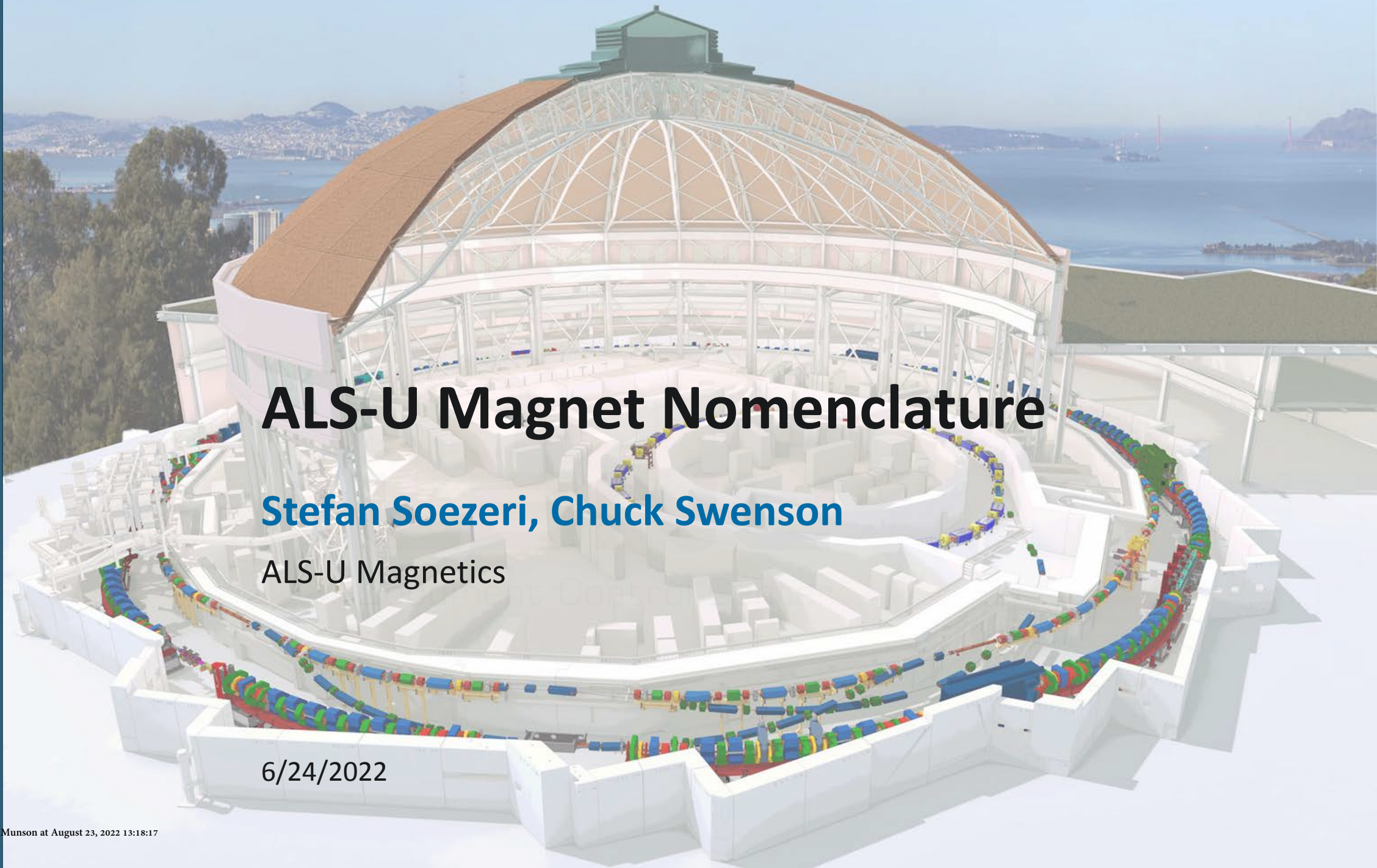




U.S. DEPARTMENT OF  
**ENERGY**

Office of Science



# ALS-U Magnet Nomenclature

**Stefan Soezeri, Chuck Swenson**

ALS-U Magnetics

6/24/2022

# Abbreviations

## Macro-systems

<u>Abbreviation</u>	<u>Description</u>
SR	Storage ring
AR	Accumulator ring
BTA	Booster-to-AR transfer line
ATS	AR-to-SR transfer line
STA	SR-to-AR transfer line
C	Arc section
S	Straight section
AP	Accelerator physics
ID	Identification

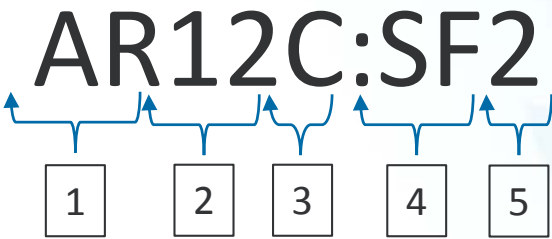
## Magnet descriptions

<u>Abbreviation</u>	<u>Description</u>
config	configuration
RB	reverse bend
BEND	bending dipole
QF	focusing quadrupole
QD	de-focusing quadrupole
QFR	RB quadrupole
SF	focusing chromatic sextupole
SD	de-focusing chromatic sextupole
SH	harmonic sextupole

# Controls and CAD Nomenclature Format

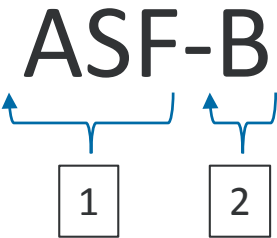
## Magnet Controls ID

- 1 Accelerator section
- 2 Sector
- 3 Arc or straight
- 4 Magnet family
- 5 Sequence in sector



## Magnet CAD ID

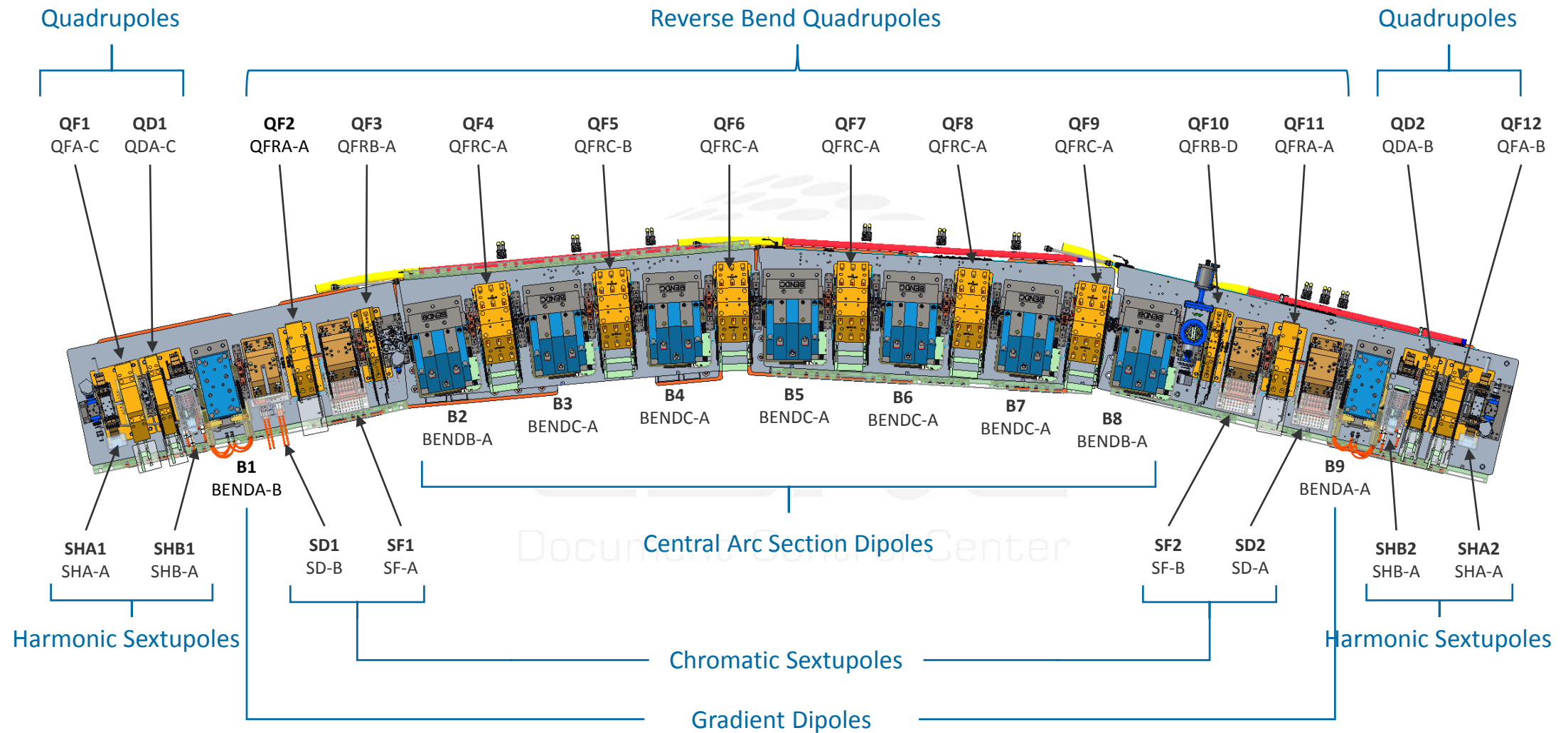
- 1 Magnet type
- 2 Magnet configuration



