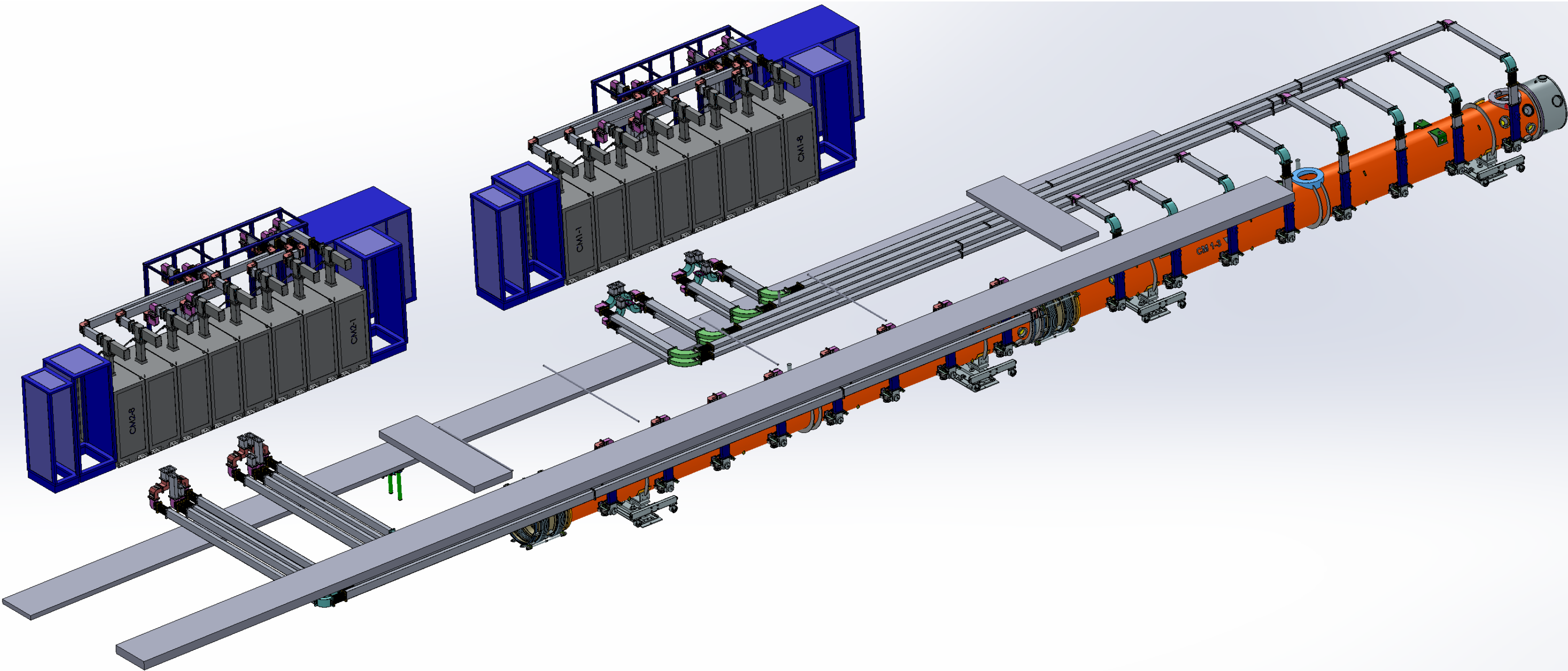


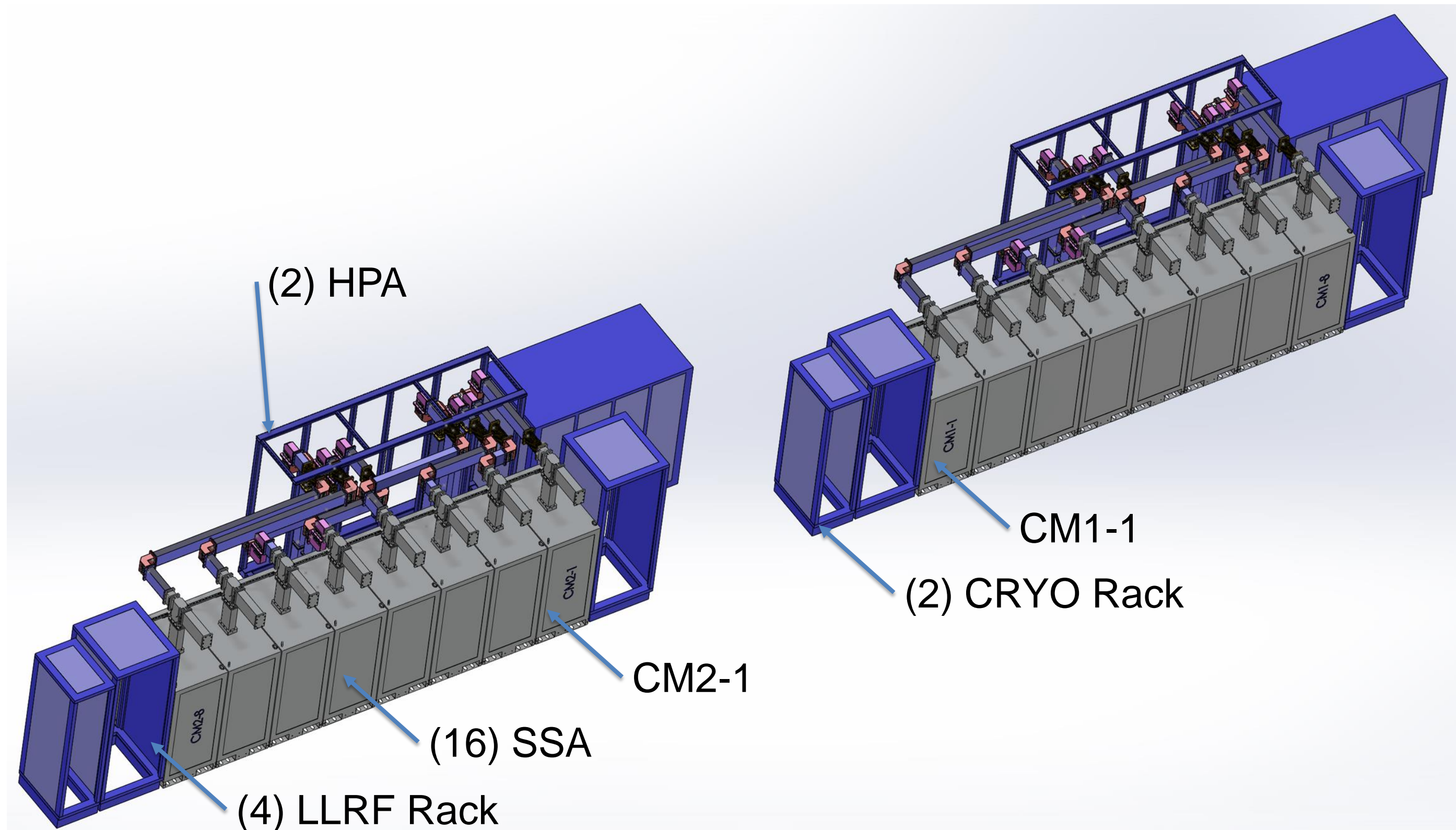
LCLS-II LERF WAVEGUIDE REVIEW

