



## **AbiliTrax Mobility Flooring System**

**OVERVIEW:** An AbiliTrax Full Flooring System shall be installed to include a series of longitudinal, parallel floor mounted, high-strength steel tracks which are imbedded into an FMVSS 302 compliant base. The system must also allow for the rapid movement or removal of FMVSS 207 and 210 compliant ambulatory seating as well as “A” AND “L” style wheelchair tie downs. Rails must provide incremental positional options for tie-downs and seats of 5” front to back and 6-1/4” side to side.

Standardized track locations must allow seating to be transferred between vehicles as needed and without additional adjustments or modifications, regardless of vehicle make, model, length or height.

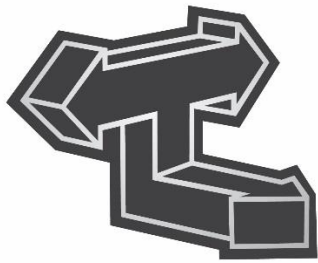
- The floor base material will consist of a 1-1/2” thick composite, water resistant substrate.
- The flooring substrate must be fully encapsulated with an FMVSS 302 compliant polyurea finish to provide a slip resistant surface while creating a barrier which is impervious to environmental elements.
- The floor tracks will be constructed of a high strength A1011 HSLA 50 (high strength low alloy) steel which has been further plated with a zinc chromate finish, thus providing maximum strength and corrosion resistance. No aluminum shall be used in any part of the system which may come into direct contact with any steel component. Aluminum and steel in direct contact with one another leads to a galvanic corrosion process. The galvanic corrosion process is further exacerbated by exposure to certain environmental elements (such as road salt) which leads to rapid decay of and premature failure of the affected materials.
- The floor tracks must be mechanically fastened to the vehicle floor structure using SAE Grade 8 fasteners. All fasteners must be self-locking. All washers will be through hardened. All hardware will also be zinc plated to provide further corrosion resistance. Mechanically fastening the system is required to insure serviceability, repair, replacement or re-use of the system in replacement vehicles.
- The track system must be capable of directly accepting both “A” and “L” style wheelchair tie-down systems without the need for intermediary “adaptors”. Wheelchair tie-downs must also be able to be positioned anywhere within the confines of the track system at increments of 5” front to back and 6-1/4” side to side.
- The floor system shall incorporate heating ducts and heat registers as well as include a cavity that allows the wheelchair lift power and interlock signal wires to be routed through the floor.

#### **AbiliTrax Mobility Flooring System Continued:**

- The track system shall be open channeled to prevent stuck debris and allow easy air or water pressure cleaning.
- The system must also meet FMVSS 207, 210 and 225 compliance standards in all possible seating configurations, including 3 abreast situations (3 seats, side by side, pull tested simultaneously). All seats will be provided with an integrated 3 point lap and shoulder belt as well as have child restraint (CRS) capability.
- Seating must be able to be positioned anywhere within track system as required for transport or storage (front to back at 5" increments and side to side at 6-1/4" increments).
- Seat cushions must flip up to facilitate ingress / egress as well as provide "nested" storage inside or outside of the vehicle.
- Seating must be able to be moved or removed without the use of tools, from a standing position using only the operator's foot.
- Latching system must also be provided with a redundant, secondary mechanism to reduce the risk of unintended unlatching. Primary and secondary latches must both be activated "hands free".
- "Hands free" latching and unlatching, as well as seat relocation and removal, must be accomplished from a standing position using the operator's foot. This eliminates the need for bending and kneeling and also eliminates the risk of the operator's knees or hands coming into contact with unsanitary floor surfaces.
- Seats must be able to be nested together for storage, occupying no more than 15" of floor space (measured front to back) while still being able to be locked into the floor system for safe transport.

#### **AbiliTrax Seating System**

- Seat frames shall mount in track system with ability to be mechanically interchangeable both throughout the flooring system and within the fleet.
- Must include option for Step N Lock Quick Disconnect Seating which allows for foot activated seat base release and includes base wheels that allow for easy repositioning of the seat.
- Minimum seat widths shall be 17" single and 34" double seats.
- An approved retractable style integrated 3-point lap and shoulder seat belt shall be provided for each seating space and shall be in compliance with FMVSS 209 & 210. Belt retractors must not interfere with seating space, and two (2) seat belt extensions shall be provided with each vehicle.
- All seats and restraints must comply with current FMVSS Standards, including 207,208,209,210,225 and 302.
- Please refer to attached floor plan.