# SR Magnet Nomenclature

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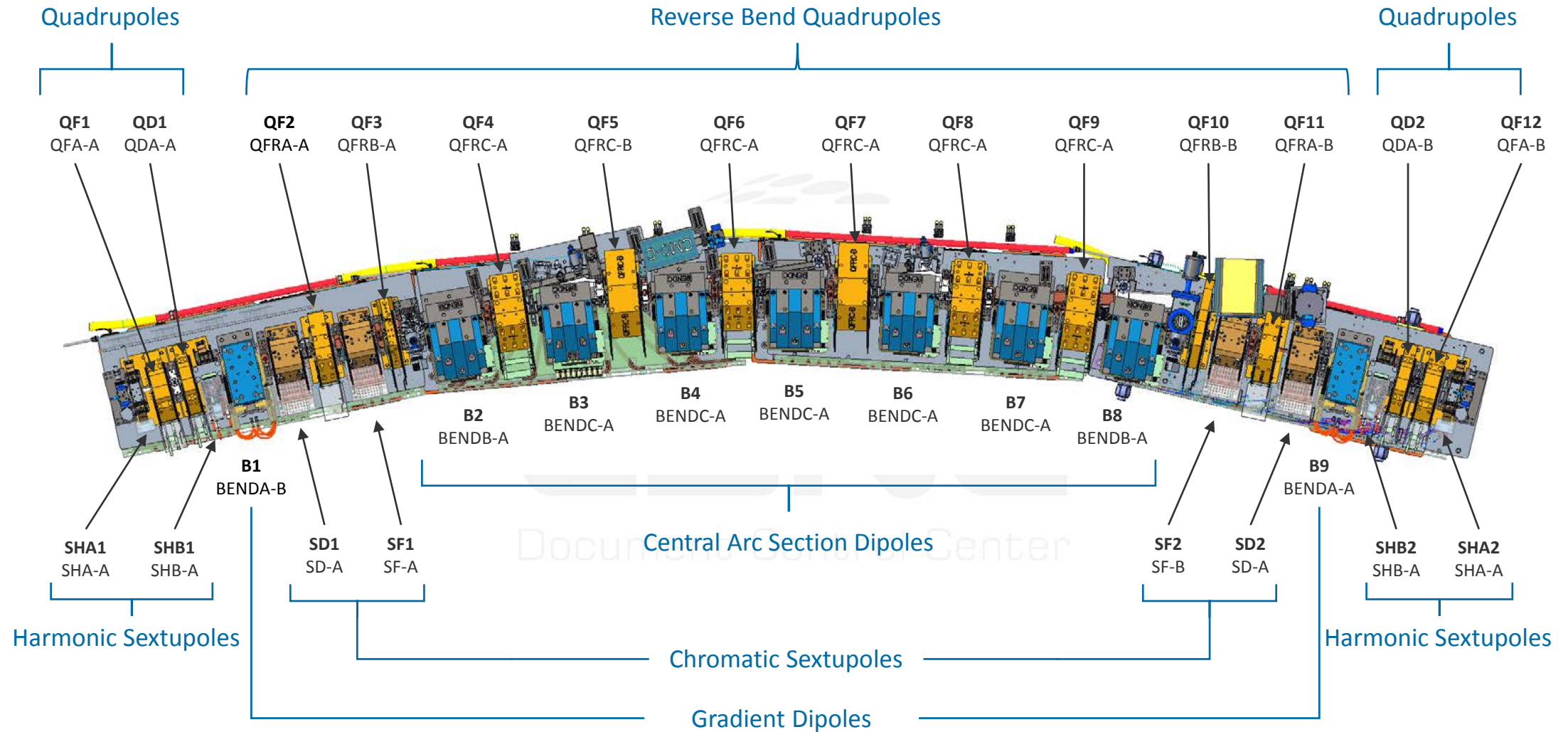
# SR Magnets: TL Region Sector 1



