



# CTT - AFE Crate Naming Conventions

- Version 1.1 -

by  
Fred Borcharding

## 1 List of 'Needed Changes'

Correct

## 2 Introduction

The Analog Front End, AFE, boards for the Central Tracking Trigger, CTT, system are mounted on the VLPC cassettes. These are mounted in turn in the Cryostat on the central platform of the D0 detector. The backplanes for the AFE boards are mounted on frames attached to the cryostat. Each of the cassettes has PCB mounting rails attached it. Thus when the cassettes are in place in the cryostat, complete crates with backplanes and rails are formed for the installation of the AFE boards.

This note defines the naming conventions of these crates and backplanes. This note also defines the naming conventions of other utility hardware located on the cryostat and cassettes.

## 3 AFE Crates

The AFE system is divided into 13 crates or 26 half-crates. Each half-crate has a common back plane PCB with separate low-voltage power leads and

multiple signal cable connectors. Figure 1 shows a rear view of a single backplane board. Each back plane servers 8 AFE boards, numbered 0 through 7 as shown. Some of the crates house four 12-MCM and four 8-MCM flavored AFE boards. In that case the 12-MCM boards are in the slots labeled FAT and the 8-MCM boards are in the slots labeled THIN. The 8-MCM boards each have a single HDI readout chain, while the 12-MCM boards each have two HDI readout chains. Each of the backplane sequencer-cable connector routes the readout for two HDI chains. The first (or only) HDI chain on each board is paired into connector numbers 1 through 4. The second (when present) HDI chain from the 12-MCM boards is paired into connector numbers 5 and 6.

The crates are numbered from 1 from the east-end through 13 at the west-end. Figure 2 shows the crate layout. Crate 7 spans the east and west cryostats, with one of its back planes on the east cryostat and one on the west. Figure 2 also shows the numbering of the half-crates, or back planes. The half-crate (back planes) of each crate are designated 'a' for the east half-crate (back plane) and 'b' for the west half-crate (back plane).

## 4 Cable Bundles

The cable bundles for the AFE boards are named by the half-crate (back plane PCB) to which they connect. The bundle names therefore start with 1a, 1b ... and so on up to 13a and 13b. The bundles are dressed from the back plane to the nearest vertical support structure, which is located at the boundary of the crates. For example, the cable bundles 1b and 2a are routed on the support structures between crates 1 and 2.

## 5 Summary

This note

## 6 Acknowledgements

The ideas for this note

## 7 References and related documents

PPD/MECHANICAL SUPPORT	900602	bundle sector layout - shows the routing of the waveguide fibers from the drop downs to the top of the cassettes
PPD/MECHANICAL SUPPORT	900626	west VLPC waveguide connector layout - shows the routing of the waveguide fibers into the top of the VLPC cassettes
PPD/MECHANICAL SUPPORT	900627	east VLPC waveguide connector layout - shows the routing of the waveguide fibers into the top of the VLPC cassettes
PPD/MECHANICAL SUPPORT	900628	barrel/waveguide naming scheme south end - shows the CFT ribbon numbering

system on the south end of the detector and the CPS bundling scheme  
PPD/MECHANICAL SUPPORT 900636 barrel/waveguide naming scheme north end - shows the CFT ribbon numbering system on the north end of the detector and the CPS bundling scheme

The rack layout for the platform can be found at:  
[http://d0server1.fnal.gov/Projects/MCH\\_and\\_Platform/Index.htm](http://d0server1.fnal.gov/Projects/MCH_and_Platform/Index.htm)

