Canadian Hyperloop Conference Rulebook

Revision: 1.0

2021-2022 Regulations

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Acknowledgements

The Canadian Hyperloop Conference and Waterloop respectfully acknowledge that this land is situated on the traditional territory of the Attawandaron (Neutral), Anishnaabeg, and Haudenosaunee peoples. The University of Waterloo is situated on the Haldimand Tract, land promised to Six Nations, which includes six miles on each side of the Grand River.

1.0 Introduction

Between 2015-2019, SpaceX Hyperloop Pod Competition was a venue for university hyperloop teams to compete in. After 2019, there has been an absence of information with regards to the continuation of the competition. This has urged many design teams across the world to come up with collaborations among themselves to host their own competitions. One such idea bred from this spirit is the Canadian Hyperloop Conference.

Canadian Hyperloop Conference (CHC), originally known as Canadian Hyperloop Consortium, was founded by University of Waterloo, Ryerson University, Queen's University, McMaster University, University of Toronto, and University of Windsor hyperloop design teams in late 2019-early 2020. Due to COVID-19, CHC operations were paused, and resumed in early 2021.

The main purpose of CHC is to strive towards an in-person track event, while also holding as many events (online or in-person) to gauge interest and motivate teams. Currently, CHC is the only organization in North America that is organizing a hyperloop competition.

2.0 Competition Schedule

The Canadian Hyperloop Conference will host two separate events. In both events, there will be speaker, networking, and recruitment events to promote collaboration and discussion during the conference. Further details regarding challenges, judging criteria, and timelines will be released at a later date.

2.1 Virtual Showcase

The first event will be a virtual showcase on November 27-28 2021, where teams may present technical designs, case studies, concepts, and other projects as part of open discussions. For more details, please see: https://www.cahyperloop.ca/virtual-showcase

2.2 In-Person Event

The second event will be a three day in-person event at the Region of Waterloo International Airport in Spring-Summer 2022. Here, team's have the opportunity to perform live demonstrations, by racing their pods on Waterloop's Semi-Permanent Test Track or presenting to other teams, industry experts, and judges. The main components of the In-Person Event are listed as below:

2.2.1 Live Demonstration

Teams will be able to demonstrate their pods on Waterloop's Semi-Permanent Test Track. The tentative timeline for the live demonstration is as follows:

2.2.1.1 Technical Preliminary Check

Teams will submit their draft design report to Canadian Hyperloop Conference for technical review and feedback. The intent of this step is to ensure that teams apply appropriate design changes before the final technical check. This step is optional but highly recommended.

2.2.1.2 Technical Eligibility

Teams will submit their final design report and the technical team will check if teams meet standards to test on the track. If teams do not meet the standards, they will not be able to participate in live demonstration.

2.2.1.3 Testing Weekends

Before the In-Person Event, teams will have to test on Waterloop's Semi-Permanent Test Track during a testing weekend. Teams will coordinate with Waterloop to arrange when they will test their pods. If teams are not able to successfully run their pods on Waterloop's Semi-Permanent Test Track, they will not be eligible to do a live demonstration during In-Person Event.

2.2.1.4 Live Demonstration

Teams who are allowed to do a live demonstration will get a chance to run their pod on Waterloop's Semi-Permanent Test Track during the In-Person Event.

2.2.2 Pod Design Competitions

Teams can also submit their Final Design Report to be considered for Pod Design Competitions. These competitions will look into pod sub-components. There will be awards for each sub-components: Propulsion & levitation, mechanical, electronics, aeroshell. The tentative timeline for the showcase competitions is as follows:

2.2.2.1 Technical Review

Teams will submit their final design report and the technical team will check if teams meet technical requirements.

2.2.2.2 Jury Meetings

Results from the technical review will be shared with the Jury. The jury will hold sessions with applicant teams to go over their final design reports, regardless of which sub-components they applied for. During this meeting, the teams will present their final design report and the jury will ask questions. These meetings will be used to rank teams for showcase competitions.

2.2.2.3 In-Person Event

The winner for each sub-category design award will be designated before the in-person event. During the in-person event, each team will have their own booth and answer questions from/ present to the guests who visit their booth. During the closing ceremony, the sub-category design competition winners will be announced.

2.2.3 Other Competitions

There will be other hyperloop related competitions that are not pod design focused. Details about these competitions will be shared soon.

3.0 Eligibility

3.1 Virtual Showcase Eligibility

To be eligible for the Virtual Showcase, teams must adhere to the following requirements:

1. Only student teams composed of undergraduate and graduate students enrolled as of the initial registration deadline are permitted to compete. Members outside this category may only hold advisory roles and are subject to all the regulations in Criterion 2 in Section 3.1.
2. Advisors are permitted and encouraged to attend the competition but cannot:
    a. Answer questions during technical interviews with the Canadian Hyperloop Conference on behalf of the team.
    b. Be a lead contributor to the manufacturing, designing, or engineering of any components, systems, or modules.
    c. Directly edit, write, or create any content in team documents, presentations, or schematics submitted to the Canadian Hyperloop Conference.

d. Lead administrative or logistical duties such as finances, member recruitment, registration, and team planning.

3.2 Live Demonstration Eligibility

To participate in the live demonstration, teams must pass all applicable pod and subsystem requirements detailed in this document. Section 20.0 lists an overview of the documentation teams are required to submit to prove rulebook compliance.

To be eligible for awards in the Live Demonstration, teams must also pass eligibility requirements for the Virtual Showcase (teams are not required to participate in the Virtual Showcase) and must also comply with the following additional requirements:

1. Each team is required to have a faculty advisor. This faculty advisor is subject to all regulations stipulated by Criterion 2 in Section 3.1.
2. There are no restrictions to team size or the institution(s) students are from, however, COVD-19 restrictions will limit the number of in-person representatives from each team. This number will be determined closer to the Live Demonstration date.
3. Teams must test on Waterloop's Semi-Permanent Test Track before the live demonstration. Waterloop will host testing weekends for teams who pass technical eligibility. Teams will have to pay a certain fee to be able to test on Waterloop's Semi-Permanent Test Track.

The exact number of permitted in-person representatives from each team is currently unknown and subject to government guidelines and the event's capacity. The Canadian Hyperloop Conference reserves the right to limit both the number of participating teams and their representatives to meet these requirements. First preference will be given to local teams and teams who can demonstrate fully functional pods.

To confirm eligibility, the Canadian Hyperloop Conference may request relevant documentation and technical interviews with team representatives during and leading up to either event.

3.3 Pod Design Competition Eligibility

To participate in pod design competitions, teams must pass eligibility requirements for the Virtual Showcase (teams are not required to participate in the Virtual Showcase) and must also comply with the following additional requirements:

1. Each team is required to have a faculty advisor. This faculty advisor is subject to all regulations stipulated by Criterion 2 in Section 3.1.

2. There are no restrictions to team size or the institution(s) students are from, however, COVD-19 restrictions will limit the number of in-person representatives from each team. This number will be determined closer to the Live Demonstration date.

Teams will be assessed based on how well they follow the subsystem requirements detailed in this document. Section 20.0 lists an overview of the documentation teams are required to submit to prove rulebook compliance. However, teams do not have to fill in information about sub-systems they do not want to compete for.

4.0 Legal

The Canadian Hyperloop Conference will strive to ensure the safety of all participants, teams, and property but will not be liable for any damages, losses, or harm caused directly or indirectly by the events. Individual teams and their representatives must also endeavour to ensure a safe event but will bear all liability and must have an insurance policy that protects them and their property.