YYY = Controls nomenclature

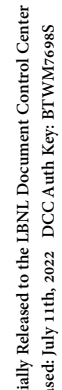
ZZZ = CAD nomenclature

# SR Magnets: Standard Sectors (2-3, 5-7, 9-11)

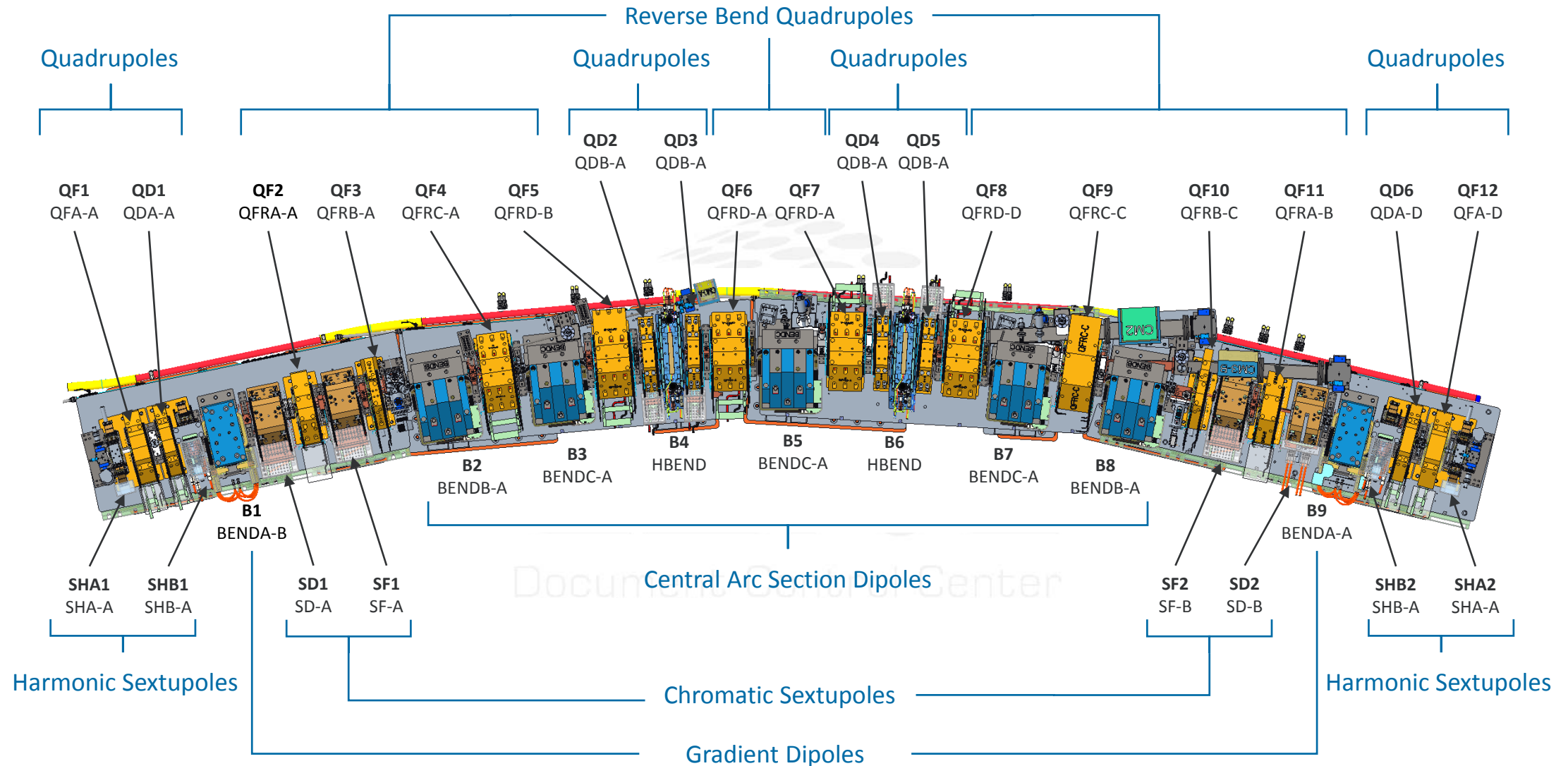


YYY = Controls nomenclature

ZZZ = CAD nomenclature



# SR Magnets: TL Region, Sector 12



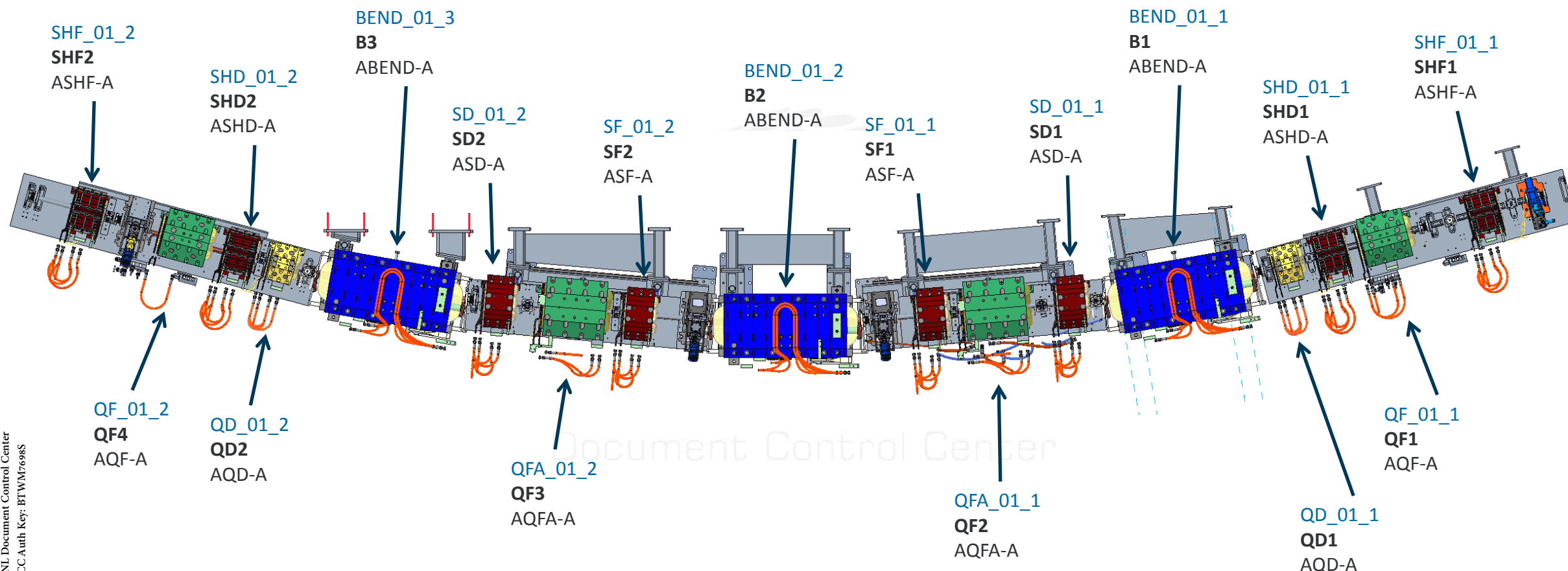
YYY = Controls nomenclature  
ZZZ = CAD nomenclature

# AR Magnet Nomenclature

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# AR Magnets: Sectors 1-11

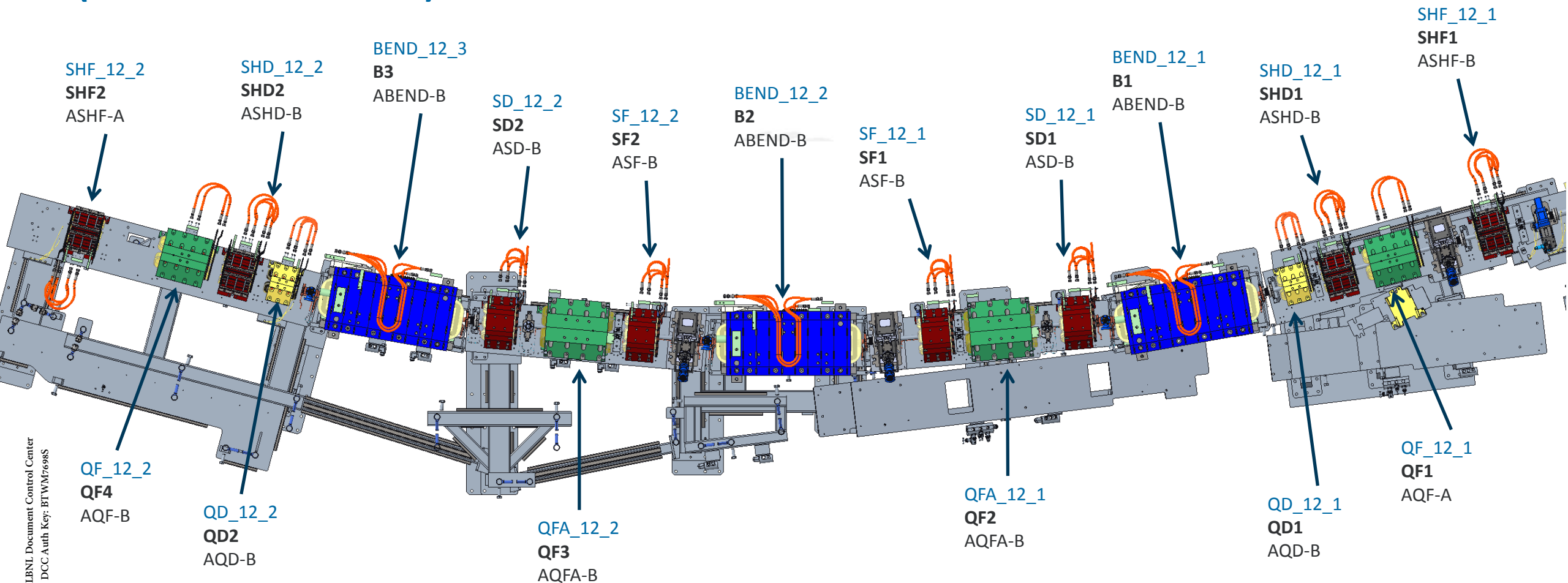
## (AP Lattice Sector 1)



