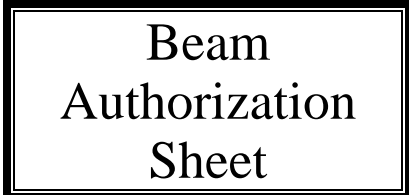


Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008



## Authorized Experiments:

1. RF:
  - S-band modulator to gun cavity,
  - X-Band modulators #0, #1, #2
  - L-band modulator #3 to cavities in NLCTA beam line.
2. Primary beam to
  - NLCTA beam dump or
  - E-163 Experimental Hall beam dump.

**FROM:** 02/23/2008      **TIME:** 00:00  
**TO:** 08/23/2008      **TIME:** 24:00

**ALL GENERAL PRE-RUNNING CONDITIONS MUST BE SIGNED OFF BEFORE RUNNING RF IN THE NLCTA.**

All **RF** Pre-Running Conditions have been signed off:

OIC: \_\_\_\_\_ Date/Time: \_\_\_\_\_

**ALL PRE-RUNNING CONDITIONS MUST BE SIGNED OFF BEFORE RUNNING BEAM IN THE NLCTA AND EXPERIMENTAL HALL.**

All Pre-Running Conditions have been signed off:

OIC: \_\_\_\_\_ Date/Time: \_\_\_\_\_

**BAS APPROVAL**

RADIATION PROTECTION \_\_\_\_\_ H. TRAN, / S. ROKNI / S. MAO / J. VOLLAIRE

ACCEL. DEPT. SAFETY OFFICE \_\_\_\_\_ P. MILLER

NLCTA (S.O./O.M.) \_\_\_\_\_ K. JOBE / J. NELSON

E-163 (S.O./O.M.) \_\_\_\_\_ E.. COLBY

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

<h2>Beam Authorization Sheet</h2>
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Check-off Boxes for Review of BAS: Read *Modifications* and *running conditions*

	Mon 02/18/08	Tues 02/19/08	Wed 02/20/08	Thurs 02/21/08	Fri 02/22/08	Sat 02/23/08	Sun 02/24/08
Shift							
Day							
Swing							
Owl							

	Mon 02/25/08	Tues 02/26/08	Wed 02/27/08	Thurs 02/28/08	Fri 02/29/08	Sat 03/01/08	Sun 03/02/08
Shift							
Day							
Swing							
Owl							

	Mon 03/03/08	Tues 03/04/08	Wed 03/05/08	Thurs 03/06/08	Fri 03/07/08	Sat 03/08/08	Sun 03/09/08
Shift							
Day							
Swing							
Owl							

	Mon 03/10/08	Tues 03/11/08	Wed 03/12/08	Thurs 03/13/08	Fri 03/14/08	Sat 03/15/08	Sun 03/16/08
Shift							
Day							
Swing							
Owl							

	Mon 03/17/08	Tues 03/18/08	Wed 03/19/08	Thurs 03/20/08	Fri 03/21/08	Sat 03/22/08	Sun 03/23/08
Shift							
Day							
Swing							
Owl							

	Mon 03/24/08	Tues 03/25/08	Wed 03/26/08	Thurs 03/27/08	Fri 03/28/08	Sat 03/29/08	Sun 03/30/08
Shift							
Day							
Swing							
Owl							

	Mon 03/31/08	Tues 04/01/08	Wed 04/02/08	Thurs 04/03/08	Fri 04/04/08	Sat 04/05/08	Sun 04/06/08
Shift							
Day							
Swing							
Owl							

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

<h2>Beam Authorization Sheet</h2>
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Check-off Boxes for Review of BAS: Read *Modifications* and *running conditions*

	Mon 04/07/08	Tues 04/08/08	Wed 04/09/08	Thurs 04/10/08	Fri 04/11/08	Sat 04/12/08	Sun 04/13/08
Shift							
Day							
Swing							
Owl							

	Mon 04/14/08	Tues 04/15/08	Wed 04/16/08	Thurs 04/17/08	Fri 04/18/08	Sat 04/19/08	Sun 04/20/08
Shift							
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Owl							

	Mon 04/21/08	Tues 04/22/08	Wed 04/23/08	Thurs 04/24/08	Fri 04/25/08	Sat 04/26/08	Sun 04/27/08
Shift							
Day							
Swing							
Owl							

