



0

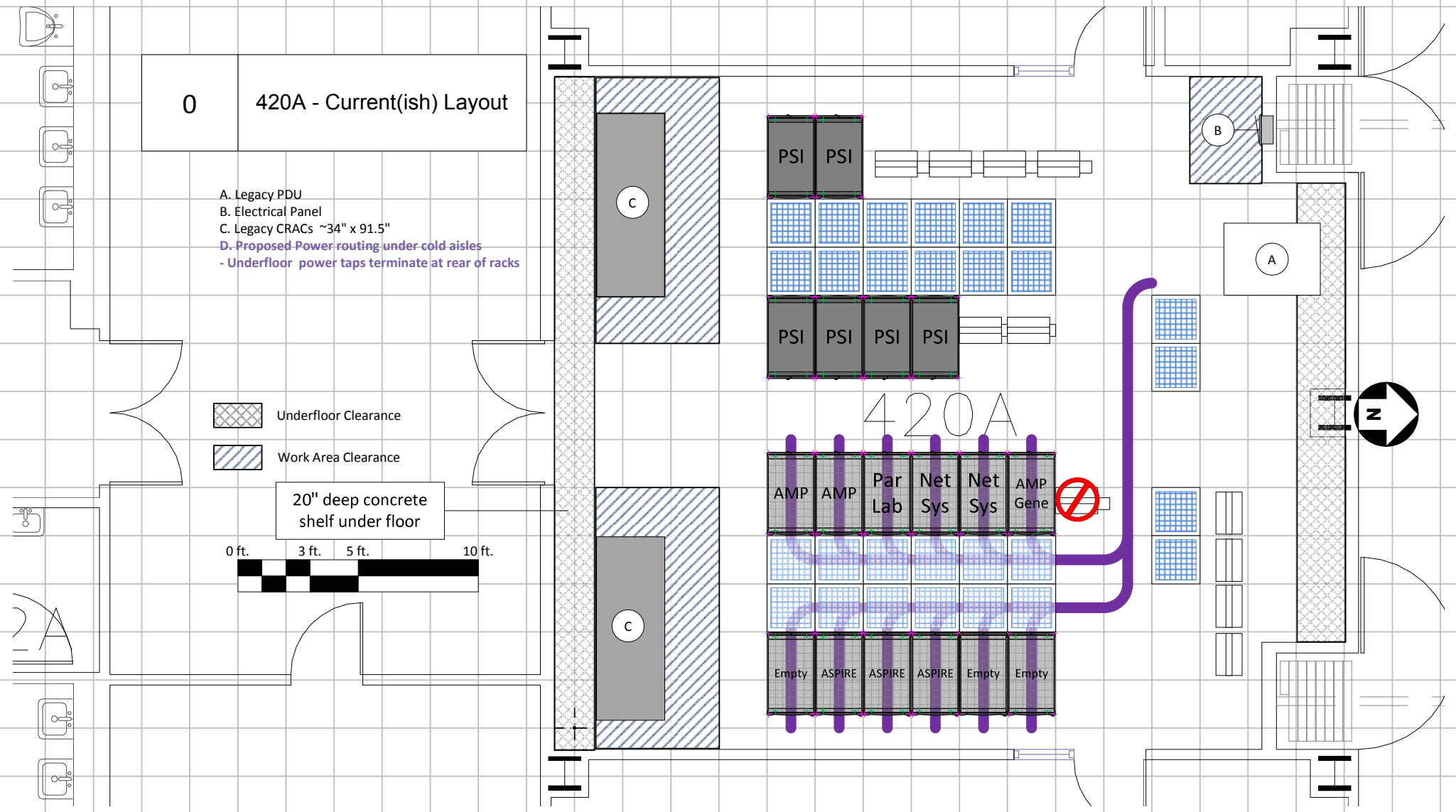
420A - Current(ish) Layout

- A. Legacy PDU
- B. Electrical Panel
- C. Legacy CRACs ~34" x 91.5"
- D. Proposed Power routing under cold aisles
- Underfloor power taps terminate at rear of racks

 Underfloor Clearance
 Work Area Clearance

20" deep concrete shelf under floor

0 ft. 3 ft. 5 ft. 10 ft.



1

420A – InRow Cooling N/S Row Arrangement

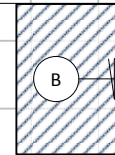
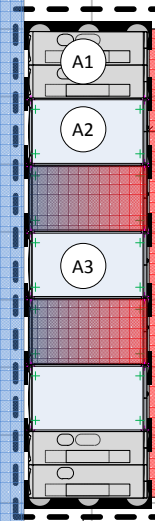
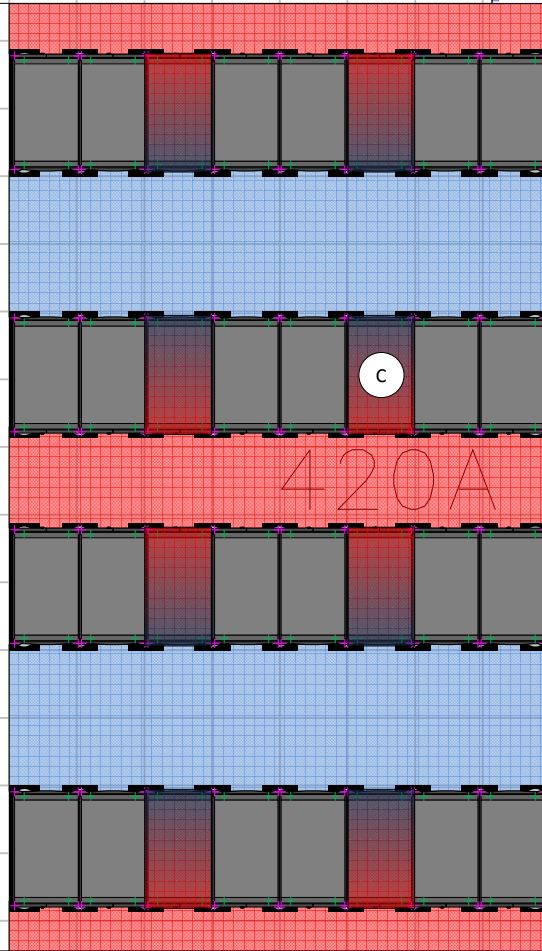
- A. Room Infrastructure Row
 - 1. Modular PDUs ala APC PDPM144F – 300mm
 - 2. Potential UPS options
 - 3. Networking/Network Services
 - 4. Row arrangement is not final
- B. Electrical Panel
- C. APC ACRC/ACRP 500 InRow Chiller

 Underfloor Clearance

 Work Area Clearance

20" deep concrete
shelf under floor

0 ft. 3 ft. 5 ft. 10 ft.



420A

C

A1

A2

A3

A

B



2

420A – InRow Cooling E/W Row Arrangement

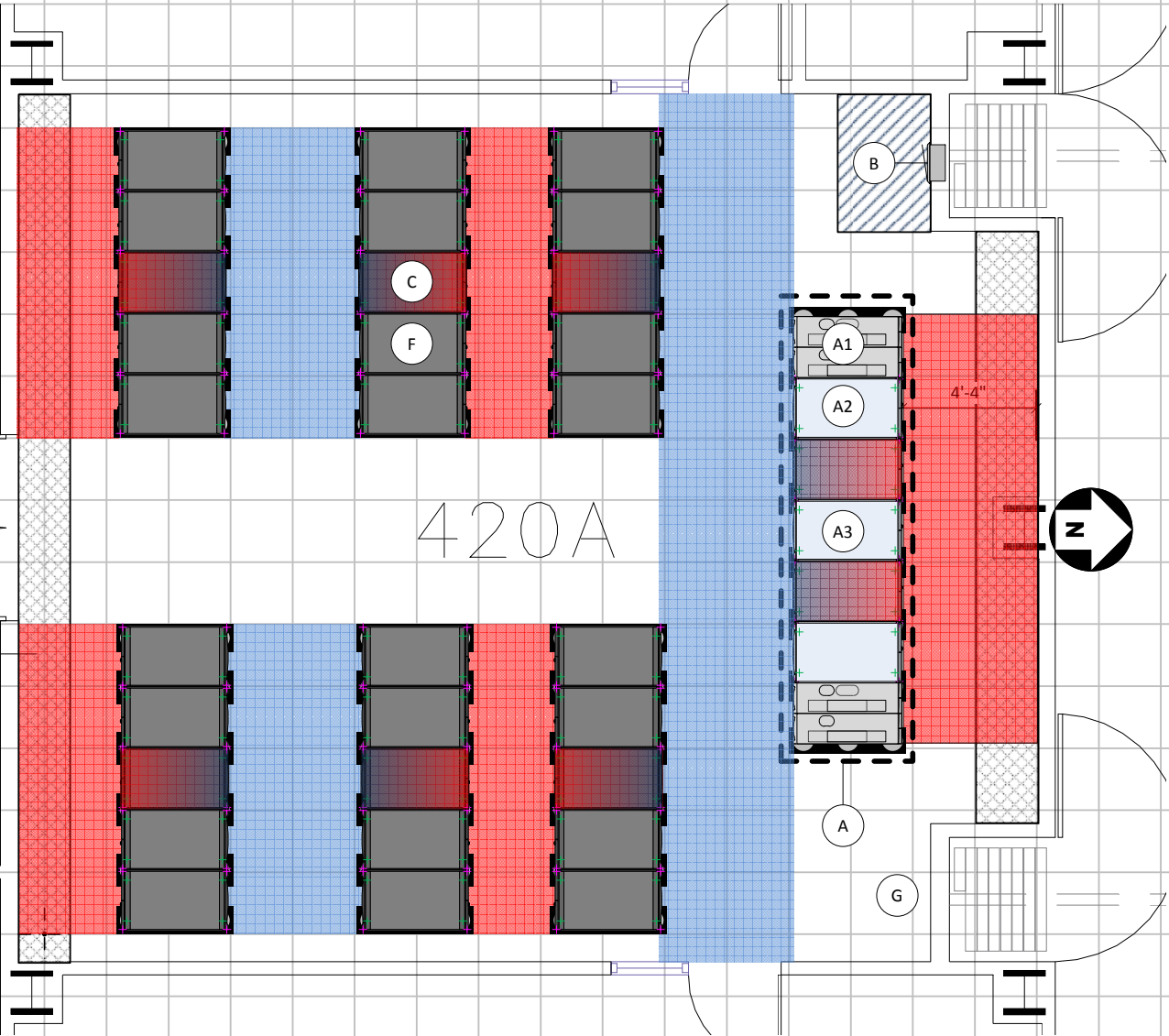
- A. Room Infrastructure Row
 - 1. Modular PDUs ala APC PDPM144F – 300mm
 - 2. Potential UPS options
 - 3. Networking/Network Services
 - 4. Row arrangement is not final
- B. Electrical Panel
- C. APC ACRC/ACRP 500 InRow Chiller
- E. ISO-Base Seismic Isolation Planks
- F. APC AR3100 600mm x 1070mm 42U
- G. Location for equipment/supply cabinet

