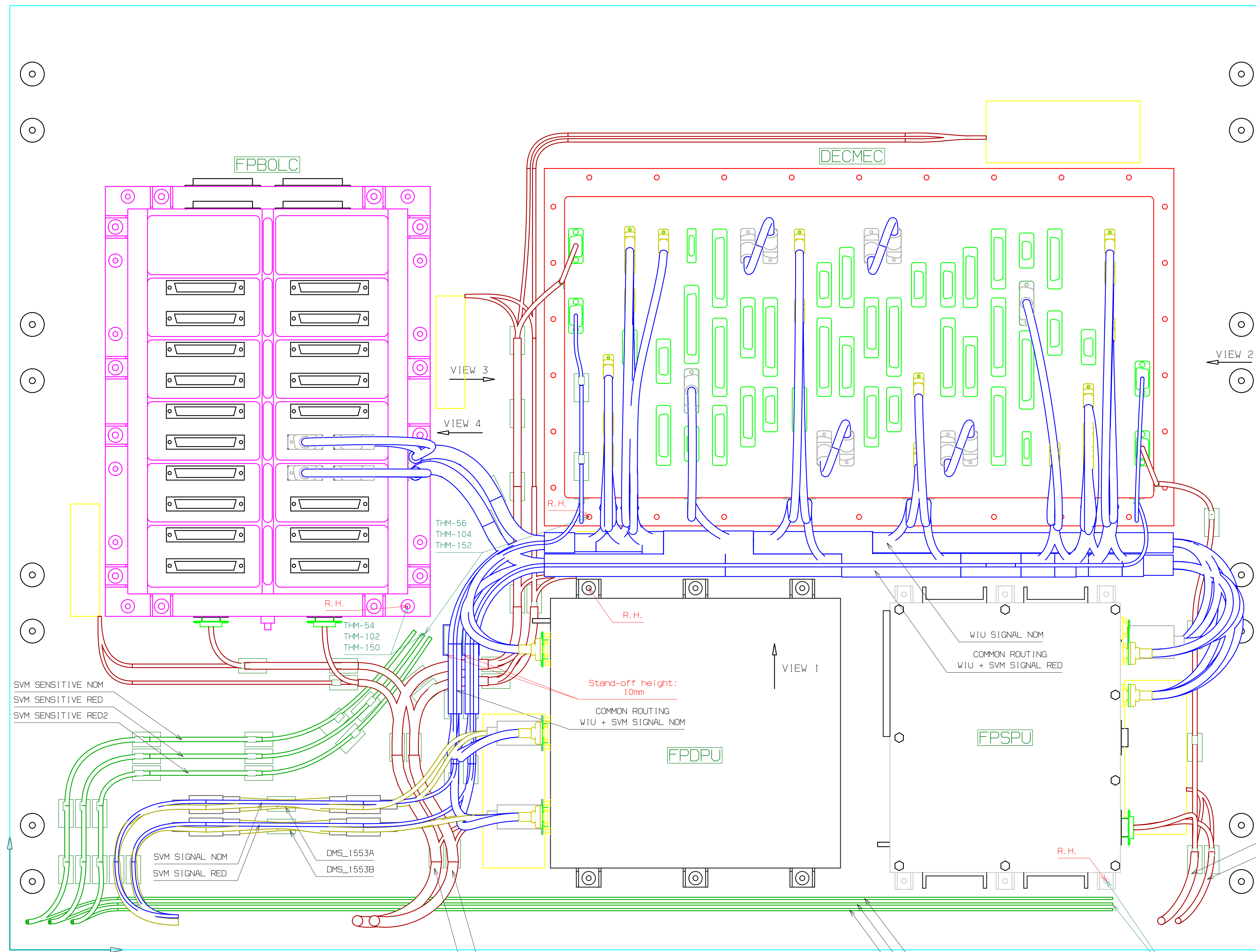
H-P WU PACS Harness	Doc Id. : H-P-4-NXH-RP-0021		
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7 PACS Extracted Lengths

Bundle	From Connector			To Connector			Bundle							
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	Nom / Red	Category	Diameter	Bending Radius	Mass BNL (g/m)	Conn.+BCK (g)	L Max (mm)	L (mm)
FPD20_01N	FPBLC P23	DEMA 9P	100P925-09-E-05-40-1-C	FPDMC P09	MDM 9P	100P-1851-F-09-A-1-C	Nominal	2					2000	1372
FPD20_01R	FPBLC P24	DEMA 9P	100P925-09-E-05-40-1-C	FPDMC P109	MDM 9P	100P-1851-F-09-A-1-C	Redundant	2					2000	1557
FPD20_02N	FPBLC P21	DEMA 9P	100P925-09-D-02-40-1-C	FPDMC P04	MDM 9P	100P-1851-F-09-C-1-C	Nominal	2	7	45	80		2000	986
FPD20_02R	FPBLC P22	DEMA 9P	100P925-09-D-02-40-1-C	FPDMC P104	MDM 9P	100P-1851-F-09-C-1-C	Redundant	2	7	45	80		2000	1654
FPD20_03N	FPDPU P07	MDM 9P	100P-1851-U-09-A-1-C	FPDMC P01	MDM 9P	100P-1851-F-09-A-1-C	Nominal	2	7	45	80		2000	830
FPD20_03R	FPDPU P08	MDM 9P	100P-1851-U-09-A-1-C	FPDMC P101	MDM 9P	100P-1851-F-09-A-1-C	Redundant	2	7	45	80		2000	1174
FPD20_04N	FPSPU1 P22	MDM 9P	100P-1851-U-09-A-1-C	FPDMC P02	MDM 9P	100P-1851-F-09-A-1-C	Nominal	2	7	45	80		2000	1241
FPD20_04R	FPSPU2 P22	MDM 9P	100P-1851-U-09-A-1-C	FPDMC P102	MDM 9P	100P-1851-F-09-A-1-C	Redundant	2	7	45	80		2000	764
FPD20_05N	FPSPU1 P32	MDM 9P	100P-1851-U-09-A-1-C	FPDMC P05	MDM 9P	100P-1851-F-09-A-1-C	Nominal	2	7	45	80		2000	1137
FPD20_05R	FPSPU2 P32	MDM 9P	100P-1851-U-09-A-1-C	FPDMC P105	MDM 9P	100P-1851-F-09-A-1-C	Redundant	2	7	45	80		2000	902
FPD20_06N	FPSPU1 P21	MDM 9P	100P-1851-U-09-A-1-C	FPDPU P09	MDM 9P	100P-1851-U-09-A-1-C	Nominal	2	7	45	80		2000	1145
FPD20_06R	FPSPU2 P21	MDM 9P	100P-1851-U-09-A-1-C	FPDPU P11	MDM 9P	100P-1851-U-09-A-1-C	Redundant	2	7	45	80		2000	1185
FPD20_07N	FPSPU1 P31	MDM 9P	100P-1851-U-09-A-1-C	FPDPU P10	MDM 9P	100P-1851-U-09-A-1-C	Nominal	2	7	45	80		2000	1213
FPD20_07R	FPSPU2 P31	MDM 9P	100P-1851-U-09-A-1-C	FPDPU P12	MDM 9P	100P-1851-U-09-A-1-C	Redundant	2	7	45	80		2000	1246
FPD20_08N	FPSPU1 P13	DAMA 15S	100P925-15-E-05-40-1-C	FPDMC P10	DAMA 15S	100P925-15-E-05-40-1-C	Nominal	2			80		2000	1140
FPD20_08R	FPSPU2 P13	DAMA 15S	100P925-15-E-05-40-1-C	FPDMC P110	DAMA 15S	100P925-15-E-05-40-1-C	Redundant	2			80		2000	972
C01	FPDMC P03	MDM 9P	100P-1851-F-09-A-1-C	FPDMC P72	MDM 9P	100P-1851-F-09-A-1-C	Nominal	2	7	45	80		800-1000	1361
C02	FPDMC P103	MDM 9P	100P-1851-F-09-A-1-C	FPDMC P73	MDM 9P	100P-1851-F-09-A-1-C	Redundant	2	7	45	80		NA	1211
C03	FPDMC P06	MDM 9P	100P-1851-F-09-A-1-C	FPDMC P172	MDM 9P	100P-1851-F-09-A-1-C	Nominal	2	7	45	80		800-1000	1161
C04	FPDMC P106	MDM 9P	100P-1851-F-09-A-1-C	FPDMC P173	MDM 9P	100P-1851-F-09-A-1-C	Redundant	2	7	45	80		NA	1167
C05	FPDMC P18	MDM 21S	100P-1851-F-21-A-1-C	FPDMC P117	DCMA 37P	100P925-37-E-05-40-1-C	Redundant	2					NA	-
C06	FPDMC P91	DEMA 9P	100P-1851-F-09-A-1-C	FPDMC P93	DEMA 9S	100P-1851-F-09-A-1-C	-	2					150	249
C07	FPDMC P191	DEMA 9P	100P-1851-F-09-A-1-C	FPDMC P193	DEMA 9S	100P-1851-F-09-A-1-C	Redundant	2					150	249
C08	FPDMC P92	DEMA 9P	100P-1851-F-09-A-1-C	FPDMC P94	DEMA 9S	100P-1851-F-09-A-1-C	-	2					150	249
C09	FPDMC P192	DEMA 9P	100P-1851-F-09-A-1-C	FPDMC P194	DEMA 9S	100P-1851-F-09-A-1-C	-	2					150	249

Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG.
 Lengths are measured from connector front face to connector front face.
 The integration sequence for the WIH bundles is free.

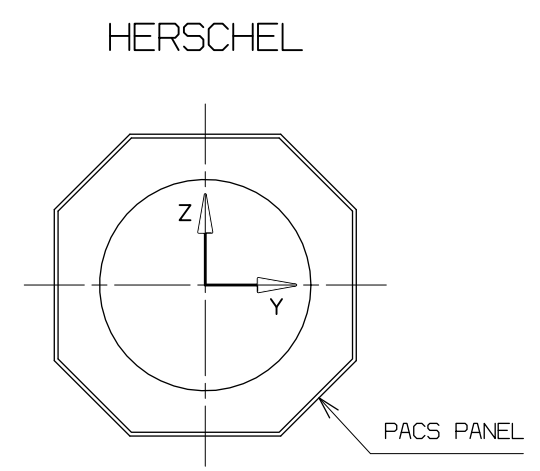
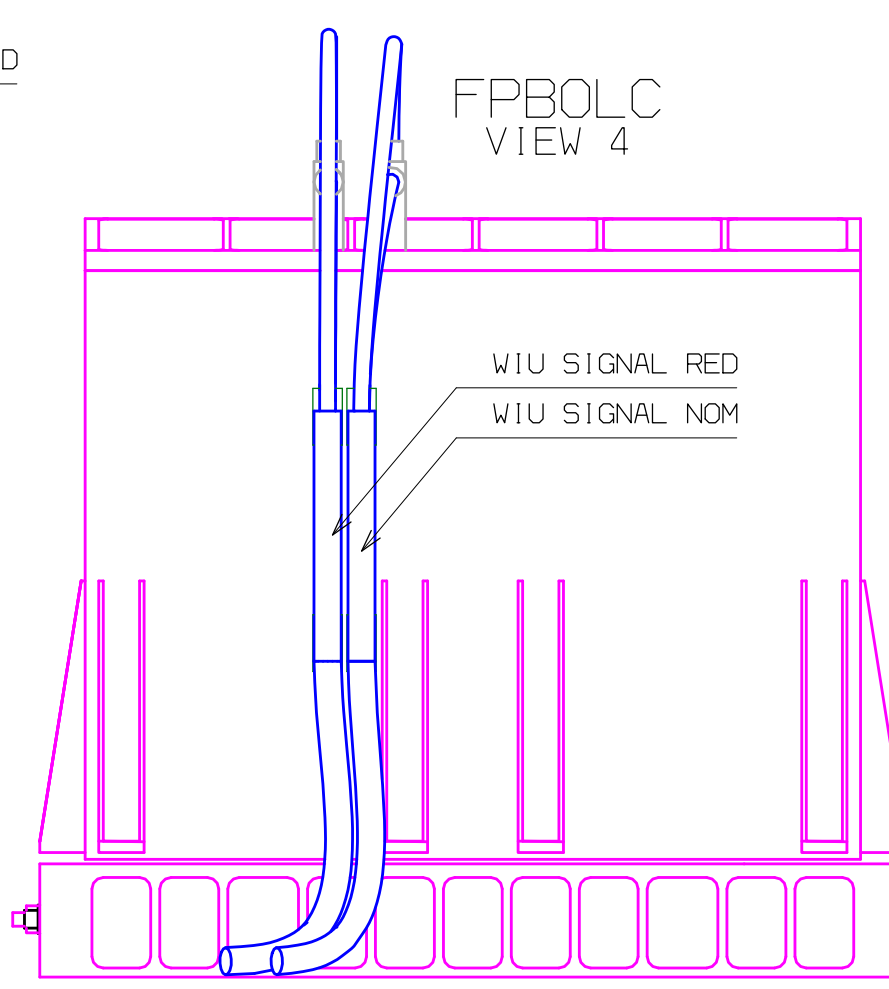
ORTHOGONAL VIEW FROM INSIDE S/C



Yp

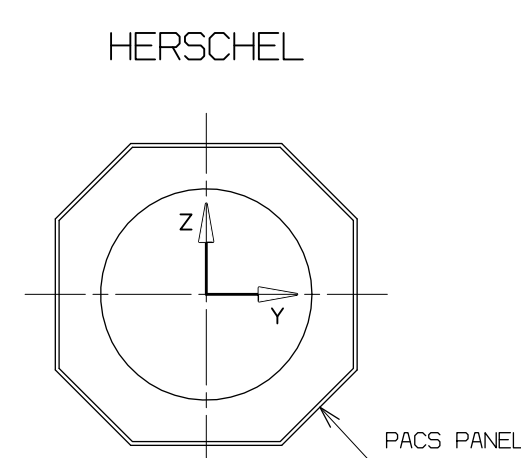
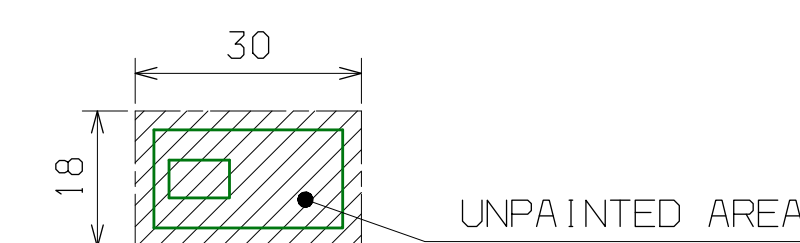
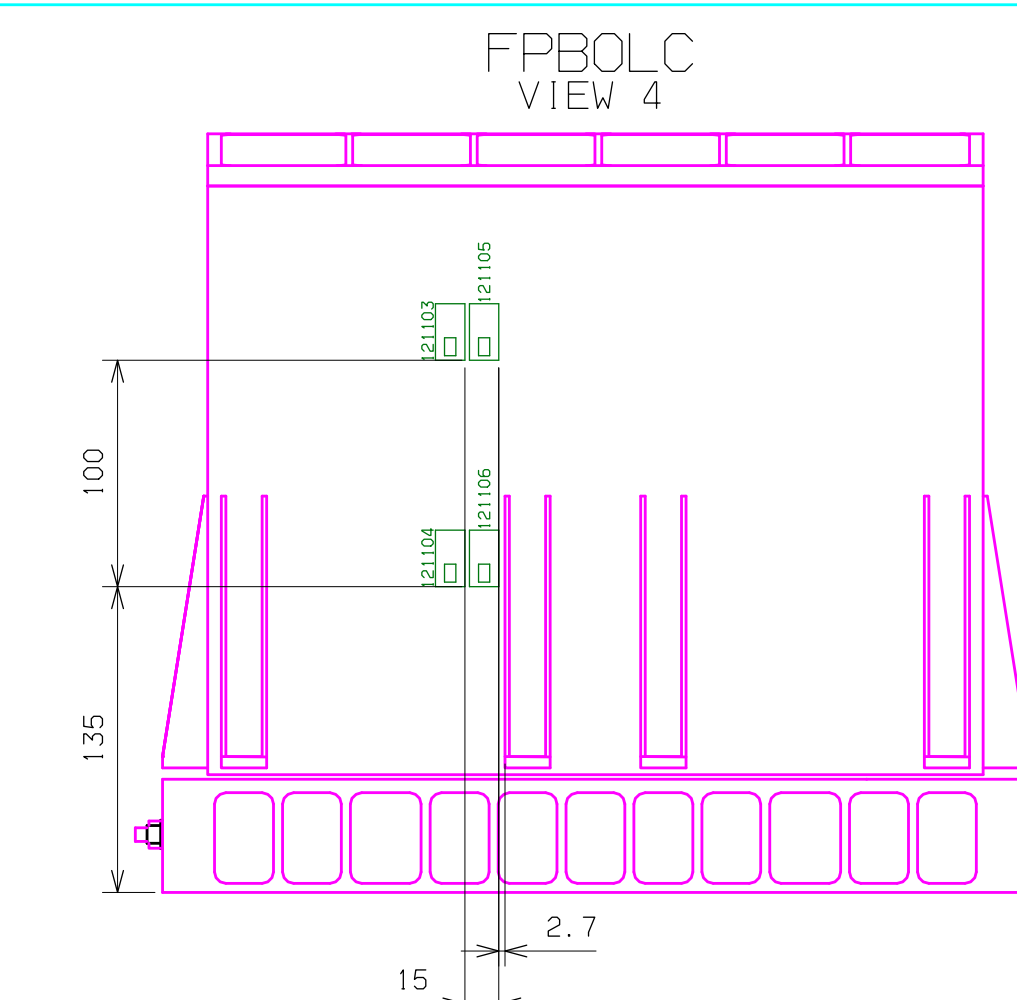
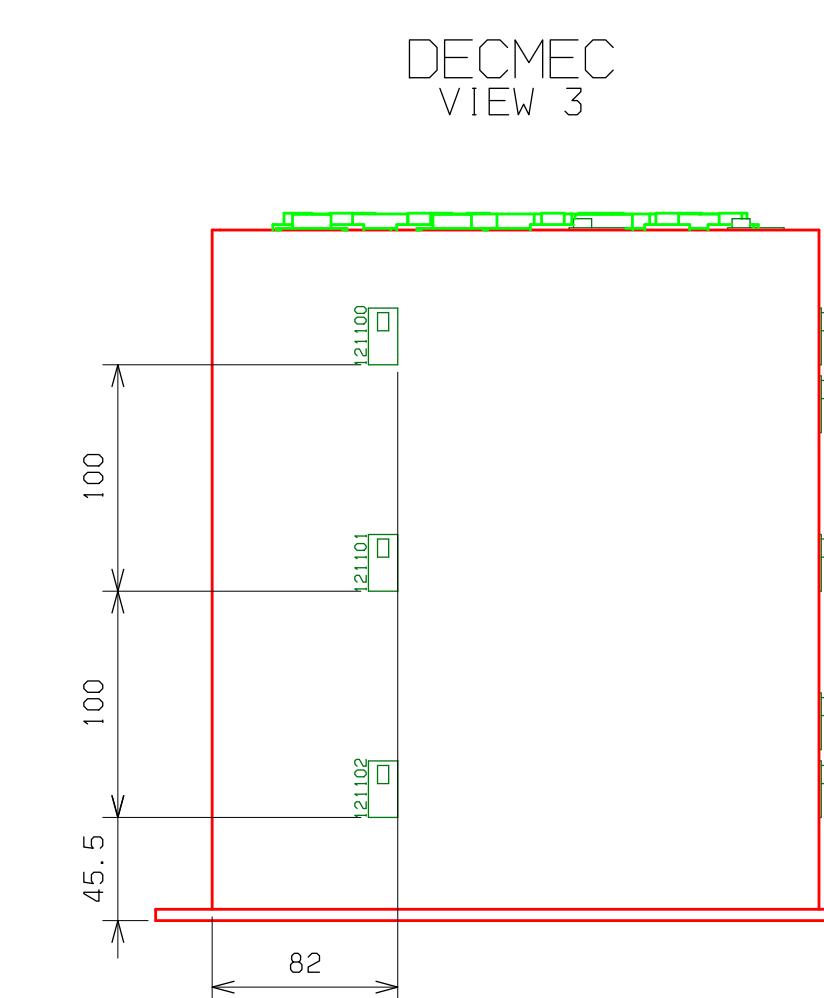
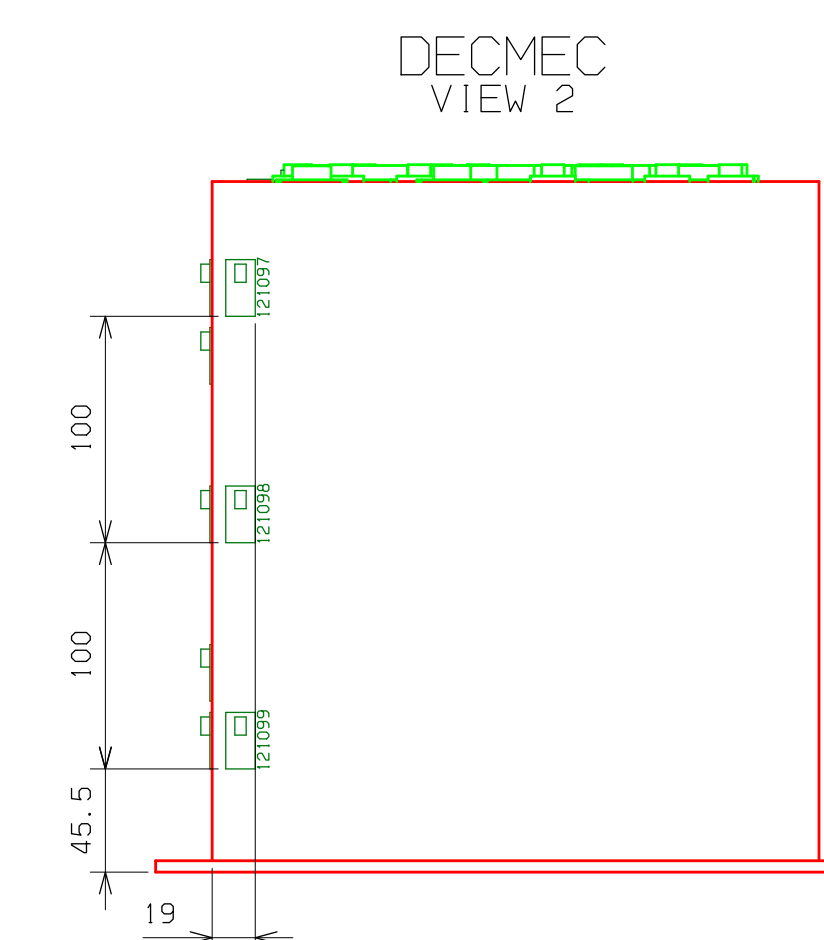
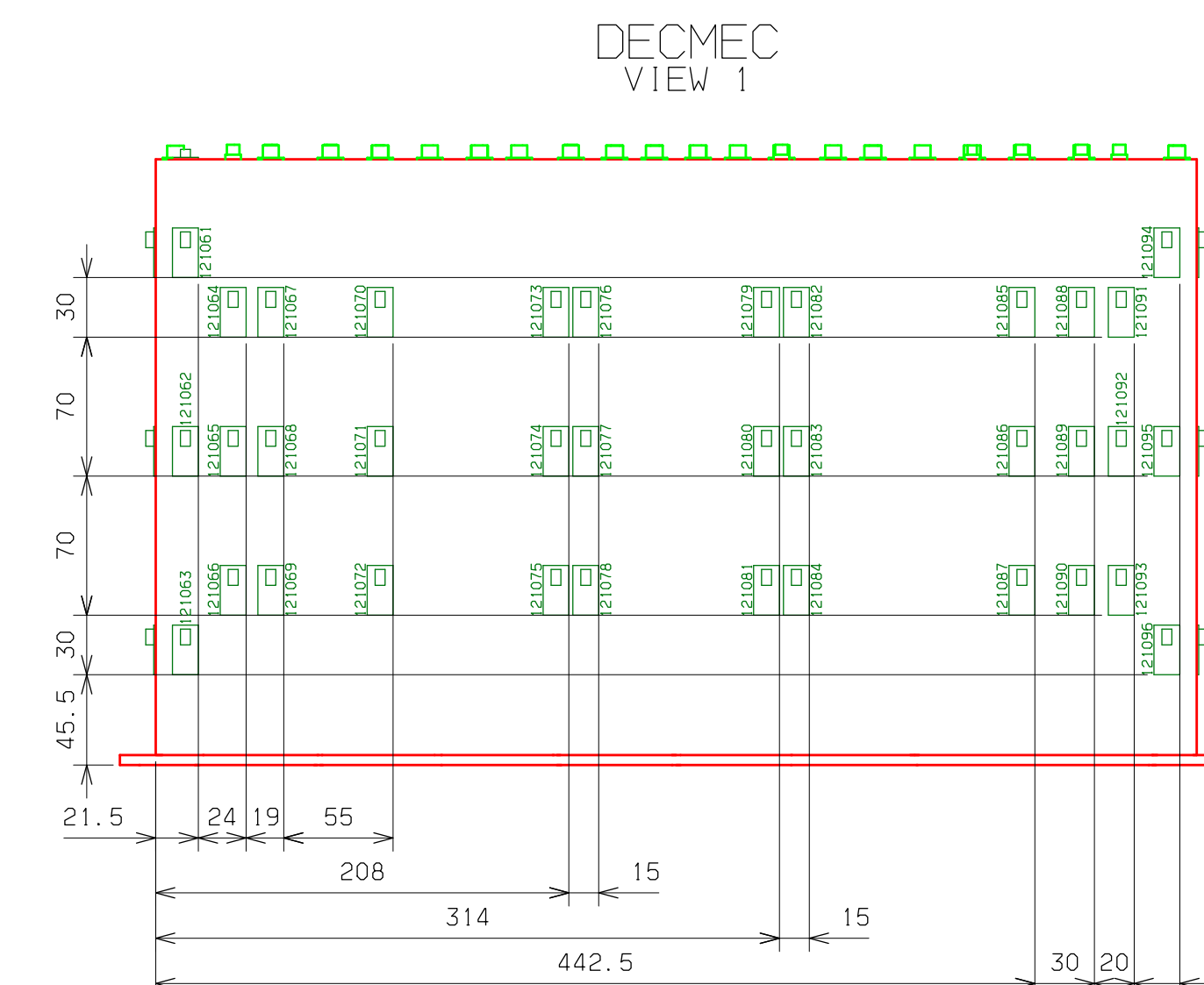
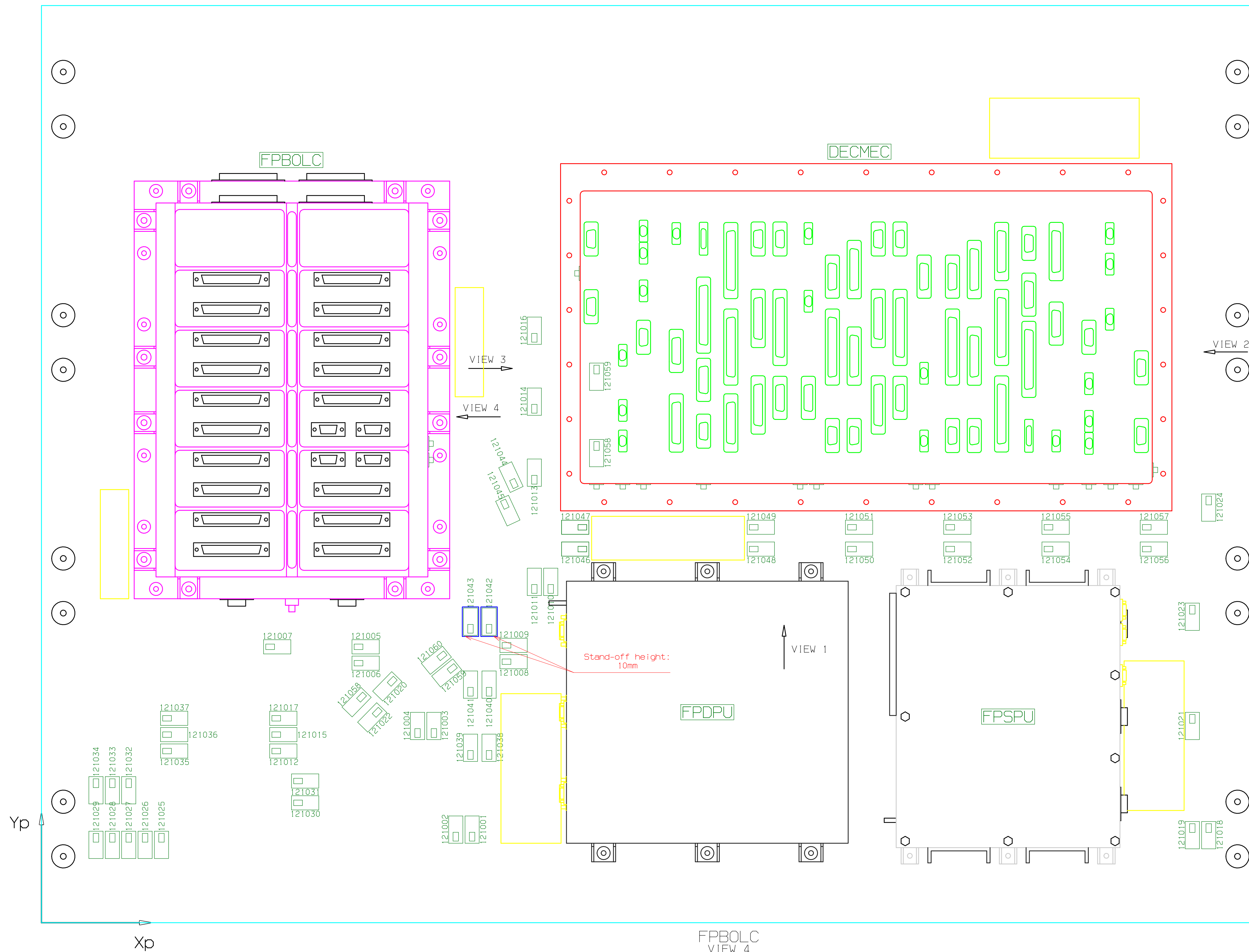
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FPBOLC VIEW 4



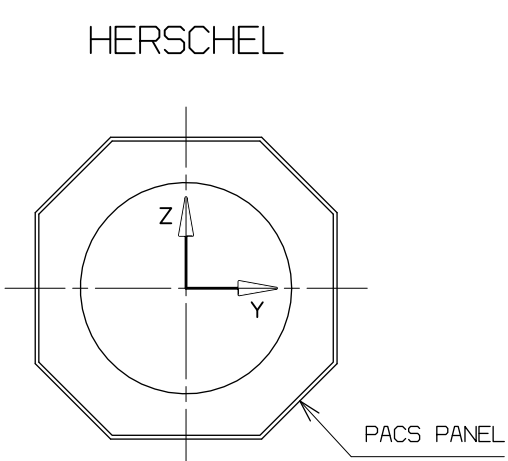
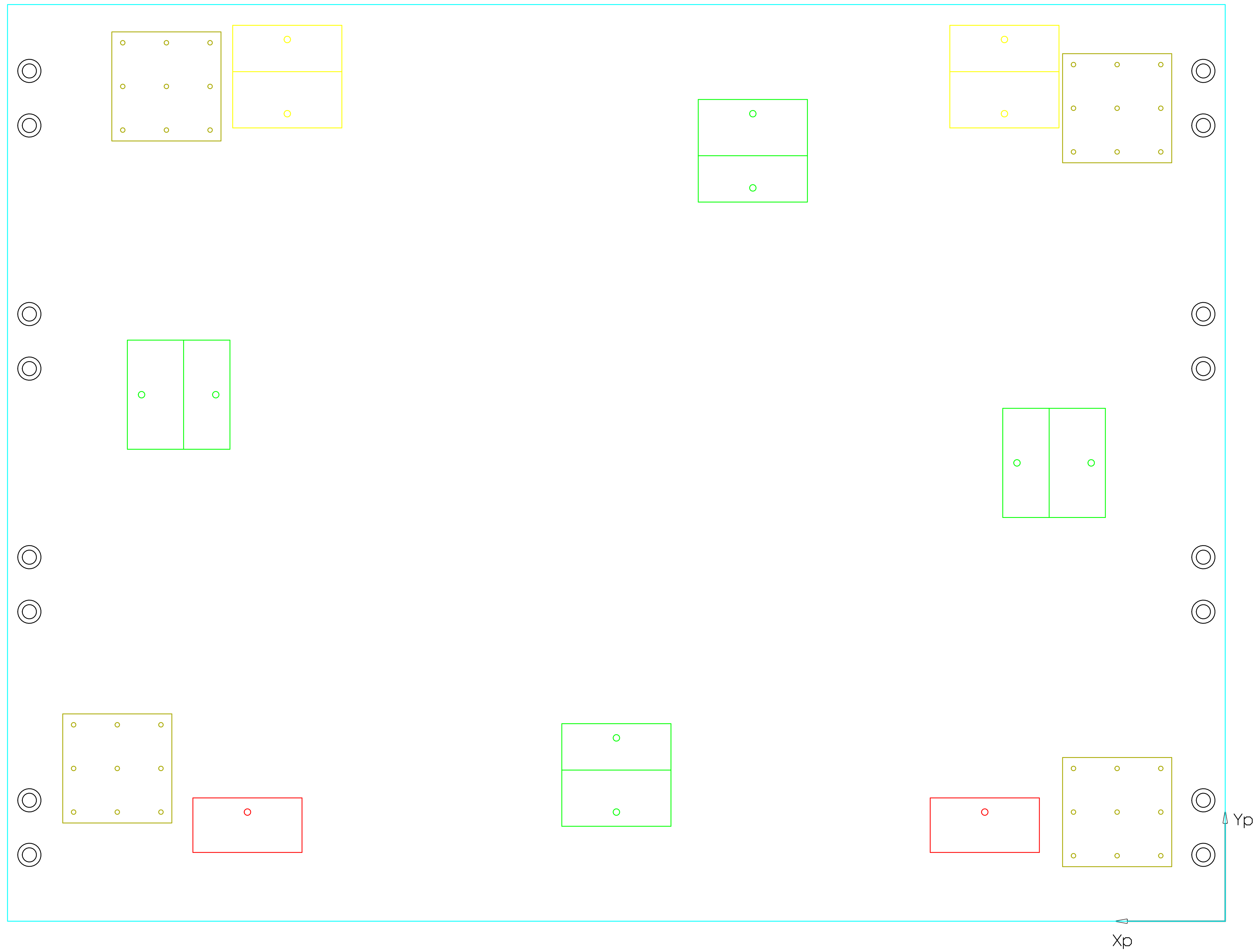
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Rev. A1	Date 30/03/04	Scale N/A	Format A1	Sht 1/4	
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ORTHOGONAL VIEW FROM INSIDE S/C

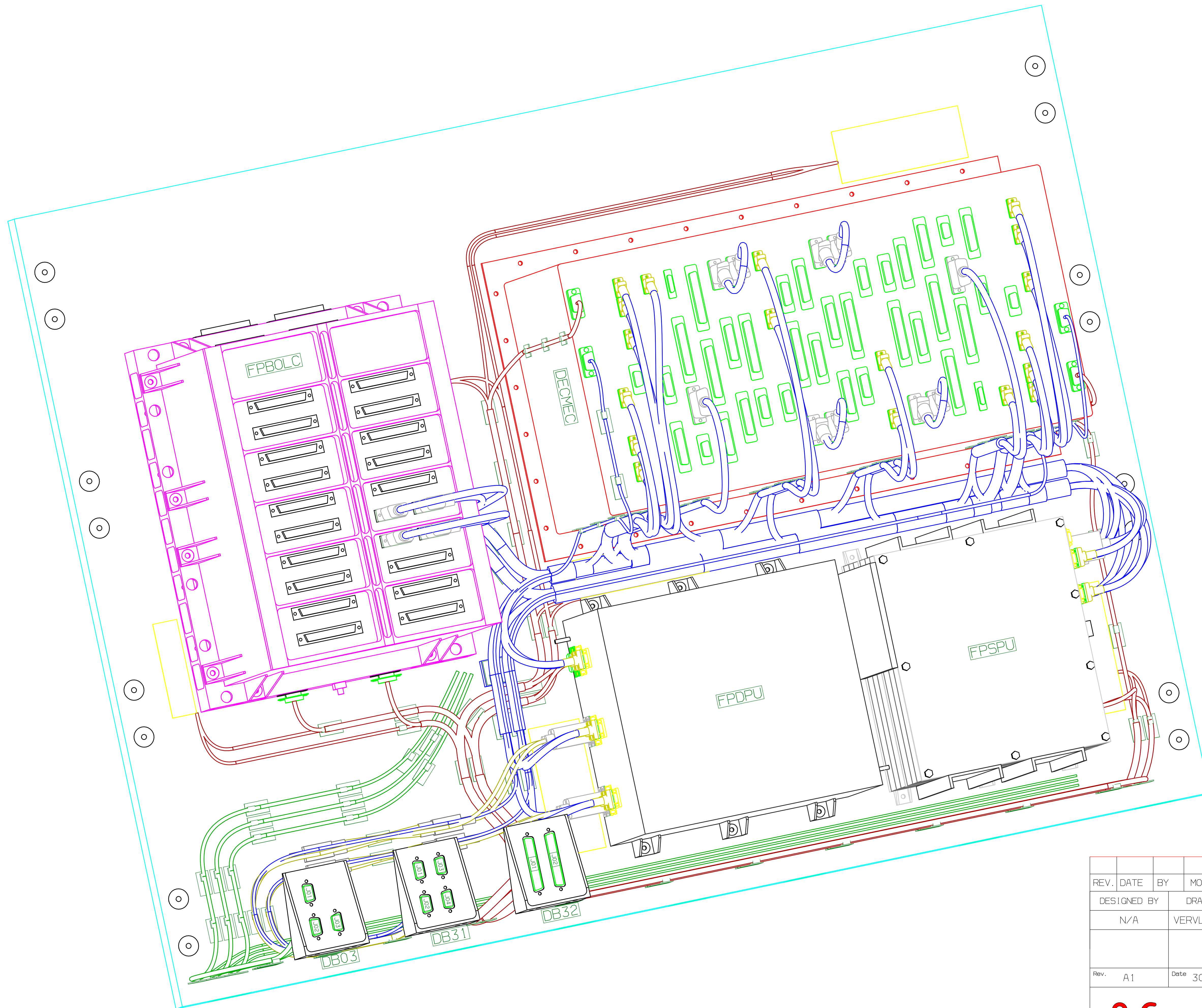



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Rev.	A1	Date	30/03/04	Scale	N/A
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				Sht	2/4
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		SVM PACS INSTRUMENT PANEL ASSY			
		DWG N° HP-NXH-DW-1021			

ORTHOGONAL VIEW FROM OUTSIDE S/C



REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
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N/A	VERVL IET J.	PLETINCKX K.	--	--	
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DOCUMENT COMPOSITION

Pages	Annexes	Others
13	10	0


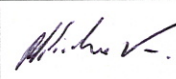
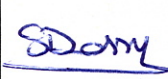


DOCUMENT IDENTIFICATION

Project	: Herschel – Planck		
N° Project	: 1680		
N° Contract	:		
Material	: Herschel-Planck SVM Harness		
Doc. Reference	: H-P-4-NXH-RP-0020	A2	
Date	: 04-05-04		

TITLE

<h1>H-P WU HIFI Harness</h1> <p>This document contains updates made by B. Marchand (09/06/04)</p>

Written by	Function	Date	Signature
Johan Vervliet	Engineering	04-05-04	
Checked by			
Ken Pletinckx	Project Engineer	06.05.04	
Approved by			
Stéphane Dassy	Project Manager	06-05-04	

H-P WU HIFI Harness	Doc Id. : H-P-4-NXH-RP-0020		
	DATE : 04-05-04	Ed / Rev : A2	Page : 4 of 13

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H-P WU HIFI Harness	Doc Id. : H-P-4-NXH-RP-0020		
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1 Scope

The purpose of this document is to provide a description of the HIFI WU harness of the Herschel S/C.

2 Introduction

On the HIFI1 panel are located the part of the WU belonging to the HIFI Experiment(LCU, LSU, HRH, WEH, WHO and the 3dB coupler), the other WU are located on the HIFI2 panel (ICU,HRV,FCU,WEV,WOV and the 3dB coupler).

The HIFI Panels harness is configured taking into account the different interconnection requirements of the experiment and harness design responsibility. The harness is split into 3 different main groups:

1. SVM Harness
2. Instrument WU Harness
3. Cryo Harness

The instrument WU Harness is defined taking into account the harness data provided by Instruments as well as SVM and CRYO Harness Design in order to verify the relevant accomodation in the SVM configuration.

Due to the interconnections between the WU located on the two panels, 6 dedicated connector brackets (DBH-, CBH-) are foreseen to route the harnesses.

- DBH1 on Lower Platform to distribute Power and Signal Harnesses
- DBH2 on Lower Platform to distribute Flex Coax Links
- DBH3 on Lower Platform to distribute Flex Coax Links
- DBH4 on Lower Platform to distribute Power and Signal Harnesses
- CBH1 on Panel to distribute Semirigid Coax Links
- CBH2 on Panel to distribute Semirigid Coax Links

Additional details/drawings on the harness accomodation are reported in this document.

H-P WU HIFI Harness	Doc Id. : H-P-4-NXH-RP-0020		
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3 Applicable Documents

3.1 Applicable documents

Number	Issue	Title
H-P-I-ASPI-SP-0027	4.2	General Design Interface Requirement Specification
H-P-I-ASPI-SP-0042	4.0	SVM Interface Specification
H-P-RP-AI-0025	1.0	SVM Harness Configuration and Design Description

3.2 ALS Baseline Documents

Number	Issue	Title
H-P-IC-AI-0001	04	Herschel/Planck SVM MICD
H-P-LI-AI-0022	05	List of HP SVM 3D CAD models
SCI-PT-IIDB/HIFI-02125	02	/
H-P-ASP-CR-0420	NA	Impact resulting from HIFI Change Request : HP-HIFI-CR-0076 v2
HP-HIFI-CR-0095 v1		Warm harness documentation up-date

3.3 CATIA Harness Directory Status : HIFI

ALS Part Nr.	Rev.	Description	Resp.	Date
HP-111301-24-1	C	-Y LATERAL PANEL HRN ELT ASSY (HIFI#1)	HRN_	03.05.04
HP-111302-24-1	B	-Y LATERAL PANEL HRN MECH ASSY (HIFI#1)	HRN_	02.04.04
HP-392001-24-1	E	-Y LATERAL PANEL HRN ELT ASSY (HIFI#1)	HRN_	03.05.04
HP-392001-24-1	N/A	-Y LATERAL PANEL HRN MECH ASSY (HIFI#1)	HRN_	N/A
HP-111301-23-1	C	-Y-Z LATERAL PANEL HRN ELT ASSY (HIFI#2)	HRN_	03.05.04
HP-111302-23-1	B	-Y-Z LATERAL PANEL HRN MECH ASSY (HIFI#2)	HRN_	02.04.04
HP-392001-23-1	E	-Y-Z LATERAL PANEL HRN ELT ASSY (HIFI#2)	HRN_	03.05.04
HP-392002-23-1	A	-Y-Z LATERAL PANEL HRN MECH ASSY (HIFI#2)	HRN_	07.11.03
HP-111301-50-1	B	LOWER CLOSURE PANEL HRN ELT ASSY	HRN_	02.04.04
HP-111302-50-1	B	LOWER CLOSURE PANEL HRN MECH ASSY	HRN_	02.04.04
HP-392001-50-1	D	LOWER CLOSURE PANEL HRN ELT ASSY	HRN_	03.05.04
HP-392002-50-1	D	LOWER CLOSURE PANEL HRN MECH ASSY	HRN_	02.04.04

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4 Document Organisation

4.1 General Information : Drawings

Every Drawing contains all relevant information with reference to the H-P HIFI Harness derived from the MICD (Mech. Interface Control Doc.) and the other data provided by instruments, such as :

Power, Signal and Sensitive Routing
 Nominal & Redundant routing
 Mil Bus lay-out
 WIU Harness lay-out
 Mechanical Items lay-out
 Mechanical Items identification

Colour codes used are

colour	Class	Comment
Colour 30 (Dark Red)	1-/POWER	SVM Primary Power
Colour 04 (Light Blue)	2-/SIGNAL	SVM Signal
Colour 45 (Dark Green)	4-/SENS	SVM Sensitive Harness
Colour 75 (Dark Yellow)	2-/Signal	Mil Bus Harness
Colour 02 (Light Red)	1-/PWR	WIH Secondary Power
Colour 120 (Dark Blue)	2-/Signal	WIH Secondary Signal
Colour 105 (Marine blue)	3-/ANL	WIH Analogue
Colour 11 (Dark Grey)	4-/DIG	WIH Rigid Coax
Colour 75 (Dark Yellow)	4-/DIG	WIH Flex Coax
Colour 111 (Dark Green)	N/A	Tie-base
Colour 05 (Yellow)	N/A	For Information Only

4.2 2D Drawing Numbering System

Each 2D Drawing is identified by H-P-NXH-DW-XXXX

Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DW	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.5

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4.3 2D JIG Numbering System

Each 2D JIG Drawing is identified by H-P-NXH-DR-XXXX

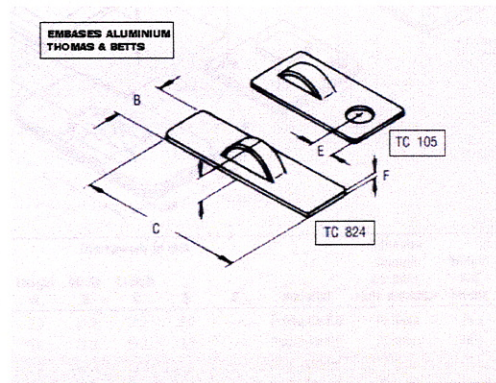
Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DR	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.5

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5 Harness Fixing

5.1 Tie-bases

The position of the tie-bases has been designed to meet the requirement to fix the harness bundles on the structure every 100mm maximum. Tiebase type used is TC-105 (Thomas & Betts). Tie-wraps sizes used, are function of bundle diameter and in accordance to the applicable process list.



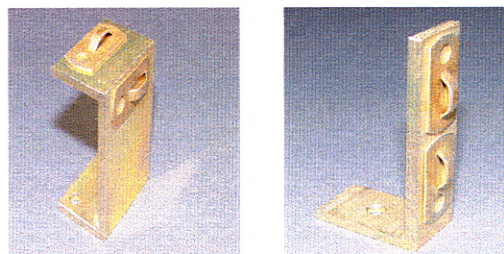
Tie-bases will be glued on the spacecraft structure and will assure harness fixation as well as electrical bonding.

5.2 Stand-off's

To maintain wire-bundles routing and minimize mechanical stress in harness, specific stand-off have been designed, which will be glued on the spacecraft structure.

The stand off designs are well approved at Kayser-Threde and will be modified to the purpose of the SVM Harness. (Pictures below)

Tie-bases will be glued to the stand-off's to allow cable fixation by using fasteners tie-wraps.



We assume 2 types of stand off will be necessary.

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6 2D Drawing Listing

6.1 HIFI 2D Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DW-1023	HIFI#2 Instrument Panel Assy	03-05-04	A2
H-P-NXH-DW-1024	HIFI#1 Instrument Panel Assy	03-05-04	A2
H-P-NXH-DW-1050	Lower Closure Assy	03-05-04	A2

6.2 HIFI JIG Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DR-1023	HIFI#2 Instrument Panel Assy	03-05-04	A2
H-P-NXH-DR-1024	HIFI#1 Instrument Panel Assy	03-05-04	A2
H-P-NXH-DR-1050	Lower Closure Assy	03-05-04	A2

6.3 HIFI 2D Drawings

See Annex

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7 HIFI Extracted Lengths
+ modification from B. Marchand

Bundle Id.	From Connector			To Connector			Bundle							Sq.**	
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	N / R	Cat.	Diameter	Bending Radius	Mass (g/m)	Conn. (g)	L Max (mm)		L (mm)
PWR-1	FHICU P07	DBMA 25P	550E039	FHFCU P01	DCMA 37S	550T039	Nom	1	9	84	175	120	-	864	3
PWR-1	FHFCU P01	DCMA 37S	550T039	DBH1 P01*	DEMA 9P	TBD	Nom	1	4	70	50	30	-	1462	3
PWR-2a	DBH1 J01*	DEMA 9S	TBD	DBH4 J01*	DEMA 9P	TBD	Nom	1	9	84	175	120	-	1230	3
PWR-2b	DBH4 P01*	DEMA 9S	TBD	FHIFH P05	DEMA 9P	550T039	Nom	1	4	70	50	30	-	758	3
PWR-3	FHICU P08	DBMA 25P	550E039	FHFCU P03	DCMA 37S	550T039	Red	1	9	84	175	120	-	912	3
PWR-3	FHFCU P03	DCMA 37S	550T039	FHIFV P05	DEMA 9P	550T039	Red	1	9	84	175	120	-	439	3
PWR-4	FHLCU P04	DBMA 25P	550T039	FHLSU P01	DBMA 25S	550T039	Nom	1	9	70	100	120	-	1706	3
PWR-5	FHLCU P24	DBMA 25P	550T039	FHLSU P04	DBMA 25S	550T039	Red	1	9	70	100	120	-	856	3

Bundle Id.	From Connector			To Connector			Bundle							Sq.**	
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	N / R	Cat.	Diameter	Bending Radius	Mass (g/m)	Conn. (g)	L Max (mm)		L (mm)
DIG-1	FHICU P09	DAMA 15P	550T039	FHFCU P02	DAMA 15S	550T039	Nom	2	4	70	40	91	-	1232	2
DIG-2	FHICU P10	DAMA 15P	550T039	FHFCU P04	DAMA 15S	550T039	Red	2	4	70	40	91	-	1323	2
DIG-3a	FHICU P11	DAMA 15P	550T039	DBH1 P06*	DAMA 15S	TBD	Nom	2	4	70	40	91	-	655	2
DIG-3b	DBH1 J06*	DAMA 15P	TBD	DBH4 J06*	DAMA 15S	TBD	Nom	2	4	70	40	91	-	1195	2
DIG-3c	DBH4 P06*	DAMA 15P	TBD	FHLCU P02	DAMA 15S	550T039	Nom	2	4	70	40	91	-	1203	2
DIG-4a	FHICU P12	DAMA 15P	550T039	DBH1 P07*	DAMA 15S	TBD	Red	2	4	70	40	91	-	710	2
DIG-4b	DBH1 J07*	DAMA 15P	TBD	DBH4 J07*	DAMA 15S	TBD	Red	2	4	70	40	91	-	1233	2
DIG-4c	DBH4 P07*	DAMA 15P	TBD	FHLCU P22	DAMA 15S	550T039	Red	2	4	70	40	91	-	1172	2
DIG-5a	FHICU P15	DBMA 25S	550T039	DBH1 P04*	DBMA 25P	TBD	Nom	2	6	70	56	120	-	720	2
DIG-5b	DBH1 J04*	DBMA 25S	TBD	DBH4 J04*	DBMA 25P	TBD	Nom	2	6	70	56	120	-	1131	2
DIG-5c	DBH4 P04*	DBMA 25S	TBD	FHWEH P01	DBMA 25P	550E039	Nom	2	6	70	56	120	-	1344	2
DIG-6a	FHICU P16	DBMA 25S	550T039	DBH1 P05*	DBMA 25P	TBD	Red	2	6	70	56	120	-	770	2
DIG-6b	DBH1 J05*	DBMA 25S	TBD	DBH2 J05*	DBMA 25P	TBD	Red	2	6	70	56	120	-	1166	2
DIG-6c	DBH2 P05*	DBMA 25S	TBD	FHWEH P02	DBMA 25P	550E039	Red	2	6	70	56	120	-	1374	2
DIG-7	FHICU P17	DBMA 25S	550T039	FHWEV P01	DBMA 25P	550E039	Nom	2	6	70	56	120	-	672	2
DIG-8	FHICU P18	DBMA 25S	550T039	FHWEV P02	DBMA 25P	550E039	Red	2	6	70	56	120	-	730	2
DIG-9a	FHICU P19	DBMA 25S	550T039	DBH1 P02*	DBMA 25P	TBD	Nom	2	6	70	56	120	-	695	2
DIG-9b	DBH1 J02*	DBMA 25S	TBD	DBH4 J02*	DBMA 25P	TBD	Nom	2	6	70	56	120	-	1165	2
DIG-9c	DBH4 P02*	DBMA 25S	TBD	FHHRH P02	DBMA 25P	550T039	Nom	2	6	70	56	120	-	1722	2
DIG-10a	FHICU P20	DBMA 25S	550T039	DBH1 P03*	DBMA 25P	TBD	Red	2	6	70	56	120	-	746	2
DIG-10b	DBH1 J03*	DBMA 25S	TBD	DBH4 J03*	DBMA 25P	TBD	Red	2	6	70	56	120	-	1199	2
DIG-10c	DBH4 P03*	DBMA 25S	TBD	FHHRH P03	DBMA 25P	550T039	Red	2	6	70	56	120	-	1825	2
DIG-11	FHICU P13	DBMA 25S	550T039	FHHRV P02	DBMA 25P	550T039	Nom	2	6	70	56	120	-	1020	2
DIG-12	FHICU P14	DBMA 25S	550T039	FHHRV P03	DBMA 25P	550T039	Red	2	6	70	56	120	-	1169	2
DIG-13	FHLCU P05	DAMA 26P	550T039	FHLSU P02	DAMA 26S	550T039	Nom	2	7	70	88	90	-	1412	2
DIG-14	FHLCU P25	DAMA 26P	550T039	FHLSU P05	DAMA 26S	550T039	Red	2	7	70	88	90	-	857	2

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+ modification from B. Marchand

Bundle Id.	From Connector			T o Connector			Bundle								Sq.**
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	N / R	Cat.	Diameter	Bending Radius	Mass (g/m)	Conn. (g)	L Max (mm)	L (mm)	
ANL-1	FHLCU P06	DEMA 15P	550T039	FHLSU P03	DEMA 15S	550T039	Nom	3	4.5	70	44	67	-	1188	4
ANL-2	FHLCU P26	DEMA 15P	550T039	FHLSU P06	DEMA 15S	550T039	Red	3	4.5	70	44	67	-	685	4
ANL-3	FHWEH P04	21WA4P	SPECIAL	FHWOH P06	21WA4S	SPECIAL	-	3	15	40	180	95	-	368	2
ANL-4	FHWEH P05	17W5P	SPECIAL	FHWOH P05	17W5S	SPECIAL	-	3	12	70	135	95	-	434	2
ANL-5	FHWEV P04	21WA4P	SPECIAL	FHWOH P06	21WA4S	SPECIAL	-	3	15	40	180	95	-	596	2
ANL-6	FHWEV P05	17W5P	SPECIAL	FHWOV P05	17W5S	SPECIAL	-	3	12	70	135	95	-	501	2
RF-1	FHIFH P03	SMA M 3401 001 02	-	FHHRH P05	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	1370	1
RF-2	FHIFV P03	SMA M 3401 001 02	-	FHHRV P05	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	620	1
RF-3	FHIFH P04	SMA M 3401 001 02	-	FHWEH P10	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	1875	1
RF-4	FHIFV P04	SMA M 3401 001 02	-	FHWEV P10	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	611	1
RF-5	FHLSU P07	SMA M 3402 001 06	-	FHHRH P20	SMA M 3402 001 06	-	-	4	2,05	40	9,5	9,8	-	983	5
RF-6a	FHLSU P08	SMA M 3402 001 06	-	DBH3 P01*	SMA M 3402 001 06	-	-	4	2,05	40	9,5	9,8	-	1413	5
RF-6b	DBH3 J01*	SMA M 3402 001 06	-	DBH2 J01*	SMA M 3402 001 06	-	-	4	2,05	40	9,5	9,8	-	235	5
RF-6c	DBH2 P01*	SMA M 3402 001 06	-	FHHRV P20	SMA M 3402 001 06	-	-	4	2,05	40	9,5	9,8	-	794	5
RF-7	FHLSU P09	SMA M 3402 001 06	-	FHWEH P11	SMA M 3402 001 06	-	-	4	2,05	40	9,5	9,8	-	980	5
RF-8a	FHLSU P10	SMA M 3402 001 06	-	DBH3 P02*	SMA M 3402 001 06	-	-	4	2,05	40	9,5	9,8	-	1498	5
RF-8b	DBH3 J02*	SMA M 3402 001 06	-	DBH2 J02*	SMA M 3402 001 06	-	-	4	2,05	40	9,5	9,8	-	216	5
RF-8c	DBH2 P02*	SMA M 3402 001 06	-	FHWEV P11	SMA M 3402 001 06	-	-	4	2,05	40	9,5	9,8	-	1253	5
RF-9a	FHHRH P04	SMA M 3402 001 03B	-	CBH2 J01*	SMA M 3402 001 03B	-	-	4	6,3	38	158	16,4	-	1720	1
RF-9b	CBH2 P01*	SMA M 3402 001 03B	-	CBH1 P01*	SMA M 3402 001 03B	-	-	4	6,3	38	158	16,4	-	258	1
RF-9c	CBH1 J01*	SMA M 3402 001 03B	-	FHHRV P06	SMA M 3402 001 03B	-	-	4	6,3	38	158	16,4	-	981	1
RF-10a	FHHRV P04	SMA M 3402 001 03B	-	CBH1 J02*	SMA M 3402 001 03B	-	-	4	6,3	38	158	16,4	-	931	1
RF-10b	CBH1 P02*	SMA M 3402 001 03B	-	CBH2 P02*	SMA M 3402 001 03B	-	-	4	6,3	38	158	16,4	-	264	1
RF-10c	CBH2 J02*	SMA M 3402 001 03B	-	FHHRH P06	SMA M 3402 001 03B	-	-	4	6,3	38	158	16,4	-	1753	1
RF-11	FHWEH P06	SMA M 3401 001 02	-	FHWOH P01	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	604	1
RF-12	FHWEH P07	SMA M 3401 001 02	-	FHWOH P02	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	574	1
RF-13	FHWEH P08	SMA M 3401 001 02	-	FHWOH P03	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	504	1
RF-14	FHWEH P09	SMA M 3401 001 02	-	FHWOH P04	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	484	1
RF-15	FHWEV P06	SMA M 3401 001 02	-	FHWOV P01	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	325	1
RF-16	FHWEV P07	SMA M 3401 001 02	-	FHWOV P02	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	348	1
RF-17	FHWEV P08	SMA M 3401 001 02	-	FHWOV P03	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	434	1
RF-18	FHWEV P09	SMA M 3401 001 02	-	FHWOV P04	SMA M 3402 001 02	-	-	4	3,6	13	52	4,8	-	469	1

Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG.