Every representative must sign the *Canadian Hyperloop Conference Waiver Form* which will be released after initial registration is complete.

All participants must follow instructions from the Canadian Hyperloop Conference or be removed from the event.

The Canadian Hyperloop Conference team will disclose more details about Non-Disclosure Agreements soon, which will be reflected in this document.

5.0 Initial Registration

Registration for all Canadian Hyperloop Conference competitions is free. To register for any Canadian Hyperloop Conference competition, teams must complete a letter of intent form which will be released later at a specific date. This document must be submitted as a PDF and contain:

1. Team captain.
2. Faculty advisor.
3. University.
4. Support from your university to compete in the form of a signed approval from the dean of engineering, assistant dean, or an equivalent figure.
5. Estimated number of in-person participants from your team including team members, advisors, and team specific sponsors.
6. Team contact information.

If sufficient documentation is submitted before the deadline, teams will be successfully registered and will receive further instructions from the Canadian Hyperloop Conference to complete registration and confirm eligibility.

6.0 Track Specifications

The Canadian Hyperloop Conference will be using the Waterloop Semi-Permanent Test Track. This is an I-beam track composed of 6061 T6-Aluminum mounted onto an intermittent series of concrete bases. The track is located at the Region of Waterloo International Airport.

Dimensions are visible in Figure 1 and Figure 2 with a standard tolerance of $\pm$ 10% for the thickness of aluminium on an aluminium extrusion. To account for the track's dimensional tolerances and to avoid track hardware, teams are prohibited from entering the keepout zones denoted by the crossed boxes in Figure 3. The keepout zones apply for the entire length of the track. The end of the track will feature sandbags as an emergency crush zone in case of pod braking failure.

