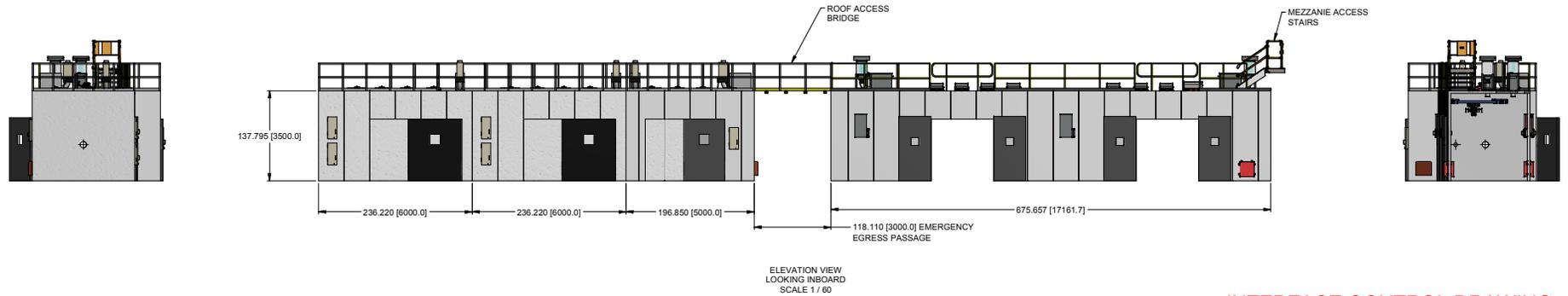
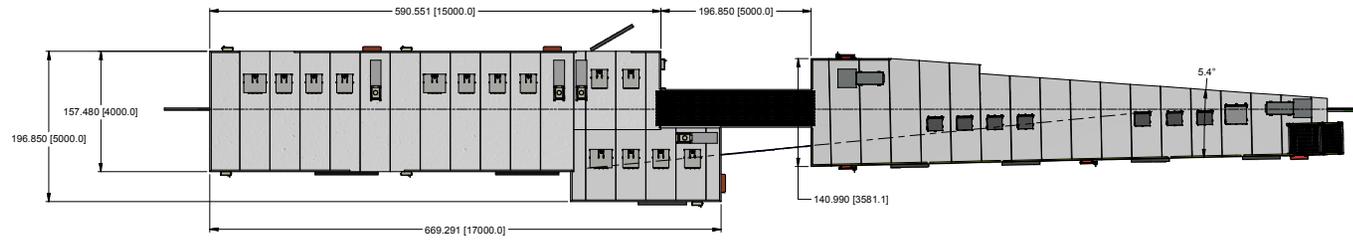
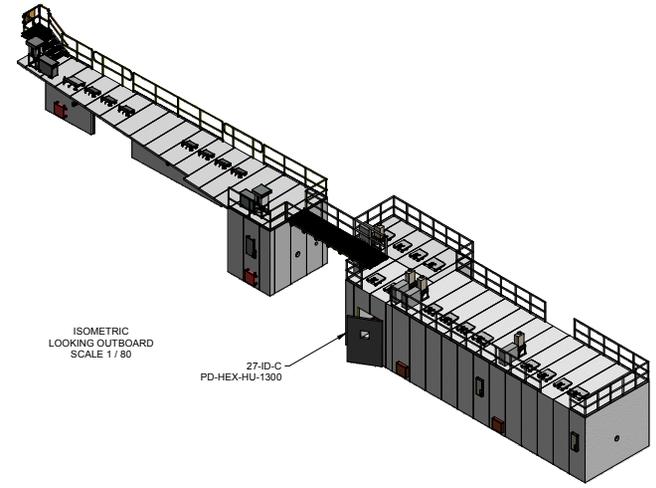
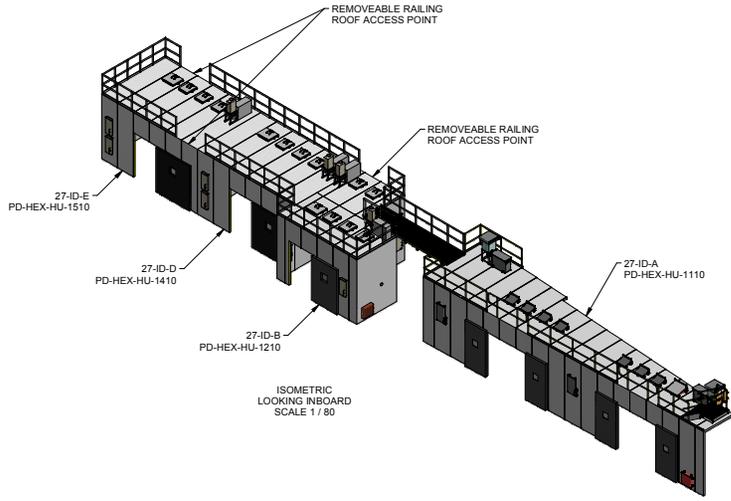