Lengths are measured from connector front face to connector front face.

* See table below for link between NXH and Alenia connector id.

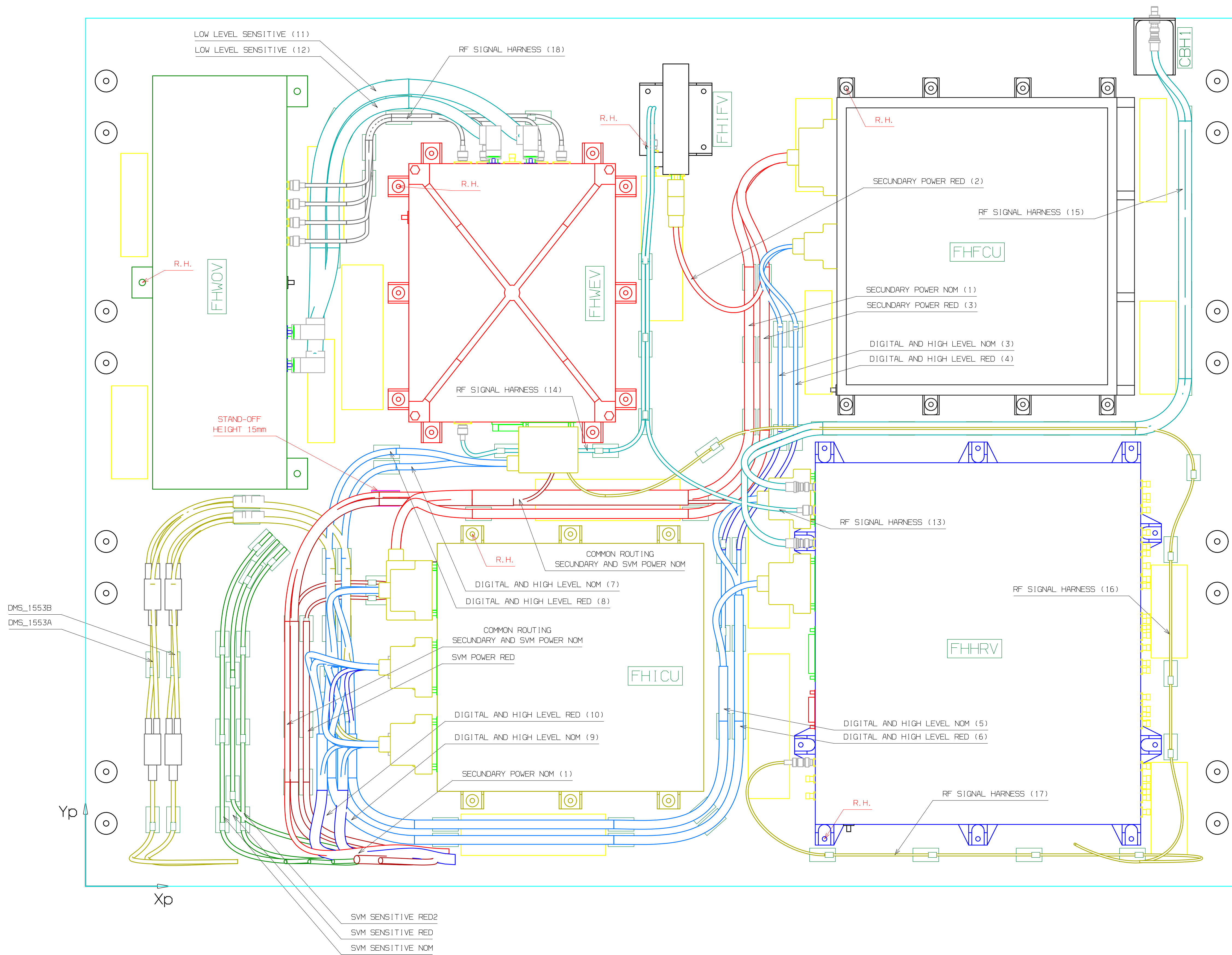
** This table indicates the sequence in which the different cables must be integrated.

H-P WU HIFI Harness	Doc Id. :		
	DATE : 04-05-04	Ed / Rev : A2	Page : 13 of 13

Link between connector id. NXH and Alenia

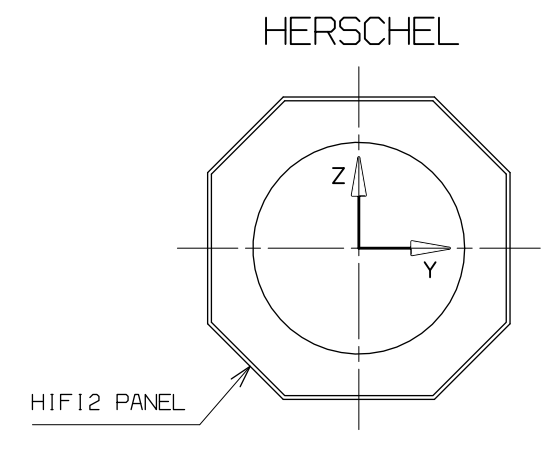
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		DBH1		DBH2		DBH3		DBH4		CBH1		CBH2	
		NXH	Alenia	NXH	Alenia	NXH	Alenia	NXH	Alenia	NXH	Alenia	NXH	Alenia
Connector id.	DBH1 J/P01	DBH1 J/P07	DBH2 P01	DBH2 P02	DBH3 P01	DBH3 P02	DBH4 J/P01	DBH4 J/P07	CBH1 P01	CBH1 P12	CBH2 P01	CBH2 P12	
	DBH1 J/P02	DBH1 J/P02	DBH2 J01	DBH2 P12	DBH3 J01	DBH3 P12	DBH4 J/P02	DBH4 J/P02	CBH1 J01	CBH1 P02	CBH2 J01	CBH2 P02	
	DBH1 J/P03	DBH1 J/P01	DBH2 P02	DBH2 P01	DBH3 P02	DBH3 P01	DBH4 J/P03	DBH4 J/P01	CBH1 P02	CBH1 P11	CBH1 P02	CBH2 P11	
	DBH1 J/P04	DBH1 J/P04	DBH2 J02	DBH2 P11	DBH3 J02	DBH3 P11	DBH4 J/P04	DBH4 J/P04	CBH1 J02	CBH1 P01	CBH2 J02	CBH2 P01	
	DBH1 J/P05	DBH1 J/P03					DBH4 J/P05	DBH4 J/P03					
	DBH1 J/P06	DBH1 J/P06					DBH4 J/P06	DBH4 J/P06					
	DBH1 J/P07	DBH1 J/P05					DBH4 J/P07	DBH4 J/P05					

ORTHOGONAL VIEW FROM INSIDE S/C

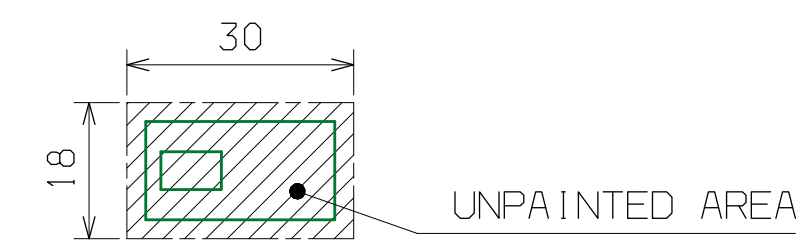
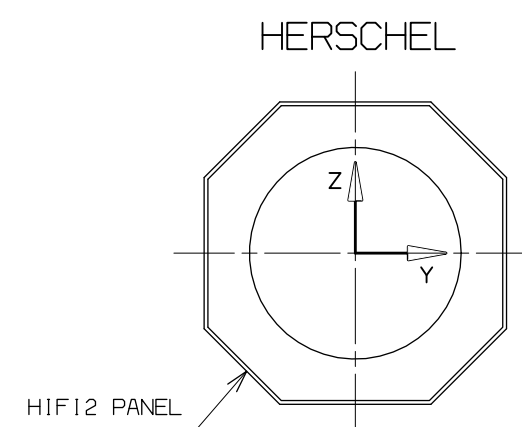
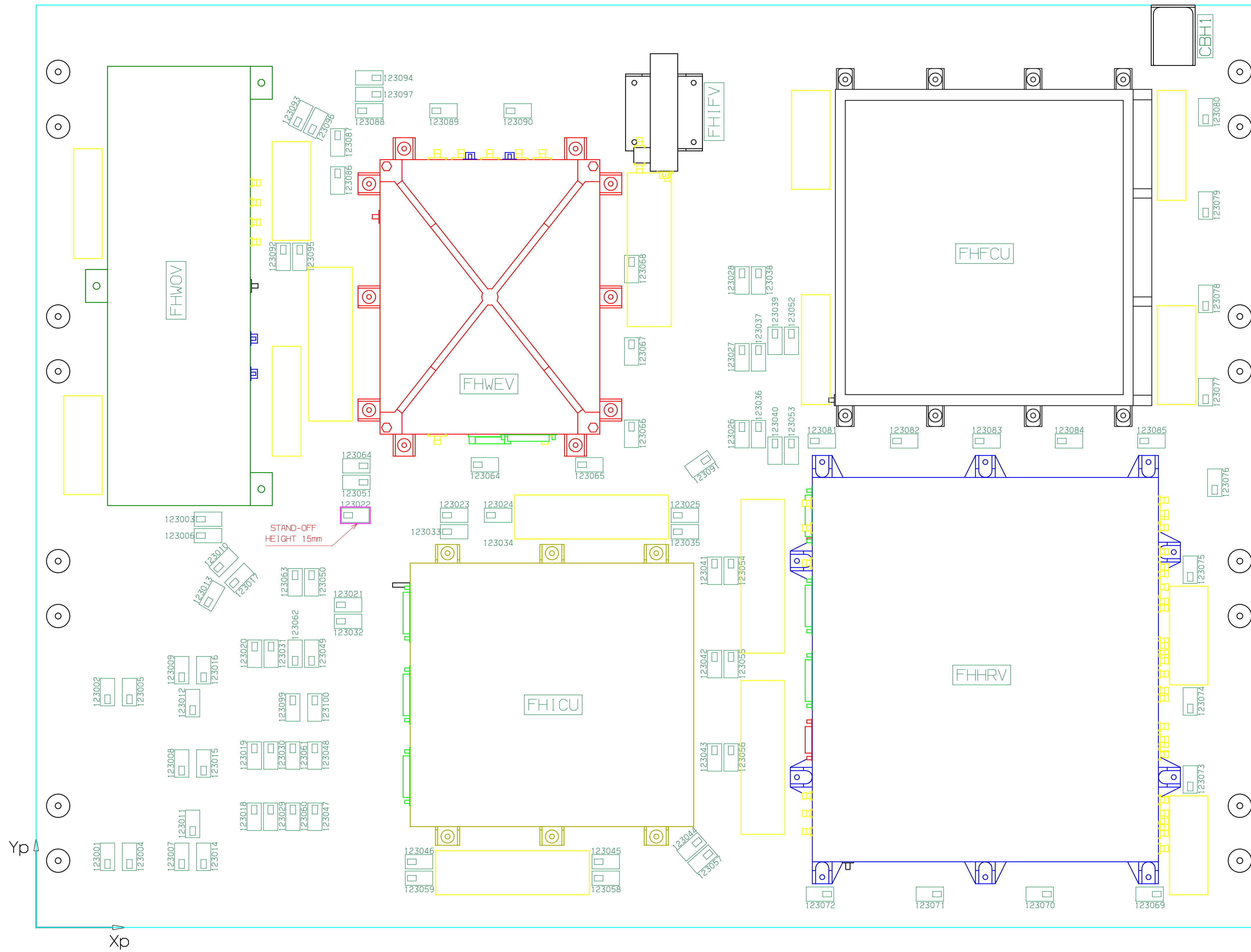


- NOTE: (1) Bundl id.: PWR-1 *
 (2) Bundl id.: PWR-3 *
 (3) Bundl id.: DIG-1 *
 (4) Bundl id.: DIG-2 *
 (5) Bundl id.: DIG-1/DIG-11 *
 (6) Bundl id.: DIG-2/DIG-12 *
 (7) Bundl id.: DIG-7 *
 (8) Bundl id.: DIG-8 *
 (9) Bundl id.: DIG-3a/DIG-5a/DIG-9a *
 (10) Bundl id.: DIG-4a/DIG-6a/DIG-10a *
 (11) Bundl id.: ANL-5 *
 (12) Bundl id.: ANL-6 *
 (13) Bundl id.: RF-2 *
 (14) Bundl id.: RF-4 *
 (15) Bundl id.: RF-9c/RF-10c *
 (16) Bundl id.: RF-8c *
 (17) Bundl id.: RF-6c *
 (18) Bundl id.: RF-15/RF-16/RF-17/RF-18 *
 * In reference with H-P-4-NXH-PR-0020 iss. A2

REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVLIET J.	PLETINCKX K.	--	--	
Rev.	A2	Date	03/05/04	Scale	N/A
		Format	A1	Sht	1/4
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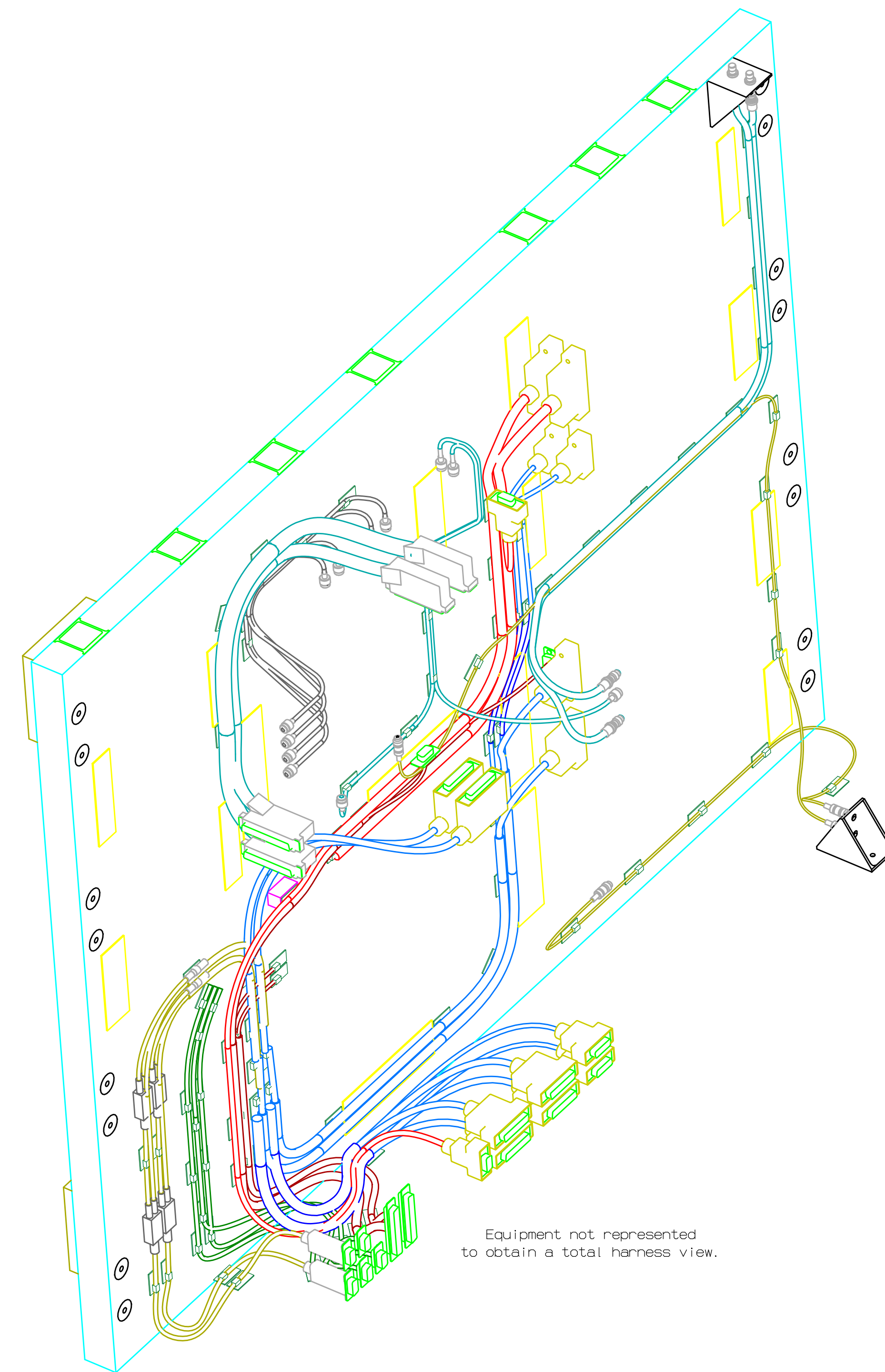
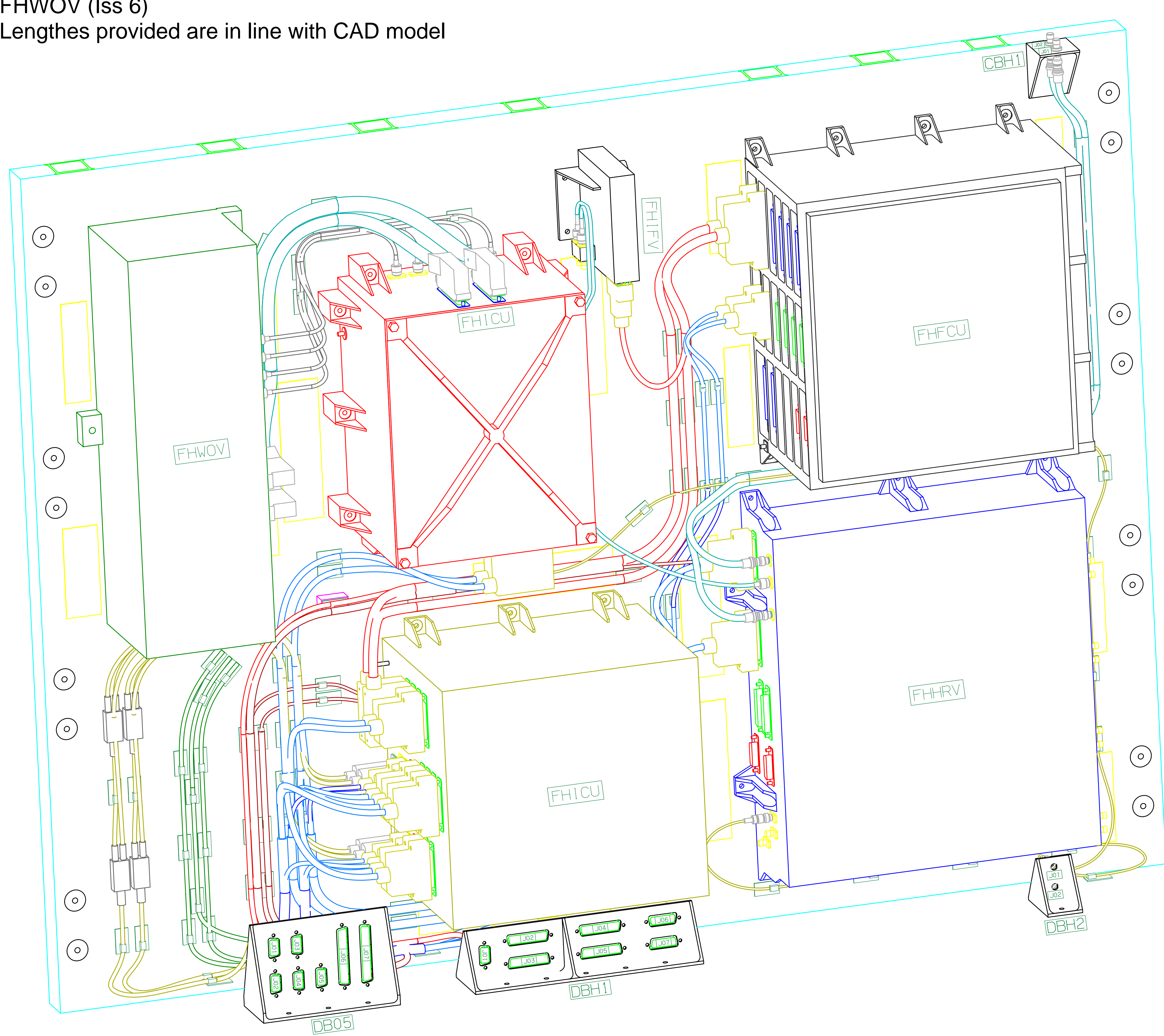


ORTHOGONAL VIEW FROM INSIDE S/C



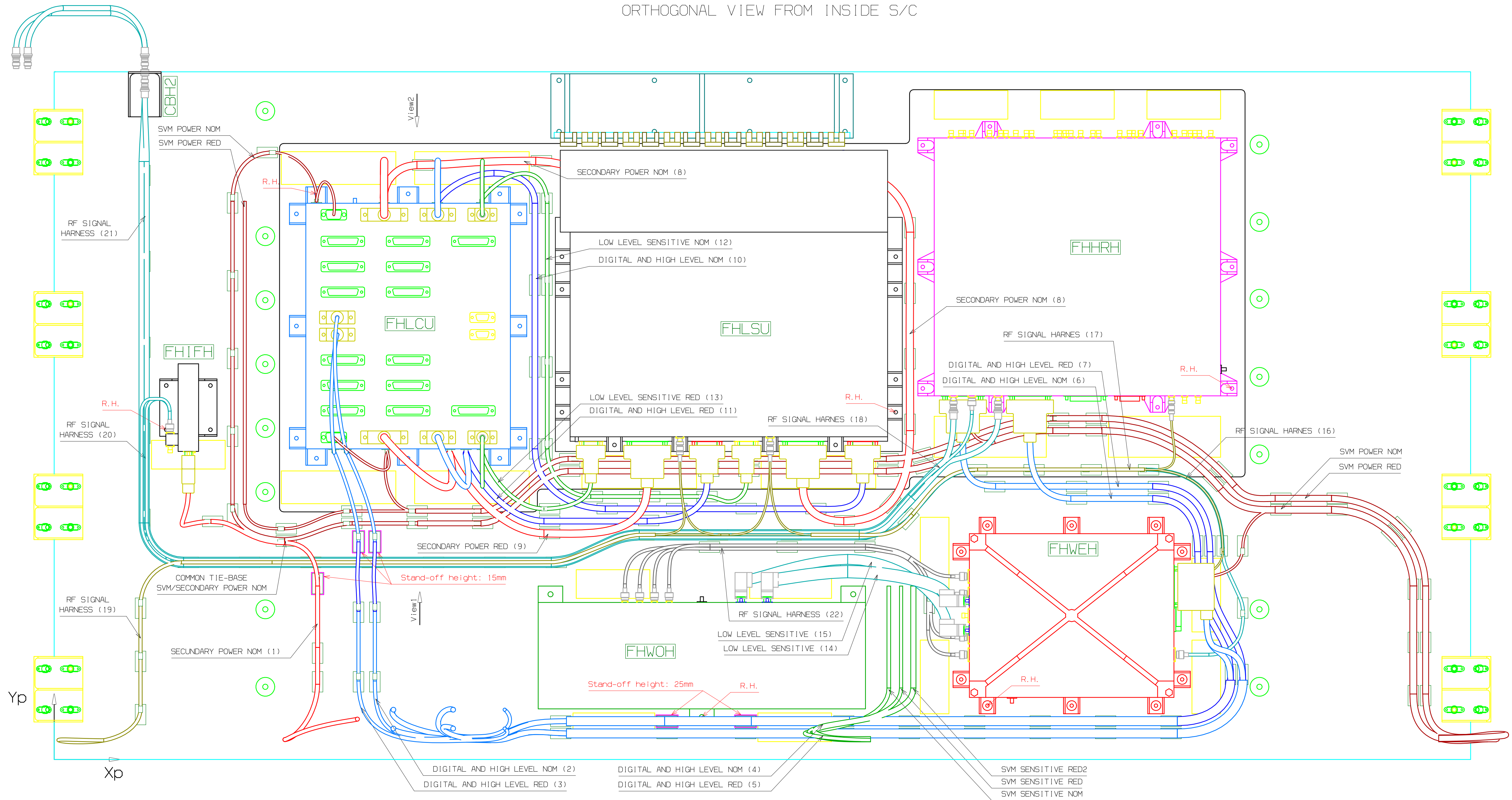
REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY		DRAWN BY	CHECKED BY	APPROVED BY	QUALITY
N/A		VERVL IET J.	PLETINCKX K.	--	--
Rev.	A2	Date	03/05/04	Scale	N/A
				Format	A1
				Sht	2/4
				Title	
				SVM HIFI 2 INSTRUMENT PANEL ASSY	
				DWG N°	
				HP-NXH-DW-1023	

Nota (B. Marchand) : CAD model reflects last changes on FHHRV (Iss 3.5),
 FHWOV (Iss 6)
 Lengthes provided are in line with CAD model

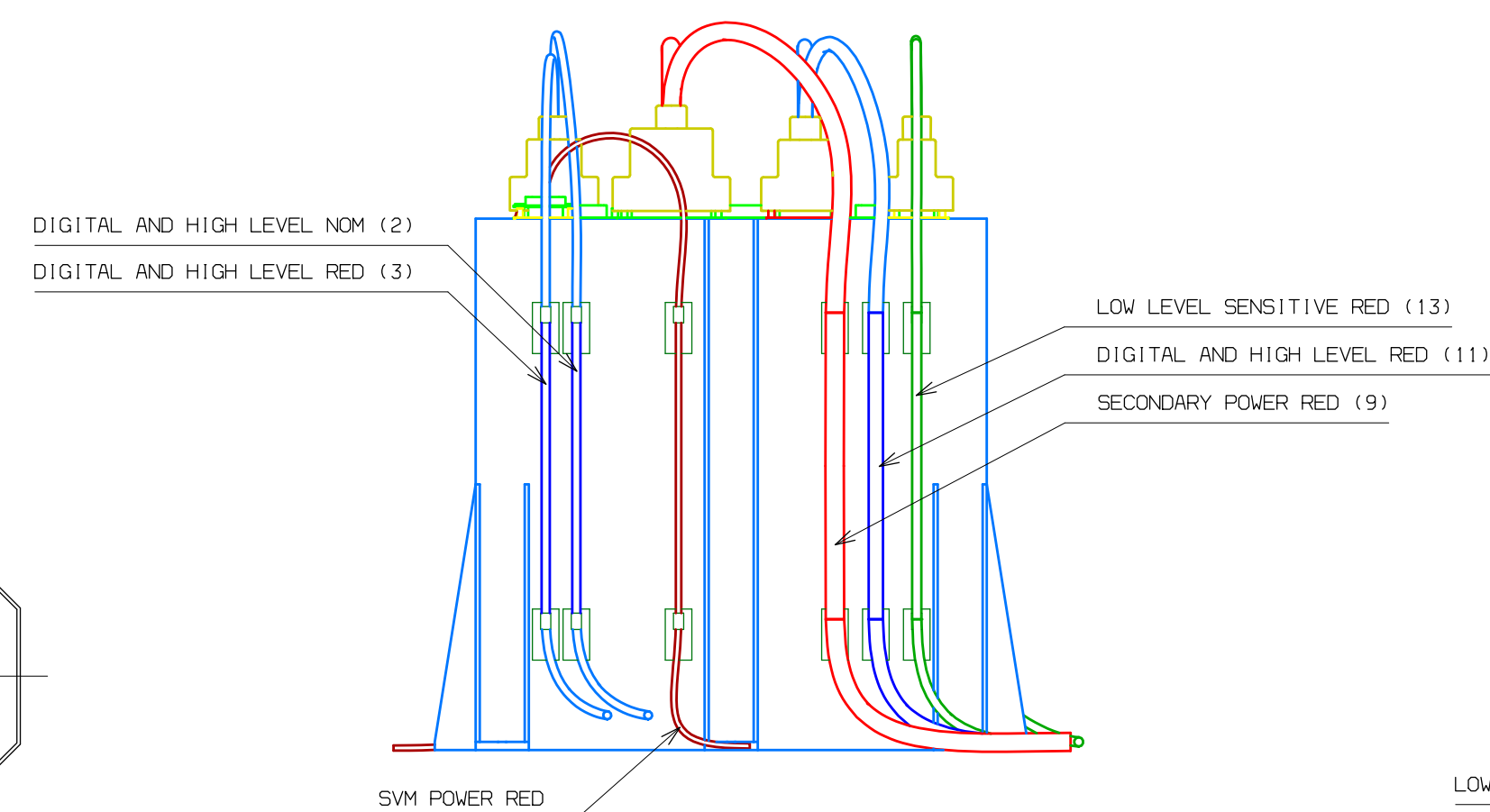


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Rev.	A2	Date	03/05/04	Scale	N/A
				Format	A1
				Sht	4/4
			Title		
			SVM HIFI 2 INSTRUMENT PANEL ASSY		
			DWG N°		
			HP-NXH-DW-1023		

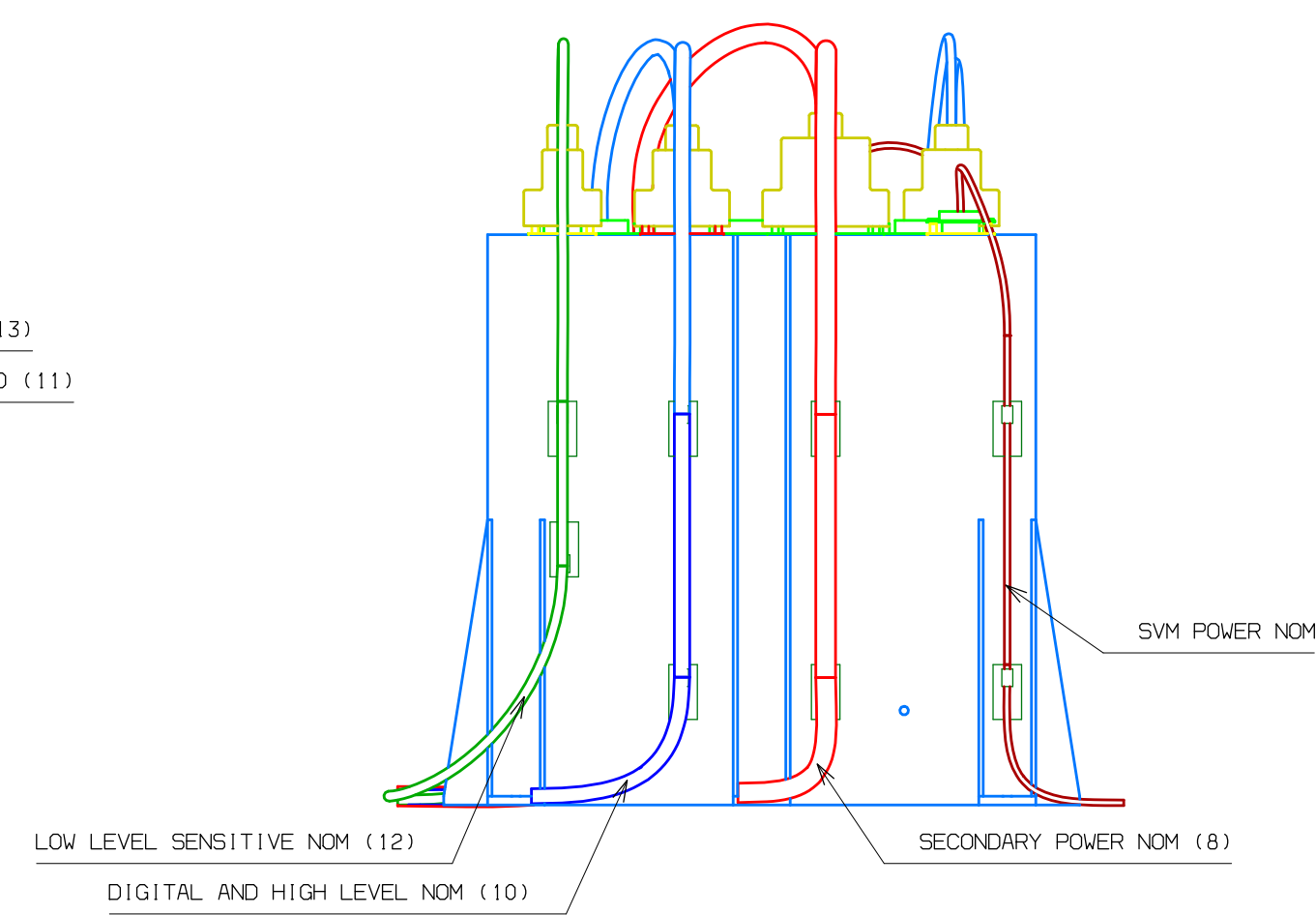
ORTHOGONAL VIEW FROM INSIDE S/C



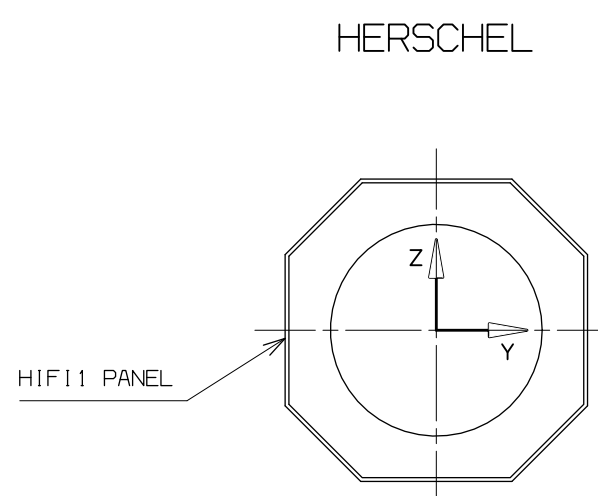
FHLCU View1



FHLCU View2

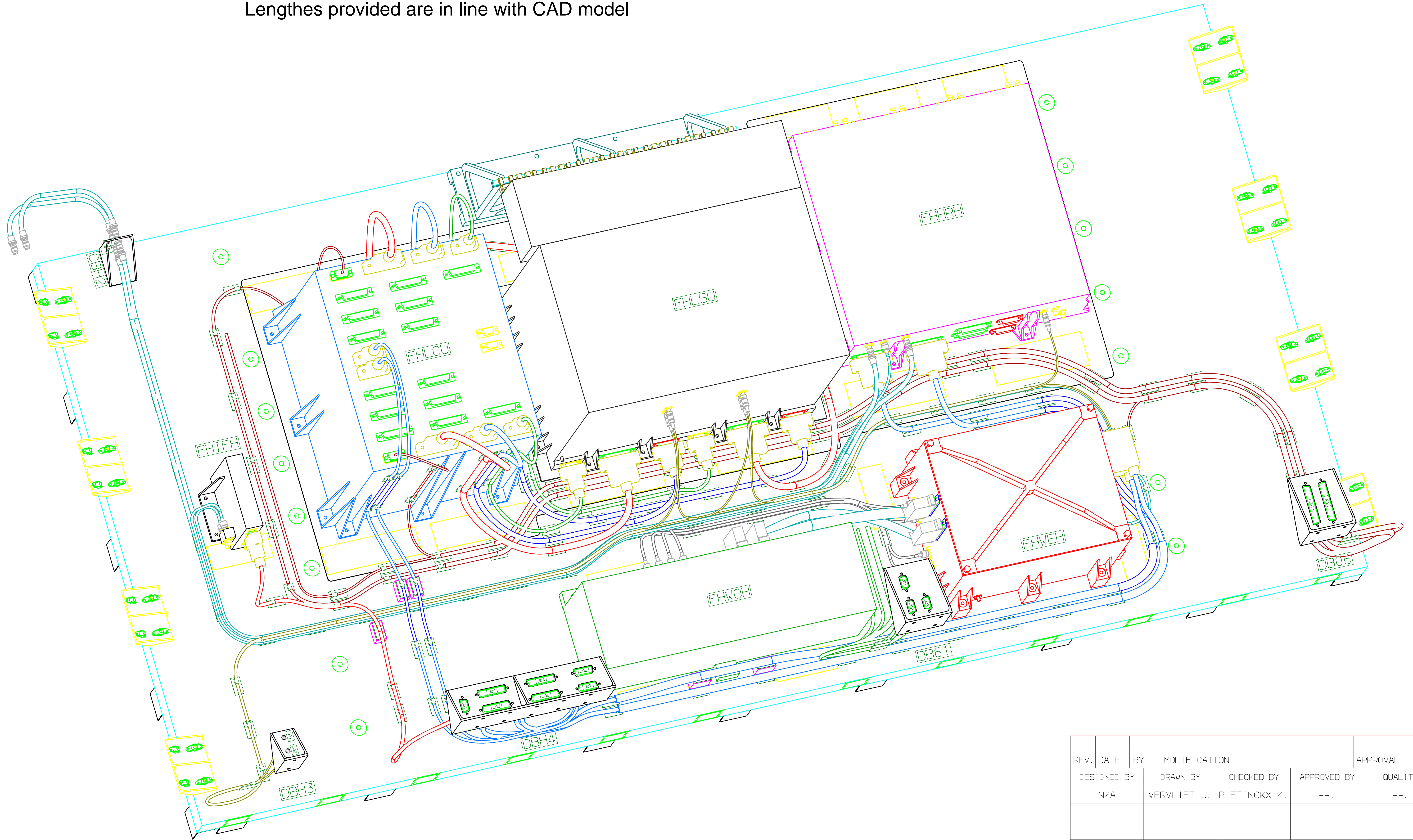



- NOTE:
- (1) Bundle id.: PWR-2b *
 - (2) Bundle id.: DIG-3c *
 - (3) Bundle id.: DIG-4c *
 - (4) Bundle id.: DIG-5c/DIG-9c *
 - (5) Bundle id.: DIG-6c/DIG-10c *
 - (6) Bundle id.: DIG-9c *
 - (7) Bundle id.: DIG-10c *
 - (8) Bundle id.: PWR-4 *
 - (9) Bundle id.: PWR-5 *
 - (10) Bundle id.: DIG-13 *
 - (11) Bundle id.: DIG-14 *
 - (12) Bundle id.: ANL-1 *
 - (13) Bundle id.: ANL-2 *
 - (14) Bundle id.: ANL-3 *
 - (15) Bundle id.: ANL-4 *
 - (16) Bundle id.: RF-3/RF-7 *
 - (17) Bundle id.: RF-3/RF-5/RF-7 *
 - (18) Bundle id.: RF-1/RF-9a/RF-10c *
 - (19) Bundle id.: RF-6a/RF-8a *
 - (20) Bundle id.: RF-1/RF-3/RF-9a/RF-10c *
 - (21) Bundle id.: RF-9a/RF-10c *
 - (22) Bundle id.: RF-11/RF-12/RF-13/RF-14 *
- * In reference with H-P-4-NXH-RP-0020 iss. A2

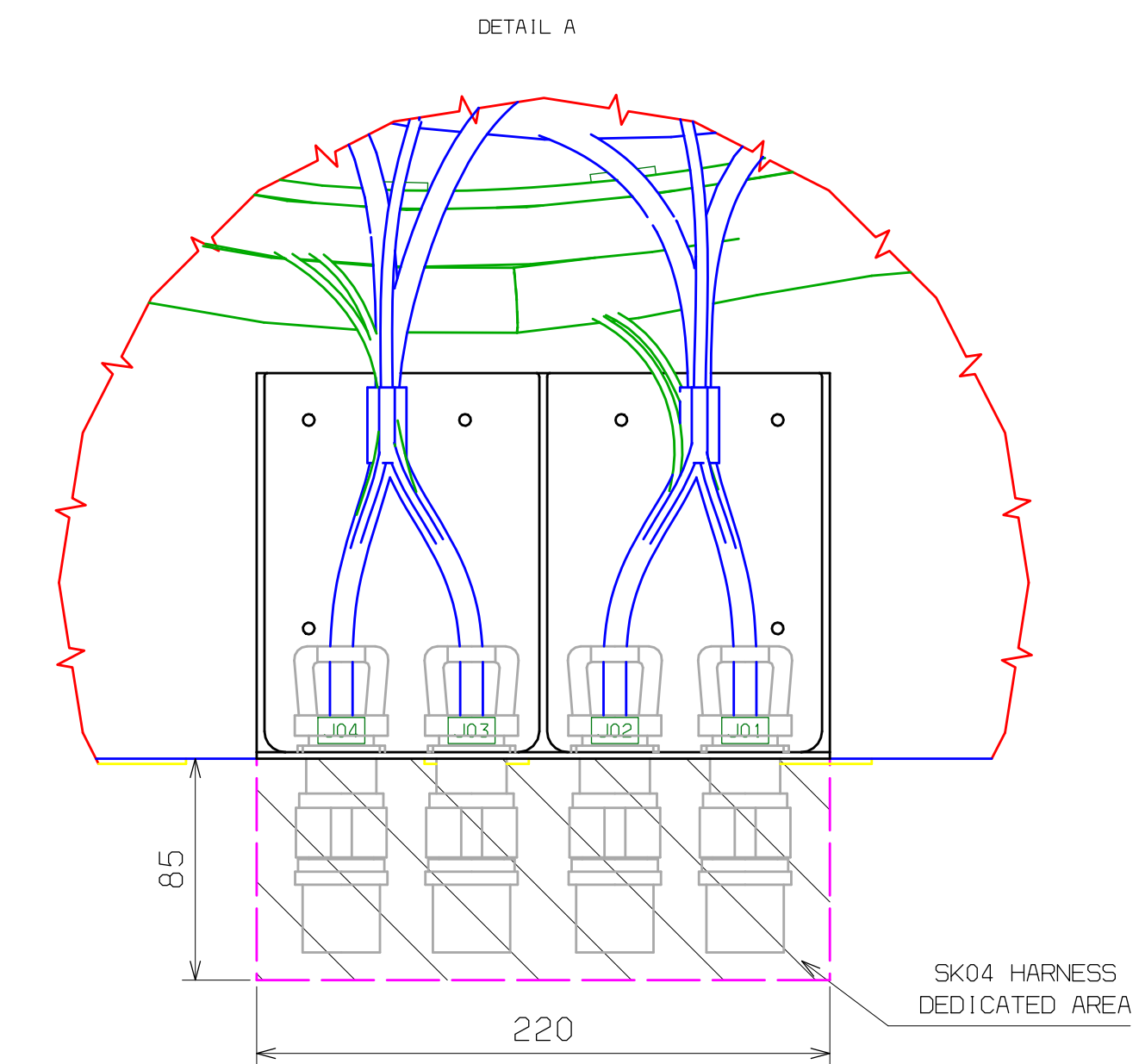
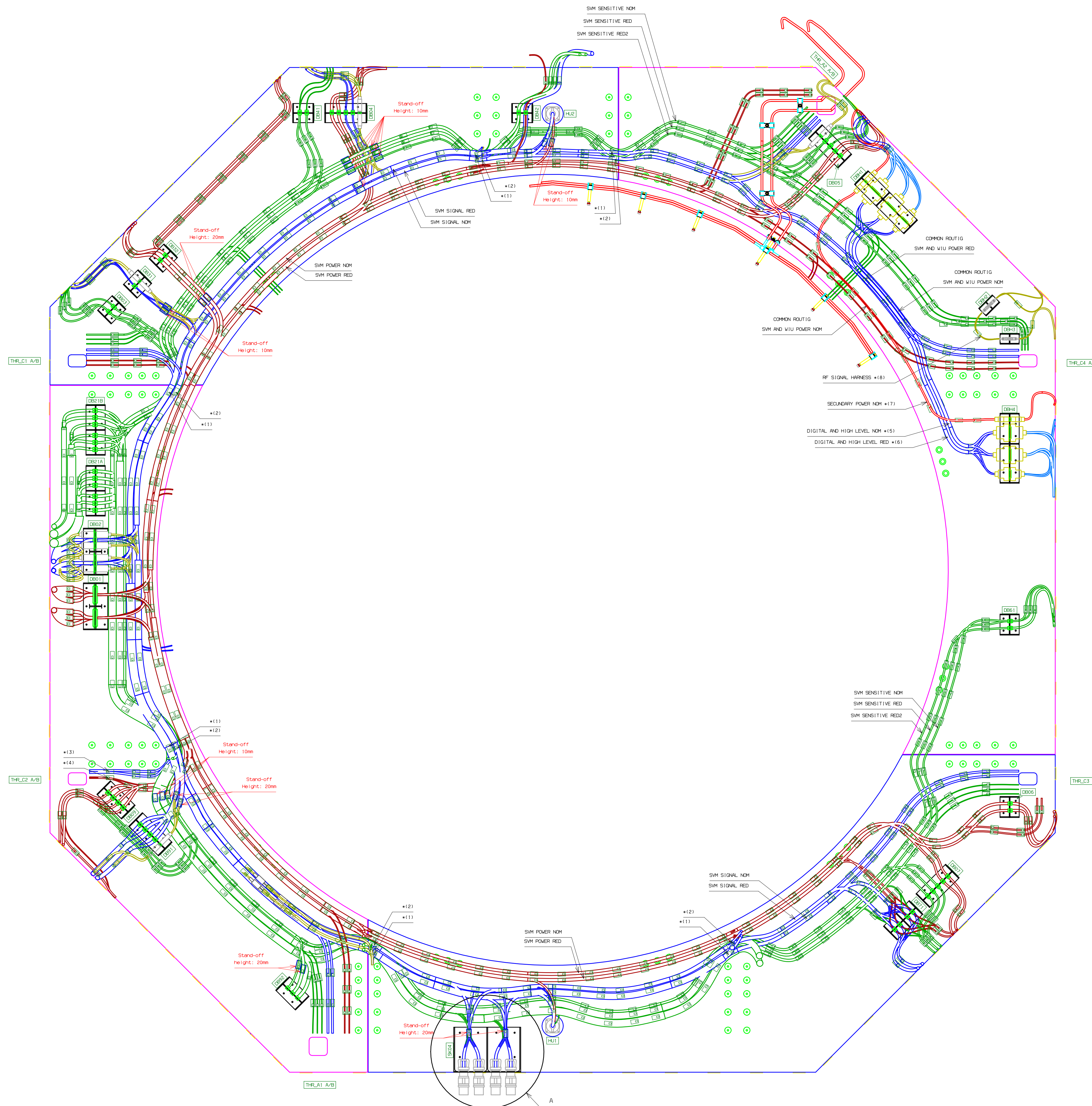


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				Sht	1/4
				Title	
				SVM HIFI 1 INSTRUMENT PANEL ASSY	
				DWG N°	
				HP-NXH-DW-1024	


Nota (B. Marchand) : CAD model reflects last changes on FHLSU (Iss P4),
 FHHRH (Iss 3.5), FHWOH (Iss 6)
 Lengthes provided are in line with CAD model

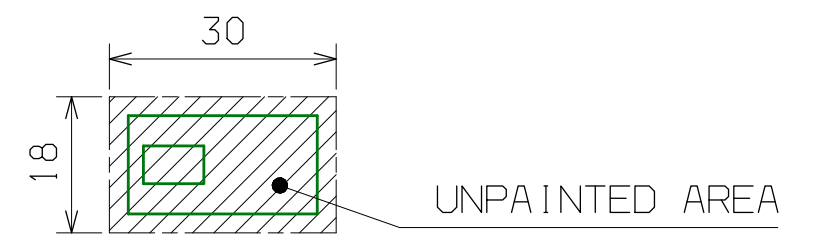
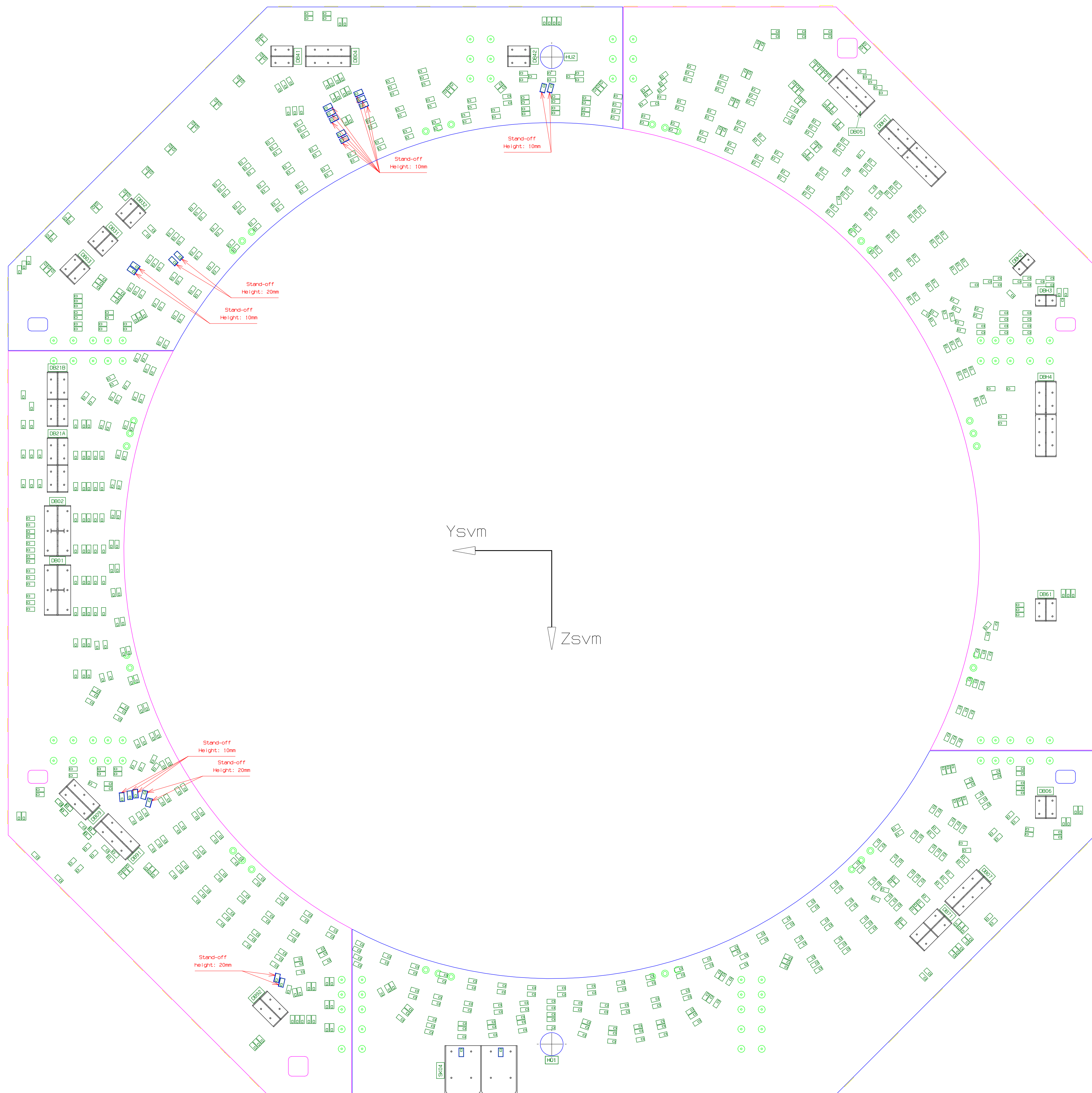