	Mon 04/28/08	Tues 04/29/08	Wed 04/30/08	Thurs 05/01/08	Fri 05/02/08	Sat 05/03/08	Sun 05/04/08
Shift							
Day							
Swing							
Owl							

	Mon 05/05/08	Tues 05/06/08	Wed 05/07/08	Thurs 05/08/08	Fri 05/09/08	Sat 05/10/08	Sun 05/11/08
Shift							
Day							
Swing							
Owl							

	Mon 05/12/08	Tues 05/13/08	Wed 05/14/08	Thurs 05/15/08	Fri 05/16/08	Sat 05/17/08	Sun 05/18/08
Shift							
Day							
Swing							
Owl							

	Mon 05/19/08	Tues 05/20/08	Wed 05/21/08	Thurs 05/22/08	Fri 05/23/08	Sat 05/24/08	Sun 05/25/08
Shift							
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Swing							
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Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

<h2>Beam Authorization Sheet</h2>
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Check-off Boxes for Review of BAS: Read *Modifications* and *running conditions*

	Mon 05/26/08	Tues 05/27/08	Wed 05/28/08	Thurs 05/29/08	Fri 05/30/08	Sat 05/31/08	Sun 06/01/08
Shift							
Day							
Swing							
Owl							

	Mon 06/02/08	Tues 06/03/08	Wed 06/04/08	Thurs 06/05/08	Fri 06/06/08	Sat 06/07/08	Sun 06/08/08
Shift							
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	Mon 06/09/08	Tues 06/10/08	Wed 06/11/08	Thurs 06/12/08	Fri 06/13/08	Sat 06/14/08	Sun 06/15/08
Shift							
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Swing							
Owl							

	Mon 06/16/08	Tues 06/17/08	Wed 06/18/08	Thurs 06/19/08	Fri 06/20/08	Sat 06/21/08	Sun 06/22/08
Shift							
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Swing							
Owl							

	Mon 06/23/08	Tues 06/24/08	Wed 06/25/08	Thurs 06/26/08	Fri 06/27/08	Sat 06/28/08	Sun 06/29/08
Shift							
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	Mon 06/30/08	Tues 07/01/08	Wed 07/02/08	Thurs 07/03/08	Fri 07/04/08	Sat 07/05/08	Sun 07/06/08
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Owl							

	Mon 07/07/08	Tues 07/08/08	Wed 07/09/08	Thurs 07/10/08	Fri 07/11/08	Sat 07/12/08	Sun 07/13/08
Shift							
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Swing							
Owl							

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

<h2>Beam Authorization Sheet</h2>
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Check-off Boxes for Review of BAS: Read *Modifications* and *running conditions*

	Mon 07/14/08	Tues 07/15/08	Wed 07/16/08	Thurs 07/17/08	Fri 07/18/08	Sat 07/19/08	Sun 07/20/08
Shift							
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Swing							
Owl							

	Mon 07/21/08	Tues 07/22/08	Wed 07/23/08	Thurs 07/24/08	Fri 07/25/08	Sat 07/26/08	Sun 07/27/08
Shift							
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Swing							
Owl							

	Mon 07/28/08	Tues 07/29/08	Wed 07/30/08	Thurs 07/31/08	Fri 08/01/08	Sat 08/02/08	Sun 08/03/08
Shift							
Day							
Swing							
Owl							

	Mon 08/04/08	Tues 08/05/08	Wed 08/06/08	Thurs 08/07/08	Fri 08/08/08	Sat 08/09/08	Sun 08/10/08
Shift							
Day							
Swing							
Owl							

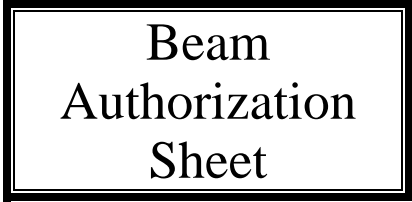
	Mon 08/11/08	Tues 08/12/08	Wed 08/13/08	Thurs 08/14/08	Fri 08/15/08	Sat 08/16/08	Sun 08/17/08
Shift							
Day							
Swing							
Owl							

	Mon 08/18/08	Tues 08/19/08	Wed 08/20/08	Thurs 08/21/08	Fri 08/22/08	Sat 08/23/08
Shift						
Day						
Swing						
Owl						

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008



## Modifications to this BAS

Item	Date/ Time	Approvals			Changes or additions*
		RP	ADSO	OIC/SO	

\* Items changed must be entirely rewritten and a single line drawn through items changed.