REVISION HISTORY		DESIGNER	CHECKED BY	ENGINEER
REV	DESCRIPTION	DATE		
1	RELEASE PER ECO-005479	04/2018	A. DESANTIS	M. LUCAS



- NOTES:
1. DETAILS FOR HUTCH REQUIREMENTS ARE OUTLINED IN THE BNL "TECHNICAL SPECIFICATION FOR THE NSLS-II LEAD/STEEL BEAMLINE SHIELDING ENCLOSURES", NXG-C-XFD-SPC-HU-001.
 2. DIMENSION REFERENCED BY THIS NOTE IS TO THEORETICAL FLOOR AND DOES NOT REFLECT ADJUSTMENT FOR ACTUAL FLOOR ELEVATION.

INTERFACE CONTROL DRAWING
REV 1 RELEASED AS AUTOCAD FILE

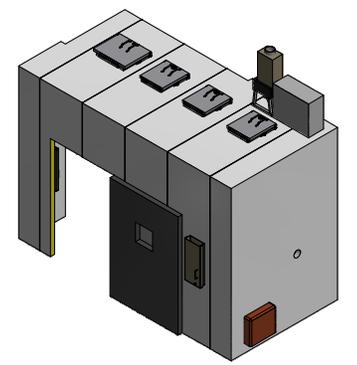
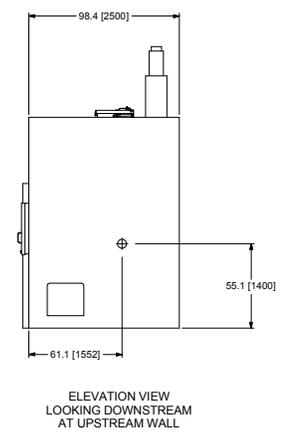
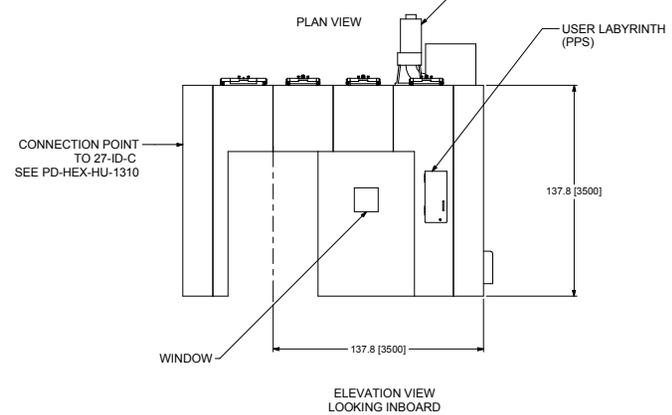
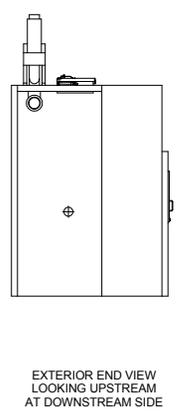
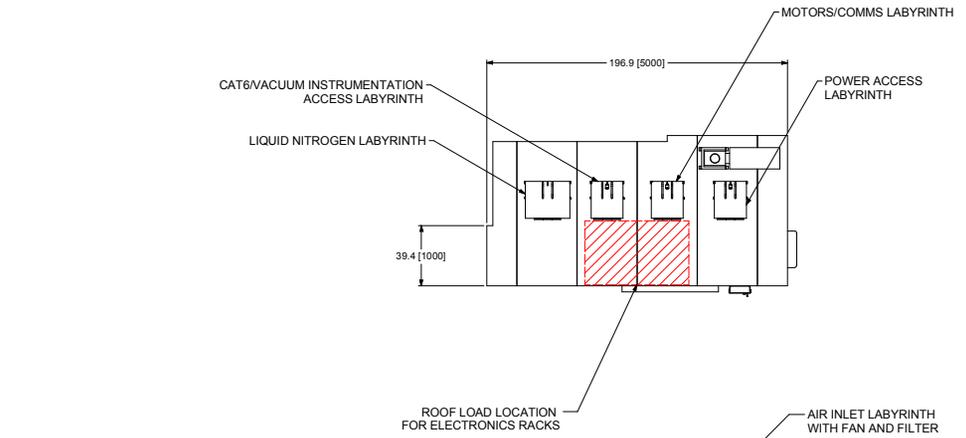
INFORMAL RELEASE
FOR QUOTES OR PROTOTYPE ONLY
NOT FOR PRODUCTION