Joe Gubeli 10-11-2017

LCLS-II LERF

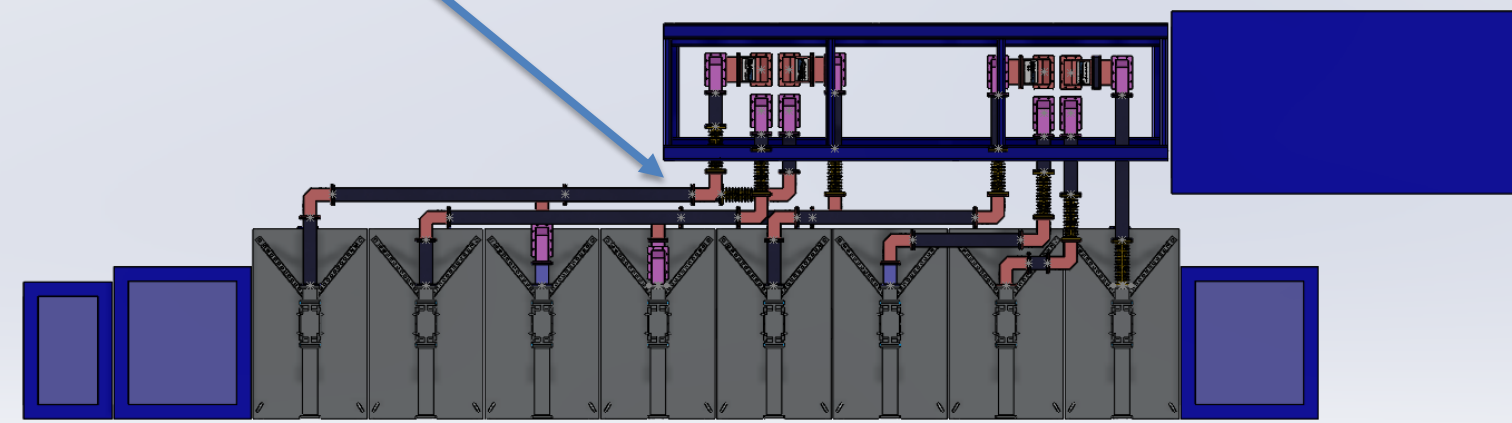
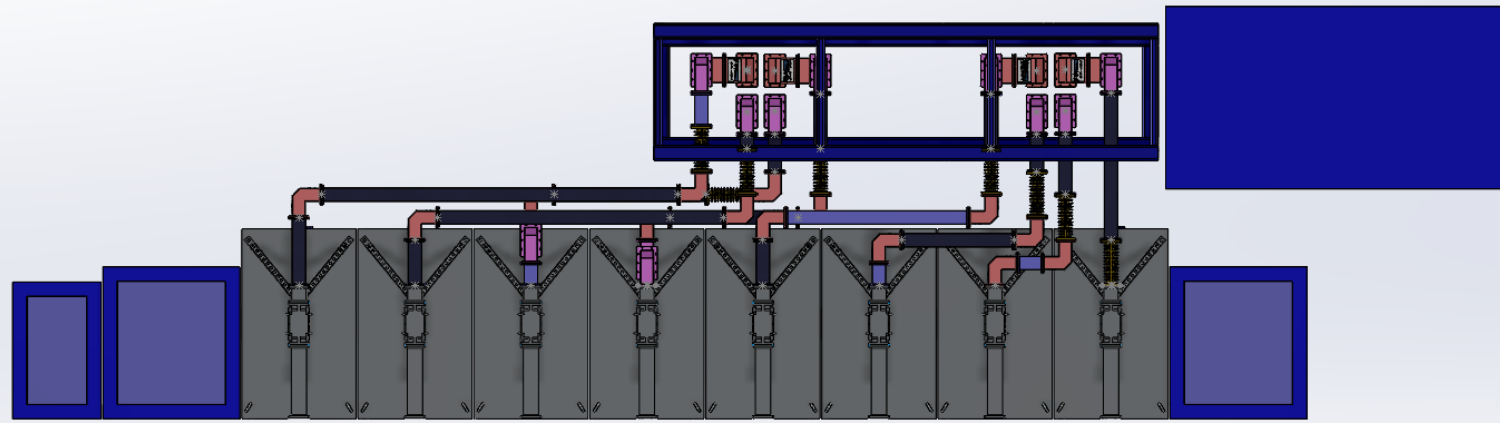


