

Figure 1
Wheelchair or Mobility Aid Envelope

ADA Regulation 4.2.4.1 Size and Approach

The minimum clear floor or ground space required to accommodate a single, stationary wheelchair and occupant is 30 in by 48 in.

A standard wheelchair is 30" by 48".
Some of the larger powerchairs are 27' x 44".

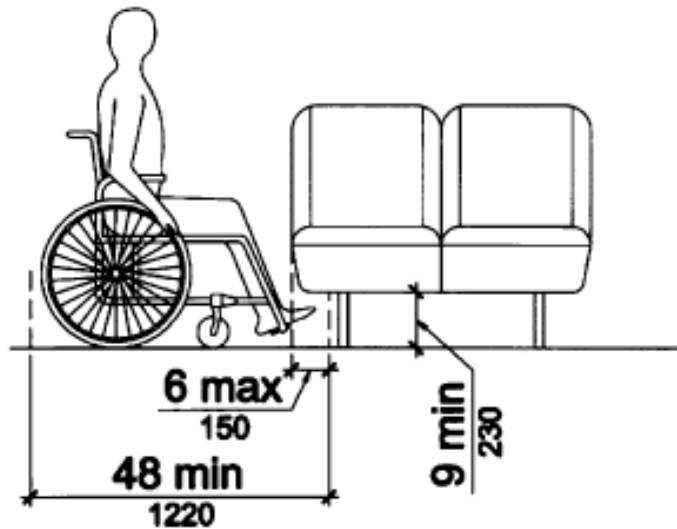
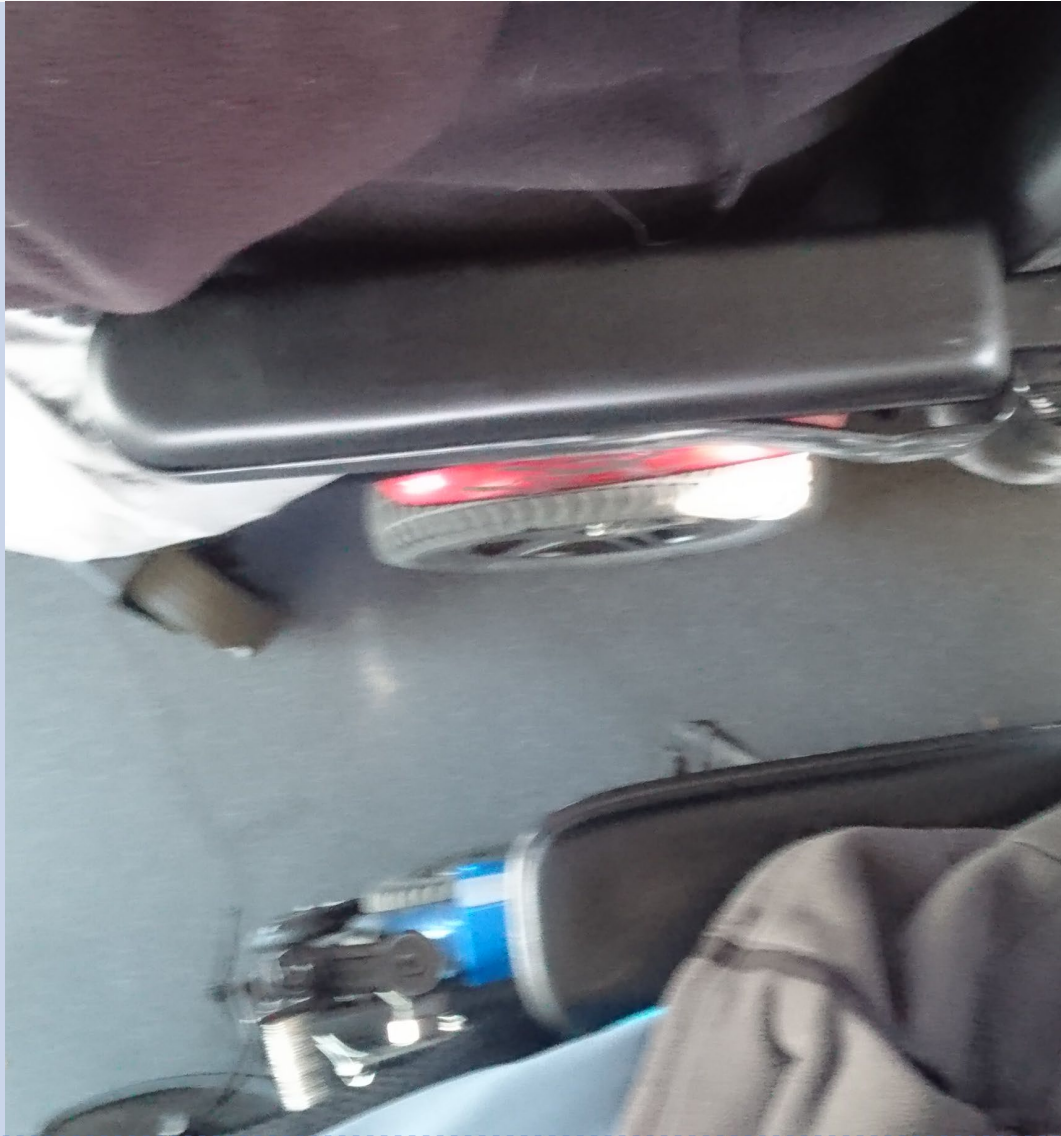