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Rev.	Date	Scale	Format	Sht	
A2	03/05/04	N/A	A1	4/4	
			Title		
			SVM HIFI 1 INSTRUMENT PANEL ASSY		
			Dwg N°		
			HP-NXH-DW-1024		



NOTE: *(1): Common tie-base SVM Signal Nom and Sensitive Nom.
 *(2): Common tie-base SVM Signal Nom, Sensitive Red and Sensitive Red2
 *(3): Common tie-base SVM Signal Nom and Red
 *(4): Common tie-base SVM Power Nom and Red
 *(5) Bundle id.: DIG-3b/DIG-5b/DIG-9b **
 *(6) Bundle id.: DIG-4b/DIG-6b/DIG-10b **
 *(7) Bundle id.: PWR-2a **
 *(8) Bundle id.: RF-6b/RF-8b **
 ** In reference with H-P-4-NXH-RP-0020 iss. A2

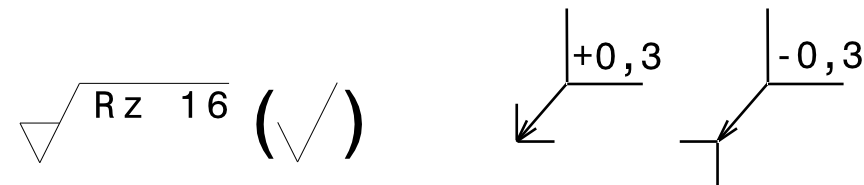
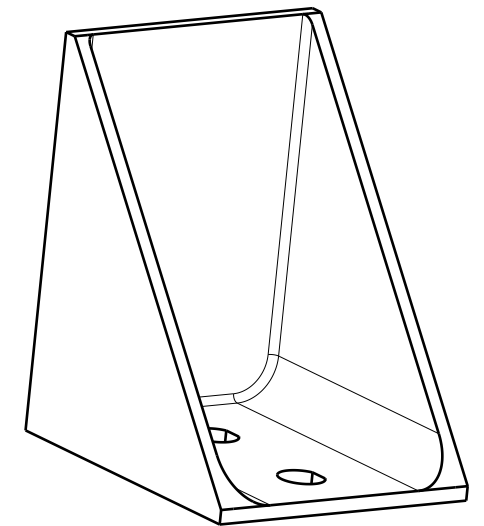
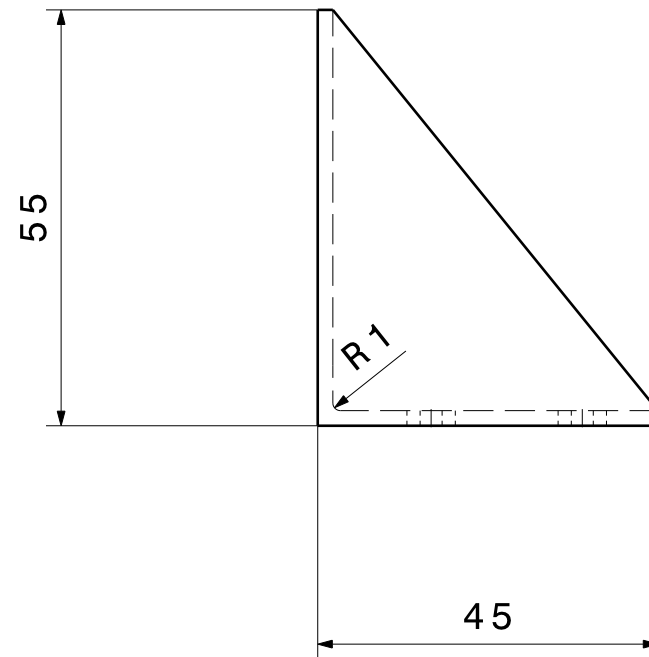
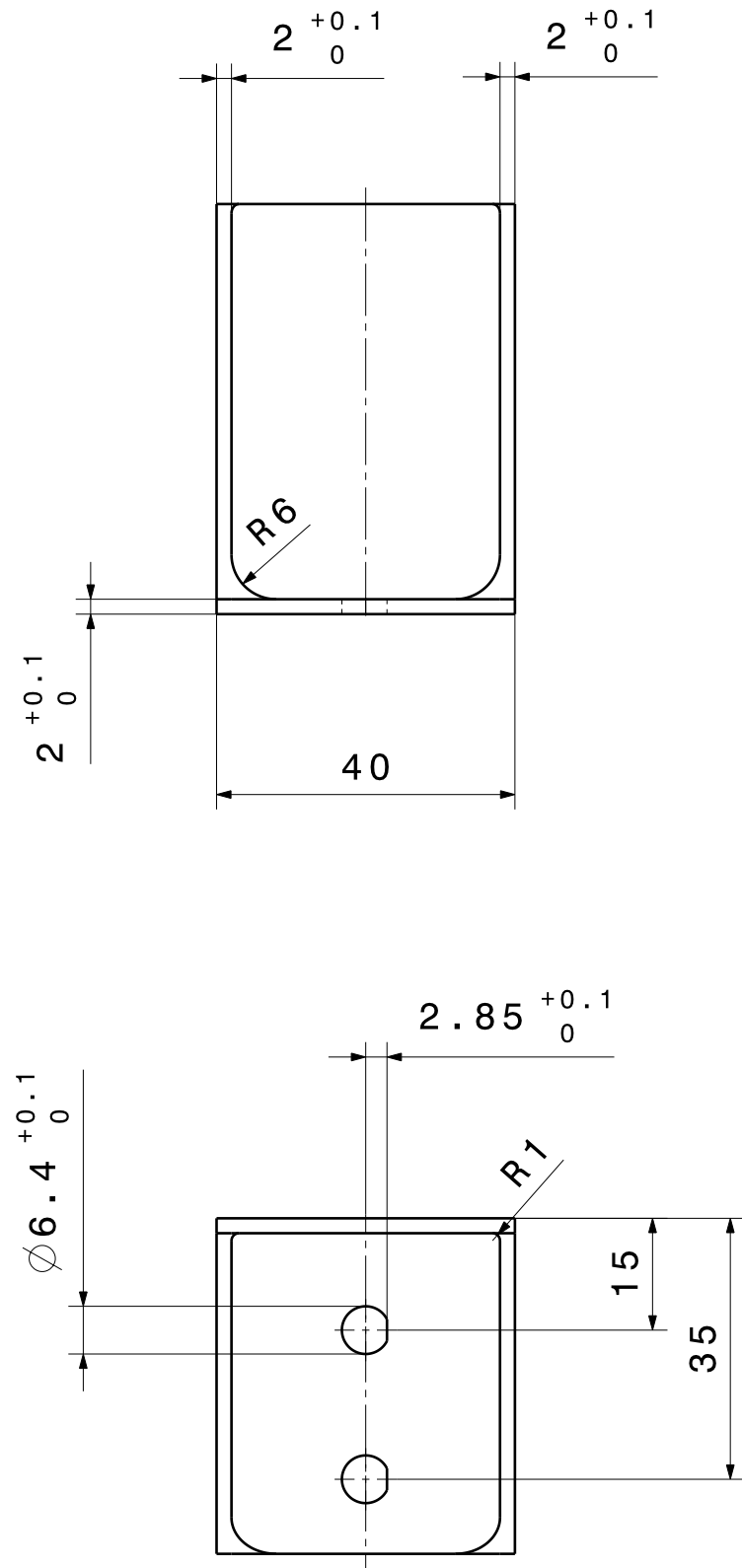
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Rev.	A2	Date	03/05/04	Scale	N/A
		Format	A1	Sht	1/2
			Title SVM LOWER FLOOR INSTRUMENT PANEL ASSY DWG N° HP-NXH-DW-1050		



REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY		DRAWN BY	CHECKED BY	APPROVED BY	QUALITY
N/A		VERVL IET J.	PLETINCKX K.	--	--
Rev.	A2	Date	03/05/04	Scale	N/A
				Format	A1
				Sht	2/2
			Title		
			SVM LOWER FLOOR INSTRUMENT PANEL ASSY		
			Dwg N°		
			HP-NXH-DW-1050		

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Approved	Struct/Therm	Proj/Syst	PA	Config
Data	Name			

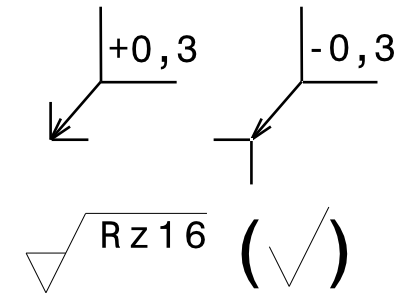
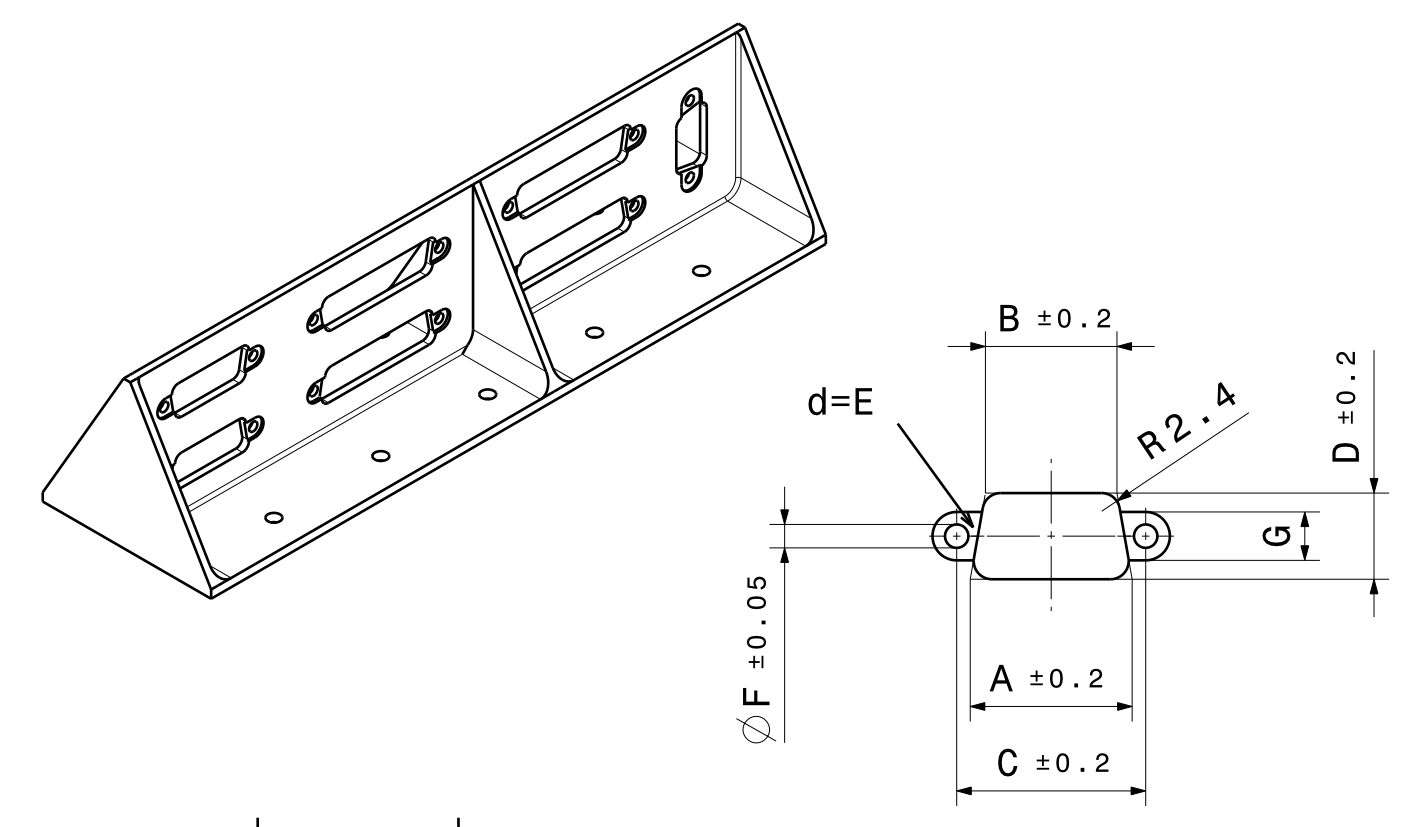
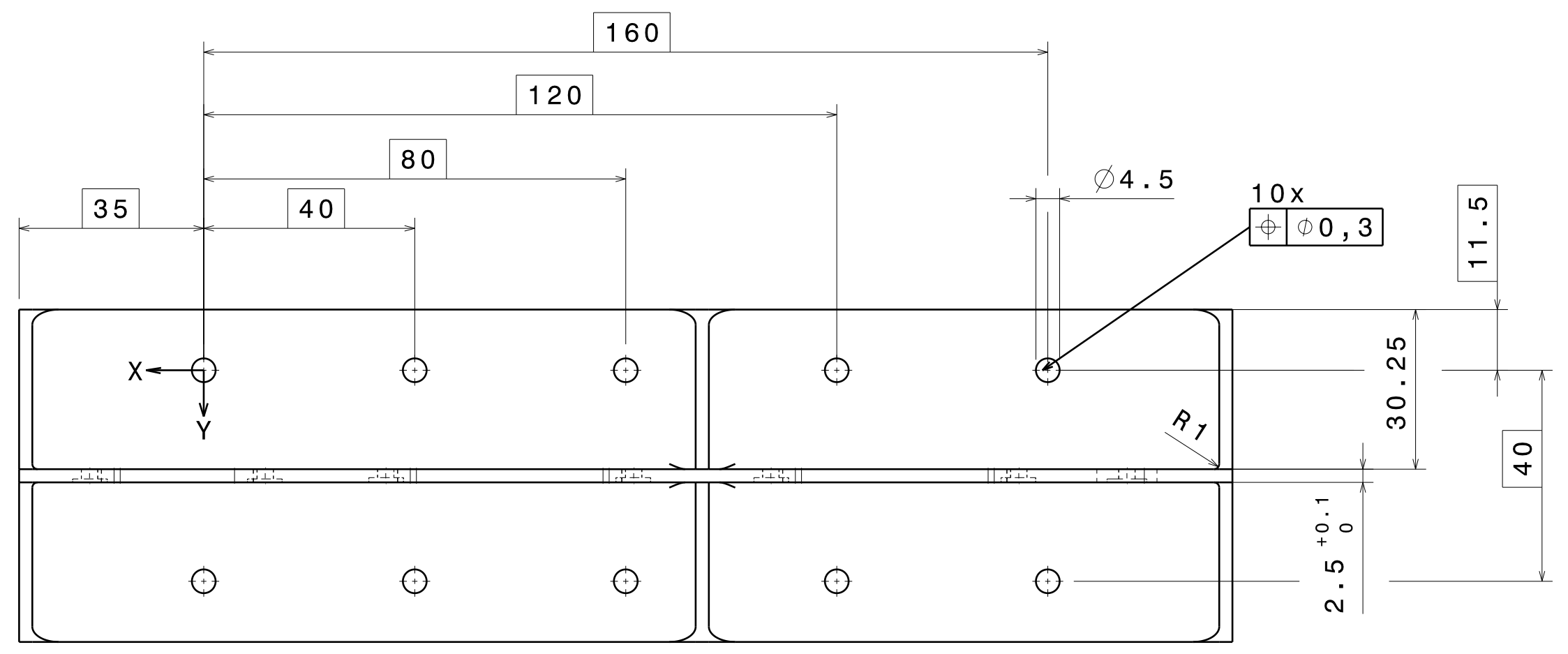
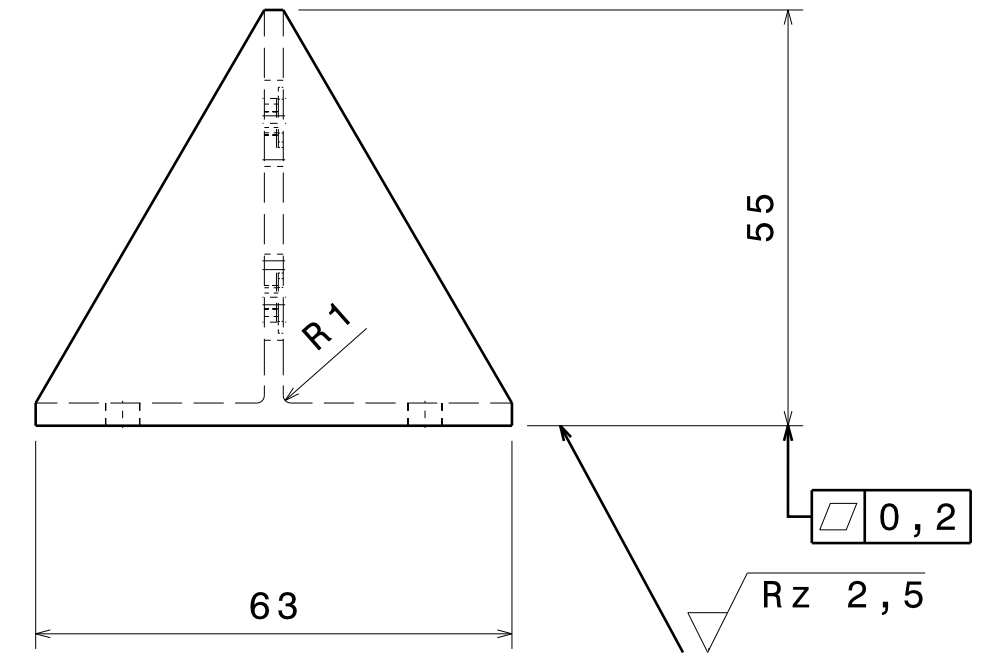
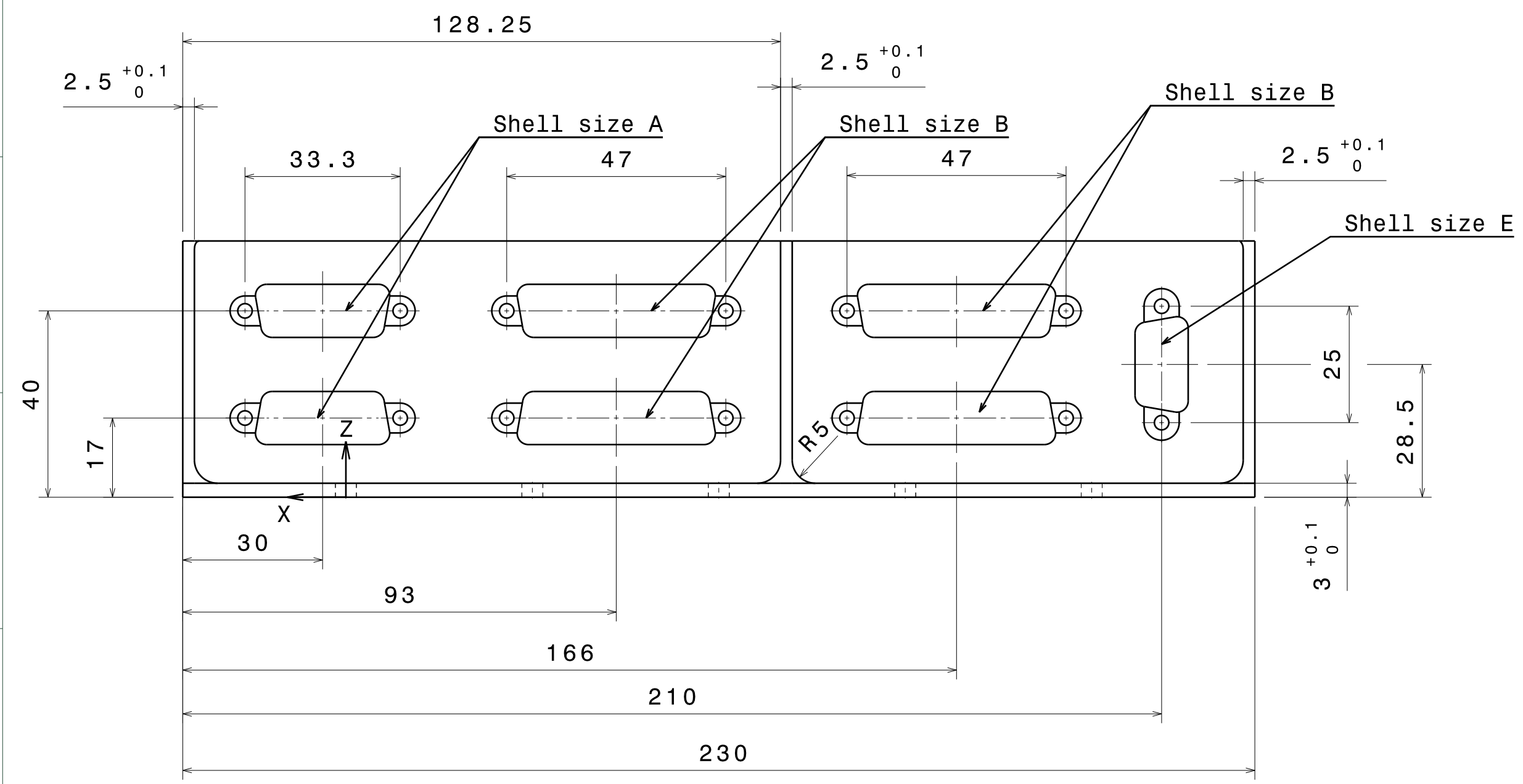


liquid penetrant inspection according to ASTM E1417-95a

Surface	Scale	General tolerances	Mass	DIN	CAD Drawing
-	-	DIN ISO 2768-fK	35 g	A3	No manual Changes
LN9368-4301.3	1:1	Material			
-	-	3.4364 T7351			
Prepared	Date	Name	SVM Harness		
Checked	24.05.04	Re/SA	-		
File	Bracket HP-17-01-01-KT.CATPart Bracket HP-17-01-01-KT.CATDrawing		Bracket		
1	First Issue	24.05.04	Re/SA		Sheet 1
Issue	Change(DCN/ECP)	Date	Name		of 1
			HP-17-01-01-KT		

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Approved Struct/Therm Pro/Syst PA
 Date Name



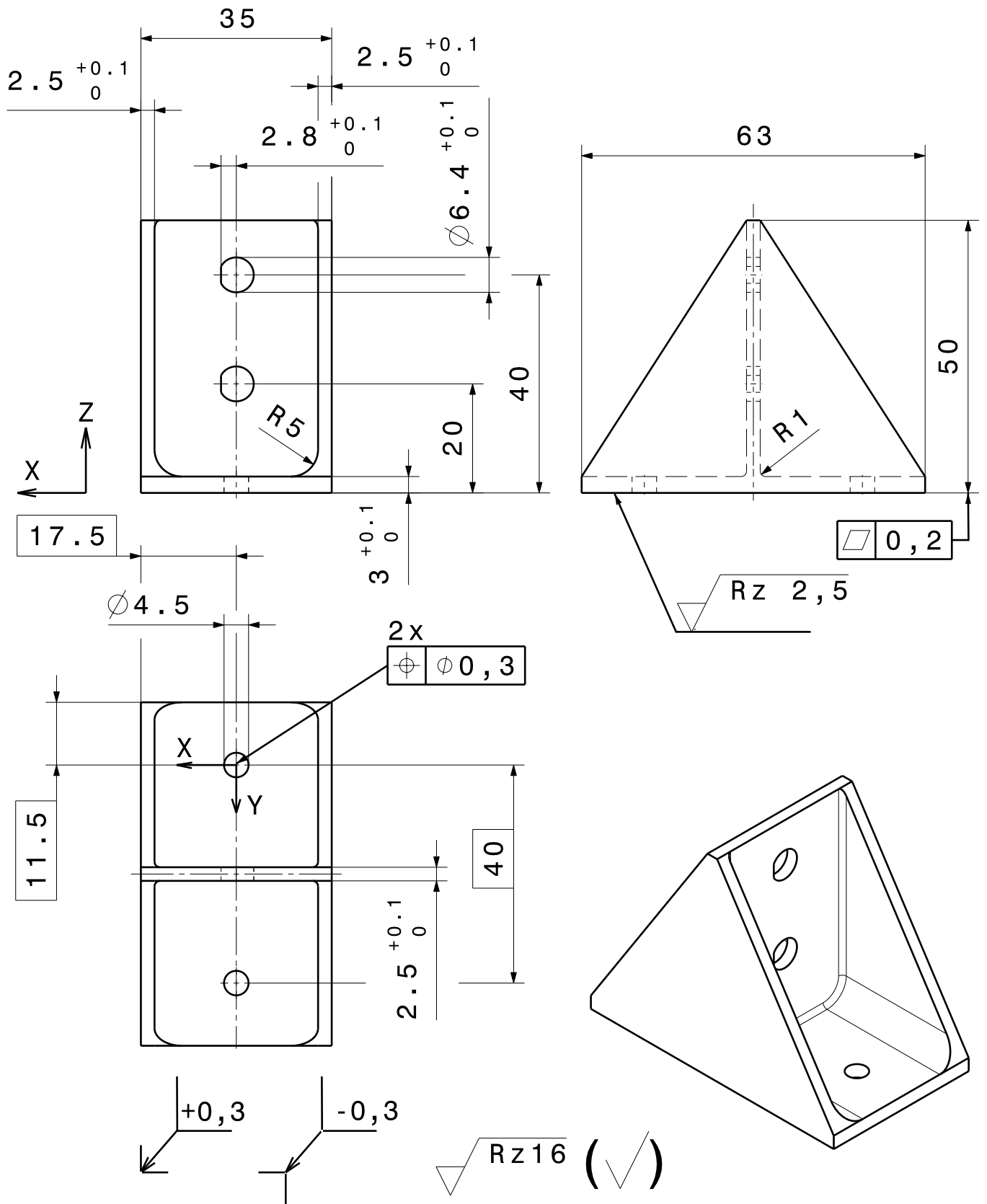
	Shell size E	Shell size A	Shell size B	Shell size C	Shell size D
A	21,42	29,72	43,42	60,02	57,22
B	17,4	25,7	39,4	56	52,25
C	25	33,3	47	63,5	61,1
D	11,4	11,4	11,4	11,4	14,1
E	0,65	0,65	0,9	0,9	0,9
F	3,1	3,1	3,1	3,1	3,1
G	6,4	6,4	6,4	6,4	6,4

liquid penetrant inspection according to ASTM E1417-95a

Surface	Scale	General tolerances	Mass	DIN	CAD Drawing
LN9368 - 4301.3	1 : 1	DIN ISO 2768-fk	213 g	A4	No manual Changes
Prepared	Date	Name	SVM Harness		
Checked	12.01.04	Re/SA	-		
File		Bracket HP-11-01-03-KT.CATPart			
Bracket HP-11-01-03-KT.CATDrawing		Bracket			
-					Sheet 1
HP-11-01-03-KT					of 1



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liquid penetrant inspection according to ASTM E1417-95a

Approved	Struct/Therm	Proj/Syst	PA	Config
Data	Name			

1	First Issue	19.05.04	Re/SA
0	DRAFT	12.01.04	Re.
Issue	Change(DCN/ECP)	Date	Name

Surface	Scale
-	-
LN9368 - 4301.3	1 : 1
Prepared	Date
Checked	Name
File	Bracket HP-01-01-02-KT.CATPart
	Bracket HP-01-01-02-KT.CATDrawing

General tolerances	Mass	DIN	CAD Drawing
DIN ISO 2768-fk	50 g	A4	No manual Changes
Material			
3.4364 T7351			
SVM Harness			
Bracket			
			Sheet 1
HP-01-01-02-KT			of 1



DOCUMENT COMPOSITION

Pages	Annexes	Others
15	22	0






DOCUMENT IDENTIFICATION

Project	: Herschel – Planck		
N° Project	: 1680		
N° Contract	:		
Material	: Herschel-Planck SVM Harness		
Doc. Reference	: H-P-4-NXH-RP-0023	A2	
Date	: 04-05-04		

TITLE

H-P WU HFI Harness

This document contains updates made by B. Marchand (06/09/2004)

Written by	Function	Date	Signature
Johan Vervliet	Engineering	04-05-04	
Checked by			
Ken Pletinckx	Project Engineer	06.05.04	
Approved by			
Stéphane Dassy	Project Manager	06-05-04	

H-P WU HFI Harness	Doc Id. : H-P-4-NXH-RP-0023		
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1 Scope

The purpose of this document is to provide a description of the HFI WU harness of the Herschel and Planck S/C.

2 Introduction

The WU belonging to the HFI Experiment are located on the HFI +Z panel (DPU1 and DPU2). Other WU belonging to the HFI Experiment are located on the +Y+Z Panel HFI 0.1K (DCE) ,+Y Panel HFI 4K (REU) and Pay-load sub-platform (PAU).

The HFI harness is configured taking into account the different interconnection requirements of the experiment and harness design responsibility. The harness is split into 2 different main groups:

1. SVM Harness
2. Instrument WU Harness

The routing accommodation foreseen to have separate routing paths for each of the above harnesses as well as for main and redundant functions.

Due to the interconnections between the WU located on the two panels, 6 dedicated connector brackets (DBH-, CBH-) are foreseen to route the harnesses.

- DBH11 on Lower Platform to distribute Power and Signal Harnesses
- DBH12 on Lower Platform to distribute Power and Signal Harnesses
- DBH2 on Lower Platform to distribute Signal Harnesses to DCE (0.1K)
- DBH3 on Lower Platform to distribute Power and Signal Harnesses to REU and 4KCDE (4K)

The instrument WU Harness is defined taking into account the harness data provided by Instruments as well as SVM Harness Design in order to verify the relevant accommodation in the SVM configuration.

Additional details/drawings on the harness accommodation are reported in this document.

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3 Applicable Documents

3.1 Applicable documents

Number	Issue	Title
H-P-1-ASPI-SP-0027	4.0	General Design Interface Requirement Specification
H-P-1-ASPI-SP-0042	4.0	SVM Interface Specification
H-P-RP-AI-0025	1.0	SVM Harness Configuration and Design Description

3.2 ALS Baseline Documents

Number	Issue	Title
H-P-IC-AI-0001	04	Herschel/Planck SVM MICD
H-P-LI-AI-0022	05	List of HP SVM 3D CAD models
IF-PHCBA282-200049-CESR	01.00	HFI Pre Amplifier Unit ICD
IC-PHDC-000009-SEA	02.A	Planck HFI 4KCDE ICD
ICD-PLANCK4K-AST-012	02	Planck HFI 4K Cooler Compressor ICD
IF-PHCBC282-200050-CESR	01.01	HFI Readout Electronics Unit ICD
	01.01	ME ICD
TD-PHEB241-100068-ISN	00.02	Planck Dilution Cooler Electronics Unit Design Description

3.3 CATIA Harness Directory Status : HFI

ALS Part Nr.	Rev.	Description	Resp.	Date
HP-212001-19-2	B	CENTRE CONE HRN ELT ASSY		02.04.04
HP-212002-19-2	A	CENTRE CONE HRN MECH ASSY		02.04.04
HP-212001-21-2	C	+Z LATERAL PANEL HRN ELT ASSY (HFI)		05.05.04
HP-212002-21-2	N/A	+Z LATERAL PANEL HRN MECH ASSY (HFI)		N/A
HP-392001-21-2	E	+Z LATERAL PANEL HRN ELT ASSY (HFI)		05.05.04
HP-392002-21-2	A	+Z LATERAL PANEL HRN MECH ASSY (HFI)		02.04.04
HP-212001-22-2	C	+Y+Z LATERAL PANEL HRN ELT ASSY (0.1K)		05.05.04
HP-212002-22-2	N/A	+Y+Z LATERAL PANEL HRN ELT ASSY (0.1K)		N/A
HP-392001-22-2	E	+Y+Z LATERAL PANEL HRN ELT ASSY (0.1K)		05.05.04
HP-392002-22-2	N/A	+Y+Z LATERAL PANEL HRN ELT ASSY (0.1K)		N/A
HP-212001-23-2	C	+Y LATERAL PANEL HRN ELT ASSY (4K)		05.05.04
HP-212002-23-2	B	+Y LATERAL PANEL HRN MECH ASSY (4K)		20.02.04
HP-392001-23-2	E	+Y LATERAL PANEL HRN ELT ASSY (4K)		05.05.04
HP-392002-23-2	N/A	+Y LATERAL PANEL HRN MECH ASSY (4K)		N/A
HP-212001-50-2	B	LOWER CLOSURE PANEL HRN ELT ASSY		02.04.04
HP-212002-50-2	B	LOWER CLOSURE PANEL HRN MECH ASSY		02.04.04
HP-392001-50-2	C	LOWER CLOSURE PANEL HRN ELT ASSY		02.04.04
HP-392002-50-2	D	LOWER CLOSURE PANEL HRN MECH ASSY		02.04.04

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ALS Part Nr.	Rev.	Description	Resp.	Date
HP-212001-60-2	A	PAYLOAD SUB-PLATFORM HRN ELT ASSY		02.04.04
HP-212002-60-2	N/A	PAYLOAD SUB-PLATFORM HRN MECH ASSY		N/A
HP-392001-60-2	N/A	PAYLOAD SUB-PLATFORM HRN ELT ASSY		N/A
HP-392002-60-2	A	PAYLOAD SUB-PLATFORM HRN MECH ASSY		02.04.04

H-P WU HFI Harness	Doc Id. : H-P-4-NXH-RP-0023		
	DATE : 04-05-04	Ed / Rev : A2	Page : 8 of 15

4 Document Organisation

4.1 General Information : Drawings

Every Drawing contains all relevant information with reference to the H-P HFI Harness derived from the MICD (Mech. Interface Control Doc.) and the other data provided by instruments, such as :

Power, Signal and Sensitive Routing
 Nominal & Redundant routing
 Mil Bus lay-out
 WIU Harness lay-out
 Mechanical Items lay-out
 Mechanical Items identification

Colour codes used are

colour	Class	Comment
Colour 30 (Dark Red)	1-/POWER	SVM Primary Power
Colour 04 (Light Blue)	2-/SIGNAL	SVM Signal
Colour 45 (Dark Green)	4-/SENS	SVM Sensitive Harness
Colour 75 (Dark Yellow)	2-/Signal	Mil Bus Harness
Colour 02 (Light Red)	1-/PWR	Secondary Power
Colour 120 (Dark Blue)	2-/Signal	Secondary Signal
Colour 111 (Dark Green)	N/A	Tie-base
Colour 05 (Yellow)	N/A	For Information Only

4.2 2D Drawing Numbering System

Each 2D Drawing is identified by H-P-NXH-DW-XXXX

Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DW	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.5

H-P WU HFI Harness	Doc Id. : H-P-4-NXH-RP-0023		
	DATE : 04-05-04	Ed / Rev : A2	Page : 9 of 15

4.3 2D JIG Numbering System

Each 2D JIG Drawing is identified by H-P-NXH-DR-XXXX

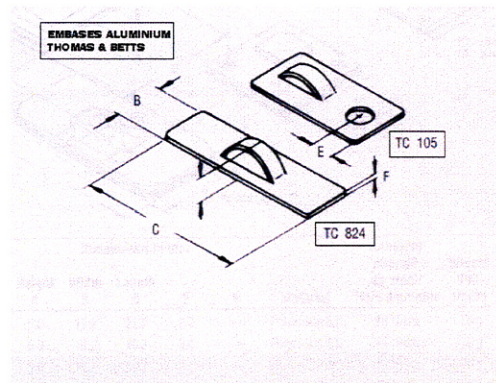
Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DR	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.5

H-P WU HFI Harness	Doc Id. : H-P-4-NXH-RP-0023		
	DATE : 04-05-04	Ed / Rev : A2	Page : 10 of 15

5 Harness Fixing

5.1 Tie-bases

The position of the tie-bases has been designed to meet the requirement to fix the harness bundles on the structure every 100mm maximum. Tiebase type used is TC-105 (Thomas & Betts). Tie-wraps sizes used, are function of bundle diameter and in accordance to the applicable process list.



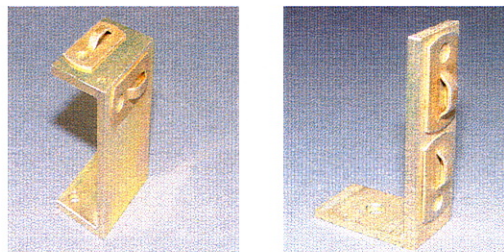
Tie-bases will be glued on the spacecraft structure and will assure harness fixation as well as electrical bonding.

5.2 Stand-off's

To maintain wire-bundles routing and minimize mechanical stress in harness, specific stand-off have been designed, which will be glued on the spacecraft structure.

The stand off designs are well approved at Kayser-Threde and will be modified to the purpose of the SVM Harness. (Pictures below)

Tie-bases will be glued to the stand-off's to allow cable fixation by using fasteners tie-wraps.



We assume 2 types of stand off will be necessary.

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	DATE : 04-05-04	Ed / Rev : A2	Page : 11 of 15

6 2D Drawing Listing

6.1 HFI 2D Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DW-2021	HFI Instrument Panel Assy	27-05-04	B0
H-P-NXH-DW-2022	0.1K Instrument Panel Assy	27-05-04	B0
H-P-NXH-DW-2023	4K Instrument Panel Assy	27-05-04	B0
H-P-NXH-DW-2050	Lower Floor Instrument Panel Assy	27-05-04	B0
H-P-NXH-DW-2060	Sub Platform Instrument Panel Assy		

6.2 HFI JIG Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DR-2021	HFI Instrument Panel Assy	05-05-04	A2
H-P-NXH-DR-2022	0.1K Instrument Panel Assy	05-05-04	A2
H-P-NXH-DR-2023	4K Instrument Panel Assy	05-05-04	A2
H-P-NXH-DR-2050	Lower Floor Instrument Panel Assy	05-05-04	A2
H-P-NXH-DR-2060	Sub Platform Instrument Panel Assy	04-03-04	A0

6.3 HFI 2D Drawings

See Annex

7 HFI Extracted Lengths

7.1 HFI DPU Interconnection with other HFI WU

Bundle Identification	From Connector			To Connector			Bundle						Via	Sq.**		
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	N / R	Cat.	Diam. (mm)	Bending Radius	Mass BNL (g/m)	Conn.+Bck (g)			L Max (mm)	L (mm)
PHBBA-N	DPU P06N	DBMA25P	DB8949105	REU 12 P07	MDM25P	-	Nom	2	9	40	78.56				Bracket	
	DPU P06N	DBMA25P	DB8949105	DBH11 P02	DBMA25S	DB8949001								1661		1
	DBH11 J02	DBMA25P	DB8949001	DBH03 J03	DBMA25S	DB8949001								2070		1
PHBBA-R	DBH03 P03	DBMA25P	DB8949001	REU 12 P06	MDM25P	-								1570		1
	DPU P06R	DBMA25P	DB8949106	REU 13 P07	MDM25P	-	RED	2	9	40	78.56				Bracket	
	DPU P06R	DBMA25P	DB8949106	DBH12 P02	DBMA25S	DB8949001								1075		1
	DBH12 J02	DBMA25P	DB8949001	DBH03 J05	DBMA25S	DB8949001								2087		1
PHBBB-N	DBH03 P05	DBMA25P	DB8949001	REU 13 P06	MDM25P	-								1130		1
	DPU P111	DBMA25P	DB8949105	REU BELTS P01 0-5	MDM09P	-	NOM	1	10	40	93.6			-	Bracket	
	DPU P111	DBMA25P	DB8949105	DBH11 P01	DBMA25S	DB8949001								1625		2
	DBH11 J01	DBMA25P	DB8949001	DBH03 J01	DBMA25S	DB8949001								2061		2
	DBH03 P01	DBMA25P	DB8949001	REU BELTS P01 0	MDM09P	-								1488		2
	DBH03 P01	DBMA25P	DB8949001	REU BELTS P01 1	MDM09P	-								1464		2
	DBH03 P01	DBMA25P	DB8949001	REU BELTS P01 2	MDM09P	-								1434		2
	DBH03 P01	DBMA25P	DB8949001	REU BELTS P01 3	MDM09P	-								1398		2
PHBBB-R	DBH03 P01	DBMA25P	DB8949001	REU BELTS P01 4	MDM09P	-								1361		2
	DBH03 P01	DBMA25P	DB8949001	REU BELTS P01 5	MDM09P	-								1333		2
	DPU P112	DBMA25P	DB8949105	REU BELTS P01 6-11	MDM09P	-	RED	1	10	40	93.6			-	Bracket	
	DPU P112	DBMA25P	DB8949105	DBH12 P01	DBMA25S	DB8949001								1179		2
	DBH12 J01	DBMA25P	DB8949001	DBH03 J02	DBMA25S	DB8949001								2126		2
	DBH03 P02	DBMA25P	DB8949001	REU BELTS P01 6	MDM09P	-								1309		2
	DBH03 P02	DBMA25P	DB8949001	REU BELTS P01 7	MDM09P	-								1282		2
	DBH03 P02	DBMA25P	DB8949001	REU BELTS P01 8	MDM09P	-								1254		2
PHBBC-N	DBH03 P02	DBMA25P	DB8949001	REU BELTS P01 9	MDM09P	-								1214		2
	DBH03 P02	DBMA25P	DB8949001	REU BELTS P01 10	MDM09P	-								1180		2
	DBH03 P02	DBMA25P	DB8949001	REU BELTS P01 11	MDM09P	-								1149		2
	DPU P08N	DBMA25P	DB8949106	DCE P02	DBMA25S	DB8949001	NOM	2	8	40	64.04				Bracket	
	DPU P08N	DBMA25P	DB8949106	DBH11 P03	DBMA25S	DB8949001								2252		1
	DBH11 J03	DBMA25P	DB8949001	DBH02 J01	DBMA25S	DB8949001								912		1
	DBH02P01	DBMA25P	DB8949001	DCE P02	DBMA25S	DB8949001								338		1
	PHBBC-R	DPU P08R	DBMA25P	DB8949106	DCE P03	DBMA25S	DB8949001	RED	2	8	40	64.04				Bracket
DPU P08R		DBMA25P	DB8949106	DBH12 P03	DBMA25S	DB8949001								1761		1
DBH12 J03		DBMA25P	DB8949001	DBH02 J02	DBMA25S	DB8949001								959		1
DBH2P02		DBMA25P	DB8949001	DCE P03	DBMA25S	DB8949001								360		1
PHBBE-N	DPU P07N	DBMA25P	DB8949106	4K CDE P2A	DBMA25S	DB8949001					73.72				Bracket	
	DPU P07N	DBMA25P	DB8949106	DBH11 P04	DBMA25S	DB8949001								2037		1
	DBH11 J04	DBMA25P	DB8949001	DBH03 J04	DBMA25S	DB8949001								2064		1
DBH03 P04	DBMA25P	DB8949001	4KCDE P2A	DBMA25S	DB8949001								867		1	

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Bundle Identification	From Connector			T o Connector			Bundle						Via	Sq.**			
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	N / R	Cat.	Diam. (mm)	Bending Radius	Mass BNL (g/m)	Conn.+ Bck (g)			L Max (mm)	L (mm)	
PHBBE-R	DPU P07R	DBMA25P	DB8949106	4KCDE P2B	DBMA25S	DB8949001		2	8	40	73.72					Bracket	
	DPU P07R	DBMA25P	DB8949106	DBH12 P04	DBMA25S	DB8949001								1525			1
	DBH12 J04	DBMA25P	DB8949001	DBH03 J06	DBMA25S	DB8949001								2067			1
	DBH03 P06	DBMA25P	DB8949001	4K CDE P2B	DBMA25S	DB8949001								1010			1

Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG.
Lengths are measured from connector front face to connector front face.

The last column (**) indicates the sequence in which the different cables must be integrated.
SVM harness is placed before WIU HFI harness.

7.2 HFI DPU Interconnection

Bundle Identification	From Connector			T o Connector			Bundle						Via	Sq.**		
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	Nom / Red	Category	Diameter	Bending Radius	Mass / Meter	Mass Connector			Length Max	Length (m)
# 1	DPU P03N	DAMA15S	DA8949106	DPU P04N	DAMA15P	DA8949106	Nominal	1	10	20	76.4	83.68	-	203	-	-
# 2	DPU P09N	DBMA25P	DB8949106	DPU P10N	DBMA25S	DB8949106	Nominal	1	10	20	76.4	83.68	-	203	-	-
PHBBG 1	DPU P131	DBMA25P	DB8949105	DPU P132	DBMA25P	DB8949105	-	2	10	40	93.08	93.08		1100		1
PHBBG 2	DPU P121	DBMA25P	DB8949105	DPU P122	DBMA25P	DB8949105	-	2	10	40	93.08	93.08		882		1
# 3	DPU P03R	DAMA15S	DB8949106	DPU P04R	DAMA15P	DB8949106	Redundant	1	10	20	104	117	-	203	-	-
# 4	DPU P09R	DBMA25P	DB8949106	DPU P10R	DBMA25S	DB8949106	Redundant	1	10	20	104	117	-	203	-	-

Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG.
Lengths are measured from connector front face to connector front face.

The last column (**) indicates the sequence in which the different cables must be integrated.
SVM harness is placed before WIU HFI harness.

7.3 HFI 4K WU

Bundle Identification	From Connector			T o Connector			Bundle						Via	Sq.**		
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	N / R	Category	Diam. (mm)	Bending Radius	Mass BNL (g/m)	Conn.+ Bck (g)			L Max (mm)	L (mm)
PHDE	4KCAU size E	size E (9P)	100P1574-09-1-C	WU-CRYO Bracket	Size E (9P)	-			6	20	60				2944	2
PHDFA-A	4KCDE P4A	DEMA09P	100P1574-09-1-C	4KCCU C122	DEMA09	100P1574-09-1-C		2 (PPO)	5	20	70				365	2
PHDFA-B	4KCDE P4B	DEMA09P	100P1574-09-1-C	4KCCU C123	DEMA09	100P1574-09-1-C		2 (PPO)	5	20	70				368	2
PHDFB	4KCDE P5	SCBM5W5P85000G	100P1574-25-1-C	4KCCU C124X	340200801B301	-		2 (FORCE)	5	20	100				410	2
PHDFC-A	4KCDE P3A	DEMA09P	100P1574-09-1-C	4KCCU C120	DEMA09	100P1574-09-1-C		1 (POW)	6	24	80				277	1
PHDFC-B	4KCDE P3B	DEMA09P	100P1574-09-1-C	4KCCU C121	DEMA09	100P1574-09-1-C		1 (POW)	6	24	80				309	1
PHDFD	4KCDE P6	DCMA37P	100P1574-37-1-C	4KCAU size C	DCMA62S	100P1574-37-1-C		2 (TEMP)	14	56	360				721	2
PHDFE	4KCDE P9	DAMA15P	100P1574-15-1-C	4KCCU P137	DEMA09S	100P1574-09-1-C		2 (ANC.)	6	24	90				380	2
PHDK	4KCDE P7	DCMA37P	N/A	CBH4K J02	DCMA37X	N/A		2							1318	3

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Bundle	From Connector			T o Connector			Bundle								Via	Sq.**
Identification	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	N / R	Category	Diam. (mm)	Bending Radius	Mass BNL (g/m)	Conn.+Bck (g)	L Max (mm)	L (mm)		
PHDK	4KCDE P8	DAMA15P	N/A	CBH4K J01	DAMA15X	N/A		2						1278		3

Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG.
Lengths are measured from connector front face to connector front face.

The last column (**) indicates the sequence in which the different cables must be integrated.
SVM harness is placed before WIU HFI harness.

7.4 HFI 0.1K WU-CRYO

Bundle	From Connector			T o Connector			Bundle								Via	Sq.**
Identification	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	Nom / Red	Category	Diameter	Bending Radius	Mass (m)	Conn.+Bck (g)	L Max (mm)	L (mm)		
PHEBG	DCE P08	MDM 25	-	WU-CRYO Bracket	-	-			8	32	110,4			5125		2
PHEBG	DCE P09	MDM 37	-	WU-CRYO Bracket	-	-			8	32	110,4			4881		2
# 1	DCE P07	MDM 25	-	He-Tank X	N/A	N/A			2,8	15	9,2			2997*		1
# 1	DCE P07	MDM 25	-	He-Tank X	N/A	N/A			2,8	15	9,2			5002*		1
# 1	DCE P07	MDM 25	-	He-Tank X	N/A	N/A			2,8	15	9,2			2725*		1
# 1	DCE P07	MDM 25	-	He-Tank X	N/A	N/A			2,8	15	9,2			4598*		1

* Flying leads, no overlength added

Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG.
Lengths are measured from connector front face to connector front face.

The last column (**) indicates the sequence in which the different cables must be integrated.

7.5 HFI REU-PAU

Bundle	From Connector			T o Connector			Bundle								Via	Sq.**
Identification	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	Nom / Red	Category	Diameter	Bending Radius	Mass / m	Conn.+Bck (g)	L Max (mm)	L (mm)		
PHCBD	REU P05 PHCBCXX	MDM 25S	-	PAU P12/P13 PHCBAXX	DCMA37S	(DC8949405)		2	15	75	350		5000	-		1
PHCBD	REU P06 PHCBCXX	MDM 09S	-	PAU P12/P13 PHCBAXX	DCMA37S	(DC8949405)										
PHCBD	REU P07 PHCBCXX	MDM 09S	-	PAU P12/P13 PHCBAXX	DCMA37S	(DC8949405)										
PHCBD	REU P08 PHCBCXX	MDM 09S	-	PAU P12/P13 PHCBAXX	DCMA37S	(DC8949405)										
PHCBD	REU P09 PHCBCXX	MDM 09S	-	PAU P12/P13 PHCBAXX	DCMA37S	(DC8949405)										
PHCBD	REU P10 PHCBCXX	MDM 09S	-	PAU P12/P13 PHCBAXX	DCMA37S	(DC8949405)										
PHCBD	REU P11 PHCBCXX	MDM 09S	-	PAU P12/P13 PHCBAXX	DCMA37S	(DC8949405)										

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Bck type between brackets are uptill now unknown by Nexans. However Nexans has worked with the most logic bck type to be used.

Sequence with other harnesses on sub-platform:

- SVM harness is placed before both WIU HFI and WIU LFI harnesses are placed.
- HFI WIU harness is placed before WIU LFI harness.

There is no interference between the REU-PAU WIU HFI harness and other harnesses on the 4K-panel. REU-PAU WIU HFI harness will be placed after SVM and other WIU HFI harnesses. The last column (**) indicates the sequence in which the different cables must be integrated.

Three different sets of cables between the REU and the PAU boxes are requested.

Lenghts between the corresponding connectors in each set must be the same while the lenghts between the sets may be different.

The individual cable lenghts are given in the following table.

	PAU 00 P13	PAU 01 P13	PAU 02 P13	PAU 03 P13	PAU 04 P13	PAU 05 P13	PAU 06 P13	PAU 07 P13	PAU 08 P13	PAU 09 P13	PAU 10 P13	PAU 11 P13
REU P05	3712	3709	3756	3766	3798	3754	3771	3781	3830	3873	3894	3915
REU P06	3655	3652	3700	3709	3744	3701	3718	3727	3774	3816	3837	3858
REU P07	3592	3589	3637	3646	3679	3635	3652	3662	3711	3754	3775	3796
REU P08	3557	3560	3602	3611	3646	3603	3620	3629	3676	3719	3740	3761
REU P09	3695	3692	3741	3748	3633	3590	3607	3617	3536	3579	3599	3620
REU P10	3730	3727	3775	3785	3668	3625	3642	3652	3571	3613	3634	3655
REU P11	3793	3790	3838	3847	3731	3688	3705	3715	3634	3677	3698	3719

Bundle 1
Bundle 2
Bundle 3

Note: - The lenghts between REU and the PAU xxP12 connectors are 50mm shorter than those indicated in the table above.
 - Lenghts are measured from connector front face to connector front face.

