

Whatever, just wash your hands.

Considerations for inclusive restroom design



Presenters



Chris Jahn, AIA, is a Senior Associate in the Education Studio at SWBR. Licensed in 2005, Chris has spent most of his career designing and managing projects for colleges and universities. His work spans 15 campuses and ranges from small renovations to new buildings, including several non-gender-specific restroom facilities. Through this experience, Chris has gained a deep understanding of the critical factors influencing restroom design – including code requirements, societal influences and economic factors. Chris earned a Master of Architecture and a Master of Sciences in Civil Engineering / CM from the University of Illinois in 1999.



Juanita Larrabee has worked within the office of Facilities Planning, Design & Construction at SUNY Cortland since 2005, and was recently named Director. She is responsible for planning, architectural and engineering design, and construction throughout the campus. Her responsibilities include execution of the Facilities Master Plan according to campus strategic goals, oversight and management of the annual capital plan, and ensuring proper Building Codes management for issuance of building permits and certificates of occupancy. Juanita is currently enrolled in NYS Building Code certification program. Juanita has a Master's degree in Public Administration from the University at Binghamton, and a Bachelor's degree in Political Science and Government from SUNY Cortland.



Zach Newswanger was named Associate Vice President for Facilities Management in June of 2019. Prior to this, he was the Director of Facilities Operations and Services at SUNY Cortland since July of 2014. Zach is responsible for the maintenance and operation of the physical facilities and grounds of SUNY Cortland in order to provide a clean, attractive, safe, healthy, and productive environment for living, teaching, learning, playing, and working. The main campus consists of 40+ structures, over 2.6 million square feet of gross floor area, and 191 acres of main campus, which includes 50 acres of athletic fields. Zach has a B.S. in psychology from Lycoming College and a M.S. in rehabilitation counseling from the University of Scranton.

Learning Objectives

1. Understand religious, psychological and social factors influencing restroom and bathroom design, including the unintended consequences – both good and bad – of non-gender specific facilities.
2. Understand the code aspects of non-gender specific spaces, including the variance process and how the Building Code, ADAAG and ANSI A117.1 affect various different approaches.
3. Review recent case studies at different institutions.



Outdoor urinal in Paris (1865)

Consider:

- Compliance with ADAAG and ANSI A117.1 is a significant effort during design, construction and maintenance of facilities; and goes beyond design requirements for wheelchair users.
- In the United States:
 - About 1% (3.6 million) use a wheelchair
 - Another 3% (11.6 million) use a walking aid (cane, crutches, walker)



Gender Non-Conforming Population

- 2017 UCLA survey: 0.7% of teens aged 13 to 17 transgender
- 2018 study in *Pediatrics*: 2.7% TGNC (Transgender and Gender Non-Conforming)
- But others benefit from a different approach, too!



Religious

- Religious
 - Orthodox Judaism: halakha (Jewish law)
 - Modesty and assisting children / special needs is religious imperative.
 - According to one source, communal facilities separated by gender actually fall short of Jewish modesty standards, as well as dignity for those who need assistance.
 - Islam: Fiqh (Islamic jurisprudence)
 - Ritual purity / cleansing for prayer after using the restroom (“wudu”)

Psychological

- Inability / discomfort in using facilities
 - Paruresis (“shy bladder”) and Parcopresis (“shy bowel”)
 - Impacts an unknown number of the population (anywhere from 1% to 25%)
 - 1994 survey indicated that 6.6 percent (17 million people) of the population has fear of using the toilet away from home
 - Benefit of increased privacy!



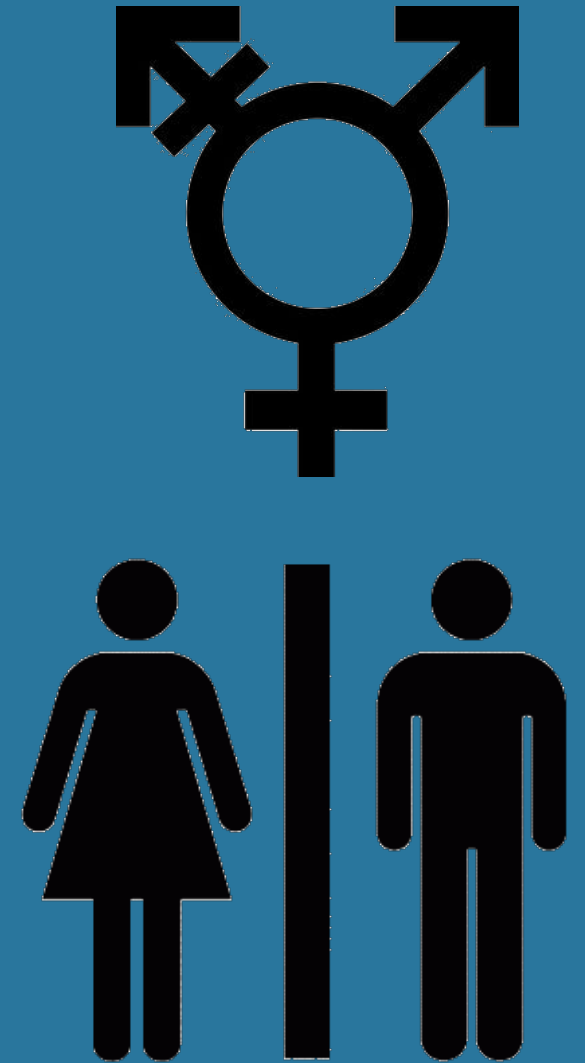
Social

- Advocacy for inclusivity
VS.
- Conservative push-back
- Safe2Pee.org
- www.Cortland.edu/offices/fos/initiatives-and-policies/



Code points – BCNYS 2017

- PCNYS 403.2 Exceptions: Where are UNISEX facilities allowed?
 1. Dwelling and sleeping units
 2. Total occupant load ≤ 15
 3. Mercantile (“M”) where occupant load ≤ 100
 4. §PC403.2.1: Family or assisted-use facilities serving as separate facilities. (For fixture counts where only 1 WC is required per sex for a building or tenant space.)
- 50/50 mix required unless:
 - **§PC403.1.1 Exception:** The total occupant load shall not be required to be divided in half where *approved*¹ statistical data indicates a distribution of the sexes of other than 50 percent of each sex.
 1. *acceptable to the Building Official*



Variance Application

Request relief from:

- **§PC403.2 Separate facilities** – requires separate facilities for each sex
- **§BC1010.1.1 Size of doors** – 32” clear width min. is required for means of egress doors.

Allowable reasons for a variance:

1. would create an excessive and unreasonable economic burden
2. would not achieve its intended objective
3. **would inhibit achievement of some other important public policy**
4. would be physically or legally impracticable
5. would be unnecessary in light of alternatives which, without a loss in the level of safety, achieve the intended objective of the code
6. would entail a change so slight as to produce a negligible additional benefit consonant with the purpose of the code.



Building Standards and Codes

New York State
Department of State
Division of Building Standards
and Codes
One Commerce Plaza
99 Washington Avenue, Suite 1160
Albany, NY 12221-0001
(518) 474-4073
Fax: (518) 474-5788

Application for Variance or Appeal

VARIANCE*

To be eligible for a variance you must document which of the following apply:

Strict compliance with sections above would entail practical difficulties, unnecessary hardship or would otherwise be unwarranted because such (check the statements that apply and provide appropriate documentation):

- | | |
|---|---------------------------------------|
| ☐ 1. would create an excessive and unreasonable economic burden; | Reasons are attached in EXHIBIT _____ |
| ☐ 2. would not achieve its intended objective; | Reasons are attached in EXHIBIT _____ |
| ☐ 3. would inhibit achievement of some other important public policy; | Reasons are attached in EXHIBIT _____ |
| ☐ 4. would be physically or legally impracticable; | Reasons are attached in EXHIBIT _____ |
| ☐ 5. would be unnecessary in light of alternatives which, without a loss in the level of safety, achieve the intended objective of the code; | Reasons are attached in EXHIBIT _____ |
| ☐ 6. would entail a change so slight as to produce a negligible additional benefit consonant with the purpose of the code. | Reasons are attached in EXHIBIT _____ |

APPEAL

An appeal is a request for a Board of Review to review any order or determination or the failure within a reasonable time to make any such order or determination by a Code Enforcement Official. Describe the order or determination and explain specifically why you believe the order or determination, or failure to act is incorrect, improper or otherwise unwarranted. This should include specific explanations relative to code sections cited.

- A. An order or determination or the failure to make said order or determination in a timely fashion; or the failure to issue a permit or other document in a timely fashion is appealed. A copy of the order or determination is attached as EXHIBIT _____. Briefly describe the order or determination (additional sheets may be used if necessary)

- B. Attached as EXHIBIT _____ are reasons why the order or determination should be reversed or modified or why other relief should be fashioned so as to do justice among the parties.

Variance Application

Best to have a policy statement from Title IX office or similar campus-adopted policy.

