

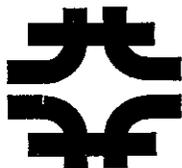


SUBJECT

NAME

DATE

REVISION DATE



Fermilab

MECHANICAL SUPPORT DEPARTMENT
ENGINEERING NOTE

NUMBER: MSD007E831

DATE: 7/³¹~~00~~/95

TITLE: MH2X&Y, IMU1H&V and MH3U(V) & IMU2H
SUPPORT STRUCTURE AND ATTACHMENTS

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REVIEWER: *Tang* 8-22-95

KEY WORDS: Wide Band Laboratory, E831, Cat Walk, Live Load Reduction, MH2X, MH2Y, IMU1H, IMU1V, MH3U(V), IMU2H, Support Structure, MSD - 006 - E831

ABSTRACT / SUMMARY: See Section A; "Problem Statement & Summary"



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10-10-95

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Problem Statement & Summary

This Engineering Note determines the required Live Load Reduction from the Allowable Live Load Capacity of the Wide Band Laboratory Cat-Walk, East side, between Column Lines 5 & 6. Sketch No. 1 shows the plan view location of that portion of the Cat-Walk which was examined. At present, Scintillator-support-attachments are supported by μ -filter-steel and the Cat-Walk as shown on Sketches No's. 2, 3 & 4.

Section "B" contains Dead Load Inventories of the Scintillator Support Beams and the Cat-Walk. Live Load Reductions are presented as ratios of "external loads" carried by the Cat-Walk to the Total Allowable Live Load on the 14.5 ft. "effective section" between Column Lines 5 & 6. The first Live Load Reduction, 14.5 %, considers only the "external load" provided by the Aluminum Beams and Trolley-Extrusions. The second, 28 %, includes the "external load" provided by the Aluminum Beams, Trolley-Extrusions and half the weight of an 1800 pound Scintillator Array.

Allowing personnel and equipment free access to the Cat-Walk between Column Lines 5 & 6 without any reduction to the Live Load Capacity would require reinforcing the existing 3X3X3/8 angles and further analysis of the Aluminum Beam Supports currently attached to the C12X20.7.

The logical alternative is to fabricate a "free-standing" support frame using 4X4X1/4 structural tubes. The capacity of these components is detailed in Engineering Note MSD - 006 - E 831.