XXX = AP lattice nomenclature  
 YYY = Controls nomenclature  
 ZZZ = CAD nomenclature

# AR Magnets: Sector 12

## (AP Lattice Sector 12)



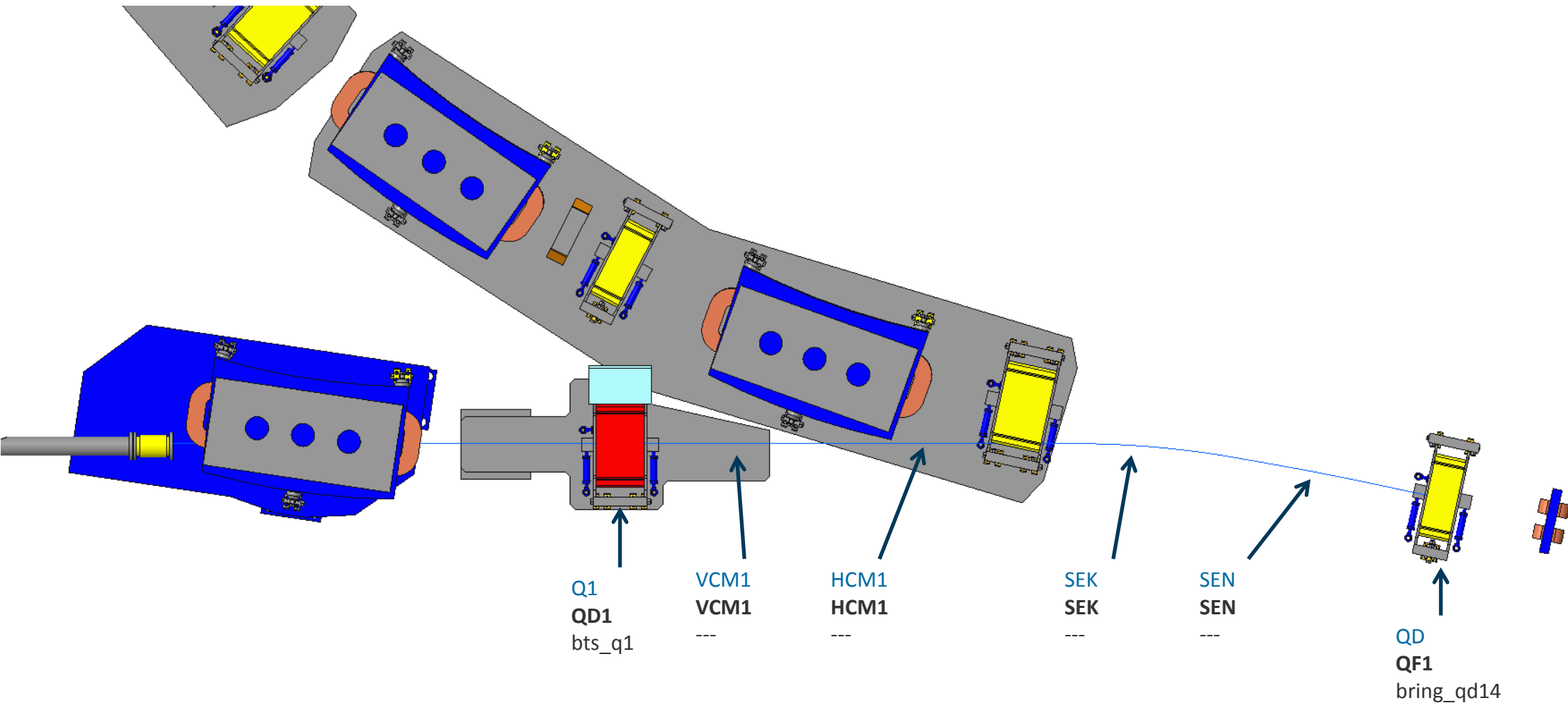
XXX = AP lattice nomenclature  
 YYY = Controls nomenclature  
 ZZZ = CAD nomenclature

# Transfer Line Nomenclature

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# BTA 1/3

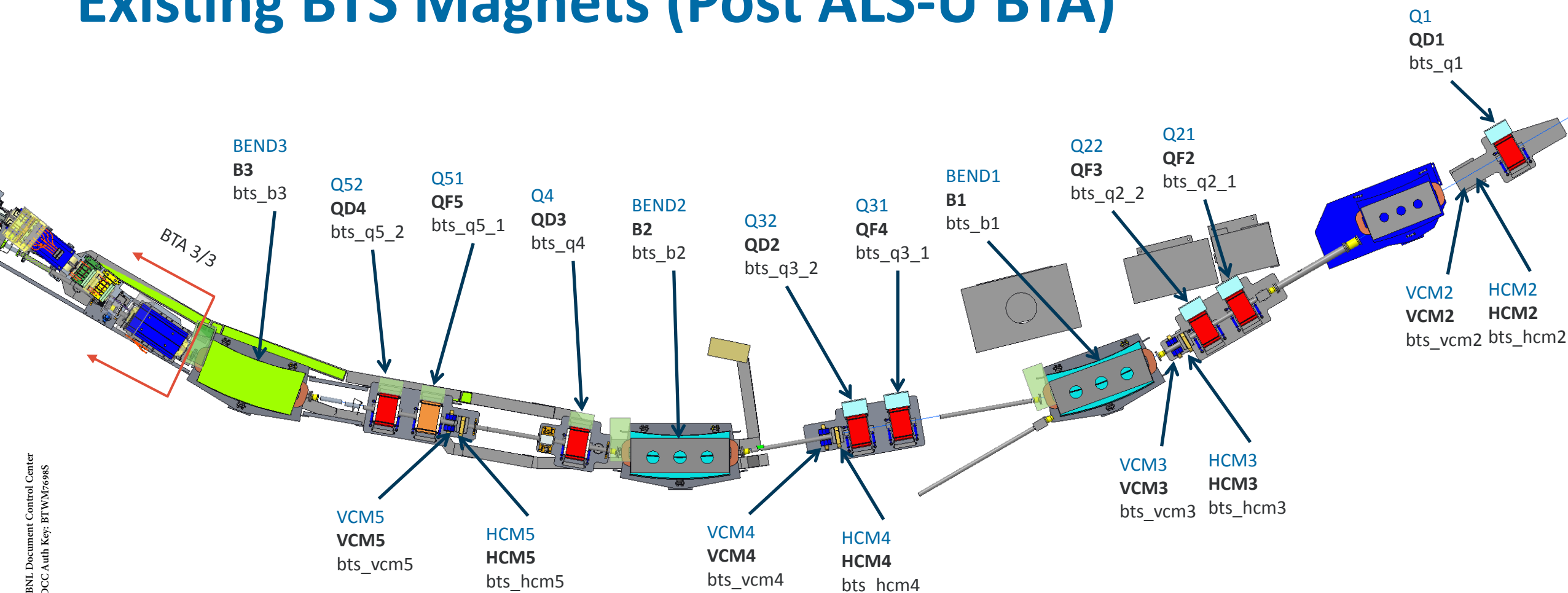
## Existing BTS Magnets (Post ALS-U BTA)