3. would inhibit achievement of some other important public policy



Building Standards and Codes

New York State
Department of State
Division of Building Standards
and Codes
One Commerce Plaza
99 Washington Avenue, Suite 1160
Albany, NY 12221-0001
(518) 474-4073
Fax: (518) 474-5788

Application for Variance or Appeal

VARIANCE*

To be eligible for a variance you must document which of the following apply:

Strict compliance with sections above would entail practical difficulties, unnecessary hardship or would otherwise be unwarranted because such (*check the statements that apply and provide appropriate documentation*):

- | | |
|---|---------------------------------------|
| ☐ 1. would create an excessive and unreasonable economic burden; | Reasons are attached in EXHIBIT _____ |
| ☐ 2. would not achieve its intended objective; | Reasons are attached in EXHIBIT _____ |
| ☐ 3. would inhibit achievement of some other important public policy; | Reasons are attached in EXHIBIT _____ |
| ☐ 4. would be physically or legally impracticable; | Reasons are attached in EXHIBIT _____ |
| ☐ 5. would be unnecessary in light of alternatives which, without a loss in the level of safety, achieve the intended objective of the code; | Reasons are attached in EXHIBIT _____ |
| ☐ 6. would entail a change so slight as to produce a negligible additional benefit consonant with the purpose of the code. | Reasons are attached in EXHIBIT _____ |

APPEAL

An appeal is a request for a Board of Review to review any order or determination or the failure within a reasonable time to make any such order or determination by a Code Enforcement Official. Describe the order or determination and explain specifically why you believe the order or determination, or failure to act is incorrect, improper or otherwise unwarranted. This should include specific explanations relative to code sections cited.

- A. An order or determination or the failure to make said order or determination in a timely fashion; or the failure to issue a permit or other document in a timely fashion is appealed. A copy of the order or determination is attached as EXHIBIT _____. Briefly describe the order or determination (*additional sheets may be used if necessary*)

- B. Attached as EXHIBIT _____ are reasons why the order or determination should be reversed or modified or why other relief should be fashioned so as to do justice among the parties.

Coming soon!

Two **new exceptions** to BCNYS 2902.1.1 / PCNYS

For Fixture Counts:

Exceptions:

1. The total *occupant load* shall not be required to be divided in half where *approved* statistical data indicate a distribution of the sexes other than 50 percent of each sex.
2. **Where multi-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100%, based on total occupant load. In such multi-user facilities, each fixture type shall be in accordance with ICC A117.1 and each urinal that is provided shall be located in a stall.**
3. **Distribution of the sexes is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 2901.1.2.**

Coming soon!

BCNYS 2902.1.2 / PCNYS:

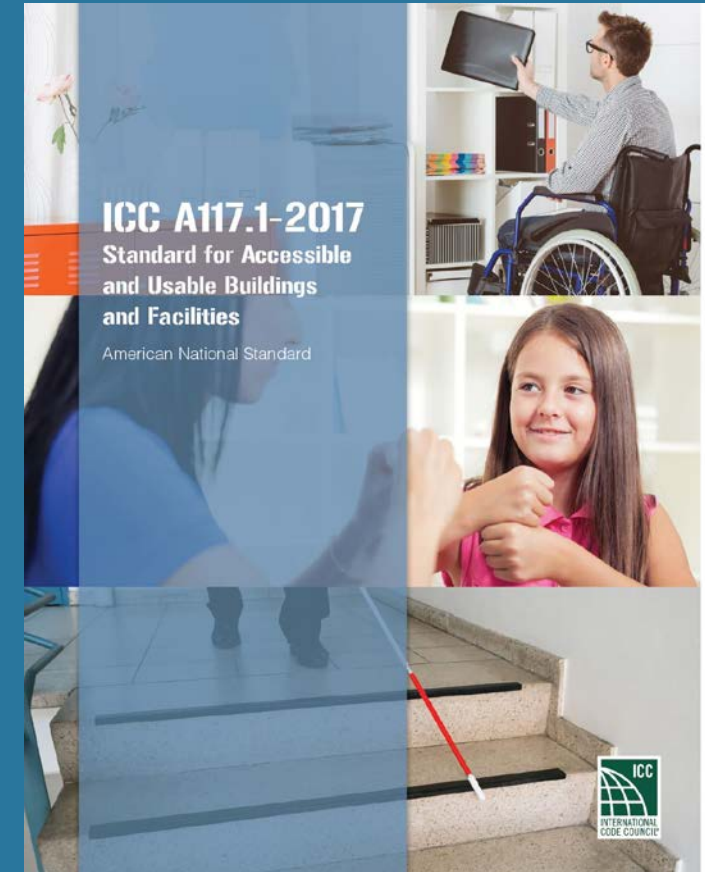
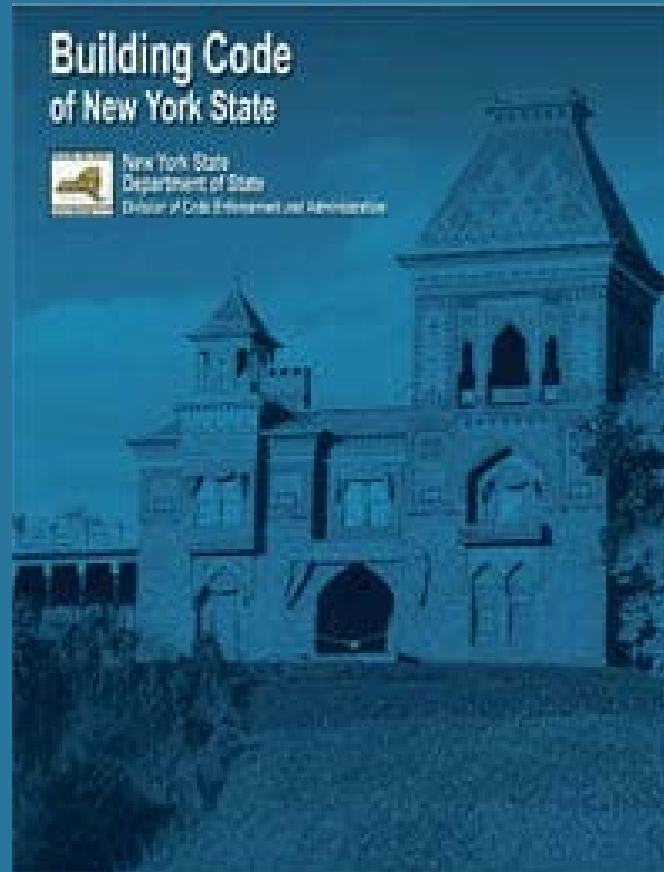
Three additional exceptions to separate facilities:

Exceptions:

4. Separate facilities shall not be required in business occupancies in which the maximum occupant load is 25 or fewer.
5. Separate facilities shall not be required to be designated by sex where single-user toilet rooms are provided in accordance with section 2902.1.2.
6. Separate facilities shall not be required where rooms having both water closets and lavatory fixtures are designed for use by both sexes and privacy for water closets are installed in accordance with section 1209.3.1. Urinals shall be located in an area visually separate from the remainder of the facility or each urinal that is provided shall be located in a stall.

