Requirements Document

Project: LIBERTY
Task: *Zip line traversal*

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McGill

1.0 TABLE OF CONTENTS

2.0 CAPABILITIES

2.1 PURPOSE

The purpose of the zip line transportation system is to cross the river (traversing from one zone to another) via the zip line over the river area and then resume navigation towards the flag zone.

2.2 SCOPE

The system shall:

1. traverse, mount and dismount the zip line in a controlled, non-obtrusive and repeatable fashion **[*REQ - ZIP - 2.2.1]*.**

2. withstand the load under its own weight **[*REQ - ZIP - 2.2.2].***
3. keep track of its position on the zip line **[*REQ - ZIP - 2.2.3].***
4. not touch the playing field during the whole traversal ***[REQ - ZIP - 2.2.4].***

See ***REQ - GEN;*** 2.5.1

2.3 CONSTRAINTS

[*REQ - ZIP - 2.3.1]:* The system shall perform the traversal under 1 minute and 30 seconds.
[*REQ - ZIP - 2.3.2]:* The dimensions of the zip line are referenced in figure 1 in references (see ***5.0***).

See ***REQ - ZIPLINE; 2.2.1*** for the constraints concerning mounting, traversing and dismounting the zip line.

2.4 USER FUNCTIONS

See ***CON - GEN; 2.4.1***

2.5 OPERATING ENVIRONMENT

See ***REQ - GEN; 2.5.1***

2.6 PERFORMANCE

Time performance: *found in* ***REQ - ZIPLINE; 2.3.2***

3.0 COMPATIBILITY

3.1 COMPONENT RE-USE

Concerning mounting onto the zipline, previous implementations of this design have not been developed as of labs 1 - 4. The results of lab 5 will provide critical components for the zip line traversal. However, the implementation of odometry will be needed to meet the requirement, see ***REQ - ZIP; 2.2.3***.

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3.2 COMPATIBILITY WITH THIRD PARTY PRODUCTS

Third party products could be manufactured using the 3D printer and be made to fit other Lego pieces of the Mindstorms kit.

4.0 GLOSSARY OF TERMS

Note that this document should be reviewed with the "Clients" and should be developed in conjunction with them.

5.0 References

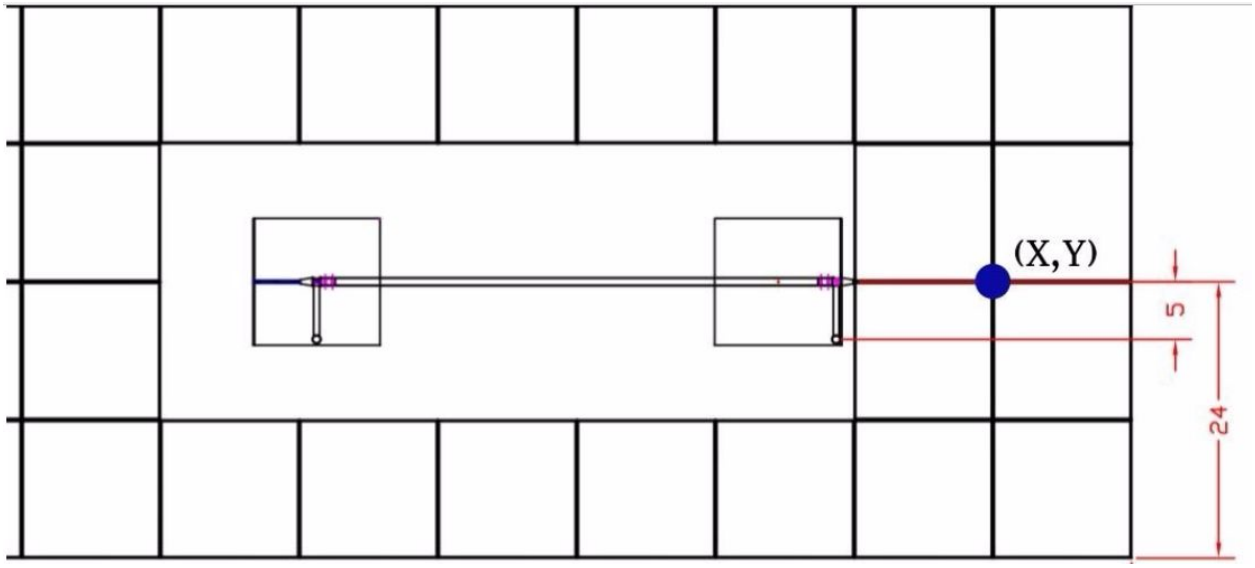

Figure 1.a : Zip line set up on a 8 x 8 grid seen from the top. Measurements are in inches.

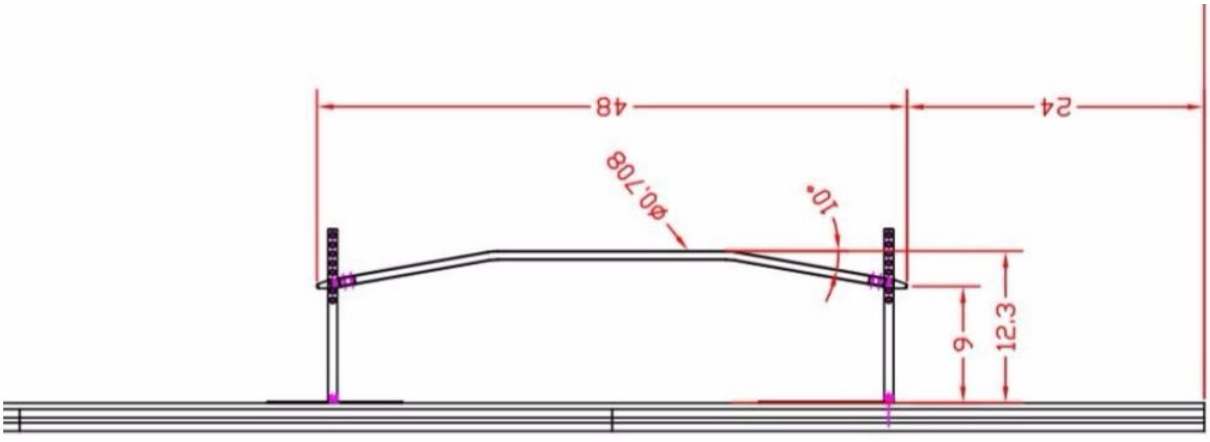

Figure 1.b: Zip line set up seen from the side. Measurements are in inches.