2ND FLOOR

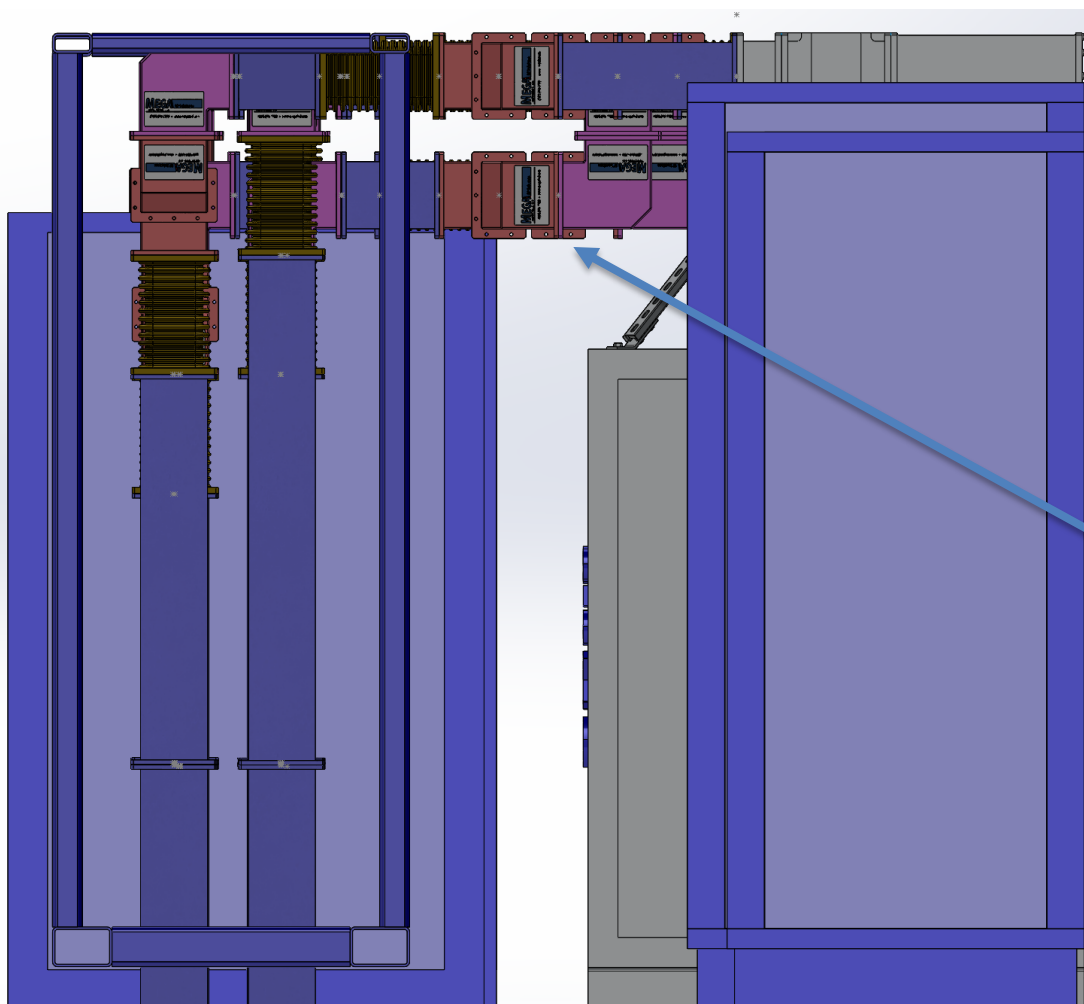


2ND FLOOR EGRESS

18" Between SSA & HPA



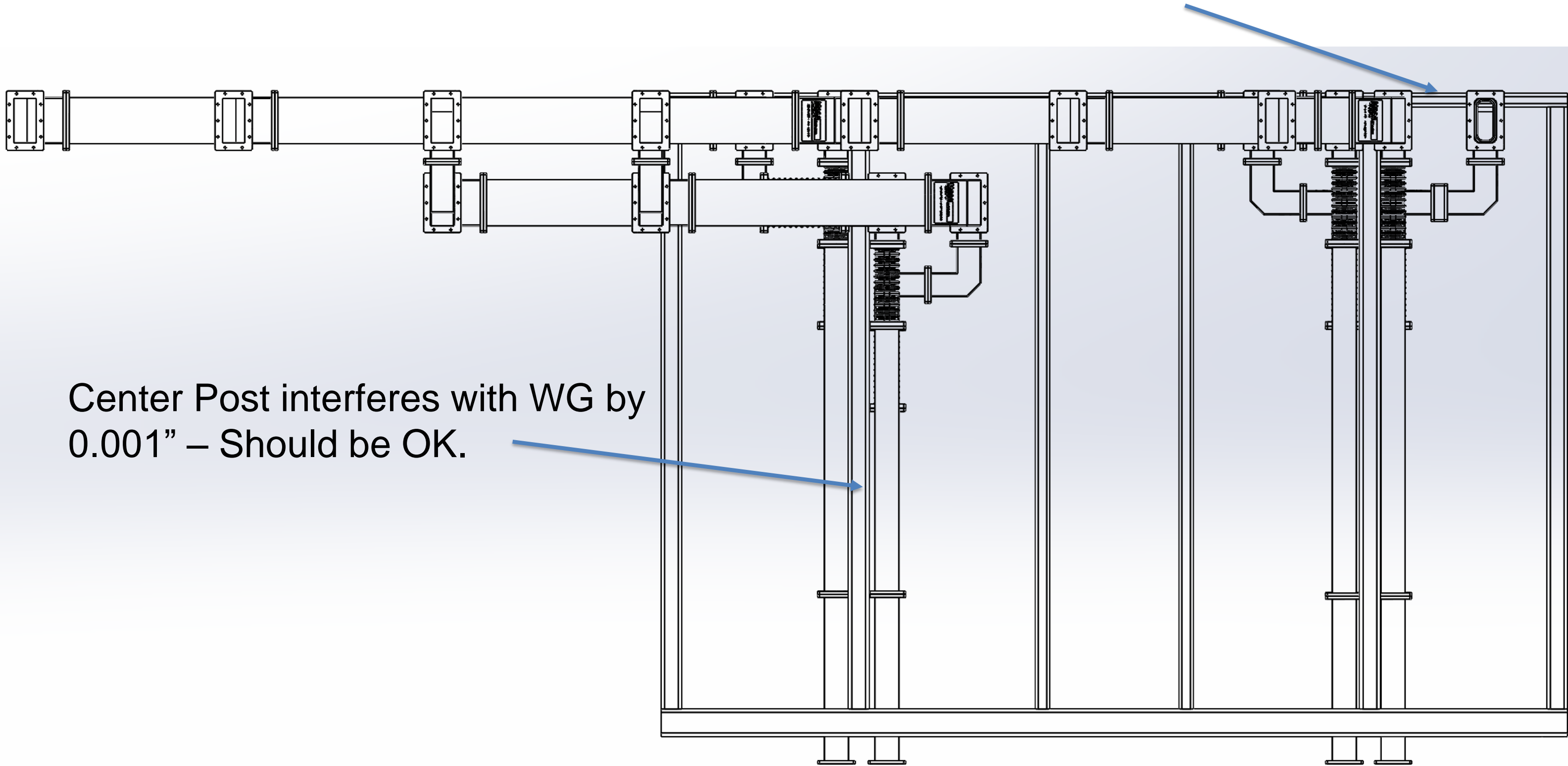
50" Between SSA & Wall



6' 5" Head Clearance

CM1 HPA

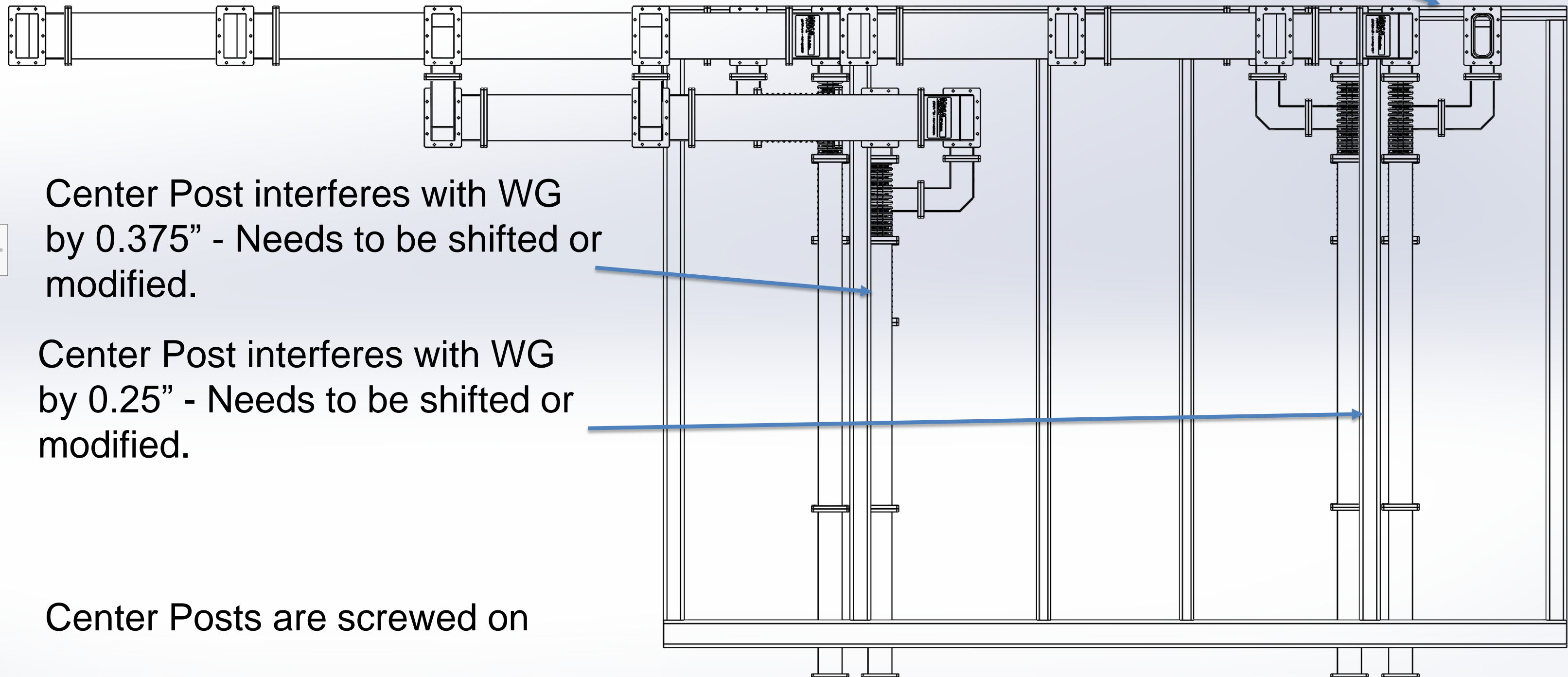
HPA Needs to be elevated 2.5"



Center Post interferes with WG by 0.001" - Should be OK.