 Underfloor Clearance

 Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



3

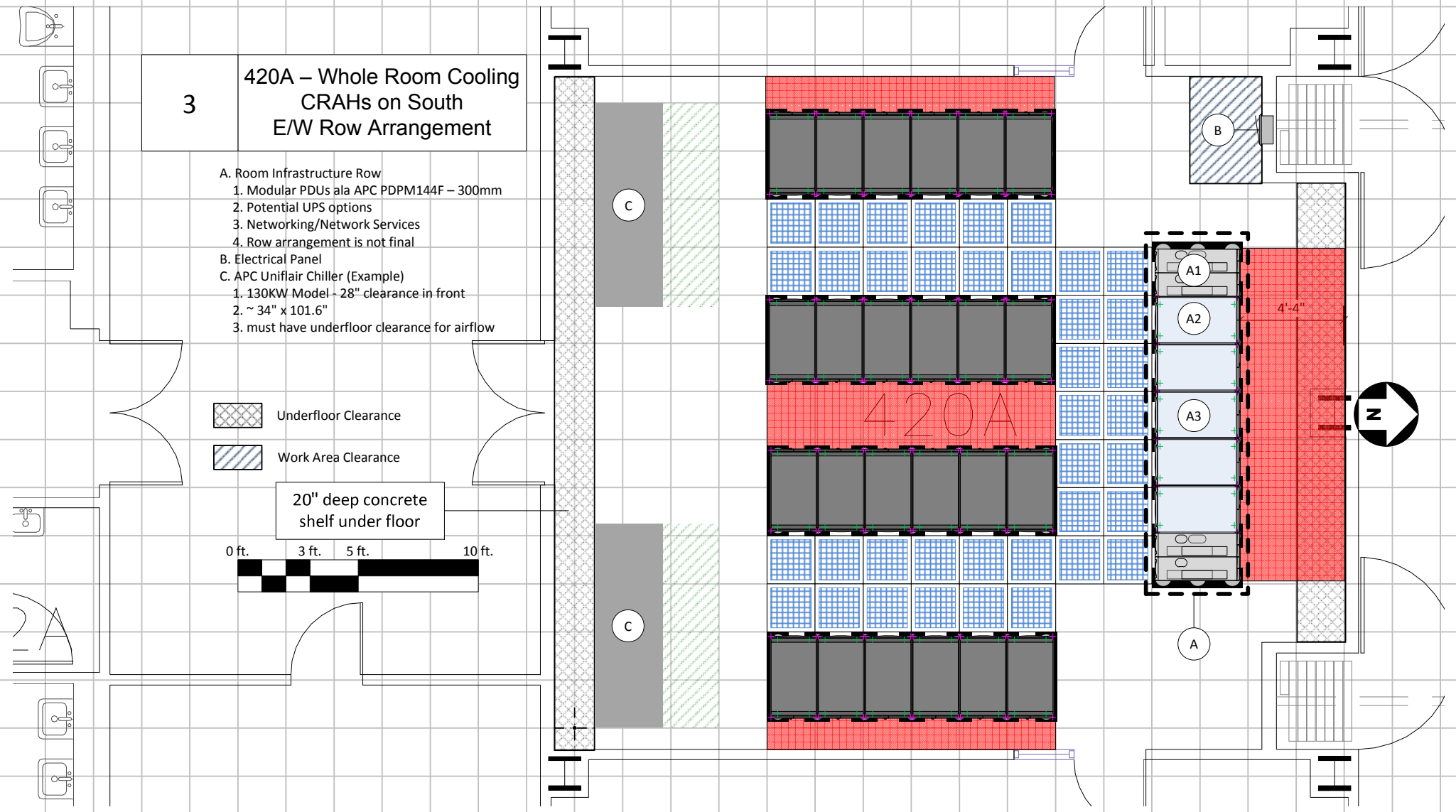
420A – Whole Room Cooling CRAHs on South E/W Row Arrangement

- A. Room Infrastructure Row
 1. Modular PDUs ala APC PDPM144F – 300mm
 2. Potential UPS options
 3. Networking/Network Services
 4. Row arrangement is not final
- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
 1. 130KW Model - 28" clearance in front
 2. ~ 34" x 101.6"
 3. must have underfloor clearance for airflow

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



4

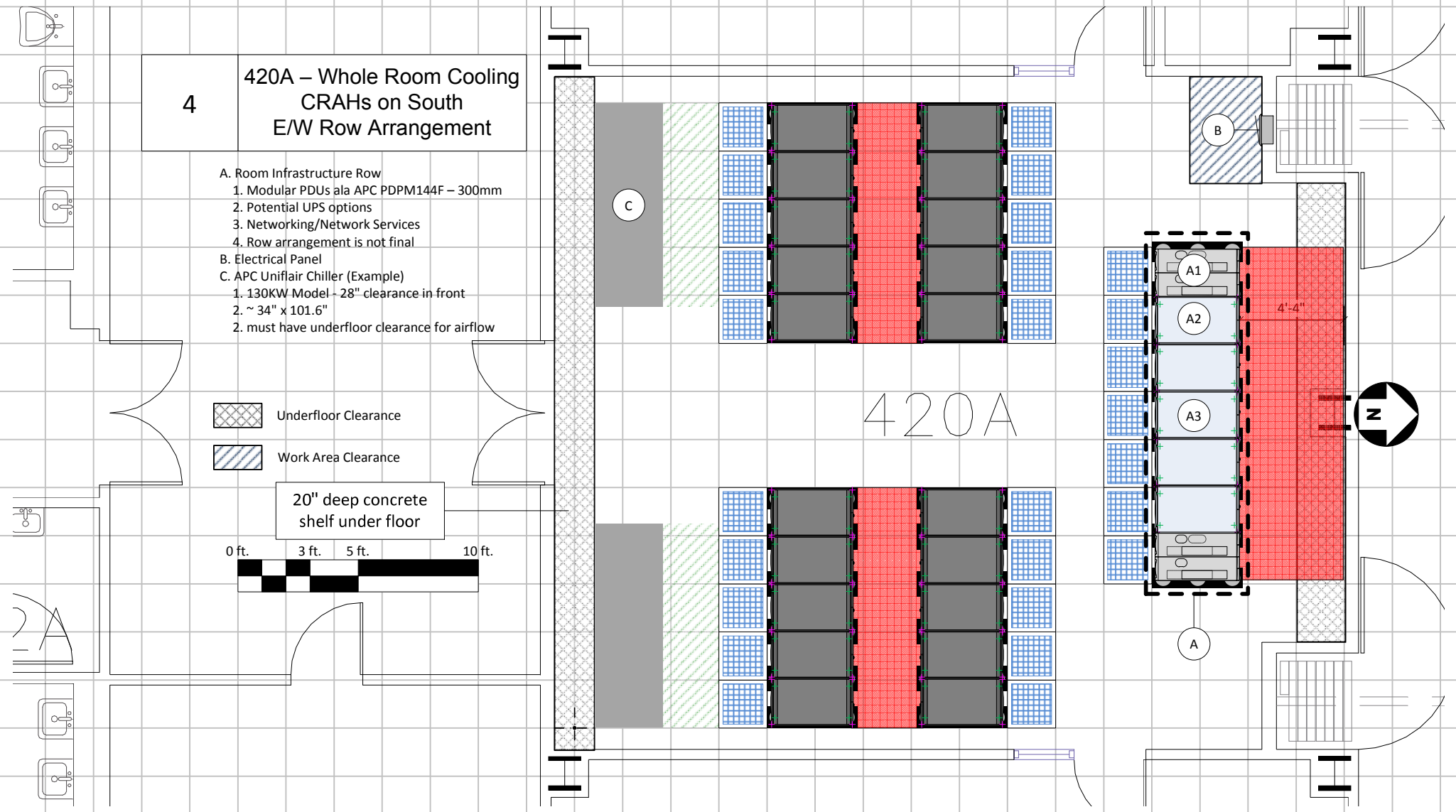
420A – Whole Room Cooling CRAHs on South E/W Row Arrangement

- A. Room Infrastructure Row
 - 1. Modular PDUs ala APC PDPM144F – 300mm
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 - 3. Networking/Network Services
 - 4. Row arrangement is not final
- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
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 - 2. must have underfloor clearance for airflow

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



5

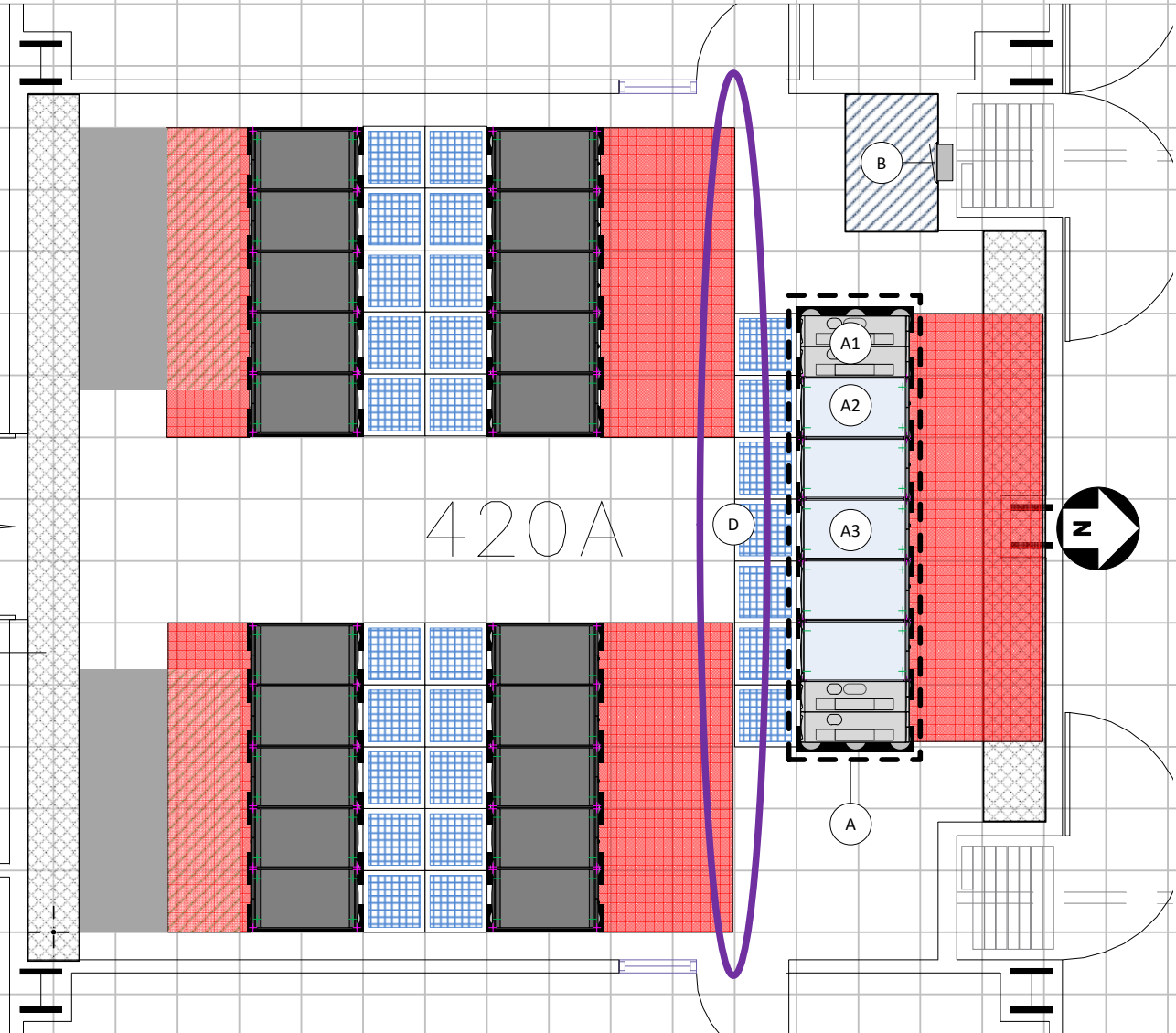
420A – Whole Room Cooling CRAHs on South N/S Row Arrangement

- A. Room Infrastructure Row
 - 1. Modular PDUs ala APC PDPM144F – 300mm
 - 2. Potential UPS options
 - 3. Networking/Network Services
 - 4. Row arrangement is not final
- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
 - 3. must have underfloor clearance for airflow
- D. Note collision between hot and cold air flow

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor

0 ft. 3 ft. 5 ft. 10 ft.





6

420A – Whole Room Cooling
CRAHs on South
E/W Row Arrangement

D1

420A

-  Underfloor Clearance
-  Work Area Clearance


20" deep concrete
shelf under floor


0 ft. 3 ft. 5 ft. 10 ft.



