



THE 300 GEV TRIPLET TRAIN

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The triplet train has been augmented by three additional main ring quadrupoles to allow it to focus 300 GeV pions into enclosure 100. The triplet consists of the following elements (the additional quadrupoles are marked with asterisks):

<u>NAME</u>	<u>z-position</u>
OUT	3465 ft.
OT1 (Target A)	3480 ft.
OT2 (Target B)	3484 ft.
OQT1-1 (3Q120)	3497 ft.
OQT1-2 (3Q120)	3508 ft.
OQT2-1 (3Q84)	3522 ft.
OQT2-2 (3Q84)	3530 ft.
OQT3 (3Q84)	3541 ft.
OQT4 (3Q84)	3549 ft.
OQT5* (3Q84)	3561 ft.
OQT6* (3Q84)	3569 ft.
OQT7 (3Q84)	3579 ft.
OQT9* (3Q84)	3619 ft.
OVT (vertical trim)	3634 ft.
OHT(1) (horizontal trim)	3639 ft.
OHT(2) (horizontal trim)	3642 ft.
OHT(3) (horizontal trim)	3646 ft.

To obtain information for the operation of the triplet train at 200 GeV or lower see TM-469. The protons are dumped at the end of the decay pipe. The 300 GeV pion beam is separated from the primary 400 GeV proton beam by deflecting the pions 1.0 mrad to the west using the OHT trims. This creates a 3" separation between the 400 GeV and 300 GeV beams at the end of the decay pipe. If this separation proves to be inadequate to dump the proton beam and maintain reasonable radiation levels in Enclosure 100, OUT will have to be used to target the proton beam at an angle on to the production target.

(2)

For 300 GeV operation, the triplet train will be in the following configuration:

<u>NAME</u>	<u>z-POSITION</u>	<u>FIELD GRADIENT</u>	<u>CURRENT</u>	<u>POWER</u>
OT1	3480 ft	-	-	-
OQT1-1	3497 ft	4.9136 Kg/in.	104.2 A	14.5 kw
OQT1-2	3508 ft	4.9136 Kg/in.	104.2 A	14.5 kw
OQT5	3561 ft	-4.3509 Kg/in.	3172.3 A	45.3 kw
OQT6	3569 ft	-4.3509 Kg/in.	3172.3 A	45.3 kw
OQT9	3619 ft	4.5630 Kg/in.	3326.9 A	49.8 kw

Acceptance 1.4mr x 1.4 mr

Magnification at the end of the decay pipe $M_x \times M_y \approx 14 \times 14$

See Fig. 1 for the train optics and Fig. 2 for a diagram of the beam envelope.