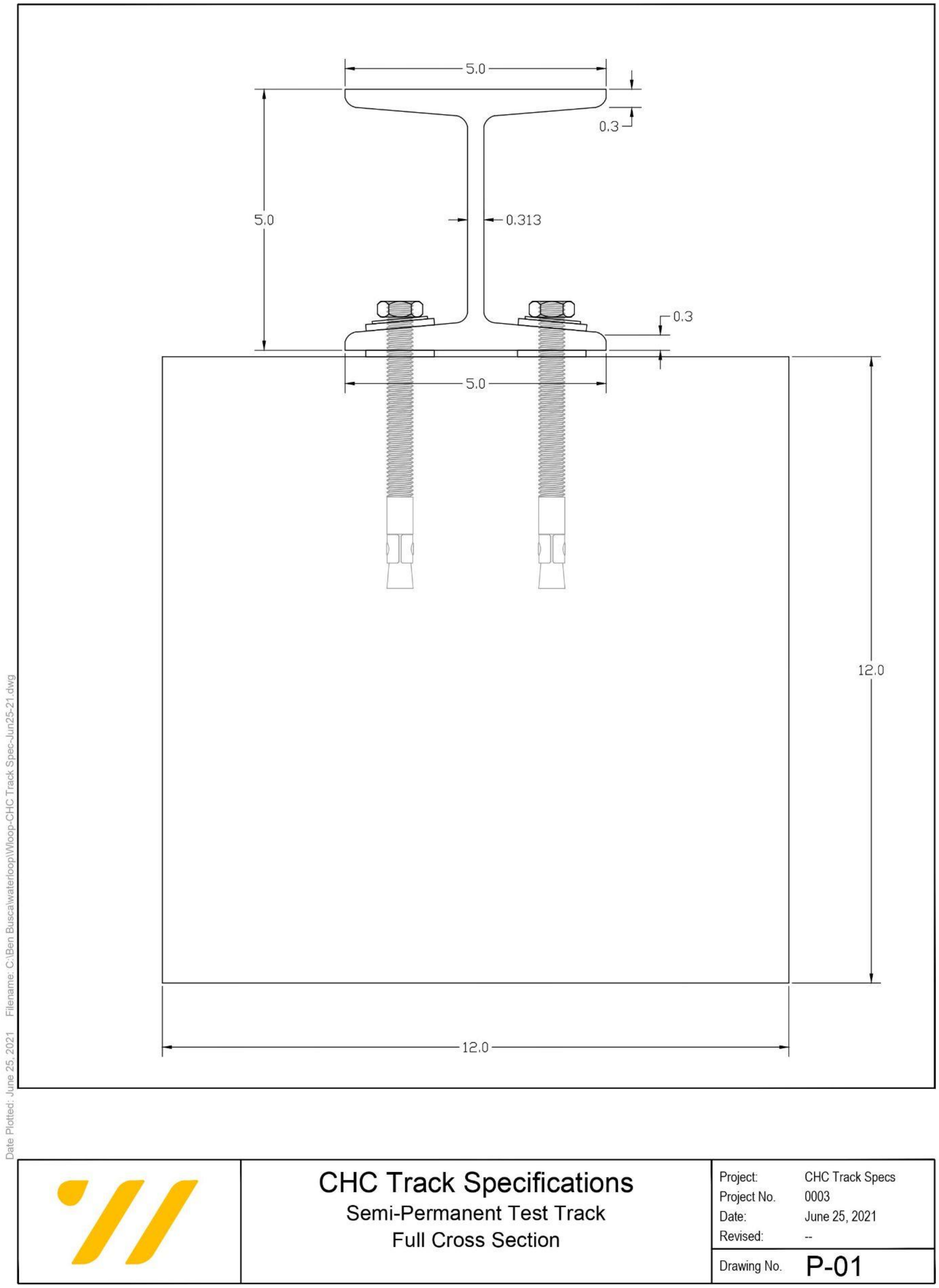


Figure 1: Waterloop Semi-Permanent Test Track Dimensions

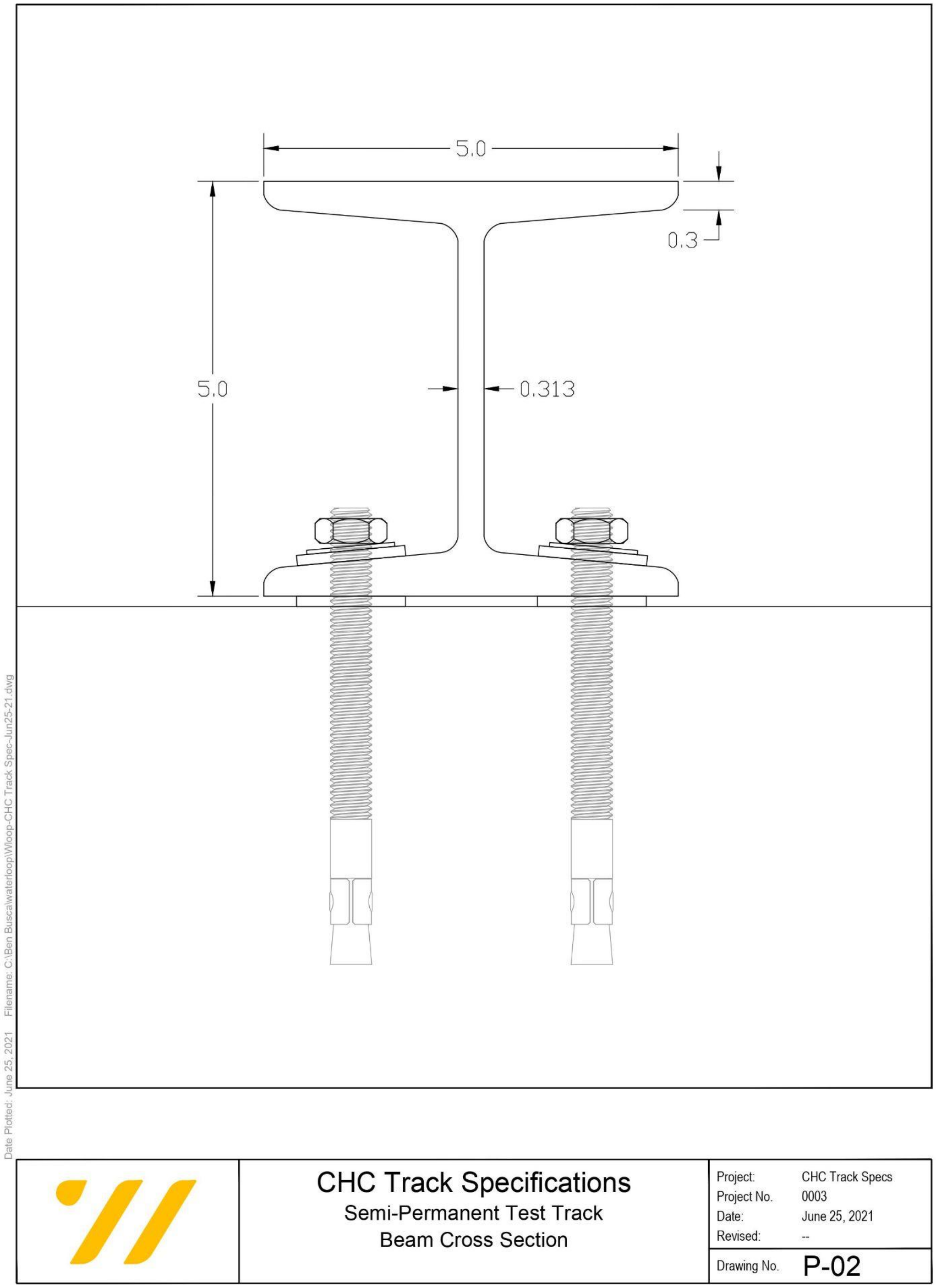


Figure 2: Waterloop Semi-Permanent Test Track Beam Cross Section

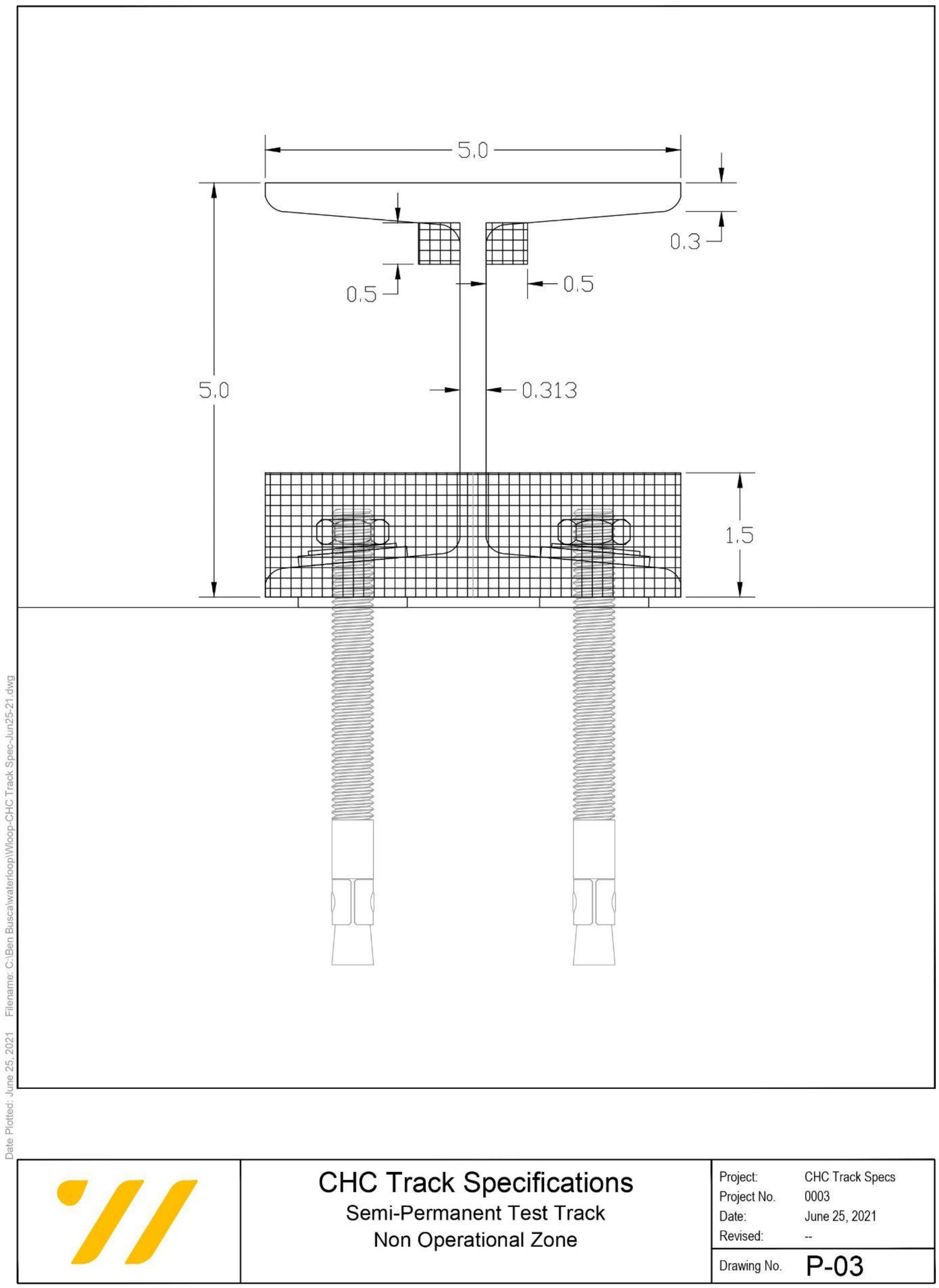


Figure 3: Waterloop Semi-Permanent Test Track Non-Operational Zone

An orthographic view of the Waterloop Semi-Permanent Test Track is visible in Figure 4.