We can derive three main sets with approximately the same lenghts from this table:

- Bundle 1 : Link between PAU 00 P12/P13 upto PAU 03 P12/P13 and the corresponding REU connectors.
- Bundle 2 : Link between PAU 04 P12/P13 upto PAU 07 P12/P13 and the corresponding REU connectors.
- Bundle 3 : Link between PAU 07 P12/P13 upto PAU 11 P12/P13 and the corresponding REU connectors.

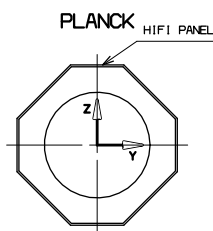
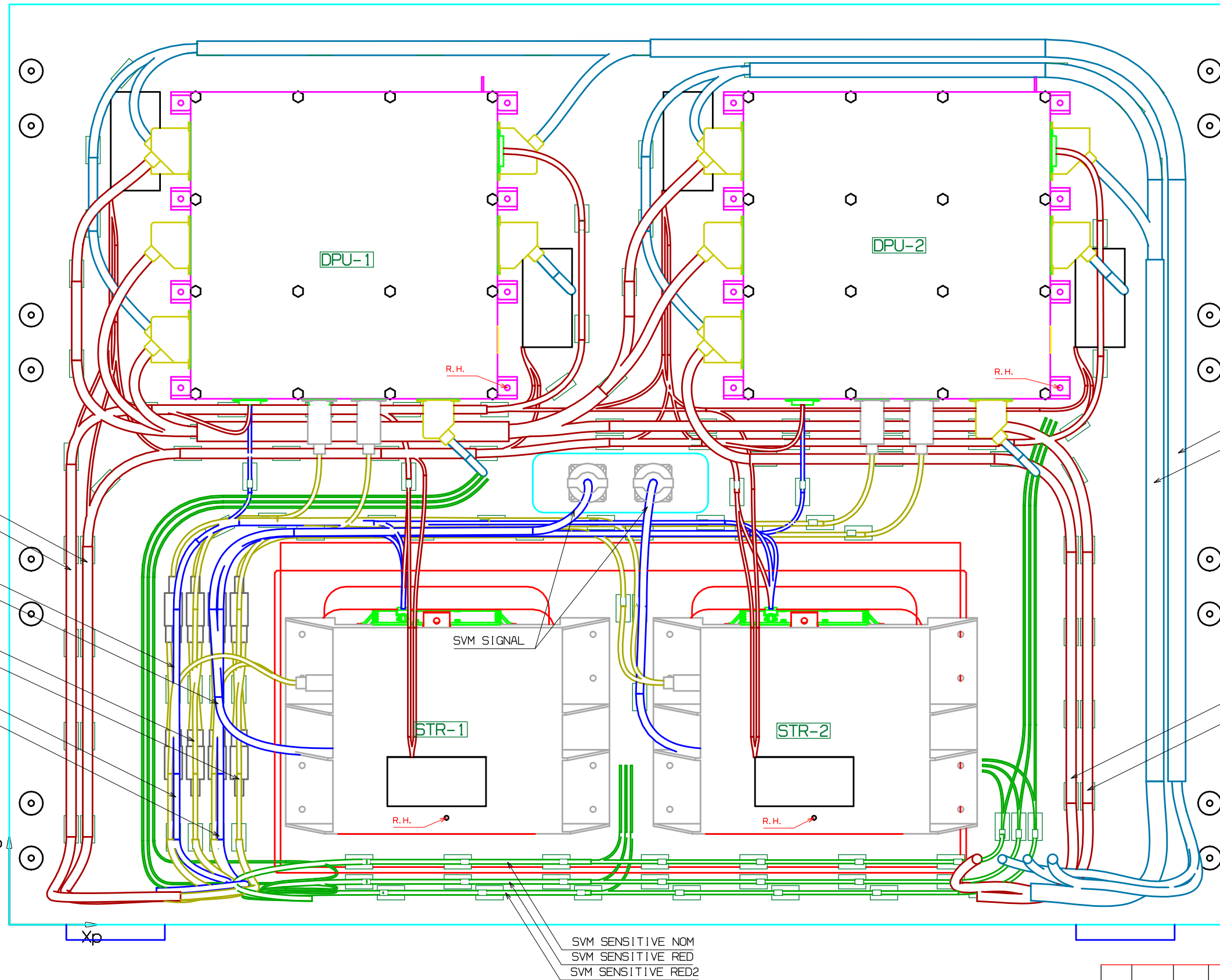
Standardisation off the lenghts within each set gives us the following table:

	PAU 00 P13	PAU 01 P13	PAU 02 P13	PAU 03 P13	PAU 04 P13	PAU 05 P13	PAU 06 P13	PAU 07 P13	PAU 08 P13	PAU 09 P13	PAU 10 P13	PAU 11 P13
REU P05	3770	3770	3770	3770	3800	3800	3800	3800	3915	3915	3915	3915
REU P06	3710	3710	3710	3710	3745	3745	3745	3745	3860	3860	3860	3860
REU P07	3650	3650	3650	3650	3680	3680	3680	3680	3800	3800	3800	3800
REU P08	3615	3615	3615	3615	3650	3650	3650	3650	3765	3765	3765	3765
REU P09	3750	3750	3750	3750	3635	3635	3635	3635	3620	3620	3620	3620
REU P10	3785	3785	3785	3785	3670	3670	3670	3670	3655	3655	3655	3655
REU P11	3850	3850	3850	3850	3735	3735	3735	3735	3720	3720	3720	3720

Bundle 1
Bundle 2
Bundle 3

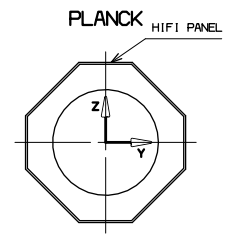
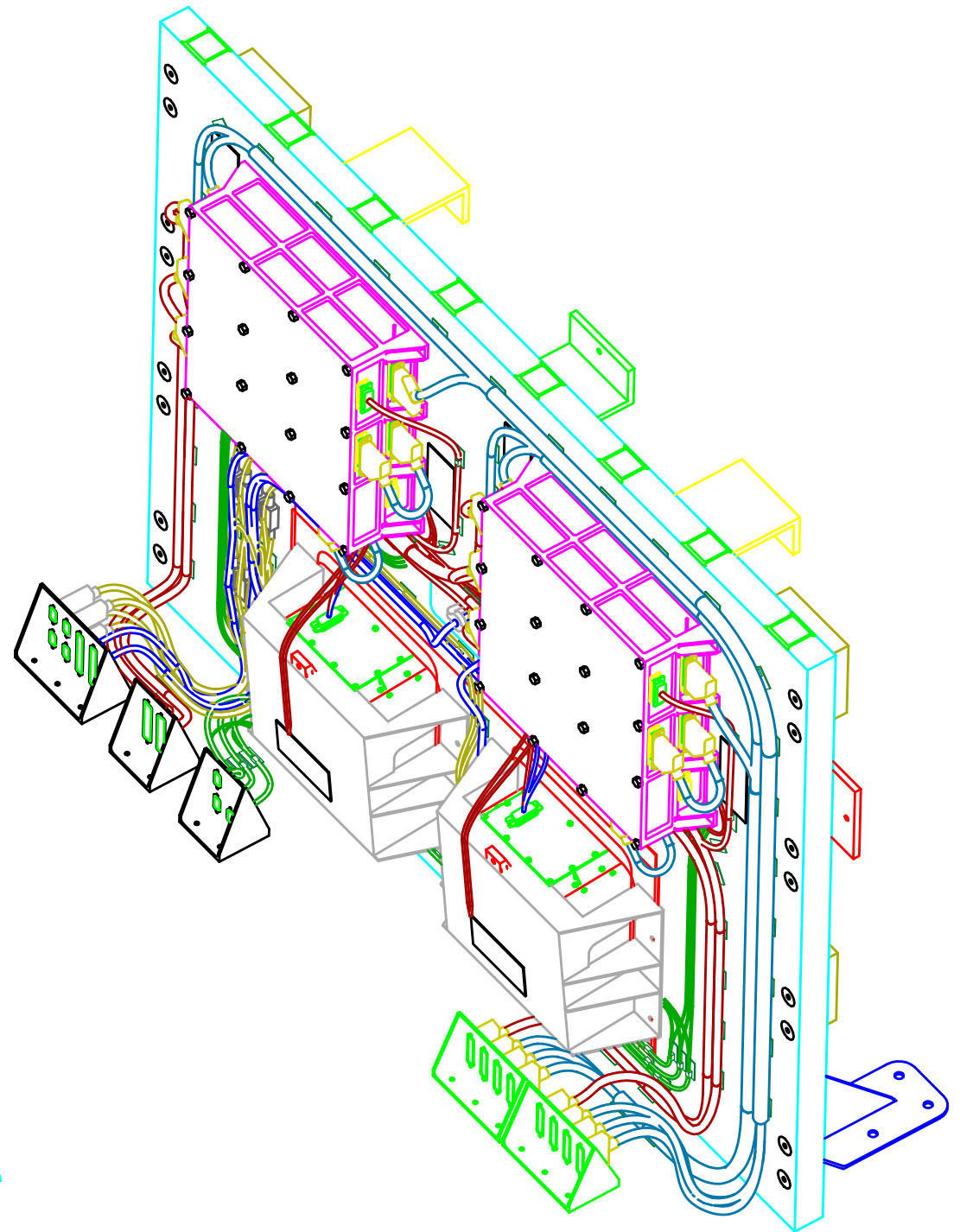
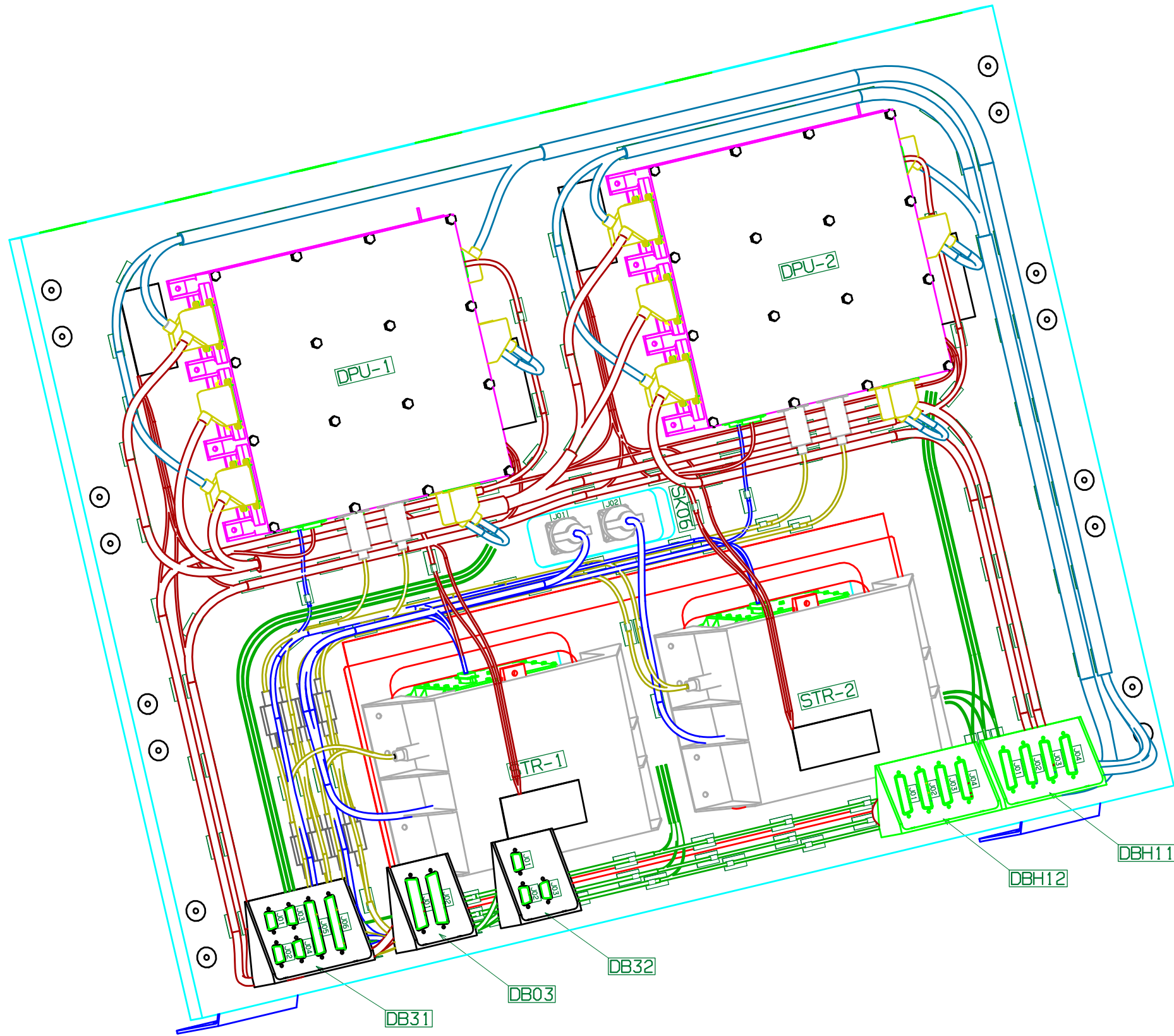
Note: - The lenghts between REU and the PAU xxP12 connectors are 50mm shorter than those indicated in the table above.
 - All the lenghts are below the maximum lenght of 5m.


No routing modification



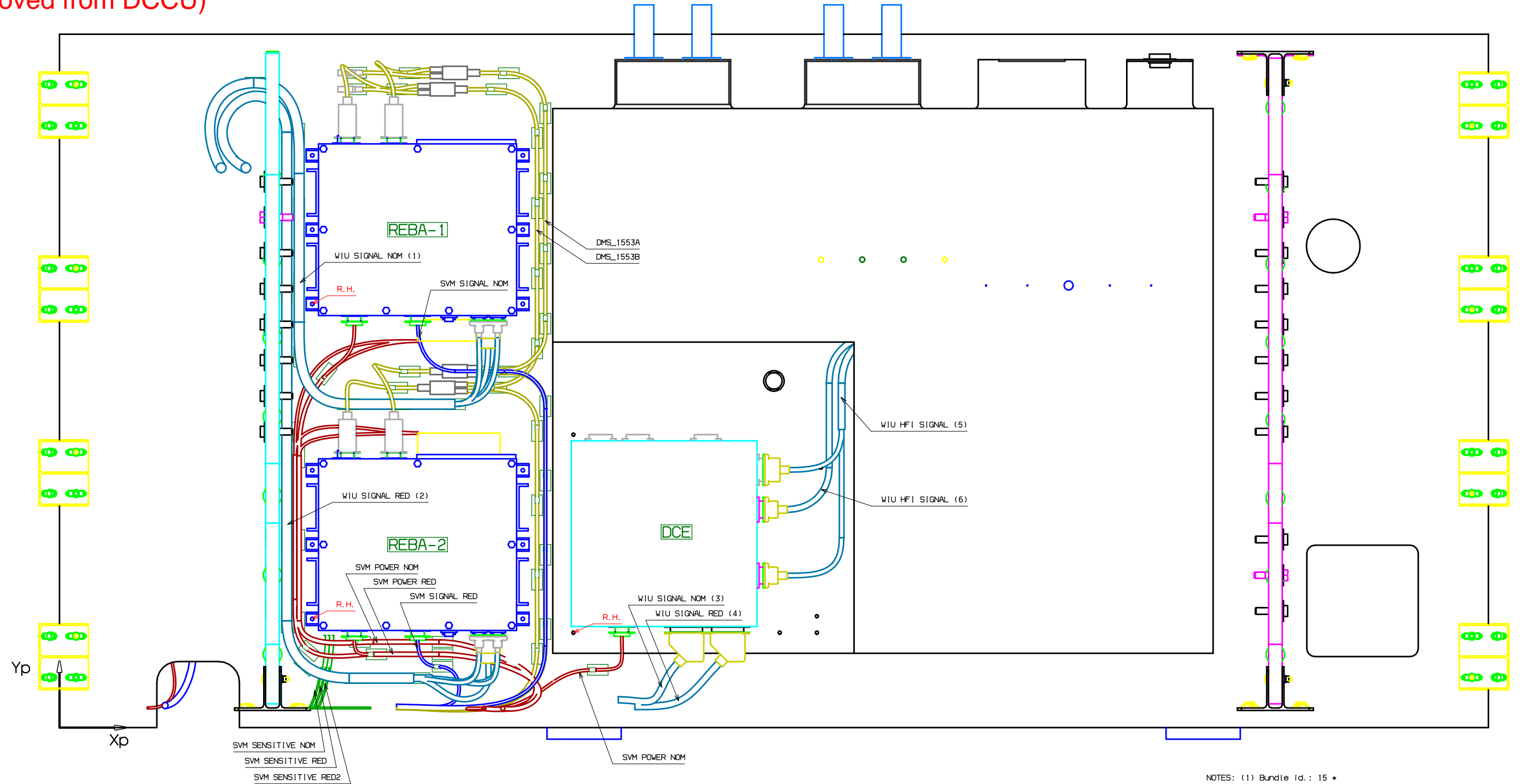
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 (4) Bundle id.: PHBBB-R *
 (5) Bundle id.: PHBBG1/PHBBG2 *
 * In reference with H-P-4-NXH-RP-0023 iss. A2

REV.	DATE	BY	MODIFICATION	APPROVAL	
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Rev.	Date	Scale	Format	Sht	
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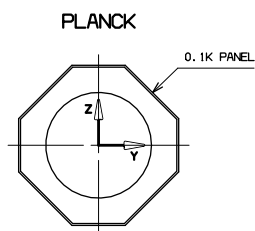


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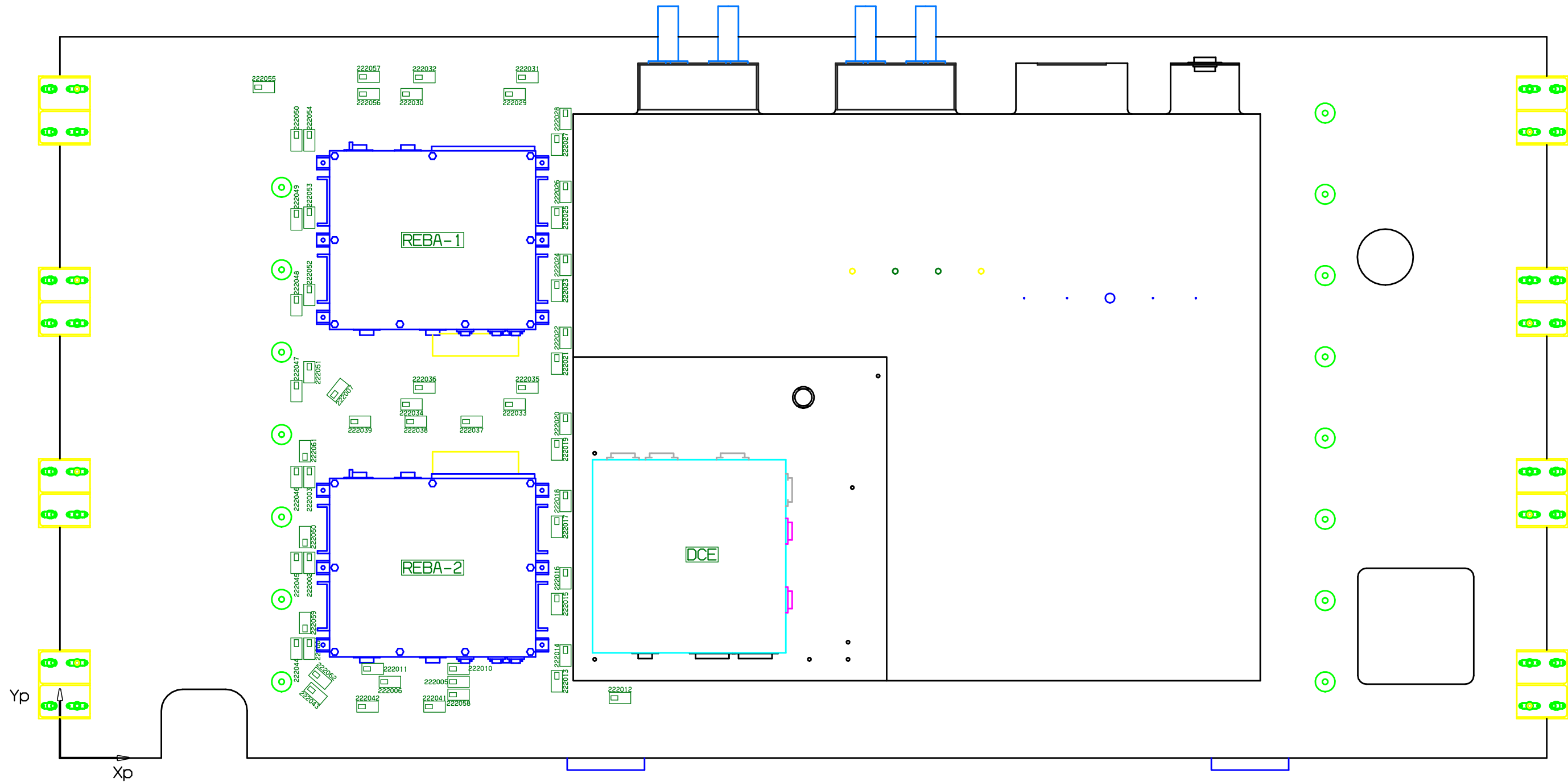
modification of SVM
harness routing only
(removed from DCCU)



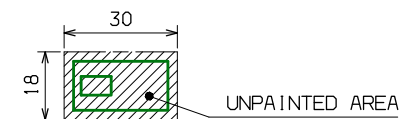
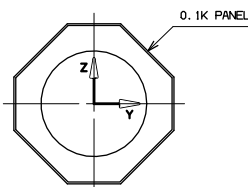
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 ** In reference with H-P-4-NXH-RP-0023 iss. A2



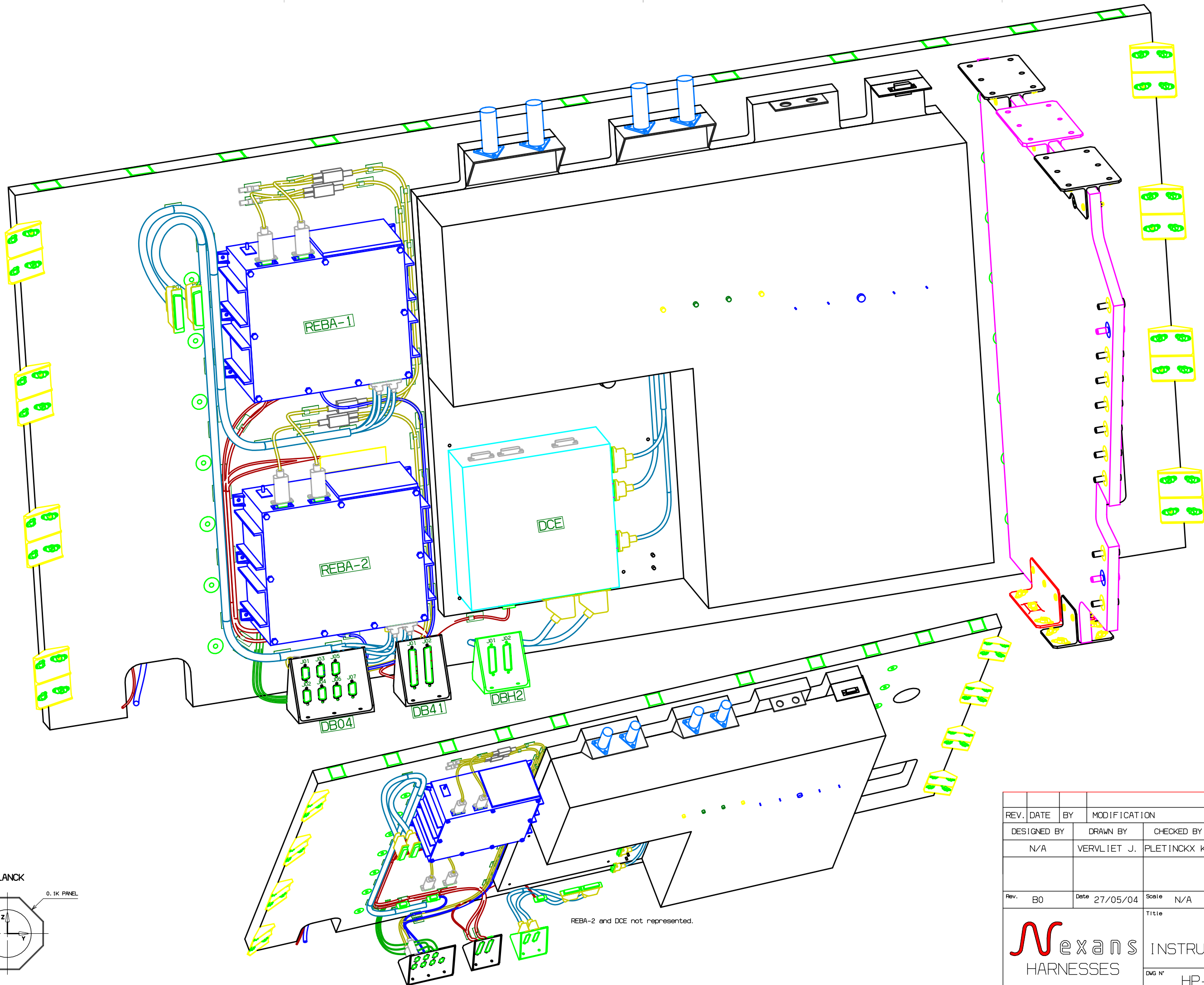
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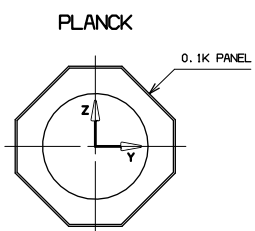
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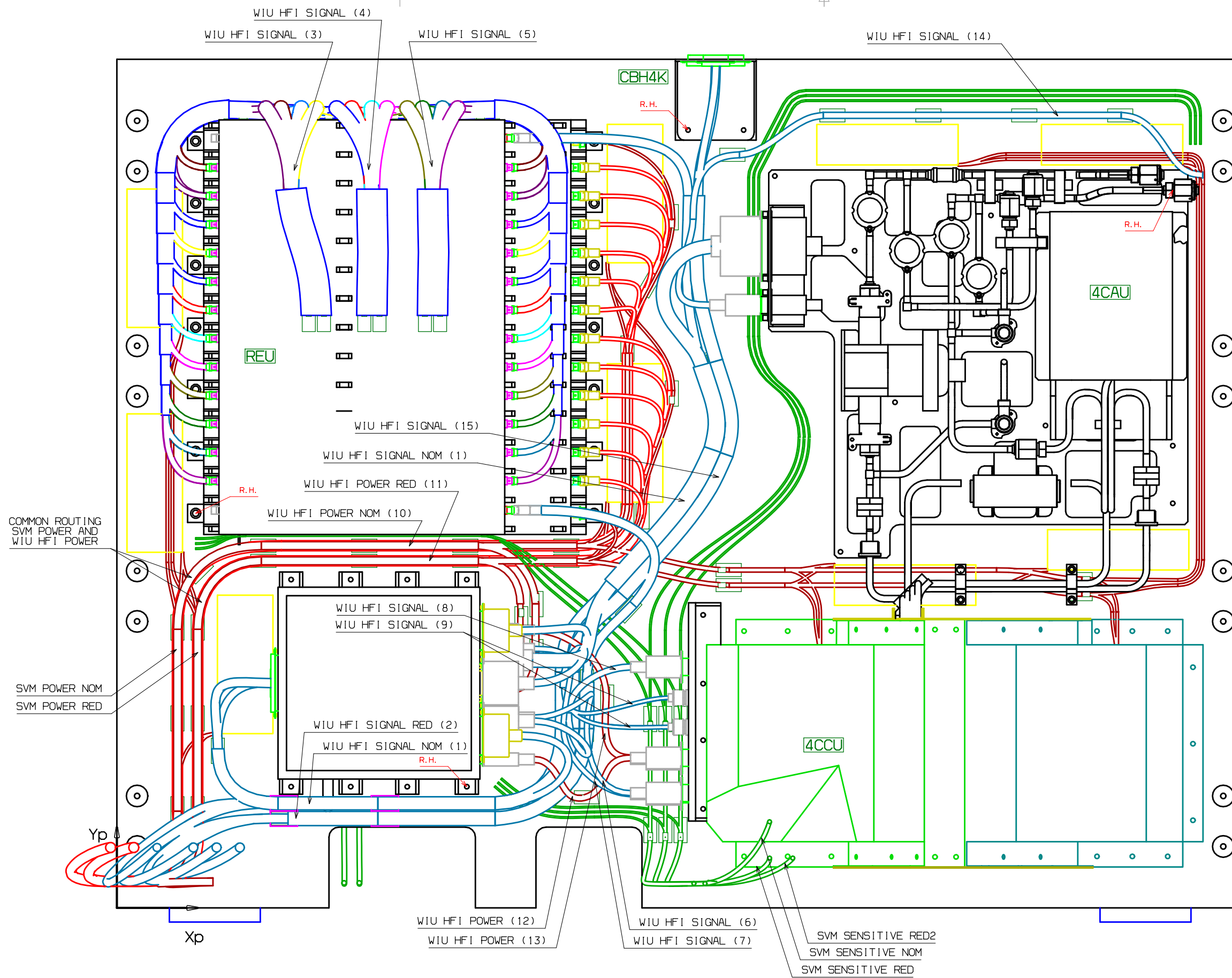
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REBA-2 and DCE not represented.



REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
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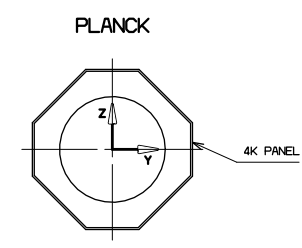


Local routing on left side of REU not representative (superseded by specific documents)

Swap of PHCBC12/13 J06/07 made

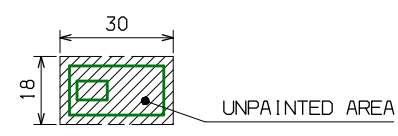
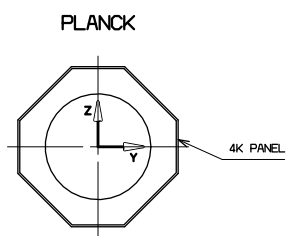
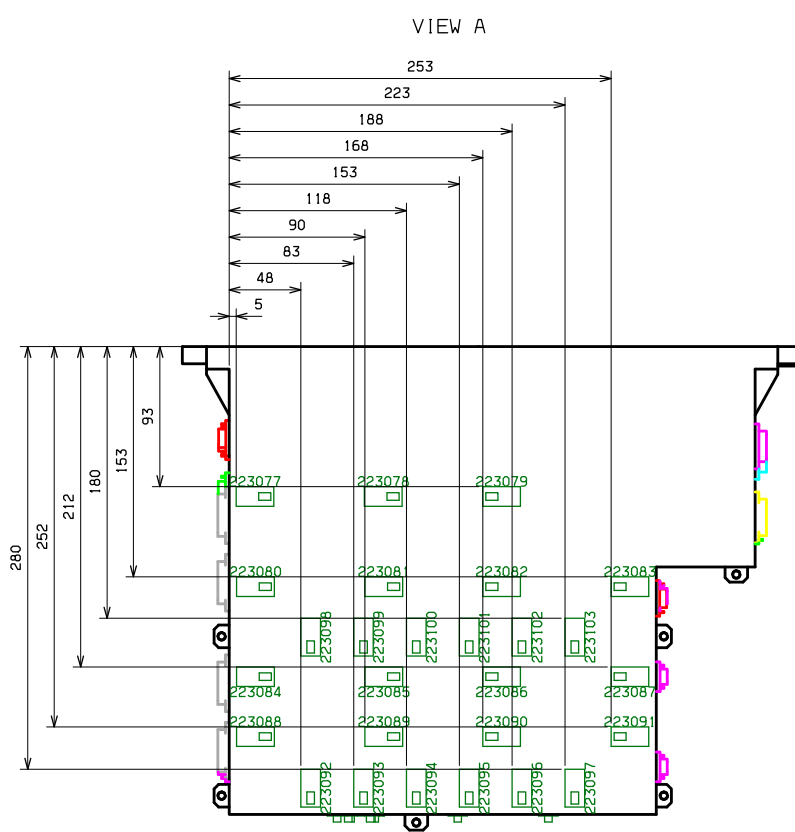
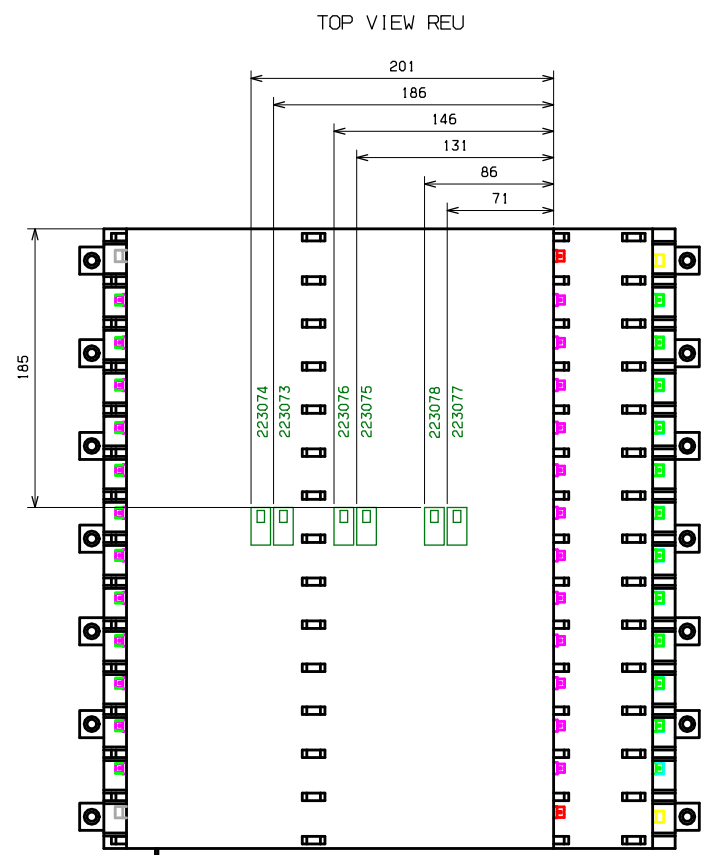
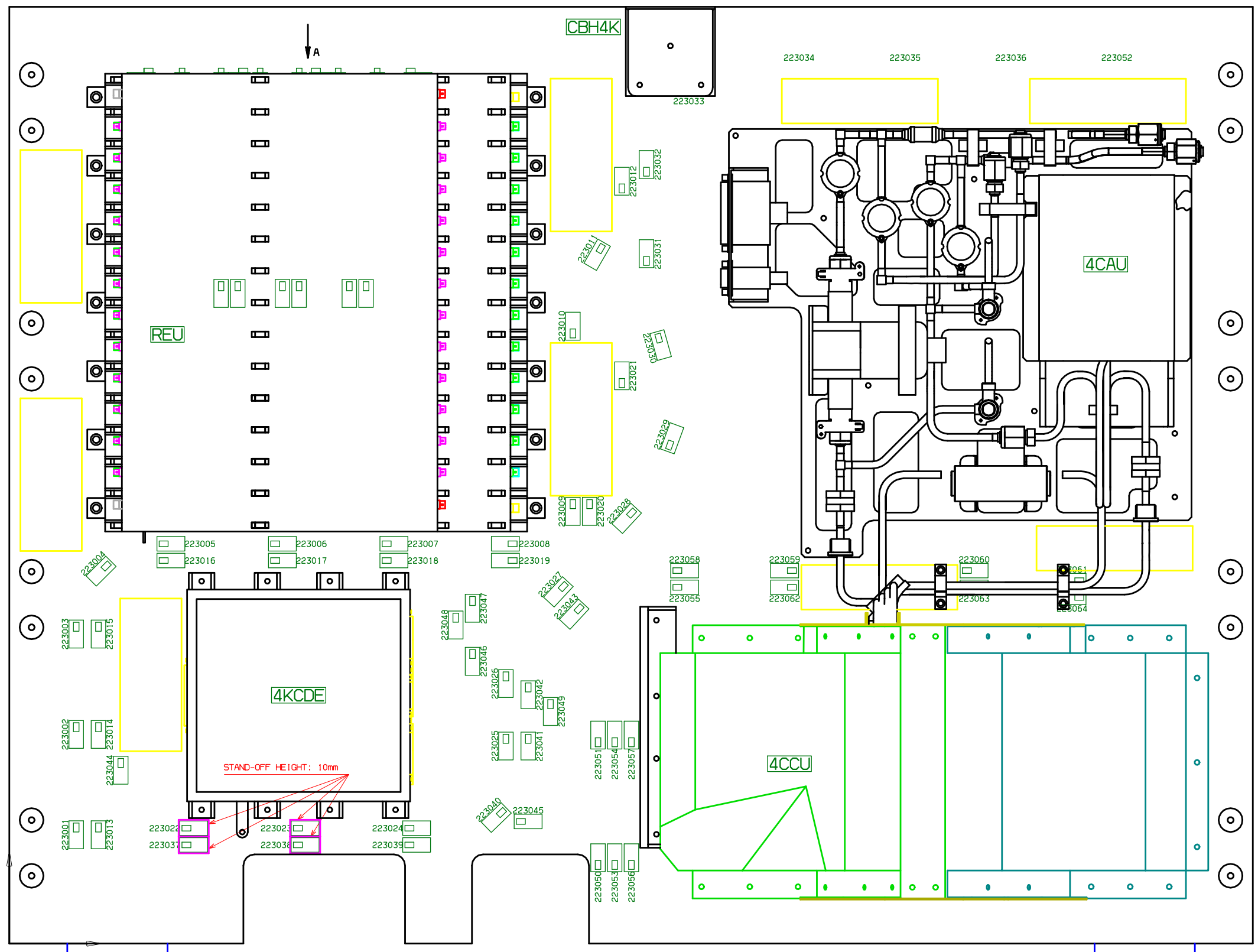
COMMON ROUTING SVM POWER AND WIU HFI POWER

SVM POWER NOM
SVM POWER RED



NOTE: (1) Bundle id.: PHBBA-N/PHBBE-N/PHDFD *
 (2) Bundle id.: PHBBA-R/PHBBE-R *
 (3) Bundle id.: PHCBD (Bundle 1) *
 (4) Bundle id.: PHCBD (Bundle 2) *
 (5) Bundle id.: PHCBD (Bundle 3) *
 (6) Bundle id.: PHDFA-A *
 (7) Bundle id.: PHDFA-B *
 (8) Bundle id.: PHDFE *
 (9) Bundle id.: PHDFB *
 (10) Bundle id.: PHBBB-N *
 (11) Bundle id.: PHBBB-R *
 (12) Bundle id.: PHDFC-A *
 (13) Bundle id.: PHDFC-B *
 (14) Bundle id.: PHDE *
 (15) Bundle id.: PHDKN&R *
 * In reference with H-P-4-NXH-RP-0023 iss. A2

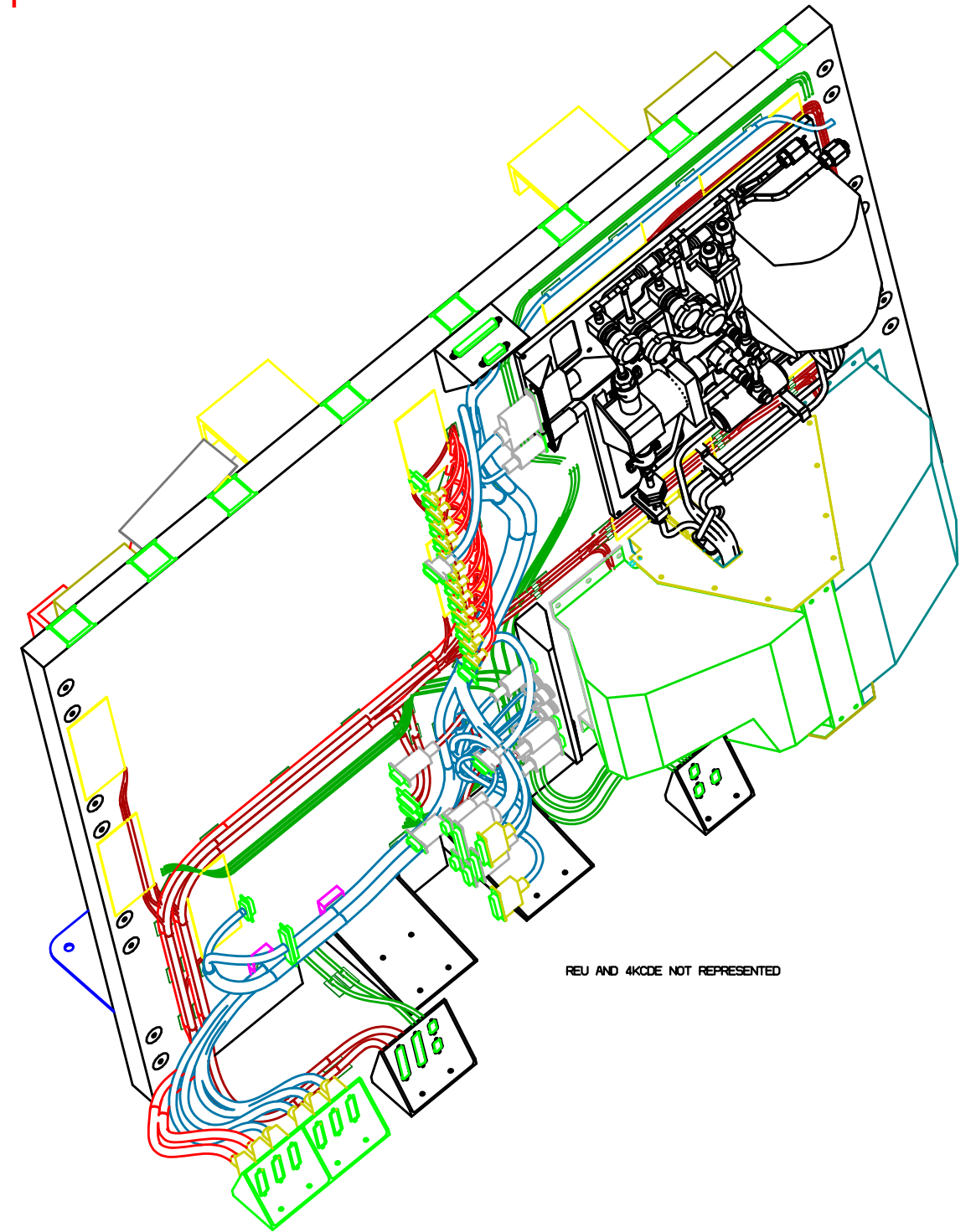
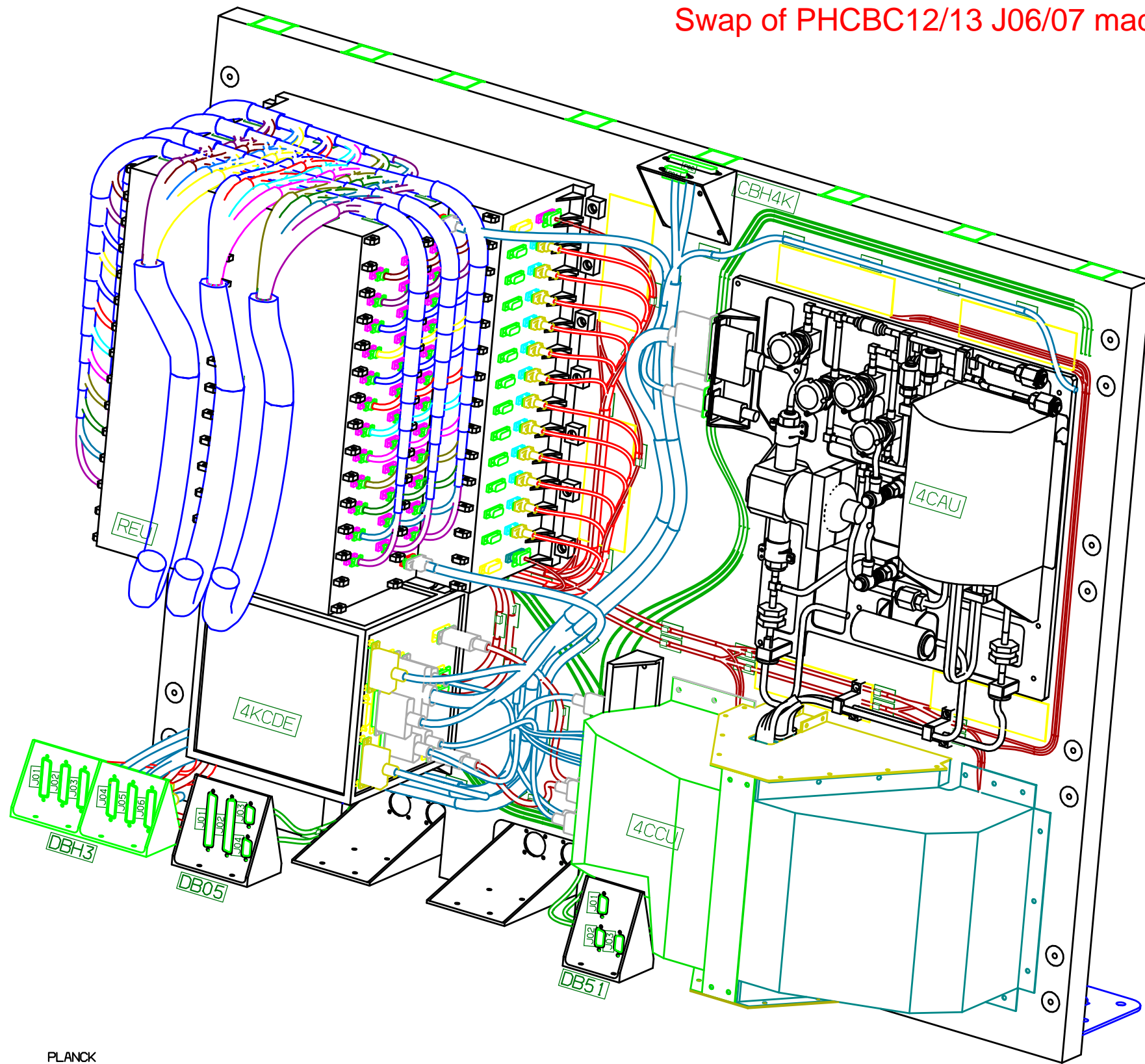
REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVL IET J.	PLETINCKX K.	--	--	
Rev.	B0	Date	27/05/04	Scale	N/A
		Format	A1	Sht	1/5
			Title 4K INSTRUMENT PANEL ASSY		
			DWG N° HP-NXH-DW-2023		



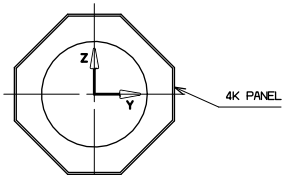
REV.	DATE	BY	MODIFICATION	APPROVAL
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY
N/A	VERVL IET J.	PLETINCKX K.	--	--
Rev.	Date	Scale	Format	Sht
B0	27/05/04	N/A	A1	2/5
		Title 4K INSTRUMENT PANEL ASSY		
		DWG N° HP-NXH-DW-2023		

Local routing on left side of REU not representative
(superseded by specific documents)

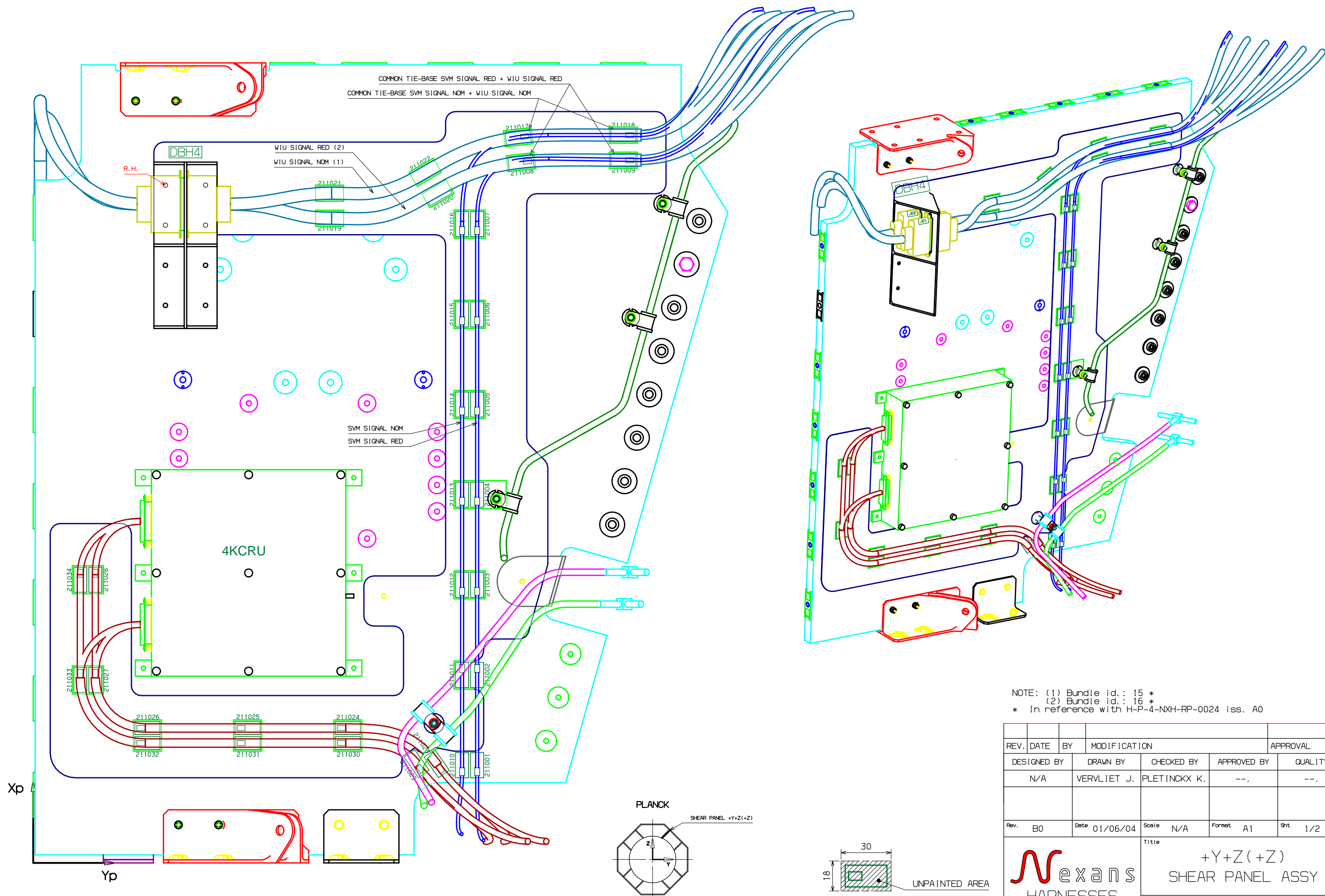
Swap of PHCBC12/13 J06/07 made



PLANCK



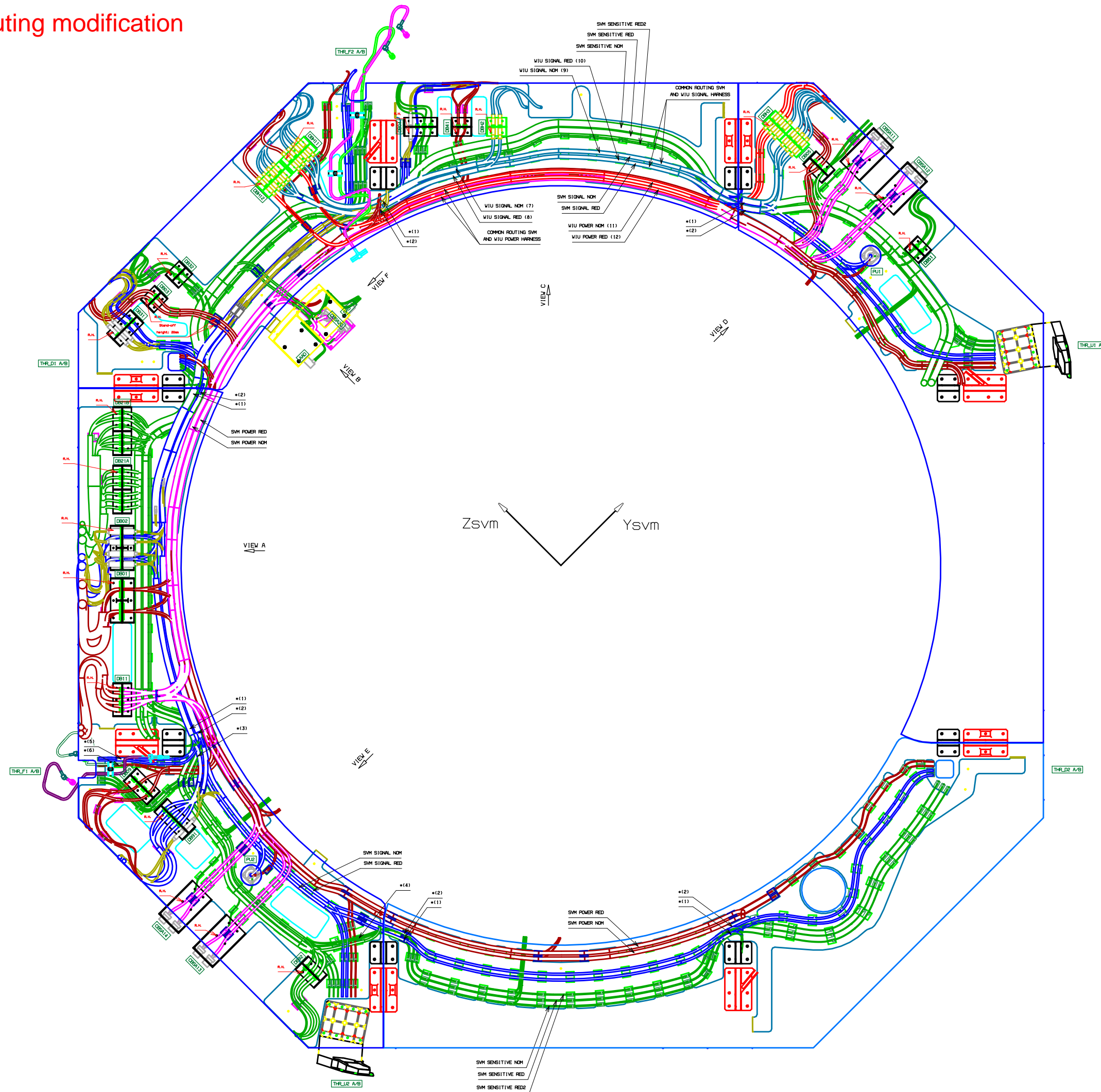
REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVL IET J.	PLETINCKX K.	--	--	
Rev.	Date	Scale	Format	Sht	
B0	27/05/04	N/A	A1	5/5	
			Title 4K INSTRUMENT PANEL ASSY DWG N° HP-NXH-DW-2023		



