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## Background

### Problem

- FPU Faraday Shield should have galvanic isolation from S/C except at DCU/FCU
- Detector Analogue Ground should be isolated from FPU and S/C except at DCU/FCU

### Verifications made prior to test

- Isolation of SPIRE FPU from OBA verified during during electrical integration of the instrument at FN (Ref; HP-2-ASED-SD-XX)
- Isolation of SIH-CS Faraday shield wires from OBA verified prior to mating with SPIRE
- CQM Electrical IF Checkout 2216 Issue 8 (23/05/06) indicated that the PLW Grounding and FPU Isolation was OK

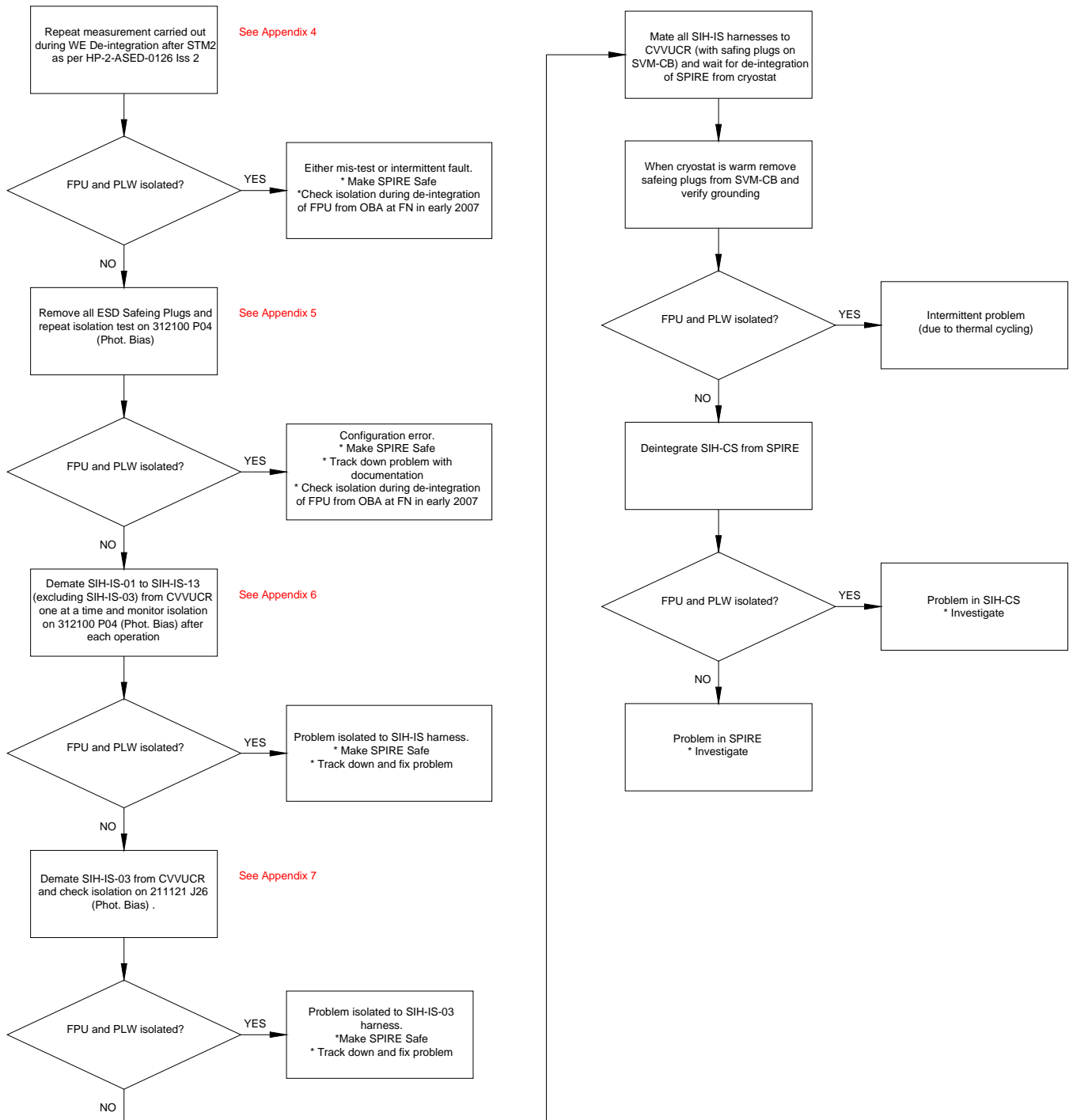
### Review of SPIRE NCRs

- HR-SP-RAL-NCR-082 - Electrical Short on Cooler Strap
  - Closed with the improved gluing procedure – but CQM has old procedure
- HR-SP-RAL-NCR-083 - Electrical Short on Photometer Detector Box Feet
  - Closed. No longer use Kapton
- HR-SP-RAL-NCR-125 – Heat shrink cracks during thermal cycling.
- HR-SP-RAL-NCR-096 - L1 electrical short
  - Opened during incoming inspection for EQM tests
  - Intermittent fault – not properly resolved
- HR-SP-RAL-NCR-092v2 - SPIRE EQM Electrical Interface Bench Test Anomalies
  - Closed