7

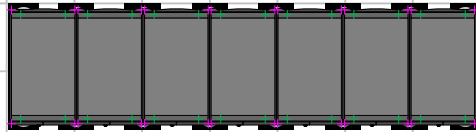
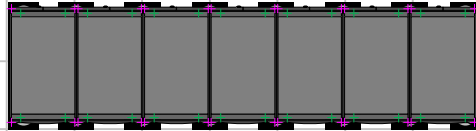
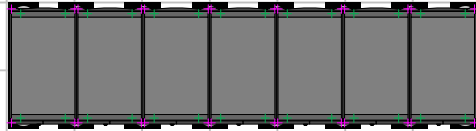
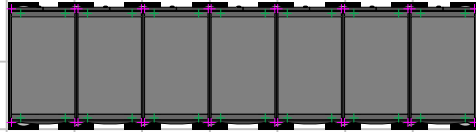
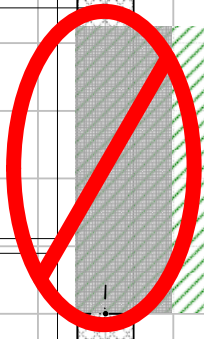
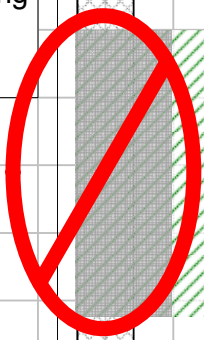
420A – Whole Room Cooling
CRAHs on South
N/S Row Arrangement

 Underfloor Clearance

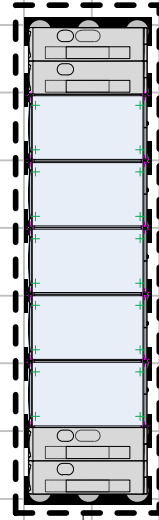
 Work Area Clearance

20" deep concrete
shelf under floor

0 ft. 3 ft. 5 ft. 10 ft.



420A





A



8

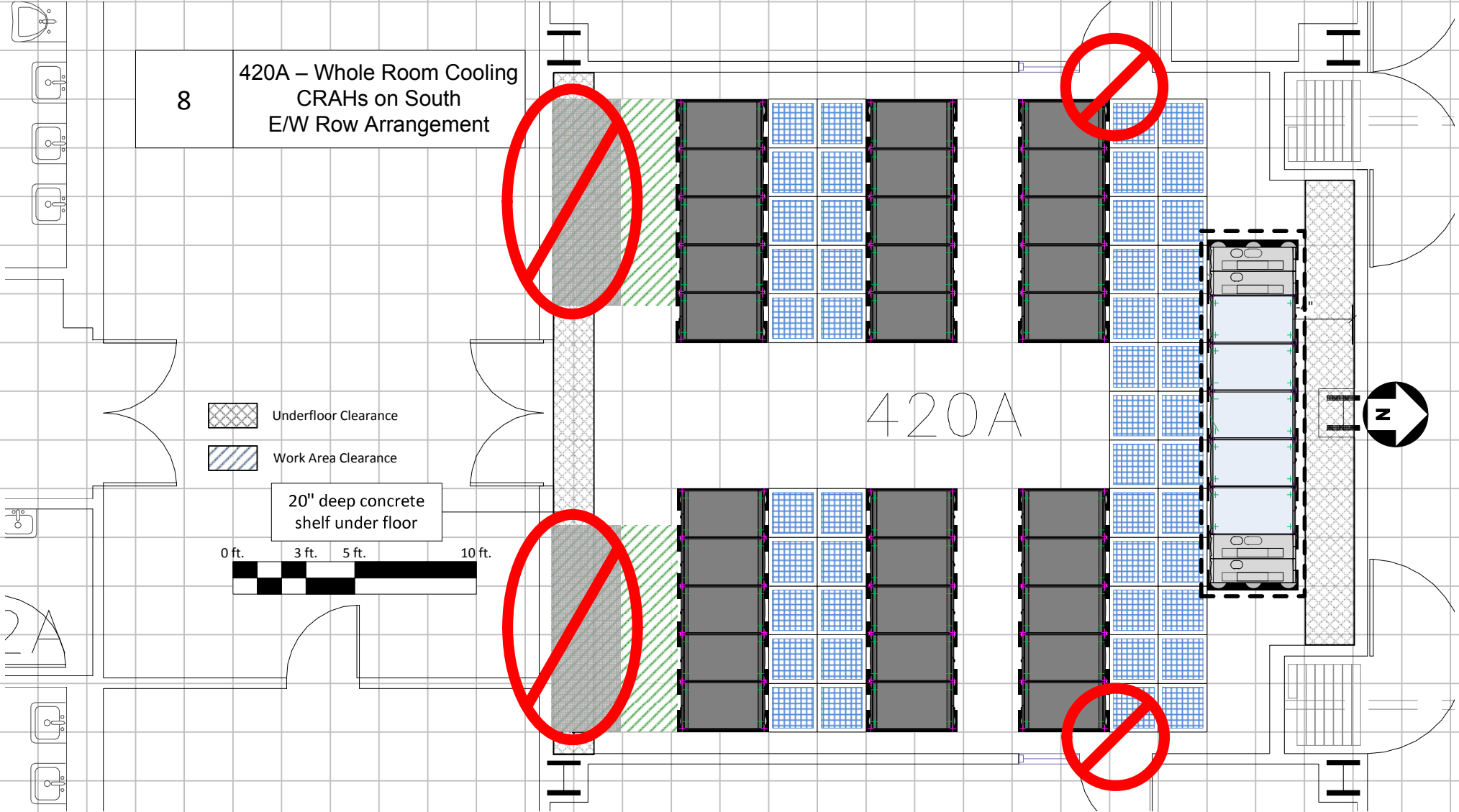
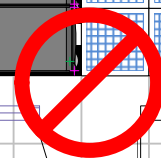
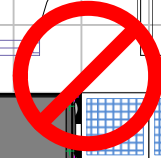
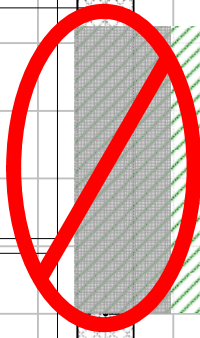
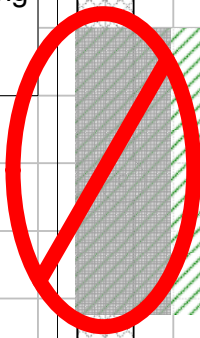
420A – Whole Room Cooling
CRAHs on South
E/W Row Arrangement

 Underfloor Clearance
 Work Area Clearance

20" deep concrete
shelf under floor

0 ft. 3 ft. 5 ft. 10 ft.



420A



9

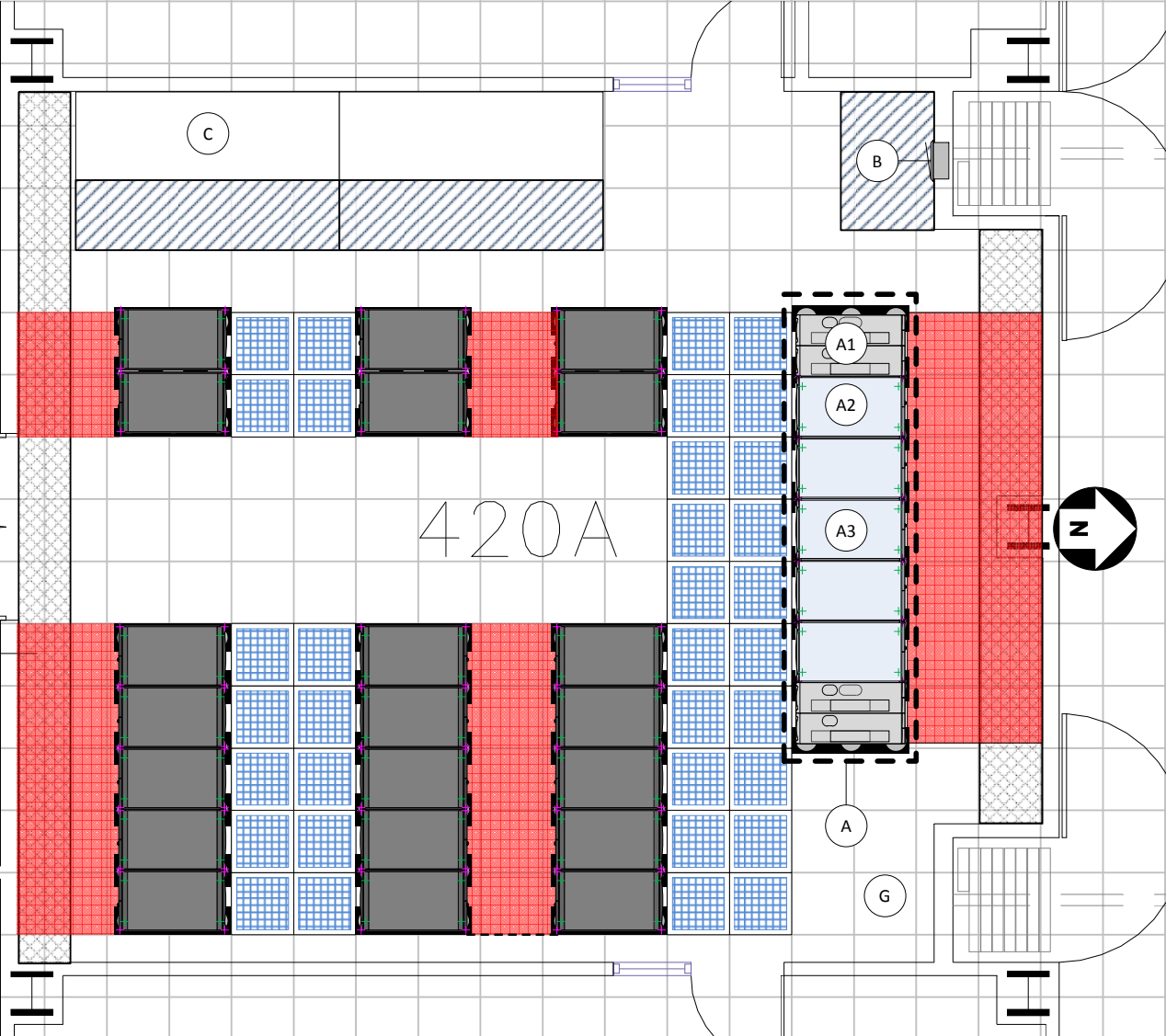
420A – Whole Room Cooling CRAHs on West Weird E/W Row Arrangement

- A. Room Infrastructure Row
 - 1. Modular PDUs ala APC PDPM144F – 300mm
 - 2. UPS/Networking/Network Service Options
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
 - 2. must have underfloor clearance for airflow
- B. Electrical Panel
- D. Air Curtains for Hot/Cold Aisle
 - 1. Note Buffer Zones between Hot/Cold
- E. ISO-Base Seismic Isolation Planks
- F. APC AR3100 600mm x 1070mm 42U
- G. Equipment/Supply Cabinet