XXX = AP lattice nomenclature  
YYY = Controls nomenclature  
ZZZ = CAD nomenclature

# BTA 2/3

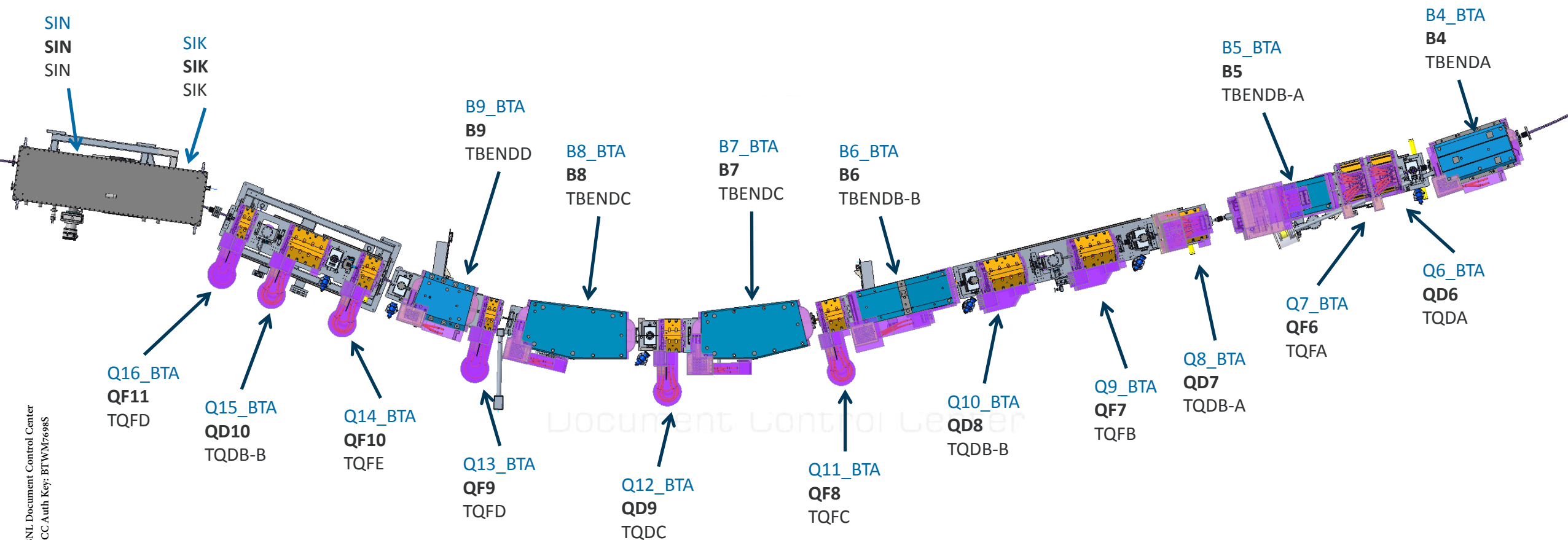
## Existing BTS Magnets (Post ALS-U BTA)



XXX = AP lattice nomenclature  
 YYY = Controls nomenclature  
 ZZZ = CAD nomenclature

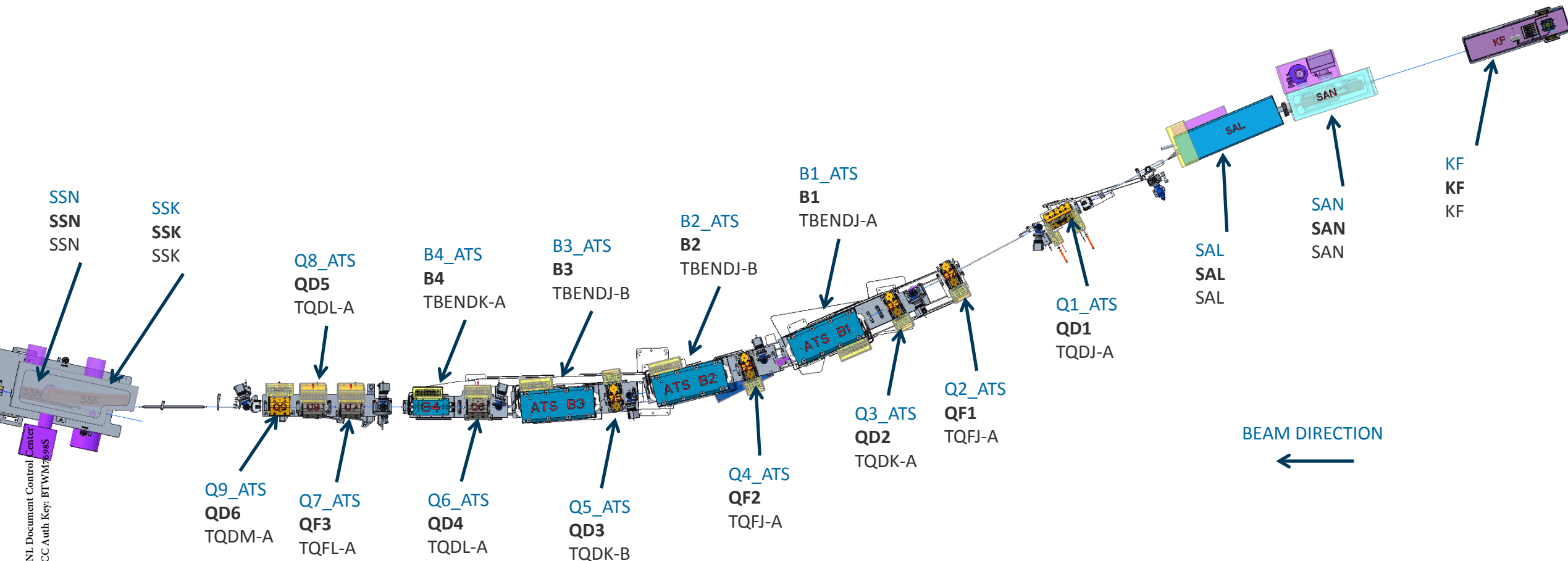
# BTA 3/3

## BTA Magnets



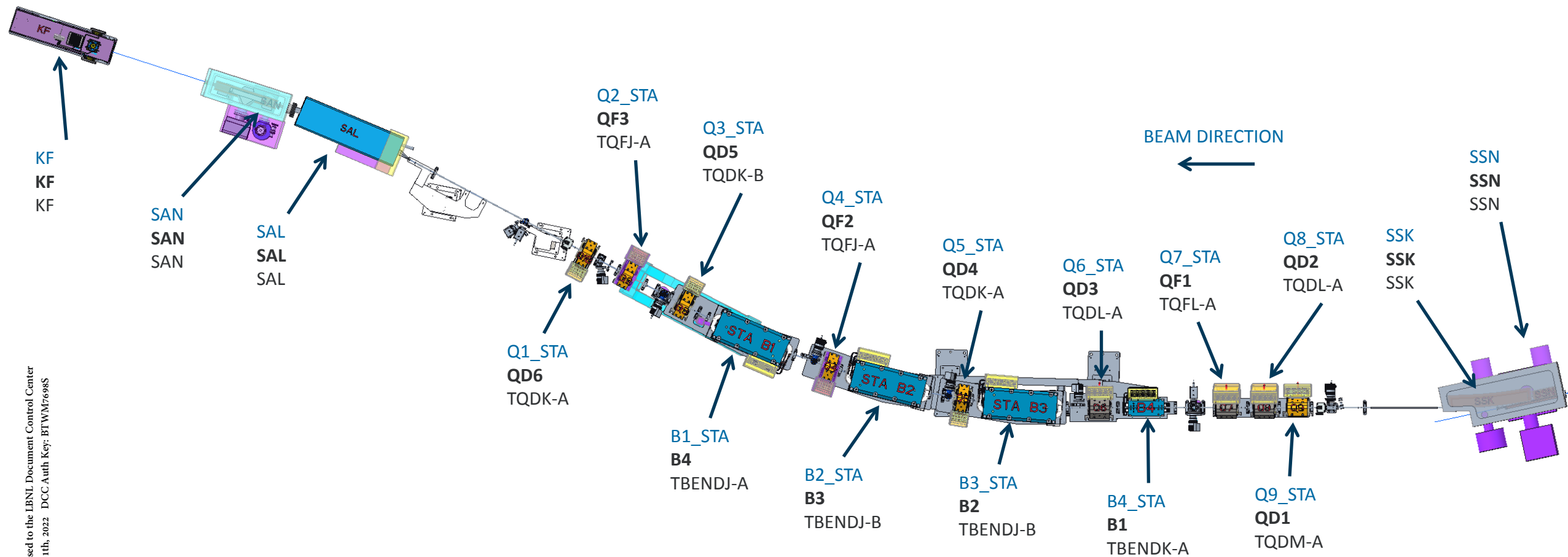
XXX = AP lattice nomenclature  
 YYY = Controls nomenclature  
 ZZZ = CAD nomenclature