# **SHIFT-N-STEP**

## **Shift n Step Dual Access Entry System**

### **Accommodates Both Ambulatory & Wheelchair Entrance**

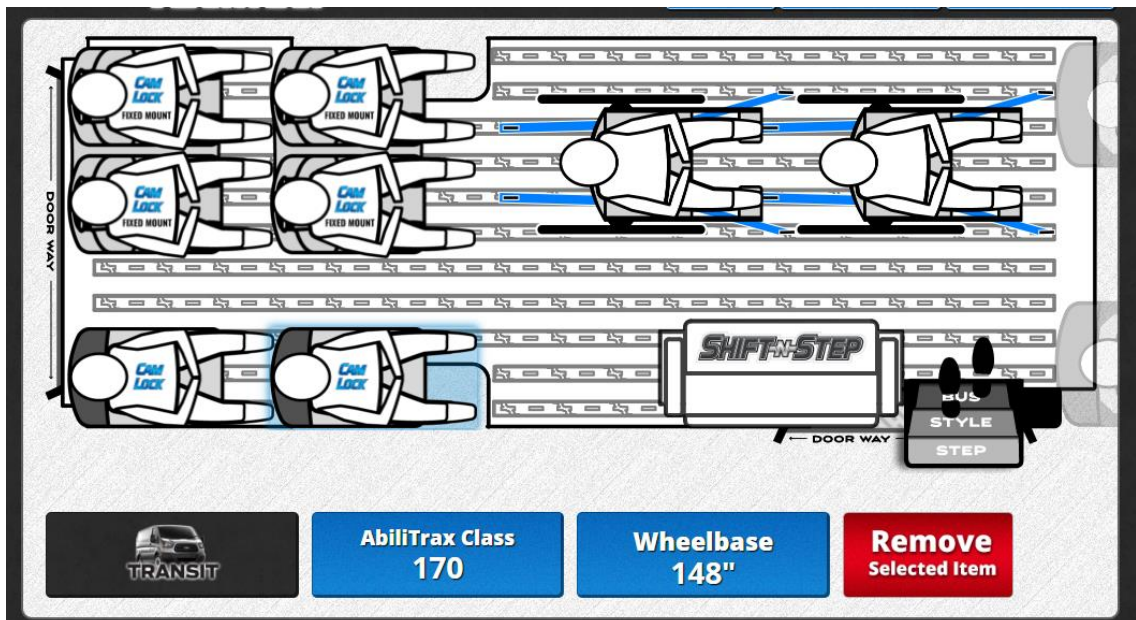
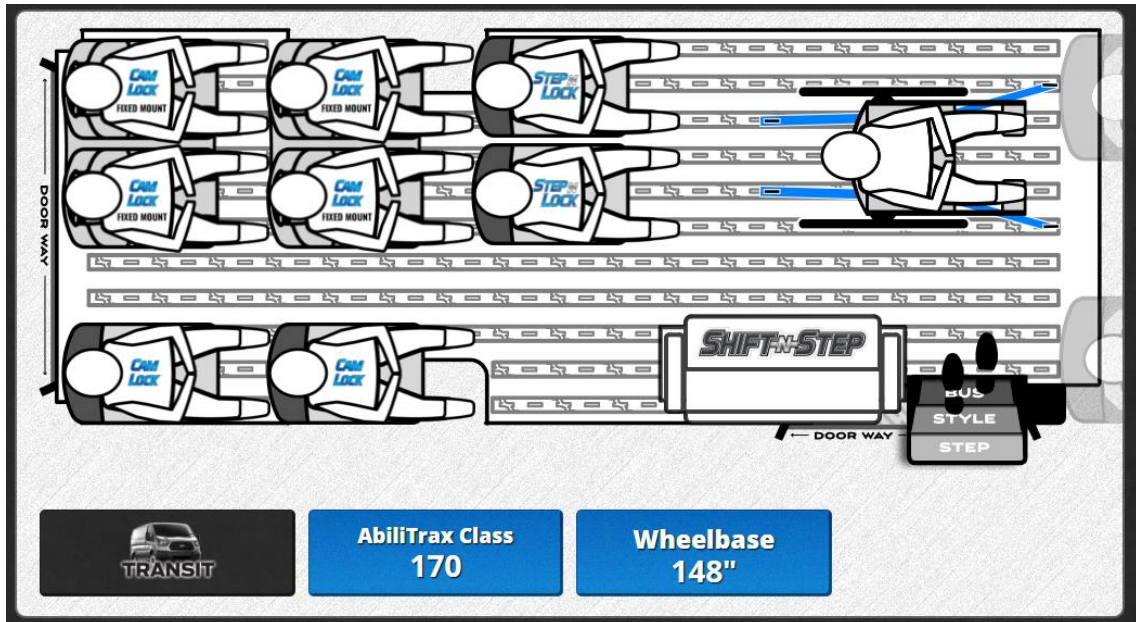
**OVERVIEW:** The side entry door will include a Lift Mounting System that provides ingress or egress to the vehicles interior by both ambulatory passengers and passengers in wheelchairs through the same curbside door opening. It must be constructed of high-strength steel and be bolted to the vehicle chassis in a manner that requires no notching, cutting or welding of the existing OEM frame or cross-member(s). The mounting system will be compliant with all pertinent FMVSS requirements for commercial lift mounting with regard to the rated capacity of the lift. The system must allow for the electro-mechanical movement of a commercial grade lift in a curb side entry situation to provide either ambulatory or non-ambulatory passengers. The electro-mechanical drive system will be equipped with a control system designed for safe operation as well as both an electrical and a mechanical back up (in the event of a failure in the primary drive system). When in the fully retracted position, the Lift Mounting System must provide a minimum 30" wide entry for ambulatory passengers. When in the fully extended position, the system must allow a commercial grade lift (D.O.T. compliant with up to a 34" wide platform) to be fully deployed through the same side door opening.