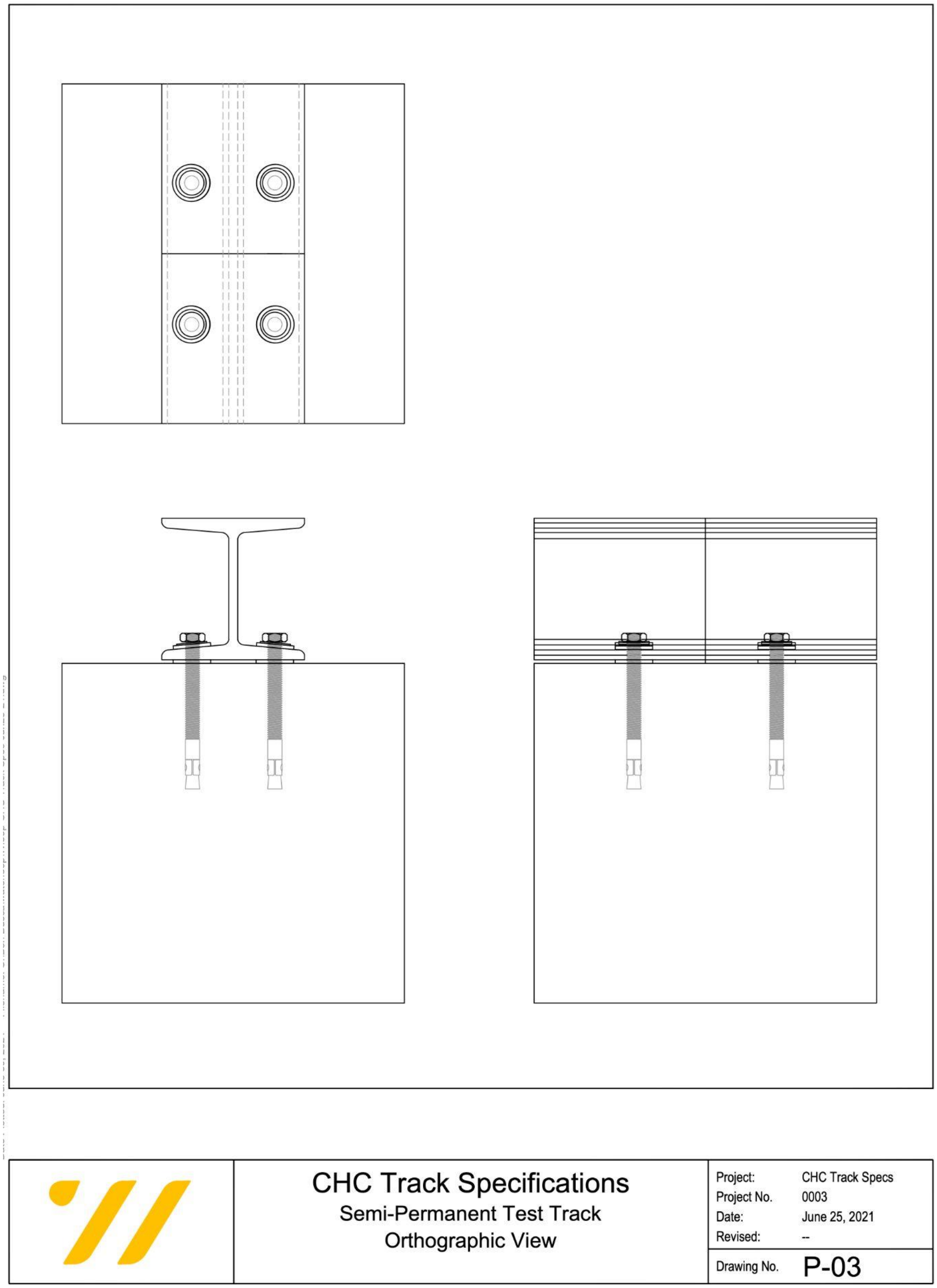


Figure 4: Waterloop Semi-Permanent Test Track Orthographic View

A render of a segment from the Waterloop Semi-Permanent Test Track is visible in Figure 5. A CAD model of the track will be released later for teams to assess their mechanical fit.

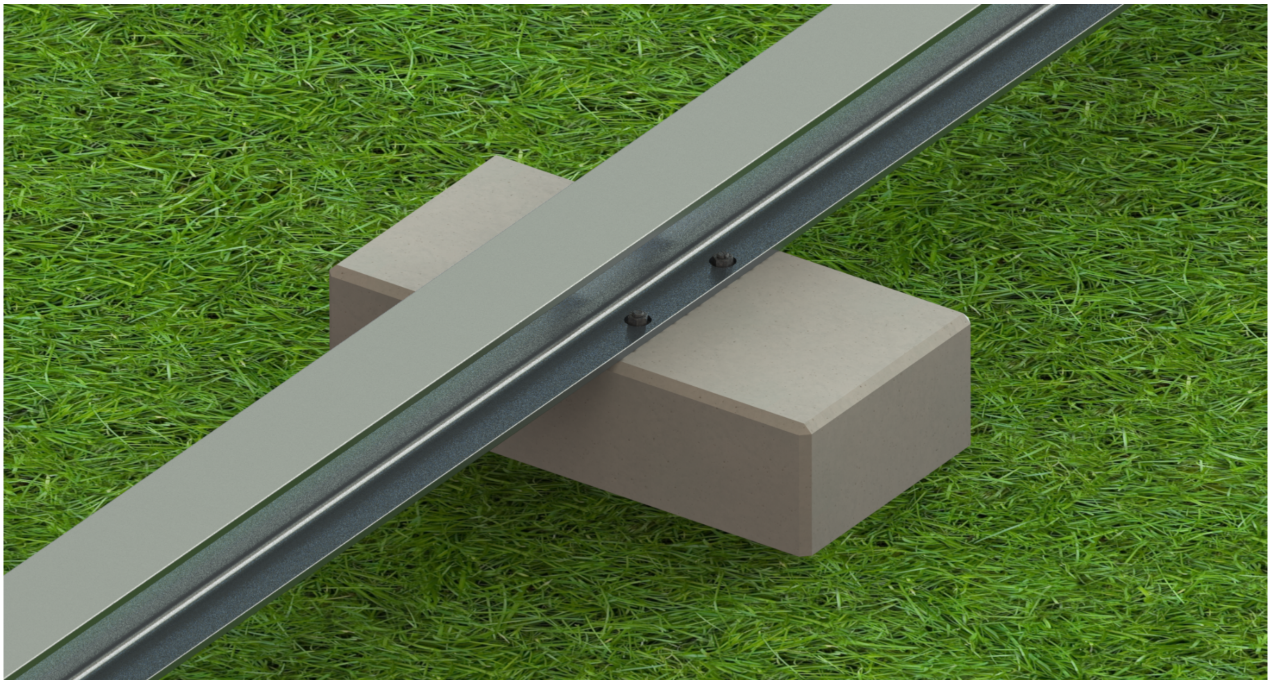


Figure 5: Waterloop Semi-Permanent Test Track I-Beam Segment

To ensure the safety of spectators, a minimum track zone of 5 meters will be established around the track from which spectators are prohibited from entering. The track zone, pod loading and unloading zones, and workstation are visible in Figure 6.