# ATS Magnets



XXX = AP lattice nomenclature  
 YYY = Controls nomenclature  
 ZZZ = CAD nomenclature

# STA Magnets



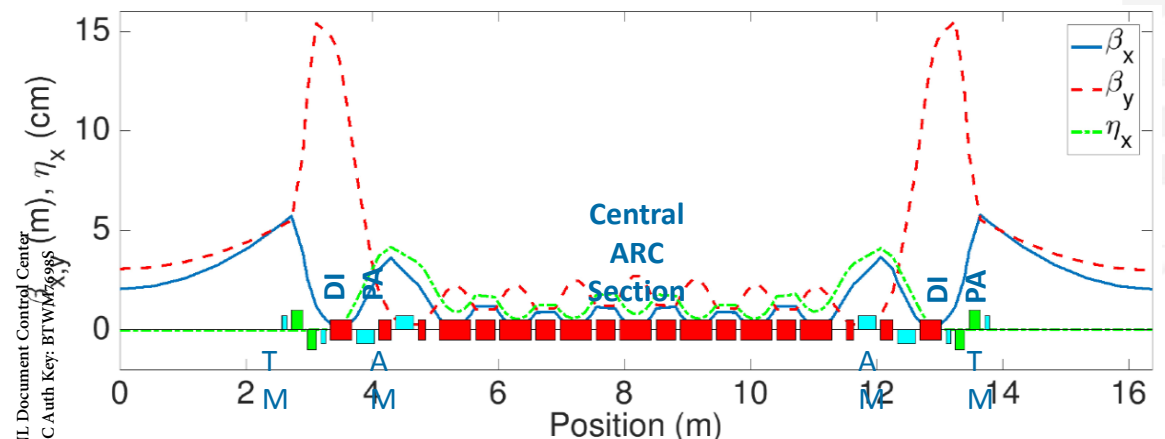
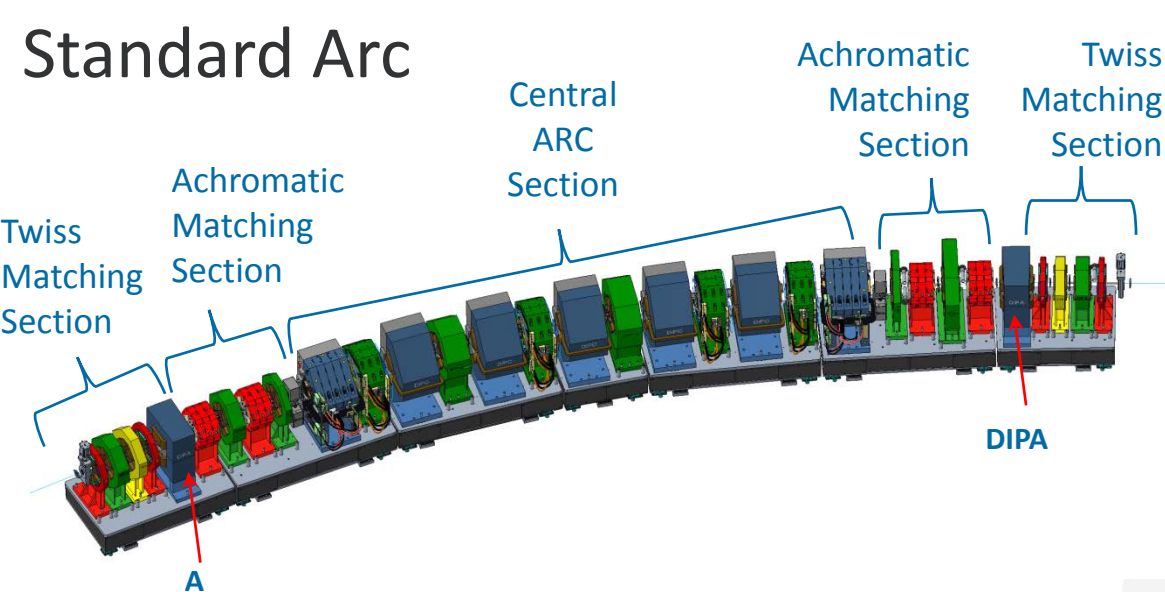
XXX = AP lattice nomenclature  
 YYY = Controls nomenclature  
 ZZZ = CAD nomenclature

# Appendix

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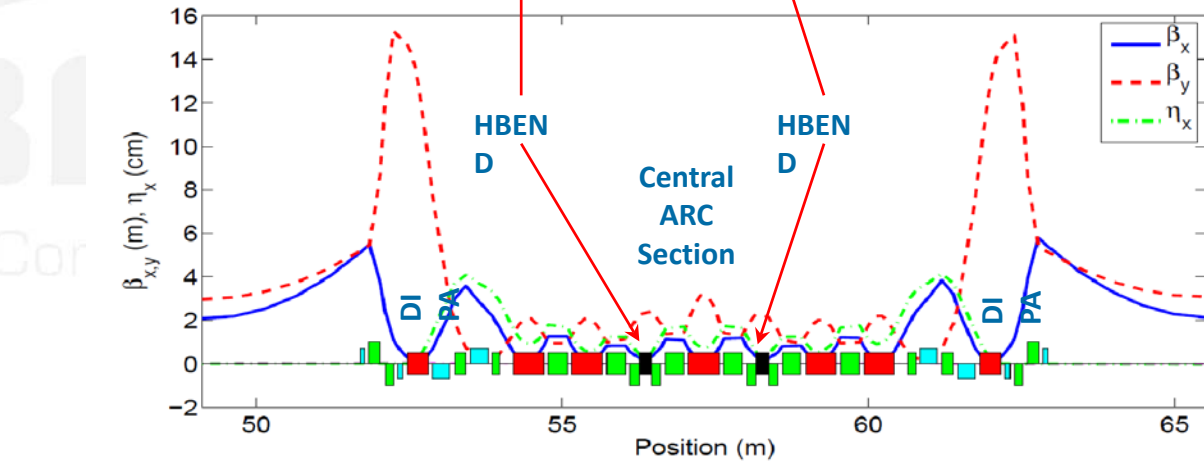
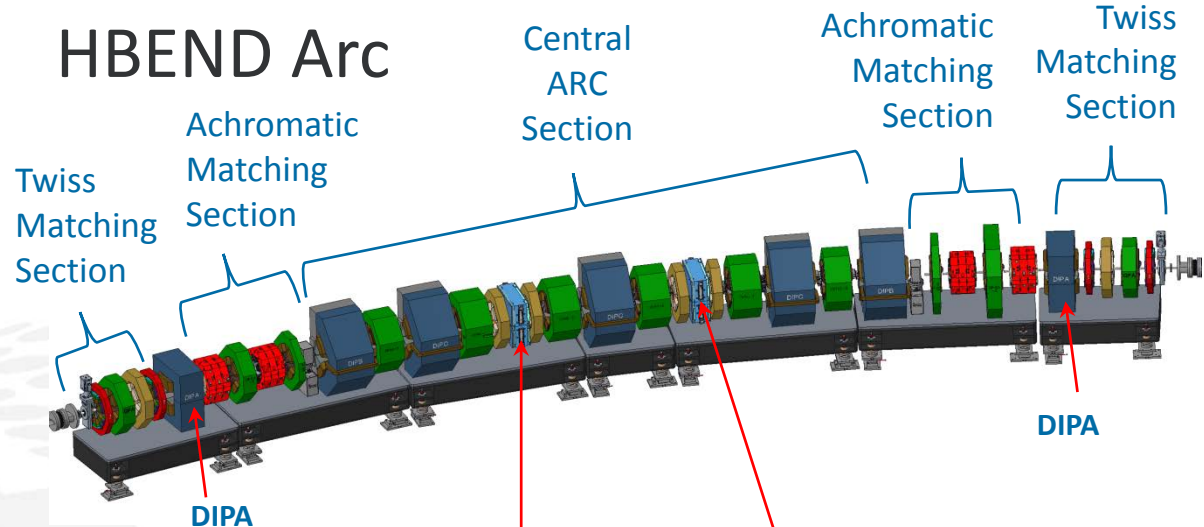
# 9BA arc sectors are organized into two structures

