Project Specifications

Wheelchair for Abby Miller

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**Client Information**

Names: Scott, Julie and Abby Miller  
Location: Clinton, IL  
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**Operational Specifications**

The wheelchairs design needs to accommodate clients with cerebral palsy. It must be constructed of a lightweight indoor/outdoor, all terrain wheel chair. It must have a head, neck, and leg restraints and a form of strap or seatbelt in order to keep the client safely in the seat. The chair must have the ability to tilt at varying angles to allow for easier exit and entry into the wheel chair. The chair cushions and safety constraints must be comfortable for the client to sit in for long periods of time. The wheel chair must also have two forms of brakes, a braking system that can be implemented by the operator of the chair, and brakes on the wheels that can be implemented by the occupant. The tires must be indoor/outdoor tires that are non-marking. There must be two forms of handlebars on the back of the chair for the operator to use, one horizontal bar and a set of traditional wheel chair handles. In the back of the chair on the bottom, there will be a basket that will hold personal belongings and necessities. A wheelie bar must be located on the bottom rear of the chair to prevent backwards tipping during motion.

**Technical Specifications**

**Physical:**
- Frame Materials: 316 Stainless Steel  
  6061 Aluminum  
- Tire Material: Rubber

**Mechanical:**
- Size: 38” x 30” x 48” (L x W x H)  
- Weight of Device: 40-55 lbs  
- Seat Size: 15” x 15” (L x W)  
- Seat Angle Range: 90°-140°  
- Weight Capacity: 50-150 lbs  
- Turning Radius of Chair: 360°

**Environmental:**
- Operating Temperature: -30°F to 120°F  
- Operating Environment: All-Terrain, Indoor, Outdoor, Varying Climate

**Software:**  
N/A

**Electrical:**  
N/A

**Safety:**
- The occupant must wear a restraining belt at all times.  
- The wheelie bar will be used to prevent backwards tipping when the chair is tilted.
• The head and neck supports/restraints.
• Brakes that can be controlled by the operator of the chair.

**Maintenance:**
• The wheelchair must be maintained by proper cleansing of the device following exposure to harsh environmental conditions including rain/snow/dust etc.
• The tires must be replaced when tread wear is evident.
• The cushions should be cleansed regularly.
• Chair should be checked for loose parts and screws regularly.