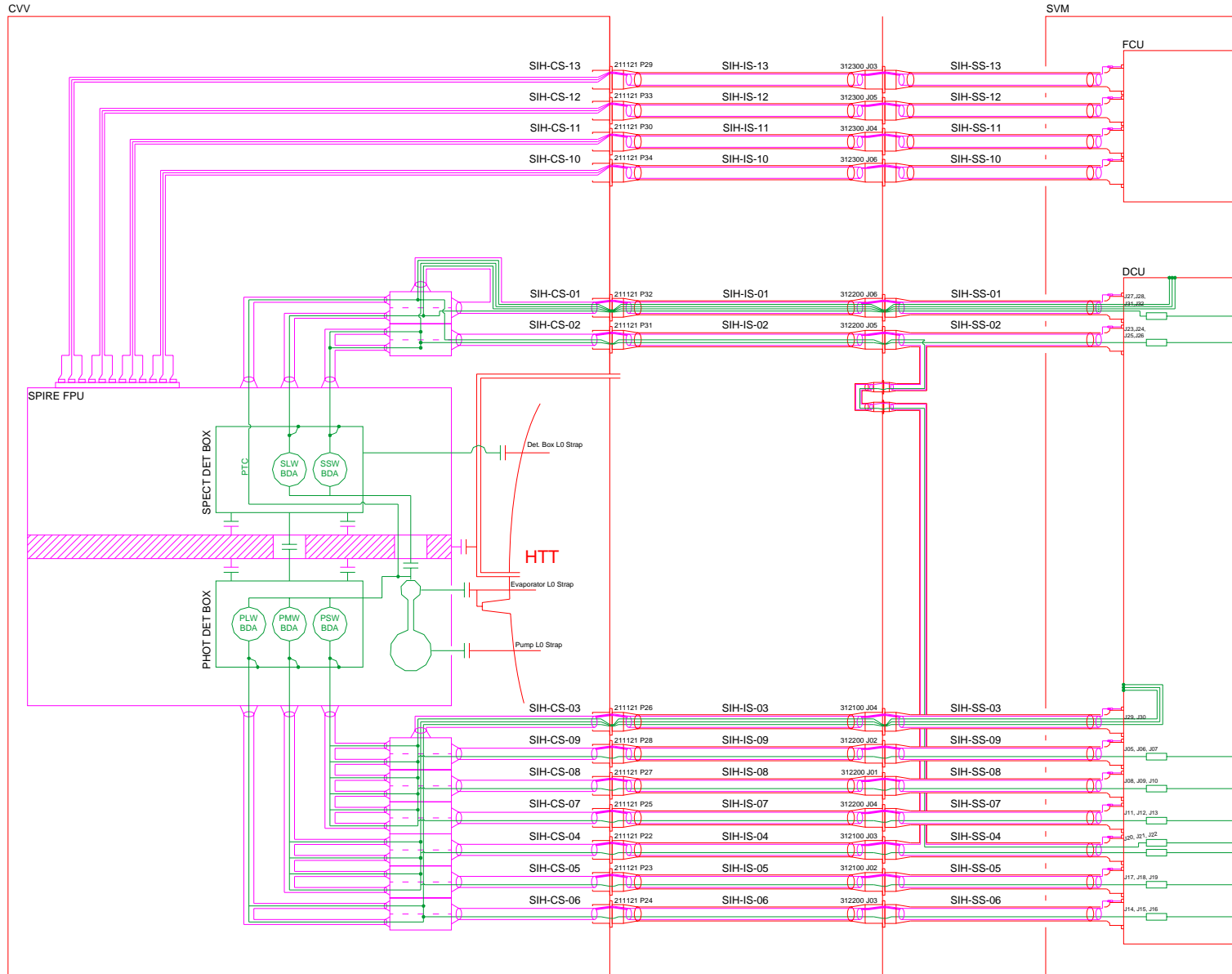
### Drawings Comments

- **RED** indicates S/C (i.e. CVV, OBA, SVM, cryoharness Outer Overall Shield etc.)
- **PINK** indicates the FPU Faraday Shield Pins.
- **GREEN** indicates analogue detector ground. The Photometer and the Spectrometer grounds are separated in the cold end and are commoned to a star point in the DCU
- Configurations shown include the nominal PFM, the nominal STM2 and proposed tests