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

<b>Beam Authorization Sheet</b>
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**ALLOWABLE BEAM TYPE:** Electrons

ITEM	RUNNING CONDITIONS
	<b>General</b>
1	The OIC must confirm the integrity of all PPS components and radiation safety items in the NLCTA and Experimental Hall per the “Weekly NLCTA Checklist”, “PPS Interlock Checklist” procedure [02-03-03], and “NLCTA Experimental Hall PPS Interlock Checklist” procedure [02-03-29].
2	The OIC must review the appropriate Radiation Safety Work Control Forms for the NLCTA or Experimental Hall after work on radiation safety items are performed.
3	BSONLC 2, 3, 5, 6, 7, 8, 13, and 14 must be set to trip at 10 mrem/hr, BSONLC 4 must be set to trip at 4 mrem/hr above the internal source level, BSONLC 9, 10, and 15 must be set to trip at 100 mrem/hr. BSONLC 2 – 10, 13 - 15 must remain active at all times.
4	Instantaneous beam voltage limit for all X-band klystrons (including overshoot) is 450 kV.
5	Maximum pulse repetition rate for all X-band klystrons is 60 PPS.
	<b>Unattended Operation (without beam)</b>
6	When an NLCTA operator is not present: a) The Gun Modulator H.V. must remain locked off and b) The NLCTA Daily Inspection Checklist for Unattended Operation Without Beam (02-03-11) must be completed each weekday. c) The Experimental Hall stopper must be in and disable when no E-163 operator present.
	<b>Operation with Beam</b>
7	The Protection Ion Chambers IONC 1 through 8 must remain active at all times. The trip levels (set to 50nA or less) must be checked per the “Beam Containment Daily Checks” procedure [02-03-07].
8	Beam operation in the NLCTA is limited to 10 Hz or less. The rep rate limiting electronics must be checked as per the “Beam Containment Daily Checks” procedure [02-03-07].
9	The maximum allowable energy (unloaded) gain in NLCTA is 650 MeV.
10	For beam to the Experimental Hall: • In the Experimental Mode , 70 MeV, 10 Hz, 200 mW.
11	No more than one screen Ce:YAG located inside the experiment chamber may be inserted into the beam during experiment.

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

<b>Beam Authorization Sheet</b>
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<b>ITEM</b>	<b>DATE/ TIME</b>	<b>CKD. BY</b>	<b>OIC ACKN.</b>	<b>INITIAL CHECKOUT</b>
<b>1</b>				Test that PICs 1 through 2 respond to beam after beam is established to the E-163 extraction line.
<b>2</b>				Test that PICs 3 through 8 respond to beam after beam is established past the E-163 extraction line.
<b>3</b>				Radiation surveys are performed when the beam power into E163 enclosure is above 100 mW, but less than 130 mW.

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

<h2 style="margin: 0;">Beam Authorization Sheet</h2>
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**NOTE:** The stopper enable key may not be released until all pre-running conditions have been satisfied, except as required by PPS certification.

ITEM	DATE TIME	CKD. BY	OIC ACKN	<i>GENERAL PRE-RUNNING CONDITIONS</i>
<b>1</b>				BSOICs must be calibrated and trip circuits checked per “NLCTA BSOIC Certification Checklist” [02-03-05]. (required annually)
<b>2</b>				Location of BSOICs must be checked by Radiation Protection.
<b>3</b>				The integrity of NLCTA and Experimental Hall enclosure (walls & roof) must be verified by Radiation Protection (note: the roof penetrations no longer are required to be shielded).
<b>4</b>				The roof blocks of the NLCTA must be chained and locked with an ADSO padlock. Radiation fences on the East and North sides of Experimental Hall must be locked with an E163 keybank key.
<b>5</b>				PPS must be certified by an approved member of the PPS group per procedures (required annually): - PPS NLCTA Initial Acceptance Interlock Test [18-29-05]. - PPS NLCTA Initial Acceptance Electrical Hazard Test [18-29-06]. - PPS NLCTA Initial Acceptance Radiation Test [18-29-07]. - PPS NLCTA Experimental Hall Initial Acceptance Test Procedure [18-29-11].
<b>6</b>				PPS interlock check per procedures [02-03-03] and [02-03-29]. (required every six months)
<b>7</b>				Verify that that the 2-Pack waveguide (located on the NLCTA roof) to the NLCTA housing is terminated and locked with an ADSO lock.
<b>8</b>				Verify penetration is filled with radiation shielding material.
<b>9</b>				Protection collimator downbeam of the stopper-pair for the experimental enclosure beamline must be in place.
<b>10</b>				All pertinent Radiation Safety Work Control forms have been reviewed.