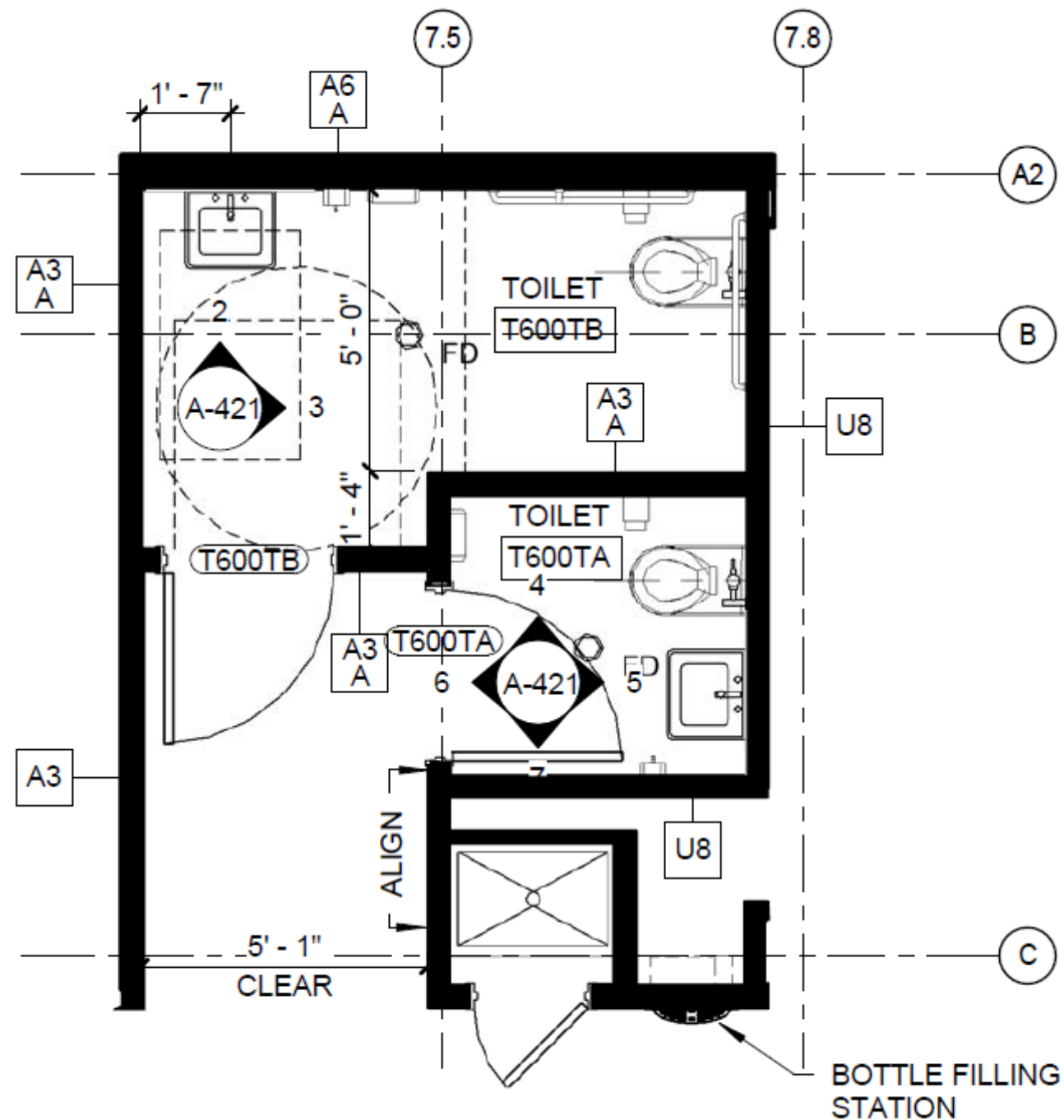
Code Compliance

- Fundamental difference: cluster vs. compartments
- Future requirements – ANSI A117.1 - 2017



Code Compliance – Cluster of Single-User Restrooms

- 50% must be accessible
- Observe all fixture clearances, including turning space



Code Compliance - Compartments

Toilet compartments in shared restroom:

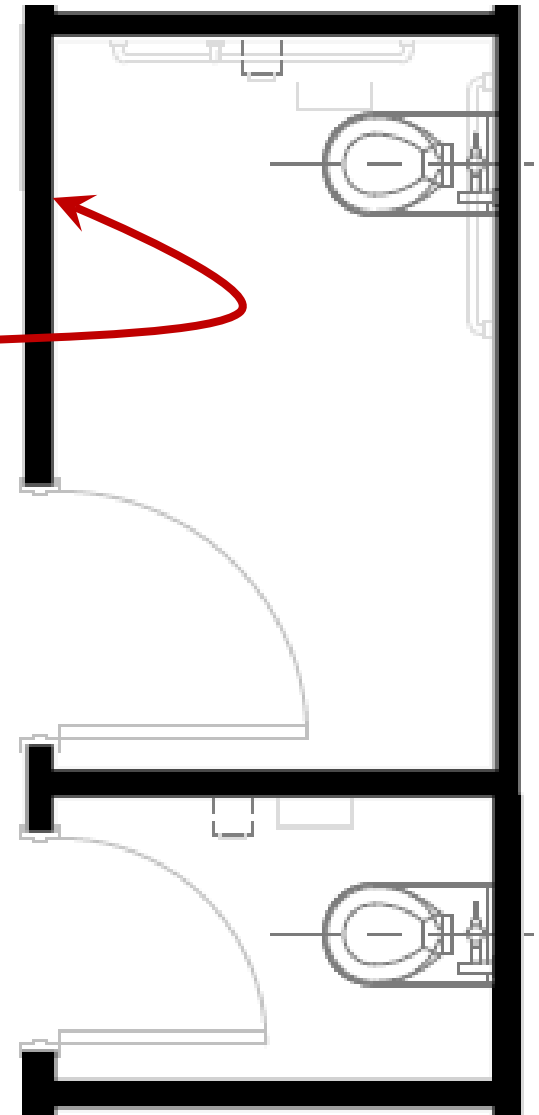
§BC1210.3 Privacy.

Privacy at water closets and urinals shall be provided in accordance with Sections BC1210.3.1 and BC1210.3.2.

§BC1210.3.1 Water closet compartment.

Each water closet utilized by the public or employees shall occupy a separate compartment with walls or partitions and a door enclosing the fixtures to ensure privacy.

Walls CAN define a toilet compartment!



Code Compliance - Compartments

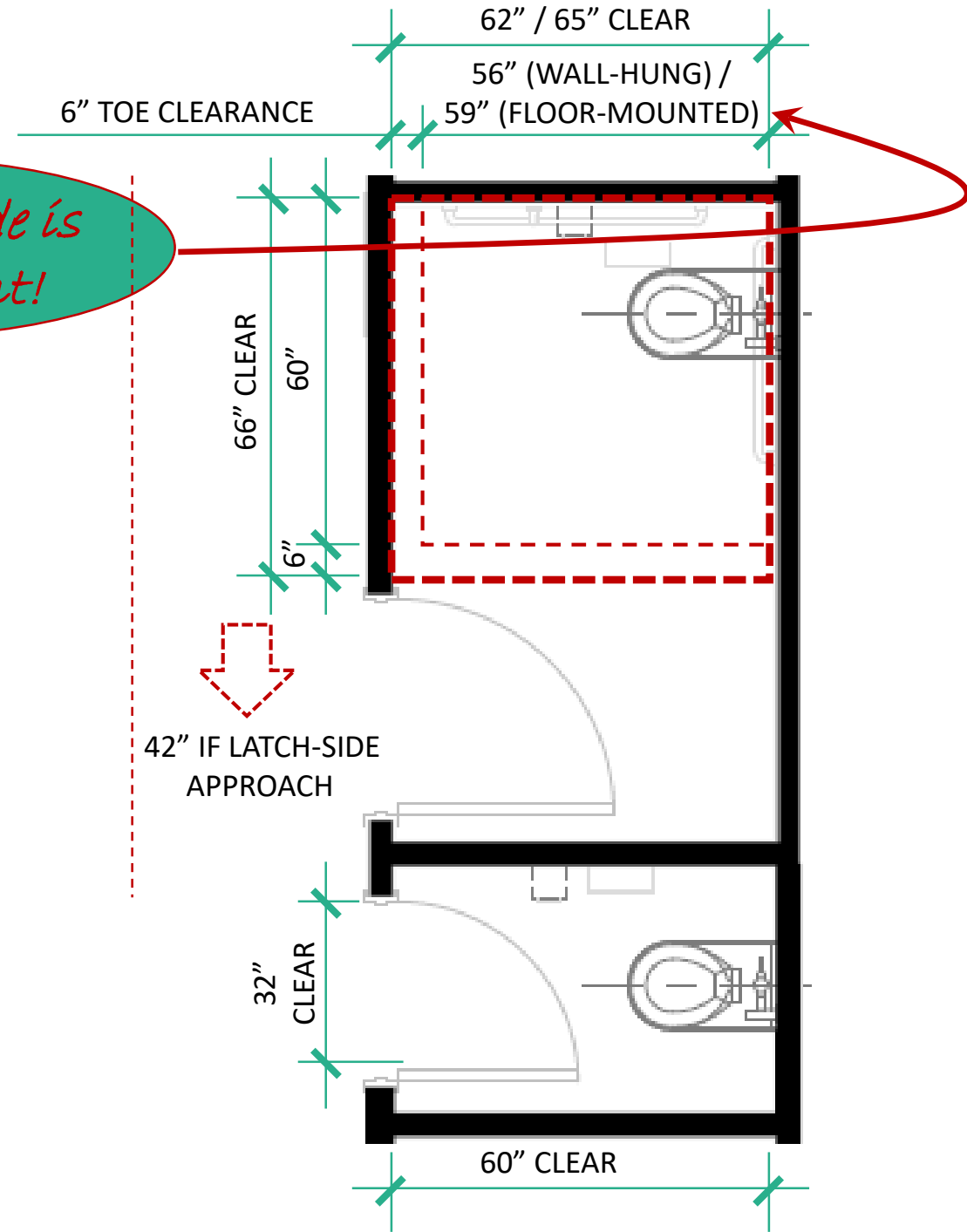
Accessible Compartment:

- Fixture clearance: ADD 6" for toe clearance
- Doors must be self-closing (604.9.3)
- Doors must comply with typical clearance requirements
 - 42" Clear in front of push-side of door is acceptable (for side approach towards latch side)

Standard Compartment:

- Fixture clearance: §PC405.3.1
 - 15" min. to each wall
 - 60" clear in front (floor mount)
- Door: minimum CLEAR width = 32" (§BC1010.1.1)
 - Smaller doors seem appropriate, but may require a variance.

Plumbing code is more stringent!



ANSI A117.1 - 2017

*COMING SOON...**

Clear Floor Space

Increases from 30" x 48" to 30" x 54" in new buildings.

Turning Space

Circular increases from 60" to 67" in new buildings.
(remains 60" for existing buildings.)

Limits knee/toe clearance overlap in both cases.
("T" clearance also increases for new buildings.)

Ambulatory Compartment

2017 gives a range of 35"-37" in width. (2009 was 36" with NO +/-)

Compartment Toe Clearance

Increases from 6" to 8" beyond compartment clearance.
Child and adult are now both 12" from floor.

