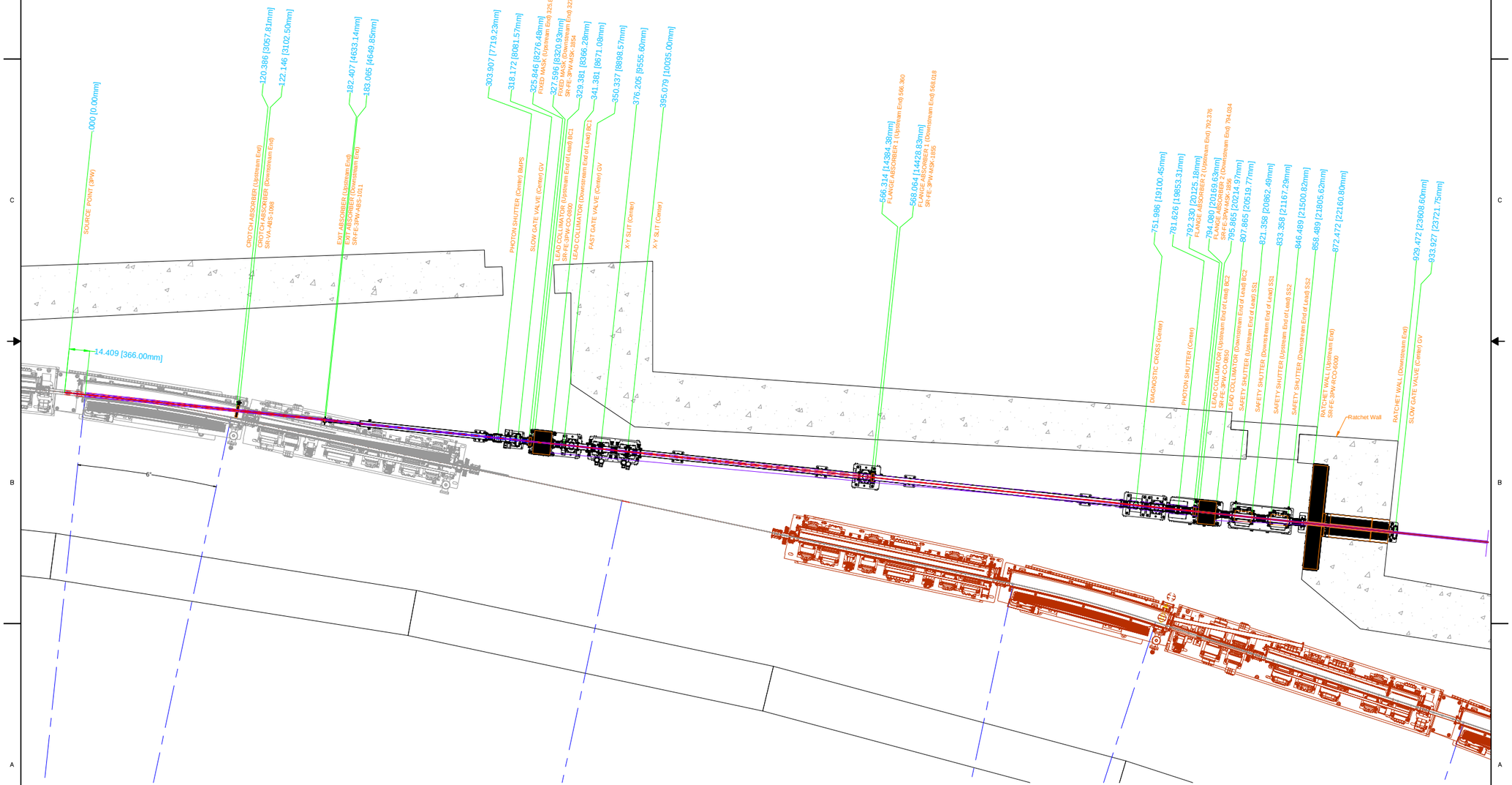
REVISION HISTORY					
REV	DESCRIPTION	DATE	DESIGNER	CHECKED BY	ENGINEER
A	RELEASE PER ECO-002768	12/2014	J. TUOZZOLO	C. AMARITO	A. HUSSAIN
B	REVISED PER ECO-003264	11/2016	R. GAMBELLA	C. STELMACH	M. BREITFELLER



XFM, CELL 4-BM, COMPONENT LAYOUT

UNLESS OTHERWISE SPECIFIED
ALL DIMENSIONS ARE IN INCHES
DIMENSIONS IN BRACKETS [mm] ARE FOR REFERENCE ONLY
ARE CALCULATED AND ARE FOR REFERENCE ONLY
REQUIRED DRAWING IN PDF AND TIFF FILES ON FILE-SFS