NOTE: (1) Bundle id.: 15 *
 (2) Bundle id.: 16 *
 * In reference with H-P-4-NXH-RP-0024 iss. A0

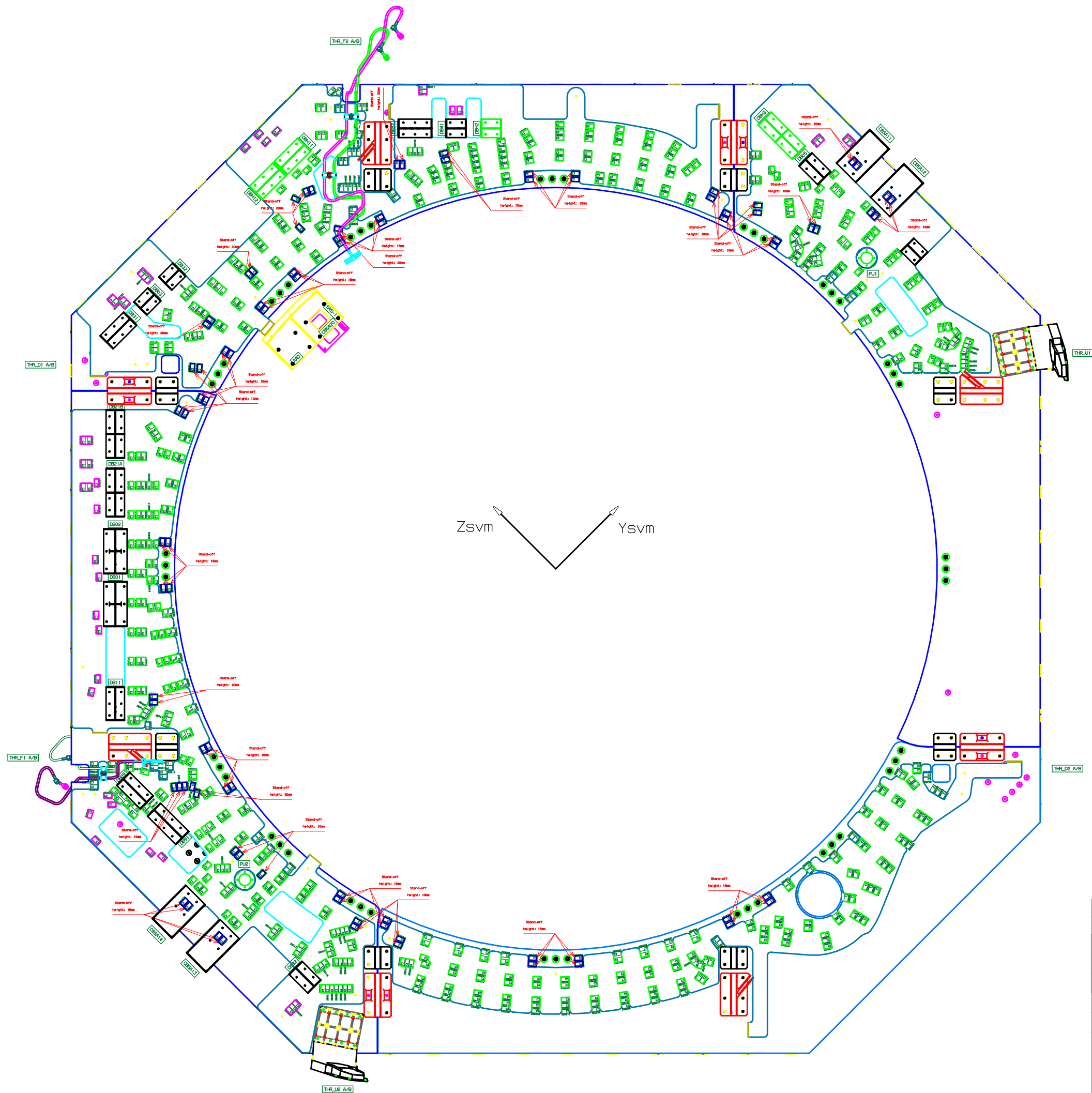
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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVL IET J.	PLETINCKX K.	--	--	
Rev.	B0	Date	01/06/04	Scale	N/A
		Format	A1	Sht	1/2
			Title +Y+Z(+Z) SHEAR PANEL ASSY		
			DWG N° HP-NXH-DW-2011		


No routing modification



NOTE: PU1/PU2: see ASP drawing F0278C PLSA1AH5001S A
 *(1): Common tie-base SVM Signal and Sensitive Nom.
 *(2): Common tie-base SVM Signal and Sensitive Red and Sensitive Red2
 *(3): Common tie-base SVM Sensitive Red and Sensitive Red2
 *(4): Common tie-base SVM Signal and Sensitive Red
 *(5): Common tie-base SVM Signal Nom and Red
 *(6): Common tie-base SVM Power Nom and Red
 (7) Bundle id.: PHBBA-N/PHBBC-N/PHBBE-N *
 (8) Bundle id.: PHBBA-R/PHBBC-R/PHBBE-R *
 (9) Bundle id.: PHBBA-N/PHBBE-N *
 (10) Bundle id.: PHBBA-R/PHBBE-R *
 (11) Bundle id.: PHBBB-N *
 (12) Bundle id.: PHBBB-R *
 * In reference with H-P-4-NXH-RP-0023 iss. A2

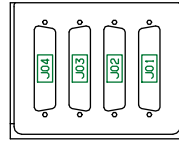
REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY		DRAWN BY	CHECKED BY	APPROVED BY	QUALITY
N/A		VERVL IET J.	PLETINCKX K.	--	--
Rev.	B0	Date	08/06/04	Scale	N/A
				Format	A1
				Sht	1/4
		Title			
		LOWER FLOOR INSTRUMENT PANEL ASSY			
		DWG N°			
		HP-NXH-DW-2050			



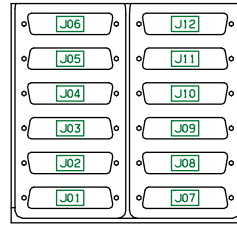
REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY		DRAWN BY	CHECKED BY	APPROVED BY	QUALITY
N/A		VERVL IET J.	PLETINCKX K.	--	--
Rev.	B0	Date	08/06/04	Scale	N/A
		Format	A1	Sht	2/4
			Title LOWER FLOOR INSTRUMENT PANEL ASSY DWG N° HP-NXH-DW-2050		

VIEW A

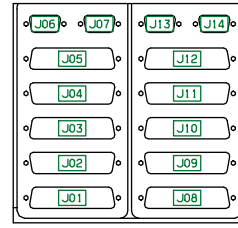
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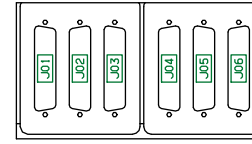
DB01



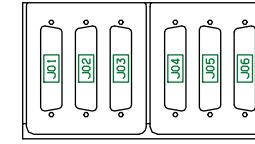
DB02



DB21A

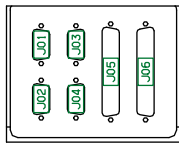


DB21B

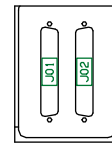


VIEW B

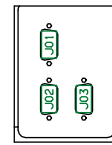
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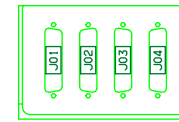
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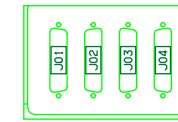
DB32



DBH12

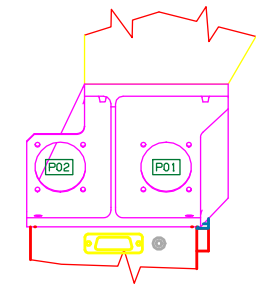


DBH11



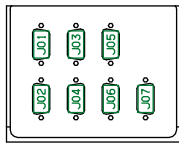
VIEW F

CBSA20

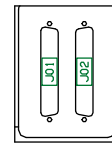


VIEW C

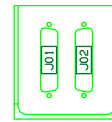
DB04



DB41

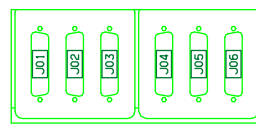


DBH2

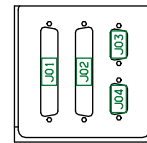


VIEW D

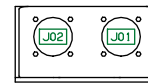
DBH3



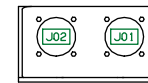
DB05



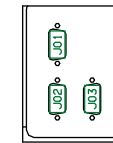
CBSA11



CBSA12

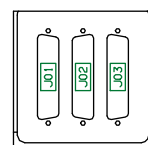


DB51

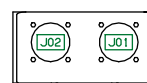


VIEW E

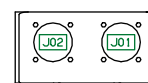
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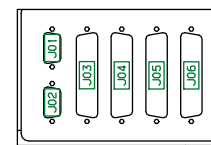
CBSA13



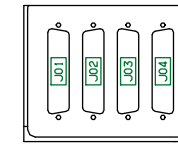
CBSA14



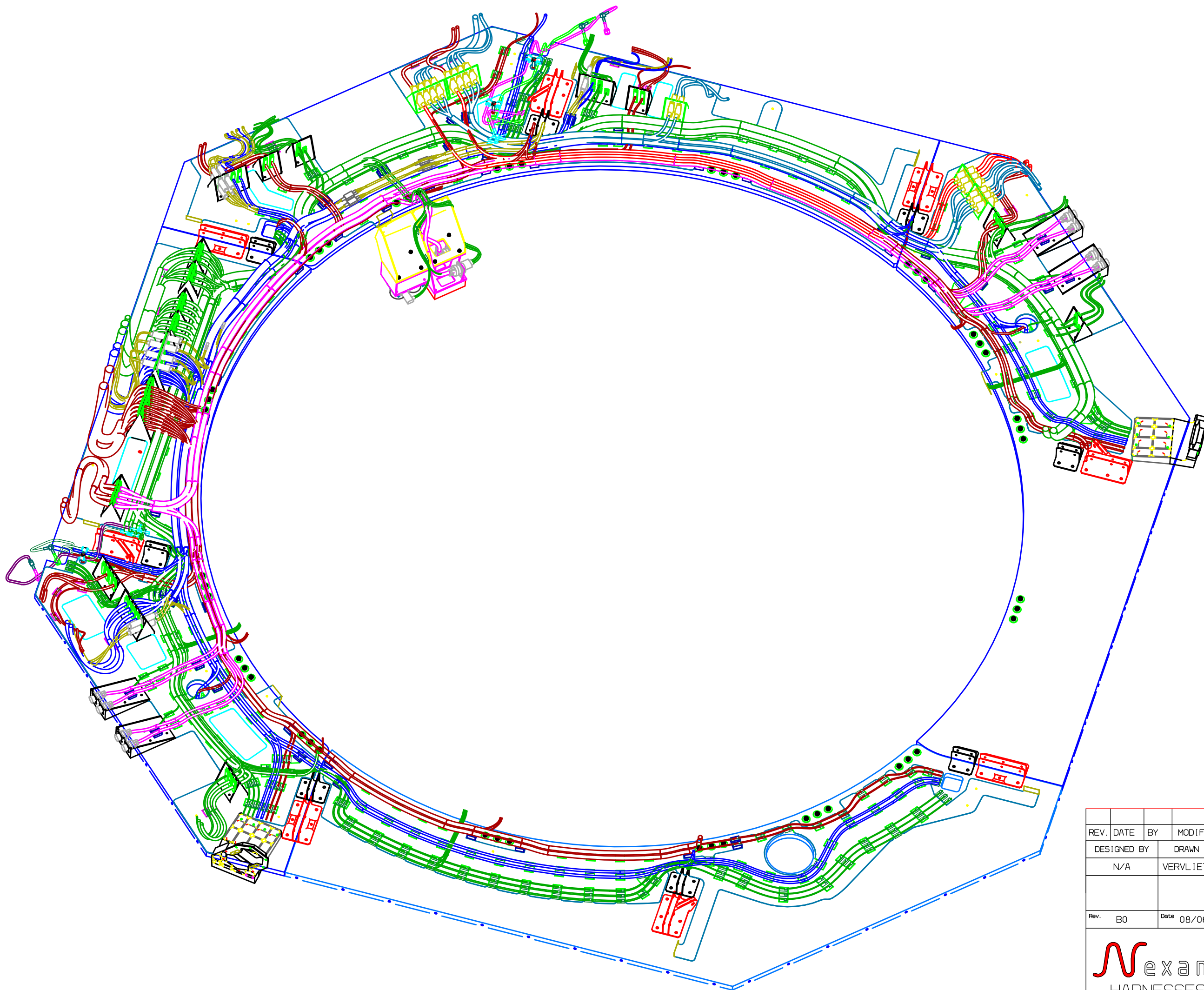
DB91




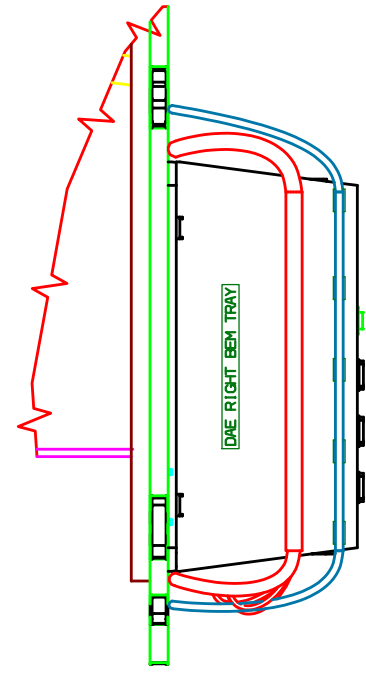
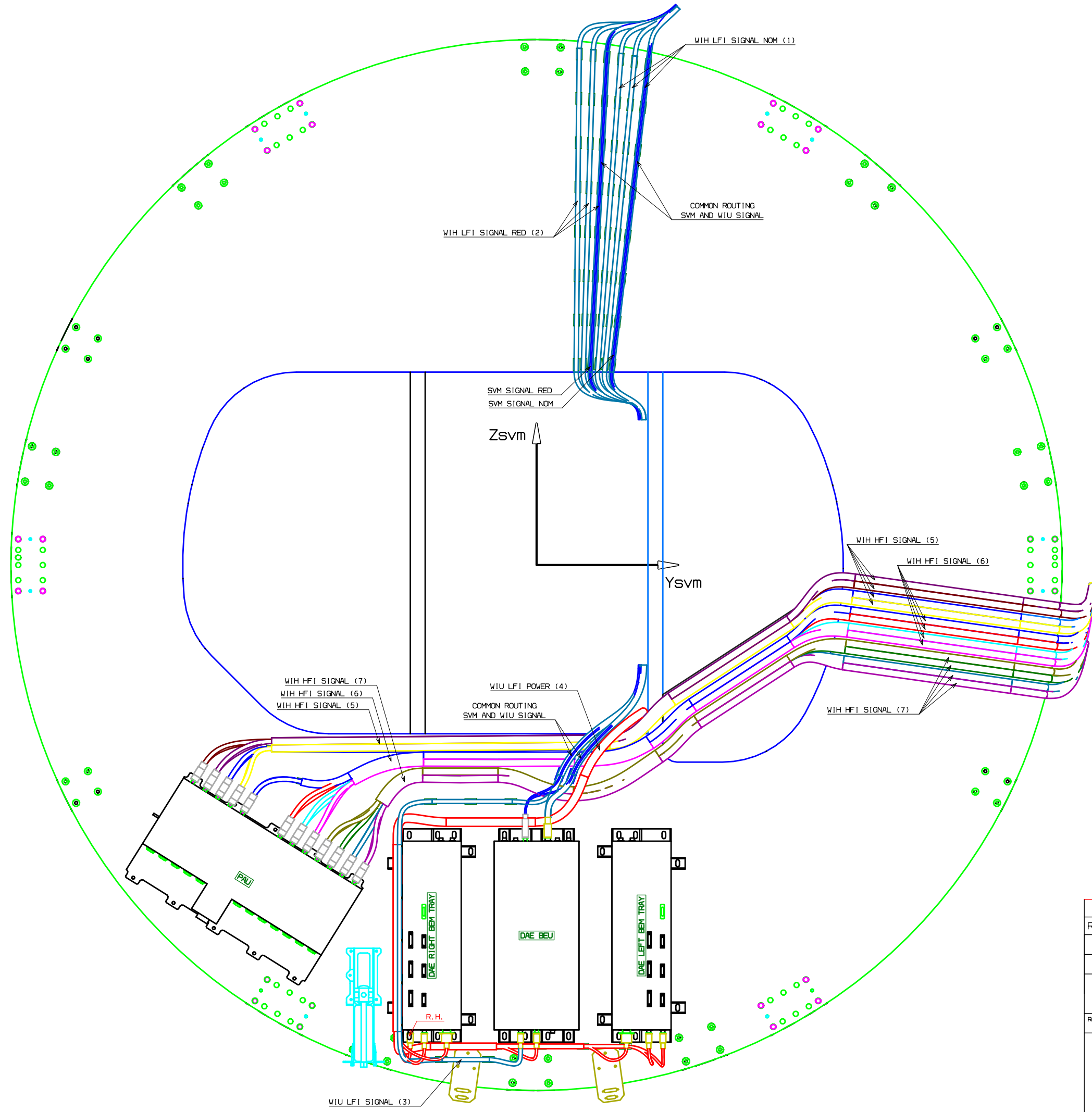
DB09



REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVL IET J.	PLETINCKX K.	--	--	
Rev.	Date	Scale	Format	Sht	
B0	08/06/04	N/A	A1	3/4	
			Title		
			LOWER FLOOR INSTRUMENT PANEL ASSY		
			DWG N° HP-NXH-DW-2050		

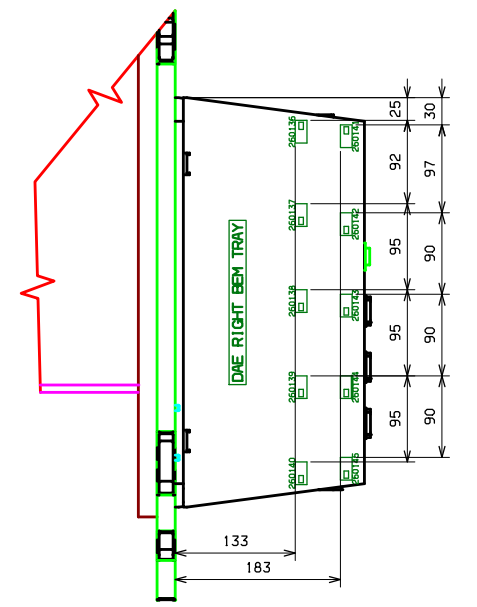
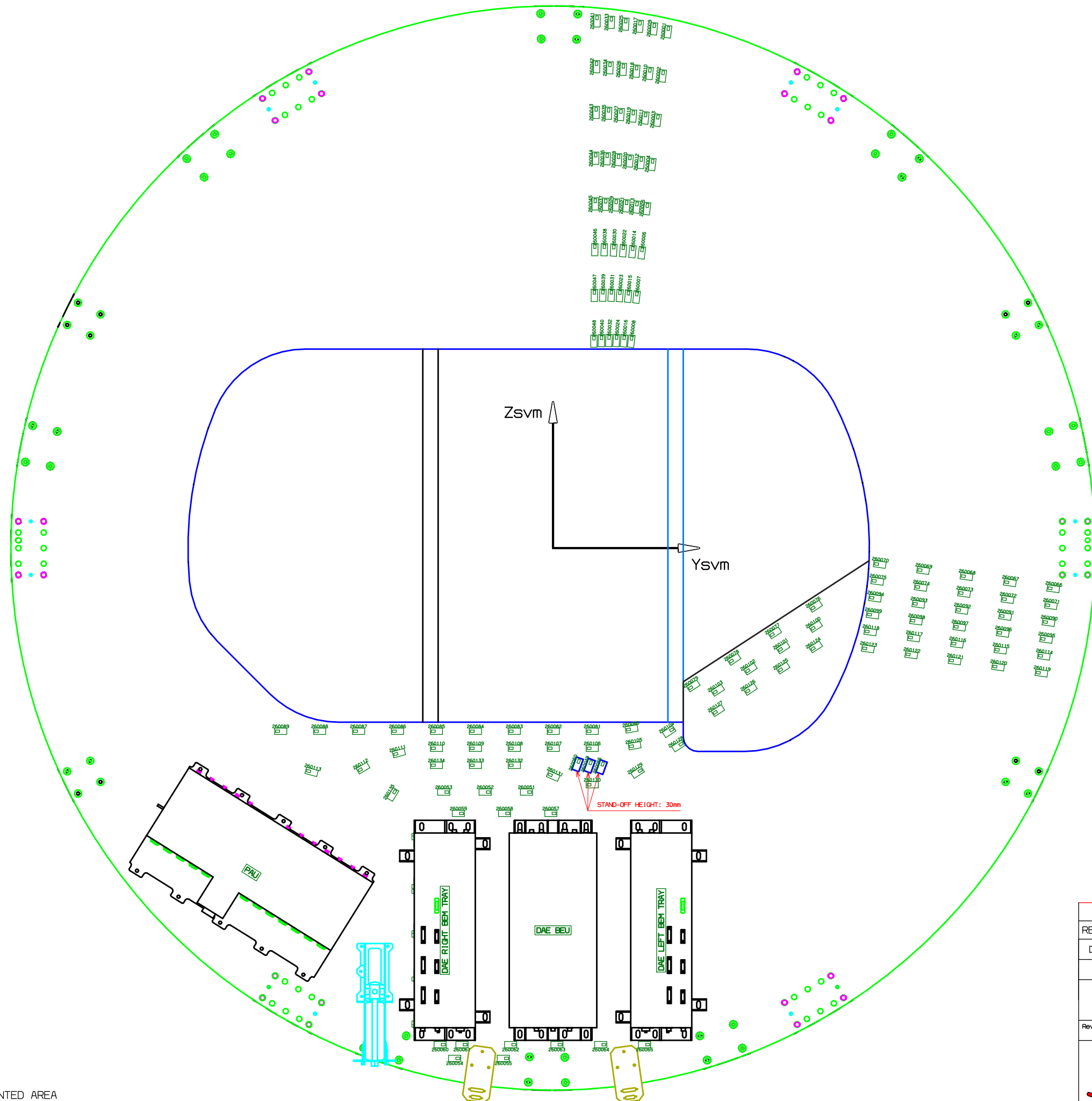


REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVL IET J.	PLETINCKX K.	--	--	
Rev.	B0	Date	08/06/04	Scale	N/A
		Format	A1	Sht	4/4
			Title LOWER FLOOR INSTRUMENT PANEL ASSY		
			DWG N° HP-NXH-DW-2050		



NOTES: (1) Bundle id.: 15 *
 (2) Bundle id.: 16 *
 (3) Bundle id.: 3 *
 (4) Bundle id.: 1A/1B/4/6A/6B *
 (5) Bundle id.: PHCBD (Bundle1) **
 (6) Bundle id.: PHCBD (Bundle2) **
 (7) Bundle id.: PHCBD (Bundle3) **
 * In reference with H-P-4-NXH-RP-0024 iss. A0
 ** In reference with H-P-4-NXH-RP-0023 iss. A1

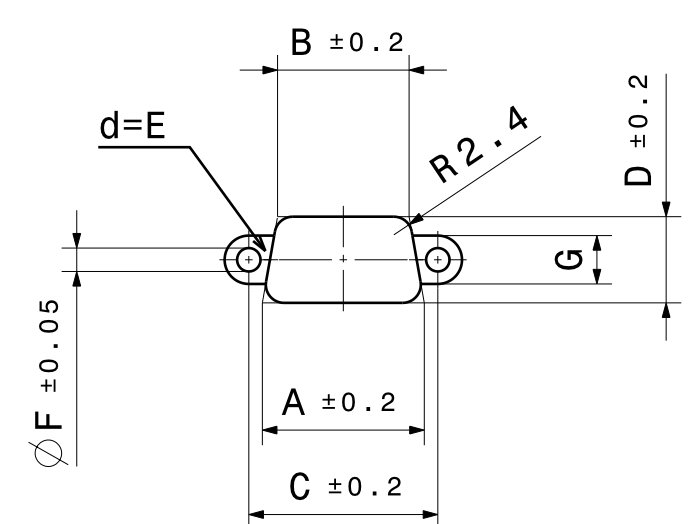
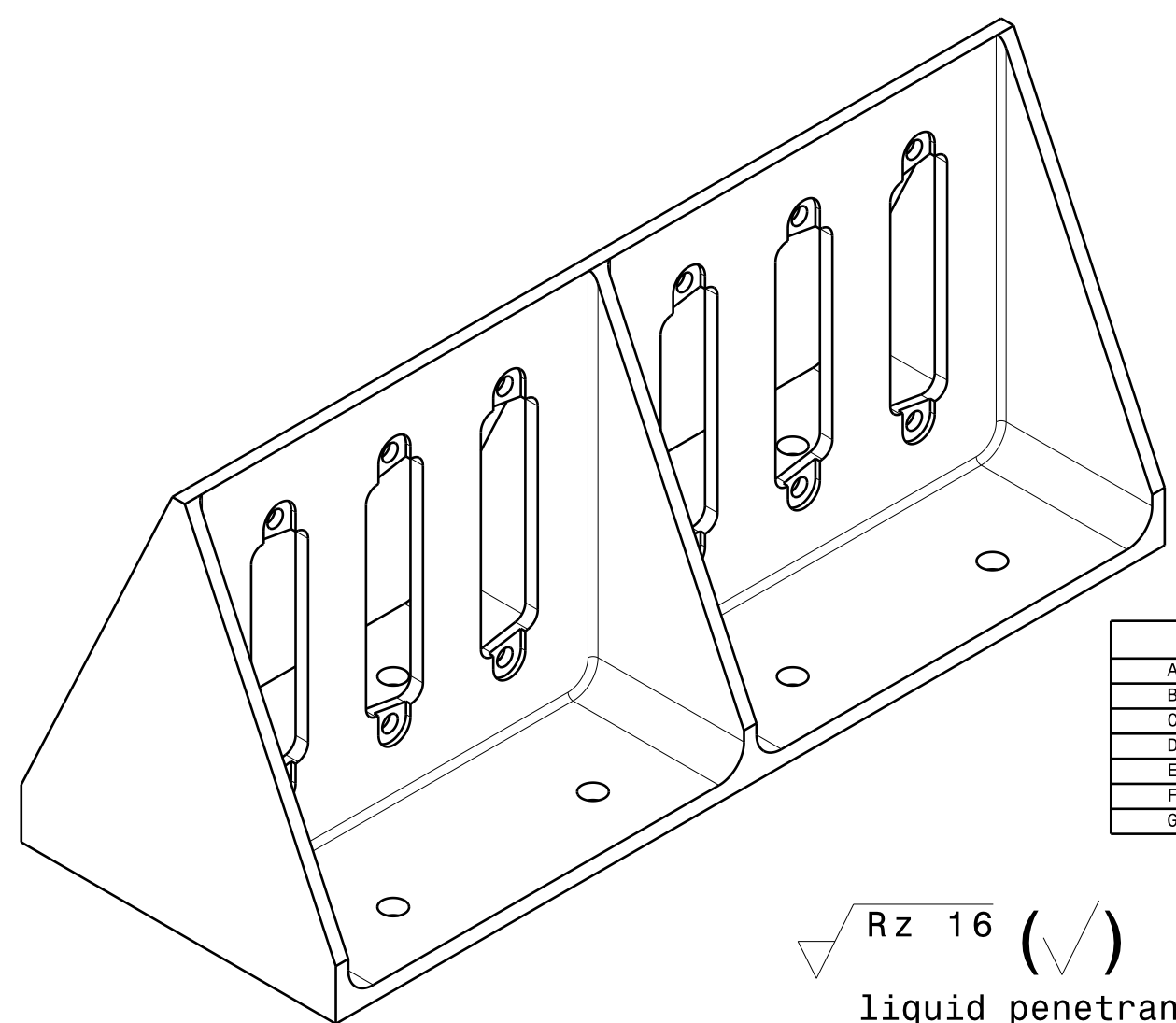
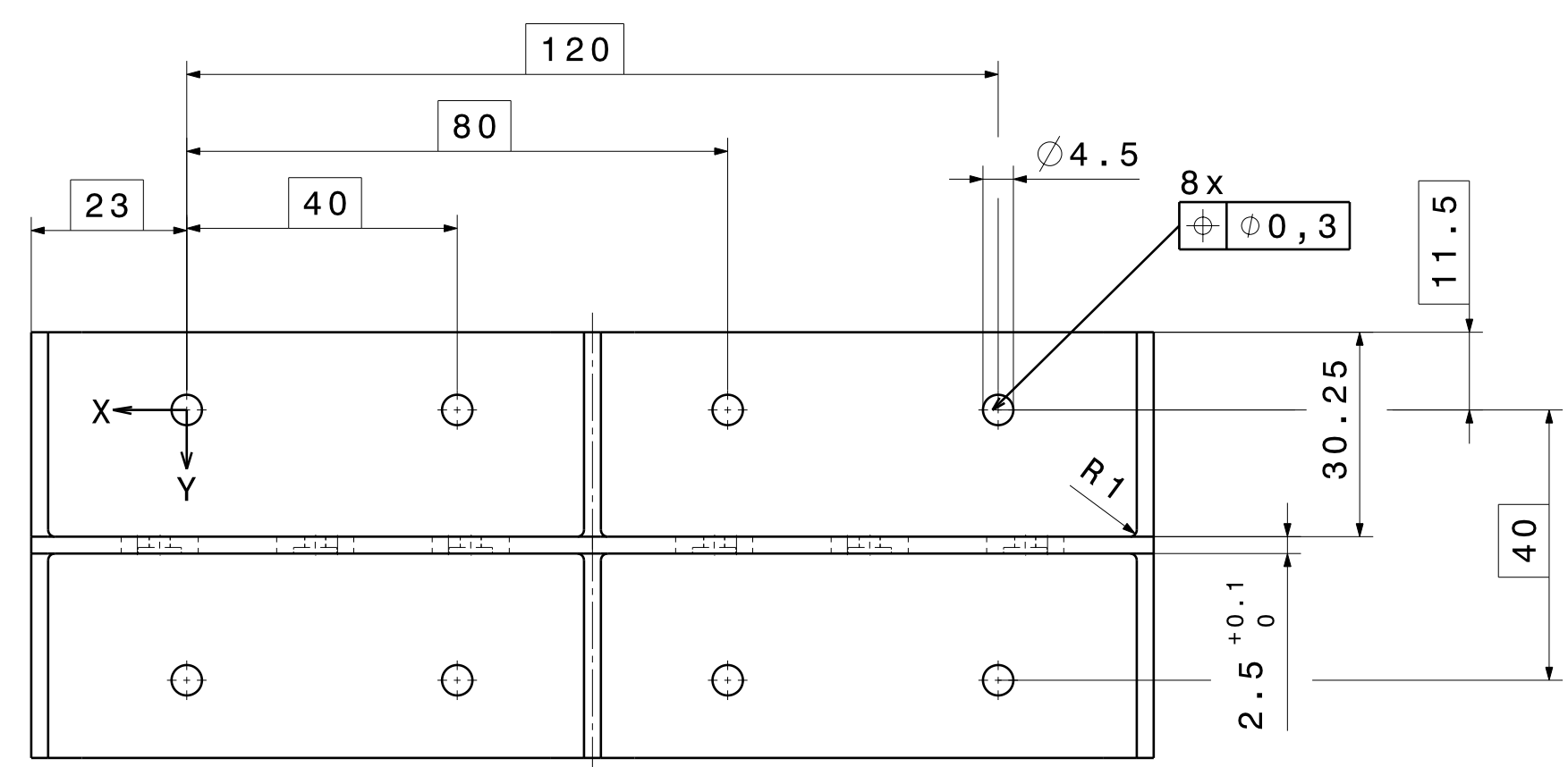
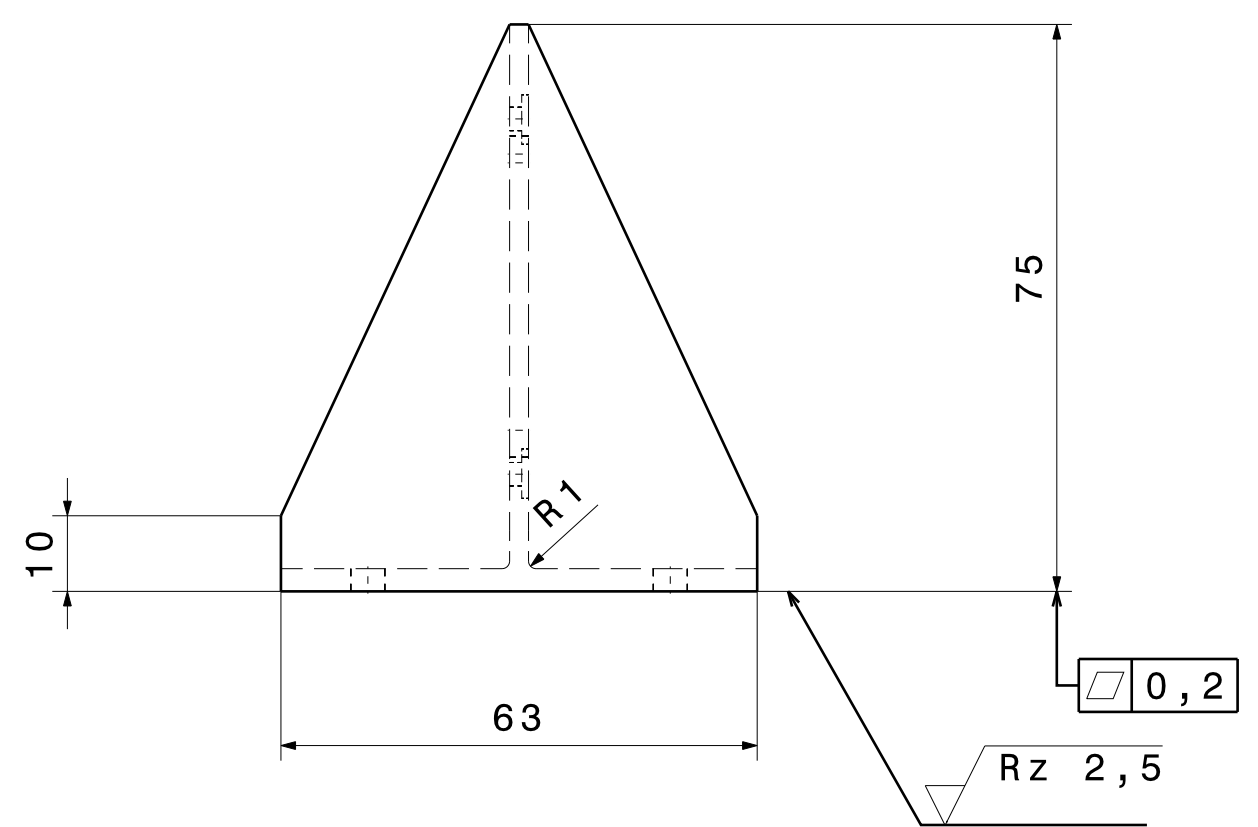
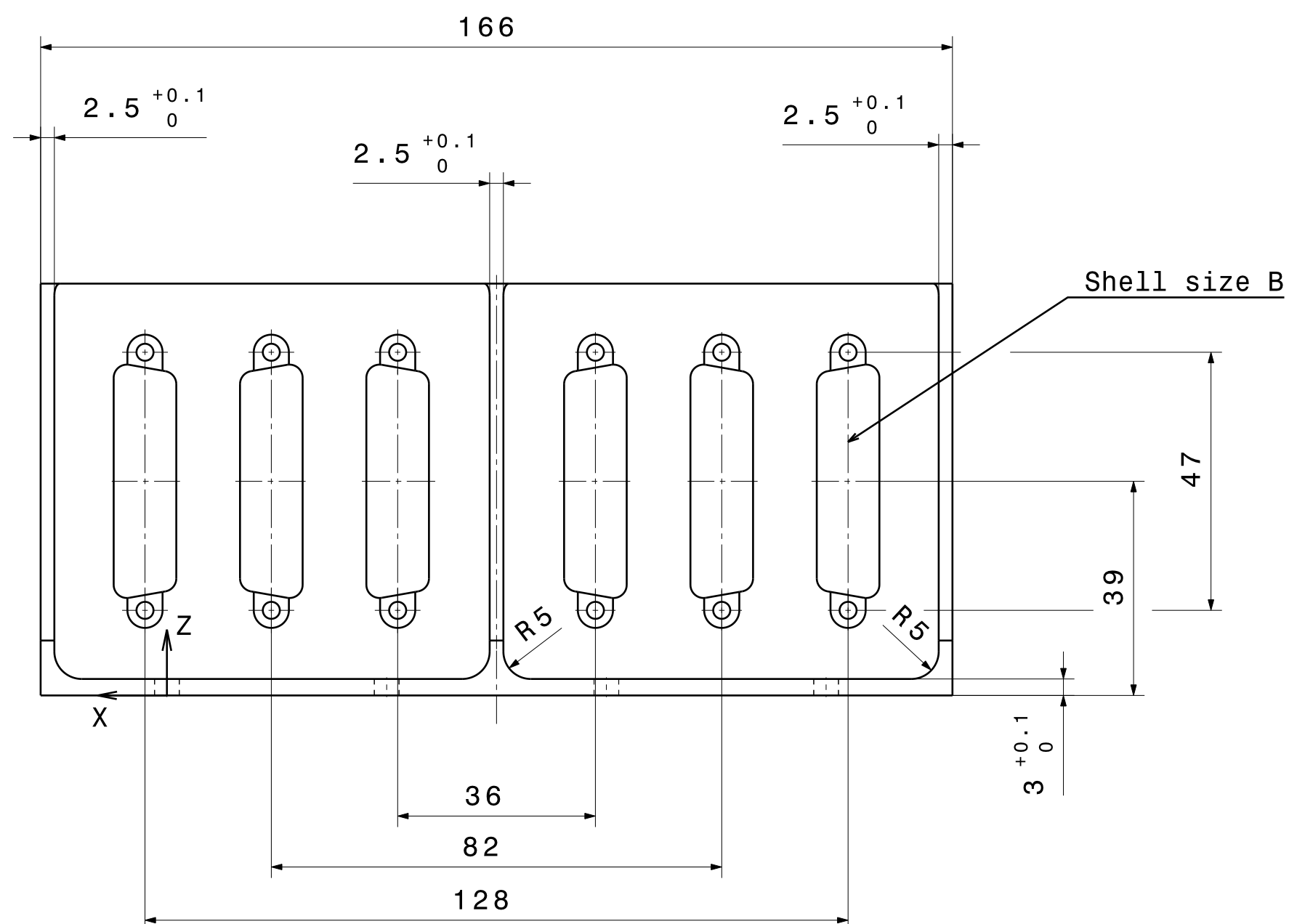
REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVL IET J.	PLETINCKX K.	--	--	
Rev.	A0	Date	08/03/04	Scale	N/A
		Format	A1	Sht	1/6
			Title SUB-PLATFORM INSTRUMENT PANEL ASSY DWG N° HP-NXH-DW-2060		



REV.	DATE	BY	MODIFICATION	APPROVAL	
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
N/A	VERVL IET J.	PLETINCKX K.	--	--	
Rev.	A0	Date	08/03/04	Scale	N/A
		Format	A1	Sht	2/6
			Title		
			SUB-PLATFORM INSTRUMENT PANEL ASSY		
			DWG N°		
			HP-NXH-DW-2060		

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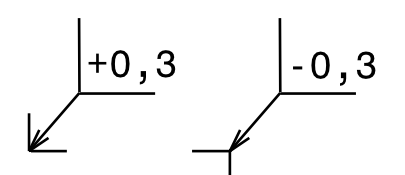
Approved Struct/Therm Pro/Syst PA
 Config
 Data
 Name



	Shell size E	Shell size A	Shell size B	Shell size C	Shell size D
A	21,42	29,72	43,42	60,02	57,22
B	17,4	25,7	39,4	56	52,25
C	25	33,3	47	63,5	61,1
D	11,4	11,4	11,4	11,4	14,1
E	0,65	0,65	0,9	0,9	0,9
F	3,1	3,1	3,1	3,1	3,1
G	6,4	6,4	6,4	6,4	6,4

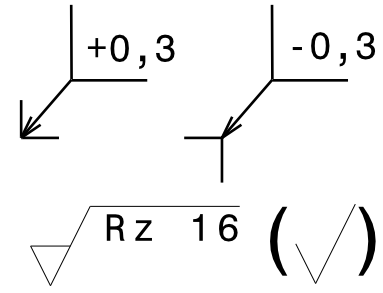
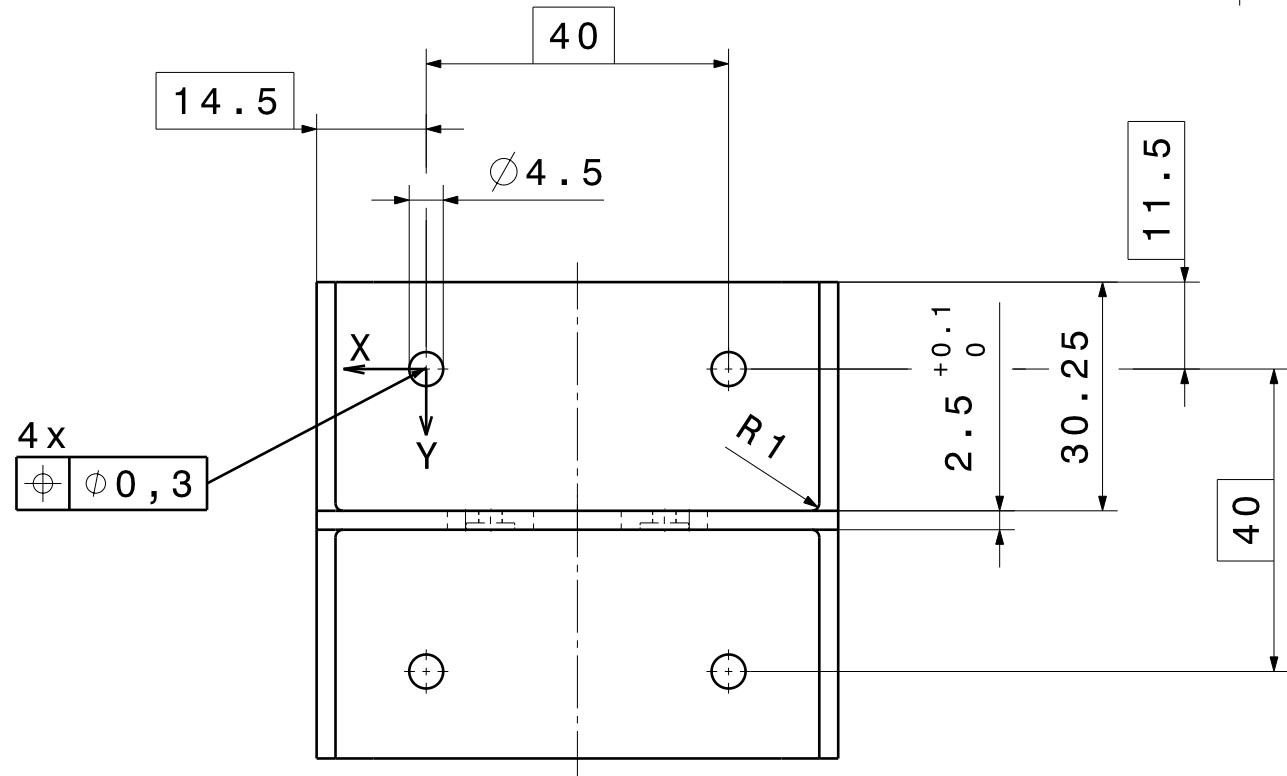
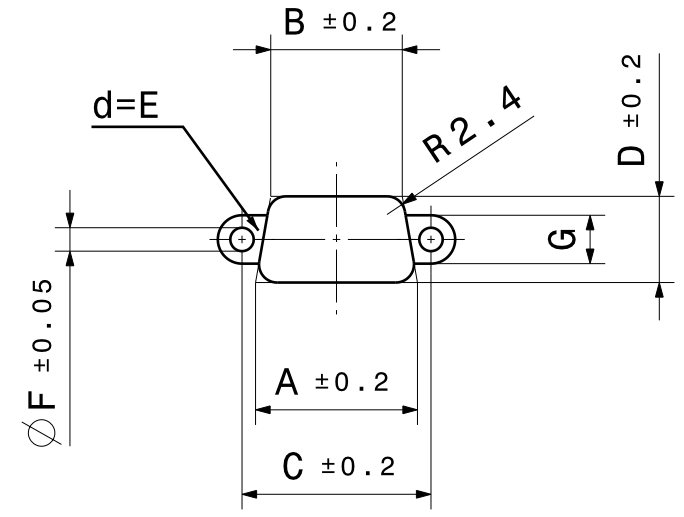
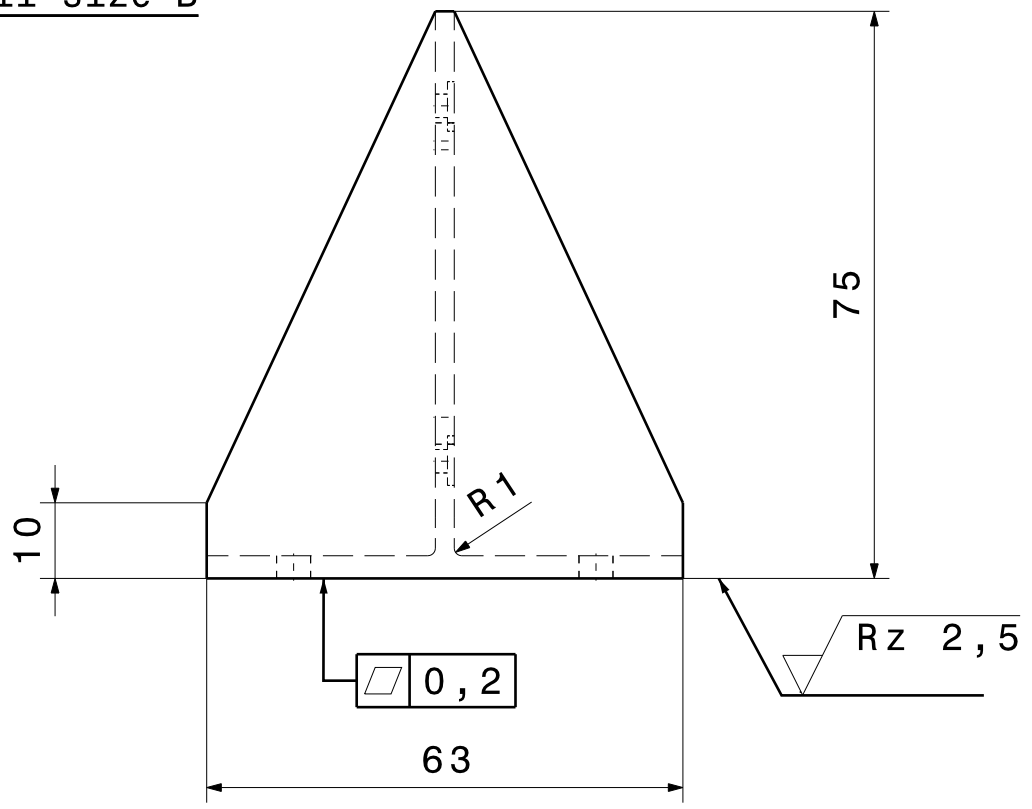
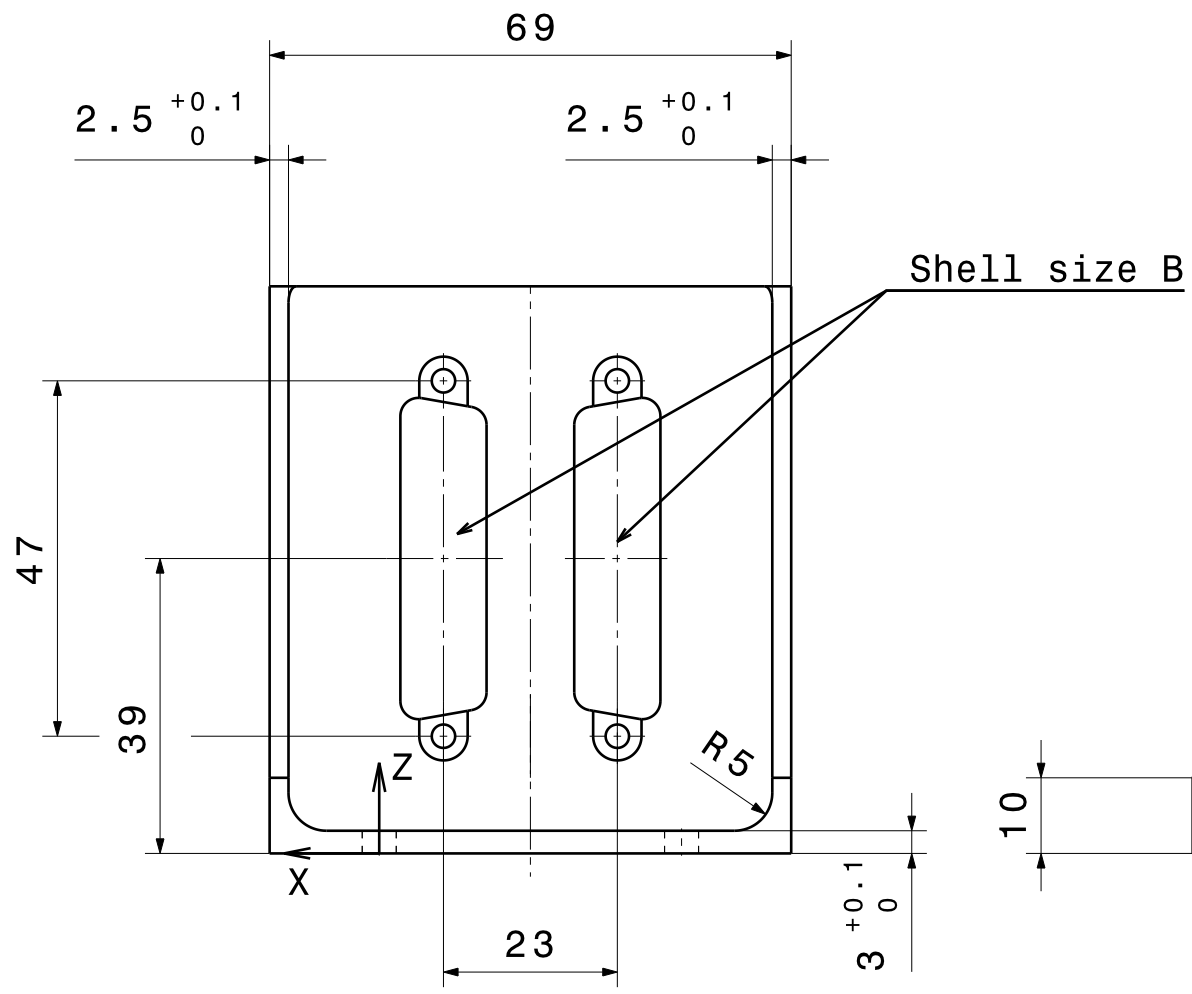
Rz 16 (✓)
 liquid penetrant inspection according to ASTM E1417-95a

Surface	Scale	General tolerances	Mass	DIN	CAD Drawing
LN9368-4301.3	1:1	DIN ISO 2768-lk	197 g	A2	No manual Changes
Date	Name	Material	SVM Harness		
19.05.04	Re/SA	3.4364 T7351			
Prepared	Checked				
File	Bracket				
Bracket HP-08-02-03-KT.CATPart	Bracket HP-08-02-01-KT.CATDrawing				
1	First issue	19.05.04	Re/SA	KAYSER-THREDE	
Issue	Change(DCN/ECP)	Date	Name		
				Sheet	1
				of	1



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Approved	Struct/Therm	Proj/Syst	PA	Config
Data				
Name				



	Shell size E	Shell size A	Shell size B	Shell size C	Shell size D
A	21,42	29,72	43,42	60,02	57,22
B	17,4	25,7	39,4	56	52,25
C	25	33,3	47	63,5	61,1
D	11,4	11,4	11,4	11,4	14,1
E	0,65	0,65	0,9	0,9	0,9
F	3,1	3,1	3,1	3,1	3,1
G	6,4	6,4	6,4	6,4	6,4