CM2 HPA

HPA Needs to be elevated 2.5"

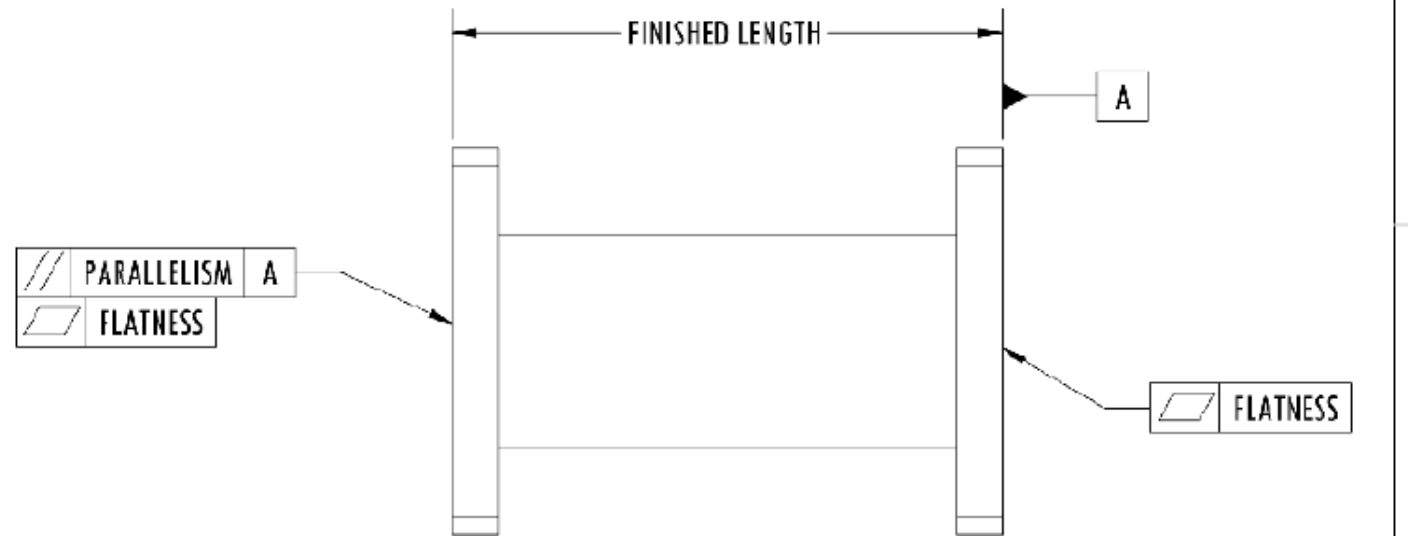


WG650 TOLERANCES

REV	ECN	DESCRIPTION	DATE	APPROVED
A	-	INITIAL RELEASE	2/28/2012	

APPROXIMATE WEIGHT OF SELECTED WAVEGUIDES

WAVEGUIDE	WALL THICKNESS	WEIGHT (lb) LENGTH: INCHES	WEIGHT (kg) LENGTH: METERS
WR2300	.188"	17.2+1.3*LENGTH	7.81+23.2*LENGTH
WR2100	.188"	14.0+1.2*LENGTH	6.36+21.4*LENGTH
WR1800	.188"	11.8+1.0*LENGTH	5.36+17.9*LENGTH
WR1500	.125"	8.4+.55*LENGTH	3.81+9.83*LENGTH
WR1150	.125"	6.8+.43*LENGTH	3.09+7.68*LENGTH
WR975	.125"	6.0+.36*LENGTH	2.72+6.43*LENGTH
WR770	.125"	5.2+.29*LENGTH	2.36+5.18*LENGTH
WR650	.125"	1.9+.24*LENGTH	.86+4.29*LENGTH
WR430	.125"	1.4+.16*LENGTH	.64+2.86*LENGTH



TOLERANCES FOR RIGID WAVEGUIDE SERIES WR430-WR2300

FINISHED LENGTH	LENGTH TOLERANCE	FLATNESS	PARALLELISM
0-12.00"	±.005"	.008"	.010"
12.01"-36.00"	±.010"	.008"	.015"
36.01"-72.00"	±.063"	.008"	.020"
72.01"-143.62"	±.130"	.008"	.025"

MAX LENGTH = ~~143.62"~~ 240" (60 lbs)

EXAMPLE CALCULATION:

WR1800 WAVEGUIDE FINISHED AT 30in (.762m) WEIGHS
 $11.8 + 1 * 30 = 42\text{lb}$
 $5.36 + 17.9 * .762 = 19\text{kg}$

ALL SPECIFICATIONS PERTAIN TO WAVEGUIDES FITTED WITH EIA CPRF THROUGH STYLE FLANGES. WAVEGUIDE WEIGHTS MAY VARY REASONABLY FROM CALCULATED VALUES. ALL SPECIFICATIONS IN THIS DOCUMENT ARE FOR REFERENCE ONLY.

MEGA RF Solutions INDUSTRIES, LLC 28 Sanford Drive : Gorham, ME 04038 : (207) 854-1700	DRAFTED BY: A. Duguay	DATE: 2/28/2012	DESCRIPTION: WR SERIES TOLERANCE SPEC.	
	CHECKED BY:	DATE:	REV: A	DRAWING #: XXXXX
PROPRIETARY AND CONFIDENTIAL THIS DOCUMENT SHALL NOT BE PUBLISHED, COPIED, OR DISTRIBUTED FOR ANY REASON UNLESS GIVEN EXPLICIT WRITTEN CONSENT BY MEGA INDUSTRIES, LLC	UNLESS SPECIFIED: UNITS: INCHES X.XXX ± .005 X.XX ± .02 X.X ± .05 ∠ ± 30'	INTERPRET PER ASME Y14.5	MATERIAL: B	
		PARENT ASSEMBLY:	MEGA MAT. CODE:	SCALE: NA
CAGE CODE: 069Y7		SHEET: 1 OF 1		

WG650 FLEX TOLERANCES

WR650 Compressed Convolution

MEGA RF Solutions

Compressed Convolution Semi-Flex

Mega Industries Compressed Convolution Semi-Flex Waveguide offers the greatest flexibility for the lowest force possible. The tighter convolutions minimize the forces for deflection, compression and elongation of any pressurized flexible waveguide on the market.

The standard construction requires that static shapes other than straight be delivered pre-formed by Mega for the customer. Field forming is an option, but tooling and training are required to successfully alter the shapes reliably in the field without voiding the warranty.

Standard flanges for this item are Brass or Aluminum. The power handling of the standard configuration can be enhanced by selecting the Silver Plating option.