Figure 2
Toe Clearance Under a Fixed Element



In the new Gillig buses, the wheelchair securement areas are staggered.

In the old Gillig buses the securement areas were across the aisle from each other, when both areas were occupied, the aisle width was decreased to approximately 4 inches.

Gillig Bus Blueprint

GILLIG PARTS	QTY	GILLIG PARTS	QTY
STRAPS, W/C BELTS	1	STANCHION, REAR (RIGHT SIDE)	2
BAR, WINDOVA, 48" G	1	STANCHION, TRVS. @ 3RD STEP	2
STANCHION, STREETSIDE FWD WHEELWELL	1	STANCHION, TRVS. @ 2ND STEP	1
STANCHION, CURBSIDE FWD WHEELWELL BACK	1	STANCHION, TRVS. @ 1ST STEP TO 4.0 R/H W/OP	1
MODERNITY, 1.0 SINGLE OFF-SET FWD RD	1	STANCHION, W/C BARRIER, NARROW	2
PANEL, MODERNITY, 3RD STEP, C. SIDE	1		

NOTES:

7. TO MAXIMIZE OCCUPANT CRASH PROTECTION AND REDUCE THE POTENTIAL FOR SIGNIFICANT INJURY TO PASSENGERS SEATED IN THE FIRST FORWARD FACING SEATS IMMEDIATELY FORWARD OF THE ADA AREA, GILLIG REQUIRES EXTENDED 1.1 THIS PLACEMENT OF A BARRIER FORWARD OF THESE SEATS. 1.2 USE OF A GRAB/STANCHION POLE FOR THE AISLE SEAT AND WALL MOUNTED GRAB HANDLE FOR THE OUTWARD SEAT OR 1.3 SEAT BELTS ON BOTH THESE SEATS.

...CONT. NOTES:

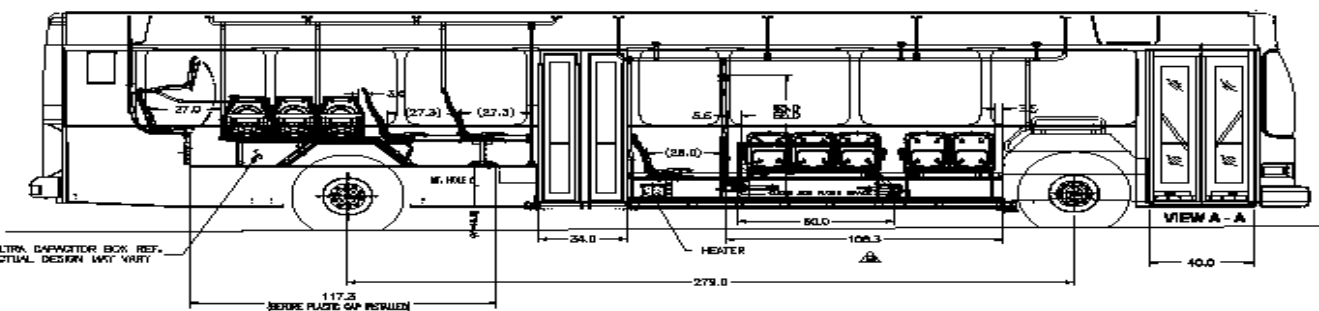
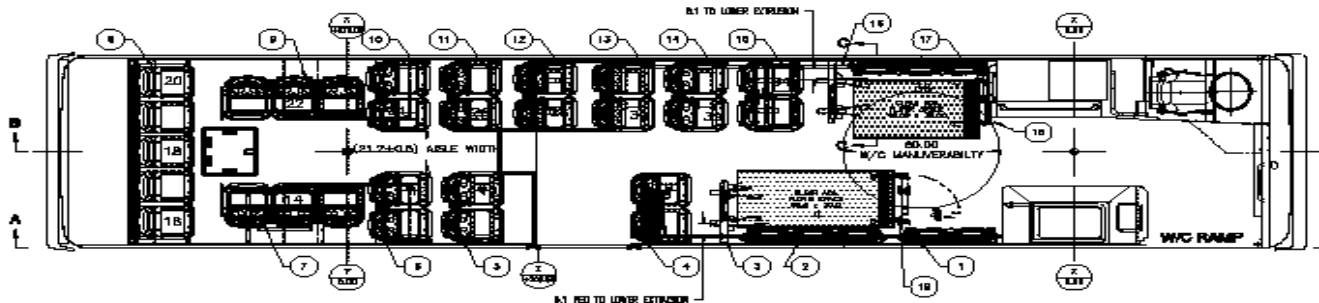
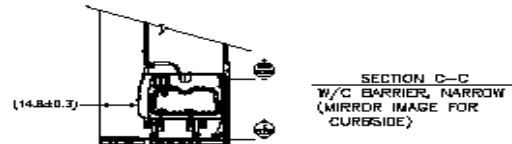
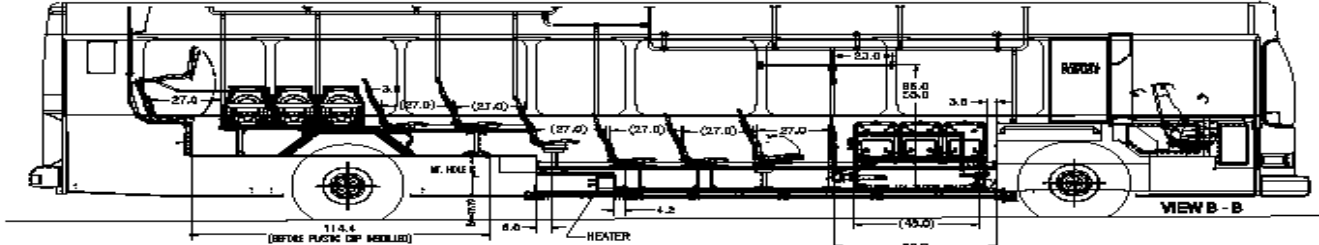
- ALL DIMENSIONS ARE IN INCHES.
- FLOORING LAYOUT: SEE FL-8752/80B7.
- THIS DRAWING TO BE USED FOR SEAT INSTALLATION. ALL OTHER GRAPHICS ARE SHOWN FOR REFERENCE ONLY AND THE FINAL DESIGN MAY VARY.

SEAT AND RESTRAINT NOTES:

- SEATS & RESTRAINT BELTS MUST MEET FMVSS 208 & 302 STANDARDS.
- GRAB HANDLE MATERIAL: STAINLESS STEEL.
- W/C BELTS AND RETRACTORS: Q'STRAIT.
- SEAT INSERT: 1.0 BOTTOM AND .50 BACK PADDING.
- CANTILEVERED SEATS SHALL HAVE NO SHROUDS.
- REF: FOR OTHER SEAT DETAILS NOT SHOWN, SEE PURCHASING ORDER SPECIFICATION SHEET.
- HIP TO KNEE SHOWN IS BASED ON .50 BOTTOM INSERT. HIP TO KNEE WITH 2.0 BOTTOM INSERT WILL VARY.