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



10

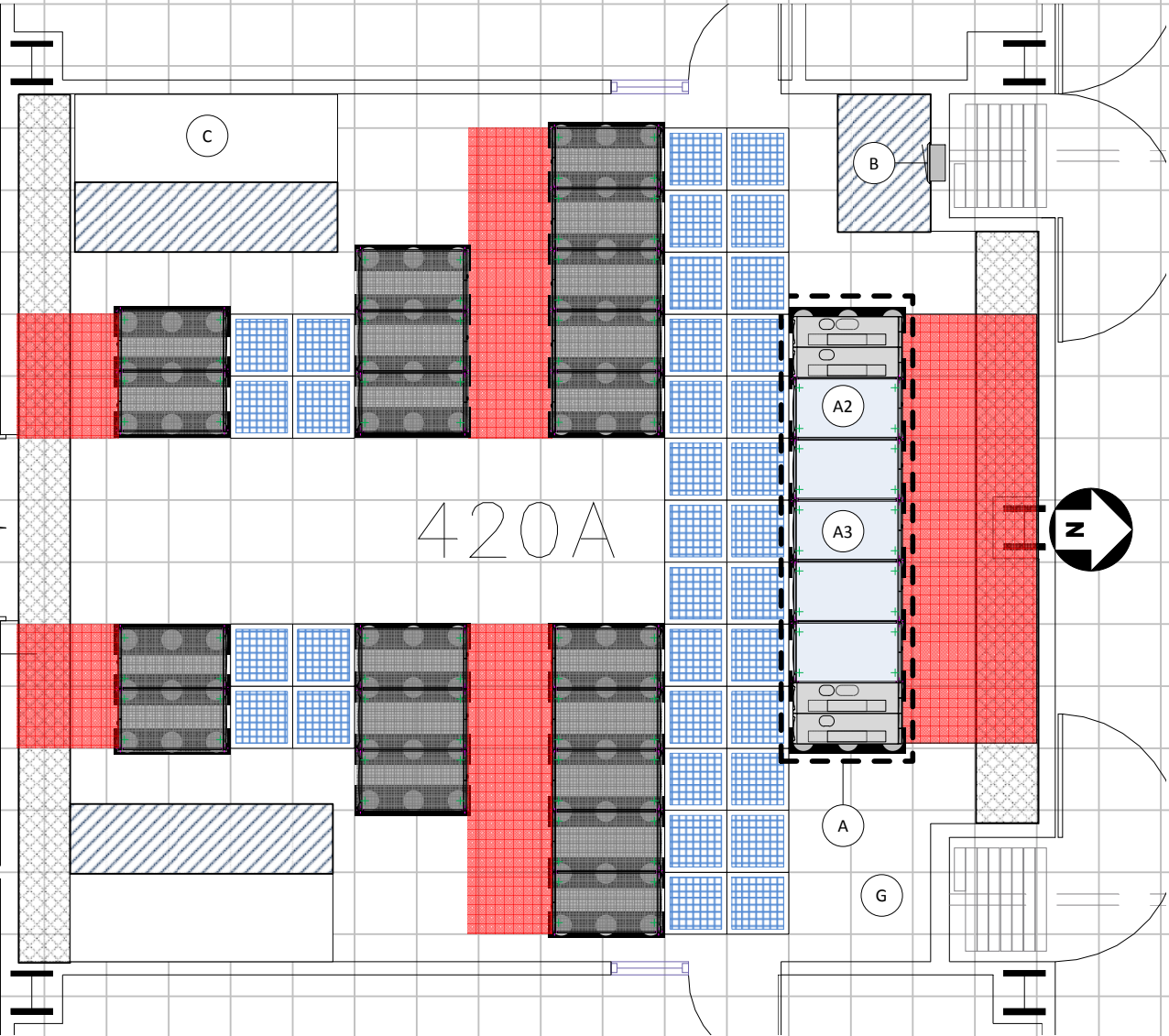
420A – Whole Room Cooling CRAHs on West Ziggurat E/W Row Arrangement

- A. Room Infrastructure Row
 - 1. Modular PDUs ala APC PDPM144F – 300mm
 - 2. UPS/Networking/Network Service Options
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
 - 2. must have underfloor clearance for airflow
- B. Electrical Panel
- D. Air Curtains for Hot/Cold Aisle
 - 1. Note Buffer Zones between Hot/Cold
- E. ISO-Base Seismic Isolation Planks
- F. APC AR3100 600mm x 1070mm 42U
- G. Equipment/Supply Cabinet

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



11

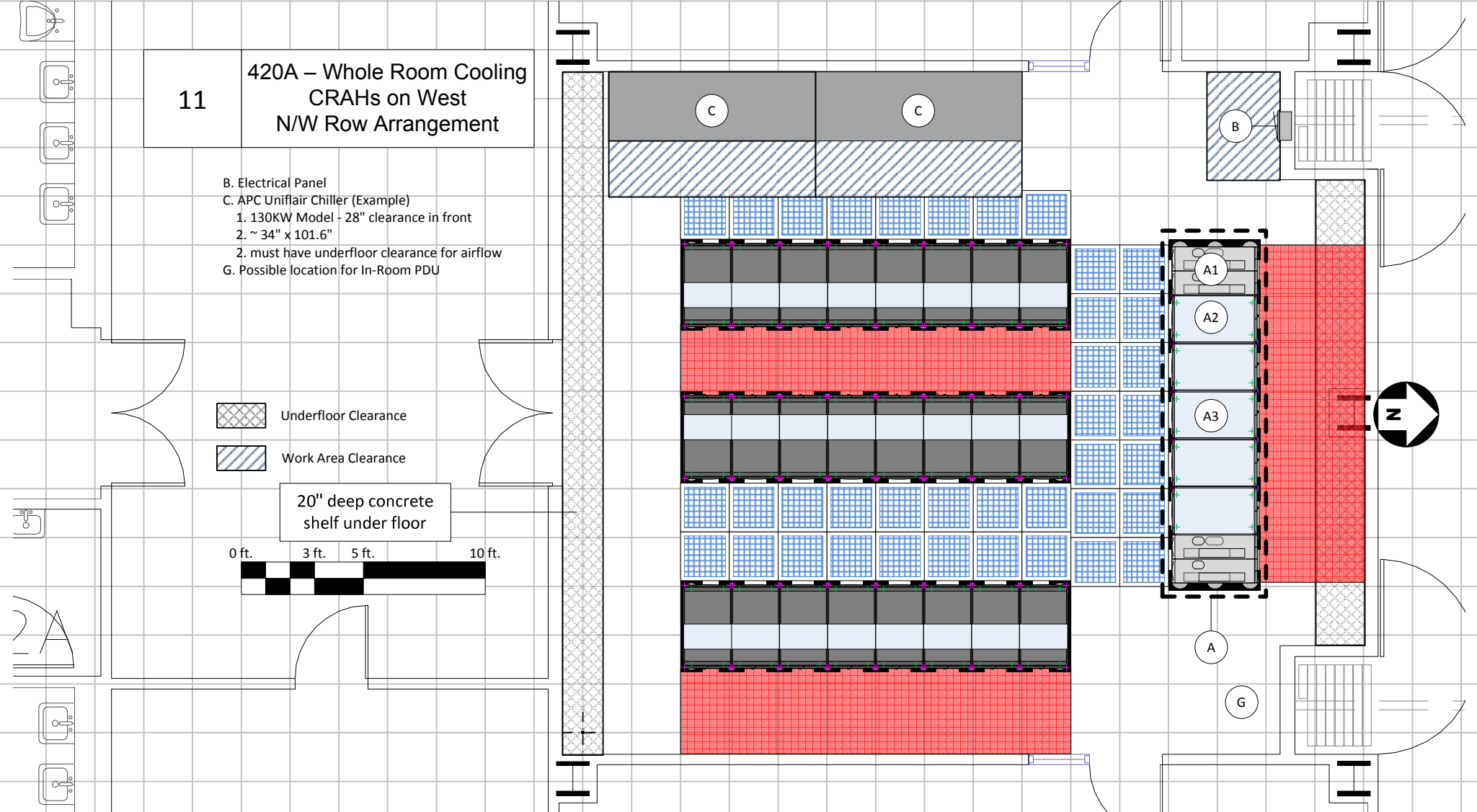
420A – Whole Room Cooling CRAHs on West N/W Row Arrangement

- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
- G. Possible location for In-Room PDU

 Underfloor Clearance
 Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



12

420A – Whole Room Cooling CRAHs on West Shift E/W Row Arrangement

- A. Room Infrastructure Row – many options
 1. Modular PDUs ala APC PDPM144F – 300mm
 2. Potential UPS options
 3. Networking/Network Services
 4. Layout shown is boilerplate example
- C. APC Uniflair Chiller (Example) - ~ 34" x 101.6"
 1. 130KW Model - 28" clearance in front
 2. must have underfloor clearance for airflow
- B. Electrical Panel
- D. Air Curtains for Hot/Cold Aisle
 1. Note Buffer Zones between Hot/Cold
- E. ISO-Base Seismic Isolation Planks
- F. APC AR3100 600mm x 1070mm 42U
- H. Move Door west 8ft. Perhaps a sliding door?

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor

0 ft. 3 ft. 5 ft. 10 ft.