NATIONAL SCIENTIFIC CENTER BROOKHAVEN U.S. DEPARTMENT OF ENERGY 8950 ROUTE 92 UPTON, NY 11973-5000 TEL: 516/335-1000 FAX: 516/335-9500 WWW.BNL.GOV	BROOKHAVEN PROJECTS/GENERAL SERVICES PROJECT AND FACILITY 335/2011 04/2018 DESIGNER: A. DESANTIS CHECKED BY: M. LUCAS DATE: 04/2018	NSLS-II NATIONAL SCIENTIFIC CENTER PHOTON DIVISION HEX BEAMLINE HUTCH LAYOUT, 27-ID BEAMLINE PD-HEX-HU-1000 1 SHEET 1 OF 1
---	--	---

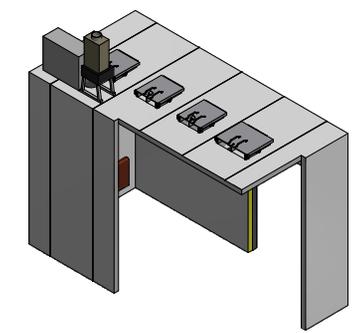
WBS# 7.5.04.01
RISK LEVEL A3

PARAMETER	VARIABLE	VALUE/DESCRIPTION
Enclosure type		SCW27 First Optical Enclosure (FOE)
Enclosure description		HEX White Beam Optics Enclosure
Shielding material		Lead
Dimensions (m) (Reference)		
	Height	3.5 m
	Width	1.8 m upstream – 3.6 m downstream (Not including inboard downstream extension panel to close gap to plug door on ratchet wall see drawing PD-HEX-HU-1110, sheet 1)
	Length	17.2 m
Shielding	Side (lateral) panels	18 mm lead
	Roof panels	10 mm lead
	Downstream wall panels	50 mm lead
	Guillotine	Downstream wall
	Beam stop	Not required
	Beam pipe penetration door	(alignment window): Not required
Entry 1	Position	Outboard side of beam direction
	Size (m)	2.4 H x 2.5 W (minimum clear opening)
	Type	Sliding double
	Actuated/Manual Opening	Upstream panel actuated – downstream panel manual
	Floor groove/Threshold	Yes, floor groove
	PPS Interfaces	Mounting plates for magnetic lock and dual position switches
	Switch position for actuated door	Upstream side of the door below the wall labyrinth
	Window	Not required
	Strip Curtain (internal)	Not required
Entry 2	Position	Outboard side of beam direction
	Size (m)	2.4 H x 2.5 W (minimum clear opening)
	Type	Sliding double
	Actuated/Manual Opening	Upstream panel manual – downstream panel actuated
	Floor groove/Threshold	Yes, floor groove
	PPS Interfaces	Mounting plates for magnetic lock and dual position switches
	Switch position for actuated door	Downstream side of the door below the wall labyrinth
	Window	Not required
	Strip Curtain (internal)	Not required
Hoist	Qty:2	Manual 1,000 lbs (1/2 US ton/453kg), (double sliding rail) minimum height of hook from floor 2.6m
Labyrinths		Positioned as on drawing, sealed with anti-tamper screws except where locks/interlocks specified.
	Roof labyrinth, compact	(on roof): Qty 7
	LN2 roof labyrinth	(on roof): Qty 1
	Labyrinth wall, single sided	(on sidewall): Qty 3 (Qty 1 that are high on the wall with interlock switches)
	Labyrinth wall, double sided	(on sidewall): Not required
	Air outlet labyrinth	(base of sidewall): Qty 2
	Roof exhaust labyrinth	(on roof): Not required
	Roof fan with labyrinth	(on roof): Qty 2
Lighting		LED
Bridges		YES
Other		Attachment points for adjacent enclosures: Not required