REVISIONS

NO.	DATE	DESCRIPTION	BY	DATE
1	08/15/17	RELEASED FOR PRODUCTION PER PO# FL-8752	LD/MSD	08/15/17
2	08/16/17	ACCORDED VERBOSIS CHANGES TO 100.3	MSD	08/16/17



New Design Seat Layout

QTY	DESCRIPTION	UNIT	REMARKS
19	OPT F. RATING SW W/ LOCK-N-HOLD SW, STORED POSITION AS SHOWN, NO RESTRNTS ONLY		
18	OPTION H L.H. WHEELWELL MOUNTED		
17	W/C FLIP-UP, 2" ARMREST, TOUCH PAD (INSIGHT NARROW)		
16	W/C BARRIER, NARROW (2) PED, P1=8.0, P2=14.0, E=8.12		
15	INDIVIDUAL FLIP-UP, (2) PED, P1=10.0, P2=16.0, E=8.12		
14			
13			
12			
11	(2) PED, P1=10.0, P2=16.55, E=8.12		
10	(1) PED, P0 = 26.25, E=8.12		
9	MOUNTED TO WHEEL WELL, MIN TRAVEL ±1.5		
8	AFT ARMREST, E=8.12		
7	HIRED SEAT 1-3-1, GAS SPRINGS W/ SINGLE LOCKING PIN		
6	AFT ARMREST, E=8.12		
5	MOUNTED TO WHEEL WELL, MIN TRAVEL ±1.5		
4	(1) PED, P0 = 26.25, E=8.12		
3	(1) PED, P0 = 29.0, HEATER UNDER SEAT, E=8.12		
2	W/C BARRIER, NARROW (2) PED, P1=8.0, P2=14.0, E=8.12		
1	W/C FLIP-UP, 2" ARMREST, TOUCH PAD (INSIGHT NARROW)		

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PASSENGERS

PASSENGER SEAT SUPPLIER:
AMERICAN SEATING CO.
PASSENGER SEAT MODELS:
VISION 18.0 WIDE RWD & AISLE FACING
INSIGHT NARROW 17.0 WIDE FOR ADA

185593-188532 (40) (03/28/17)

NOTE: SIGNATURE ON THIS DRAWING INDICATES CUSTOMER APPROVAL OF LAYOUT AND AGREEMENT THAT SAME IS IN COMPLIANCE WITH CUSTOMER'S SPECIFICATIONS. ONCE SIGNED THIS DRAWING BECOMES A PART OF CONTRACT # _____
PURCHASE ORDER # _____
SIGNED BY: _____
ACTING ON BEHALF OF AND WITH THE AUTHORITY OF _____

