

THIS LOG DOCUMENTS CURRENT FILES FOR NuMI EXTRACTION / PRIMARY BEAM DESIGN, ALONG WITH DESCRIPTION OF CHANGES SINCE PREVIOUS RELEASE.

OFFICIAL BEAM DESIGN RELEASE IS DESIGNATED BY



- **NuMI0x_Vx.x beam design** with release date.

Working updates are listed with

- *file name and date, plus changes since previous release [affected systems]*

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Working update – 012204:

- *NuMI_121102_e.ces0.doc(TRANSPORT)*

Changes are:

1. Extraction region updated to most recent MI parameters – proper length MI BPM, MI quad offsets and trim dipole values.
2. Horizontal tune changed as a result of the above. Necessitated new rolls in HV101 of up to 2 milliradians.
- 3 Accurate instrumentation positions and device separations in stub region implemented.
4. .253” added to line just before shield wall, to return target region station values to previous norms.
5. Ds and Fs added to quadrupole names.

Working update – 092503:

- *NuMI_121102_d.ces0.doc (TRANSPORT)*
- *Offsets.xls (Excel)*
[Impacts alignment – 1.1.6]

Changes are:

1. The beamsheet beamline before V100 refers to the MI60 straight section nominal.
2. As always, the beamline starting at V100 refers to the NuMI extracted beam.
- 3 A column, ‘Surveyor’s Roll’, has been added to the beamsheet. This quantity refers to roll angle with respect to the nearest rectilinear axis.
4. The file Offsets.xls notes all elements positioned at some offset from the beamsheet values.

Working update – 050203:

- *NuMI_121102_c.ces0 (TRANSPORT)*
[Impacts alignment – 1.1.6, ACNET name inputs, locations - 1.1.8, vacuum layout design – 1.1.7]

Changes are:

1. Vacuum valve moved from downstream of c-magnet to upstream thereof.
Valve did not fit downstream using standard installation.
2. Toroid 101 moved somewhat upstream and PM101, moved immediately downstream of it. *Dimensions of the U. Texas monitor require this change.*
- 3 The two standard type profile monitor/beam targets, PM111T and PM118T are positioned.

Working update: For release with NuMI02_v1.1

- *NuMI_121102_b.ces0 (TRANSPORT)*
[Impacts MI-60 magnet stand placement, alignment – 1.1.6, ACNET name inputs, locations - 1.1.8, vacuum layout design – 1.1.7]

Changes are:

1. Moving dipoles 101-3 thru 101-5 downstream by 3.0 inches and dipole 101-6 downstream by 6.9 inches to create space for ion pumps.
Impact on beam trajectory: 0.09 “ H and -0.015 “ V at V108 center.
 2. Placement of profile monitors (except PM101) downstream of corresponding position monitors.
 3. Inclusion of toroids
 4. Inclusion of flange space at ends of profile monitors
 5. Defined flange drift spaces for all functional components
 6. Update of ACNET names for all components
- *NuMI_101102.ces0 (TRANSPORT)*
[Impacts Extraction Stub stand design]

Changes are:

1. Correction of flange space allocated for correctors based on Tech. Div. design update. Freeze space between V108 string magnets for stand design. Maintain bend center of V108.

- **NuMI02_v1.0 beam design** released Oct. 2, 2002

Package provides beam design from extraction kickers to NuMI target.

Design Files included:

- LAT92.OUT_circulating_rotat145_20_0_NEW (STRUCT - Oct 01'02)
- LAT92.OUT_extracted_rotat145_20_0_NEW (STRUCT – Oct 01'02)
- NuMI_092302.ces0 (TRANSPORT – Sep 23'02)