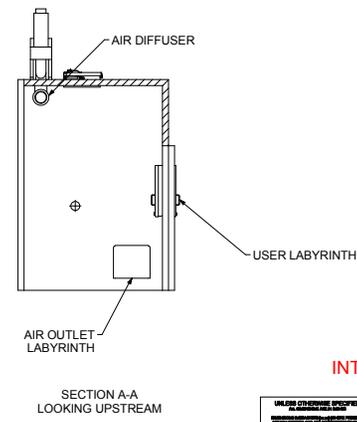
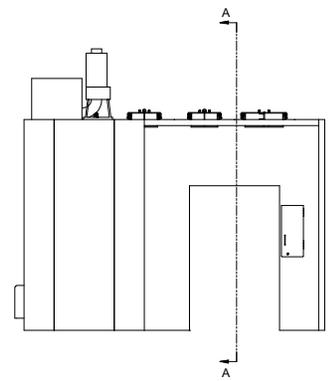
REVISION HISTORY		DATE	DESIGNER	CHECKED BY	ENGINEER
REV 1	DESCRIPTION RELEASE PER ECO005479	2/2018	A. DESANTS	M. JRG	M. LUCAS



ISOMETRIC VIEW
LOOKING INBOARD



ISOMETRIC VIEW
LOOKING OUTBOARD

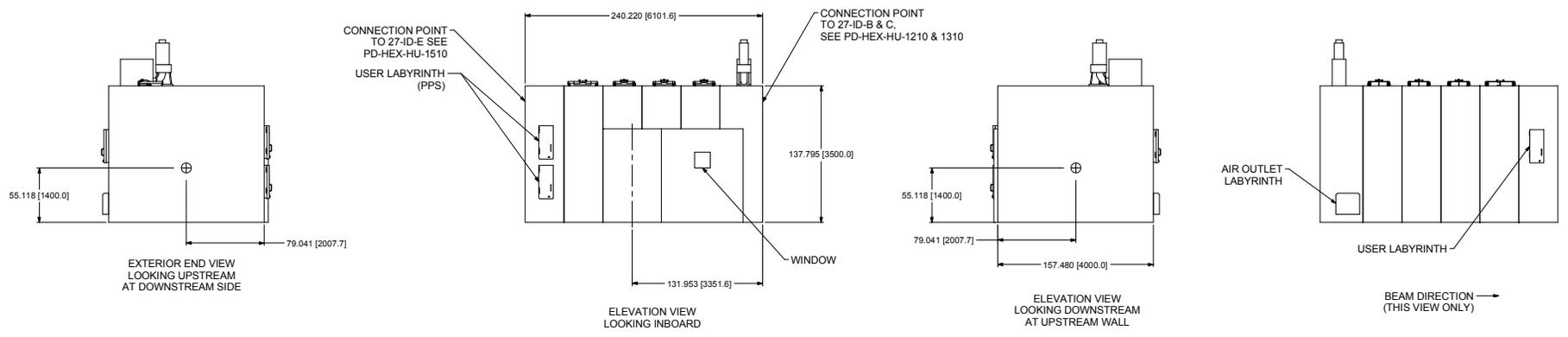
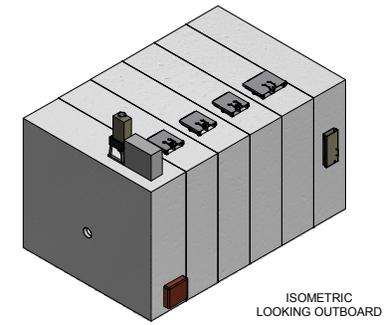
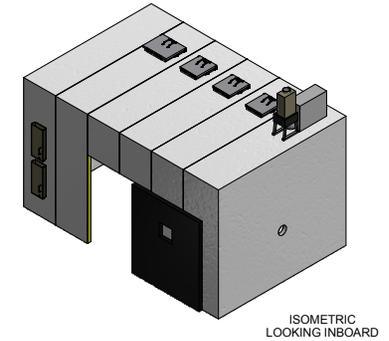
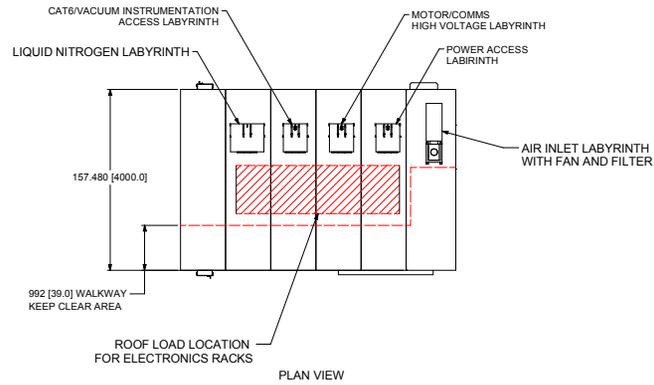