A1

A2

A3

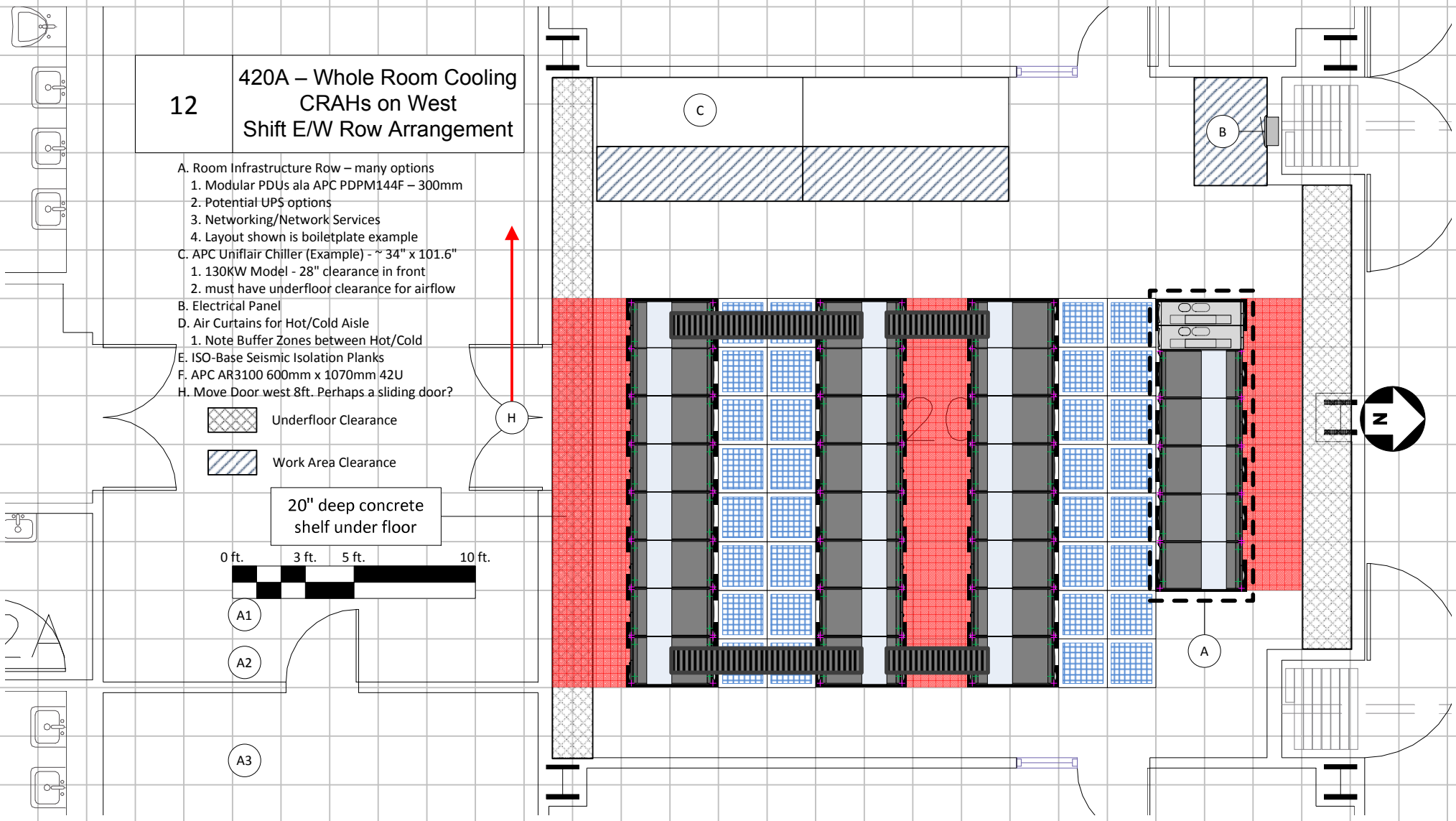
H

C

B

N



A



13

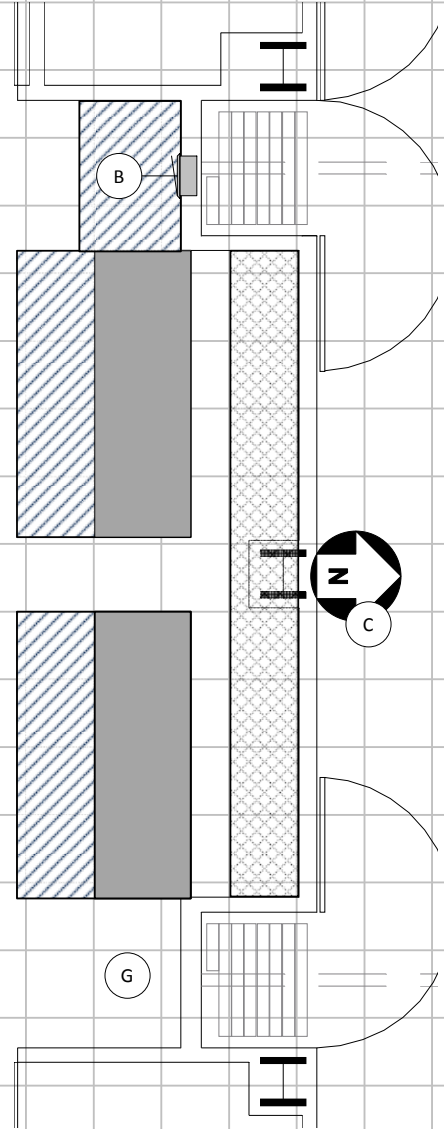
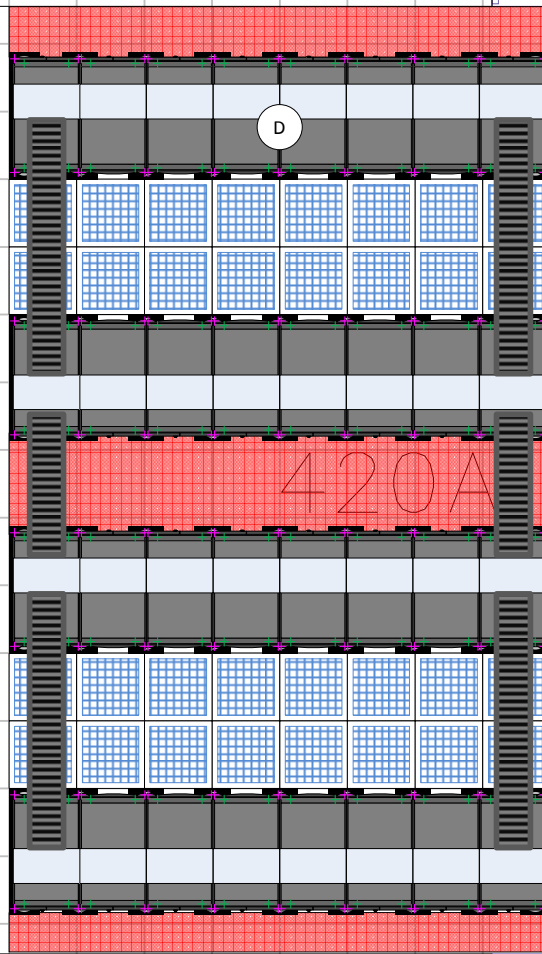
420A – Whole Room Cooling CRAHs on North N/S Row Arrangement

- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
 - 2. must have underfloor clearance for airflow
- D. Could use 36" deep racks here for more clearance
- n.b. may no longer be available
- G. Possible location for In-Room PDU

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



14

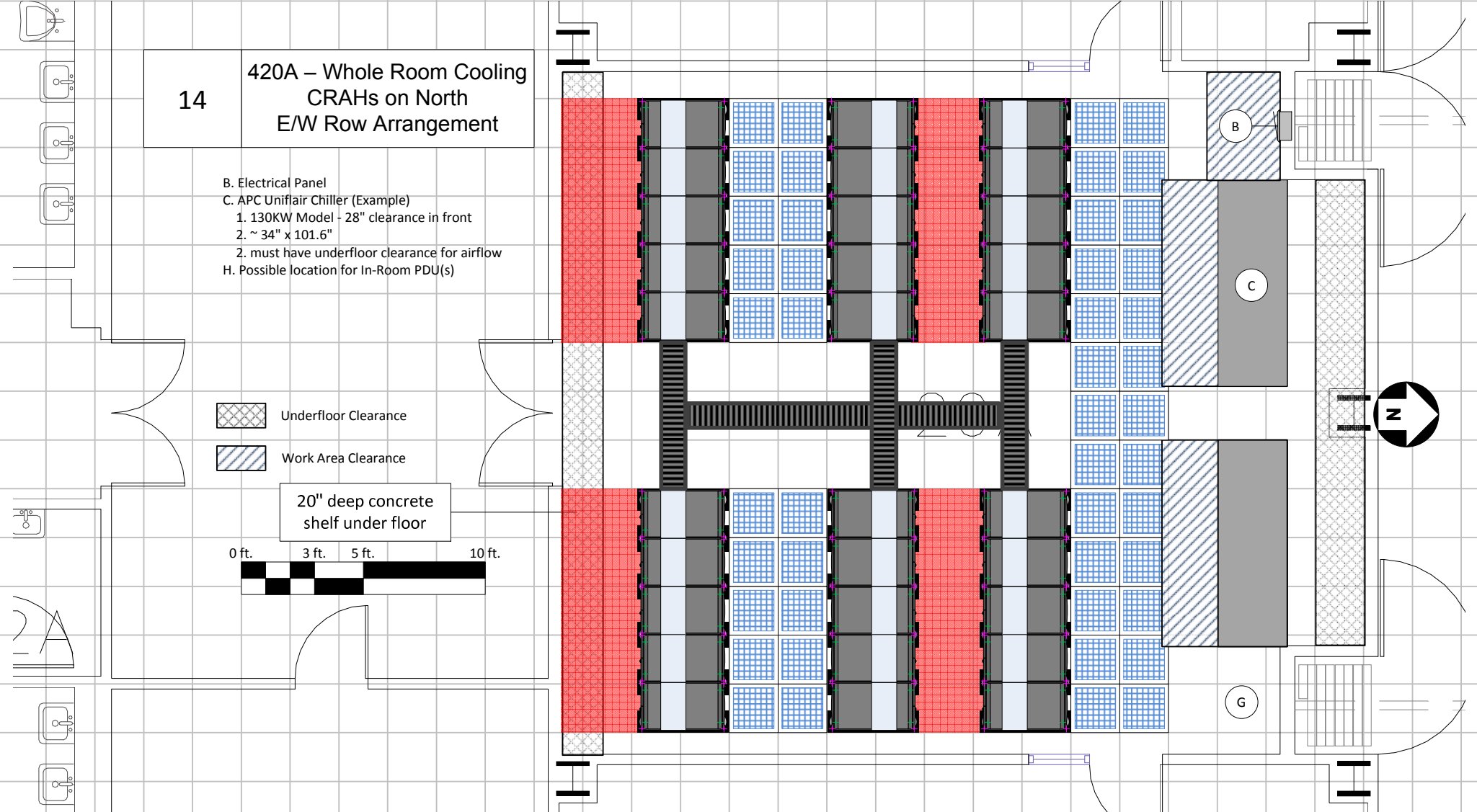
420A – Whole Room Cooling CRAHs on North E/W Row Arrangement

- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
- H. Possible location for In-Room PDU(s)

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



15

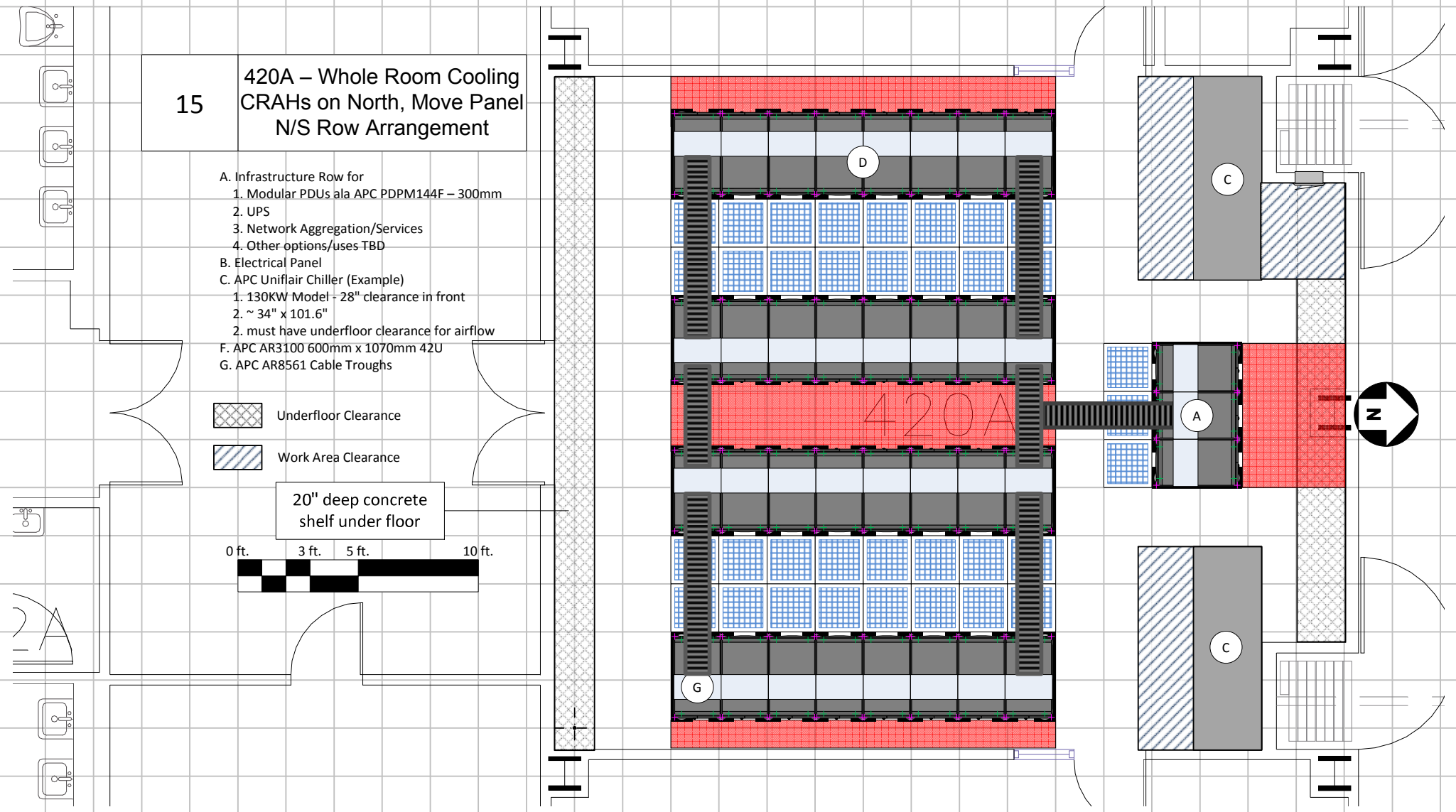
420A – Whole Room Cooling CRAHs on North, Move Panel N/S Row Arrangement

- A. Infrastructure Row for
 - 1. Modular PDUs ala APC PDPM144F – 300mm
 - 2. UPS
 - 3. Network Aggregation/Services
 - 4. Other options/uses TBD
- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
 - 2. must have underfloor clearance for airflow
- F. APC AR3100 600mm x 1070mm 42U
- G. APC AR8561 Cable Troughs