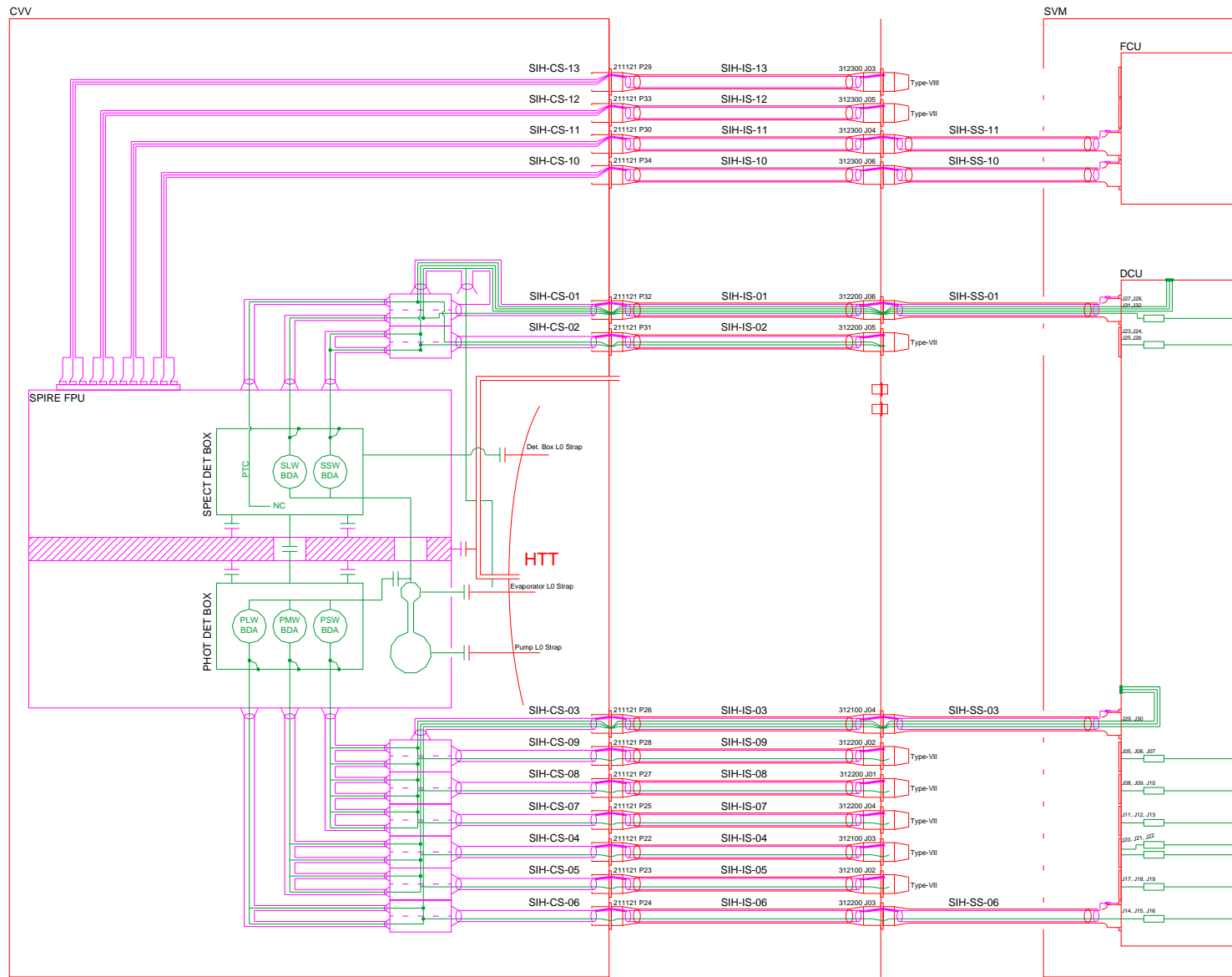
## Appendix 1 – SPIRE NCR-163 Proposal