DATE: 02/13/17

GILLIG HAYWARD, CA
GILLIG LLC HAYWARD, CA

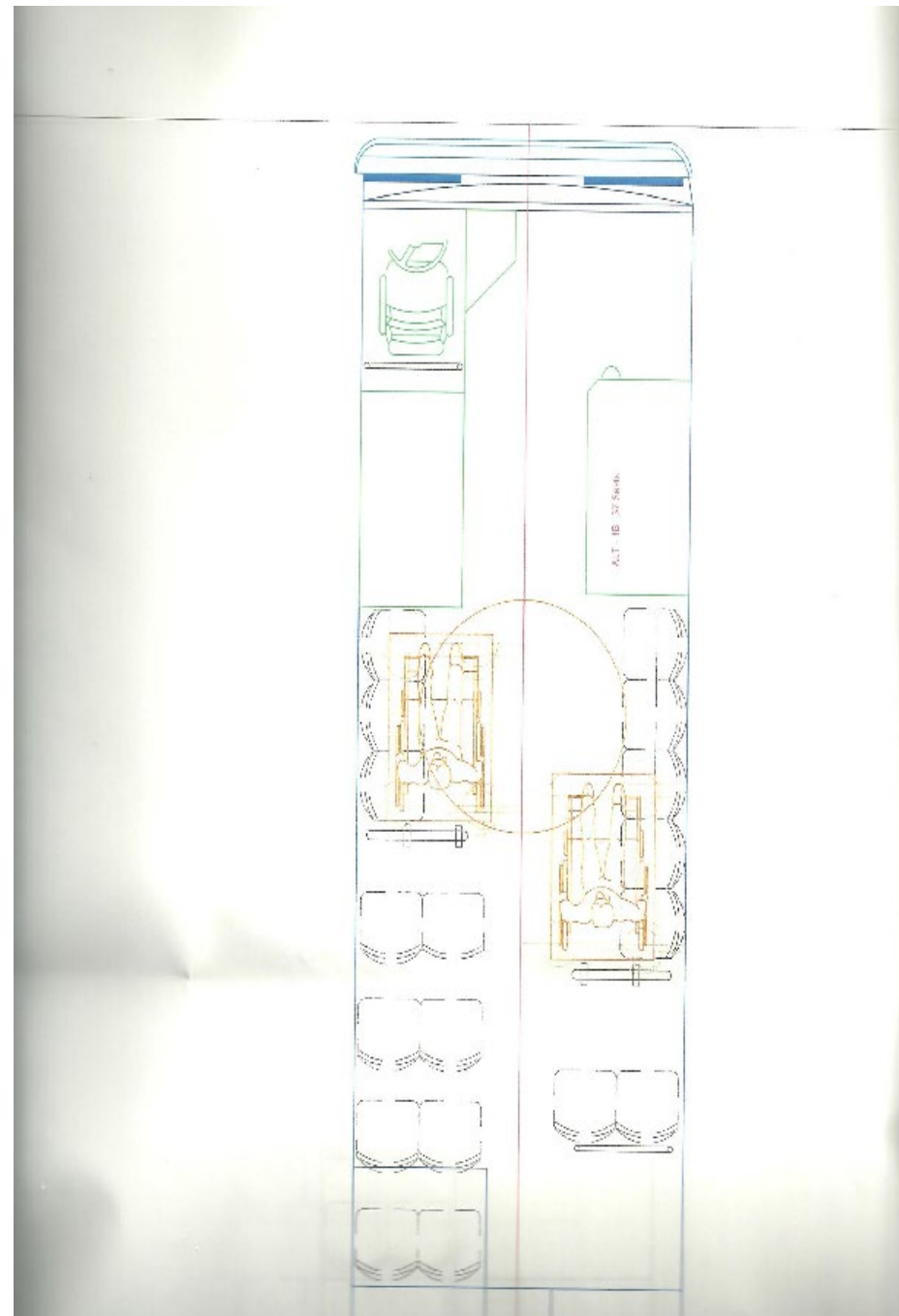
KIT & DIAGRAM, SEAT LF2010 40" X 102"
DENVER, CO
SL-76752-188593