### AFE Back Plane - Viewed from rear

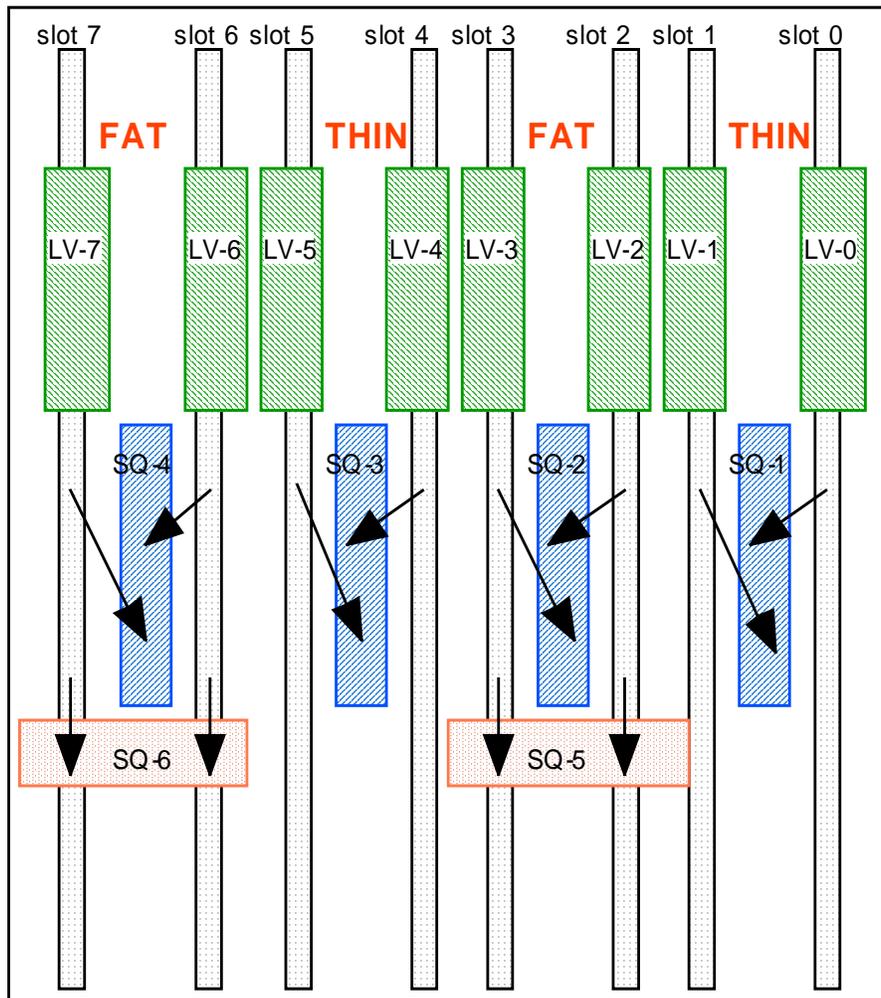


Figure 1, shows a rear view of an AFE back plane board. Each board supports 8 AFE boards on 4 cassettes. Two back plane boards constitute a crate.

## AFE Crate Numbering Convention

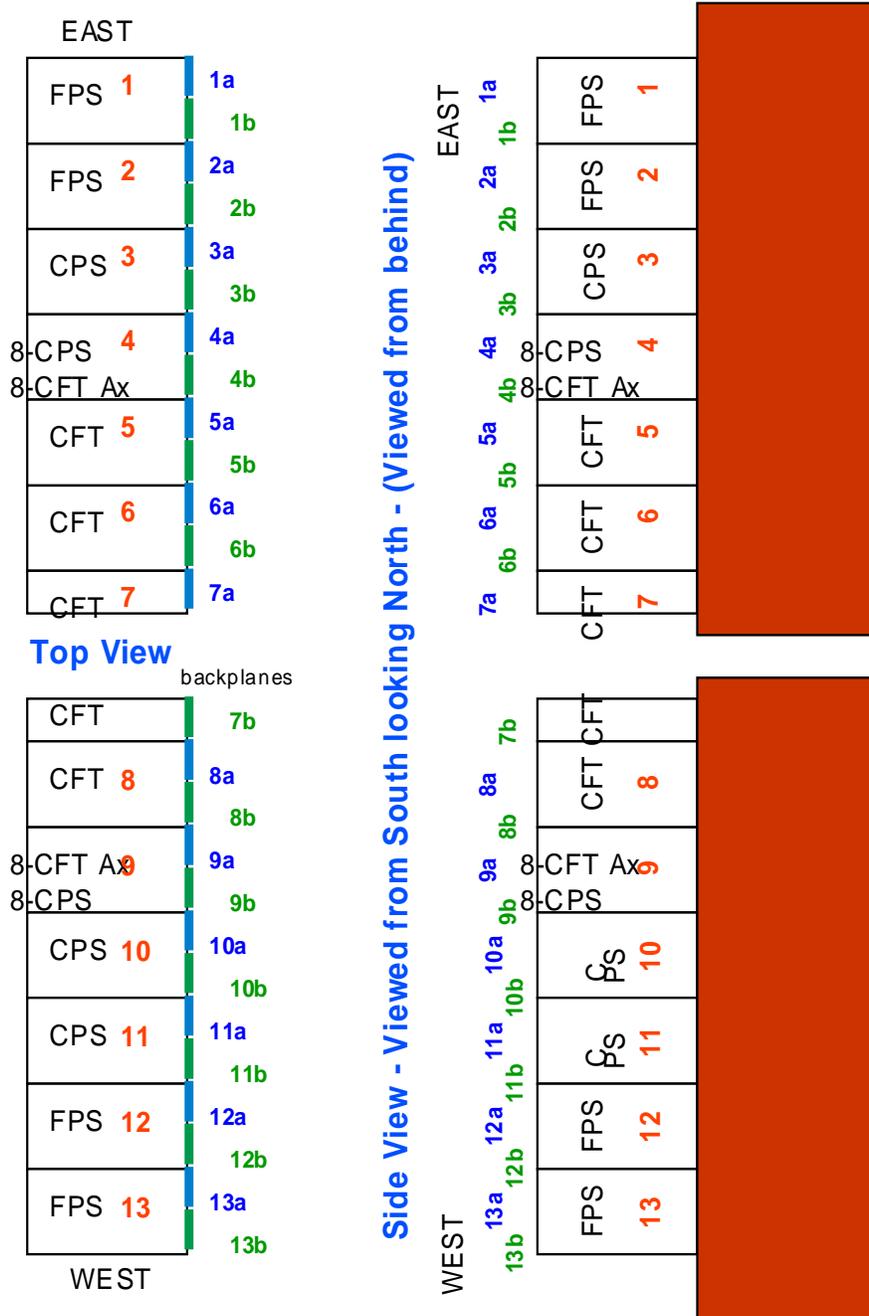


Figure 2, shows a top and side view of the VLPC cryostats and the AFE crates mounted on top of them. The numbering goes from east to west, which is right to left when viewed from the rear of the crates.