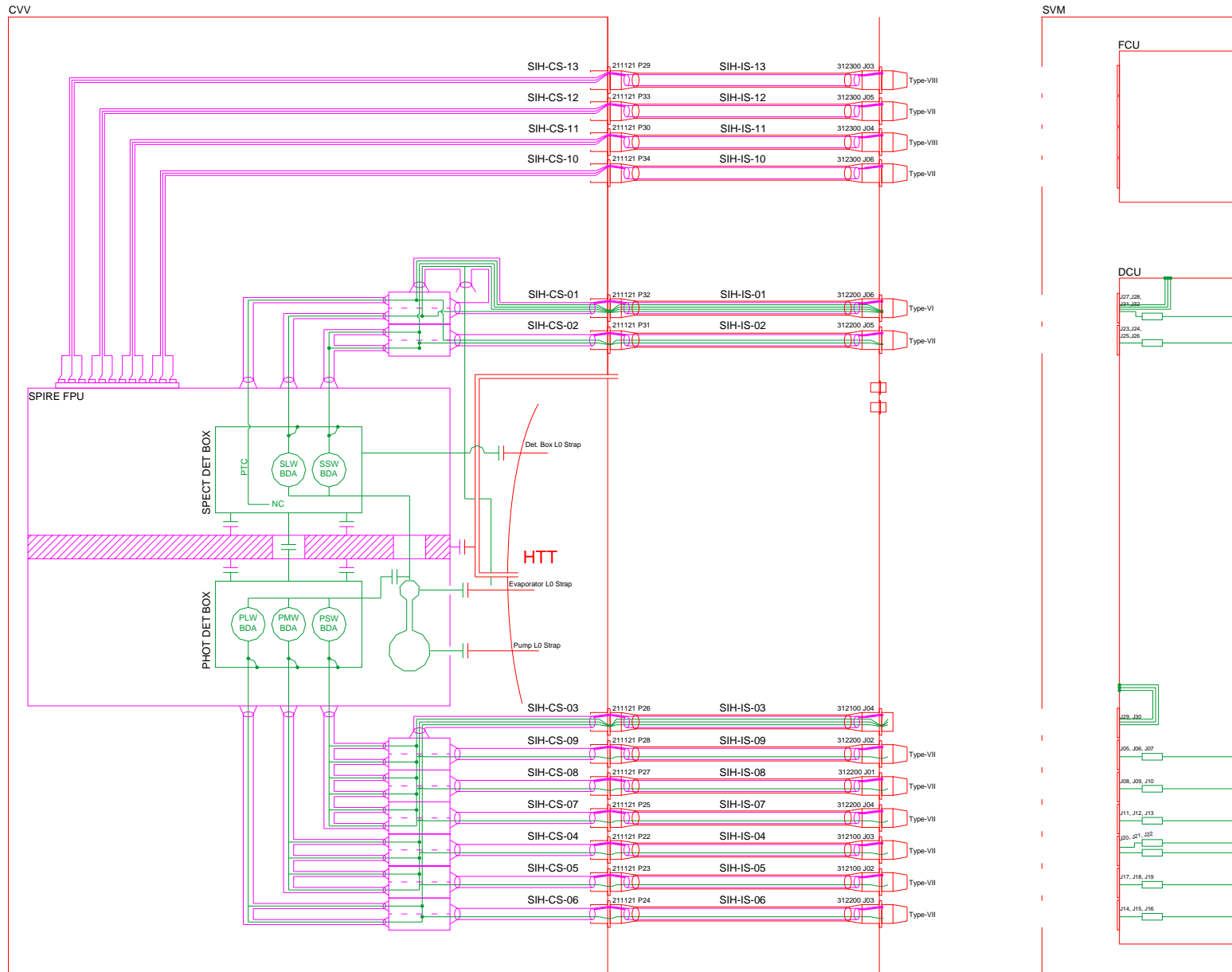
## Appendix 2 – Nominal PFM Grounding Diagram