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



16

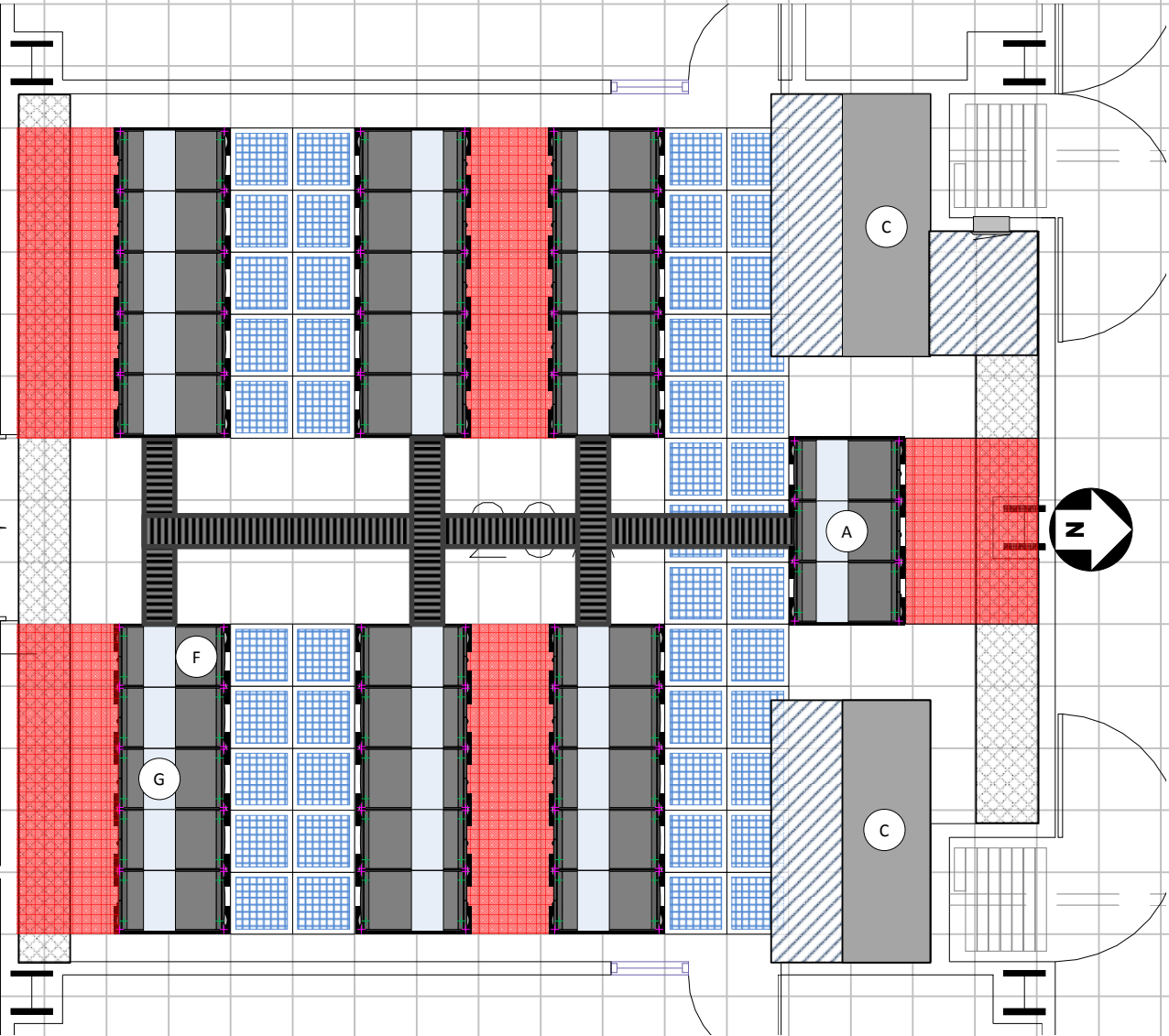
420A – Whole Room Cooling CRAHs on North, Move Panel E/W Row Arrangement

- A. Infrastructure Row for
 - 1. Modular PDUs ala APC PDPM144F – 300mm
 - 2. UPS
 - 3. Network Aggregation/Services
 - 4. Other options/uses TBD
- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
 - 2. must have underfloor clearance for airflow
- F. APC AR3100 600mm x 1070mm 42U
- G. APC AR8561 Cable Troughs

-  Underfloor Clearance
-  Work Area Clearance

20" deep concrete
shelf under floor



0 ft. 3 ft. 5 ft. 10 ft.



17

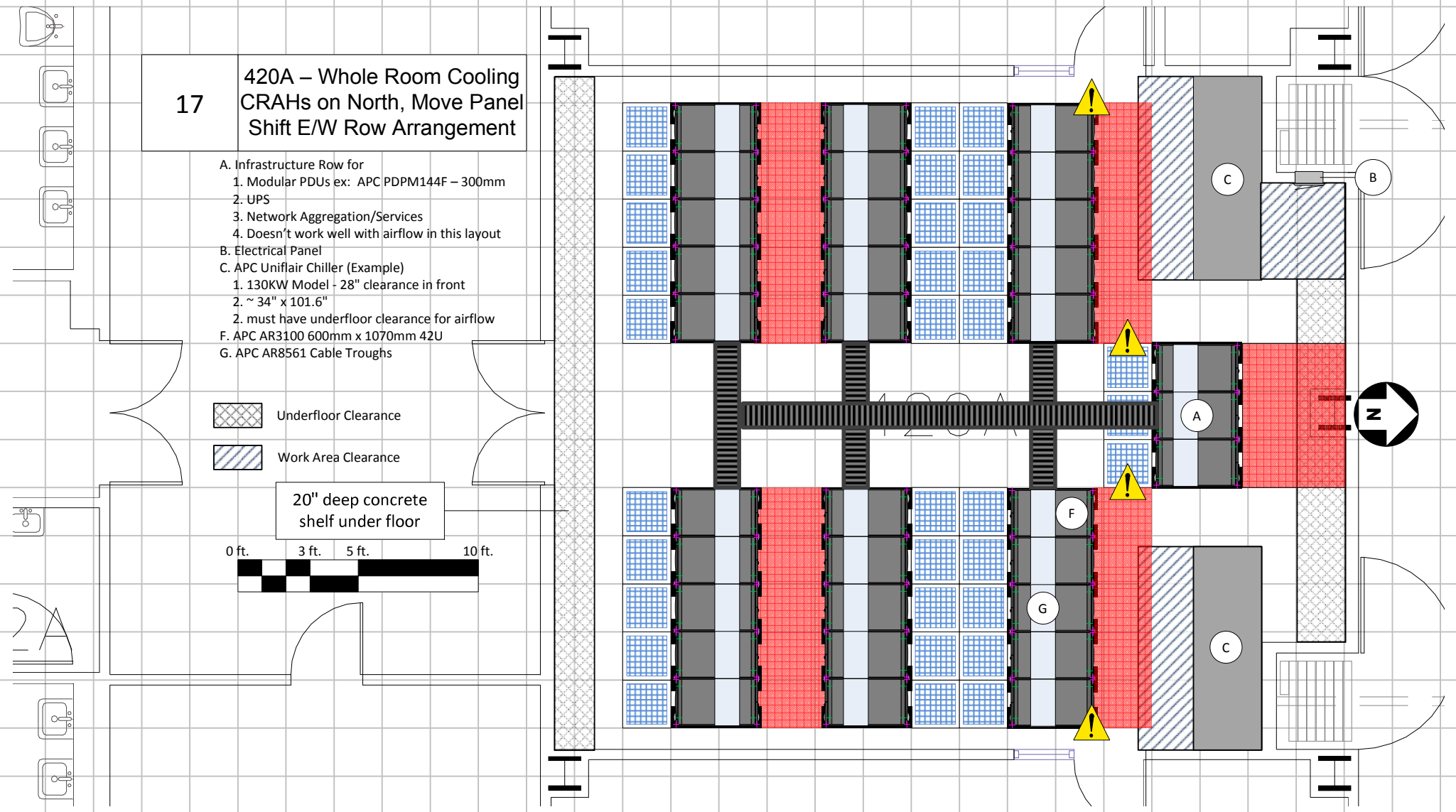
420A – Whole Room Cooling CRAHs on North, Move Panel Shift E/W Row Arrangement

- A. Infrastructure Row for
 - 1. Modular PDUs ex: APC PDPM144F – 300mm
 - 2. UPS
 - 3. Network Aggregation/Services
 - 4. Doesn't work well with airflow in this layout
- B. Electrical Panel
- C. APC Uniflair Chiller (Example)
 - 1. 130KW Model - 28" clearance in front
 - 2. ~ 34" x 101.6"
 - 3. must have underfloor clearance for airflow
- F. APC AR3100 600mm x 1070mm 42U
- G. APC AR8561 Cable Troughs

-  Underfloor Clearance
-  Work Area Clearance

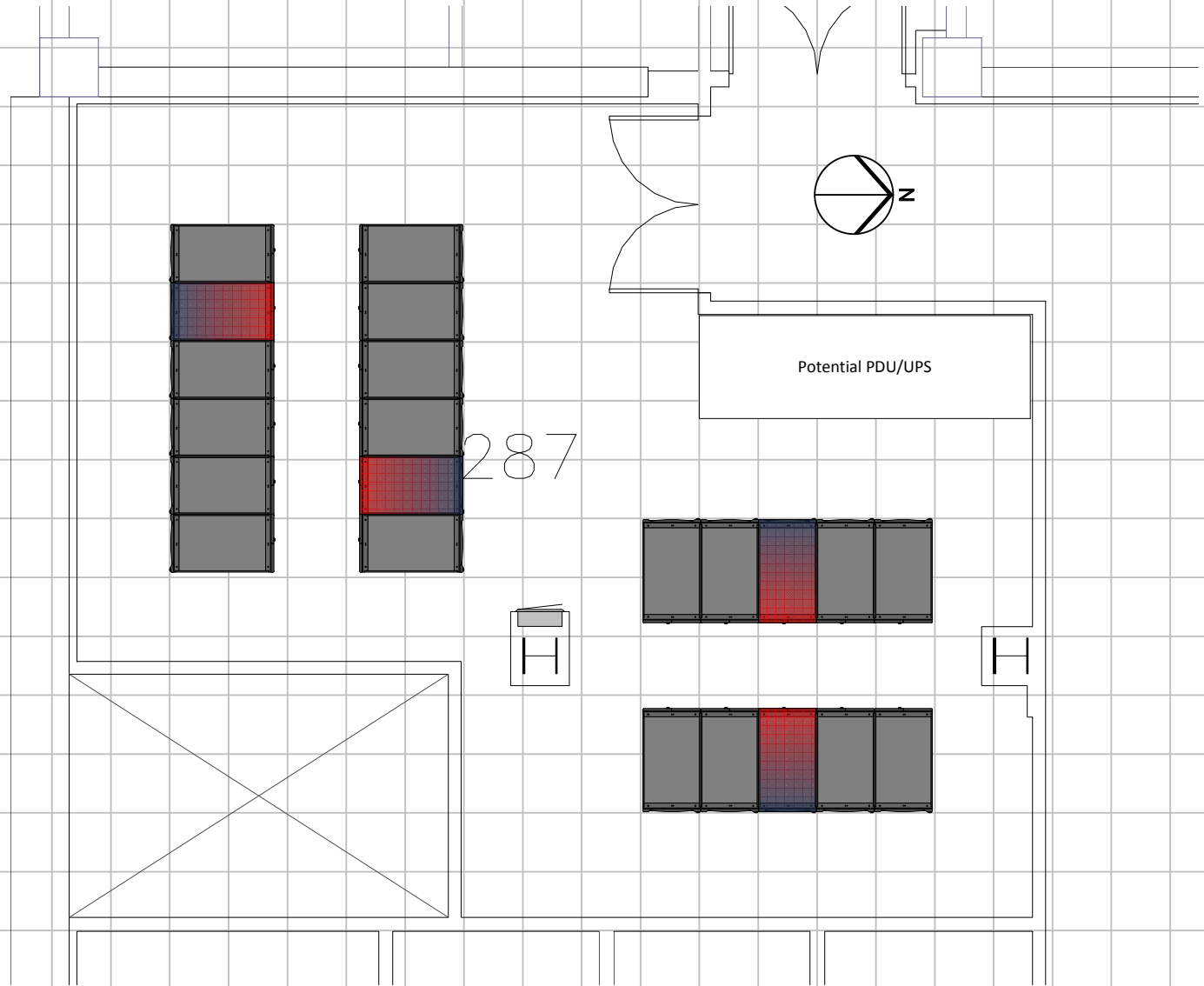
20" deep concrete
shelf under floor

0 ft. 3 ft. 5 ft. 10 ft.