DIMENSIONAL TOLERANCE: X ± 0.060, .X ± 0.030, .XX ± 0.015, .XXX ± 0.005
ANGULAR TOLERANCE: ± .5°
FINISH: 125

DRAWING REQUIRS A SHARP CORNERS ALSO MFG. TO 0.005 R MAX

DRAWN BY:	J. TUOZZOLO	12/2014
CHECKED BY:	C. AMARITO	12/2014
APPROVED BY:	Z. ZHONG	12/2014
DESIGNER:	A. HUSSAIN	12/2014
APPROVED BY:	S. SHARMA	12/2014
ENGINEER:	A. HUSSAIN	12/2014
APPROVED BY:	J. GUSSMAN	12/2014
ISM ACTIVITY:	J. CARBINE	12/2014

BROOKHAVEN NATIONAL LABORATORY
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BROOKHAVEN NATIONAL LABORATORY
NSLS-II NATIONAL SYNCHROTRON LIGHT SOURCE II
UPTON, NEW YORK 11973

STORAGE RING
FRONT END, XFM, CELL 4
RAY TRACING

SR-FE-3PW-6001

SIZE: E — SHEET SIZE
DRAWING/PART NUMBER
REVISION: B

ESH&Q RISK LEVEL: A-1
SHEET 1 OF 7

NEXT ASSY: N/A
PROJECT: NSLS-II
THIRD ANGLE PROJECTION
SCALE: SEE DWG VIEW
WBS# 6.12

RELEASED → EFFECTIVE

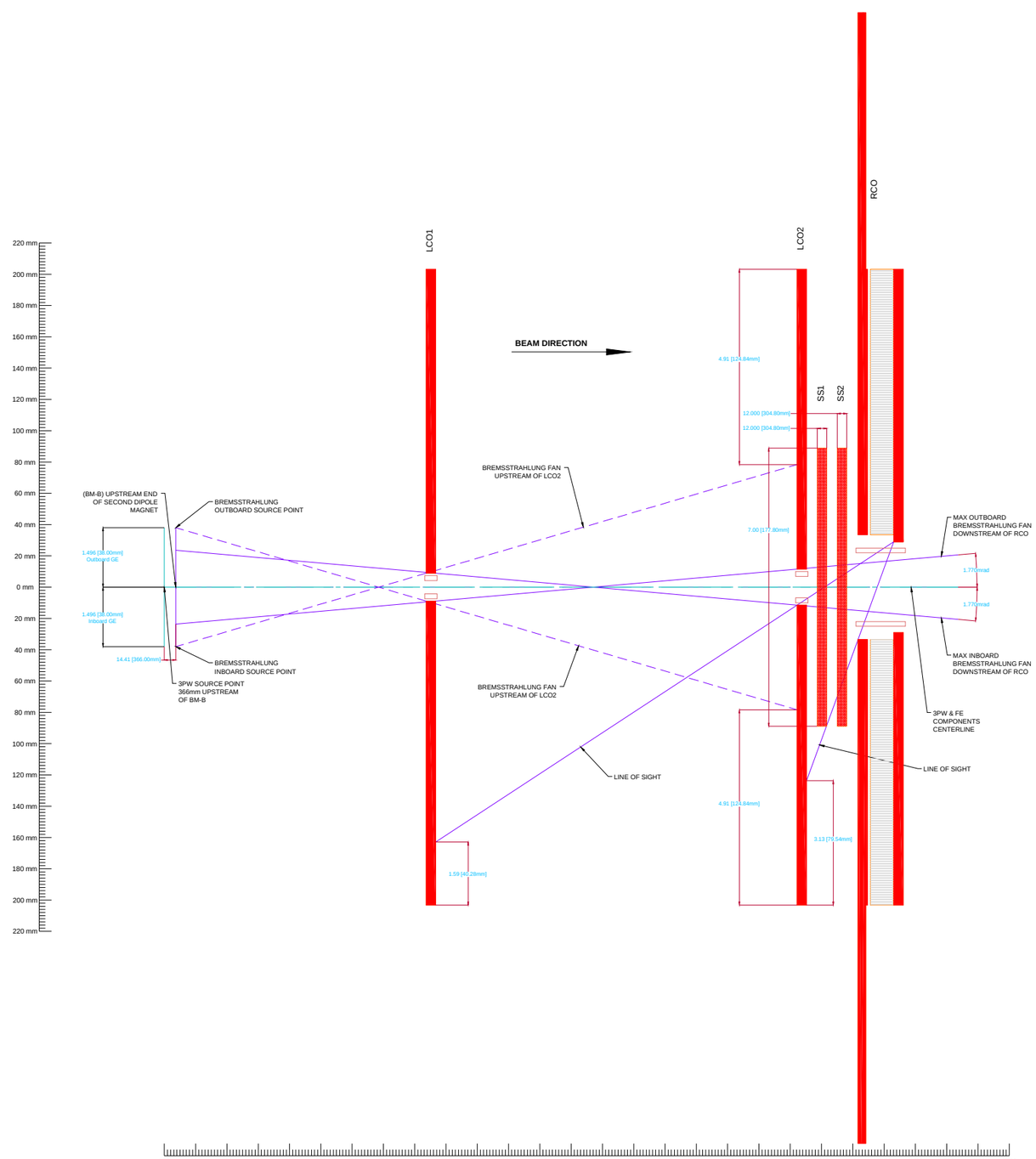


TABLE 1

XFM BEAMLINE RAYTRACE TOLERANCE

	STANDARD TOLERANCE				
	mm		Inches		Comments
	+	-	+	-	
Crotch Absorber	2.0	2.0	0.079	0.079	Manufacturing & Position
Exit Absorber	2.0	2.0	0.079	0.079	Manufacturing & Position
FM at LCO1 (Beam defining Mask)	0.1	0.0	0.004	0.000	Manufacturing
Flange Absorber	1.5	1.5	0.059	0.059	Manufacturing & Position
LCO tube	1.5	1.5	0.059	0.059	Manufacturing & Position
Collimator load Horizontal	1.5	N/A	0.059	N/A	Manufacturing, Assembly, & Tube Clearance
Collimator load Vertical	2.5	N/A	0.098	N/A	Manufacturing, Assembly, & Tube Clearance
Shadow Shield	3.0	3.0	0.118	0.118	Manufacturing & Position
RCO (upstream load Horizontal and Vertical	8.5	N/A	.335	N/A	Manufacturing, Assembly, & Tube Clearance
RCO (downstream load Horizontal	4.0	N/A	.157	N/A	Manufacturing, Assembly, & Tube Clearance
RCO (downstream load Vertical	4.5	N/A	.177	N/A	Manufacturing, Assembly, & Tube Clearance
RCO tube (minimum)	4.0	-	0.157	-	Manufacturing & Position

NOTE:

1. BREMSSTRAHLUNG SOURCE POINT (ORIGIN) IS UPSTREAM END OF BM-B.

2. ALL APERTURES & TOLERANCES ARE ASSUMED TO BE SYMMETRIC ABOUT THE COMPONENT CENTERLINE UNLESS OTHERWISE SHOWN.

HORIZONTAL
SCALE: X:Z = 1:50

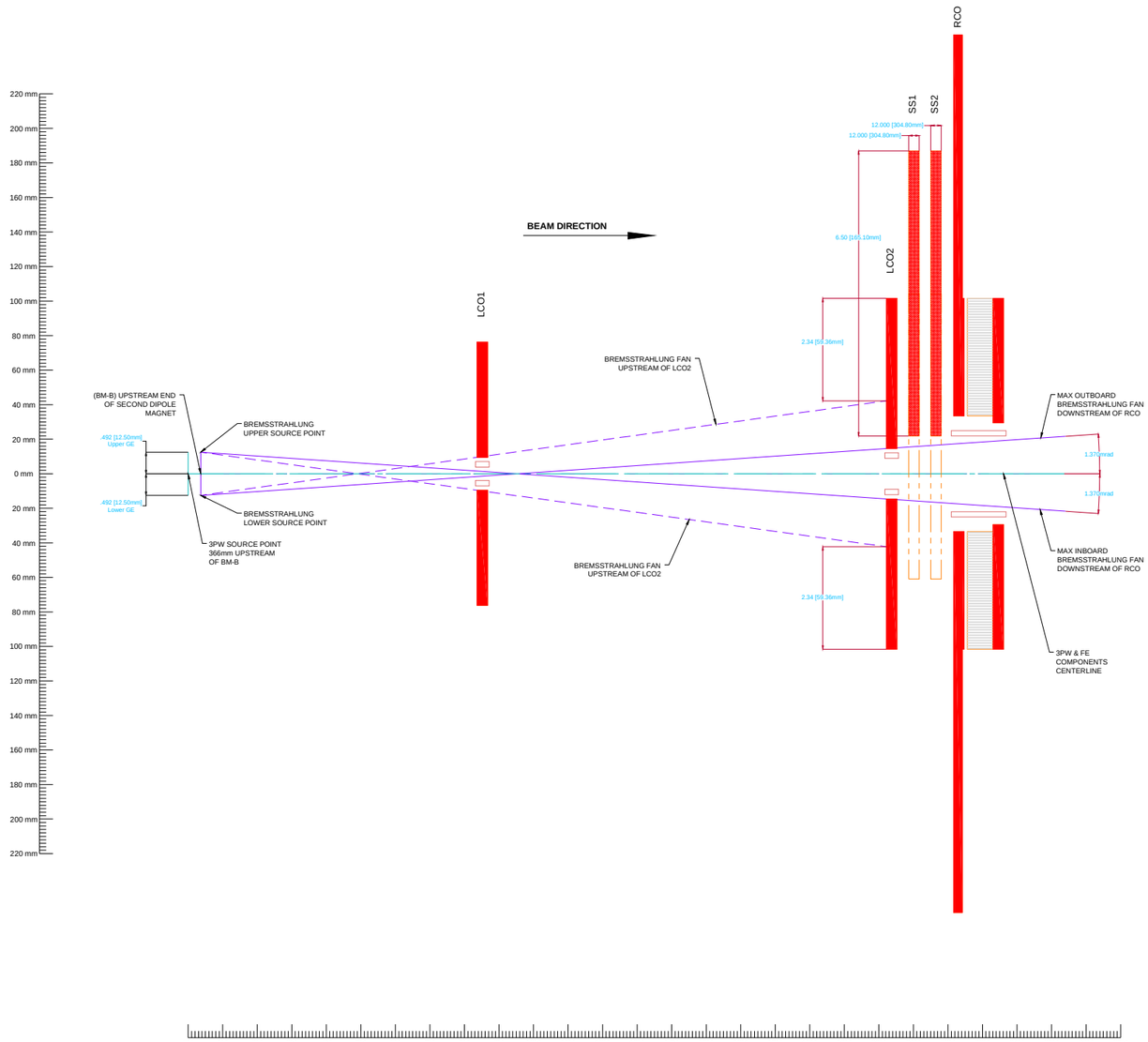
HATCH LEGEND	
	Lead
	Concrete
	Lead (Safety Shutter)

XFM, CELL 4-BM, BREMSSTRAHLUNG RAY TRACING HORIZONTAL

E	SR-FE-3PW-6001	B
ESH&Q RISK LEVEL A-1	SHEET 6 OF 7	

DRAWING/PART NUMBER REVISION

RELEASED – EFFECTIVE



VERTICAL
SCALE: Y:Z = 1:50

TABLE 1

XFM BEAMLINE RAYTRACE TOLERANCE

	STANDARD TOLERANCE				
	mm		Inches		Comments
	+	-	+	-	
Crotch Absorber	2.0	2.0	0.079	0.079	Manufacturing & Position
Exit Absorber	2.0	2.0	0.079	0.079	Manufacturing & Position
FM at LCO1 (Beam defining Mask)	0.1	0.0	0.004	0.000	Manufacturing
Flange Absorber	1.5	1.5	0.059	0.059	Manufacturing & Position
LCO tube	1.5	1.5	0.059	0.059	Manufacturing & Position