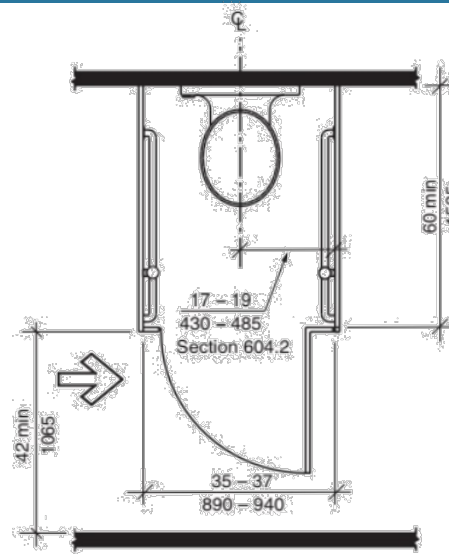
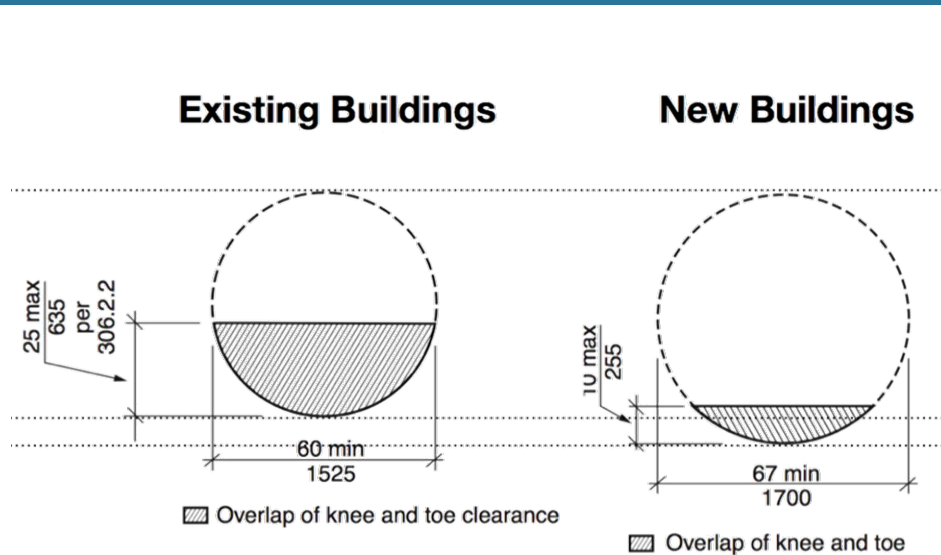


FIGURE 604.10.1
AMBULATORY COMPARTMENT

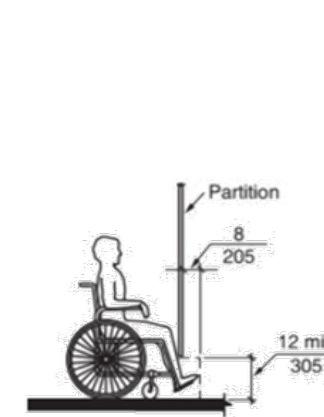


FIGURE 604.9.5(A)
TOE CLEARANCE - ELEVATION

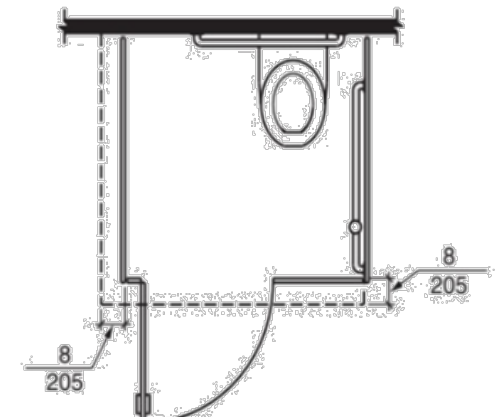


FIGURE 604.9.5(B)
TOE CLEARANCE - PLAN

604.9.5.1 Toe clearance at wheelchair accessible toilet compartments.

ANSI A117.1 - 2017

COMING SOON...*

- * January 2020 – New York State will vote on adoption of new model codes based on ICC-2018. ICC-2018 still references A117.1 - 2009 . ICC-2021 references A117.1-2017...so it's possible these will come into effect in 2023. (2017 can be adopted as a local amendment – best to check with your AHJ.)

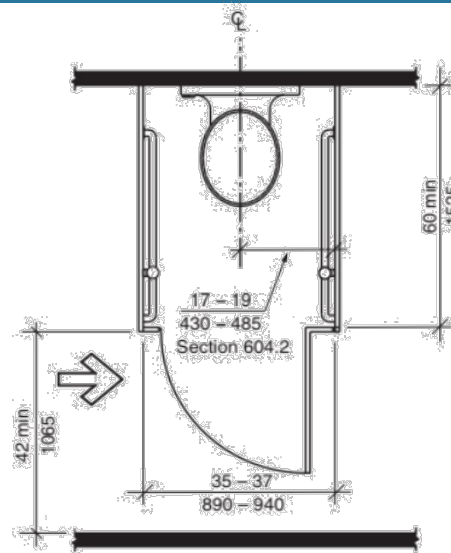
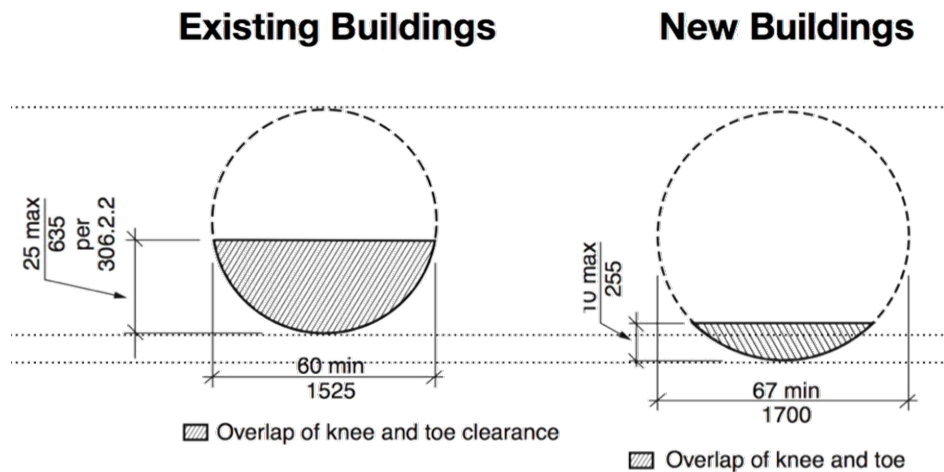