\* Item marked with a (\*) has been signed off on the previous BAS

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

<b>Beam Authorization Sheet</b>
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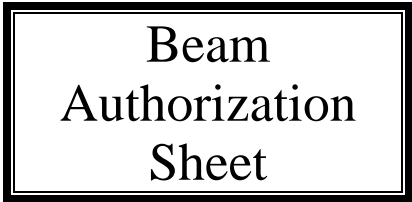
<b>ITEM</b>	<b>DATE TIME</b>	<b>CKD. BY</b>	<b>OIC ACKN.</b>	<b><i>BEAM PRE-RUNNING CONDITIONS</i></b>
<b>1</b>				BCS must be certified per the "NLCTA BCS PIC Pre-run Checkout" procedure [18-08-80]. (required annually)
<b>2</b>				Gun Faraday Cup (flange on upward spectrometer beamline) must be in place.
<b>3</b>				Protection collimators at the first chicane bend (A on map) and at the spectrometer bend (B) must be in place.
<b>4</b>				All unused roof penetrations into the accelerator area of the accelerator enclosure are blocked.
<b>5</b>				The items in the NLCTA & Experimental Hall shielding check list are verified by H. Tran or J. Vollaire or S. Rokni or S. Mao.
<b>6</b>				All pertinent Radiation Safety Work Control forms have been reviewed.

\*Item marked with a (\*) has been signed off on the previous BAS

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

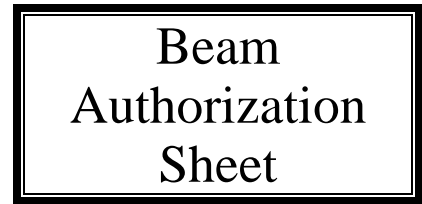


Item No.	Label	NLCTA & EXPERIMENTAL HALL SHIELDING CHECK LIST*	Checked By
		<b>Girder 41 Shield Components</b>	
1	1A	Front (Northwest) Plate - Inside	
2	1B	Front (Northwest Plate) - Outside	
3	2A	Downbeam wall - Top	
4	2B	Downbeam wall - Bottom	
5	3A	Roof plate - top	
6	3B	Roof plate - bottom	
7	4A	Rear (southeast) plate - Inside	
8	4B	Rear (southeast) plate - Outside	
		<b>Girder 42 Shield Components</b>	
9	5A	Front (North) plate-- West Section	
10	5B	Front (North) plate-- Center Section	
11	5C	Front (North) plate-- East Section	
12	6A	Roof plate-- Top Plate--West Section	
13	6B	Roof plate-- Bottom Plate--West Section	
14	6C	Roof plate-- Top Plate--Center Section	
15	6D	Roof plate-- Bottom Plate--Center Section	
16	6E	Roof plate-- Top Plate--East Section	
18	6F	Roof plate-- Bottom Plate--East Section	
19	7A	Downbeam wall -- Top	
20	7B	Downbeam wall -- Bottom	
21	8	Downbeam wall -- North 0.5" Lead Supplement Plate	
22	22A	Quad 7,8 North 1" plate - West (view from behind girder 42)	
23	22B	Quad 7,8 North 1" plate - East (view from behind girder 42)	
24	23A	Quad 7,8 North 3" plate - West (view from behind girder 42)	
25	23B	Quad 7,8 North 3" plate - East (view from behind girder 42)	
		<b>Girder 44 Shield Components</b>	
26	10A	Front (Northwest) Plate - Inside	
27	10B	Front (Northwest Plate) - Outside	
28	11A	Downbeam wall	
29	12	0-degree Dump	
		<b>East Wall Shelf Components</b>	
30	13	Lead Dump (beneath steel retaining plate)	
31	14	12x12x8 Steel Block north of Lead Dump	
32	15	8x12x32 Steel block south of Lead Dump	
33	16A	Top Steel block behind column	
34	16B	Front Steel block behind column	