General Specifications

General Specifications	
Material	Brass Alloy
Frequency	1120 – 1700 MHz
Power	Up to 11MW Peak, 150 kW Average
VSWR	1.05 : 1 Max
Insertion Loss	0.019 dB per meter
Insertion Loss Silver Plated	0.011 dB per meter
Longitudinal Compression	1.9% per 100N (250N Max)
Longitudinal Elongation	1.9% per 100N (250N Max)
E-Plane Offset	3.6% per 100N (250N Max)
H-Plane Offset	2.2% per 100N (250N Max)
Twist	1.8° per meter (Torque = 150 N-m)



MAX COMPRESSION/ELONGATION = 0.6”
MAX E-PLANE OFFSET = 1.1”
MAX H-PLANE OFFSET = 0.7”

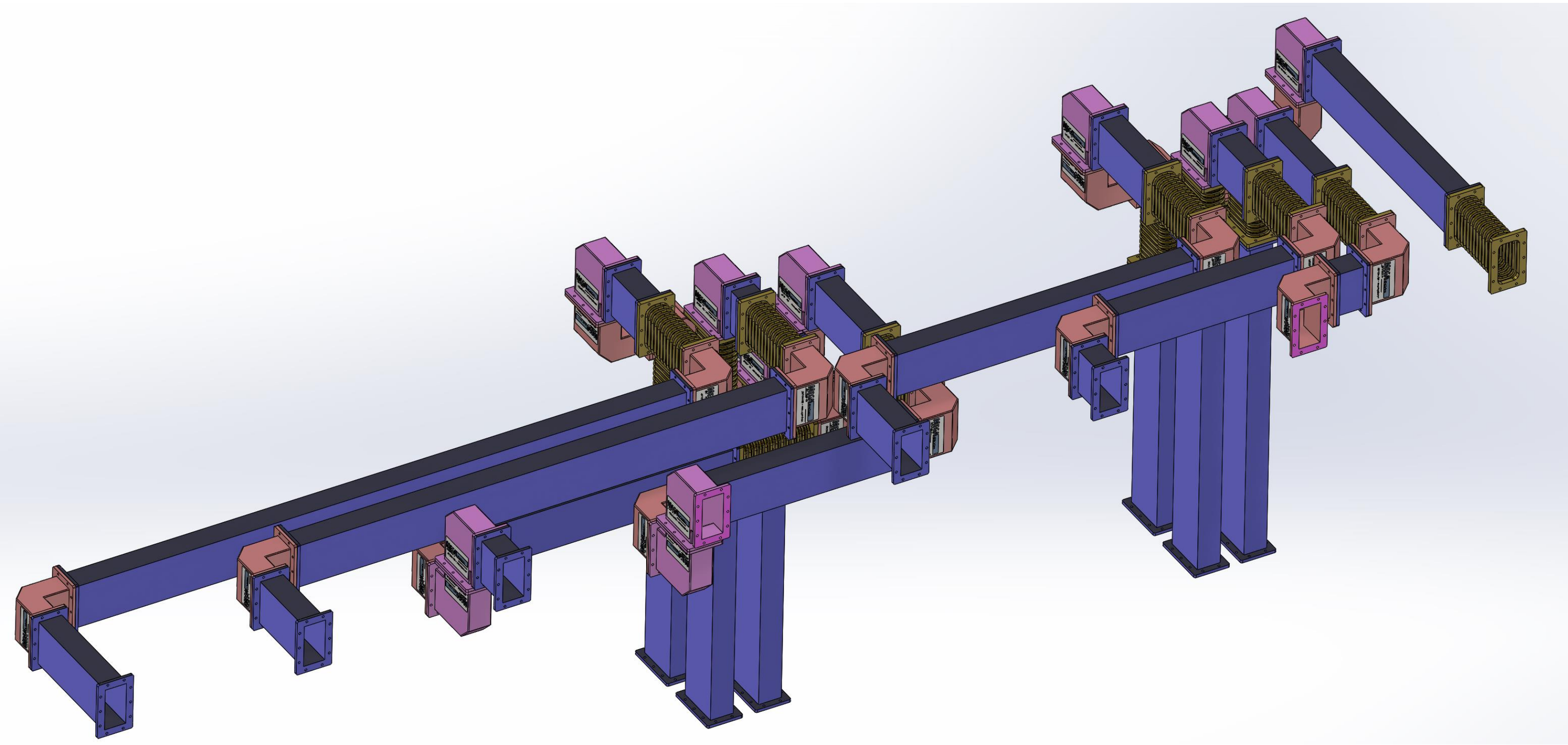
Specifications subject to change

Mega Industries, LLC • 28 Sanford Drive, Gorham, Me. 04038 USA

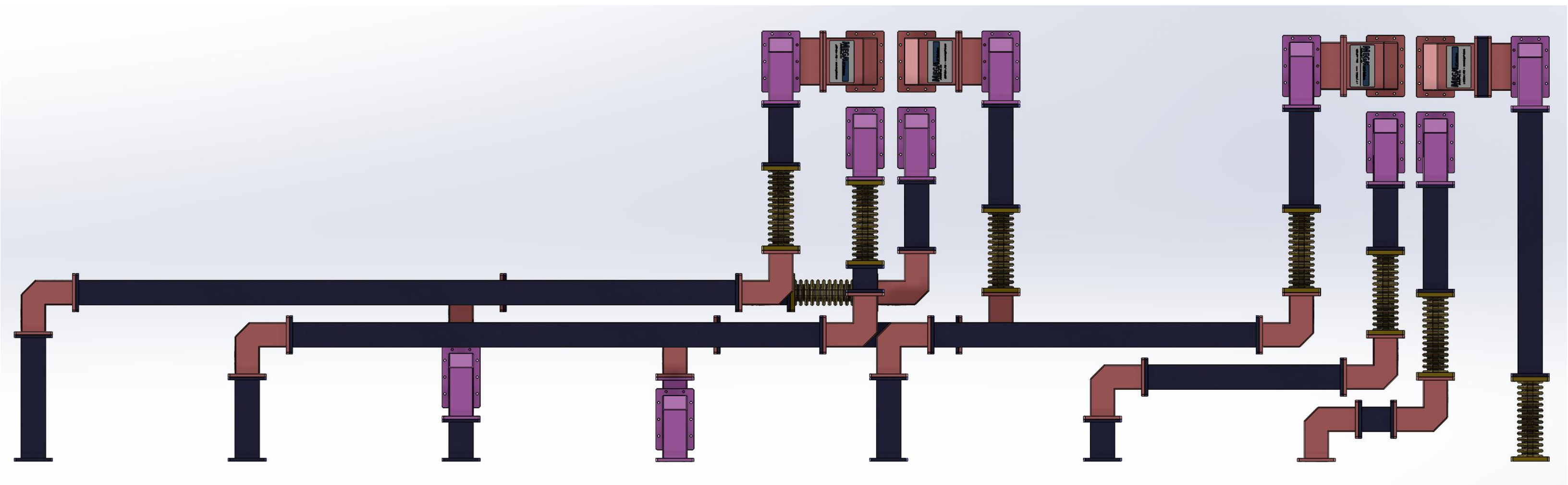
Phone: 207-854-1700 Fax: 207-854-2287

E-Mail: sales@megaind.com Website www.megaind.com ISO9001: 2008 Cert # C2010-0281

