SeaPerch
Structural System
Structural Technology

• Structural Technology is the engineering of putting mechanical parts and materials together to create supports, containers, shelters, connectors, and functional shapes.
What makes a structure?

- Supports a load
- Resists various forces
- Holds elements in a relative position to other parts
What happened?
Standard PVC Frame Parts

If building the standard SeaPerch ROV frame, refer to the latest “SeaPerch Construction Manual” which may be downloaded from http://seaperch.org/build

The construction manual provides detailed instructions for construction and assembly as well as procedural tips.
Modified Structural System

• If your team developed a modified structure, you will need to determine the length of each piece of PVC pipe.
• The pipe fits into the connector $\frac{3}{4}”$.
• This means that you will need to add $1 \frac{1}{2}”$ to the length of the pipe if you have a connector on both ends.
Follow the steps in the construction manual to build the propulsion assemblies and to mount them on the frame.

**Construction Steps:**

1. Thread a large, heavy-duty tie wrap through the two thruster-mounting holes at each of the three thruster locations, as shown in Figure 2.6-4.
2. Place the appropriate thruster in the loop formed by each tie wrap, and tighten the tie wrap around the thruster, as shown in Figure 2.6-5. Refer to Table 2.6-1 for thruster placement. Be sure to mount the vertical thruster with its propeller pointing upward, as shown in Figure 2.6-7.

**Table 2.6-1 – Thrusters Identification for Placement on the Vehicle Frame**

<table>
<thead>
<tr>
<th>Color</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green / Green Striped</td>
<td>Starboard (Right)</td>
</tr>
<tr>
<td>Blue / Blue Striped</td>
<td>Port (Left)</td>
</tr>
<tr>
<td>Orange / Orange Striped</td>
<td>Vertical (Up and Down)</td>
</tr>
</tbody>
</table>