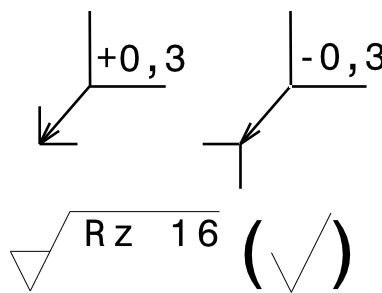
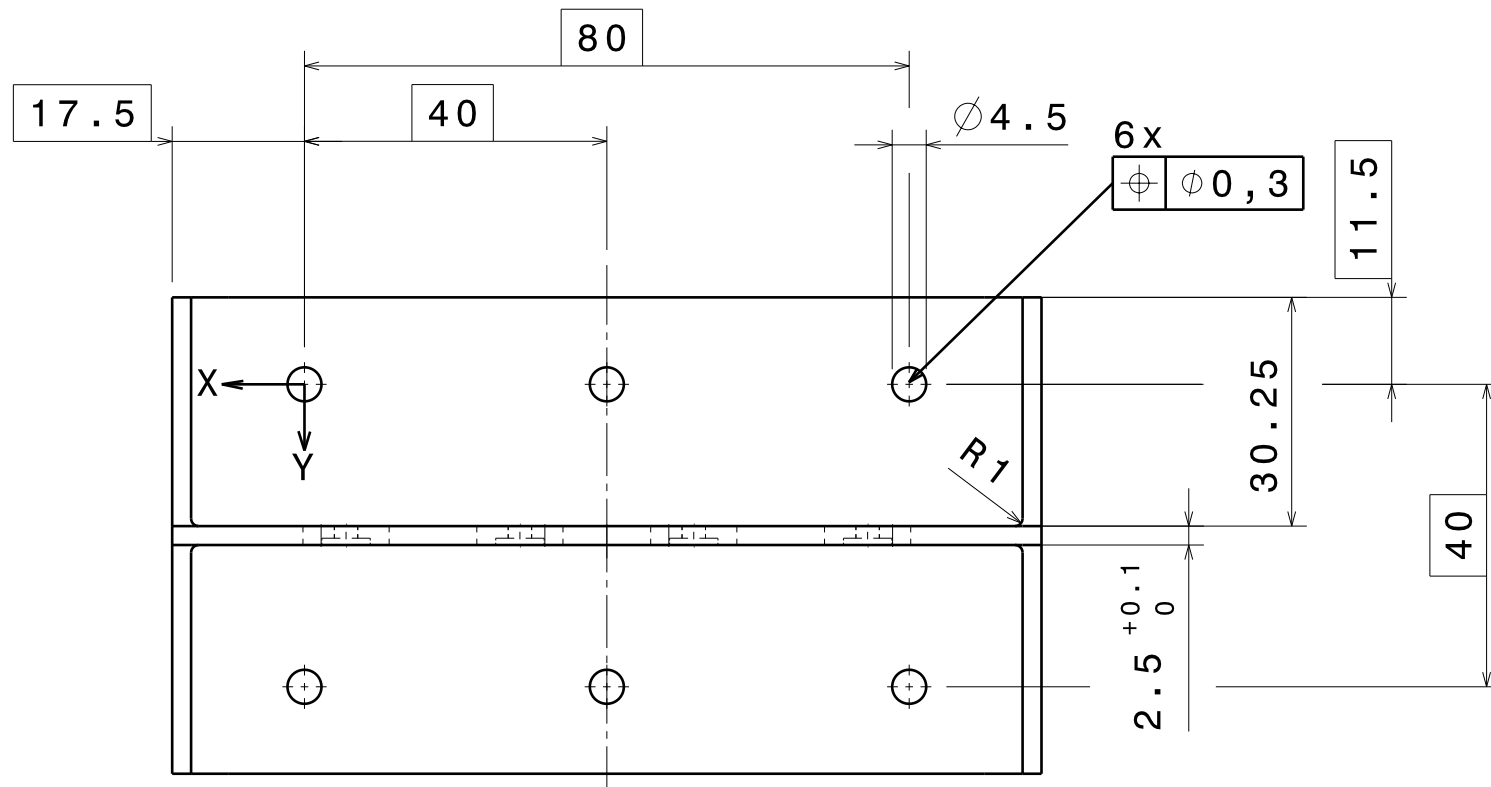
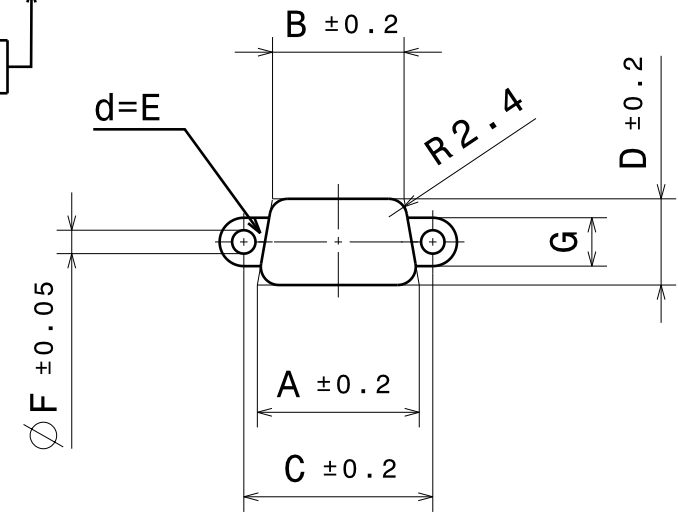
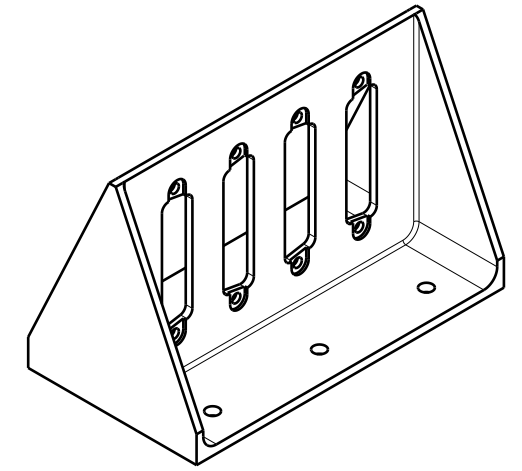
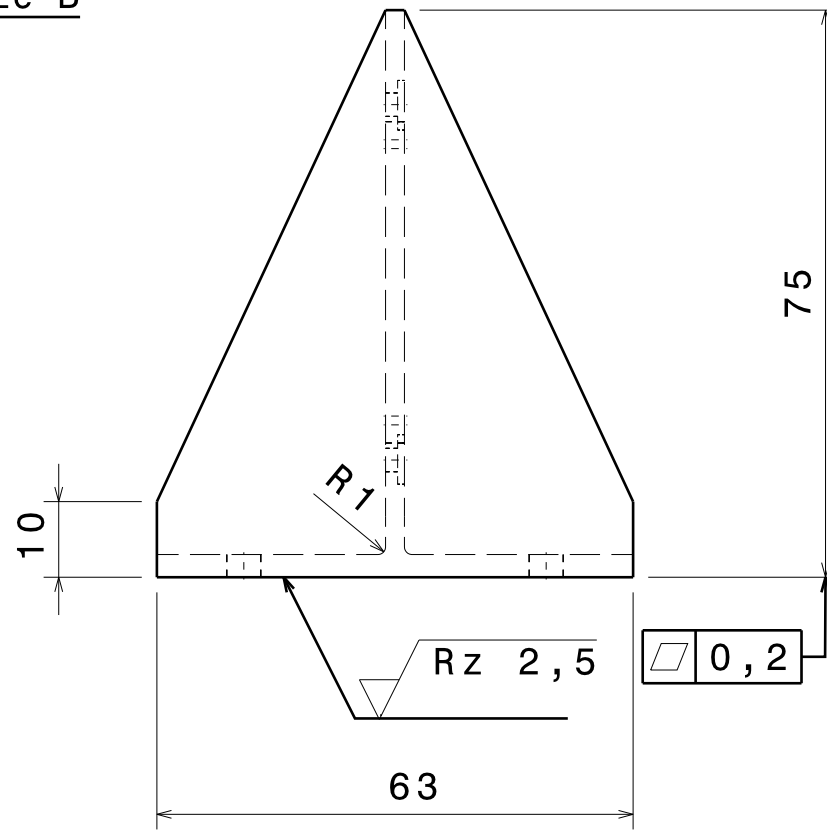
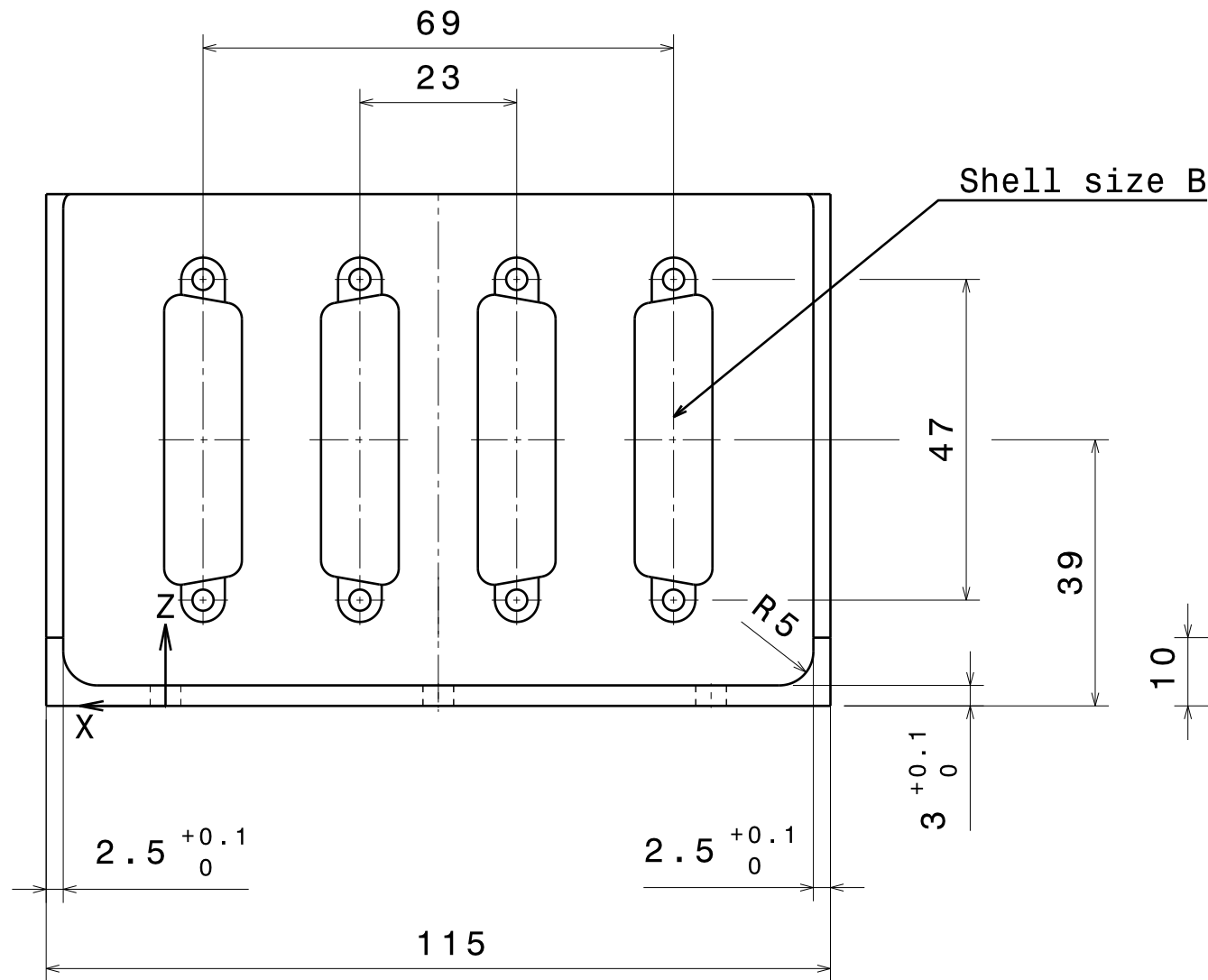
liquid penetrant inspection according to ASTM E1417-95a

Surface	Scale	General tolerances	Mass	DIN	CAD Drawing
LN9368 - 4301.3	1:1	DIN ISO 2768-fK	96 g	A3	No manual Changes
Prepared	Date	Name	Material		
Checked	12.01.04	Re/SA	3.4364 T7351		
File	Bracket HP-02-01-02-KT.CATPart		SVM Harness		
	Bracket HP-02-01-02-KT.CATDrawing		Bracket		
1	First Issue	17.05.04	Sheet		
0	Draft	12.01.04	1		
Issue	Change(DCN/ECP)	Date	Name		
			HP-02-01-02-KT		
			of		
			1		



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Approved	Struct/Therm	Proj/Syst	PA	Config
Data	Name			



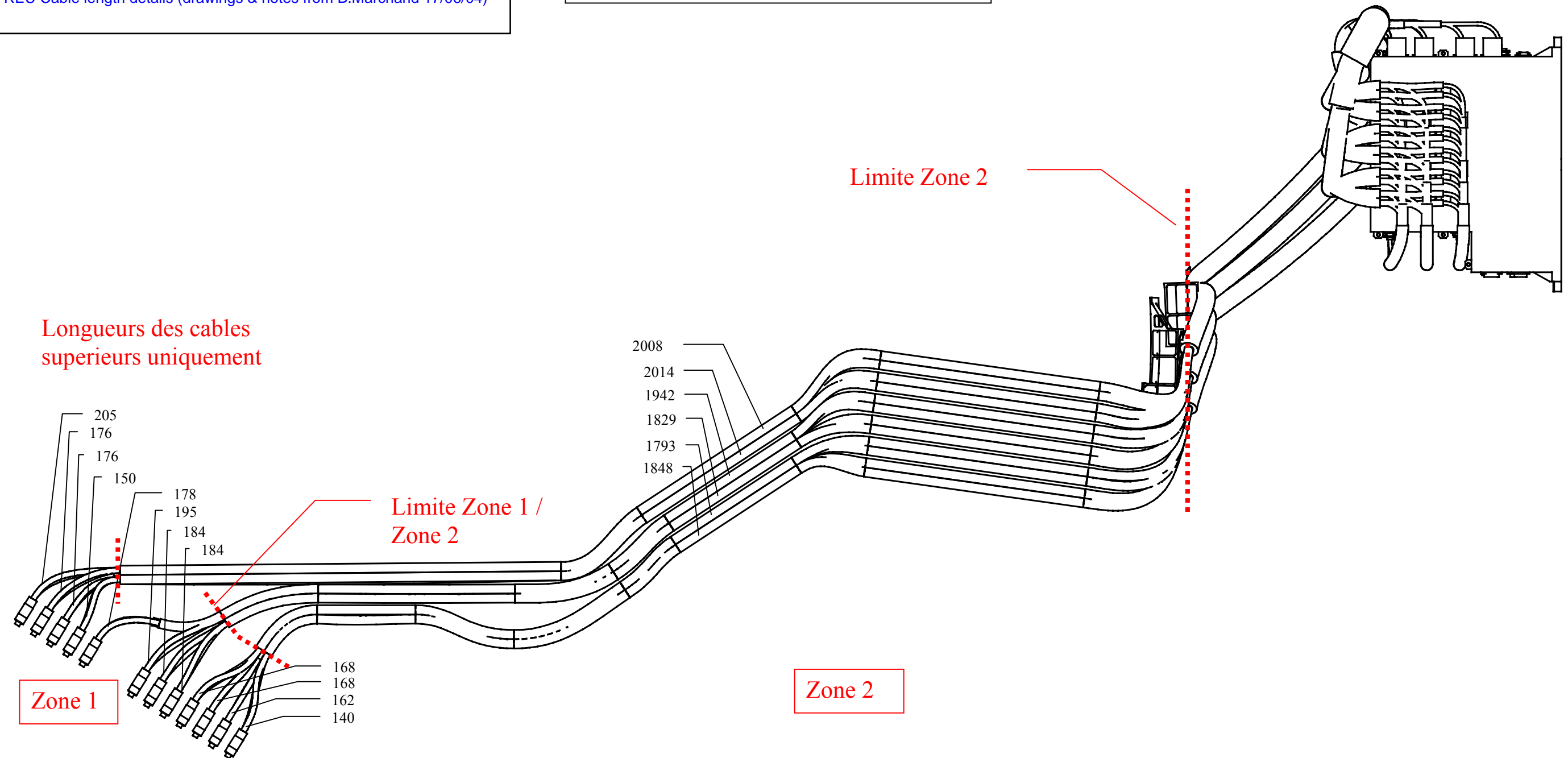
	Shell size E	Shell size A	Shell size B	Shell size C	Shell size D
A	21,42	29,72	43,42	60,02	57,22
B	17,4	25,7	39,4	56	52,25
C	25	33,3	47	63,5	61,1
D	11,4	11,4	11,4	11,4	14,1
E	0,65	0,65	0,9	0,9	0,9
F	3,1	3,1	3,1	3,1	3,1
G	6,4	6,4	6,4	6,4	6,4

liquid penetrant inspection according to ASTM E1417-95a

Surface	Scale	General tolerances	Mass	DIN	CAD Drawing
-	-	DIN ISO 2768-fK	135 g	A3	No manual Changes
LN9368-4301.3	1:1	Material			
		3.4364 T7351			
Prepared	Date	Name	SVM Harness		
Checked	12.01.04	Re/SA			
File	Bracket HP-04-01-03-KT.CATPart		Bracket		
	Bracket HP-04-01-03-KT.CATDrawing				
1	First Issue	19.05.04	HP-04-01-03-KT		
0	DRAFT	12.01.04			
Issue	Change(DCN/ECP)	Date	Name		



VUE DE DESSUS



Longueurs des cables
superieurs uniquement

Zone 1

Limite Zone 1 /
Zone 2

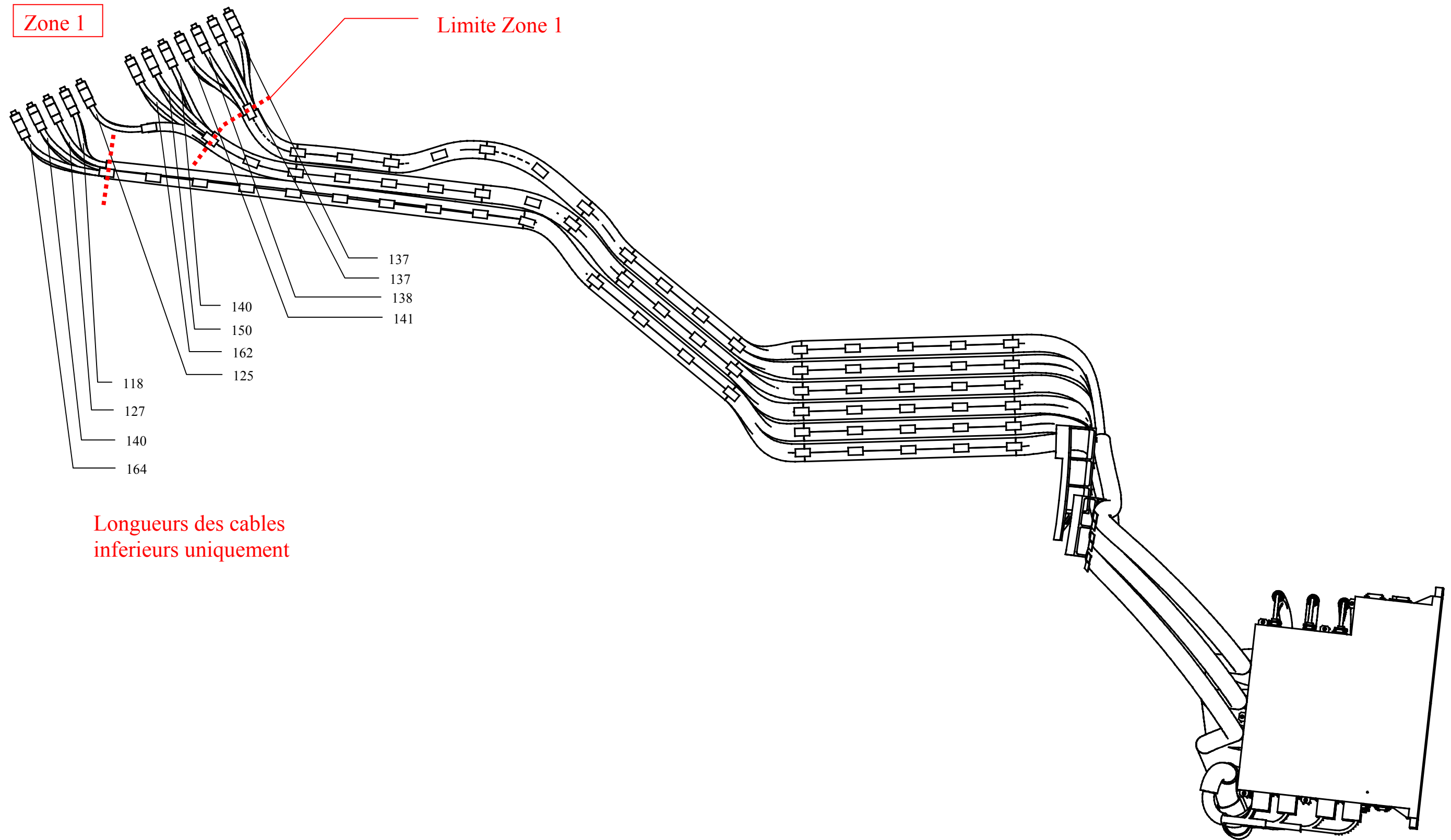
Zone 2

Limite Zone 2

Les connecteurs modelises ne sont pas forcement representatifs des vrais connecteurs (surtout REU qui sont specifiques)

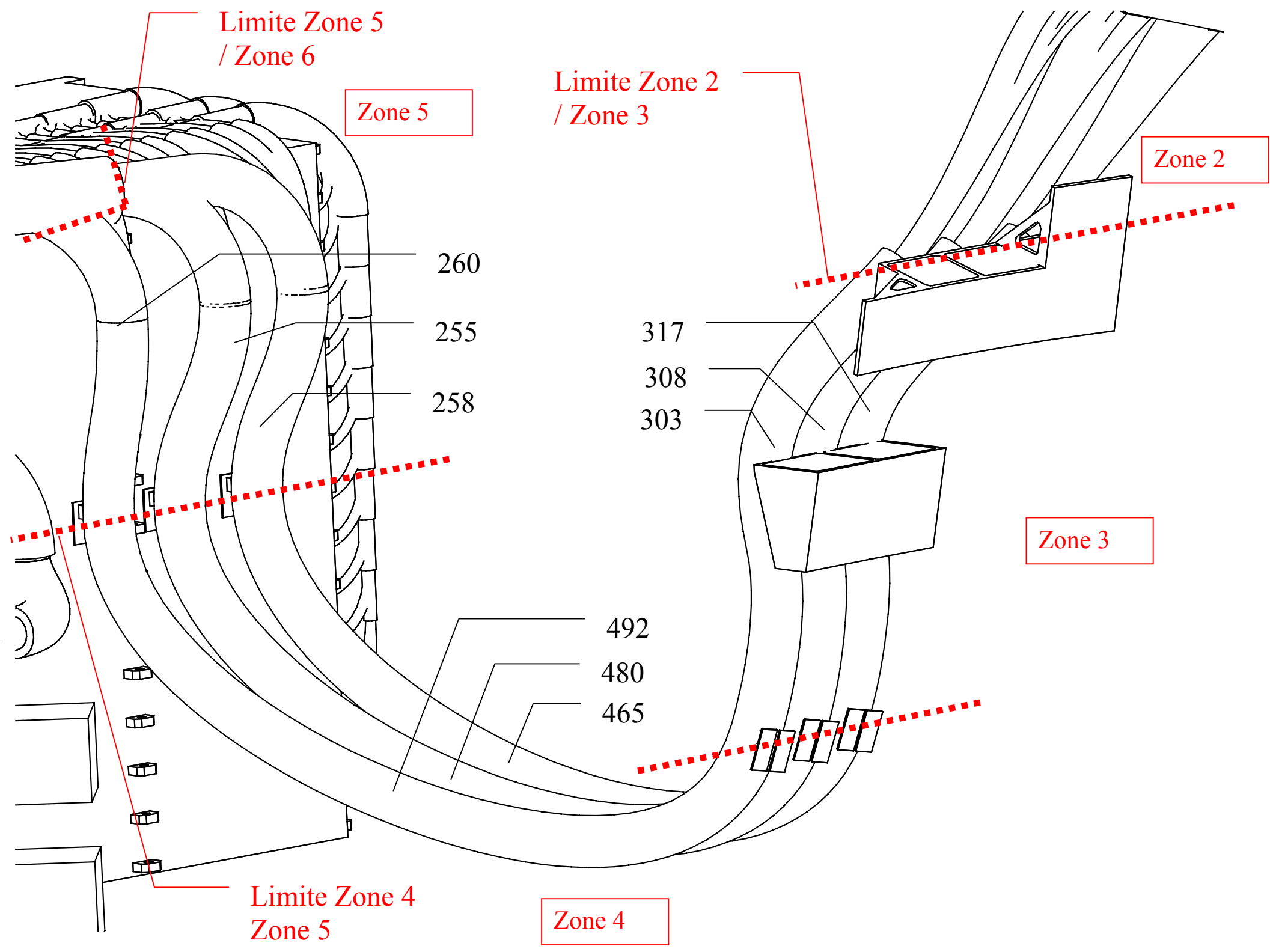
Toutes les longueurs donnees sont en millimetres

VUE DE DESSOUS

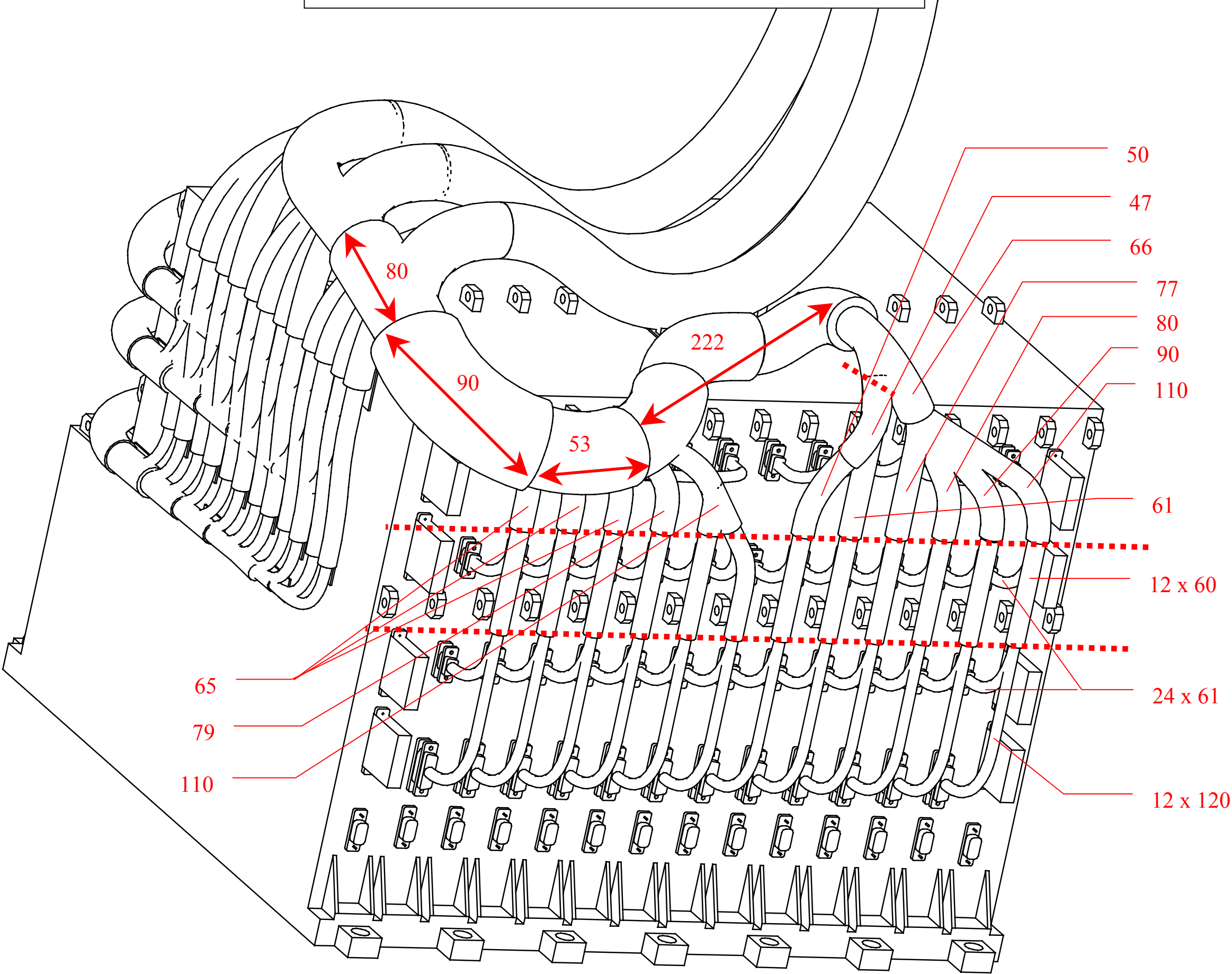


Longueurs des cables
inferieurs uniquement

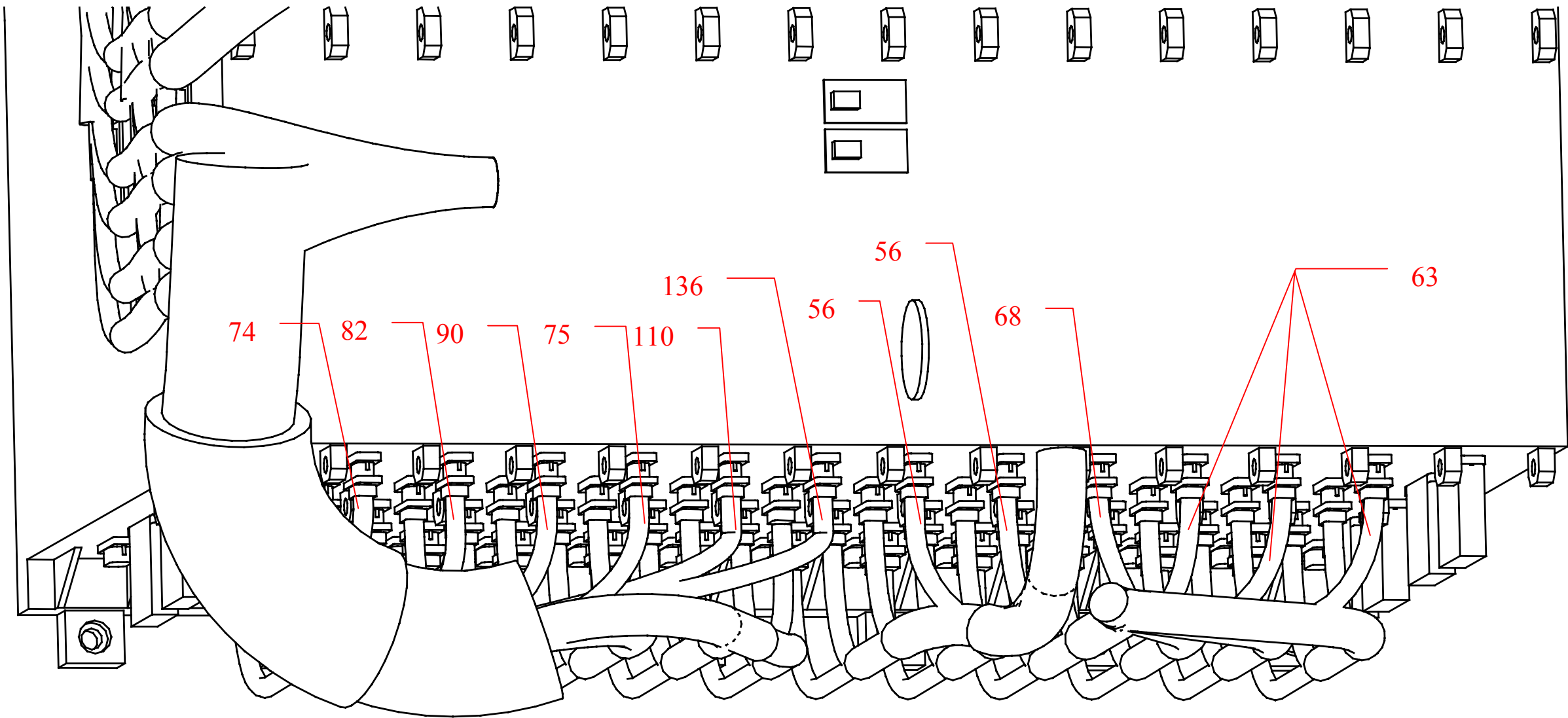
VUE ENTRE LE CONE ET LE REU



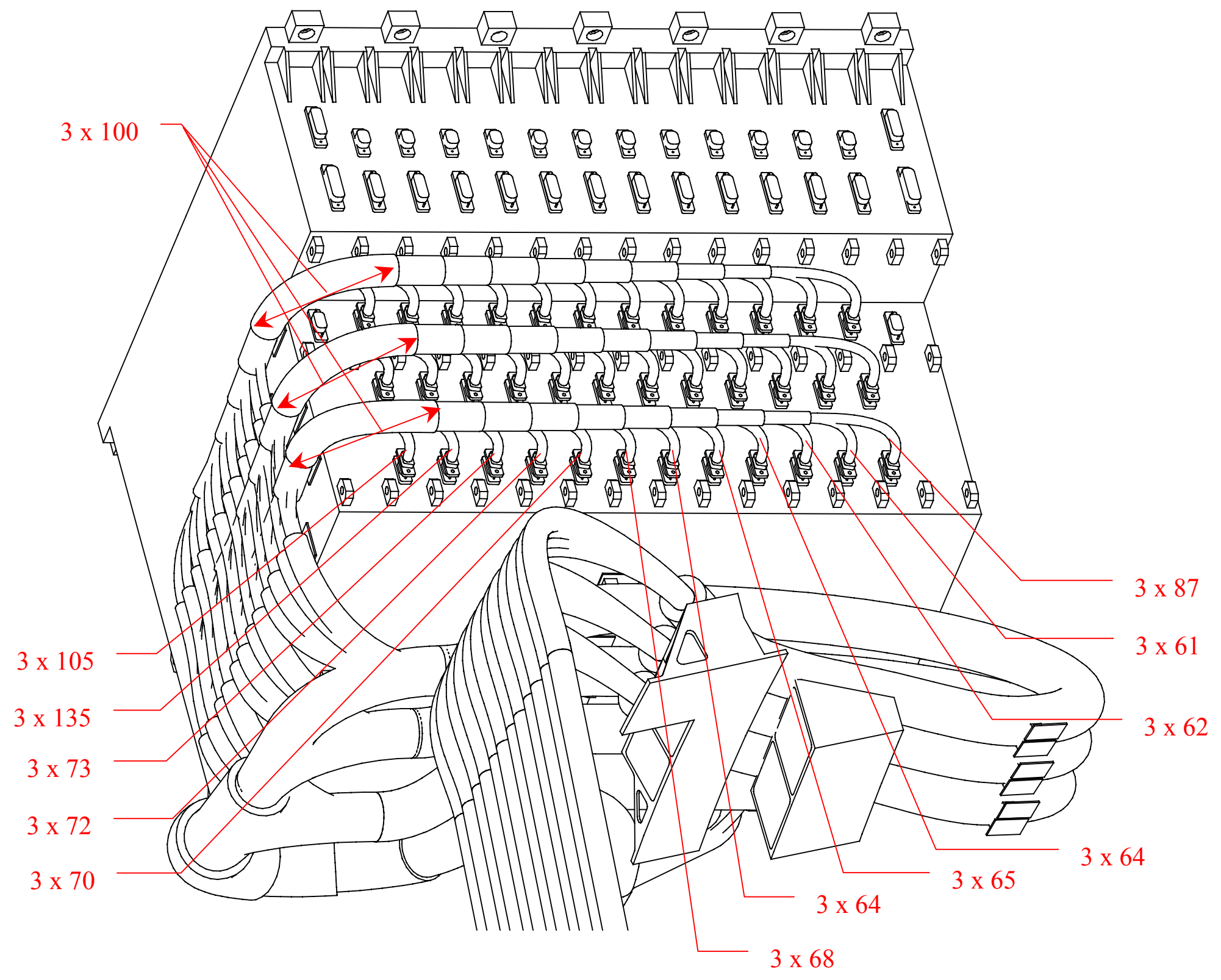
FACE +Zsat REU



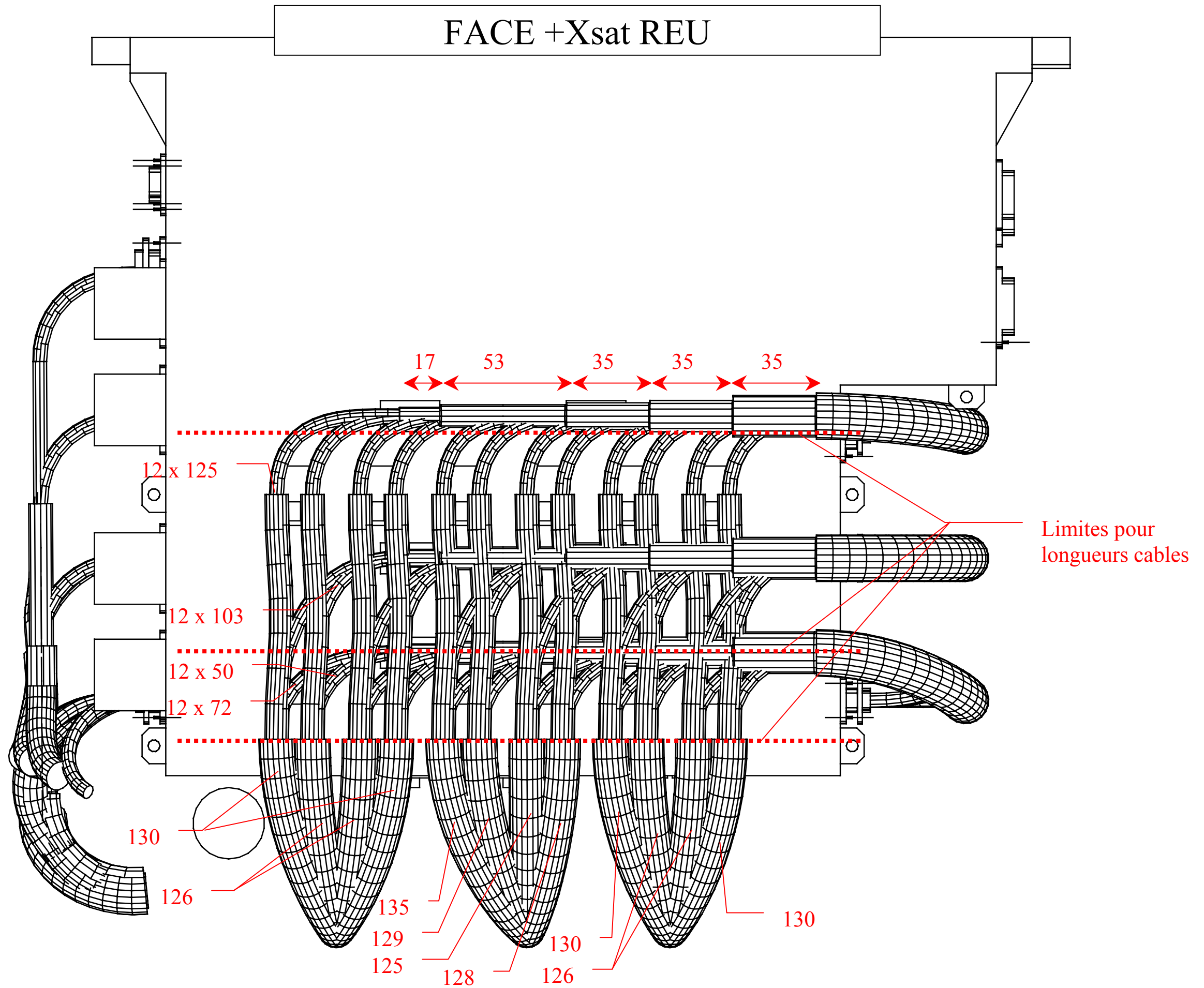
FACE +Zsat REU



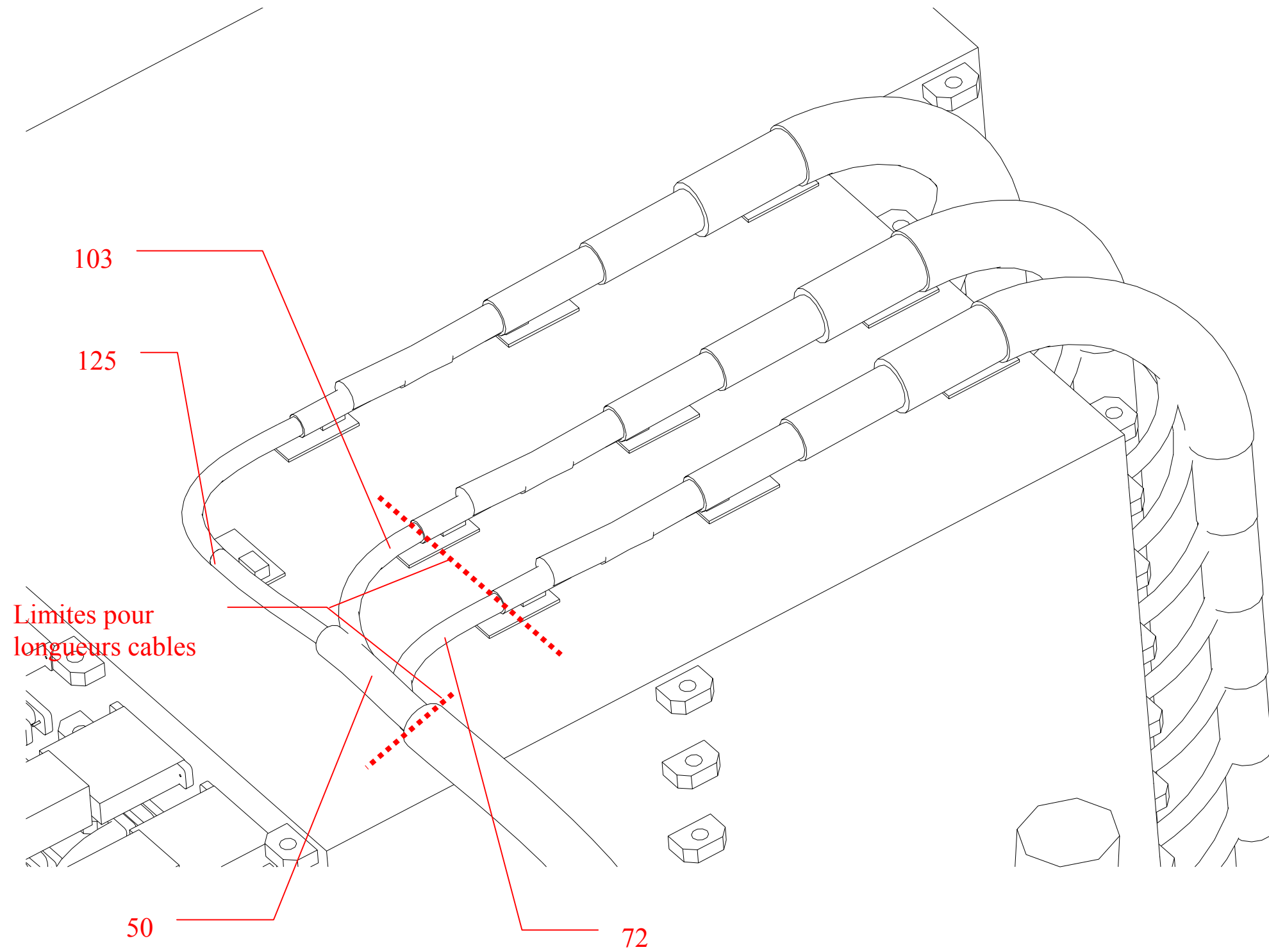
FACE -Zsat REU



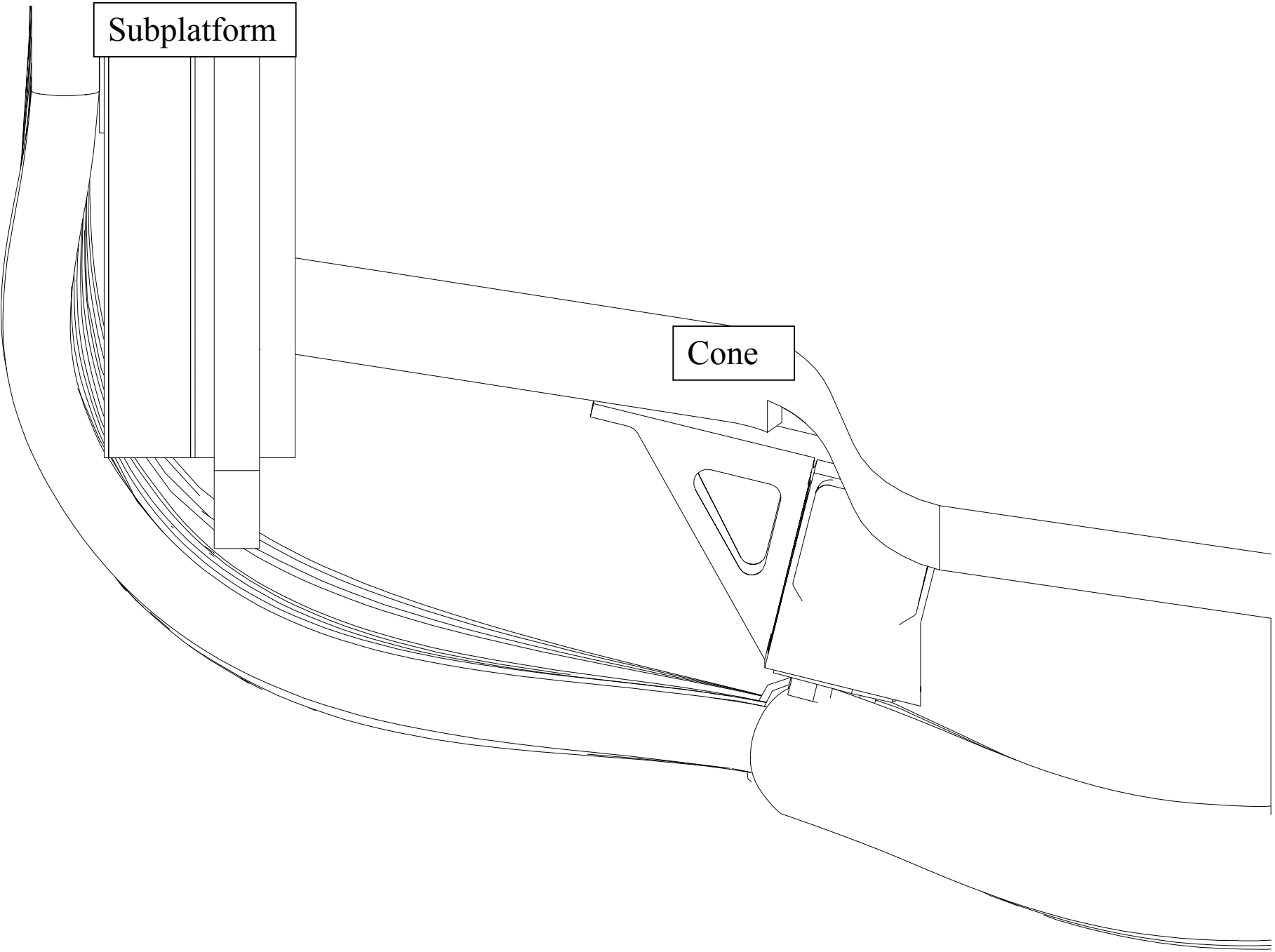
FACE +Xsat REU



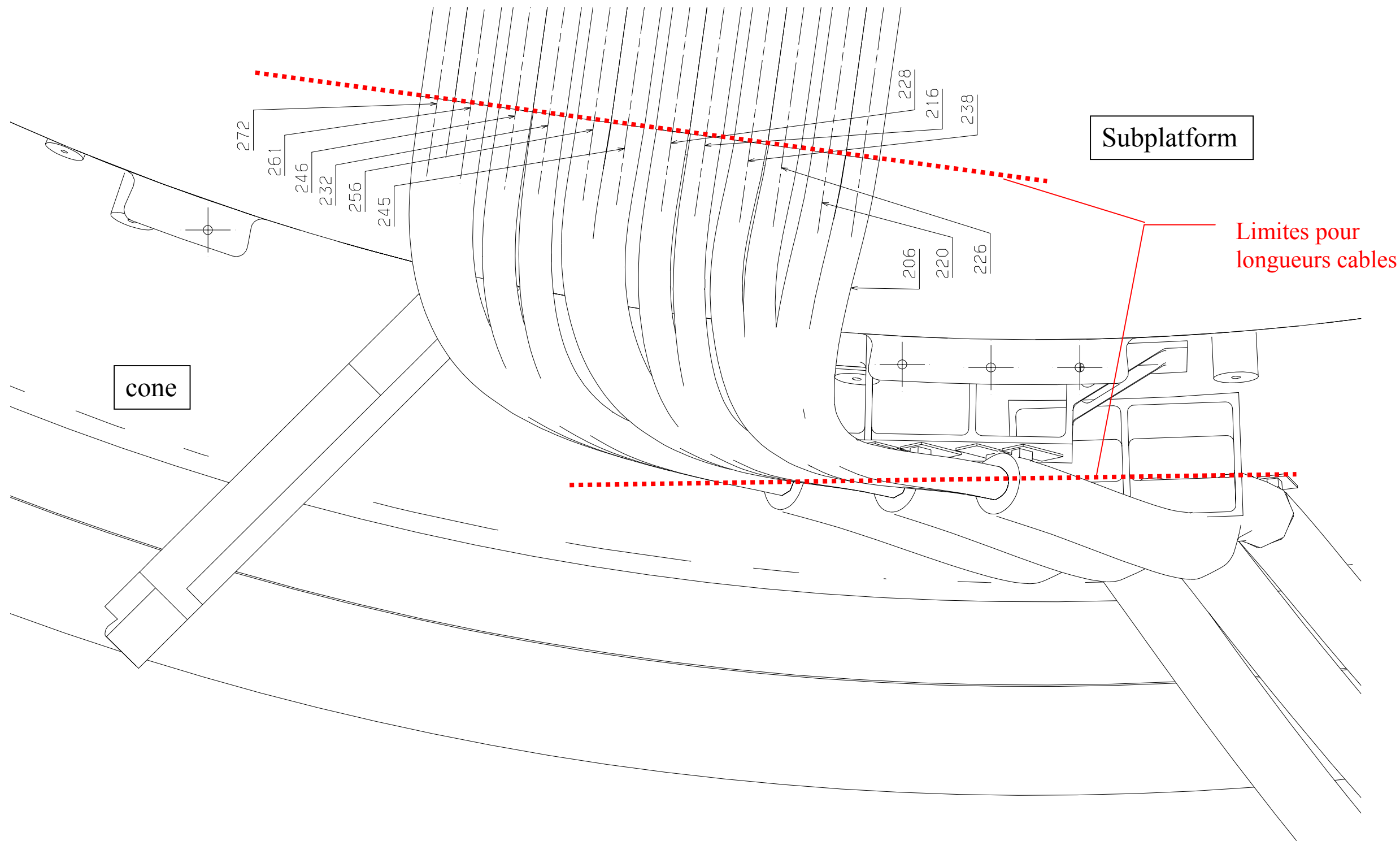
FACE +Xsat REU – 1 seul cable



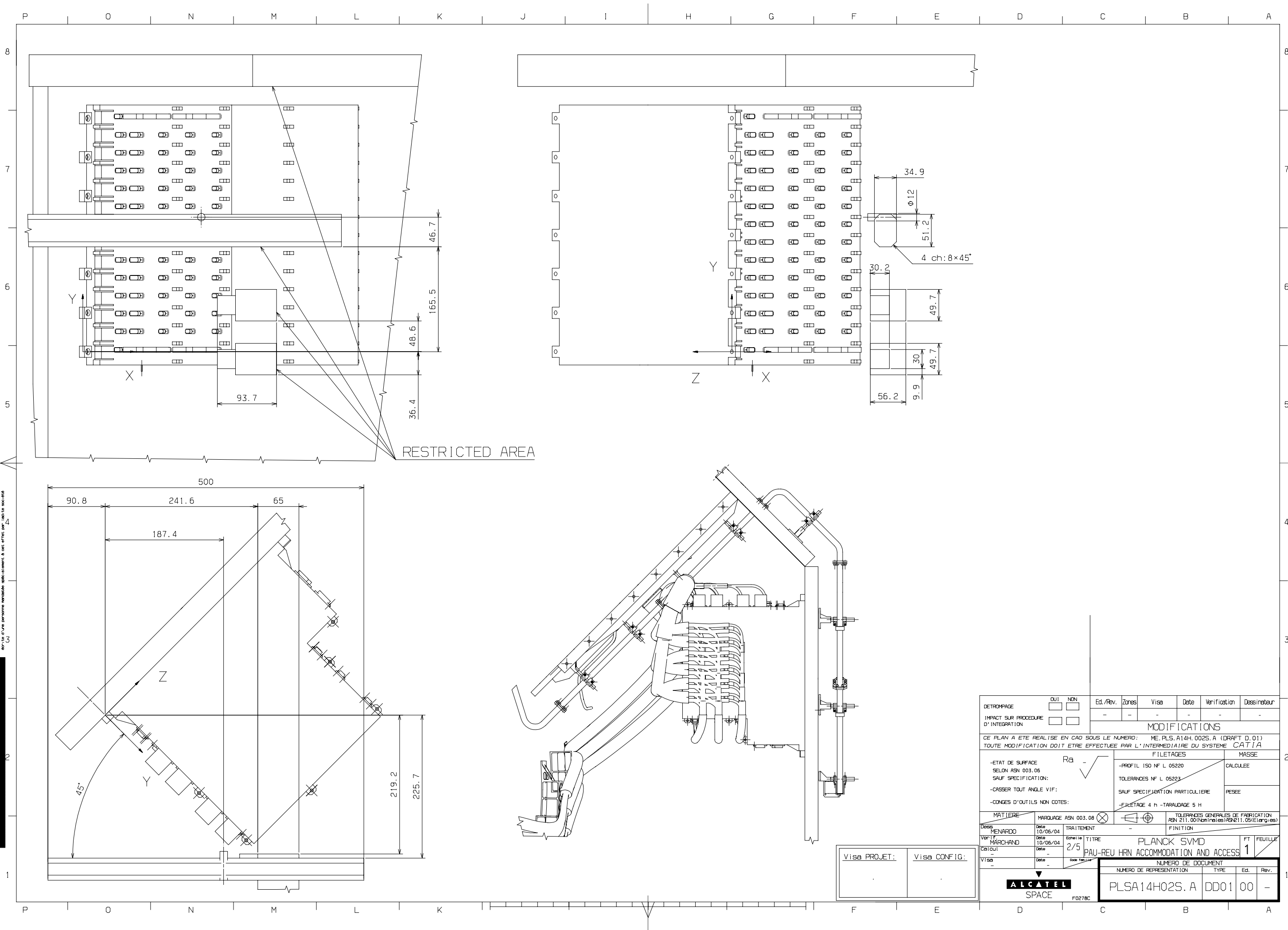
Cablage REU/PAU subplatform / cone – vue transverse



