

## **Whale Watch Element Description**

*The Whale Watch is a low ropes course element that can be found on many existing low ropes course. The element features a large platform that is balanced on a central pivot. The goal of the element is for the group to try and bring the platform to rest, balanced in the center.*

*We chose this element because of the wide precedent of its use as an accessible low-ropes element. Many low-ropes elements require significant alterations to make them accessible, but the Whale Watch requires very few changes to make it inclusive for all. The Indiana University (Bloomington, IN) is one of the most outspoken proponents of accessible challenge programming. They refer to design of this type of programming as "Universal Design." Universal Design was the result of a collaboration of architects, product designers, engineers, and environmental design researchers at the Center for Universal Design at North Carolina State University. The result of that collaboration was the Principles of Universal Design:*

### ***Principles of Universal Design***

#### ***1) Equitable Use***

The design is useful and marketable to people with diverse abilities.

#### ***2) Flexibility in Use***

The design accommodates a wide range of individual preferences and abilities.

#### ***3) Simple and Intuitive Use***

Use of the design is easy to understand, regardless of the user's experience, knowledge, language, skills, or current concentration level.

#### ***4) Perceptible Use***

Use of the design is easy to understand, regardless of the user's experience, knowledge, language, skills, or current concentration level.

#### ***5) Tolerance for Error***

The design communicates necessary information effectively to the participant, regardless of ambient conditions or the participant's sensory abilities.

#### ***6) Low Physical Effort***

The design minimized hazards and the adverse consequences of accidental or unintended actions.

#### ***7) Size and Space for Approach and Use***

The design can be used efficiently and comfortably and with a minimum of fatigue.

*(Adapted from The Principles of Universal Design, Version 2.0 (1997) by North Carolina State University)*

*The Challenge Program plans to follow all seven of these design standards in the creation of the Whale Watch. Our choice of the Whale Watch was based entirely on the ease of following both the Principles of universal design and also conforming to ADA standards. In terms of constructing a fully accessible element for the least cost, the Whale Watch is a sure choice.*

*This element can easily be adapted to be fully accessible. Primarily, the pitch of the platform is reduced so that the maximum angle cannot exceed the 4.8 degrees mandated by ADA standards. Additionally, one side of the platform will feature a 36" railing with additional middle and bottom rails as specified by current ADA standards. These railings will give*

participants a variety of options to augment their balance and feel comfortable participating. Additionally, the surface of the platform will be covered with 3M Safety Walk Heavy Duty grip tape to ensure traction in all situations. The perimeter of the platform will be edged by a 2"x4" strip that is painted high-visibility yellow. This perimeter will not only create a solid barrier to the edge of the platform, but also will aid participants with visual impairments.

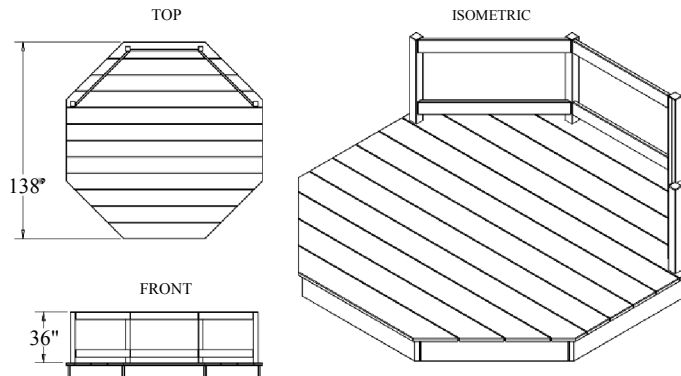
The platform will be an octagon that is 12' in diameter. This platform will be constructed from 2"x10" Douglas Fir lumber and surfaced with 2"x12" Douglas Fir lumber. The railing/grab bars will be constructed from 4"x4" Douglas Fir posts and 2"x6" Douglas Fir boards for the railings.

The platform will be framed to support heavy loads, and will even be able to support participant in motorized wheelchairs. The platform will be supported by a steel pivot, allowing the platform to tilt back-and-forth.

## Item Details

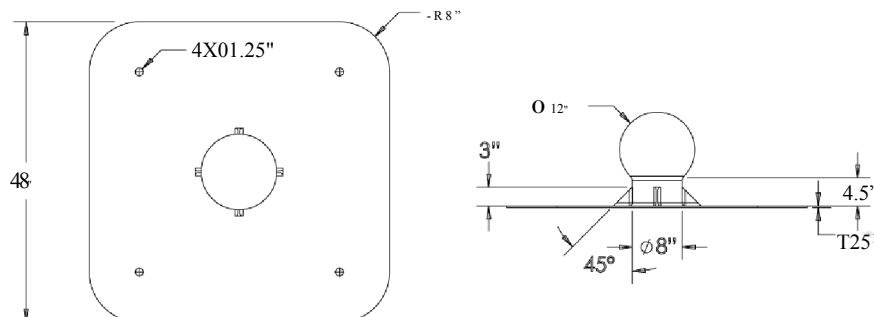
### Platform

The platform will be framed in the same manner as a standard load-bearing deck. The platform deck will be constructed from 2"x10"x12' Douglas Fir timber. It will be fastened with 3" #9 Zinc-coated steel deck screws. The platform structure will be surfaced with 2"x12"x12' Douglas Fir lumber. The surface of the platform will be fastened down with the same #9 screws. All of the edges will be rounded over with a .25" radius to ensure that there are no sharp edges.



### Pivot

The pivot is the central piece of the Whale Watch. It will be fabricated from a 36"x36" plate of .25" plate steel. The plate will be welded to a 4.5" length of 8" steel tubing with .25" wall thickness. The top of the pivot is a spun steel sphere 12" in diameter. The steel tubing will be gusseted with .25" thick pieces of steel plate. The steel for the pivot will be sourced locally and will be fabricated by a local vendor.



## Ramp

*In order for the Whale Watch to be fully accessible, the element will require a ADA-certified ramp. The ramp will be framed in similar fashion to the platform. It will slant at a 1:12 pitch, in accordance to ADA standards. The end of the ramp will be covered with a sheath of .75" Oak-veneered plywood. This plywood end will allow for a smooth transition from the ground to the ramp.*

### Item List/ Costs

16x	2"x12"x12' Douglas Fir	16 [x]	\$16	= \$256
22x	2"x10"x12' Douglas Fir	22 [x]	\$13	= \$286
28x	2"x4"x8' Douglas Fir	28 [x]	\$2.5	= \$70
2x	4"x4"x8' Douglas Fir	2 [x]	\$9.5	= \$19
12x	2"x6"x8' Douglas Fir	12 [x]	\$4.5	= \$54
1x	2'x4'x.75" Plywood	1 [x]	\$20	= \$20
1x	2000ct. #9 x 3" Screws	1 [x]	\$108	= \$108
3x	60' roll 3M Safety Walk tape	3 [x]	\$83	= \$249
1x	48"x48"x.25" Steel Plate	1 [x]	\$200	= \$200
1x	8" diameter Steel Tubing	1 [x]	\$150	= \$150
1x	12" diameter steel sphere	1 [x]	\$85	= \$85
2 Ox	Facilitator Set-up Labor	20 [x]	\$15	= \$300

Total = \$1797