FIGURE 604.10.1
AMBULATORY COMPARTMENT

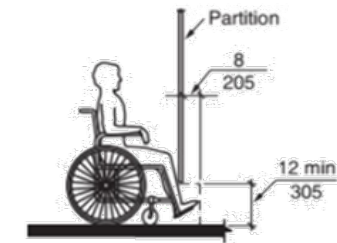


FIGURE 604.9.5(A)
TOE CLEARANCE - ELEVATION

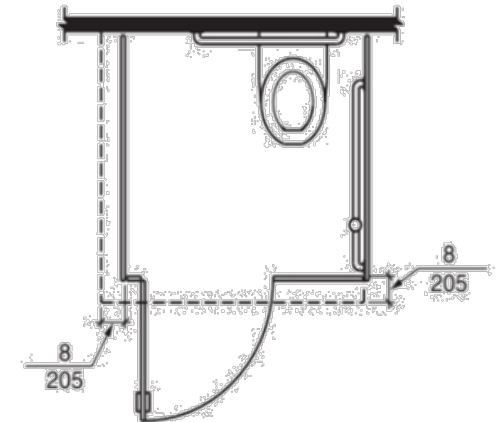


FIGURE 604.9.5(B)
TOE CLEARANCE - PLAN

604.9.5.1 Toe clearance at wheelchair accessible toilet compartments.

Case studies

Corey Union
SUNY Cortland

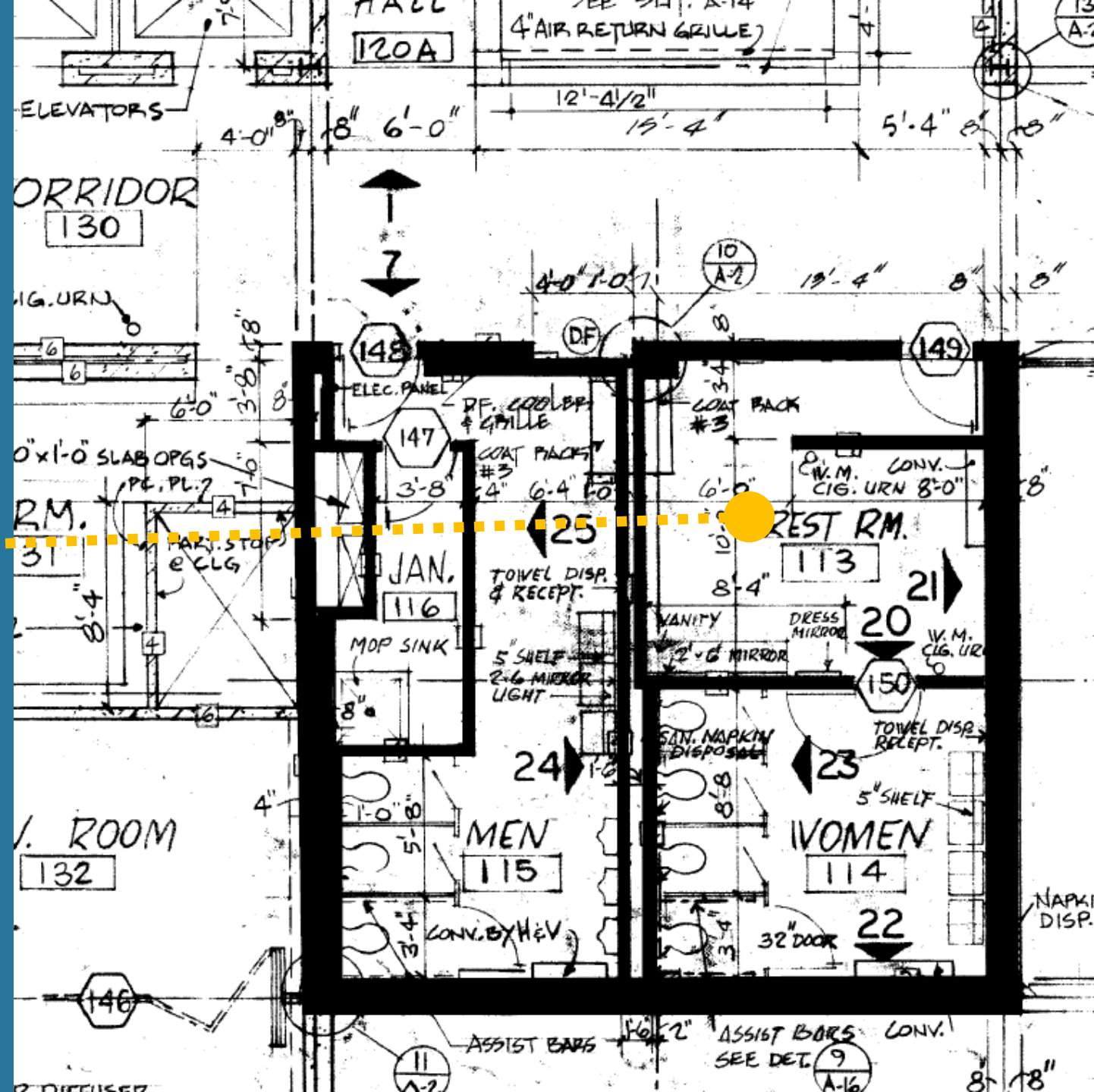
Carlson Library
University of Rochester

Veterinary
Research Tower
Cornell University



Corey Union

SUNY Cortland



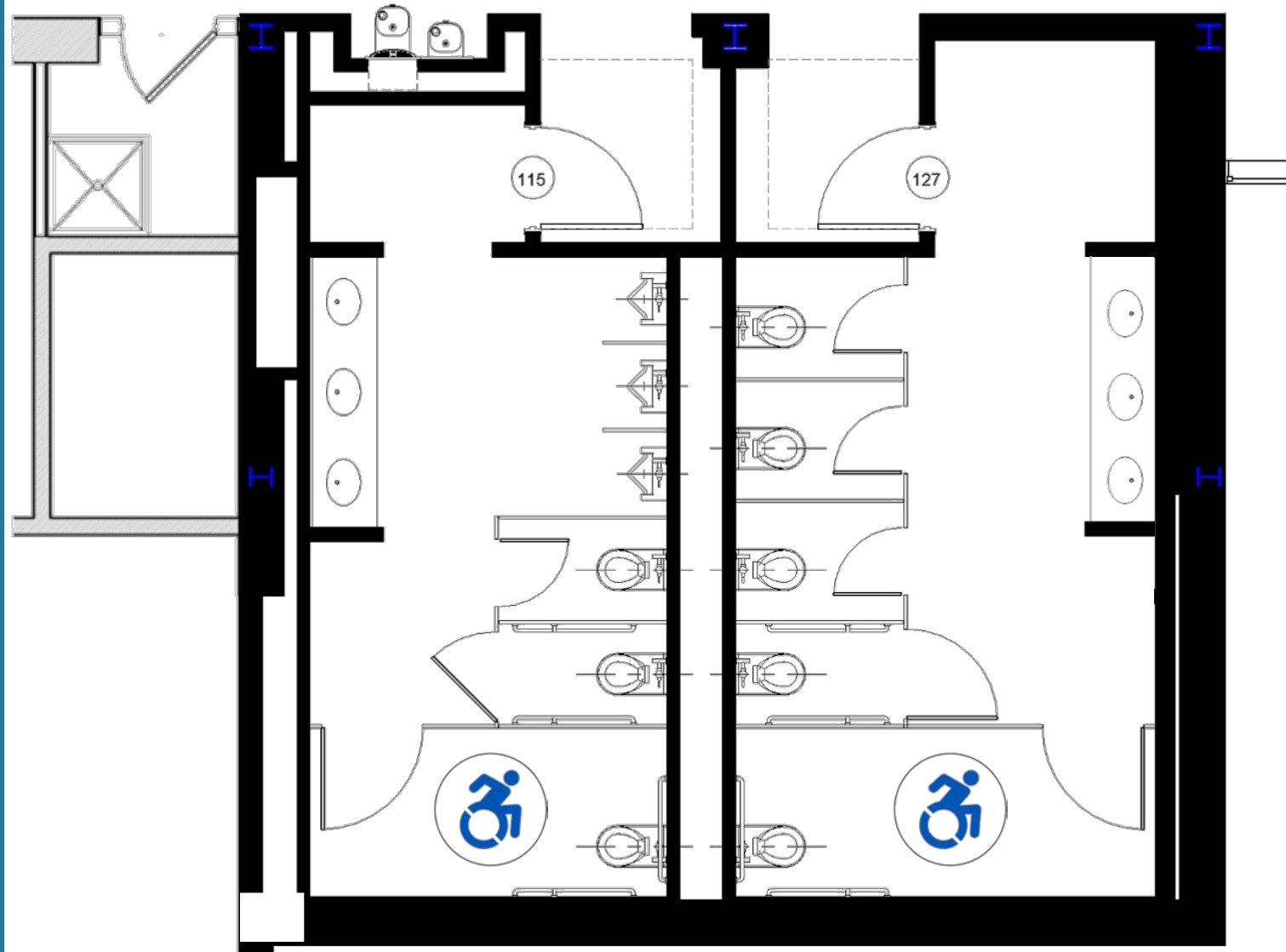
Fixture	Quantity
WC's / Urinal	11 (6M / 4F)
Lavatories	7 (3M / 4F)
Hand Dryers	4 (2M / 2F)

Conventional

Conventional Men's and Women's restroom

- Fixture layout shown maximized based on the available floor area.

Fixture	Quantity
WC's / Urinal	11 (6M / 5F)
Lavatories	6 (3M / 3F)
Hand Dryers	4 (2M / 2F)