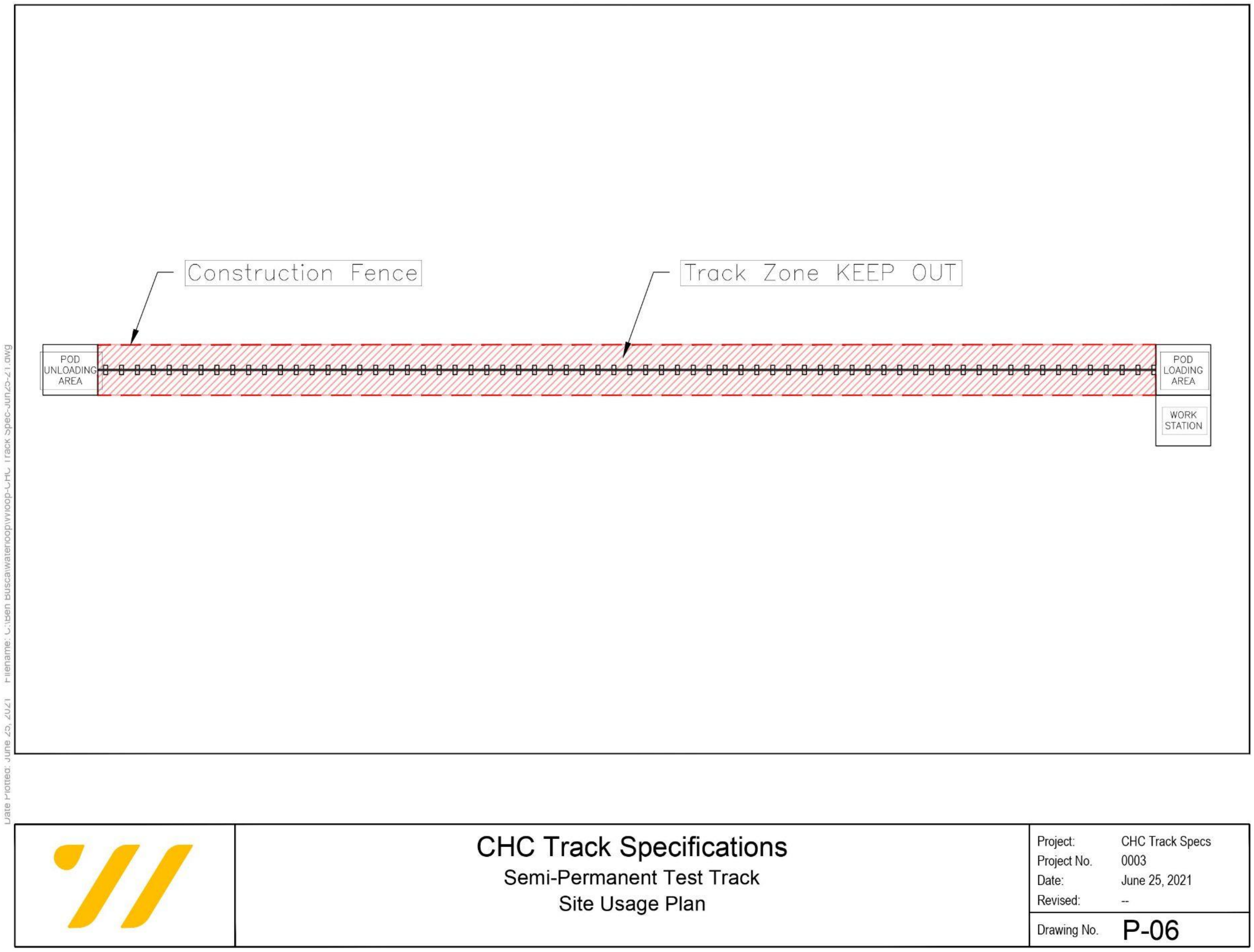


Figure 6: Waterloop Semi-Permanent Test Track Site Usage Plan

7.0 Fundamental Pod Requirements

The pod requirements were created to ensure the safety of the participants, teams, track, and property while allowing for freedom of design.

7.1 Structural

Pods shall not:

1. Weigh more than 236 kg at any point during operation. Levitating pods must also adhere to this limit. All teams must ensure that the maximum downward force exerted onto the track never exceeds 2315 N.
2. Exceed 6 metres in length. There is no minimum length requirement.
3. Have any exposed or loose wires. All electrical subsystems must be enclosed and wires must be tied.
4. Have loose fasteners. All fasteners must be in good condition and are properly installed.
5. Have any sharp external protrusions.
6. Damage the I-beam track through plastic deformation, excessive wear, corrosion, or fracture.
7. Cause the track to overheat past 70℃ during operation.
8. Extend outside of the clearance zone or below the track during operation.

Pods must also prove that they:
1. Have an aeroshell that sufficiently protects the pod against wind, dust particles, and other aerodynamic forces and atmospheric conditions normally sustained during operation.
2. Are resistant to vibrations, derailing, torsion, and other deformations through FEA, physical tests, and/or test runs.
    a. Positive locking mechanisms such as lock washers or blue loctite are highly recommended to resist vibration but not required.
    b. Stress analysis is recommended to ensure that components of the pod will not fail due to stress from torsion, shear and bending under normal loading conditions and operations while applying a safety factor of 2 at minimum.
3. Maintain a minimum safety factor of 2 for all force, acceleration, and speed requirements during operation through FEA, physical tests, and/or test runs.
4. Have calculated the combined TNT equivalent of all pressure, spring, and electrical systems on the pod. This will be used to determine the minimum clearance zone around the track during operation.
5. Have a centre of mass that lies on the track.

7.2 Guidance

Any components that directly contact the track at any time are considered guidance components. All pods must prove that they have:
1. Excellent mechanical fit with the track through detailed tolerances, material specifications, and CAD models of the contact points mounted to the track.
    a. Adhere to the Non-Operation zones detailed in Figure 3.

2. Wheels (if present) that adhere to the configuration shown in Figure 7. Vertical symmetry across the guidance system is highly recommended but not required if the system is proven to be stable through physical test runs.
3. If wheels are present, they must be accessible for inspection when not in operation.
4. A suspension system that resists vibrations, torsion, and other forces during operation. This applies to both levitating and non-levitating pods.