- The Mounting system will be constructed of high strength steel wherever required to achieve maximum structural capacity.
- All steel parts will either be powder coated or plated to maximize corrosion resistance.
- The Mounting System must be mechanically fastened to the vehicle floor structure using SAE Grade 8 fasteners. All fasteners must be self-locking. All washers will be through hardened. All hardware will also be zinc plated to provide further corrosion resistance. Mechanically fastening the system is required to insure serviceability, repair, replacement or re-use of the system in replacement vehicles.
- The system must also meet FMVSS 404 compliance standards in fully retracted or fully extended positions
- All sliding mechanisms will be constructed in such a manner as to achieve both corrosion and friction resistance as well as to provide minimal maintenance.
- The Lift Mounting System will be available with an (optional photo-electric eye to prevent lateral movement should an obstruction be detected in the walk through area.

#### Shift n Step Continued:

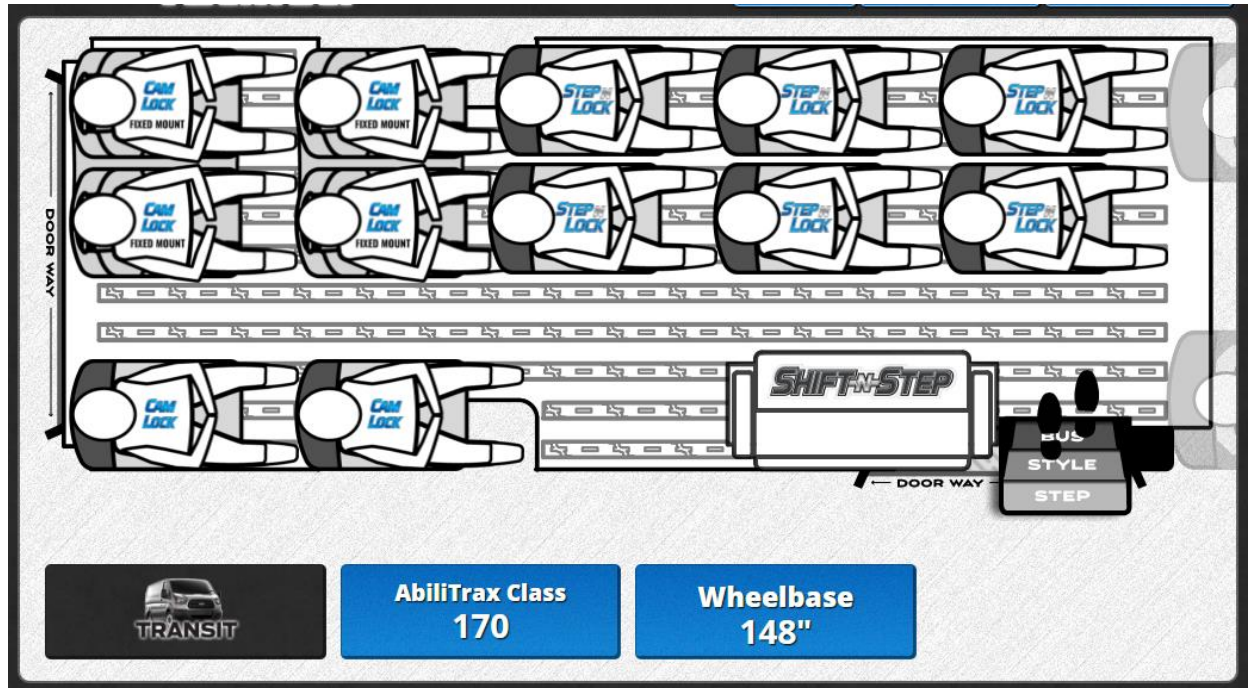
- The Lift Mounting System will be available with optional grab bars on both sides of the ambulatory walk through area
- The Lift Mounting System will include an optional “bus style” side step that is also a “bolt on” accessory. This step is provided with a cover that is also a “bolt on” accessory. This cover bolts on to the sliding door and shields the step from debris accumulation and also moves with the door.
- Electro-Mechanical Rack and Pinion Drive System
- Standard Interlock feature requires lift to be in the stowed -shifted left- position in order to remove vehicle from park.
- The lift shall be guaranteed by the manufacturer for twelve (12) months (with no mileage or hour limits) and any in-warranty service required shall be performed without charge (excluding labor) to using agency.