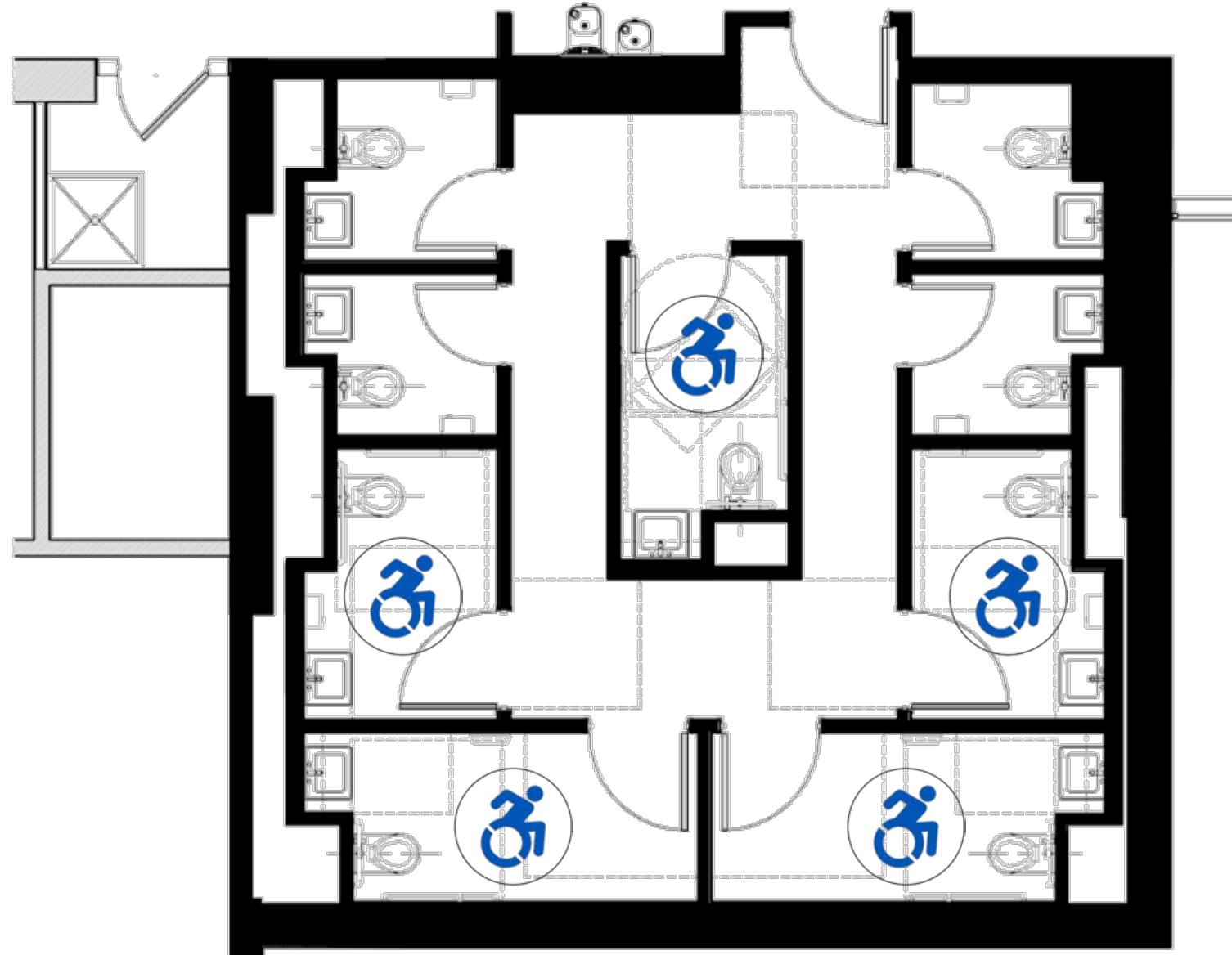


Cluster

Cluster of single-user toilet rooms

- 50% must be wheelchair-accessible
- No variance (if traditional male/female signs are provided)

Fixture	Quantity
WC's	9
Lavatories	9
Hand Dryers	9

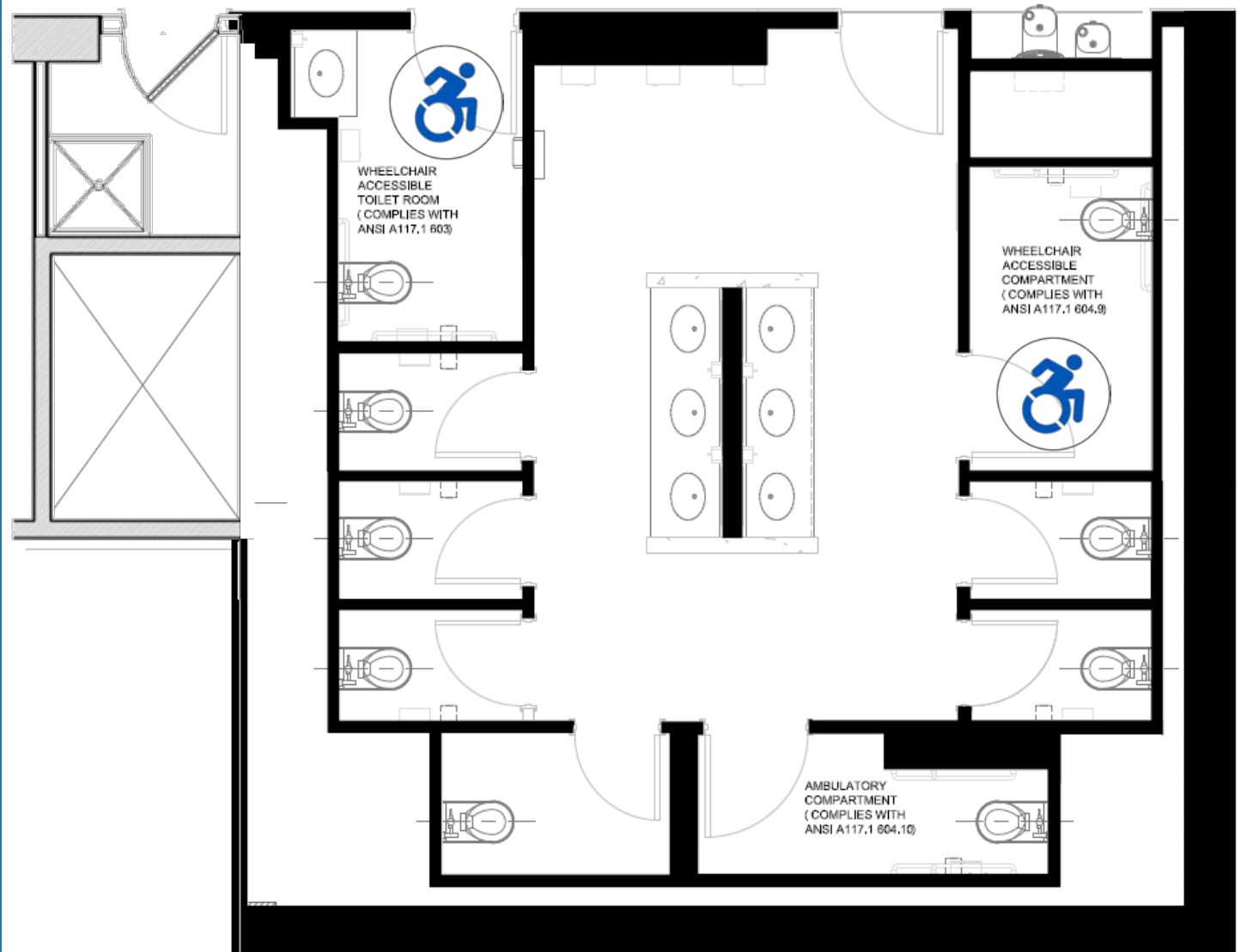


Compartments

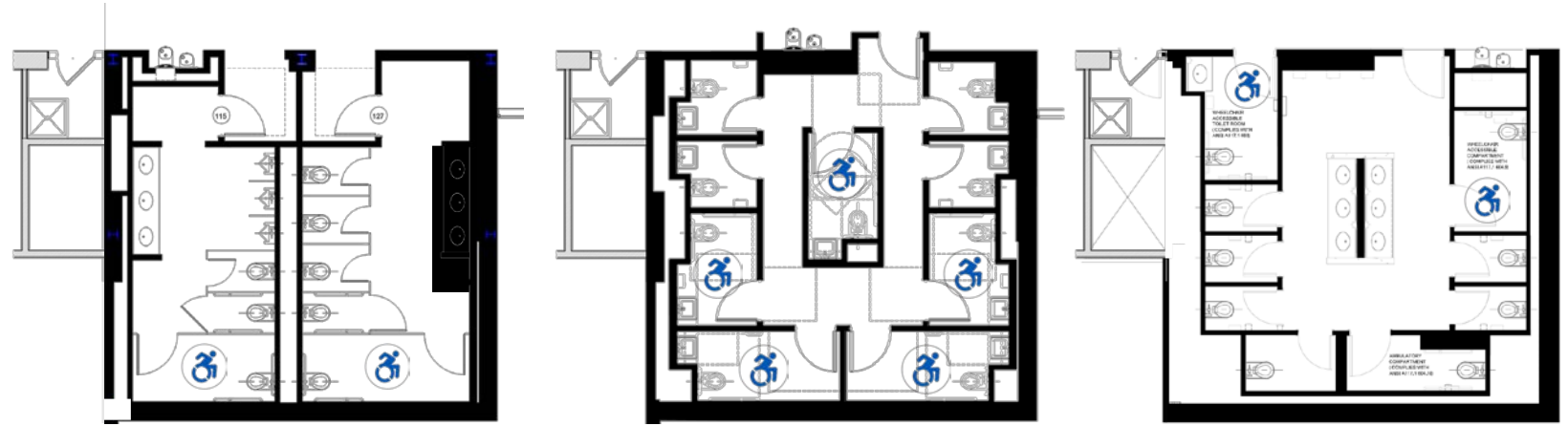
Non-gender specific restroom with private compartments

- §BC1210.3 definition of “compartments” applies
- 5% must be wheelchair accessible
- If 6 or more compartments, another 5% must be ambulatory accessible