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008



<b>Item No.</b>	<b>Label</b>	<b>NLCTA &amp; EXPERIMENTAL HALL SHIELDING CHECK LIST* (Continued)</b>	<b>Checked By</b>
35	16C	Bottom Steel block behind column	
36	17	Supplementary blocks to fill in behind column	
		<b>North Wall Shelf Components</b>	
37	18	Tungsten core of bend line dump	
38	19A	Dump steel top plate	
39	19B	Dump steel rear (South) plate	
40	19C	Dump steel middle plate	
41	19D	Dump steel front (North) plate	
		<b>Spectrometer Protection Collimator Components</b>	
42	20	Upbeam copper collimator—top & bottom	
43	21	Downbeam copper collimator – top & bottom	
		<b>Others</b>	
44		4 External concrete shielding blocks located outside the east wall of Experimental Hall.	
45		The integrity of radiations fences on the east and north sides of Experimental Hall. (East Fence: minimum 10' from the east wall, North Fence: minimum 6' from the north wall)	

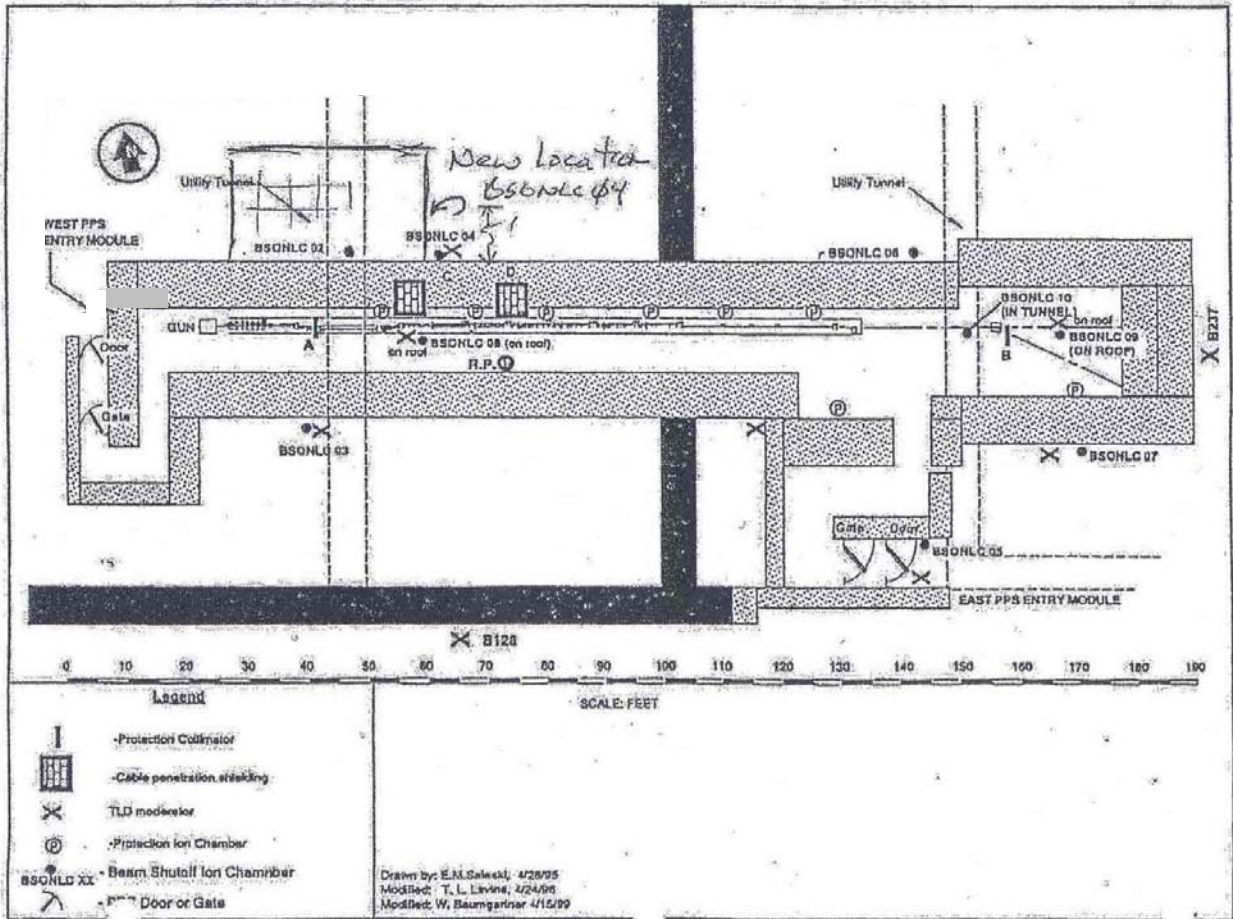
\* Items marked with a (\*) have been signed off on a previous BAS as dated and are still valid

Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

## Beam Authorization Sheet

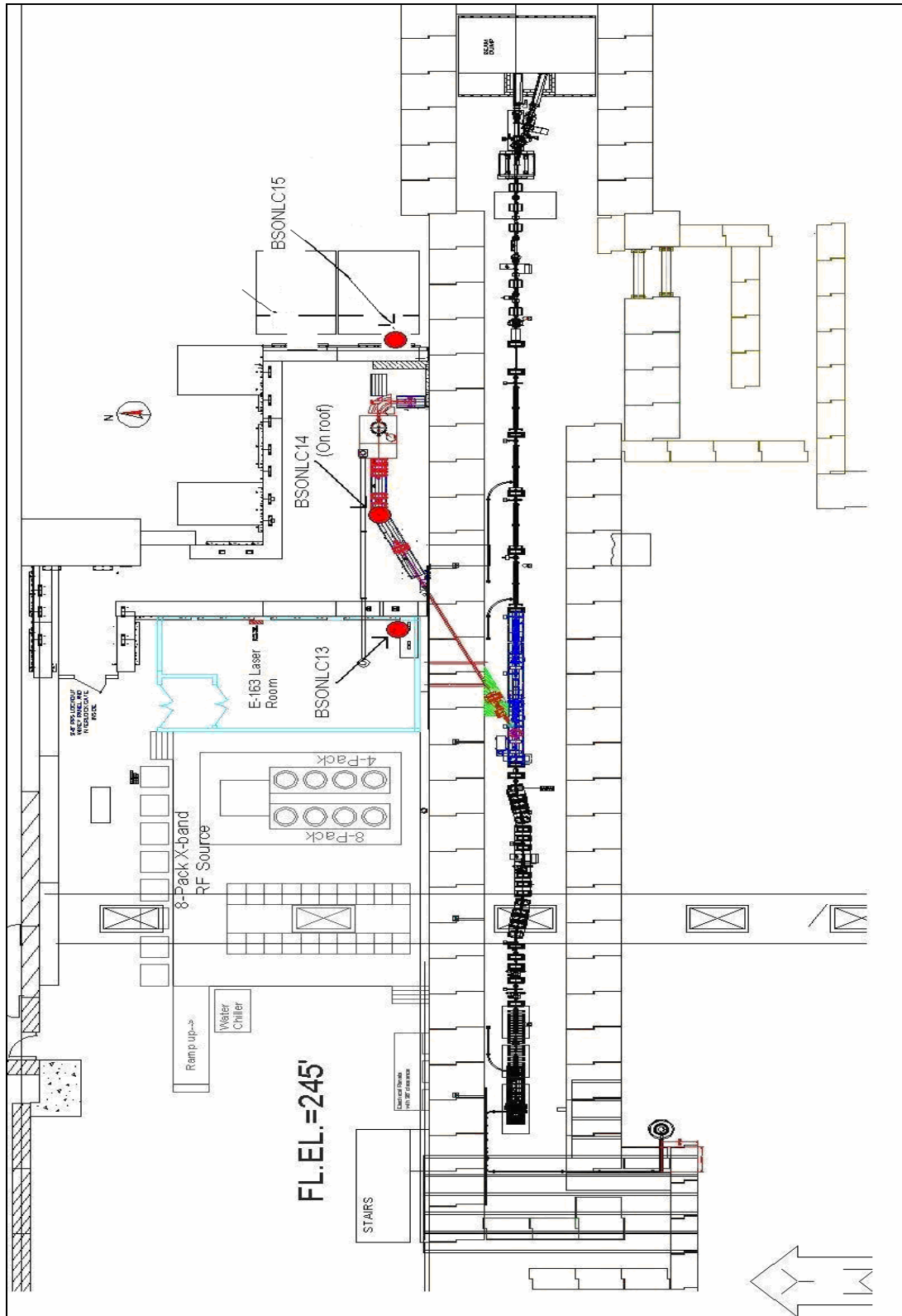


Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

Beam  
Authorization  
Sheet



Experiment:

# NLCTA & E-163

Date of issue: 02/22/2008

## Beam Authorization Sheet