- NOTES:
1. DETAILS FOR HUTCH REQUIREMENTS ARE OUTLINED IN THE BNL TECHNICAL SPECIFICATION FOR THE NSLS-II LEAD/STEEL BEAMLINE SHIELDING ENCLOSURES, NXG-C-XFD-SPC-HU-001. SEE SHEET #2 FOR SPECIFICATIONS APPLICABLE TO THIS HUTCH.
 2. INTERNAL PANELS SHALL HAVE (2) LENGTHS OF UNISTRUT ATTACHED VERTICALLY, 200 mm ABOVE THE FLOOR TO THE TOP OF THE ENCLOSURE AND 400 mm APART.
 3. ALL USER ACCESS LABYRINTHS TO BE SINGLE SIDED. THE LABYRINTHS ACCESS DOOR IS LOCATED INSIDE THE HUTCH. USER ACCESS LABYRINTHS LOCATED ON A PANEL THAT FORM A CORNER MUST HAVE A DOOR THAT OPENS TOWARDS THE PERPENDICULAR WALL.
 4. DIMENSION REFERENCED BY THIS NOTE IS TO THEORETICAL FLOOR AND DOES NOT REFLECT ADJUSTMENT FOR ACTUAL FLOOR ELEVATION.

INTERFACE CONTROL DRAWING
REV 1 RELEASED AS AUTOCAD FILE

		PHOTON DIVISION HEX BEAMLINE HUTCH 27-ID-B PROCUREMENT ASSY PD-HEX-HU-1210		1
NEXT ASSY: PD-HEX-HU-1000 PROJECT: NSLS-II HEX BEAMLINE	WBS# 7.5.04.01 RISK LEVEL: A3	SHEET 1 OF 2	1	

REVISION HISTORY		DATE	DESIGNER	CHECKED BY	ENGINEER
REV	DESCRIPTION				
1	RELEASED AS PER ECO-1005479	04/2018	A DESANTIS	MLJRG	MLUCAS



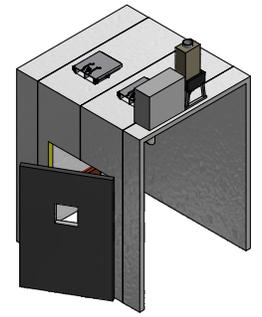
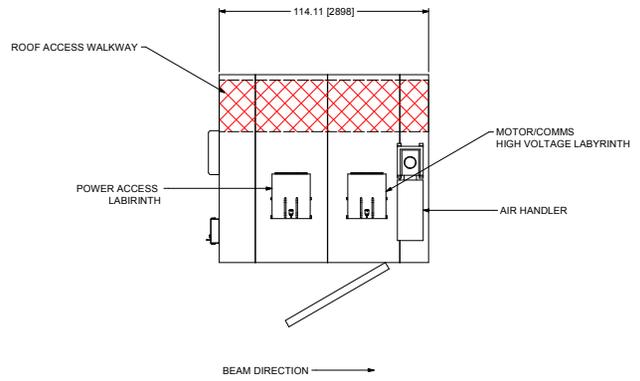
- NOTES:
1. DETAILS FOR HUTCH REQUIREMENTS ARE OUTLINED IN THE BNL "TECHNICAL SPECIFICATION FOR THE NSLS-II LEAD/STEEL BEAMLINE SHIELDING ENCLOSURES", NXG-C-XFD-SPC-HU-001. SEE SHEET #2 FOR SPECIFICATIONS APPLICABLE TO THIS HUTCH.
 2. INTERNAL PANELS SHALL HAVE (2) LENGTHS OF UNISTRUT ATTACHED VERTICALLY, 200 mm ABOVE THE FLOOR TO THE TOP OF THE ENCLOSURE AND 400 mm APART.
 3. ALL USER ACCESS LABYRINTHS TO BE SINGLE SIDED. THE LABYRINTHS ACCESS DOOR IS LOCATED INSIDE THE HUTCH. USER ACCESS LABYRINTHS LOCATED ON A PANEL THAT FORM A CORNER MUST HAVE A DOOR THAT OPENS TOWARDS THE PERPENDICULAR WALL.
 4. DIMENSION REFERENCED BY THIS NOTE IS TO THEORETICAL FLOOR AND DOES NOT REFLECT ADJUSTMENT FOR ACTUAL FLOOR ELEVATION.