## Standard Arc



Reference image of standard machine lattice functions illustrating placement with respect to the DIPA magnets.

## HBEND Arc

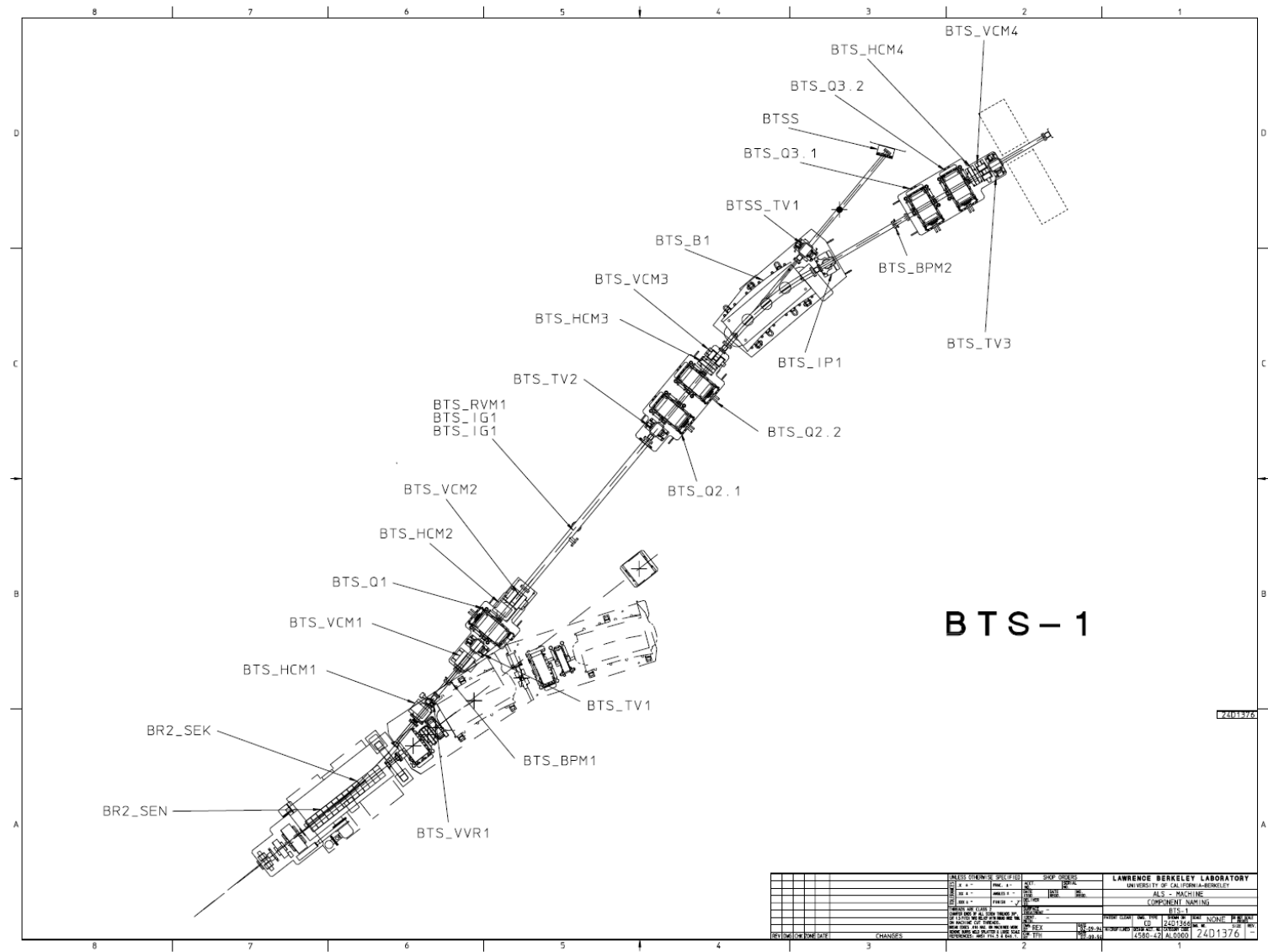


Reference image of HBEND lattice functions illustrating placement with respect to the DIPA magnets.

Officially Released to the LBNL Document Control Center  
Released: July 11th, 2022 DCC Auth Key: BTWM7698S