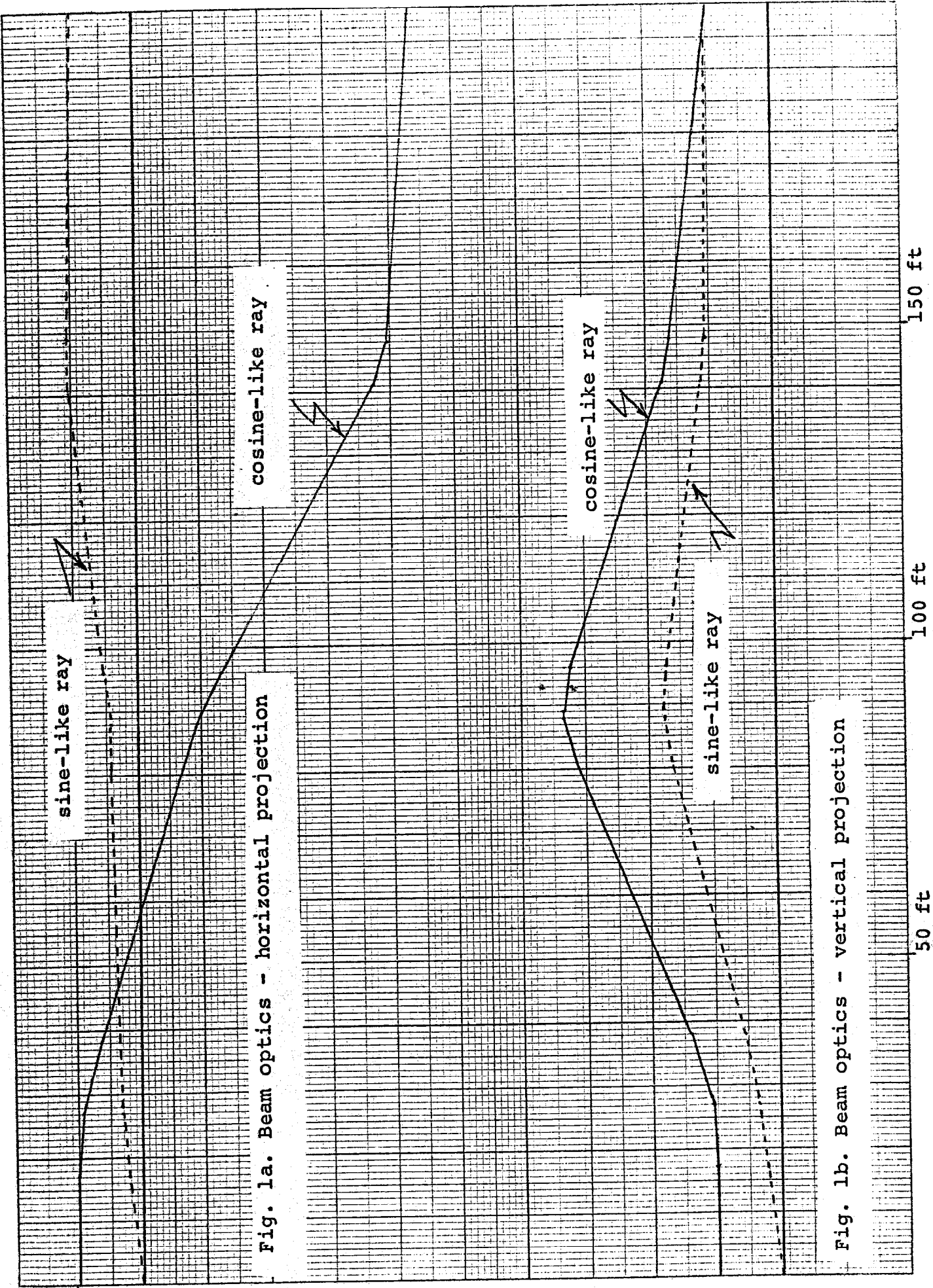


Fig. 1a. Beam optics - horizontal projection

Fig. 1b. Beam optics - vertical projection

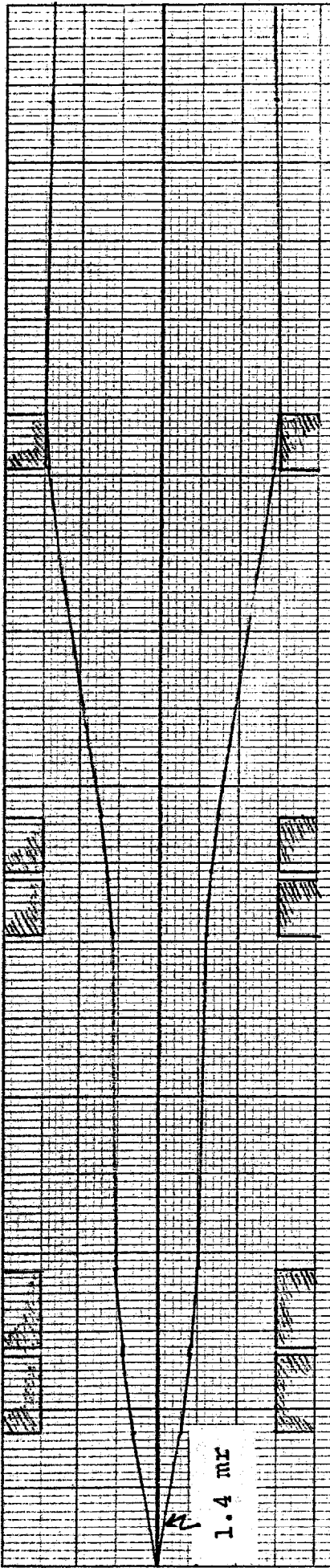