INTERFACE CONTROL DRAWING
REV 1 RELEASED AS AUTOCAD FILE

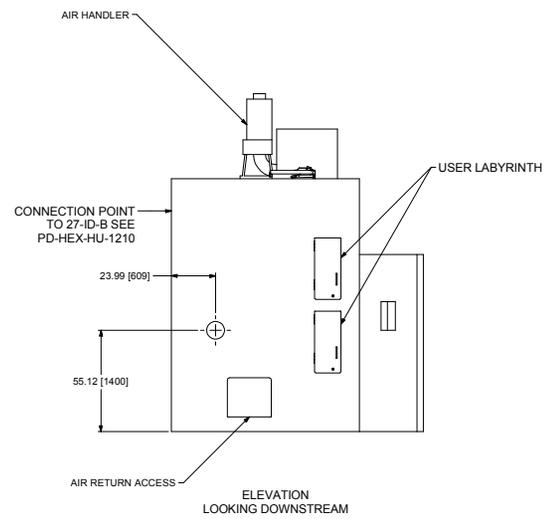
UNLESS OTHERWISE SPECIFIED STANDARD: ASME Y14.5-2018 DIMENSIONS: MILLIMETERS DECIMALS: X = 0.030, XX = 0.015, XXX = 0.005 TOLERANCES: FRACTIONS, DECIMALS, ANGLES FINISHES: UNLESS OTHERWISE SPECIFIED		BROOKHAVEN NATIONAL SYNCHROTRON LIGHT SOURCE 870 UTAH AVE. UTAH STATE LOGAN, UT 84301-7000 TEL: 435/794-6000 FAX: 435/794-6001 WWW.BNL.GOV		NSLS-II NSLS-II PHOTON DIVISION 1252011 MLJRG 03/2018 MLOFTUS 03/2018		PHOTON DIVISION HEX BEAMLINE HUTCH 27-ID-D PROCUREMENT ASSY PD-HEX-HU-1410 1	
NEXT ASSY: PD-HEX-HU-1000 PROJECT: NSLS-II HEX BEAMLINE		WBS# 7.5.04.01		RISK LEVEL: A3		SHEET 1 OF 2	