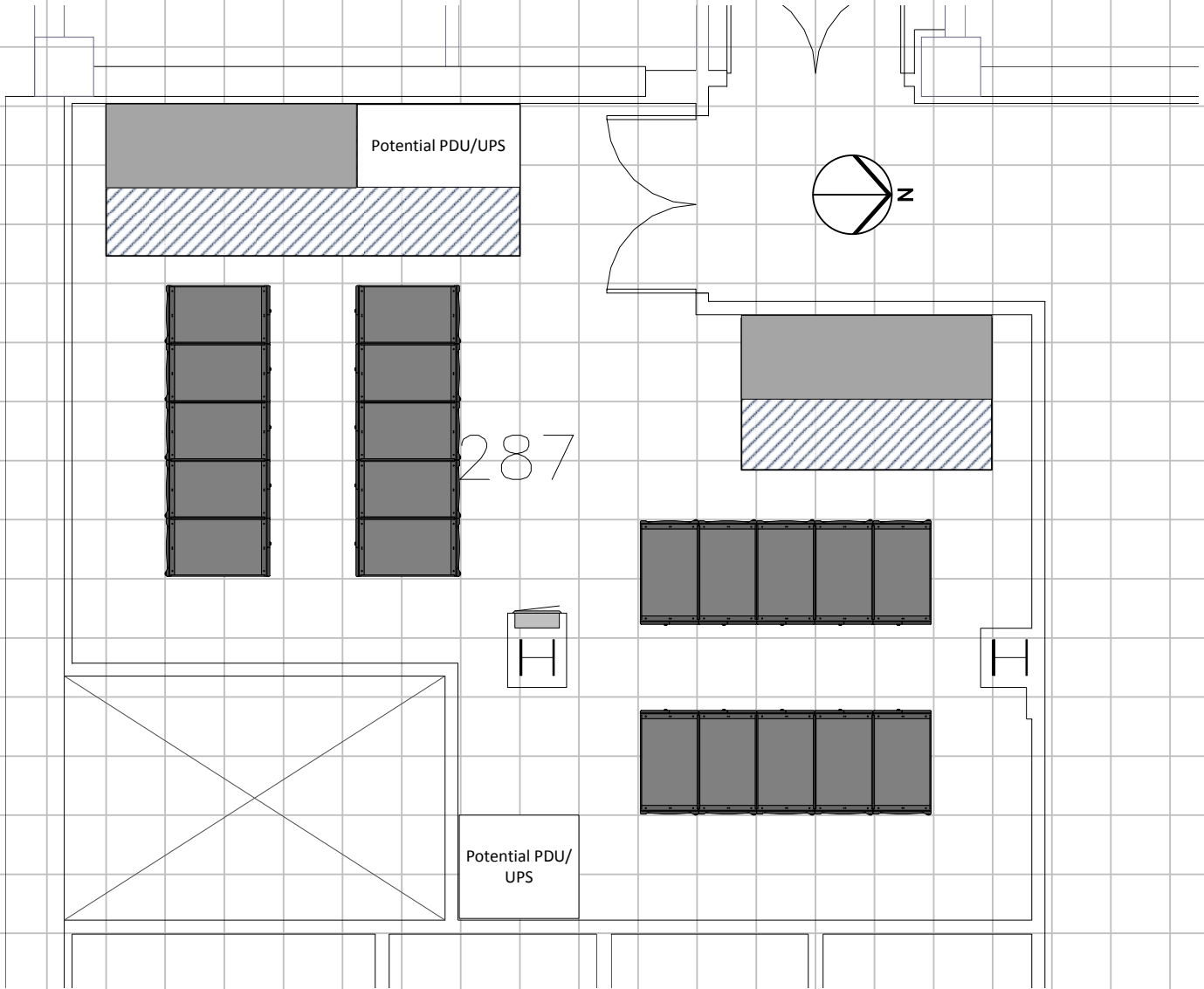


18

287 – InRow Cooling



18 287 – Whole Room Cooling



287

H

H

283F

283G

283H

33E

283

H

H

24 Circuits per
Modular PDU



"Only" need 48 Circuits, so 4 Modular
PDUs is a bit of overkill at 96 circuits

Existing UPS Figure 15-20yr
Operational Lifespan

19

290 - In Row

Hot Aisle

Cold Aisle

Hot Aisle

Cold Aisle

Hot Aisle

H

InRow
AC

InRow
AC

InRow
AC

InRow
AC

InRow
AC

InRow
AC

InRow
AC

InRow
AC

InRow
AC

InRow
AC

H

H

287

H

H

283F

283G

283H

33E

283

H

H

Leave empty for work area, staging, etc

Modular UPS
Symmetra PX
MGE Galaxy 5000
MGE Galaxy etc
Expand up to 4-wide

Halfwidth
InRow AC

- Empty Racks kept as Spares
- Network/Infrastructure Racks
- Spaceholders for UPS expansion

Cold Aisle

Hot Aisle

Cold Aisle

Hot Aisle

Cold Aisle

H

InRow
AC

InRow
AC

InRow
AC

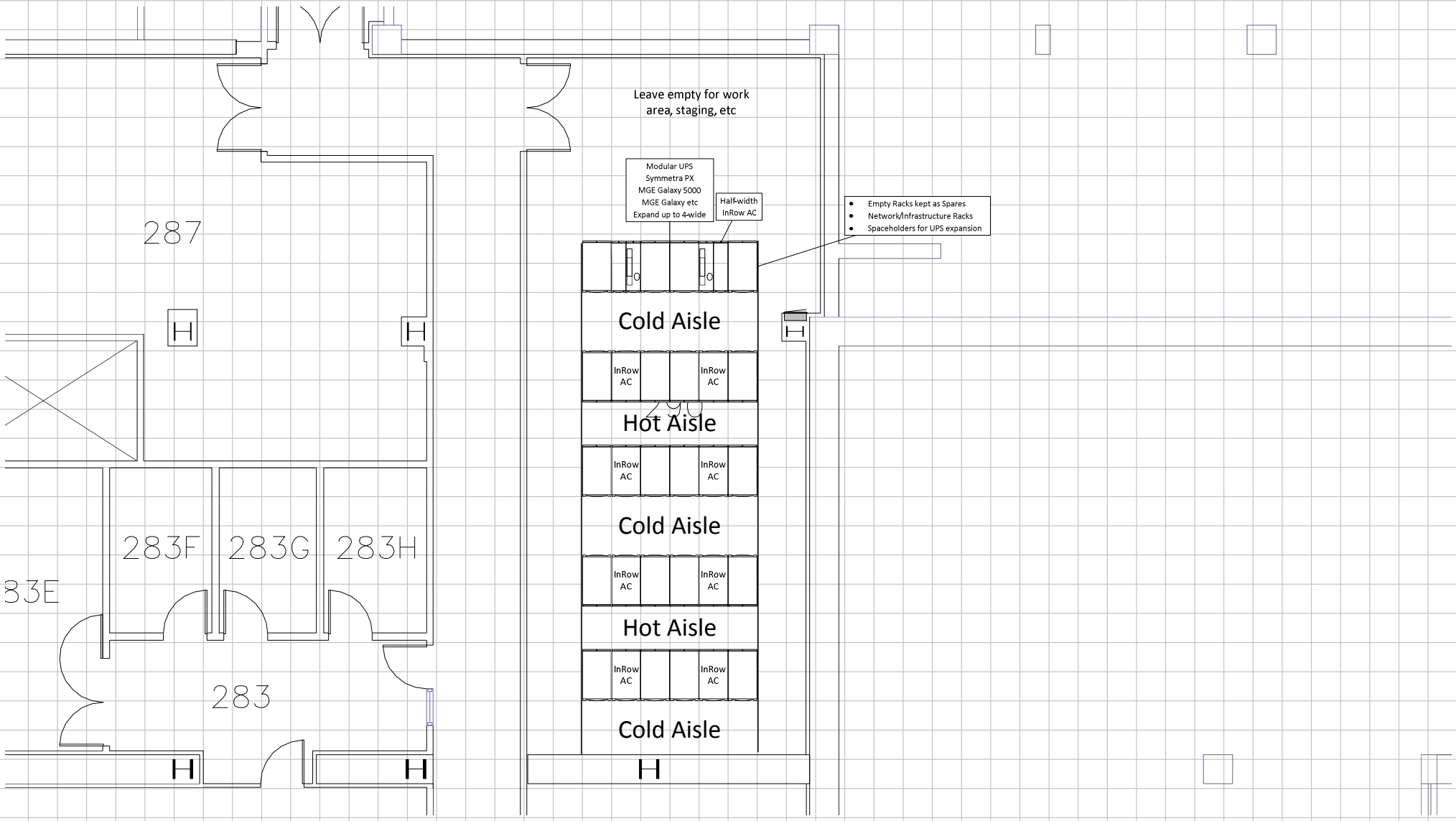
InRow
AC

InRow
AC

InRow
AC

InRow
AC

InRow
AC



287

H

H

283F

283G

283H

33E

283

H

H

Leave empty for work area, staging, etc

- Empty Racks kept as Spares
- Network/Infrastructure Racks
- Spaceholders for UPS expansion