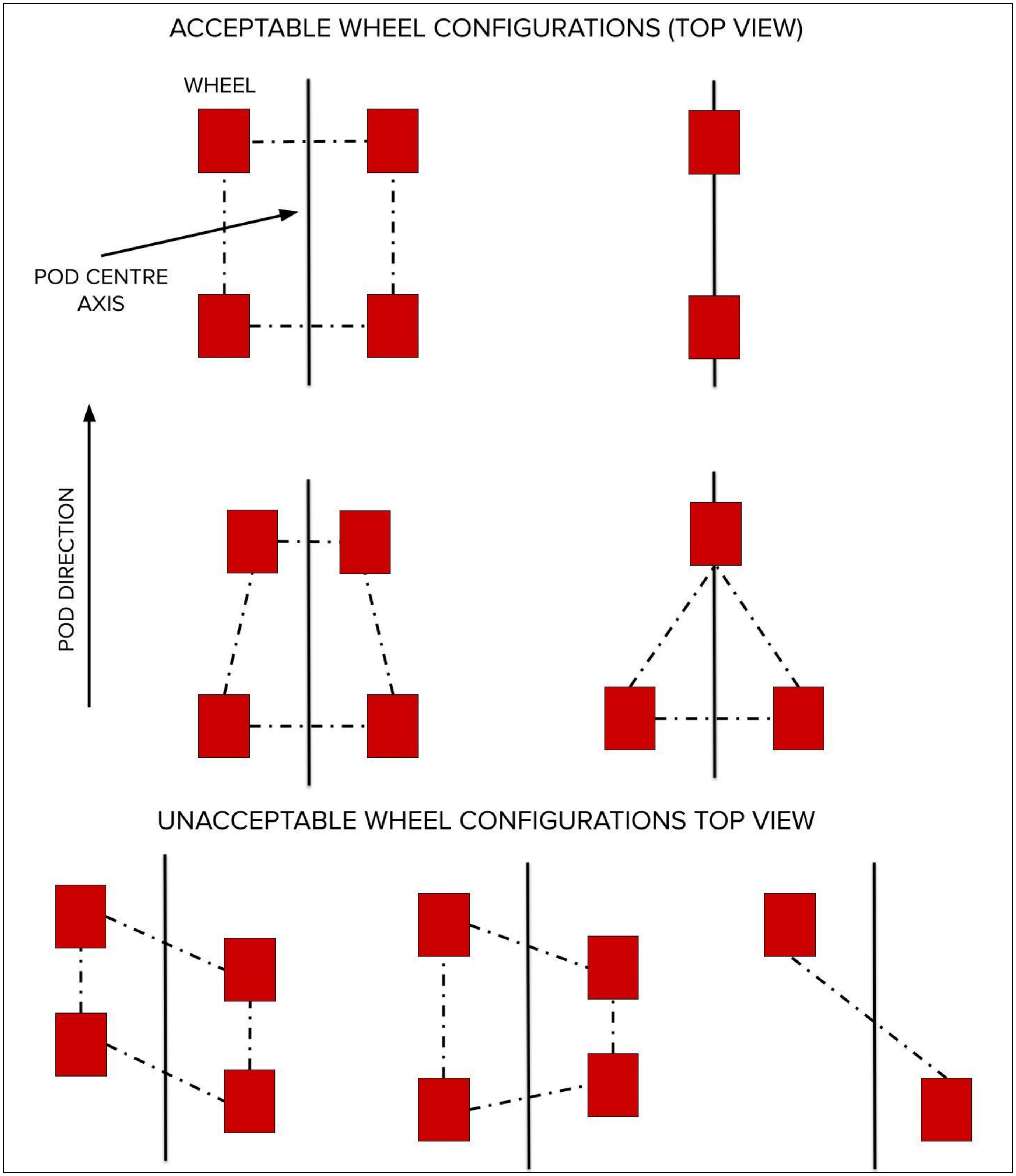


Figure 7: Canadian Hyperloop Conference Wheel Configurations

7.3 Powertrain & rotating components

Pods that make use of powertrains or rotating motors must adhere to the following criteria:

1. There is no limitation to the type of powertrain used, however, any mechanical power transmission devices must be confined in a solid enclosure that prevents part dislocation in the event of failure.
2. Mechanical power transmission enclosures should be monolithic; if composed of separate components, the maximum allowable gap is 3 mm.
3. Mechanical power transmission enclosures must demonstrate that they are capable of withstanding the force impacts of any moving components within the enclosure. In particular rotating belt drives and chains should be contained within the enclosure even if dislocated at top speed.
    a. The enclosure will be inspected by CHC as part of the safety check prior to the demonstration. This is to ensure that the enclosure is properly installed and will not fail due to any unforeseen circumstances.

7.4 Cooling

Teams that use cooling systems must:

1. Ensure that their coolant will not come in contact with any electrical devices in the competition zone.
2. If using liquid cooling, either use water only or ask the CHC Technical Team for special approval to use di-eletric coolants. For the latter, the team is responsible for cleaning up any spills that occur in the competition area.
3. Have sufficient sealing that liquid leakage is prevented
    a. Teams are recommended to test the effectiveness of sealing by rotating the liquid enclosure about the XYZ axis or by hydrostatic pressure test.
    b. Pressurized cooling systems are subject to all the regulations in Section 13.0. In particular automatic and manual release valves are required for pressure relief.

7.5 Pressurized systems

1. All gases used must be non-flammable.
2. Self-made pressure systems (canisters, tubing, components) are prohibited. Purchased pressure systems cannot be disassembled and must be Department of Transportation (DOT) certified or equivalent.
3. Pressurized systems must have constant pressure monitoring. This information should be displayed both on the pod and relayed to the team desktop.

4. If the maximum allowable working pressure (MAWP) is surpassed in any pressurized system, emergency procedures must be taken to decelerate the pod to a full stop and a release valve mechanism must be activated to release the pressure immediately.
5. Pressurized systems must be immobile when subject to rotations, vibrations, and collisions experienced during normal operation of the pod.
6. Pressurized systems must be isolated from any heat sources.
7. Pressurized systems should be leak tested at their maximum allowable pressure (MAP) for 5 minutes and then depressurized to verify functionality.
8. An automatic pressure release valve is required for each pressurized system to relieve pressure at the MAWP.
9. Pressure regulators are required to limit the output of each pressurized system.
10. A manual release valve(s) must also be present at each pressurized system to depressurize it.

7.6 Braking

A robust braking system is critical to ensure the safety of the event. To minimize damage to the track brakes must:

1. Be blunt and not scratch, damage, or overheat the track past 70℃ when engaged.
2. Have a Brinell hardness less than 85 HB for physical brakes.
3. Not apply an instantaneous pressure of more than 34 MPa at any point.
4. Be capable of automatically deploying and stopping the pod in case of total power failure.
5. Be dimensionally tolerant of all potential variations and defects in the track.
6. Adhere to the braking configurations shown in Figure 8.
7. Not use aerobraking.