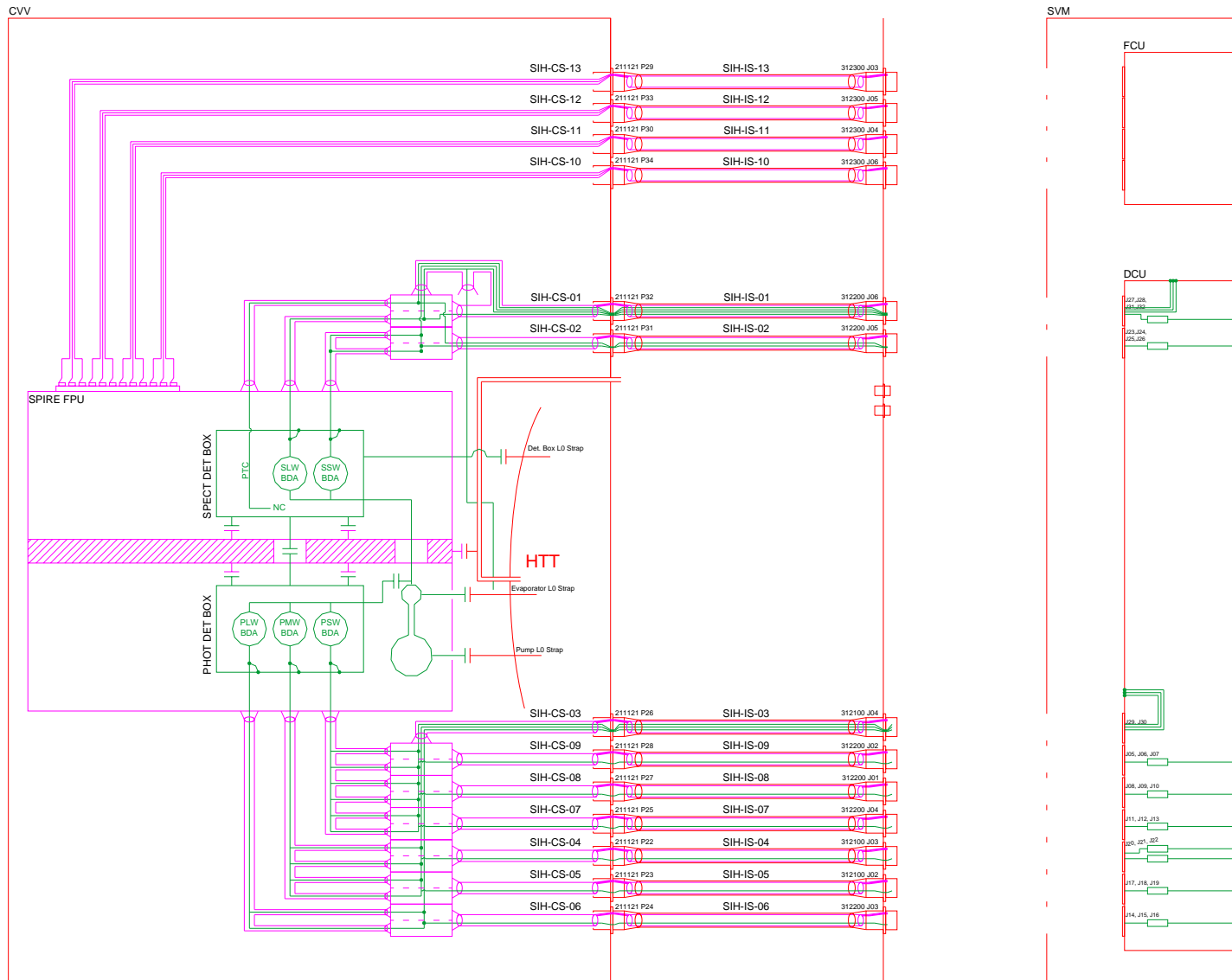
### Appendix 3 – Nominal STM2 Grounding Diagram



# Appendix 4 – Nominal STM2 Grounding Diagram during Grounding Verification



# Appendix 5 – Nominal STM2 Grounding Diagram for NCR-163 Investigation (Stage 2)



# Appendix 6 – Nominal STM2 Grounding Diagram for NCR-163 Investigation (Stage 3)