Half-Width
InRow AC

Cold Aisle

Hot Aisle

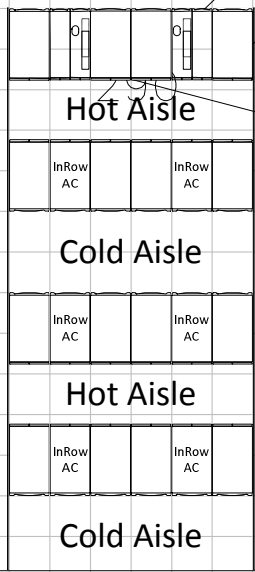
Cold Aisle

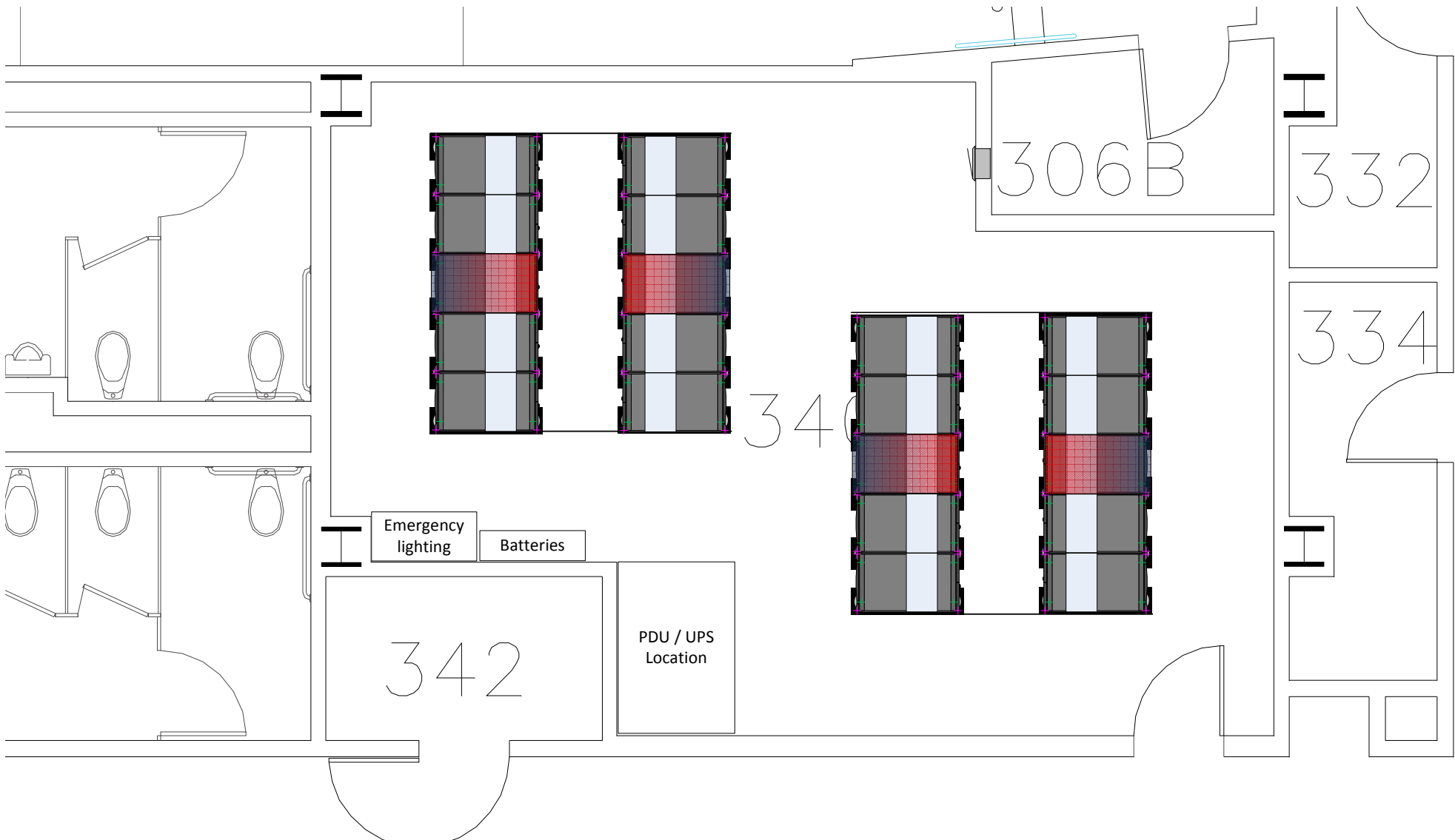
Hot Aisle

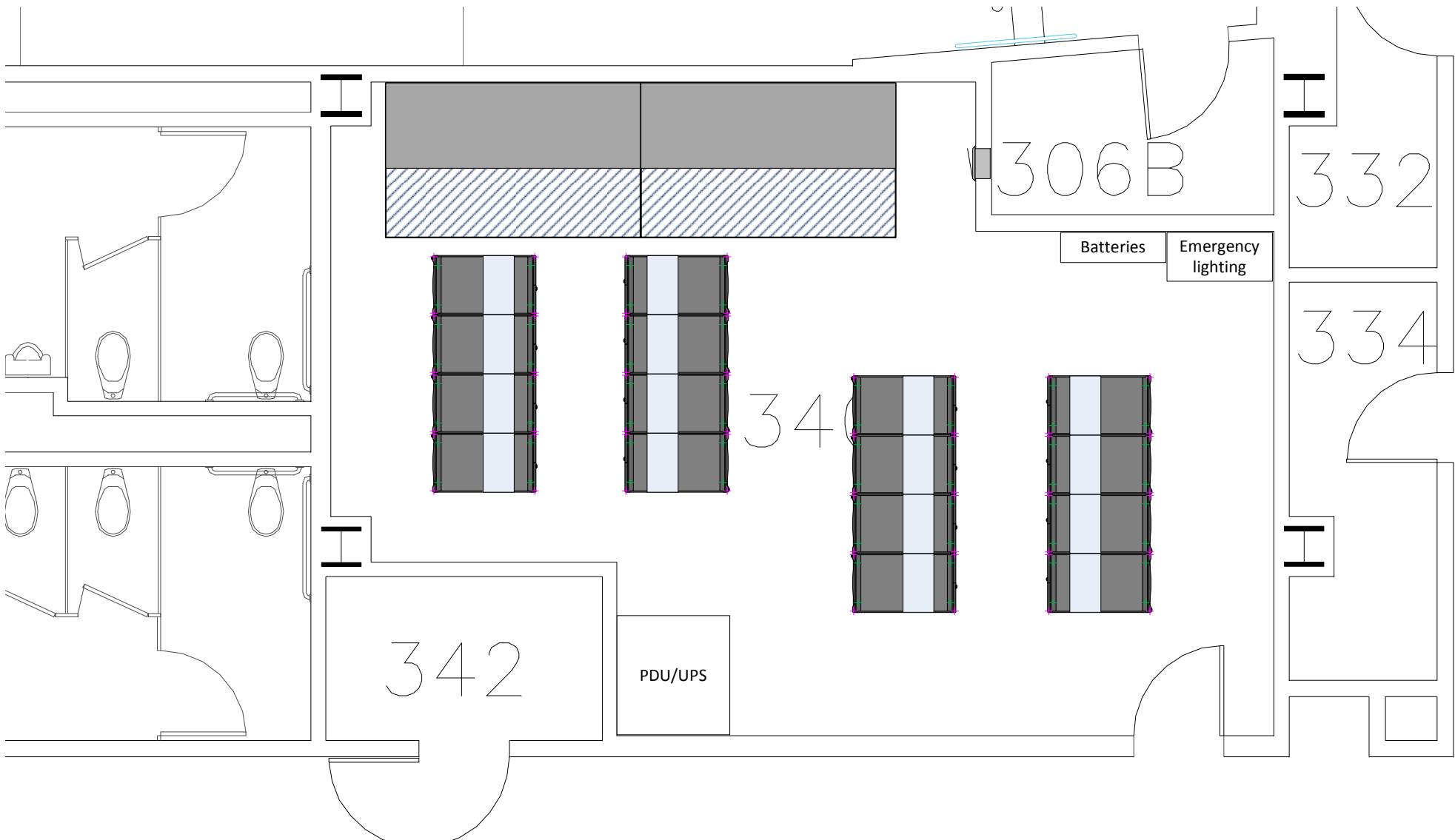
Cold Aisle

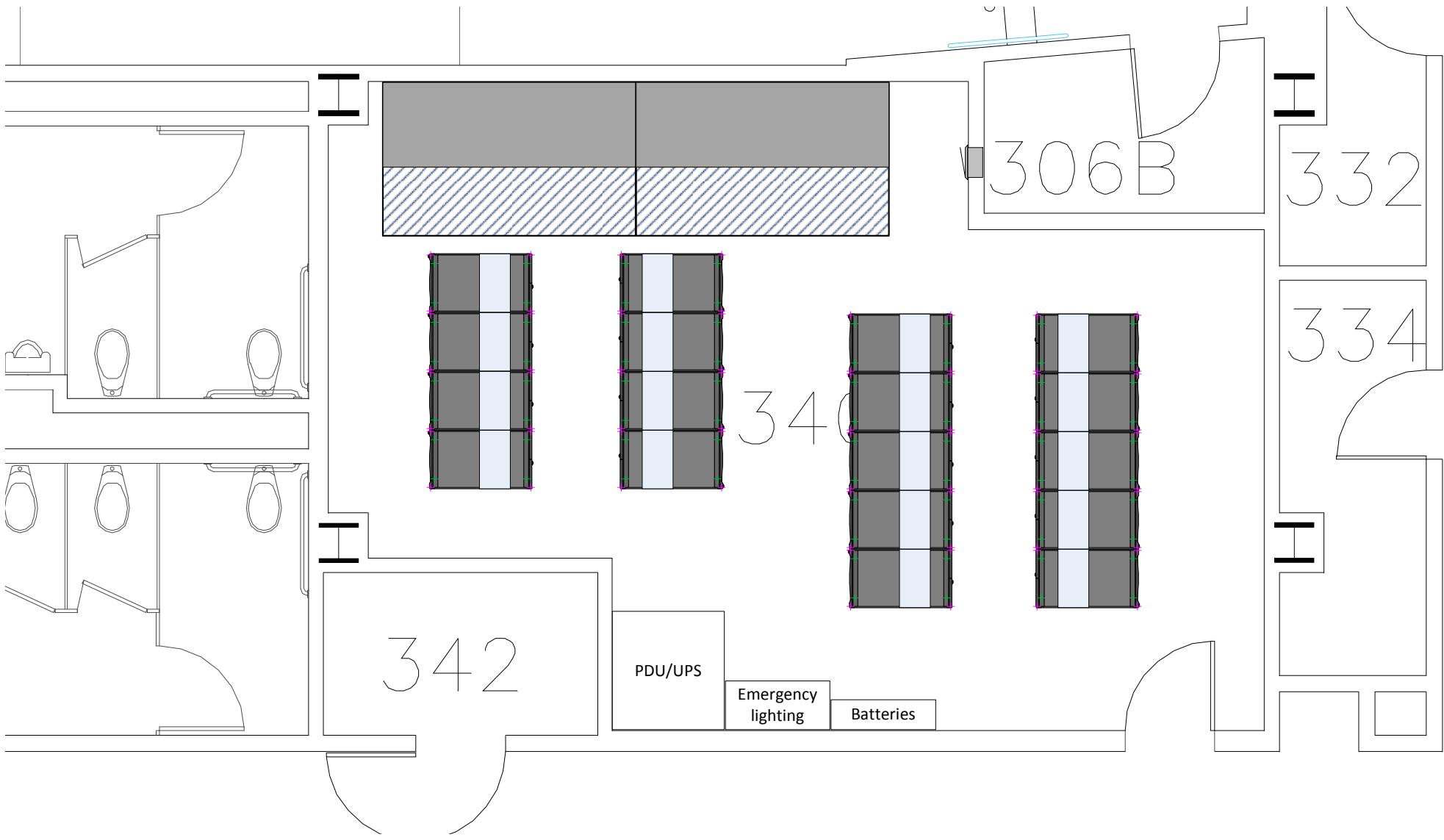
H

Modular UPS
Symmetra PX
MGE Galaxy 5000
MGE Galaxy etc
Expand up to 4-wide









306B

332

334

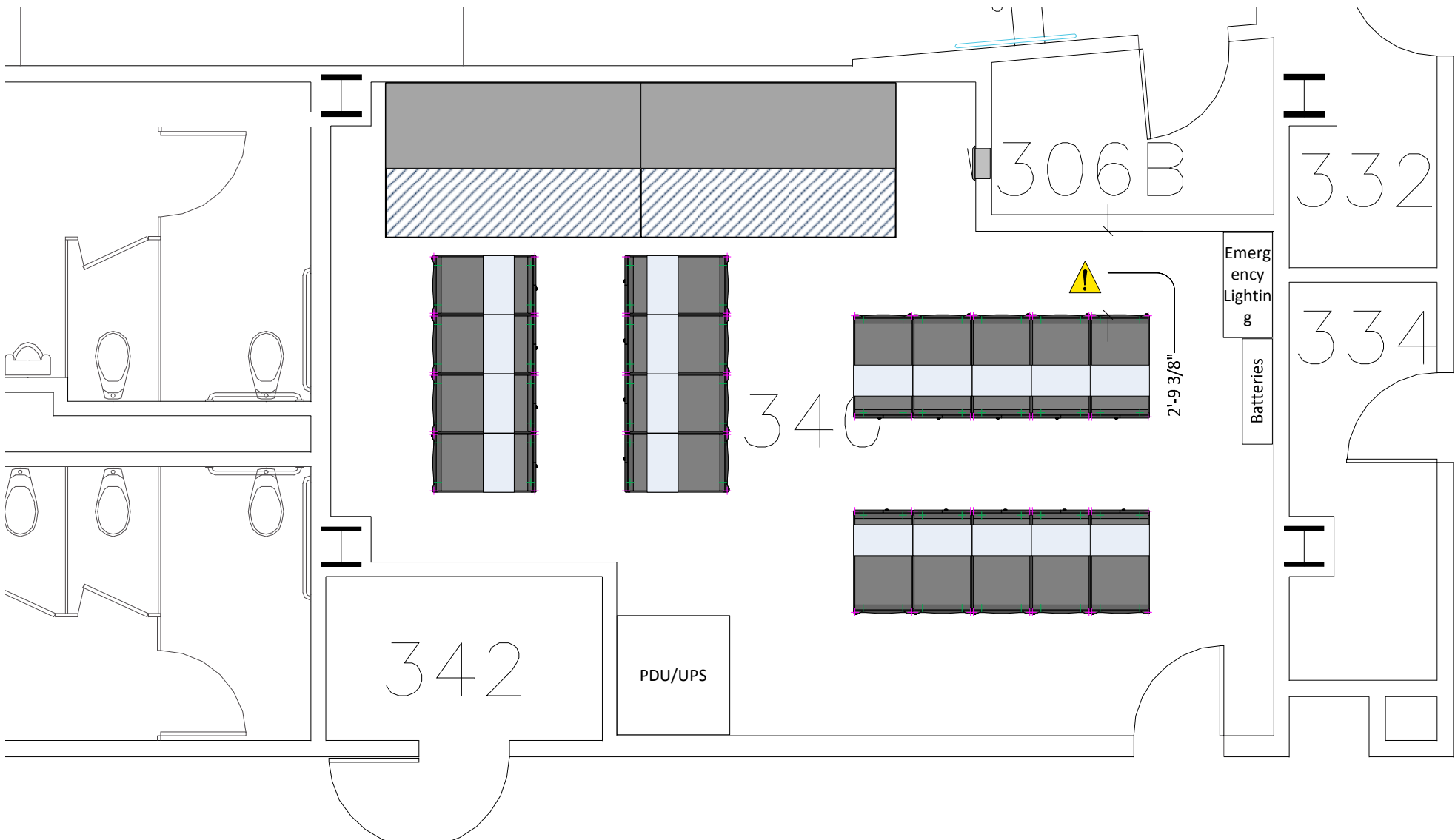
340

342

PDU/UPS

Emergency lighting

Batteries



306B

332

334

340

342

PDU/UPS

Emergency Lighting & Batteries

2-9 3/8"