Diagram Shows Seating Options Available with 1 or 2 Wheelchair Positions are in place.





When Additional Seating is applied:  
Shows Max Ambulatory Capability Available with Additional Step N Lock Seating:



## Contract Verbiage to Include

Chassis: 2017 Ford Transit U4X Passenger Wagon

### Wheelchair Lift

Wheelchair Lift	<p>Platform size shall be minimum 34" x 51" (of useable space) and lift capacity shall be minimum 800 lbs. Wheelchair lift platform shall be constructed of expanded metal grating with left and right side 2 ½" high safety stops plus a spring loaded or power activated ADA front stop. A pendent type operating control with a cable length sufficient to allow operation of lift at outermost platform position shall be provided. Lift platform shall be automatic power fold/unfold design.</p> <p>A transmission interlock system that utilizes intermittent fault filter technology shall be installed to prevent operation of the lift unless door(s) are opened and transmission is in park with parking brake applied. A manual override system in case of power failure shall also be provided. Lift electric system shall be protected with fuse or circuit breaker.</p> <p>Two (2) folding handrails on lift platform measuring approximately 30" Height x 8" Length (minimum) shall be provided. Handrails shall not reduce platform size.</p>
-----------------	--

### Protective Barriers (If desired)

Driver Barrier	Driver Barrier constructed of a vertical and horizontal stanchion, a padded modesty panel, and transparent durable plastic material, or Compatible Equivalent, shall be installed directly behind driver seat.
Wheelchair Side Lift Safety Barrier	A protective panel which travels with the Lift System shall be provided to prevent shearing action between the lift platform and vehicle floor or door jams in conformance with Title 17 NYCRR Part 720.8(a)(3)(b).

### Wheelchair Occupant Restraints

Wheelchair & Wheelchair Occupant Restraints	One (1) Wheelchair Restraint Systems (Wheelchair and Wheelchair Occupant) shall be provided and installed and designed for either "A" or "L" track systems. Provide and install identical wheelchair and occupant restraint systems (including lap belt, shoulder belt, floor inserts, retractable wheelchair restraint/tie-downs, and restraint mounting hardware) meeting the required 30" wide x 48" long ADA envelope (or amendments thereto) adjacent to lift at rear of bus and ADA wheelchair space maneuvering clearances (or any amendments thereto). Wheelchair restraint/tie-downs (retractable), lap belt, and retractable shoulder belt with height adjustment shall be in compliance with FMVSS 209 210, shall be forward facing. Individual storage pouch shall be provided to completely secure belts/straps on bus sidewalls when not in use. All items shall be installed in accordance with manufacturer's standards and be in compliance with the American's with Disability Act, SAE Standard J2249, ANSI/RESNA WC-18, and ISO Standard 10542. Instructions on use of the wheelchair restraint system shall be affixed to the vehicle interior at a minimum of one restraint position.
---	---

### Running Boards

Side Cargo Door Entrance Step	Shall be equipped with a bolt on bus style side step with polymer cover system. Step to be custom E-Coated to best OEM color match possible. This cover bolts on to the sliding door and shields the step from debris accumulation and also moves with the door.
-------------------------------	--

### Grab Bars

Side Cargo Door Entrance Step	Optional grab bars on both sides of the ambulatory walk through area
-------------------------------	--

## **Additional Options**

Additional Step n Lock Seat Option Forward Facing)	Provide and install one forward facing Quick Disconnect Step n Lock Seat to accommodate one (1) additional ambulatory passengers, when not in use as a wheelchair station. Seat shall be of the same type (including grab handles) and color as standard seats.
Double Fold Away Seating (Forward Facing)	Provide and install one forward facing Double Fold Away Seat System to accommodate two (2) additional ambulatory passengers, when not in use as a wheelchair station. Seat shall be of the same type (including grab handles) and color as standard seats.
Optional Power Door with Dash Mount Lift Shift Option	Option available for a Power Sliding Door kit which opens and closes the side Cardo door automatically with 12VDC voltage system. Nominal current – 5A. Functioning at road inclinations of $\pm 20^{\circ}\text{C}$ (36%). Tested performance – 550,000 cycles (open/close = cycle) Driven by rustproof chain. Electronically controlled microprocessor Remote control optional. Includes option to have lift in right shift position in drive mode. Quick Disconnect to return the door to manual.