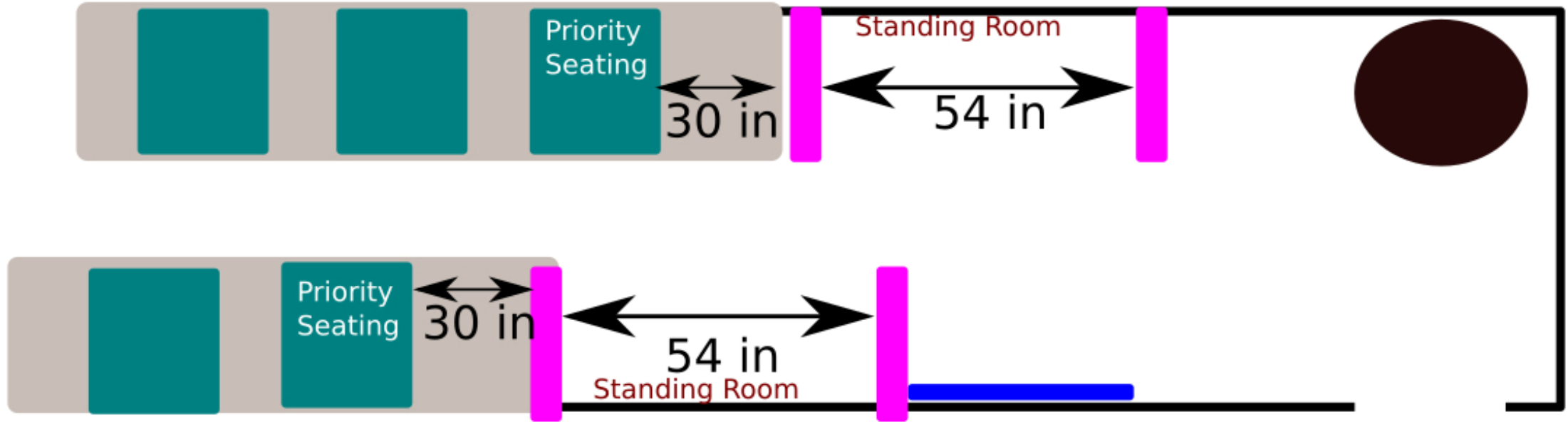
DESCRIPTION	DB NUMBER	REV
SEATING	DB 157.000	D
UPPER SECTION	DB 158.001	C
CENTER SECTION	DB 158.001	C
W/C RESTRAINT OPTION	DB 158.014	AL
ADA CLEAR FLOOR SPACE	DB 162.000	A
SEAT SPECIFICATIONS	DB 152.001	D

This blueprint is similar to the buses purchased in 2017 and 2019. The securement areas on both sides of the current buses are 30" x 48", securements use 4" of that space
Some powerchairs can be 27' x 44", making it difficult to parallel park their chair.

In 2016 RTD gave this drawing was given to a group of people from CCDC and APAC (ADA Paratransit Advisory Committee), however buses with the layout weren't purchased until 2019.

Now, most of the buses in the RTD Fleet have a floor plan like this.