PARAMETER	VARIABLE	VALUE/DESCRIPTION
Enclosure type		SCW27 First Optical Enclosure (FOE)
Enclosure description		HEX White Beam Optics Enclosure
Shielding material		Lead
Dimensions (m) (Reference)		
	Height	3.5 m
	Width	1.8 m upstream – 2.8 m downstream (Not including inboard downstream extension panel to close gap to plug door on ratchet wall see drawing PD–HU-1110, sheet 1)
	Length	14.0 m
Shielding		
	Side (lateral) panels	18 mm lead
	Roof panels	10 mm lead
	Downstream wall panels	50 mm lead
	Guillotine	Downstream wall
	Beam stop	Not required
	Beam pipe penetration door	(alignment window): Not required
Entry 1		
	Position	Outboard side of beam direction
	Size (m)	2.4 H x 2.5 W (minimum clear opening)
	Type	Sliding double
	Actuated/Manual Opening	Upstream panel actuated – downstream panel manual
	Floor groove/Threshold	Yes, floor groove
	PPS Interfaces	Mounting plates for magnetic lock and dual position switches
	Switch position for actuated door	Upstream side of the door below the wall labyrinth
	Window	Not required
	Strip Curtain (internal)	Not required
Entry 2		
	Position	Outboard side of beam direction
	Size (m)	2.4 H x 2.0 W (minimum clear opening)
	Type	Sliding double
	Actuated/Manual Opening	Upstream panel manual – downstream panel actuated
	Floor groove/Threshold	Yes, floor groove
	PPS Interfaces	Mounting plates for magnetic lock and dual position switches
	Switch position for actuated door	Downstream side of the door below the wall labyrinth
	Window	Not required
	Strip Curtain (internal)	Not required
Holst		Manual 2,000 lbs (1 US ton/907kg), (double sliding rail) minimum height of hook from floor 2.6m
Labyrinths		Positioned as on drawing, sealed with anti-tamper screws except where locks/interlocks specified.
	Roof labyrinth, compact	(on roof): Qty 6
	LN2 roof labyrinth	(on roof): Qty 2
	Labyrinth wall, single sided	(on sidewall): Qty 3 (Qty 2 that are high on the wall with interlock switches upstream and downstream of the d
	Labyrinth wall, double sided	(on sidewall): Not required
	Air outlet labyrinth	(base of sidewall): Qty 2
	Roof exhaust labyrinth	(on roof): Not required
	Roof fan with labyrinth	(on roof): Qty 1
Lighting		LED
Bridges		YES
Other		Attachment points for adjacent enclosures: Not required

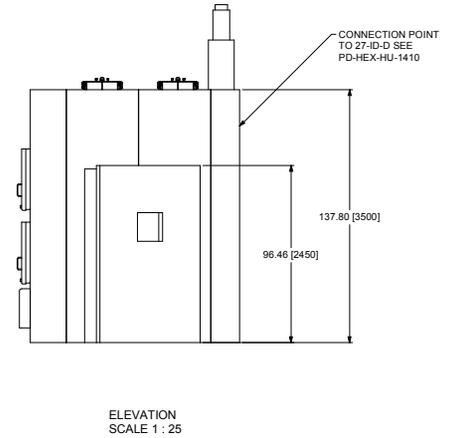
REV	DESCRIPTION	REVISION HISTORY		
		DATE	DESIGNER	CHECKED BY
1	RELEASED PER ECO00	03/2018	A. DESANTIS	M. JRG



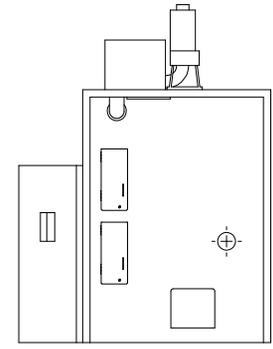
ISOMETRIC
LOOKING OUTBOARD



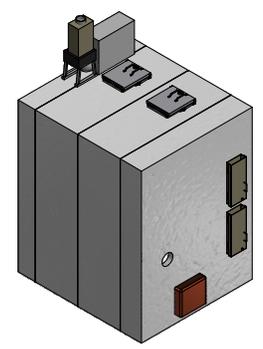
ELEVATION
LOOKING DOWNSTREAM



ELEVATION
SCALE 1 : 25



ELEVATION
LOOKING UPSTREAM



ISOMETRIC
LOOKING INBOARD

- NOTES:
1. DETAILS FOR HUTCH REQUIREMENTS ARE OUTLINED IN THE BNL TECHNICAL SPECIFICATION FOR THE NSLS-II LEAD/STEEL BEAMLINE SHIELDING ENCLOSURES*, NXG-C-XFD-SPC-HU-001. SEE SHEET #2 FOR SPECIFICATIONS APPLICABLE TO THIS HUTCH.
 2. INTERNAL PANELS SHALL HAVE (2) LENGTHS OF UNISTRUT ATTACHED VERTICALLY, 200 mm ABOVE THE FLOOR TO THE TOP OF THE ENCLOSURE AND 400 mm APART.
 3. ALL USER ACCESS LABYRINTHS TO BE SINGLE SIDED. THE LABYRINTHS ACCESS DOOR IS LOCATED INSIDE THE HUTCH. USER ACCESS LABYRINTHS LOCATED ON A PANEL THAT FORM A CORNER MUST HAVE A DOOR THAT OPENS TOWARDS THE PERPENDICULAR WALL.
 4. DIMENSION REFERENCED BY THIS NOTE IS TO THEORETICAL FLOOR AND DOES NOT REFLECT ADJUSTMENT FOR ACTUAL FLOOR ELEVATION.