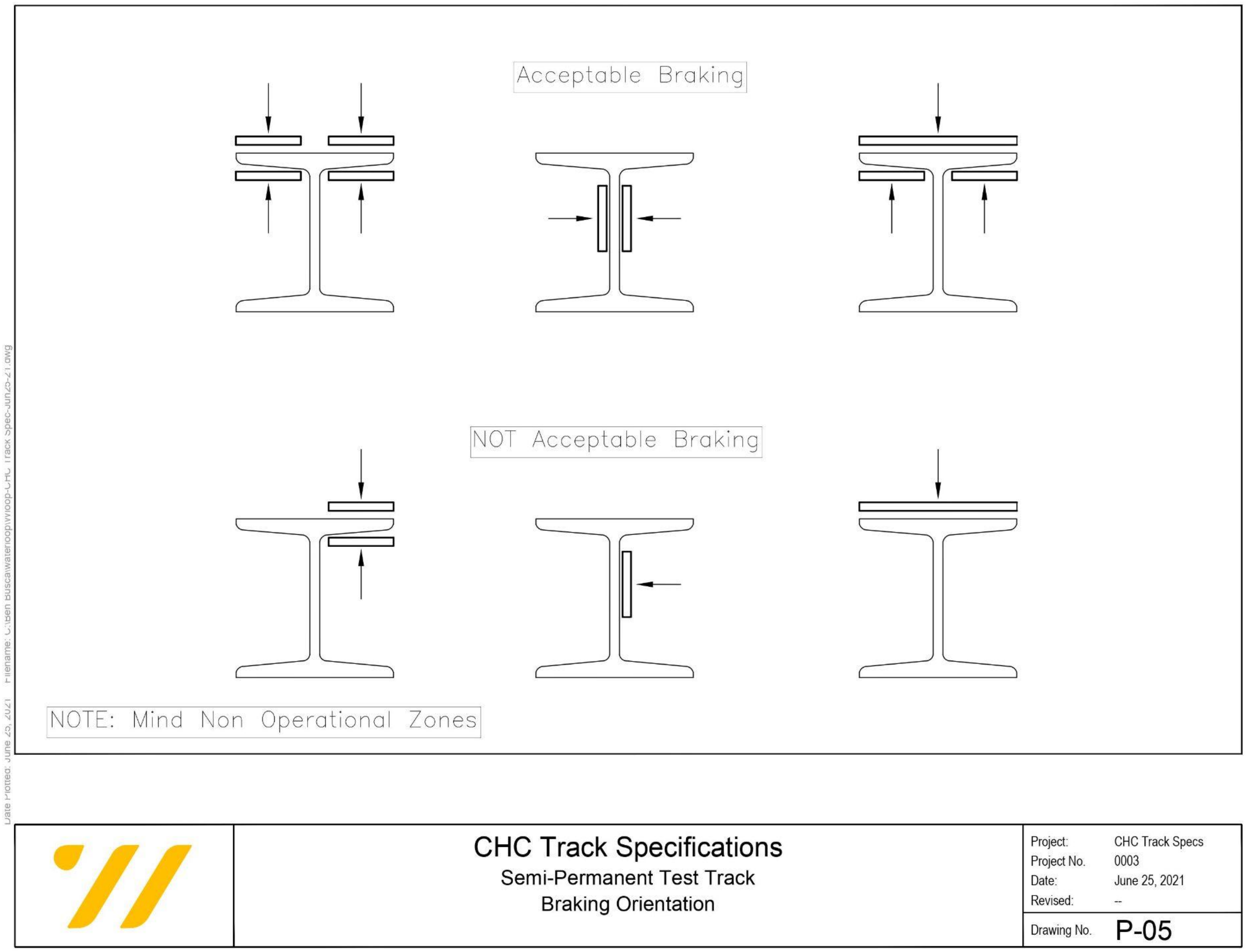


Figure 8: Waterloop Semi-Permanent Test Tack Braking Orientation

7.7 Battery

1. All pods must be electric and powered through electrochemical cells (batteries, fuel cells). Gasoline, biofuel, solar panels, and other non-electric power sources are prohibited.
2. All battery cells must be suited for the pod's application as per manufacturer specifications. This includes ensuring that voltage and current discharge rates are never exceeded.
3. Self-made battery cells are prohibited and purchased battery cells must be from manufacturers that are UN38.3 or ISO certified or equivalent.

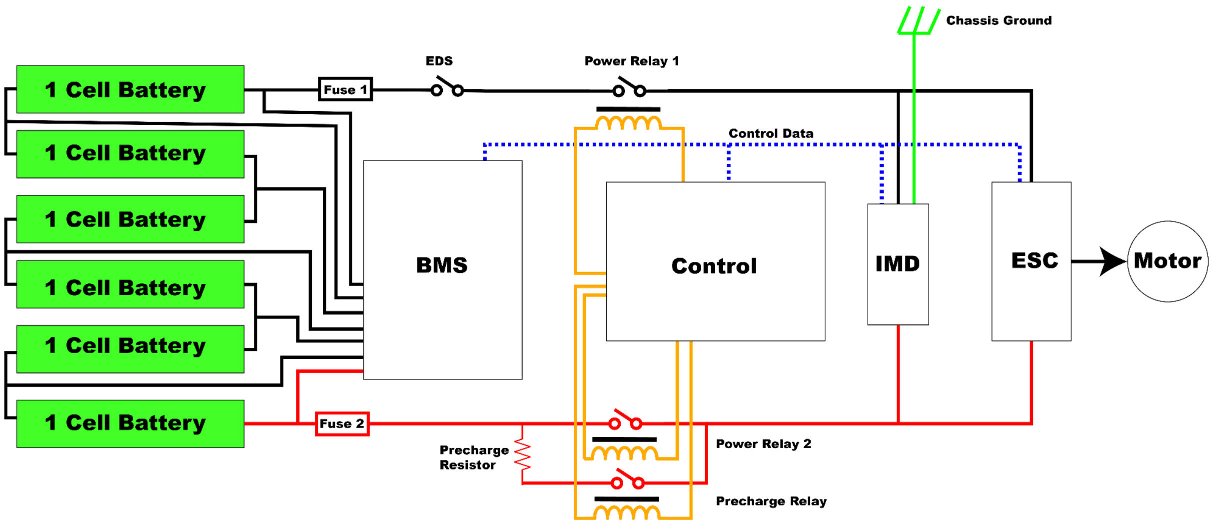
4. Battery packs must prevent cell dislocation when subject to rotations, vibrations, and collisions experienced during normal operation of the pod.
5. The pod's power on/off mechanism must be capable of engaging and disengaging the high side and low side contactors to completely isolate the battery from the drivetrain.
6. At least one E-STOP switch that is accessible from outside the pod and clearly labelled should be placed to terminate power to the pod by disengaging the contactors.
7. A battery management system (BMS) must be implemented to monitor battery pack health and power off the pod if necessary.
8. Circuit protection features must be implemented whenever possible. Some minimum features include:
    a. Overvoltage and undervoltage protection.
        - The BMS must monitor the voltage output of the battery pack and cells. In case of overvoltage or undervoltage the BMS must disengage the contactors.
        - Additional components such as diodes, potentiometers, and voltage regulation circuits are recommended.
    b. Overcurrent
        - Fuses should be placed between each of the battery packs and contactors on the high side and low side.
        - The BMS must monitor the continuous current of the battery pack and disengage the contactors in case of overcurrent. The BMS must also monitor the state of charge and ensure the battery charge is not depleted.
    c. Over temperature
        - The BMS must monitor the temperature of at least 25% of the cells for high voltage and relay this information to the desktop. there is no minimum requirement for low voltage
    d. Reverse polarity
        - All connectors should be keyed such that high voltage and low voltage lines cannot fit into the same connector or be connected in the reverse direction.
    e. Transient circuit protection
        - There are no strict requirements for transient protection, however, teams are expected to account for this in their designs.
    f. A pre-charge and discharge circuit is required for high voltage systems to restrict current through components. Teams must calculate the duration of time the circuits need to be active before the contactors can be reengaged.

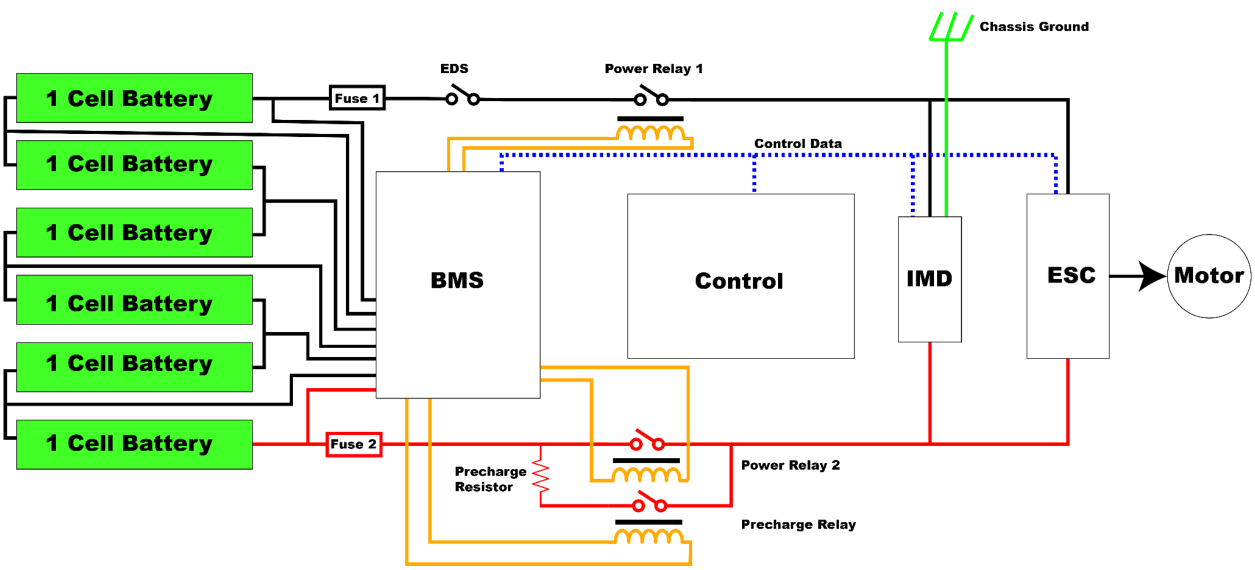
g. A MID service plug is required to disconnect the battery. It is recommended that it is placed between the battery cells, however, it is acceptable to place it between the contactor and the battery pack on the high and low side.