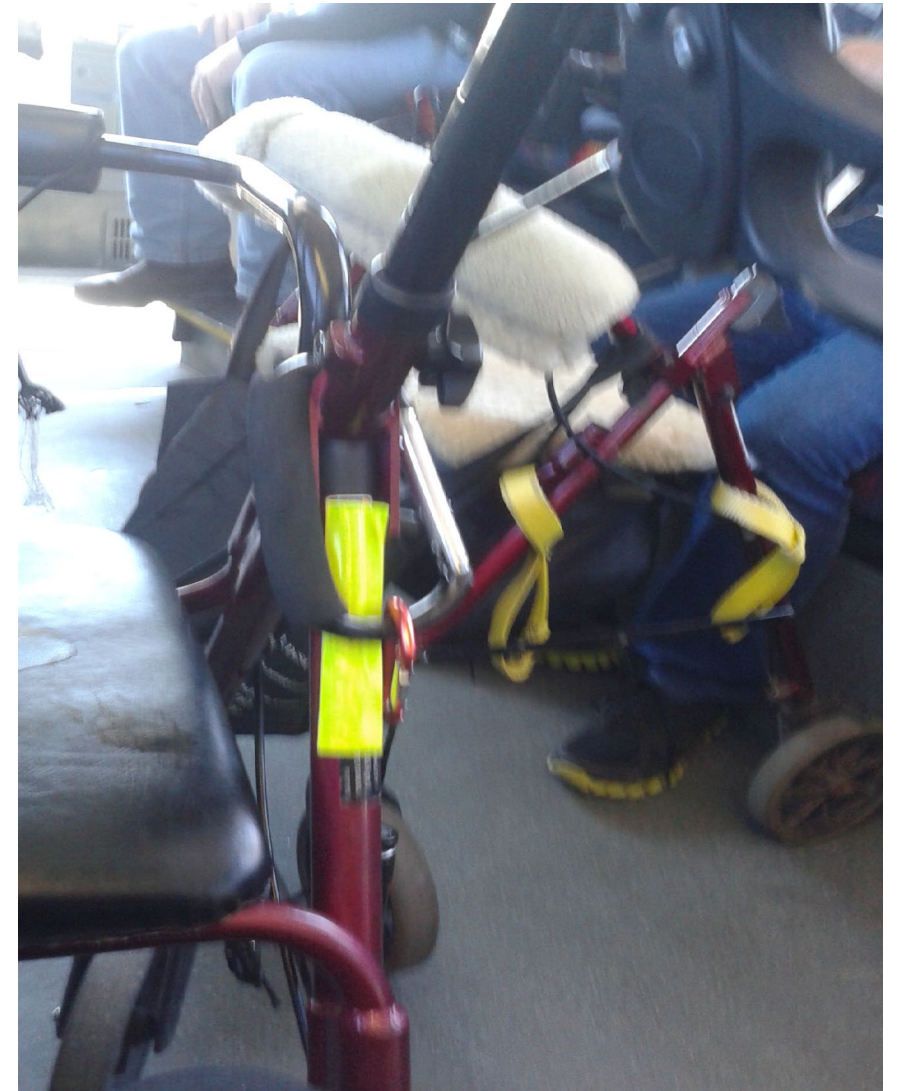


A 2021 suggested bus design with a 30" x 54" sized securement area, more user-friendly than an ADA minimum 30" x 48" one.

The ADA requires forward facing priority seating for People with Disabilities and Persons over the age of 65.

The forward-facing seats in the new Gillig buses have very little leg room so people have to put their walker in the aisle.

In the 16th Street Free Mall Shuttles, the only forward-facing seats are in the rear of the bus up a 12" step making it impossible for persons who use walkers to use those seats.



Slide 1:

ADA Guidelines:

4.2.4.1 Size and Approach

The minimum clear floor or ground space required to accommodate a single, stationary wheelchair and occupant is 30" in by 48".

ADA Standard Wheelchair Measurements:

Width of the wheelchair measured to the outside of the rear wheels is 26 inches. Length of the wheelchair is 42 inches measured from the back of the rear wheels to the front of the footrests.

Slide 2:

49 CFR § 38.23(d)(2)

Location and size. The securement system shall be placed as near to the accessible entrance as practicable and shall have a clear floor area of 30 inches by 48 inches. **Such space shall adjoin, and may overlap, an access path.**

In the new Gillig Bus design, the wheelchair securement areas are staggered. In the old Gillig busses the securement areas were across the aisle from each other, so when both areas were occupied, the aisle width was decreased to about 4 inches.

RTD will do what is required, not necessarily what is needed.

Slide 3:

The securement areas on both sides of the current buses are 30" x 48", the securements use 4" of that space.

A standard manual wheelchair is 30" x 40". The larger than standard powerchairs are 27' x 44", which means that the person in the chair must do some serious maneuvering to parallel park their chair.

Slide 4:

The ADA requires forward facing priority seating for People with Disabilities and persons over the age of 65 on all buses.

In the new Gillig Buses, the forward-facing seats have very little leg room so people have to put their walker in the aisle.

These pictures demonstrate how little legroom there is in a forward-facing seat and a main aisle crowded with walkers. By removing one seat to make the area between seats larger would make the bus safer and getting up from a seat easier.

In the 16th Street Free Mall Shuttles, the only forward-facing seats are in the rear of the bus up a large step making it impossible for persons who use walkers to use those seats.

Slide 5:

RTD gave this drawing to the APAC committee in 2016, but buses with this layout were not ordered at that time.

This layout is similar to RTD's 2019 purchase, the majority of RTD's fleet has this plan.

Slide 6:

This slide is a fixed route bus design suggestion by a person who uses a larger than a standard power chair.

For the most recent purchase of Access-a-Ride shuttles, RTD involved people in the disability community for the first time, and the shuttles are almost perfect. They have safer vertical securements, a wider lift, and a longer vehicle making more room for multiple wheelchairs.

In 2014 CCDC filed a class action suit against RTD alleging the light rail trains do not provide the required space to allow at least two persons using wheelchairs or other mobility aids to access the train and have sufficient room to ride the train without interfering with the others getting on and off the train.

Department of Transportation regulations require that each light rail train have at least two wheelchair locations that provide 30" x 48" of clear floor space, that does not unduly restrict passenger flow.

In 2016, the lawsuit with RTD was settled. 172 light rail vehicles were to be retrofitted over the course of 5 years.