Fixture	Quantity
WC's	9
Lavatories	6
Hand Dryers	3



Pros/Cons

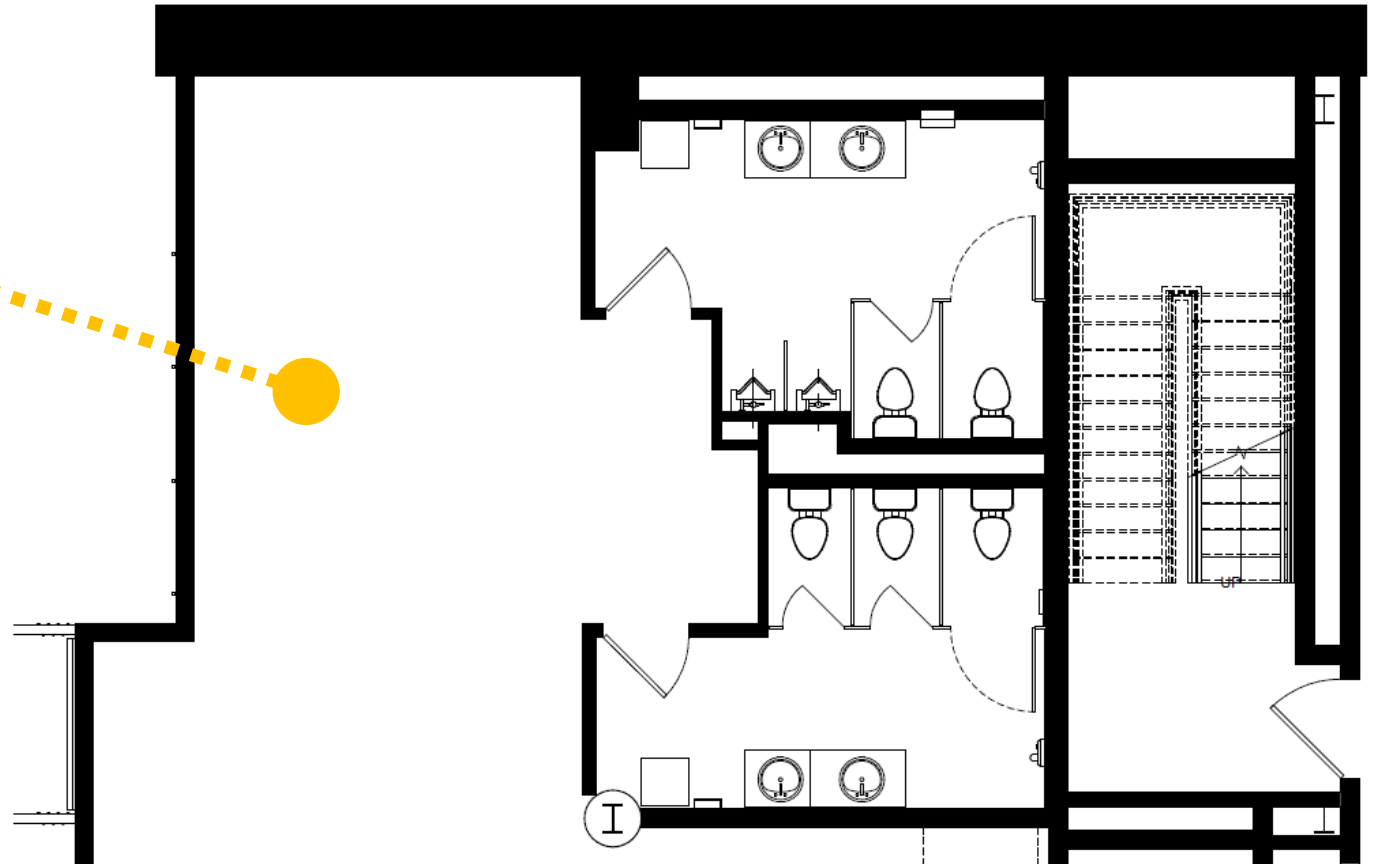


	Conventional	Cluster	Compartments
Complies with current codes	Yes	Yes (with M/F signage)	Variance required
Conforms with traditional social norms	Yes	Yes (with M/F signage)	No
Accommodates NGC population	Not very well	Yes	Yes
Accommodates persons with disabilities	<i>Depends on configuration, benefits and drawbacks to all options</i>		
Efficient use of fixtures	Somewhat	Least efficient	Most efficient
Relative construction cost	Least expensive	Most expensive	In between
Ease of maintenance – staff perspective	Easiest*	Most difficult*	In between*
Impact of maintenance / cleaning	Restroom closed	Mostly open	Mostly open

Carlson Library

University of Rochester

Fixture	Quantity
WC's / Urinal	7 (4M / 3F)
Lavatories	4 (3M / 3F)
Hand Dryers	4 (2M / 2F)



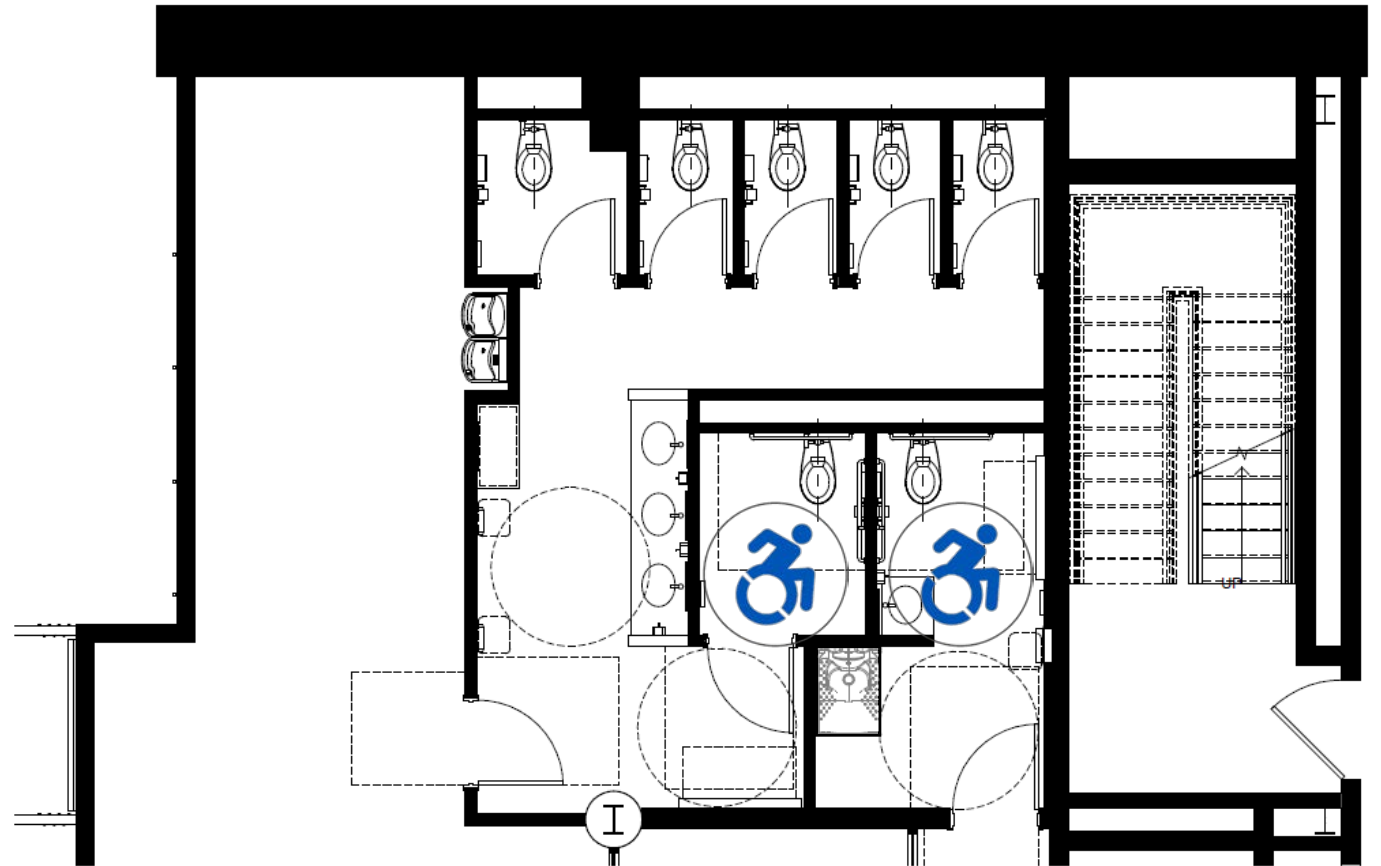
Carlson Library

University of Rochester

Non-gender specific restroom with private
compartments

Separate single-user accessible / assisted
use restroom, with wudu station.