INTERFACE CONTROL DRAWING
REV 1 RELEASED AS AUTOCAD FILE

UNLESS OTHERWISE SPECIFIED STANDARD SYMBOLS AND ABBREVIATIONS AS PER THE BNL SHIELDING DESIGN HANDBOOK (REV. 01/00)		BROOKHAVEN NATIONAL LABORATORY U.S. DEPARTMENT OF ENERGY 805 UTAH AVE UPTON, NEW YORK 11973-5000 (516) 336-7000 WWW.BNL.GOV		NSLS-II NSLS-II BEAMLINE SHIELDING ENCLOSURE II	
DESIGNED BY	A. DESANTIS	DATE	03/2018	PHOTON DIVISION	
ENGINEERED BY	M. JRG	CHECKED BY	03/2018	HEX BEAMLINE	
PROJECT	NSLS-II HEX BEAMLINE	DESIGNED BY	M. LUCAS	HUTCH 27-ID-C PROCUREMENT ASSY	
NEXT ASSY:	PD-HEX-HU-1000	DATE	03/2018	PD-HEX-HU-1310	
PROJECT:	NSLS-II HEX BEAMLINE	DESIGNED BY:	M. LUCAS	1	
WBS# 7.5.04.01			RISK LEVEL: A3		SHEET 1 OF 2

DRAWING: NSLS-II/PHOTON/SHIELDING/27-ID-C/1310

PARAMETER	VARIABLE	VALUE/DESCRIPTION
Enclosure type		SCW27 First Optical Enclosure (FOE)
Enclosure description		HEX White Beam Optics Enclosure
Shielding material		Lead
Dimensions (m) (Reference)		
	Height	3.5 m
	Width	1.8 m upstream – 2.8 m downstream (Not including inboard downstream extension panel to close gap to plug door on ratchet wall see drawing PD–HU-1110, sheet 1)
	Length	14.0 m
Shielding	Side (lateral) panels	18 mm lead
	Roof panels	10 mm lead
	Downstream wall panels	50 mm lead
	Guillotine	Downstream wall
	Beam stop	Not required
	Beam pipe penetration door	(alignment window): Not required
Entry 1	Position	Outboard side of beam direction
	Size (m)	2.4 H x 2.5 W (minimum clear opening)
	Type	Sliding double
	Actuated/Manual Opening	Upstream panel actuated – downstream panel manual
	Floor groove/Threshold	Yes, floor groove
	PPS Interfaces	Mounting plates for magnetic lock and dual position switches
	Switch position for actuated door	Upstream side of the door below the wall labyrinth
	Window	Not required
	Strip Curtain (internal)	Not required
Entry 2	Position	Outboard side of beam direction
	Size (m)	2.4 H x 2.0 W (minimum clear opening)
	Type	Sliding double
	Actuated/Manual Opening	Upstream panel manual – downstream panel actuated
	Floor groove/Threshold	Yes, floor groove
	PPS Interfaces	Mounting plates for magnetic lock and dual position switches
	Switch position for actuated door	Downstream side of the door below the wall labyrinth
	Window	Not required
	Strip Curtain (internal)	Not required
Holst		Manual 2,000 lbs (1 US ton/907kg), (double sliding rail) minimum height of hook from floor 2.6m
Labyrinths		Positioned as on drawing, sealed with anti-tamper screws except where locks/interlocks specified.
	Roof labyrinth, compact	(on roof): Qty 6
	LN2 roof labyrinth	(on roof): Qty 2
	Labyrinth wall, single sided	(on sidewall): Qty 3 (Qty 2 that are high on the wall with interlock switches upstream and downstream of the
	Labyrinth wall, double sided	(on sidewall): Not required
	Air outlet labyrinth	(base of sidewall): Qty 2
	Roof exhaust labyrinth	(on roof): Not required
	Roof fan with labyrinth	(on roof): Qty 1
Lighting		LED
Bridges		YES
Other		Attachment points for adjacent enclosures: Not required