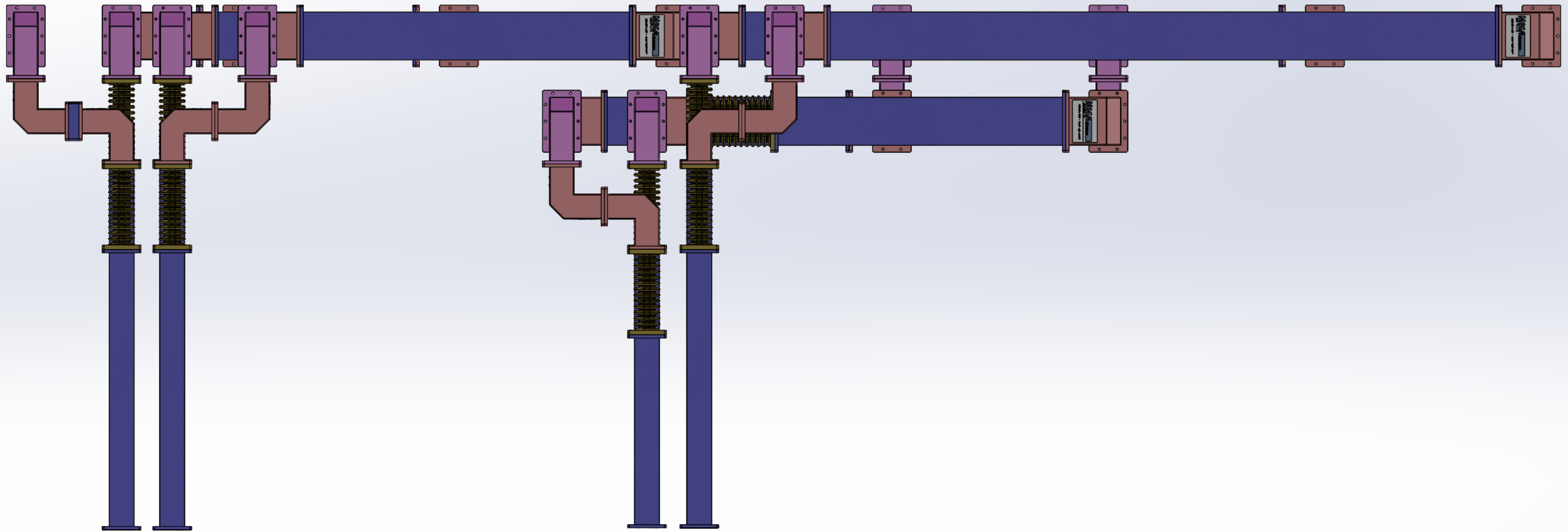
2ND FLOOR WG



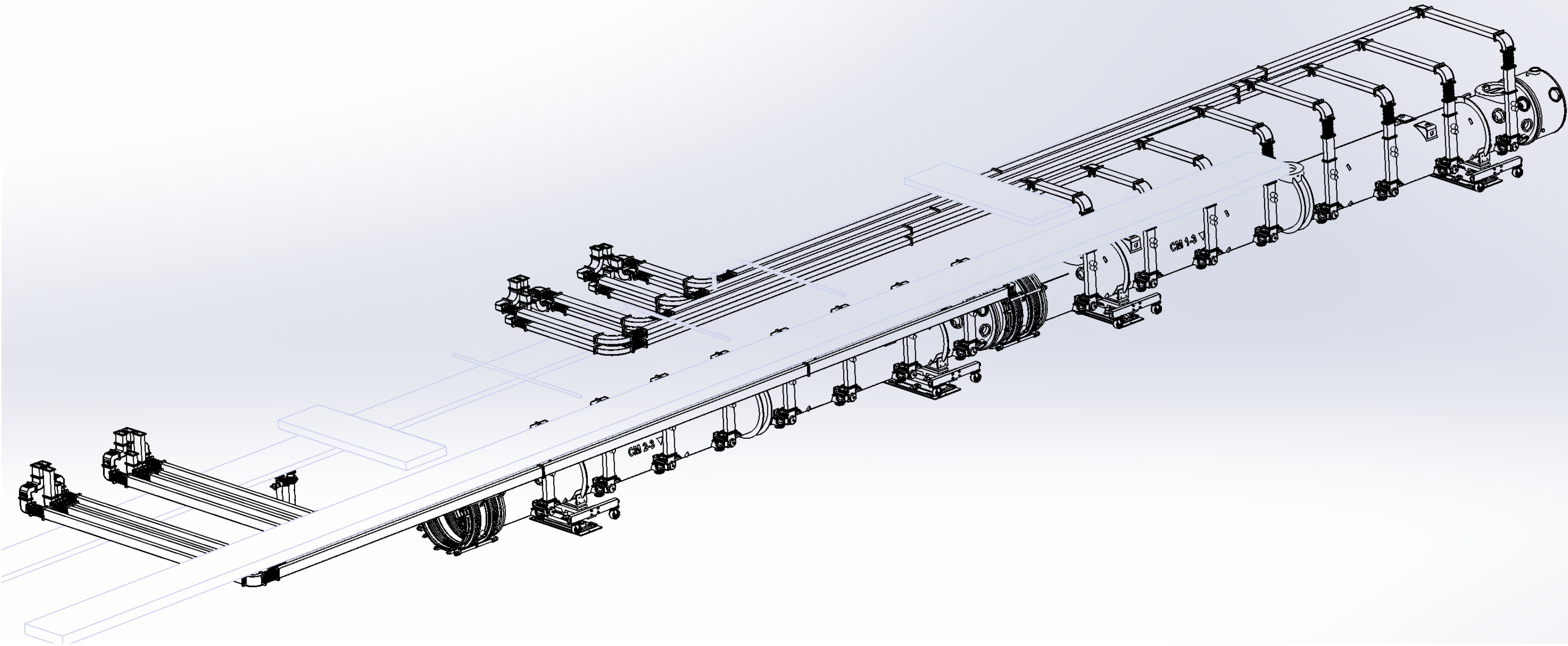
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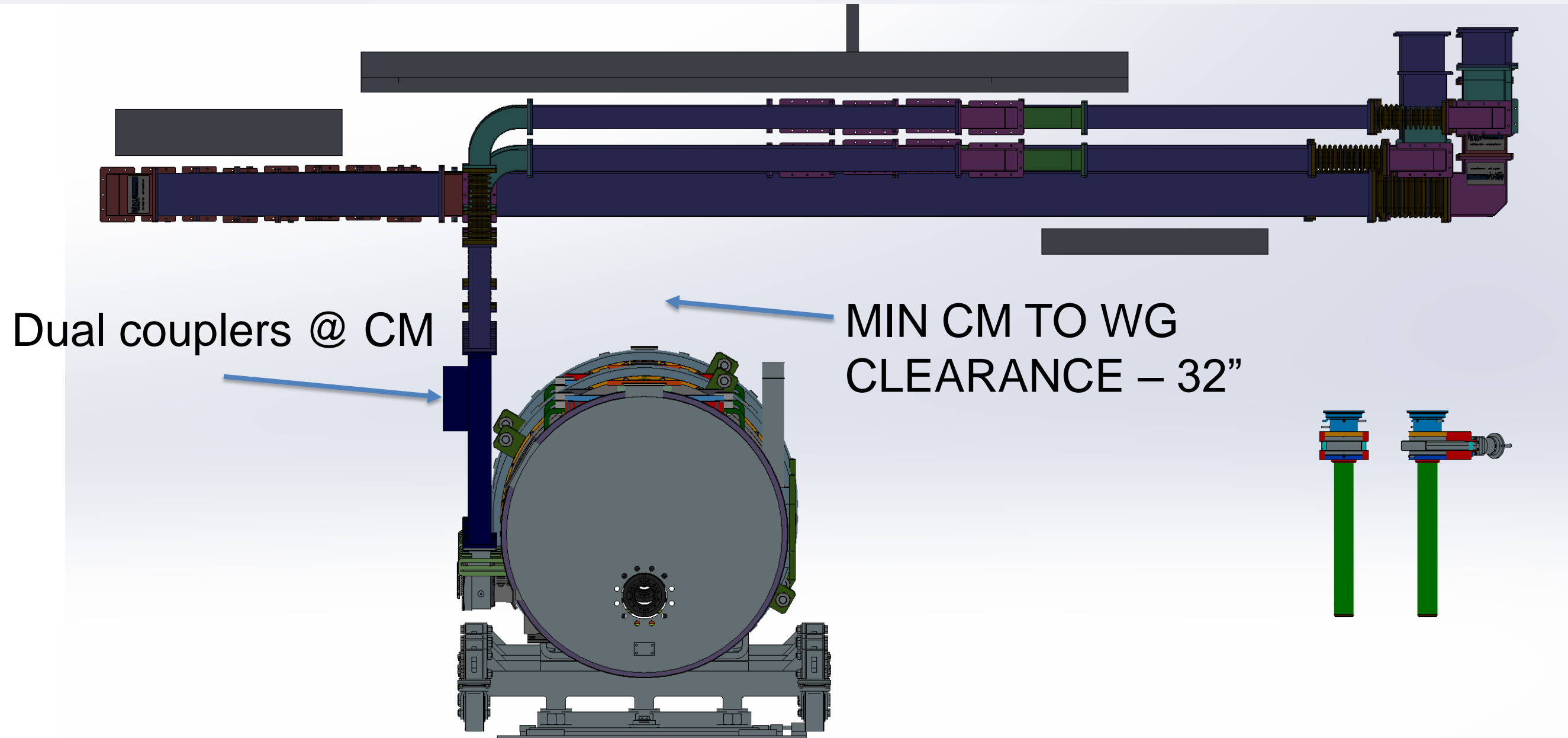