Cablage REU/PAU subplatform / cone – vue de dessus



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Visa PROJET: _____
 Visa CONFIG: _____

DETROUPE	<input type="checkbox"/> OUI <input type="checkbox"/> NON	Ed./Rev.	Zones	Visa	Date	Verification	Dessinateur
IMPACT SUR PROCEDURE D'INTEGRATION	<input type="checkbox"/> <input type="checkbox"/>	-	-	-	-	-	-
MODIFICATIONS							
CE PLAN A ETE REALISE EN CAO SOUS LE NUMERO: ME, PLS, A14H, 0025, A (DRAFT D.01) TOUTE MODIFICATION DOIT ETRE EFFECTUEE PAR L'INTERMEDIAIRE DU SYSTEME CATIA							
-ETAT DE SURFACE SELON ASN 003.06 SAUF SPECIFICATION:				Ra		CALCULEE	
-CASSER TOUT ANGLE VIF:				FILETAGES		MASSE	
-CONGES D'OUTILS NON COTES:				TOLERANCES NF L 05220		RESEE	
MATERIE				MARQUAGE ASN 003.08		TOLERANCES GENERALES DE FABRICATION ASN 211.05 (Normal (es)/AS211.05 (E) (ang (es)))	
Dessins				TRAITEMENT		FINITION	
MENARDO				Date 10/06/04		Echelle	
Verif MARCHAND				Date 10/06/04		TITRE	
Cetou				Date		2/5	
Visa				Date		000 10/06/04	
PLANCK SVM D PAU-REU HRN ACCOMMODATION AND ACCESS							
NUMERO DE REPRESENTATION TYPE Ed. Rev.							
ALCATEL SPACE F0278C PLSA14H025.A DDO1 00 -							

LIST OF CAD MODELS APPLICABLE TO HFI WIH

WIH : WARM UNIT INTERCONNECTING HARNESS (INSTRUMENT)

SVMh : SVM HARNESS (SATELLITE)

HARNESS 4K INSTRUMENT ON SVM – ALL FILES IN STEP FORMAT; File: 4K panel pack.zip

NUMBER	ISSUE	NAME	CONTENT
HP212001-19-2	B	CENTRE CONE HRN ELT ASSY 4K STEP	HRN 4K CAU->PPLM / SVM PART
HP212001-23-2	D	+Y LATERAL PANEL HRN ELT ASSY (4K)	WIH ON 4K PANEL
HP212002-23-2	B	+Y LATERAL PANEL HRN MECH ASSY (4K)	STAND-OFFS FOR HRN ON 4K PANEL
HP392001-23-2	F	+Y LATERAL PANEL HRN ELT ASSY (4K)	SVMh ON 4K PANEL
ME.PLS.A11F.Z.012SA	J	EQPT SVM PLANCK +Y 4K	WARM UNITS ON 4K PANEL + LATERAL PANEL STRUCTURE

HARNESS 0.1K INSTRUMENT ON SVM – ALL FILES IN STEP FORMAT; File: DCCU 0.1K pack.zip

NUMBER	ISSUE	NAME	CONTENT
HP212001-19-2	B	CENTRE CONE HRN ELT ASSY 0.1K STEP	HRN DCCU->PPLM + HE TANKS / SVM PART
HP212001-22-2	C	+Y+Z LATERAL PANEL HRN ELT ASSY (0.1K) HRN SOE	WIH ON 0.1K PANEL + SMALL PART OF SVMh ROUTING ON DCCU? CONTAINS STAND-OFFS
ME.PLS.A11F.Z.013SA	H	GM EQPT SVM PLANCK +Y+Z DCCU STEP	DCCU MODEL + LATERAL PANEL STRUCTURE
ME.PLS.A14K.Z.101SA	B	DM PIPING 0.1K	PIPES 0.1K ON SVM

HARNESS DPU INSTRUMENT ON SVM – ALL FILES IN STEP FORMAT ; File: DPU pack.zip

NUMBER	ISSUE	NAME	CONTENT
HP212001-21-2	C	+Z LATERAL PANEL HRN ELT ASSY (DPU)	WIH ON DPU LATERAL PANEL
HP212001-50-2	B	LOWER CLOSURE PANEL HRN ELT ASSY	WIH FROM DPU TO OTHER HFI UNITS ON LOWER CLOSURE PANEL
HP212002-50-2	B	LOWER CLOSURE PANEL HRN MECH ASSY	STAND-OFFS AND BRACKETS ON LOWER CLOSURE PANEL
HP392001-21-2	E	+Z LATERAL PANEL HRN ELT ASSY (DPU)	SVMh ON DPU LATERAL PANEL
HP392001-21-2	A	+Z LATERAL PANEL HRN MECH ASSY (DPU)	STAND-OFFS ON DPU
ME.PLS.A11F.Z.014SA	F	EQPT SVM PLANCK +Z DPU	DPU MODELS AND LATERAL PANEL

HARNESS REU-PAU – ALL FILES IN STEP FORMAT; File: hrnreu pau 140604 Step format.zip

NUMBER	ISSUE	NAME	CONTENT
ME.HP212001-60-2	D	STB HRN REU PAU A COTE DU HRN INTERNE	ROUTING OF REU-PAU ON SVM FOR FM + UNITS MODELS
ME.PLS.336000002	C	RCS ASSY BTS 150604 STEP	PROPULSION PIPING AND ELTS IMPACTING ROUTING OF REU-PAU
ME.PLS.346000002	C	WAVE GUIDES ASSY STEP	WAVE-GUIDES ELTS IMPACTING ROUTING OF REU-PAU
ME.PLS.A14K.Z.101SA	B	DM PIPING 0.1K	ROUTING OF 0.1K PIPES IMPACTING REU-PAU HARNESS

NOTA : A CATIA FILE OF REU-PAU HRN ROUTING HAS ALSO BEEN PROVIDED

ADDITIONAL MODELS – ALL FILES IN STEP FORMAT; File: Additional models.zip

NUMBER	ISSUE	NAME	CONTENT
ME.PLS.A120.Z.010SA	K	STB CAISSE PLANCK ALLEGEE	SVM ENTIRE STRUCTURE
ME.PLS.A14L.Z.010SA	D	STB HE TANK SVM PLANCK	HE TANKS (0.1K)

DOCUMENT COMPOSITION

Pages	Annexes	Others
12	19	0



DOCUMENT IDENTIFICATION

Project	: Herschel - Planck	
N° Project	: 1680	
N° Contract	:	
Material	: Herschel-Planck SVM Harness	
Doc. Reference	: H-P-4-NXH-RP-0024	A0
Date	: 18-03-04	

TITLE

H-P WU LFI Harness

This document contains updates made by B. Marchand (02/09/04)

Written by	Function	Date	Signature
Johan Vervliet	Engineer	18-03-04	
Checked by			
Ken Pletinckx	Project Engineering	18.03.04	
Approved by			
Stéphane Dassy	Project Manager	23-3-04	

H-P WU LFI Harness	Doc Id. : H-P-4-NXH-RP-0024		
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1 Scope

The purpose of this document is to provide a description of the LFI WU harness Planck S/C.

2 Introduction

The WU belonging to the LFI Experiment are located on the -Z LFI/SCS Panel (SCE1/2), the +Y-Z LFI/SCS panel (SCC1) and the -Y-Z Panel LFI/SCS (SCC2). Other WU belonging to the LFI Experiment are located on the +Y+Z Panel HFI 0.1K (REBA1/2) and the Top Floor (DAE-BEU).

The LFI harness is configured taking into account the different interconnection requirements of the experiment and harness design responsibility. The harness is split into 2 different main groups:

1. SVM Harness
2. Instrument WU Harness

The routing accommodation foreseen to have separate routing paths for each of the above harnesses as well as for main and redundant functions.

WU Harness interconnecting SCE and SCC does not require any brackets as the three SCS panels are mounted as a sub_assembly.

Due to the interconnections between the WU located on the 0.1K HFI panel and the Top Floor, a dedicated connector brackets DBH4 is foreseen to route the harnesses.

The instrument WU Harness is defined taking into account the harness data provided by Instruments as well as the SVM Harness Design in order to verify the relevant accommodation in the SVM configuration.

Additional details/drawings on the harness accommodation are reported in this document.

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3 Applicable Documents

3.1 Applicable documents

<i>Number</i>	<i>Issue</i>	<i>Title</i>
H-P-1-ASPI-SP-0027	4.0	General Design Interface Requirement Specification
H-P-1-ASPI-SP-0042	4.0	SVM Interface Specification
H-P-RP-AI-0025	1.0	SVM Harness Configuration and Design Description

3.2 ALS Baseline Documents

<i>Number</i>	<i>Issue</i>	<i>Title</i>
H-P-IC-AI-0001	04	Herschel/Planck SVM MICD
H-P-LI-AI-0022	05	List of HP SVM 3D CAD models
SCI-PT-IIDB/LFI-04142 5.12.2003	3.0 <small>drft2</small>	IIDB LFI
PL-LFI-PST-ID-002	2.1	SCC ICD
(BEU Cables-Baseline July 03)	/	BEU to Power Box

3.3 CATIA Harness Directory Status : LFI

<i>ALS Part Nr.</i>	<i>Rev.</i>	<i>Description</i>	<i>Resp.</i>	<i>Date</i>
HP-211102-11-2	A	+Y+Z(+Z) SHEAR PANEL HRN MECH ASSY		20.02.04
HP-211101-22-2	B	+Y+Z LATERAL PANEL HRN ELT ASSY (0.1K)		20.02.04
HP-211101-24-2	B	SCS PANELS HRN ELT ASSY		20.02.04
HP-211102-24-2	B	SCS PANELS HRN MECH ASSY		20.02.04
HP-211101-60-2	A	PAYLOAD SUB-PLATFORM HRN ELT ASSY		20.02.04
HP-211102-60-2	A	PAYLOAD SUB-PLATFORM HRN MECH ASSY		20.02.04

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4 Document Organisation

4.1 General Information : Drawings

Every Drawing contains all relevant information with reference to the H-P LFI Harness derived from the MICD (Mech. Interface Control Doc.) and the other data provided by instruments, such as :

Power, Signal and Sensitive Routing
 Nominal & Redundant routing
 Mil Bus lay-out
 WIU Harness lay-out
 Mechanical Items lay-out
 Mechanical Items identification

Colour codes used are

colour	Class	Comment
Colour 30 (Dark Red)	1-/POWER	SVM Primary Power
Colour 04 (Light Blue)	2-/SIGNAL	SVM Signal
Colour 45 (Dark Green)	4-/SENS	SVM Sensitive Harness
Colour 75 (Dark Yellow)	2-/Signal	Mil Bus Harness
Colour 02 (Light Red)	--/PWR	Secondary Power
Colour 120 (Dark Blue)	--/Signal	Secondary Signal
Colour 111 (Dark Green)	N/A	Tie-base
Colour 05 (Yellow)	N/A	For Information Only

4.2 2D Drawing Numbering System

Each 2D Drawing is identified by H-P-NXH-DW-XXXX

Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DW	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.4

H-P WU LFI Harness	Doc Id. : H-P-4-NXH-RP-0024		
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4.3 2D JIG Numbering System

Each 2D JIG Drawing is identified by H-P-NXH-DR-XXXX

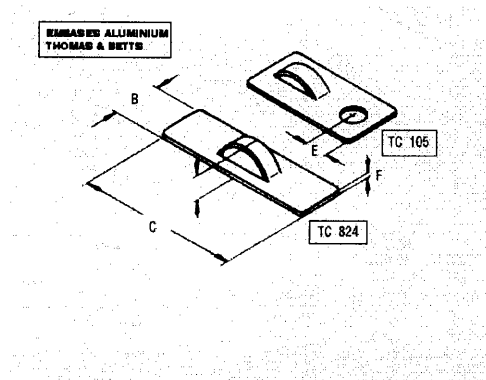
Part	Field
H-P	Herschel-Planck
NXH	Nexans Harnesses
DR	Drawing
X (first of XXXX)	1 for Herschel 2 for Planck
X (second of XXXX)	0 for General Panel Information 1 for Power (Nom and Red) 2 for Signal (Nom and Red) 4 for Sensitive (Nom/Red/Red2) 9 for MIL BUS (DMS/ACMS-NOM/RED)
XX (last two of XXXX)	00 General Structure XX Panel number in ref. with H-P-LI-AI-0022 iss.4

H-P WU LFI Harness	Doc Id. : H-P-4-NXH-RP-0024		
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5 Harness Fixing

5.1 Tie-bases

The position of the tie-bases has been designed to meet the requirement to fix the harness bundles on the structure every 100mm maximum. Tiebase type used is TC-105 (Thomas & Betts). Tie-wraps sizes used, are function of bundle diameter and in accordance to the applicable process list.



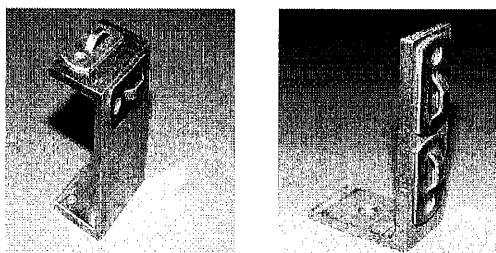
Tie-bases will be glued on the spacecraft structure and will assure harness fixation as well as electrical bonding.

5.2 Stand-off's

To maintain wire-bundles routing and minimize mechanical stress in harness, specific stand-off have been designed, which will be glued on the spacecraft structure.

The stand off designs are well approved at Kayser-Threde and will be modified to the purpose of the SVM Harness. (Pictures below)

Tie-bases will be glued to the stand-off's to allow cable fixation by using fasteners tie-wraps.



We assume 2 types of stand off will be necessary.

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6 2D Drawing Listing

6.1 LFI 2D Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DW-2011	Shear Panel Assy +Y+Z (+Z)	01-06-04	B0
H-P-NXH-DW-2022	0.1K Instrument Panel Assy	27-05-04	B0
H-P-NXH-DW-2024	SCS Instrument Panel Assy	27-05-04	B0
H-P-NXH-DW-2060	Sub-platform Instrument Panel Assy		

6.2 LFI JIG Drawing Listing

<i>Document Ref.</i>	<i>Document Title</i>	<i>Date</i>	<i>Issue</i>
H-P-NXH-DR-2011	Shear Panel Assy +Y+Z (+Z)	27-02-04	A1
H-P-NXH-DR-2022	0.1K Instrument Panel Assy	04-03-04	A1
H-P-NXH-DR-2024	SCS Instrument Panel Assy	04-03-04	A1
H-P-NXH-DR-2060	Sub-platform Instrument Panel Assy	04-03-04	A0

6.3 LFI 2D Drawings

Scs panel, 0.1K panel, Shear panel +Y+Z(+Z) and Sub-platform Lay-out : See Annex

7 **LFI Extracted Lengths**

Lengths updated according to SCE dwg PL-SCE-ID-0002-CRS iss 1

7.1 **SCS panel**

Bundle Id.	From Connector			To Connector			Bundle								Seq.
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	Nom / Red	Cat.	Diam	Bending Radius	Mass BNL (g/m)	Conn.+BCK (g)	L Max (mm)	L (mm)	
W001	SCE PSM/R4 P03	DBMA 25P	DB8949405-1NM	SCC PSM/R3 P01	DBMA 25S	DB8949405-1NM	Nominal Redundant	2	7.5				1500	1960 2153	1
W002	SCE PSM/R5 P09	DAMA 15P	DA8949405-1NM	SCC PSM/R3 P02	DAMA 15S	DA8949405-1NM	Nominal Redundant	1	7				1500	2125 2140	2
W003	SCE PSM/R4 P04	340104401B06G24-29PN	340106209B - 18B	SCC PSM/R3 P03	340104401B06G24-29SN	340106209B - 18B	Nominal Redundant	2	18				1500	2091 1965	1
W004	[REDACTED]														deleted
W005	SCE PSM/R4 P10	DAMA 15P	DA8949405-1NM	SCC PSM/R3 P05	DAMA 15S	DA8949405-1NM	Nominal Redundant	1	8				1500	2211 2200	2
W006	SCE PSM/R4 P06	DCMA 37P	DC8949405-1NM	SCC PSM/R3 P06	DCMA 37S	DC8949405-1NM	Nominal Redundant	2	12.5				1500	1932 2065	1
W007	SCE PSM/R4 P07	DCMA 37P	DC8949405-1NM	SCC PSM/R3 P07	DCMA 37S	DC8949405-1NM	Nominal Redundant	2	12				1500	2469 2721	1
W008	SCE PSM/R4 P08	DCMA 37P	DC8949405-1NM	SCC PSM/R3 P08	DCMA 37S	DC8949405-1NM	Nominal Redundant	2	12				1500	2568 2823	1
W101	SCE PSM4 P01	MDM37	500T010M37B09	SCCE PSM1 +Y BRACKET	(MDM37)	(500T010M37B09)	Nominal	2					5000	1882	1
W101	SCE PSR4 P01	MDM37	500T010M37B09	SCCE PSR1 -Y BRACKET	(MDM37)	(500T010M37B09)	Redundant	2					5000	2474	1
W102	SCE PSM4 P02	MDM37S	500T010M9B07	SCCE PSM1 +Y BRACKET	(MDM25)	(500T010M25B09)	Nominal	2					5000	1874	1
W102	SCE PSR4 P02	MDM37S	500T010M9B08	SCCE PSR1 -Y BRACKET	(MDM25)	(500T010M25B09)	Redundant	2					5000	2393	1

deleted

} length
} on
} SVM
} only

Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG. Lengths are measured from connector front face to connector front face.

Bck type between brackets are uptill now unknown by Nexans. However Nexans has worked with the most logic bck type to be used.

SVM harness is placed before SCS LFI WIU harness.

7.2 IIDB LFI

Lengths updated according to new routing under subplatform

Bundle Id.	From Connector			To Connector			Bundle								Seq.
	Identification	Con Type	Bck Type	Identification	Con Type	Bck Type	Nom / Red	Category	Diam. (mm)	Bending Radius	Mass BNL (g/m)	Conn.+Bck (g)	L Max (mm)	L (mm)	
3	DAE BEU P48	DAMA26S	3401-022-35B	DAE Pow Box P47	DAMA26P	3401-022-35B	RED	2	8	45			4.000	3.877	2
4	DAE BEU P50	DEMA09S	3401-022-34B	DAE Pow Box P49	DEMA09P	3401-022-34B	N/A	1	5	35			4.000	3.764	1
1A	DAE BEU P11	DEMA15S	3401-022-35B	DAE Pow Box P05	DDMA50P	(3401-022-38B)	N/A	1	9,4	55			4.000	3.798	1
1B	DAE BEU P13	DAMA26S	3401-022-35B				N/A	1					4.000	3.818	1
	DAE BEU P23	DEMA09S	3401-022-34B				N/A	1					4.000	3.828	1
6B	DAE BEU P12	DEMA15S	3401-022-35B	DAE Pow Box P06	DDMA50P	(3401-022-38B)	N/A	1	9,4	55			4.000	3.433	1
6A	DAE BEU P14	DAMA26S	3401-022-35B				N/A	1					4.000	3.452	1
	DAE BEU P24	DEMA09S	3401-022-34B				N/A	1					4.000	3.723	1
15	DAE BEU P09	DDMA50S	(3401-022-38B)	DBH4 P01	DDMA50S	(3401-022-38B)	Nom	2	7	42			4.000	3.574	2
15	DBH4 J01	DDMA50P	(3401-022-38B)	REBA1 J13	DAMA15S	3401-022-35B	Nom	2	N/A	N/A			500	917	2
				REBA1 J22	MDM9P	GLN 507-146-M09H	Nom	2	N/A	N/A			500	924	2
				REBA1 J23	MDM9P	GLN 507-146-M09H	Nom	2	N/A	N/A			500	934	2
				REBA1 J32	MDM9P	GLN 507-146-M09H	Nom	2	N/A	N/A			500	940	2
				REBA1 J33	MDM9P	GLN 507-146-M09H	Nom	2	N/A	N/A			500	951	2
16	DAE BEU P10	DDMA50S	(3401-022-38B)	DBH4 P02	DDMA50S	(3401-022-38B)	Red	2	7	42			4.000	3.847	2
16	DBH4 J02	DDMA50P	(3401-022-38B)	REBA2 J13	DAMA15S	3401-022-35B	Red	2	N/A	N/A			500	1.172	2
				REBA2 J22	MDM9P	GLN 507-146-M09H	Red	2	N/A	N/A			500	1.145	2
				REBA2 J23	MDM9P	GLN 507-146-M09H	Red	2	N/A	N/A			500	1.173	2
				REBA2 J32	MDM9P	GLN 507-146-M09H	Red	2	N/A	N/A			500	1.169	2
				REBA2 J33	MDM9P	GLN 507-146-M09H	Red	2	N/A	N/A			500	1.197	2

Note : These lengths are CATIA extracted and therefore theoretical values. It is recommended to perform harness production activities on JIG.
Lengths are measured from connector front face to connector front face.

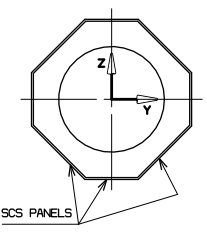
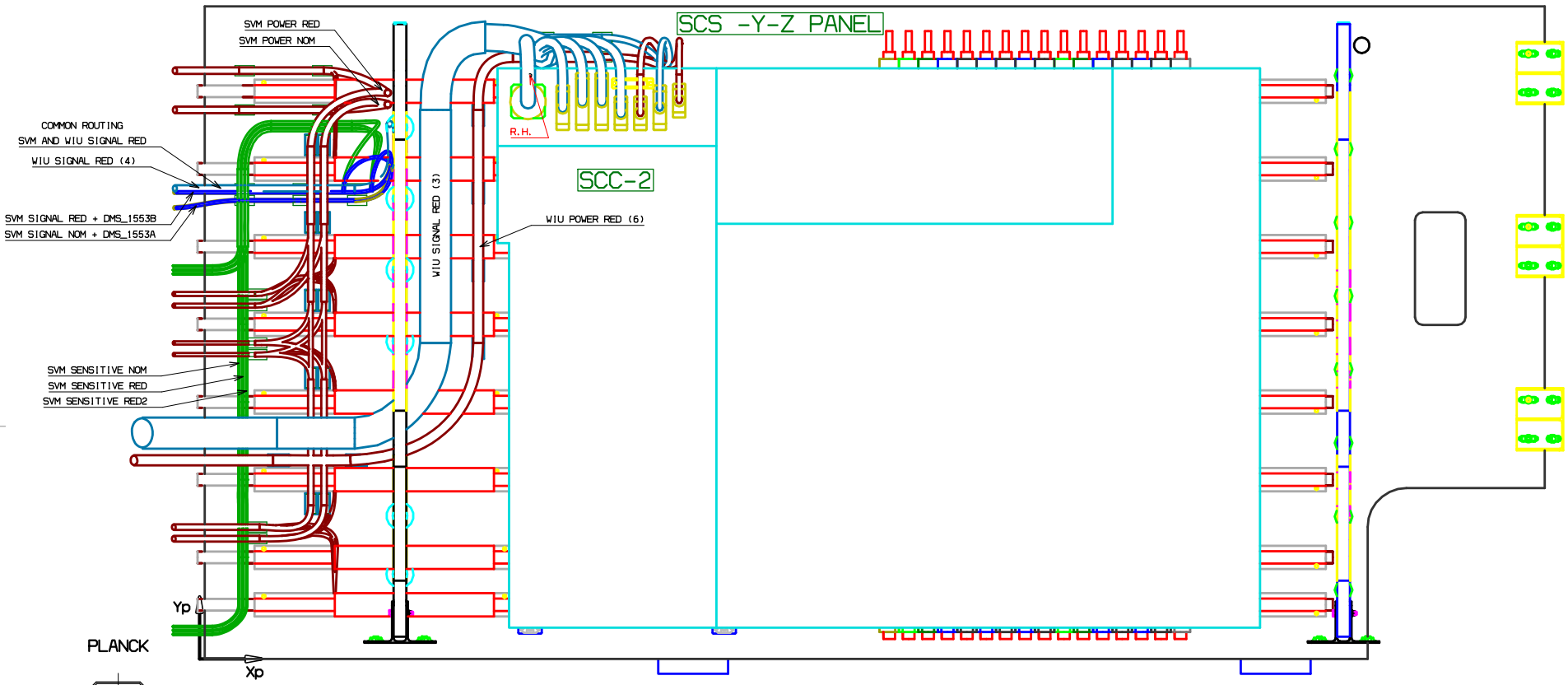
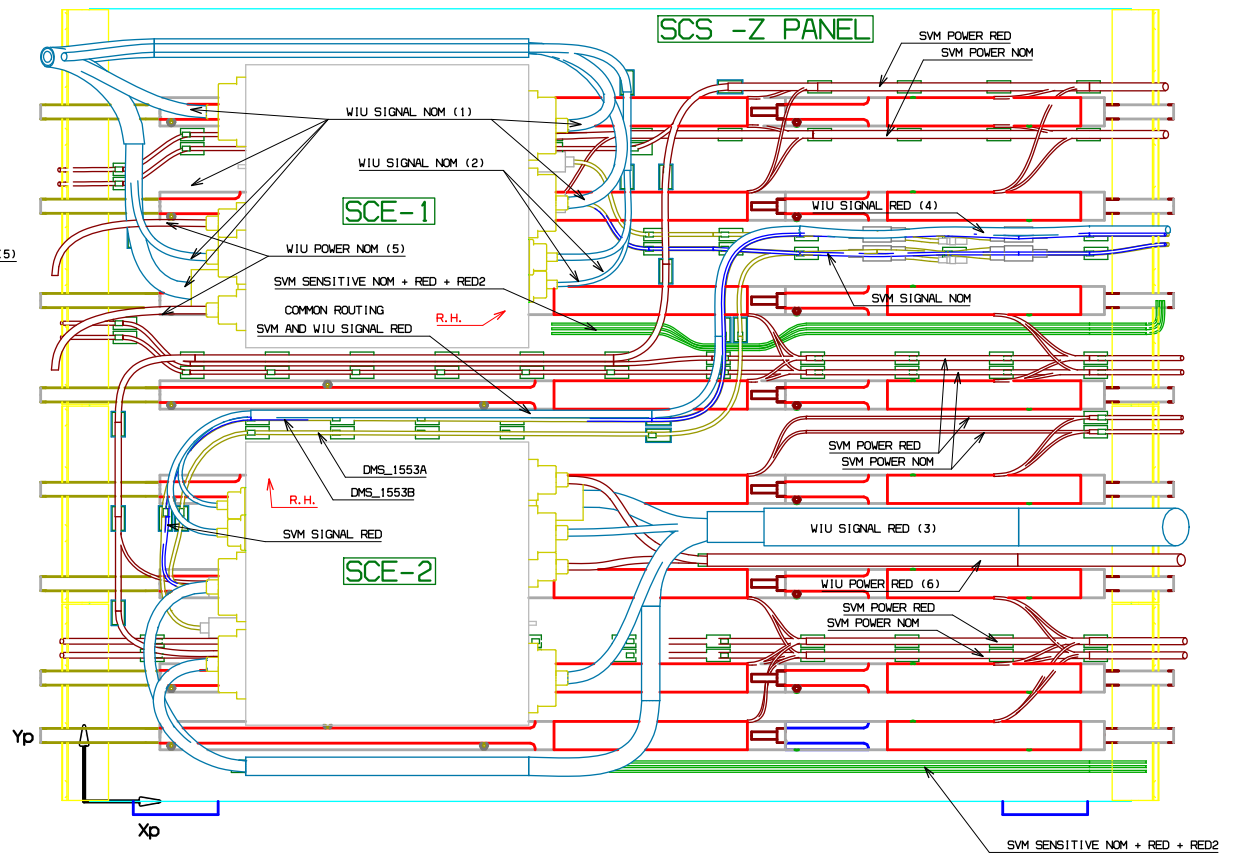
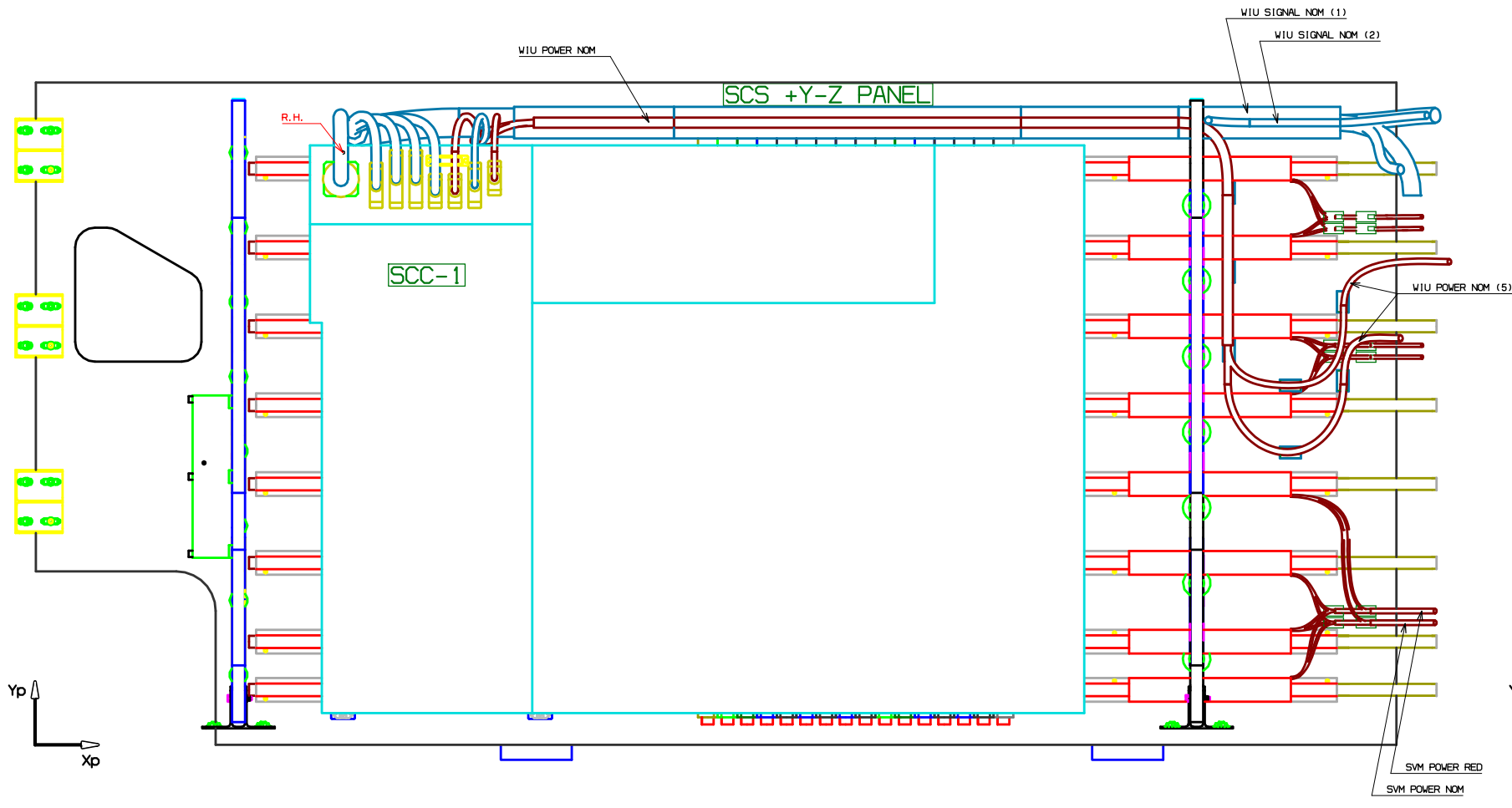
Bck type between brackets are uptill now unknown by Nexans. However Nexans has worked with the most logic bck type to be used.

HFI WIU harness is placed before LFI WIU harness.

SVM harness is placed after both HFI and LFI WIU harness are placed.

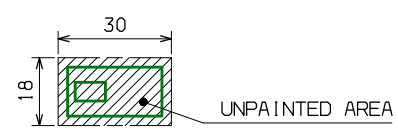
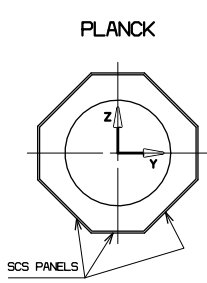
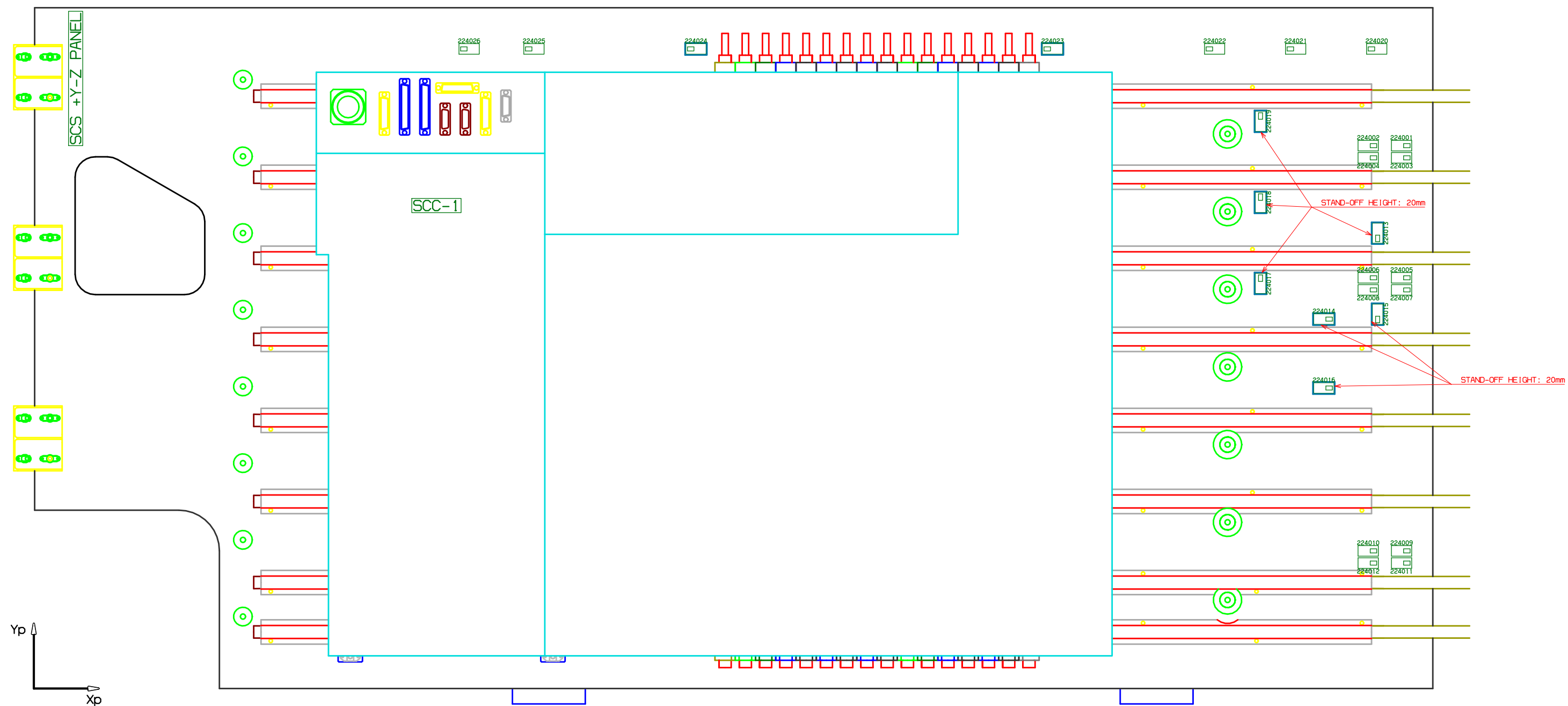
Link between DBH4 connector names and those indicated in document SCI-PT-IIBD-LFI-04142 :

- J01 = P90
- P01 = P91
- J02 = P95
- P02 = P96

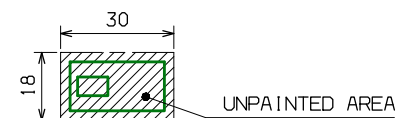
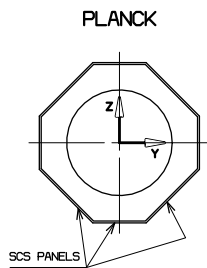
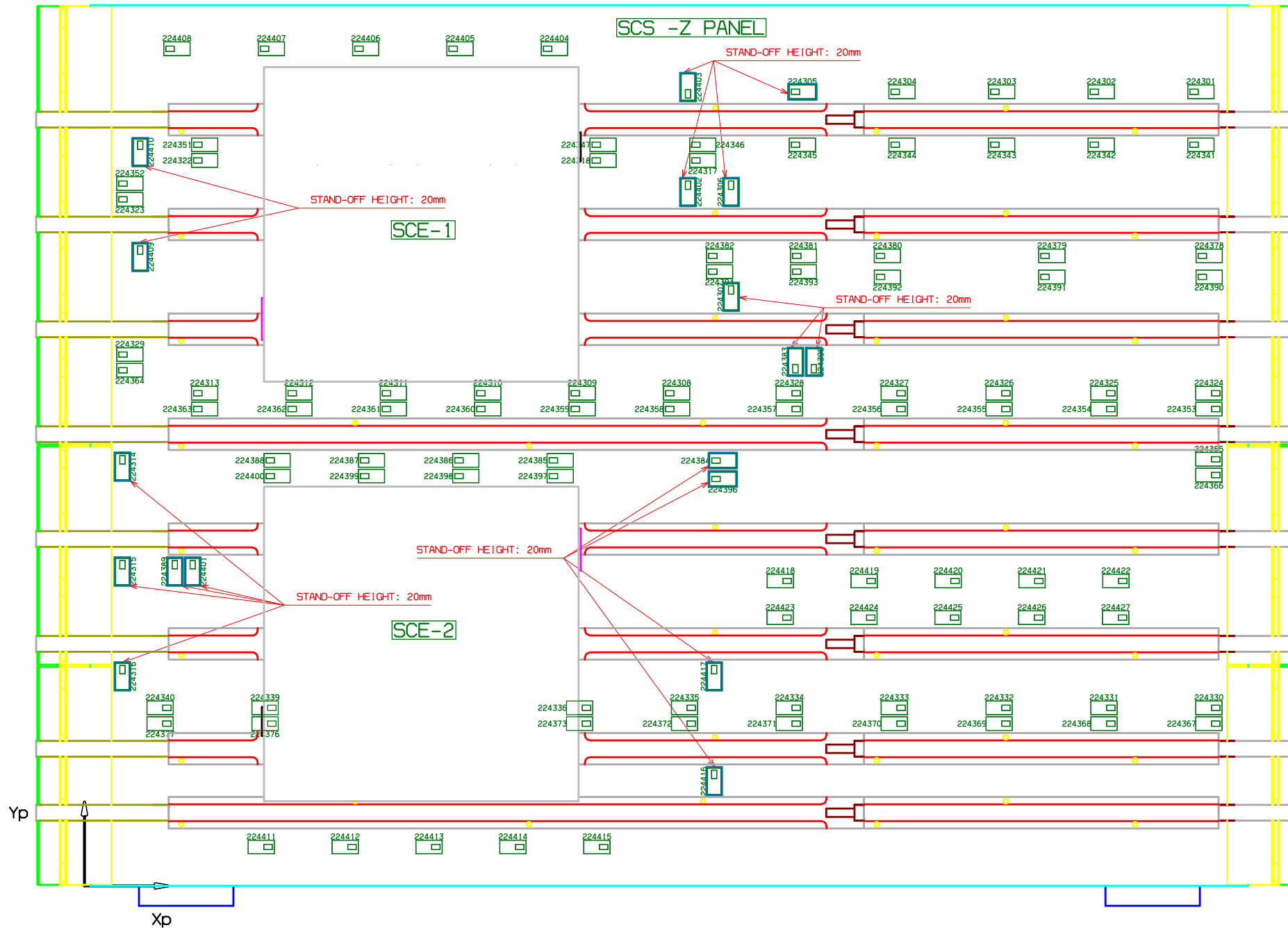


NOTE: (1) Bundle id.: W001/W003/W004/W004/W006/W007/W008 *
 (2) Bundle id.: W021/W022 *
 (3) Bundle id.: W001/W003/W004/W004/W006/W007/W008 *
 (4) Bundle id.: W021/W022 *
 (5) Bundle id.: W002/W005 *
 (6) Bundle id.: W002/W005 *
 * In reference with H-P-4-NXH-RP-0024 iss. A0