Fig. 2a. Beam envelope - horizontal projection

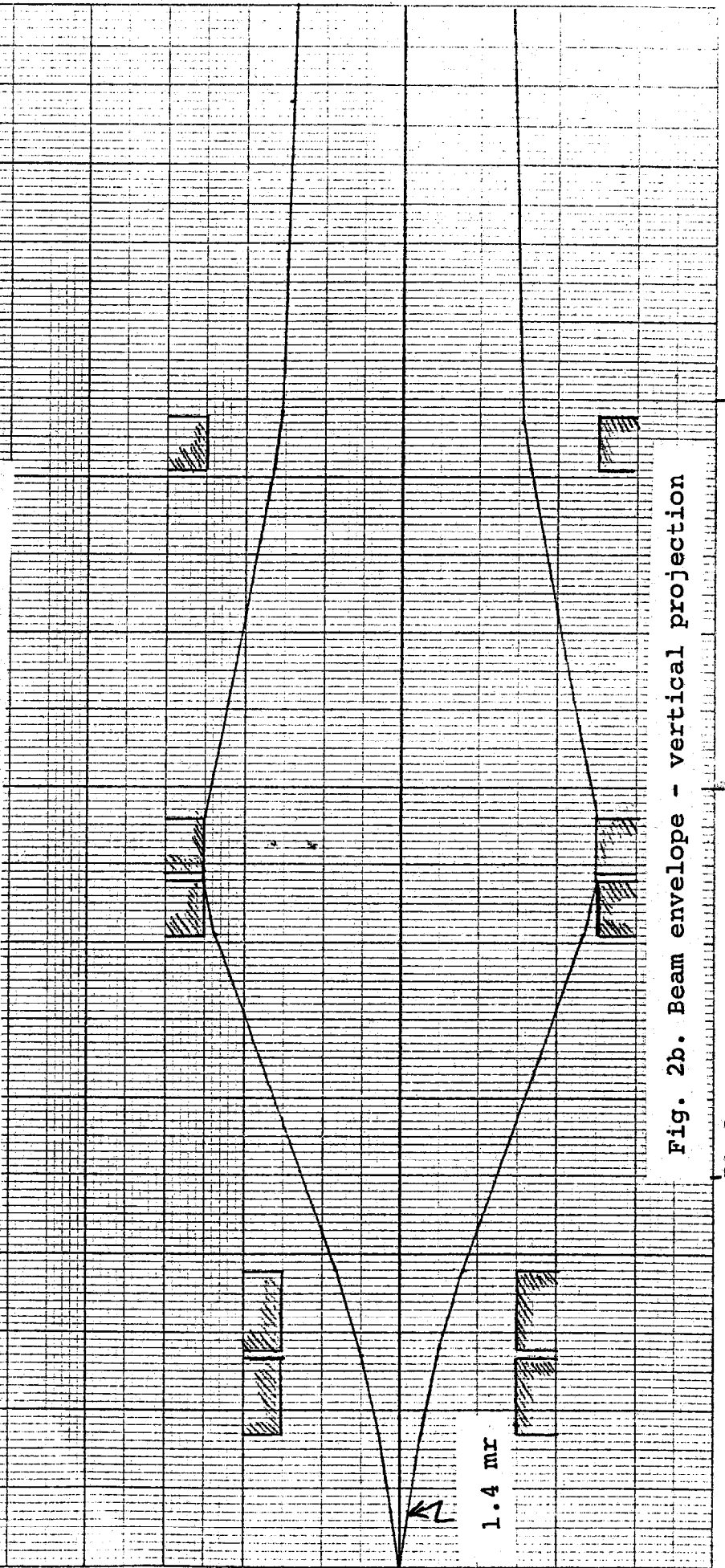


Fig. 2b. Beam envelope - vertical projection

50 ft

100 ft

150 ft