9. Battery packs must account for battery expansion and be electrically grounded.
10. Low voltage battery packs must be galvanically isolated from high voltage battery packs.
11. Teams are responsible for bringing fire extinguishers that are suited for use on the chemistry of their particular batteries.
12. Teams are required to perform thermal testing on cells to verify expansion and functionality.

7.8 Electrical & Wiring

1. Any wires that carry a nominal voltage greater than 48 V are considered high voltage wires. All high voltage wires must have orange insulation. If this is not possible, teams are permitted to identify high voltage wires with orange tape.
2. Length vs gauge table for wires
3. High voltage and low voltage wires must be tied separately and have different connector heads.
4. High voltages wires must be grounded to the ground of the battery and cannot be grounded to the chassis. Low voltage wires should be grounded to the chassis. All grounded wires must use black insulation.
5. An insulation monitoring device (IMD) must be used to ensure that the high voltage rail remains isolated from the chassis. This IMD should be placed before the contactors and main fuse, however, a secondary fuse should be placed on the high voltage input line to the IMD.
6. High voltage and low voltage systems must be electrically isolated from each other.
7. Grounded wires must be clearly identifiable with a black wire.
8. Wire insulation must be rated for the expected temperature, voltage, and current.
9. Thermal pads, heat sinks, and other thermal management techniques are recommended for additional temperature insulation.
10. Net ties, cable ties, and other wire management tools must be implemented to prevent loose, mobile, or hanging wires between connections.
11. Custom high voltage PCBs must be IPC-2221 compliant. In particular creepage distance must be kept equal or greater than clearance distance.
12. Acceptable power delivery circuit configurations are shown below





7.9 Software, Controls and Communication

A robust software, controls and communication design is critical to ensure a safe and predictable behaviour of the pod. The following software guidelines must be met:

1. Teams must show how the individual computing units of the pod ("nodes") are physically connected and which communication methods are used

2. This overview shall show which node is responsible for a particular (critical) task as well as how critical signals are distributed
3. For critical tasks and signals, teams must ensure that the failure of a single component does not lead to a catastrophic failure (e. g. digital signals using watchdogs, analog signals via value range, short circuit leads to implausibility)
4. Teams must ensure that main software components (critical tasks) react to both expected and unexpected inputs with a defined and stable output

The following controls guidelines shall be met:

1. Teams must provide runtime profiles detailing acceleration, deceleration, and steady speed zones during runtime on the track. This includes the distance at which the maximum speed is expected to be reached so that an external speed sensor may record the pod speed.
2. The maximum pod acceleration and deceleration is 50 m/s^2.
3. Pod's that decelerate above 10 m/s^2 must prove through calculations, simulations, or test runs that their brakes can withstand the temperature increase, and that the track temperature does not increase past 70 ℃.
4. All pods must have a method of measuring position, speed and acceleration.
5. All motors must be controlled via a motor controller. Feedback control loops are recommended, however, open loop configurations are acceptable if previously tested.
6. All pod data, sensor information, and communication logs must be recorded at a reasonable rate in persistent memory onboard the pod. Access to this persistent memory may be requested by CHC officials.
7. All pods must indicate basic health information through an LED interface on the exterior with sufficient brightness for visibility under sunlight when the observer is within 2 meters. At minimum, pod's must indicate:
    a. Battery health: blinking RED if malfunctioning
    b. Other errors: constant RED
    c. Standby (main power off): blinking YELLOW
    d. Moving (main power on): solid GREEN
    e. Braking (main power on): blinking GREEN
8. Teams are required to create a pod state diagram with detailed conditions and responses for all potential states that the pod may be in. As a principal, the pod should never be in an "unknown" state.
9. Teams are required to explain the conditions that lead to a state transition from the state diagram, including error conditions and expected outcomes.
10. Teams must validate the sequence of actions following the detection of a catastrophic error until a safe state is reached (f. ex.. what happens when drivetrain throws an error, what shuts down first, etc.)

11. Teams must calculate the minimum braking distance to reach a complete stop from their top expected speed and brake at a minimum of 2 times that distance on the track during runtime.

For the communication in between the pod and the remote computer the following guidelines must be met:

12. A network interface at the CHC event site will be set up so that pods can communicate to and from a desktop computer.
13. The desktop must display relevant information about the pod in a convenient format. For example, it is not necessary to display the information of each individual cell if they are all operating within range, instead an average may be acceptable. However, if a parameter is no longer within range, that data should be the primary viewpoint of the operator. Teams are responsible for deciding which parameters to relay to the desktop, however, some example key specifications include but are not limited to:
    a. Voltage, current, and temperature for critical components belonging to the motor controller, motor, and batteries.
    b. Battery current and voltage, state of charge, target speed, current speed, acceleration, position, and pressure.
14. The desktop computer must have a physical emergency stop button that can relay a stop command to the pod at the user's discretion. CHC officials reserve the right to manually control the pod.
15. Communication between the pod and desktop must be wireless. Currently, the plan is to have two options available for communications at the test track:
    a. Use of a radio (operating frequency between 902 MHz to 928 MHz to transmit to the network)
    b. Direct wifi connection on a 2.4 GHz wifi network

    Note: *This is subject to change depending on what the Waterloo Airport permits. Further information will be released to teams as it becomes available.*

7.11 Pod transportation

The Canadian Hyperloop Conference event venue is still under construction and there are no current storage facilities or transportation mechanisms for pods. Once these are established, the *Canadian Hyperloop Conference Track Safety Procedure* will be released with further details regarding pod transportation and storage on site.

Current transportation requirements include:

1. The pod must be moveable by hand on the track while unpowered. This is necessary for inspection and for removal from the track in case of power failure.
2. If the pod is hand carried, one carrier is required for every 25 kg of pod weight. The carrying handles must be detailed in the *Team Safety Procedure* document.

8.0 Documentation

Thorough documentation requirements will be released at a later date. An early preview of the upcoming required documents is listed:

1. Letter of Intent (Preliminary due date: mid-January)
2. Team White Paper (Preliminary due date: mid-January)

The Team White Paper is an overview of the team's pod design and capabilities. The paper will be reviewed by the Canadian Hyperloop Conference to help teams determine whether they are compliant with the rules and regulations and to plan the Live Demonstration. CHC officials may also provide feedback to teams based on their White Paper.

3. Final Design Package (Preliminary due date: early March)

The Final Design Package is an in depth analysis of the team's pod, detailing tolerances, test results, simulations, and calculations. This package will be used to assess whether teams are eligible for the Live Demonstration and may be used for award judging. After assessing the FDP, CHC officials may give the following feedback:

a) Accepted without conditions
b) Accepted under certain conditions
c) Deferred, may be accepted under certain conditions
d) Not accepted.

Conditions to be met may include a request on clarification and further documents as well as design changes. Teams must comply with those conditions in the designated time frame.

4. Team Safety Procedure (Preliminary due date: late April)
5. Waiver Form (Preliminary due date: late April)

The Team Safety Procedure is a safety document detailing the team's loading, unloading, storage, assembly, transportation, and logistical plans. This will be used by the Canadian Hyperloop Conference to ensure that sufficient facilities are available for teams and that appropriate safety protocols are being followed.

9.0 Contributors

Canadian Hyperloop Conference

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Contact

Please feel free to reach out to technical@cahyperloop.ca for any questions, or further clarification regarding the rulebook.

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Website: www.cahyperloop.ca