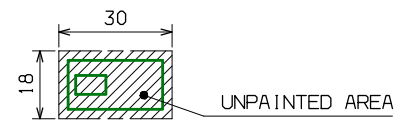
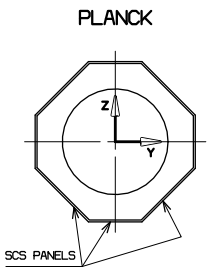
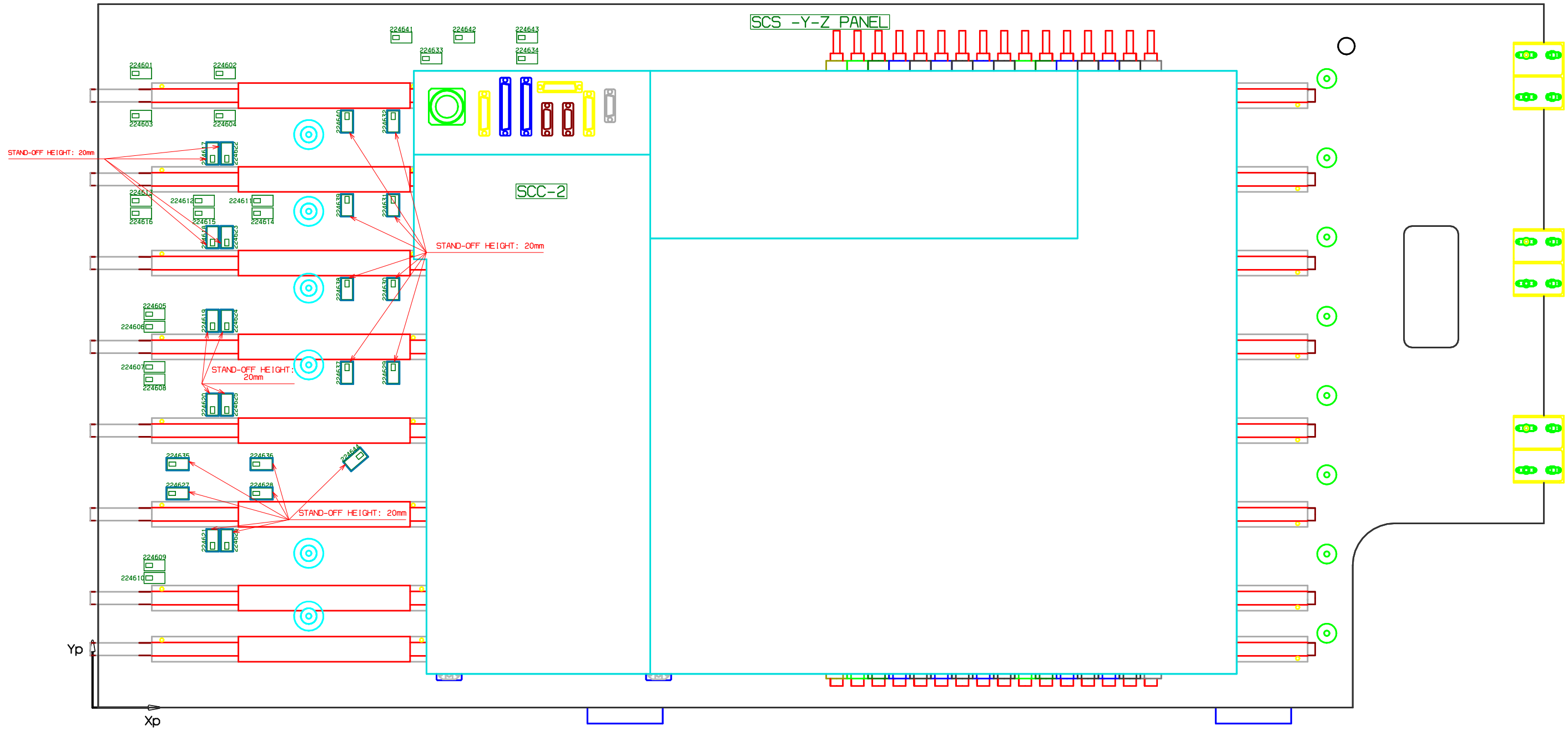
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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
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Rev.	B0	Date	27/05/04	Scale	N/A
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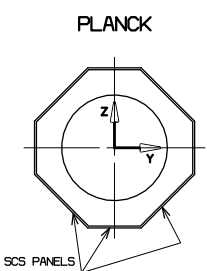
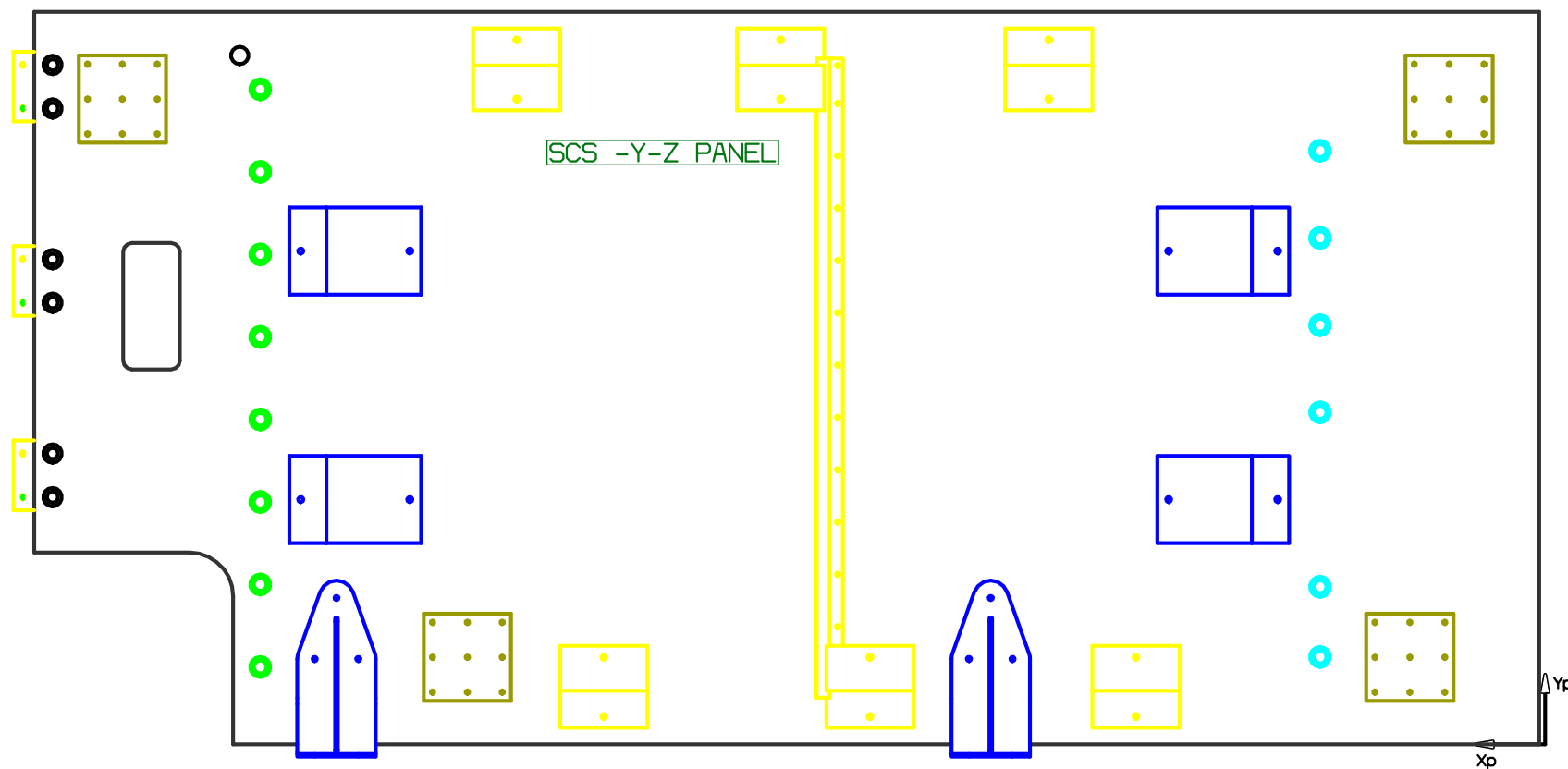
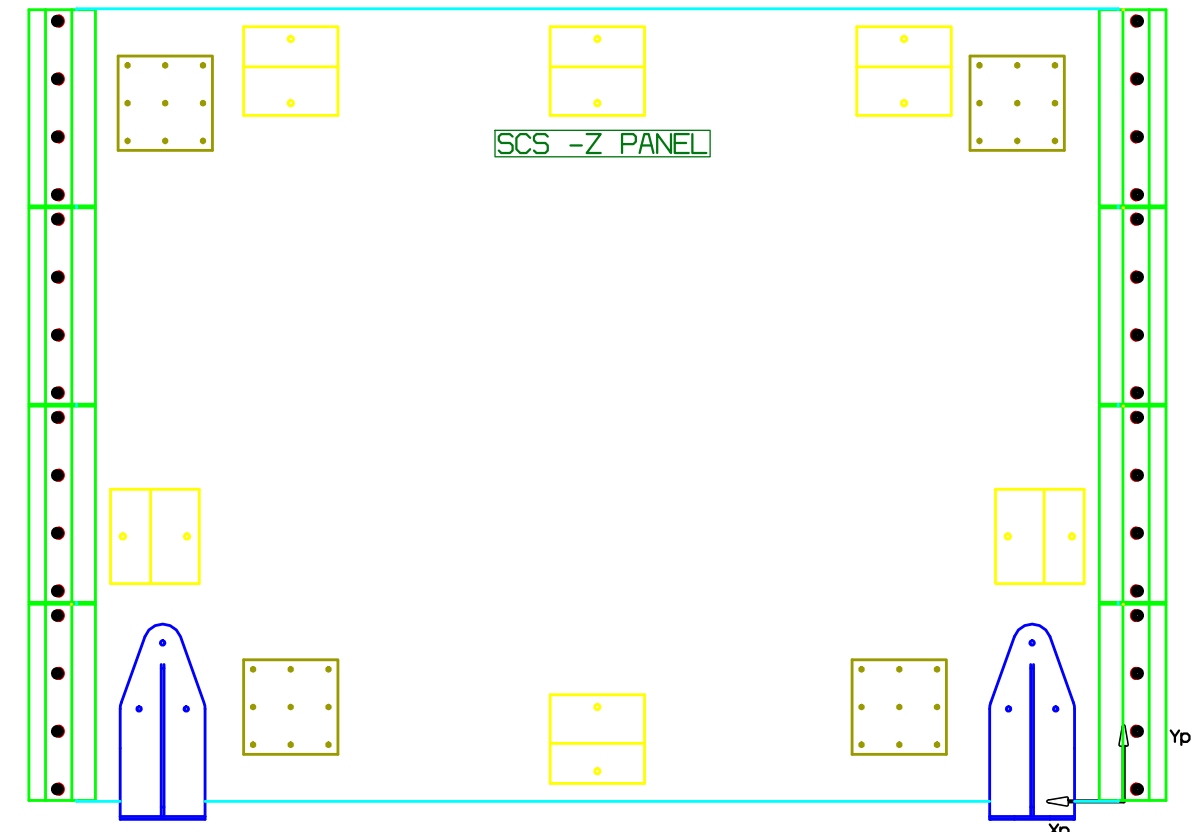
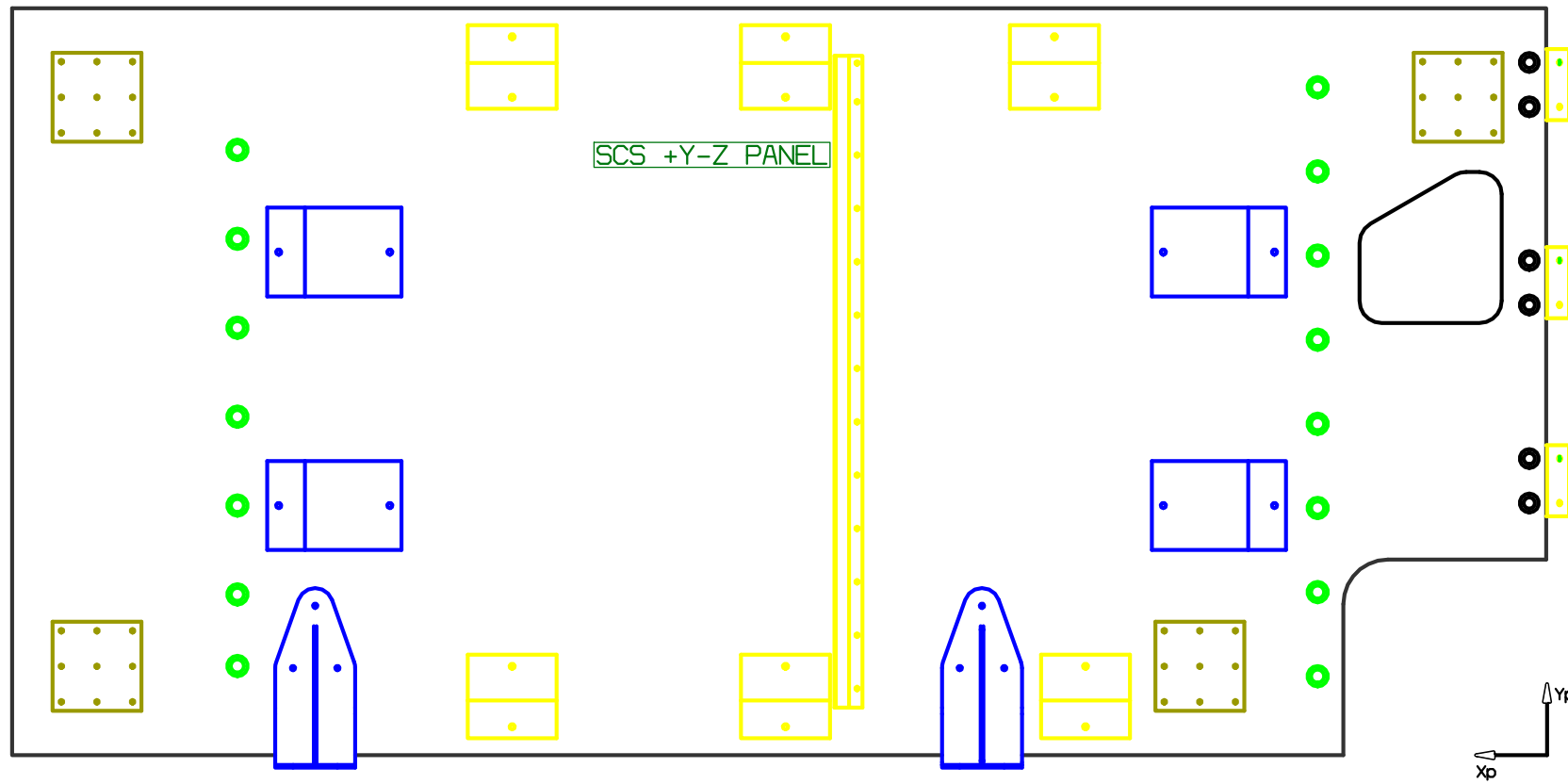
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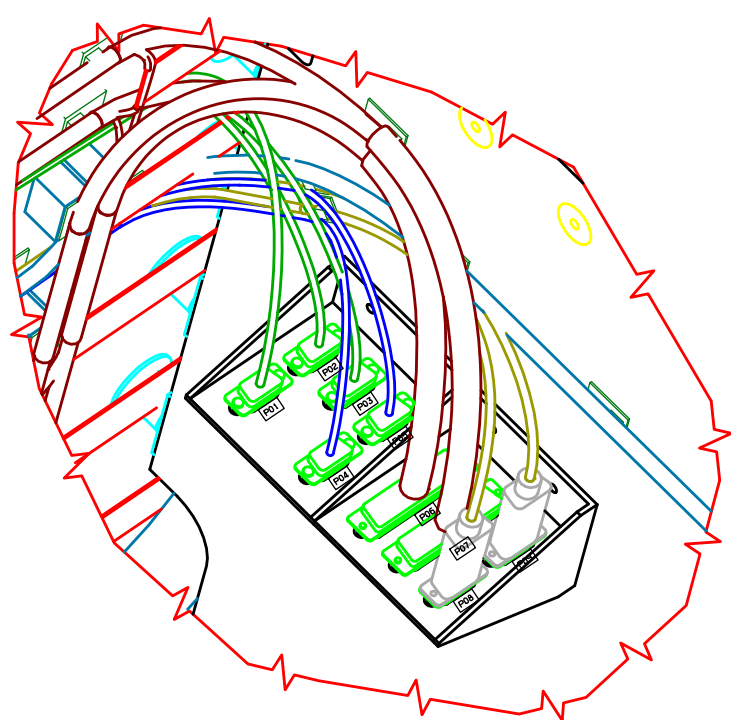
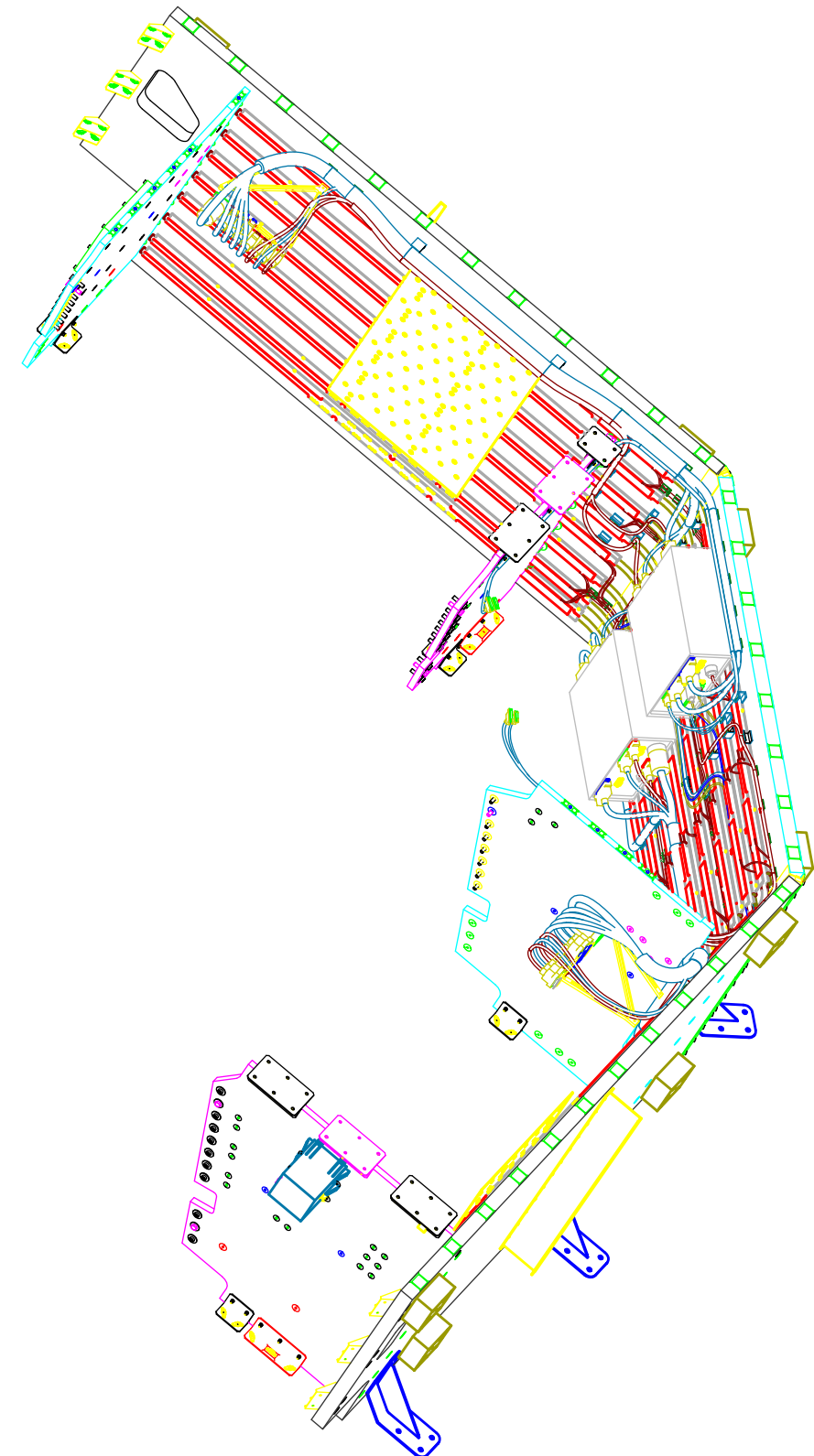
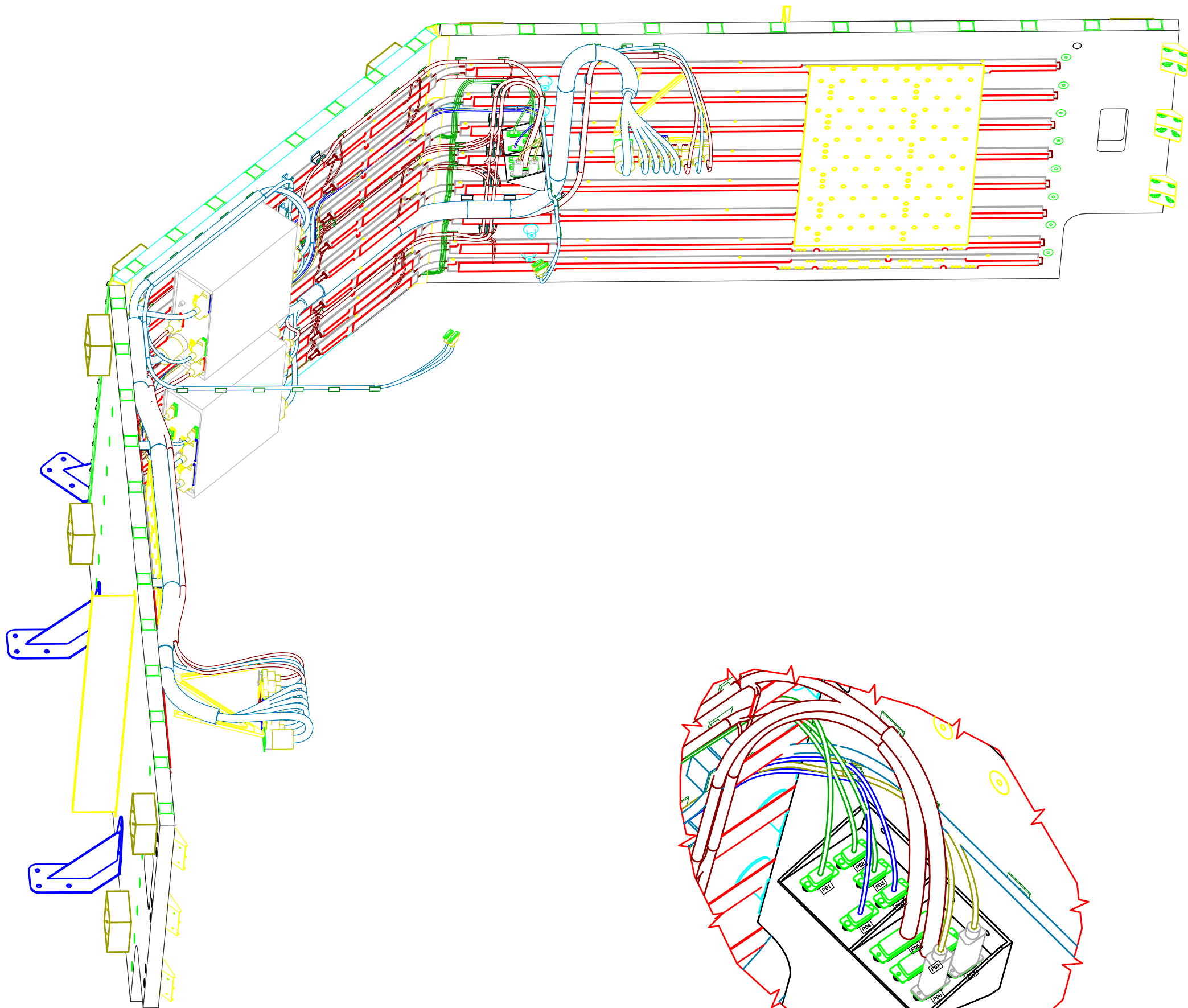
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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
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Rev.	Date	Scale	Format	Sht	
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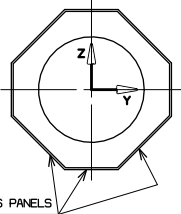
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Rev.	Date	Scale	Format	Sht	
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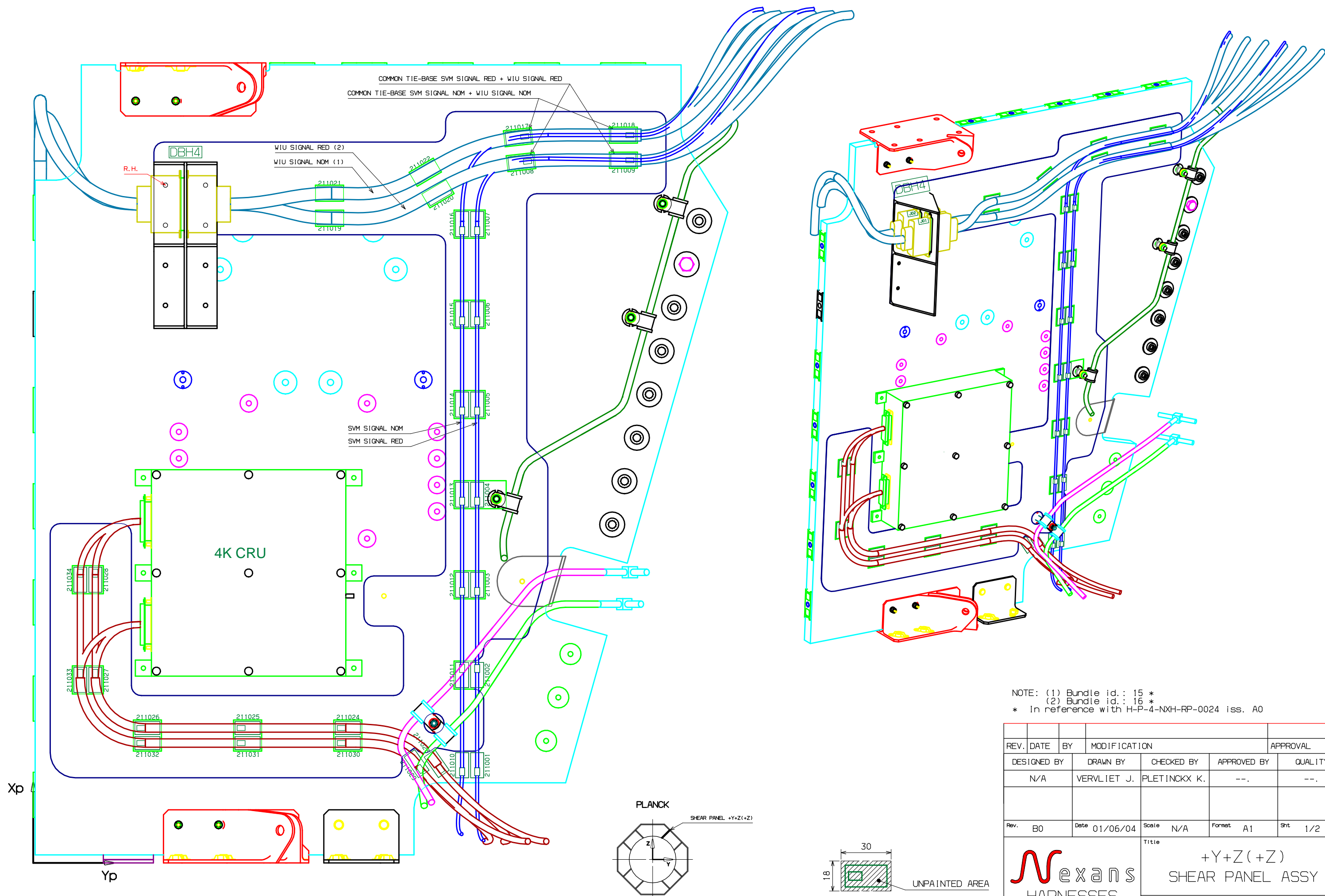
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			DWG N° HP-NXH-DW-2024		



PLANCK

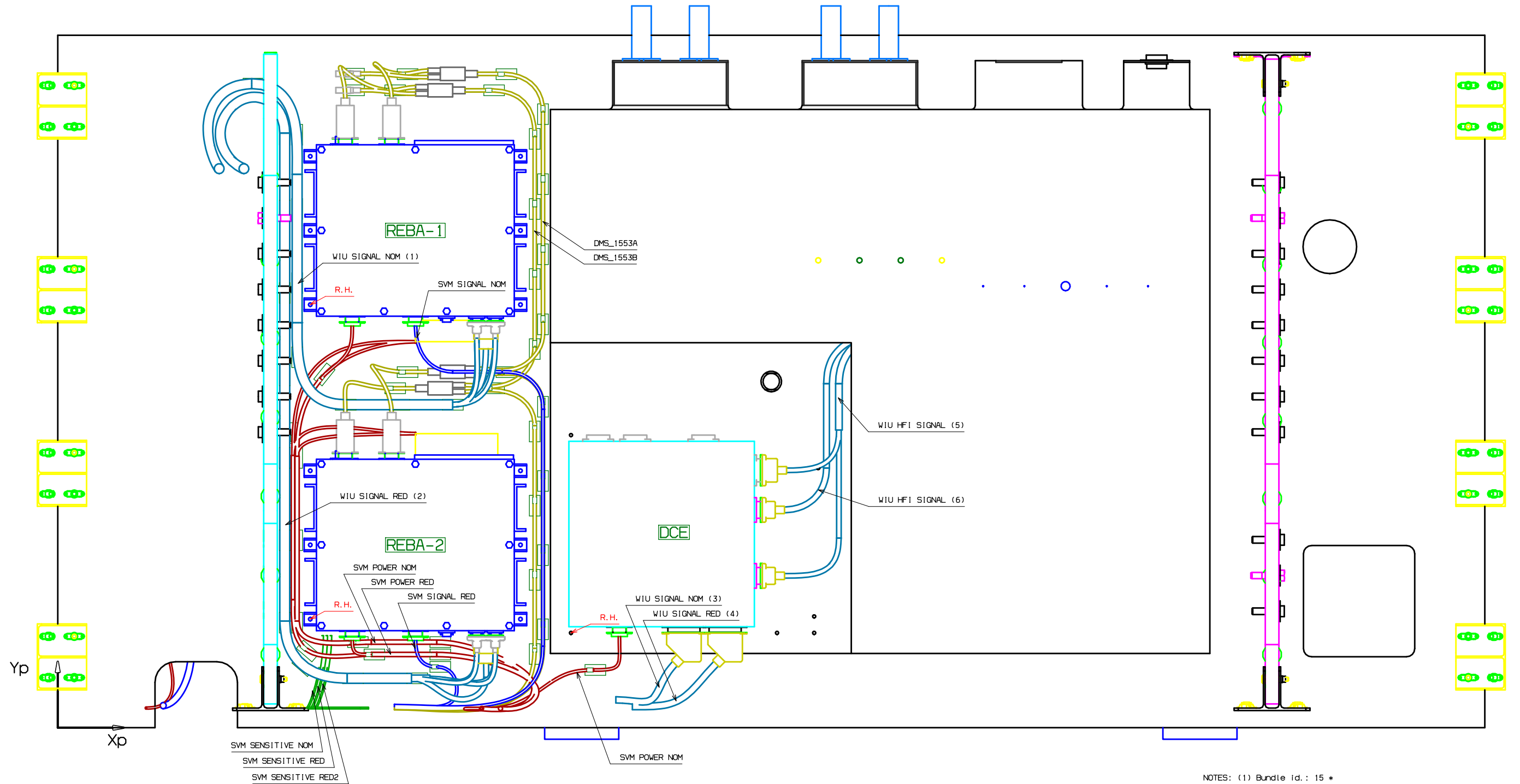


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			DWG N° HP-NXH-DW-2024		

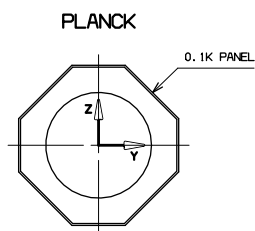


NOTE: (1) Bundle id.: 15 *
 (2) Bundle id.: 16 *
 * In reference with H-P-4-NXH-RP-0024 iss. A0

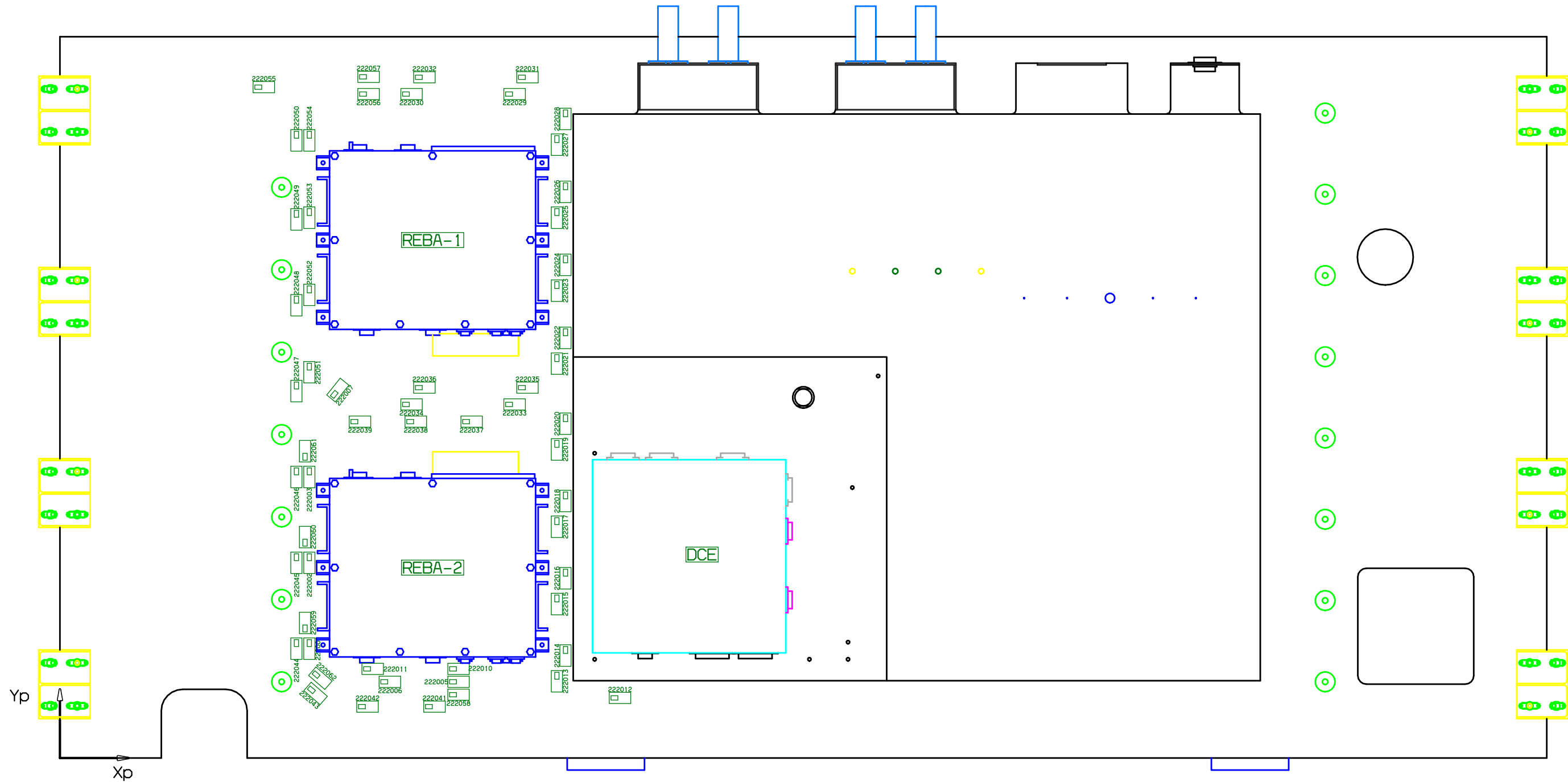
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Rev.	B0	Date	01/06/04	Scale	N/A
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			DWG N° HP-NXH-DW-2011		



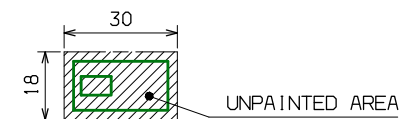
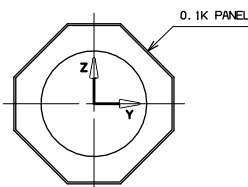
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 (2) Bundle id.: 16 *
 (3) Bundle id.: PHEBC-N **
 (4) Bundle id.: PHEBC-R **
 (5) Bundle id.: PHEBG **
 (6) Bundle id.: H1 **
 * In reference with H-P-4-NXH-RP-0024 iss. A0
 ** In reference with H-P-4-NXH-RP-0023 iss. A2



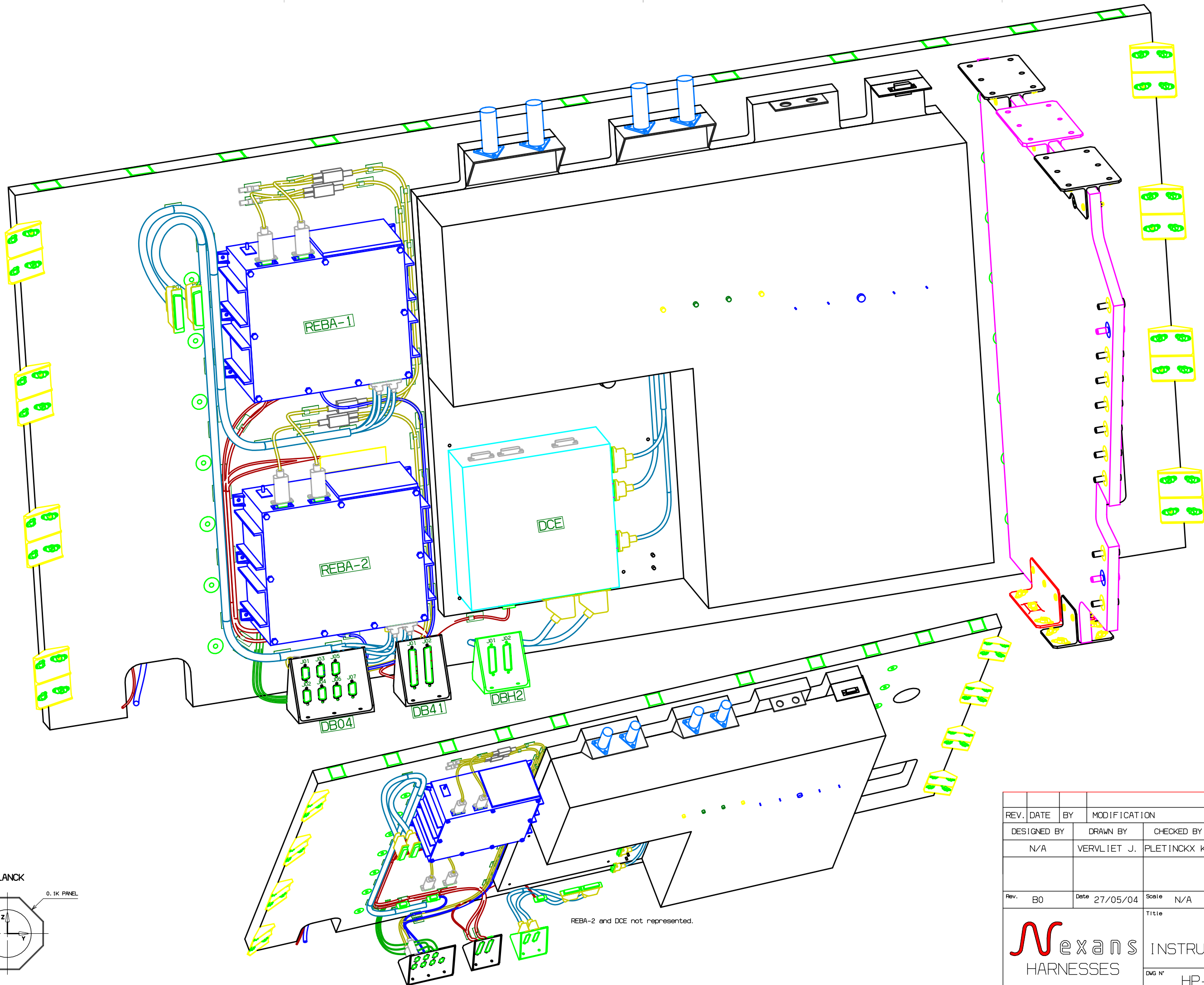
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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
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Rev.	Date	Scale	Format	Sht	
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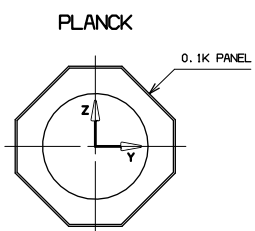
PLANCK



REV.	DATE	BY	MODIFICATION	APPROVAL	
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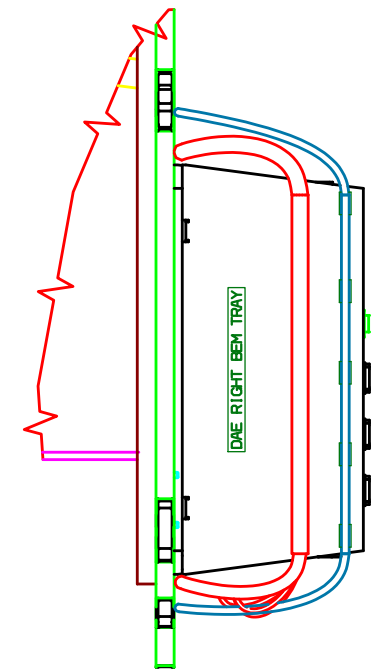
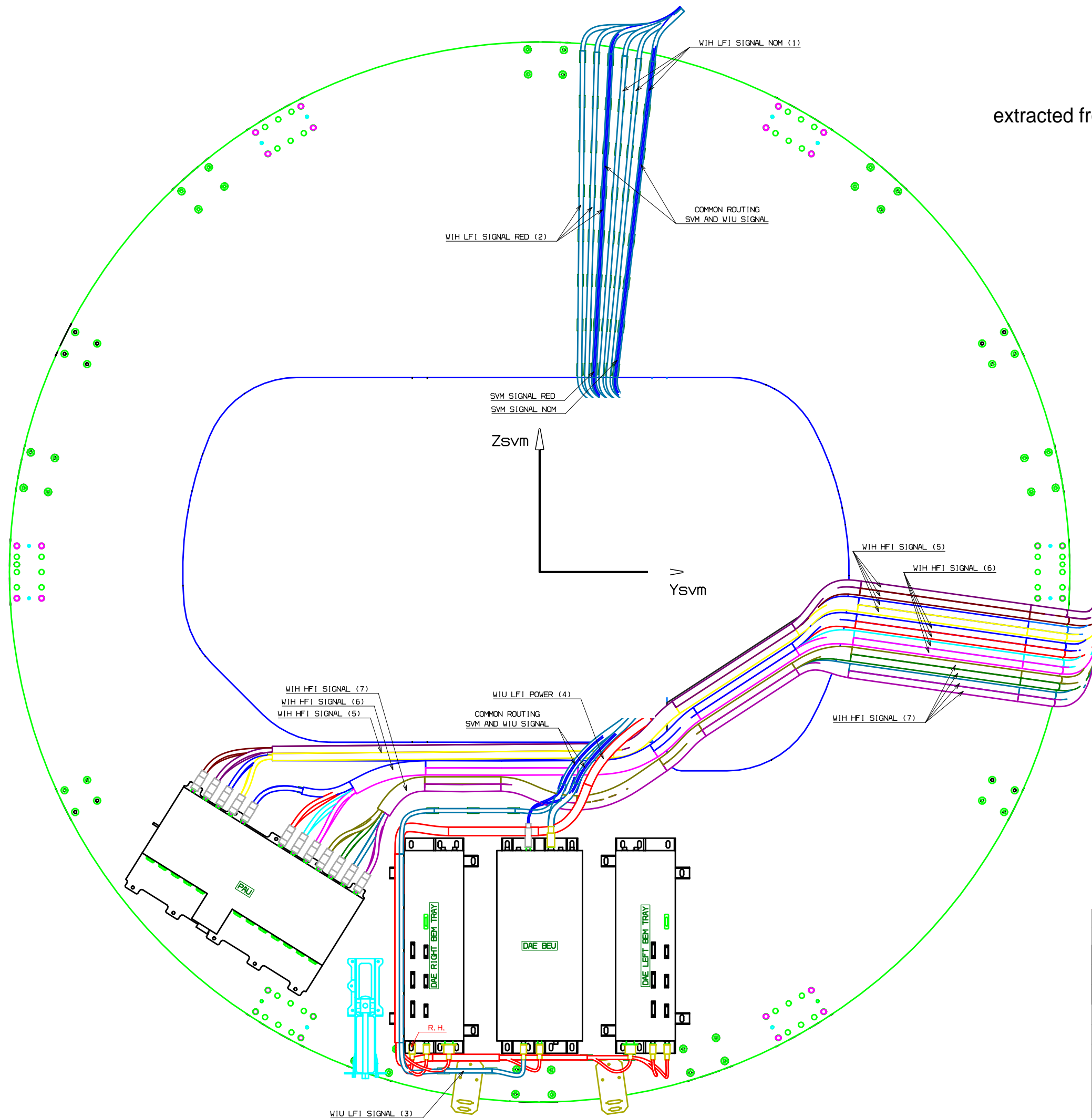


REBA-2 and DCE not represented.



REV.	DATE	BY	MODIFICATION	APPROVAL	
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Rev.	Date	Scale	Format	Sht	
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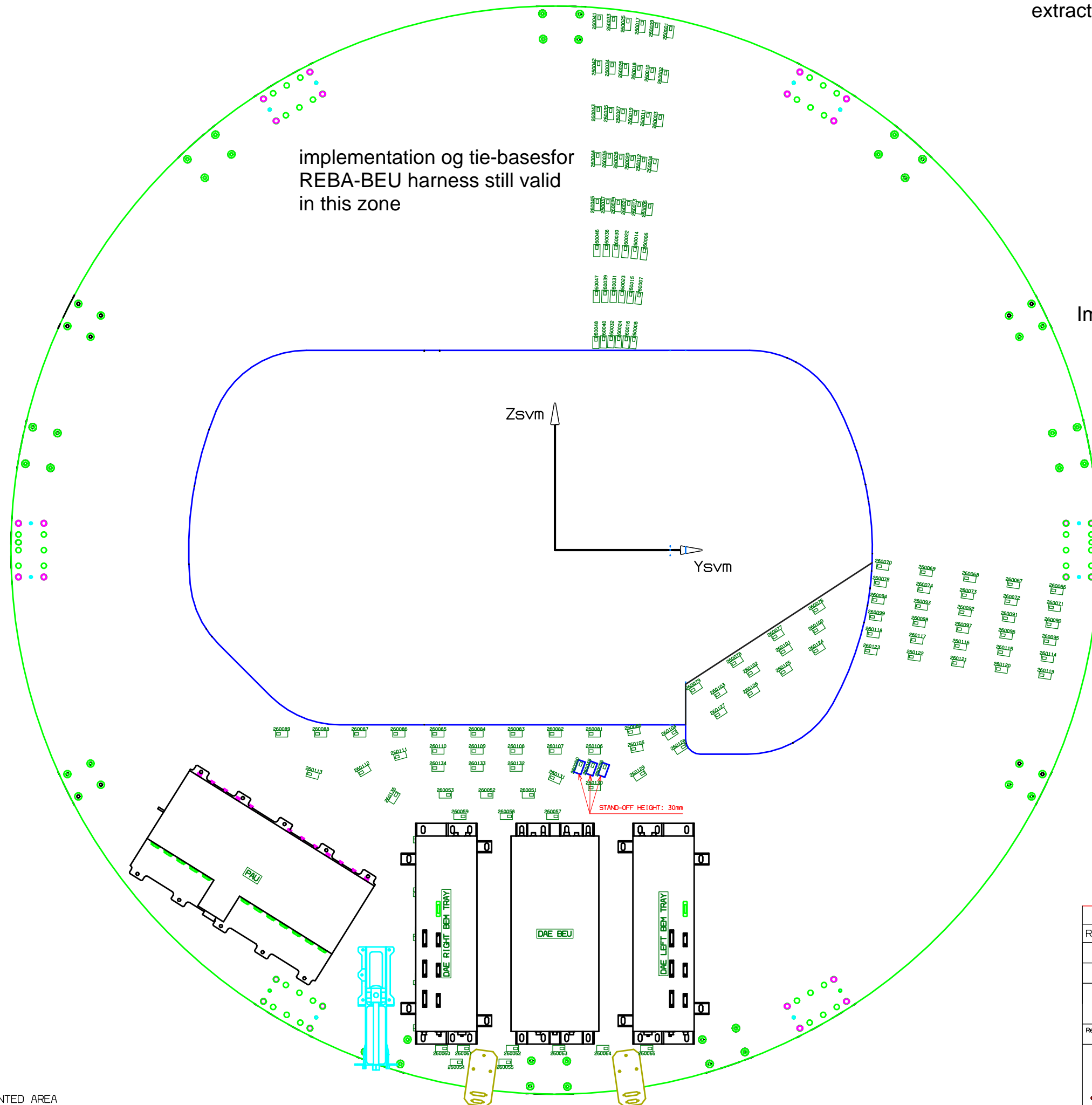
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NOTES: (1) Bundle id.: 15 *
 (2) Bundle id.: 16 *
 (3) Bundle id.: 3 *
 (4) Bundle id.: 1A/1B/4/6A/6B *
 (5) Bundle id.: PHCBD (Bundle1) **
 (6) Bundle id.: PHCBD (Bundle2) **
 (7) Bundle id.: PHCBD (Bundle3) **
 * In reference with H-P-4-NXH-RP-0024 iss. A0
 ** In reference with H-P-4-NXH-RP-0023 iss. A1

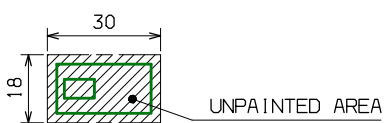
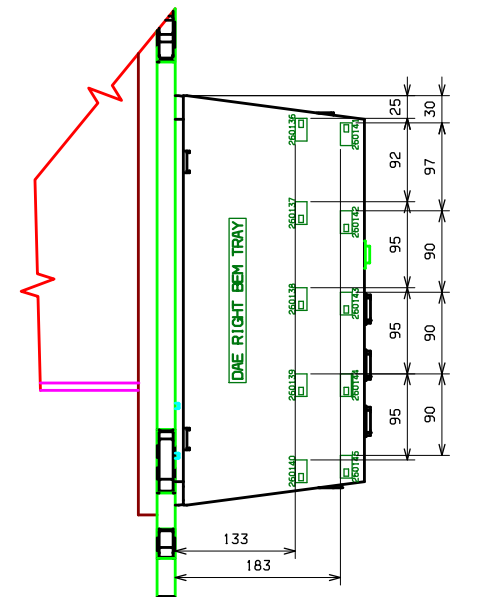
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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY	QUALITY	
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Rev.	A0	Date	08/03/04	Scale	N/A
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extracted from previous routing -for information-



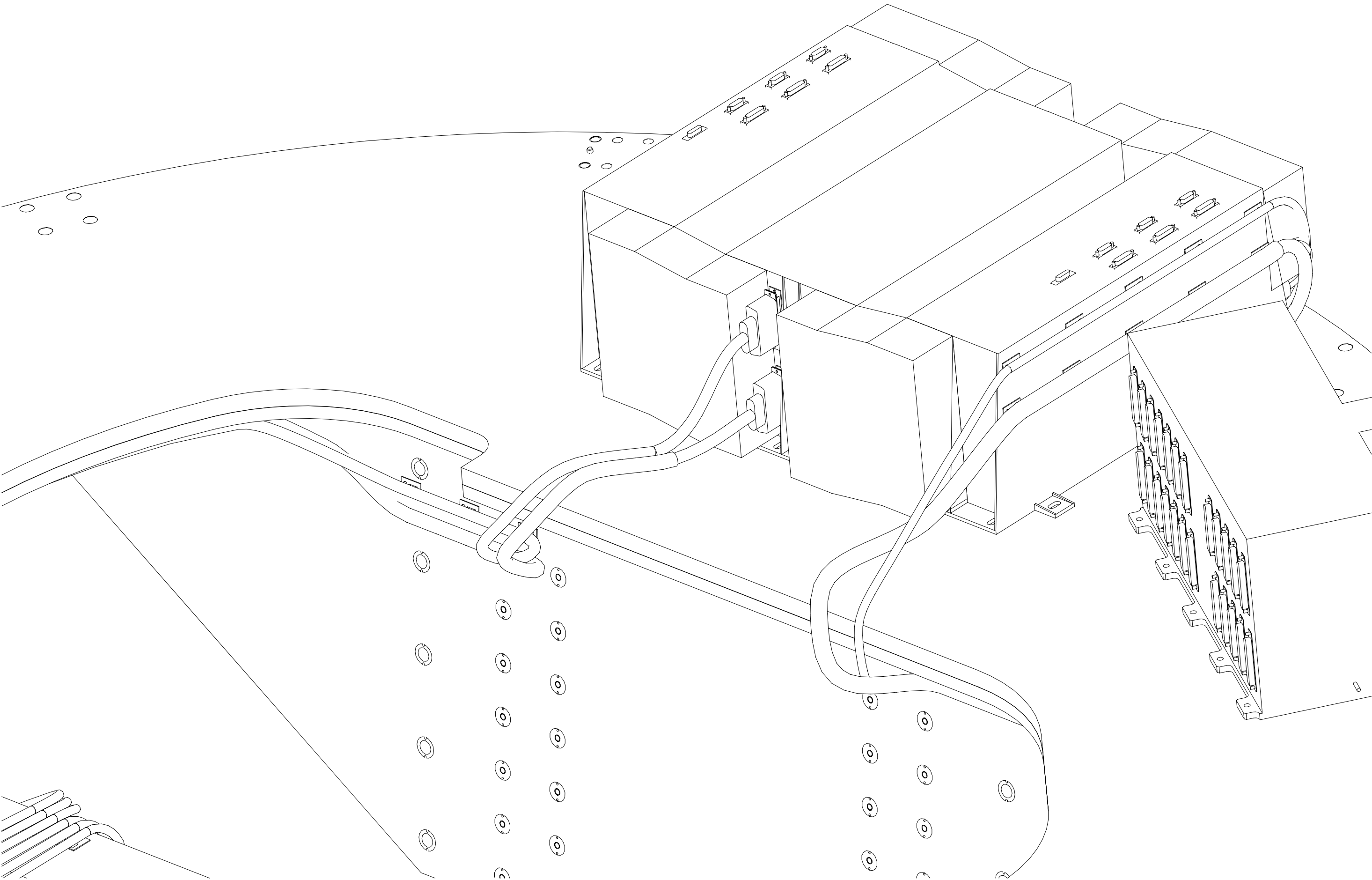
implementation of tie-bases for
REBA-BEU harness still valid
in this zone

Implementation of tie-bases on BEU still valid

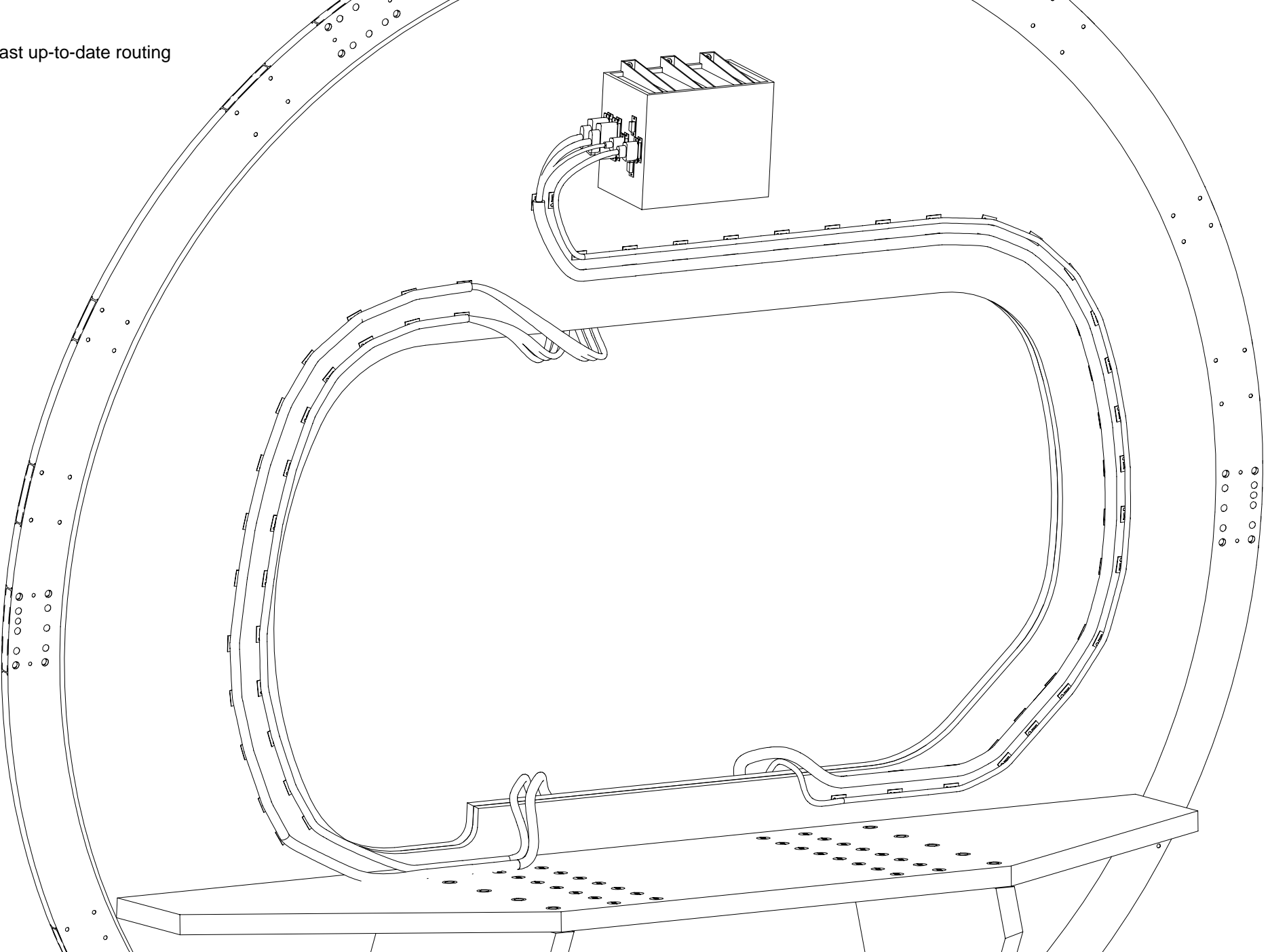


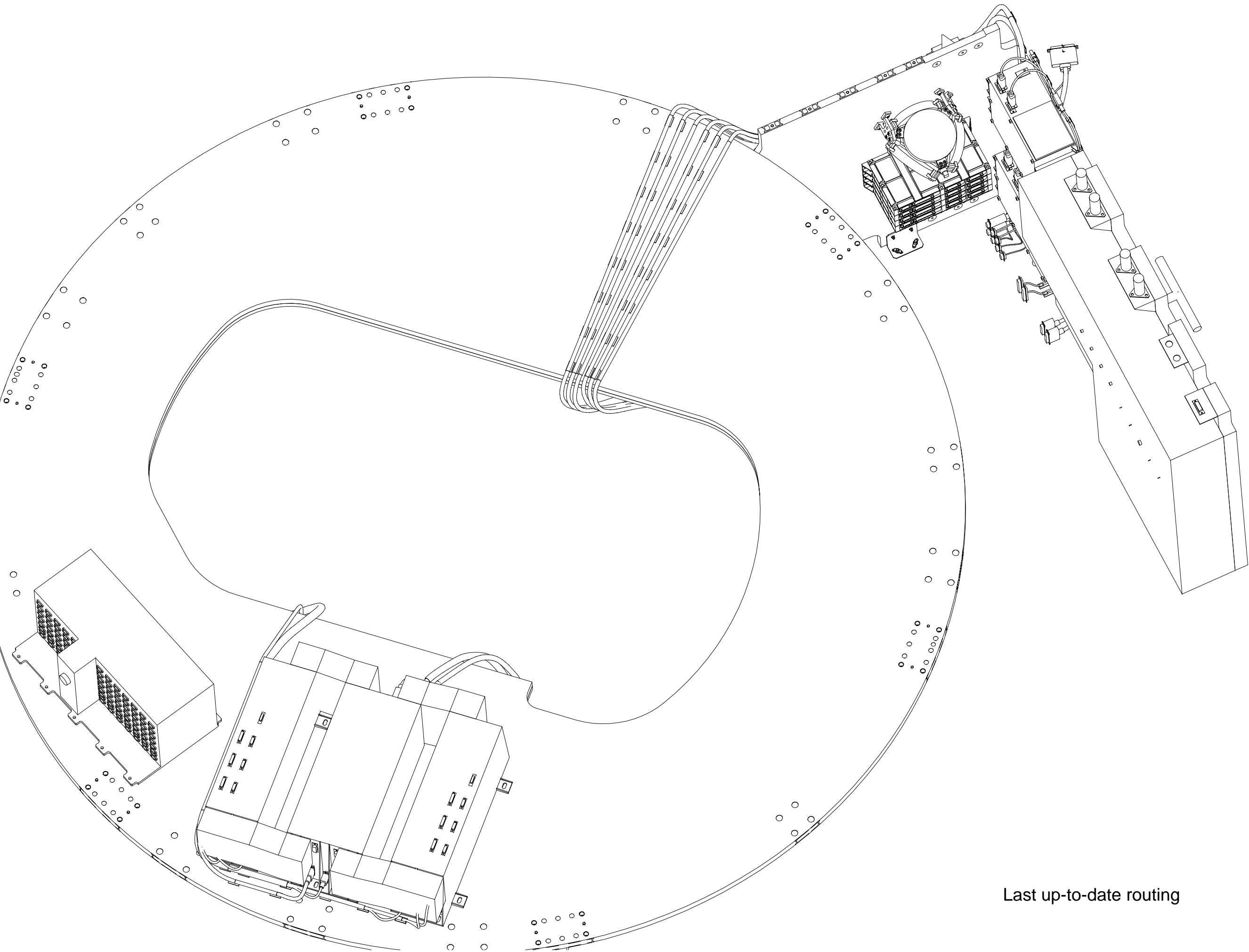
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			DWG N° HP-NXH-DW-2060		

Last up-to-date routing



Last up-to-date routing





Last up-to-date routing

LIST OF CAD MODELS APPLICABLE TO LFI WIH

Issue 2

WIH : WARM UNIT INTERCONNECTING HARNESS (INSTRUMENT)

SVMh : SVM HARNESS (SATELLITE)

HARNESS LFI ON SVM – ALL FILES IN STEP FORMAT

NUMBER	ISSUE	NAME	CONTENT
HP211101-60-2	B	GM PAYLOAD SUB-PLATFORM HRN ELT ASSY HRN STEP	WIH BEU / DAE & BEU / REBA HARNESS SUPPORTS STRUCTURE
ME.PLS.A11F.Z.013SA	H	EB EQPT SVM PLANCK +Y+Z REBA STEP	REBA UNITS MODEL
ME.PLS.A120.L.010SA	K	STB CAISSE PLANCK ALLEGEE	SVM STRUCTURE MODEL
ME.PLS.392001222	C	+Y+Z LATERAL PANEL HRN ELT ASSY	SVM HARNESS WITH SUPPORTS ON +Y+Z PANEL
ME.PLS.A11F.Z.016SA	J	GM EQPT SVM PLANCK SUBPLATFORM	SUBPLATFORM EQUIPMENTS (DAE PB, BEU)

LIST OF CAD MODELS APPLICABLE TO SCS WIH

WIH : WARM UNIT INTERCONNECTING HARNESS (INSTRUMENT)

SVMh : SVM HARNESS (SATELLITE)

HARNESS SCS INSTRUMENT ON SVM – ALL FILES IN STEP FORMAT

NUMBER	ISSUE	NAME	CONTENT
HP211101-24-2	B	SCS PANELS HRN ELT ASSY HRN SOE	WIH ON SCS PANELS AND CRYOHARNESS FROM SCE TO BRACKETS ON SUBPLATFORM (W101 & W102)
HP211102-24-2	B	SCS PANELS HRN MECH ASSY HRN	WIH SUPPORTS ON SCS PANELS
HP392001-24-2	E	SCS PANELS HRN ELT ASSY HRN STEP	SVM HARNESS ON SCS PANELS
HP392002-24-2	B	SCS PANELS HRN MECH ASSY HRN	SVM HARNESS SUPPORTS ON SCS PANELS
ME.PLS.A11F.Z.011SA	H	GM EQPT SVM PLANCK -Z -Z+Y -Z-Y SCC STEP	SCCs AND SCEs MODELS
ME.PLS.A11F.Z.011SA	H	GM STRUCT SVM PLANCK -Z -Z+Y -Z-Y SCC STEP	PANELS STRUCTURE AND HEAT-PIPES