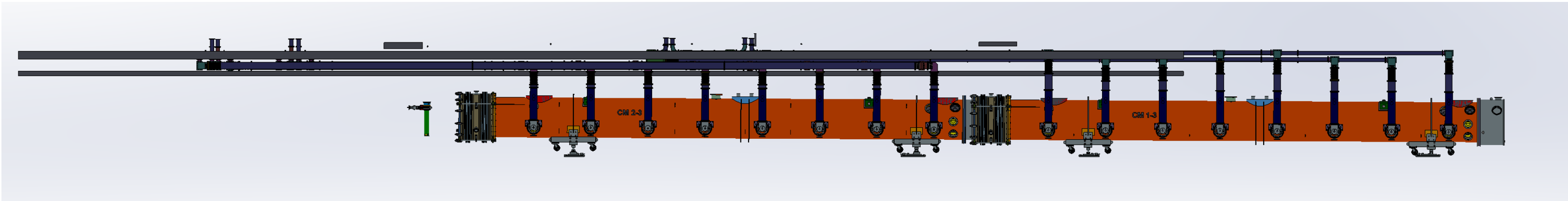
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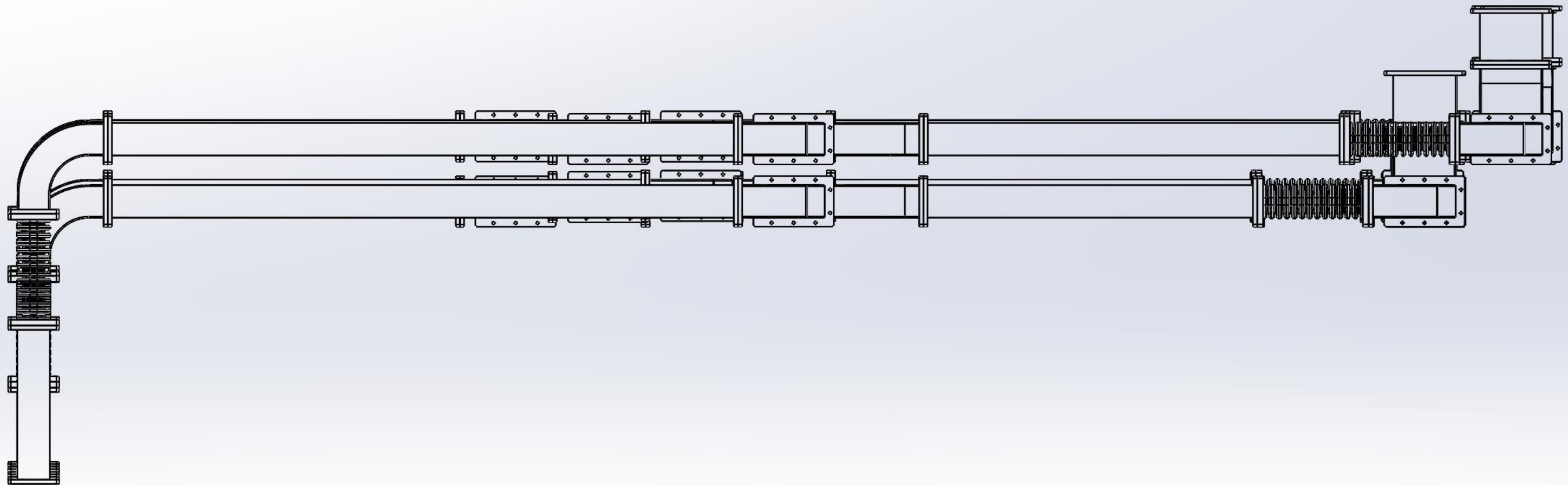
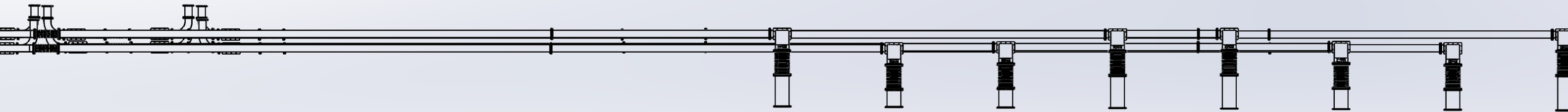
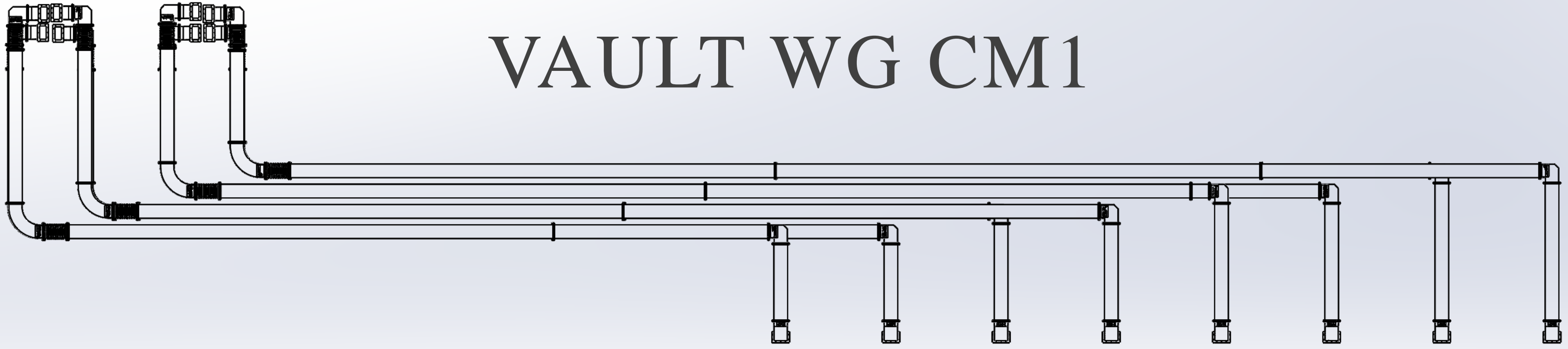
VAULT WG