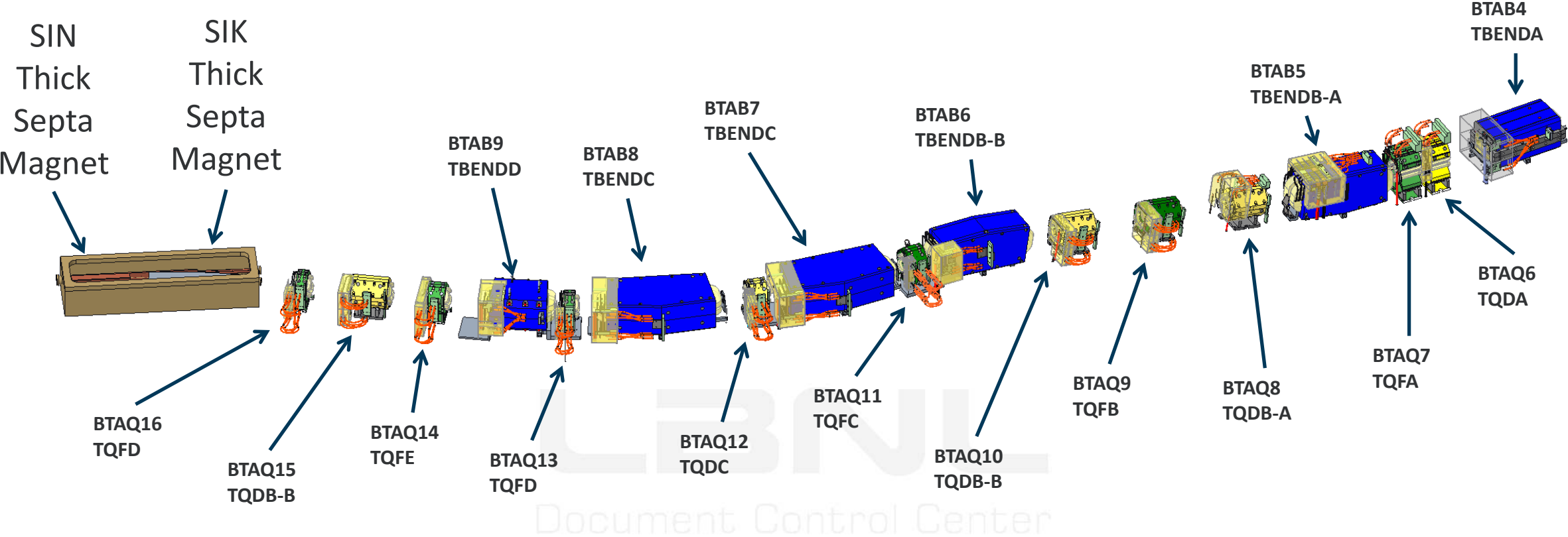


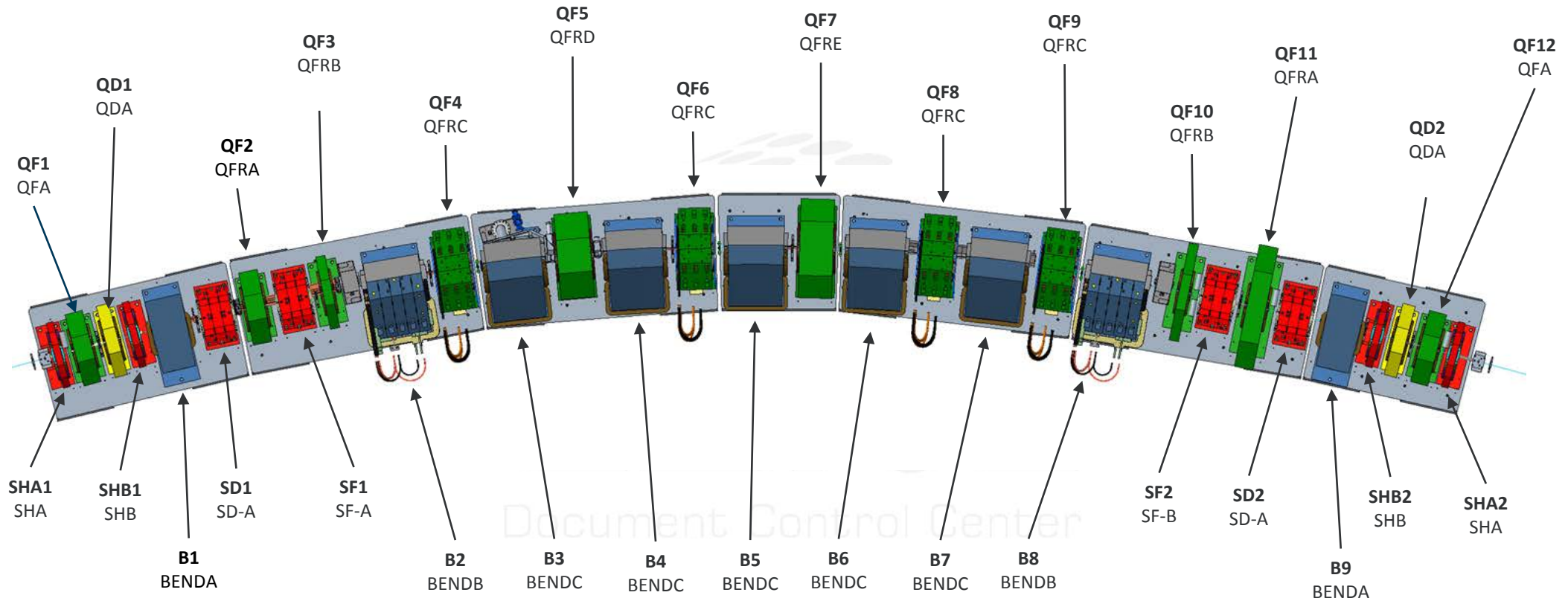
# ALS BTS-1



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Declassified: July 11th, 2022 DCC Auth Key: BTWM7698S

# BTA Magnets (ISO view)





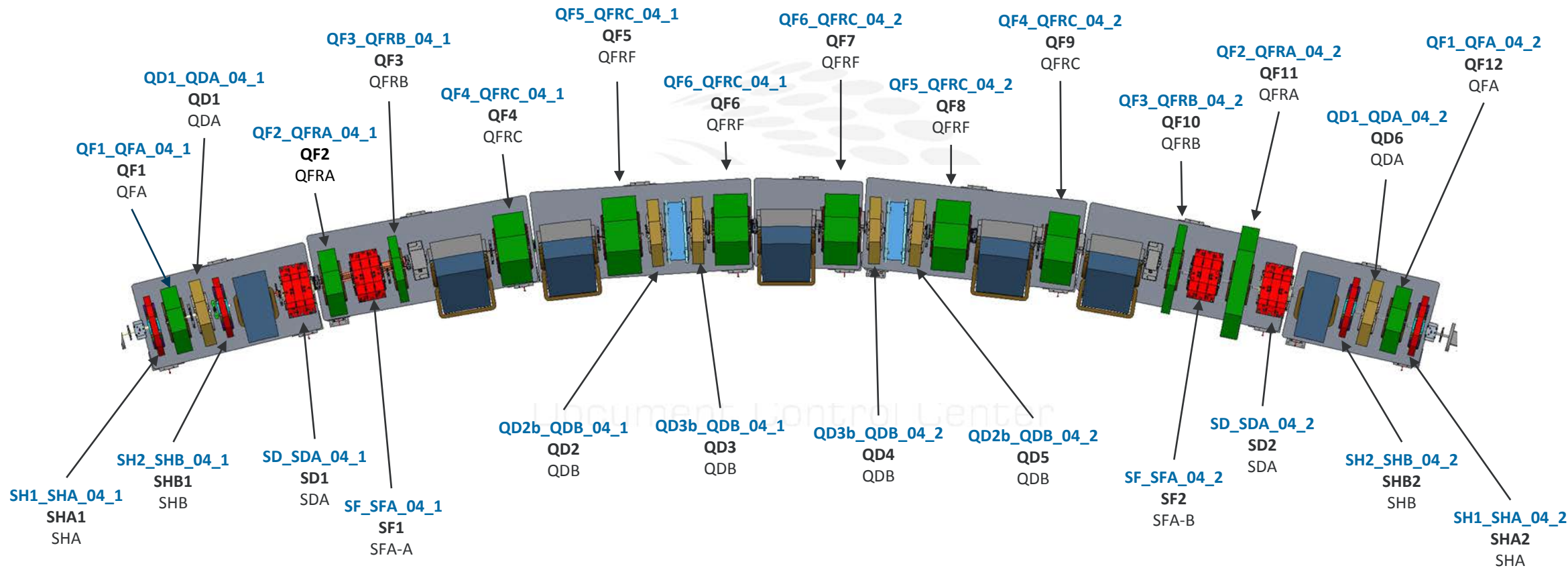
YYY = Controls nomenclature  
ZZZ = CAD nomenclature

# SR Magnets: HBEND Sectors (4, 8, 12)

## Quadrupoles and Sextupoles

### (AP Lattice Sector 4)

Ref ASSY: AL-1327-2904



XXX = AP lattice nomenclature  
 YYY = Controls nomenclature  
 ZZZ = CAD nomenclature