Collimator lead Horizontal	1.5	N/A	0.059	N/A	Manufacturing, Assembly, & Tube Clearance
Collimator lead Vertical	2.5	N/A	0.098	N/A	Manufacturing, Assembly, & Tube Clearance
Shutter (Wide)	3.0	3.0	0.118	0.118	Manufacturing & Position
RCO upstream lead Horizontal and Vertical	8.5	N/A	.335	N/A	Manufacturing, Assembly, & Tube Clearance
RCO downstream lead Horizontal	4.0	N/A	.157	N/A	Manufacturing, Assembly, & Tube Clearance
RCO downstream lead Vertical	4.5	N/A	.177	N/A	Manufacturing, Assembly, & Tube Clearance
RCO tube (minimum)	4.0	-	0.157	-	Manufacturing & Position

HATCH LEGEND	
	Lead
	Concrete
	Lead (Safety Shutter)

NOTE:

1. BREMSSTRAHLUNG SOURCE POINT (ORIGIN) IS UPSTREAM END OF BM-B.

2. ALL APERTURES & TOLERANCES ARE ASSUMED TO BE SYMMETRIC ABOUT THE COMPONENT CENTERLINE UNLESS OTHERWISE SHOWN.

XFM, CELL 4-BM, BREMSSTRAHLUNG RAY TRACING VERTICAL

E	SR-FE-3PW-6001	B
	DRAWING/DRAFT NUMBER	REVISION
ESH&Q RISK LEVEL A-1	SHEET 7 OF 7	

RELEASED – EFFECTIVE