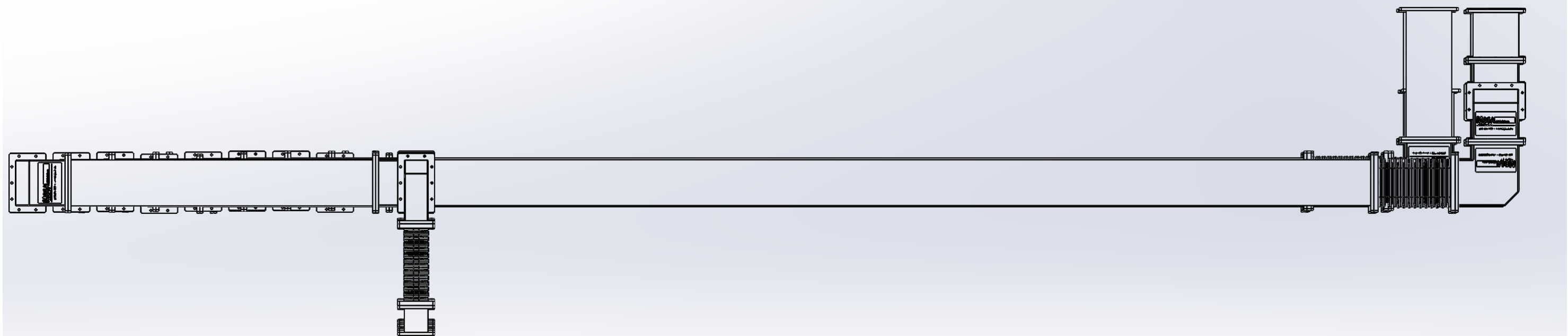
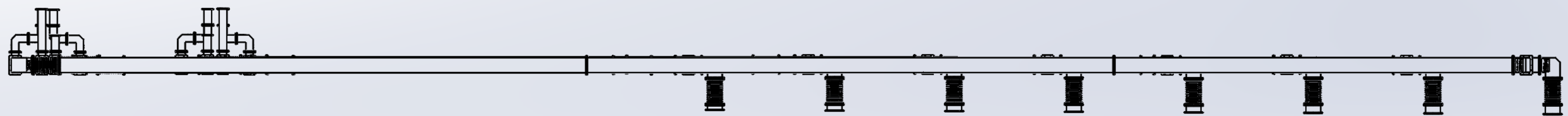
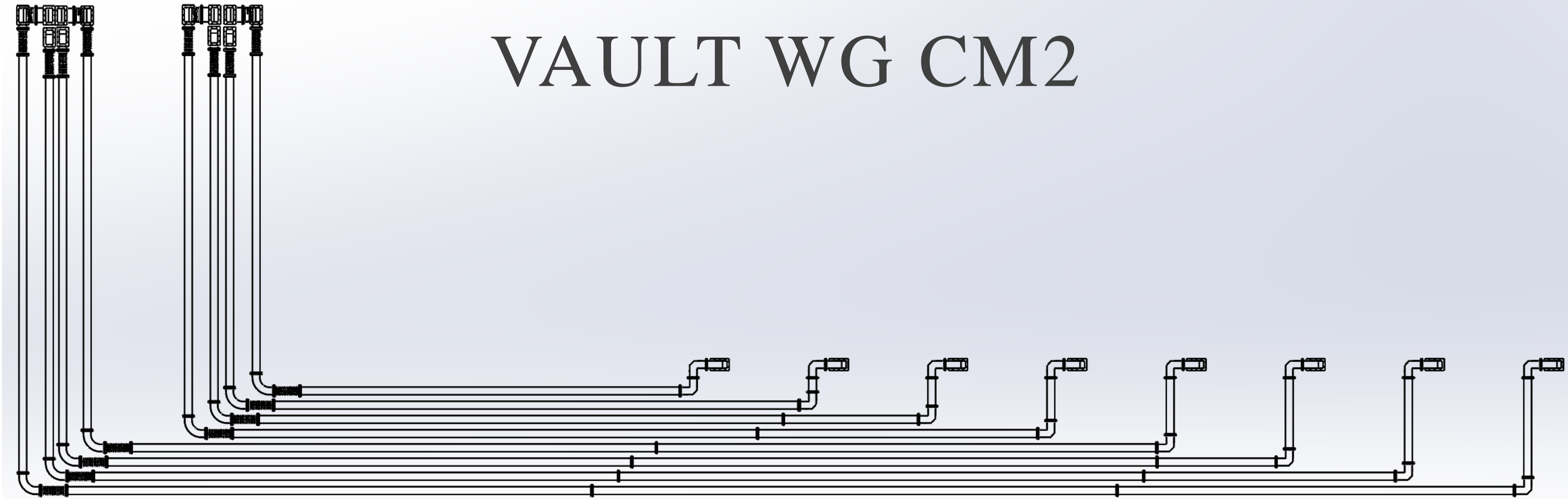
VAULT WG



VAULT WG CM1



VAULT WG CM2



WG BOM (PARTIAL)

LCLS-II WAVEGUIDES					
DESCRIPTION	Length (in)	QTY.	Have	Unit Cost	EXT Cost
WR 650 E-SWEEP	8 (offset)	24	24	610	\$0.00
WR650 H-SWEEP	14 (offset)	8	8	650	\$0.00
WR650 E-MITER	6 (offset)	68	7	608	\$37,088.00
WR650 H-MITER	6 (offset)	56	14	650	\$27,300.00
WR650 FLEX 12"	12	80	31	1640	\$80,360.00
WG650 Straight 2-8/16 in	2.5	1		\$450 + \$6.40/in	\$466.00
WG650 Straight 3 in	3	1		\$450 + \$6.40/in	\$469.20
WG650 Straight 3-5/16 in	3.3125	1		\$450 + \$6.40/in	\$471.20
WG650 Straight 3-7/16 in	3.4375	2		\$450 + \$6.40/in	\$944.00
WG650 Straight 3-12/16 in	3.75	1		\$450 + \$6.40/in	\$474.00
WG650 Straight 3-14/16 in	3.875	1		\$450 + \$6.40/in	\$474.80
WG650 Straight 3-15/16 in	3.9375	1		\$450 + \$6.40/in	\$475.20
WG650 Straight 4-2/16 in	4.125	1		\$450 + \$6.40/in	\$476.40
WG650 Straight 4-6/16 in	4.375	1		\$450 + \$6.40/in	\$478.00
WG650 Straight 5 in	5	1		\$450 + \$6.40/in	\$482.00
WG650 Straight 6 in	6	10		\$450 + \$6.40/in	\$4,884.00
"	"	"		"	"
"	"	"		"	"
WG650 Straight 180 in	180	1		\$450 + \$6.40/in	\$1,602.00
WG650 Straight 181-8/16 in	181.5625	1		\$450 + \$6.40/in	\$1,612.00
WG650 Straight 190-14/16 in	190.875	1		\$450 + \$6.40/in	\$1,671.60
WG650 Straight 228-11/16 in	228.6875	1		\$450 + \$6.40/in	\$1,913.60
WG650 Straight 235-5/16 in	235.3125	1		\$450 + \$6.40/in	\$1,956.00
WG650 Straight 240 in	240	22		\$450 + \$6.40/in	\$43,692.00
WG650 Spacer 3/16 in	0.1875	1			\$250.00
WG650 Spacer 1-8/16 in	1.5	1			\$250.00
				Grand Total	\$287,991.60