Fixture	Quantity
WC's	7
Lavatories	4
Hand Dryers	3



Carlson Library

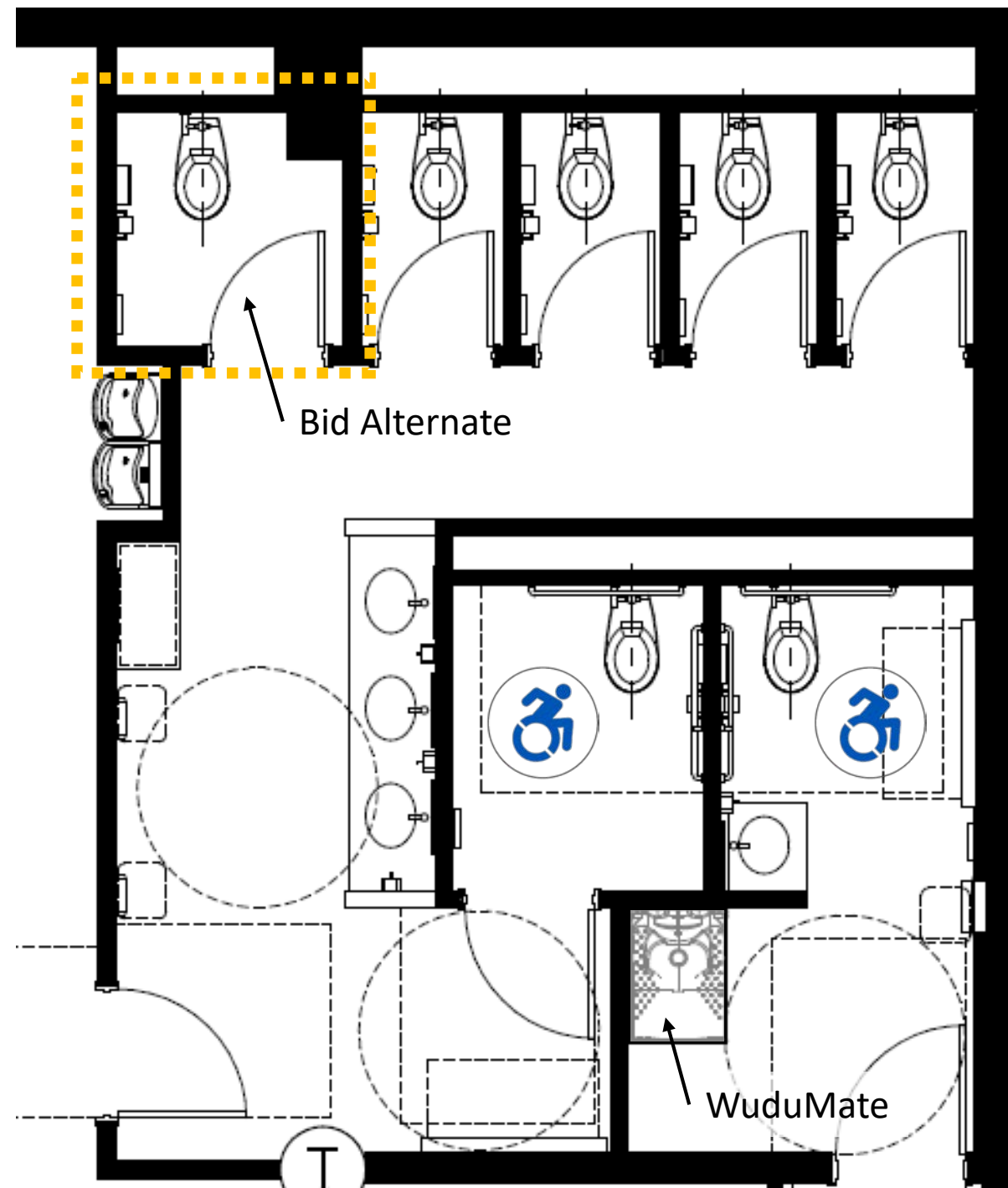
University of Rochester

Non-gender specific restroom with private compartments

Separate single-user accessible / assisted use restroom, with wudu station.

(Note – spring hinges are not considered closers.)

Fixture	Quantity
WC's	7
Lavatories	4
Hand Dryers	3



Carlson Library

University of Rochester

WuduMate provided for washing of feet



© Candace Sutton/ Daily Mail



Cornell University

-
- This architectural floor plan shows a rest area with two restrooms and a bottle filling station. The layout is defined by grid lines 7.5 and 7.8 horizontally, and A2, B, and C vertically. Key features include:
- Restroom 1 (Top):** Labeled "TOILET T600TB", it contains a toilet, a sink, and a wheelchair symbol. A dashed line indicates a path with a 5'-0" dimension. A diamond-shaped area is labeled "A-421".
 - Restroom 2 (Middle):** Labeled "TOILET T600TA", it contains a toilet, a sink, and a wheelchair symbol. A dashed line indicates a path with a 5'-0" dimension. A diamond-shaped area is labeled "A-421".
 - Bottle Filling Station:** Located at the bottom right, labeled "BOTTLE FILLING STATION".
 - Clearance:** A 5'-1" CLEAR area is indicated at the bottom left.
 - Dimensions:** Various dimensions are noted, including 1'-7", 1'-4", and 5'-0".
 - Labels:** "A3 A" labels are placed near the restrooms, and "U8" labels are placed near the bottle filling station.

Veterinary Research Tower

Cornell University

From: Chad [REDACTED]@cornell.edu>

Sent: Friday, March 1, 2019 8:05 AM

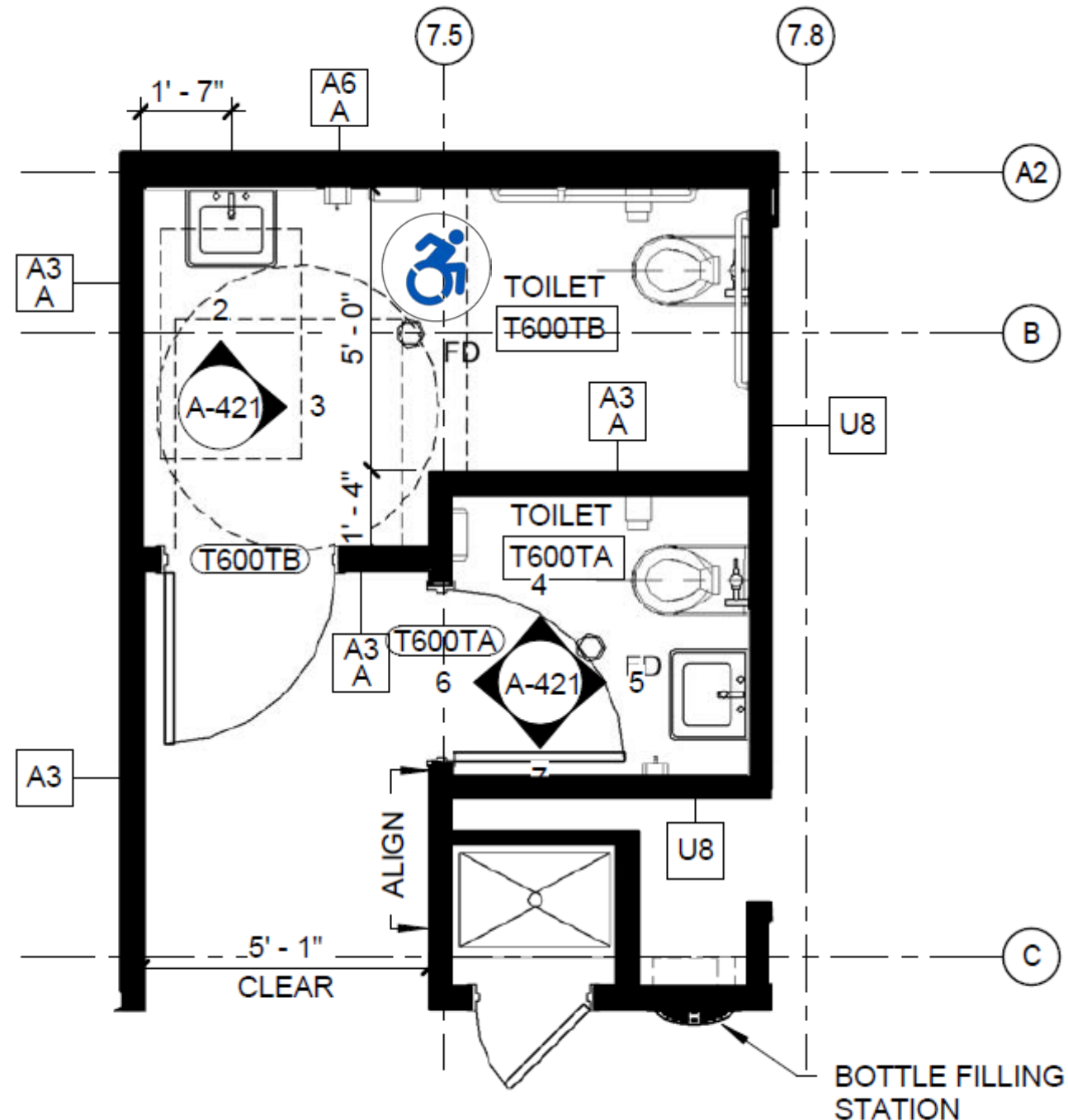
To: Chris Jahn <cjahn@swbr.com>

Subject: RE: VRT restroom design

Hi Chris,

I never heard any disparaging remarks regarding the actual design. Which I think turned out great. The only issue that was mentioned to me was training a certain gender to put the toilet seat up... and then down... and maybe improve their aim. Two things that I'm not sure how you would address design wise.

Chad



What about Urinals?

- To date, we have not provided urinals within individual compartments.
- Proposed code allows for a separate area within a communal facility for urinals.
- Concerns raised by owners during design conversations about their location and the experience of users, particularly (but not exclusively) females, of using a compartment or restroom that contains both a WC and a Urinal
- Implications:
 - Water use:
 - can achieve greater efficiency with pint-flush urinals vs. dual-flush WC's
 - Construction cost / maintenance cost
 - It depends – are urinals substituted for WC's in some compartments or are they being provided in addition to WC's within compartments?



In Summary...

1. Increased privacy that is inherent in inclusive restroom design benefits more than just those who are non-gender conforming.
2. Unless identifying separate male and female facilities specifically, a variance from the NYS Building Code will be required for most facilities (until January?).
3. Feedback from facilities has generally been favorable, although issues that have been raised will need to be addressed as best practices continue to be developed.



Outdoor urinal in Paris (2018)

