

**56th ANNUAL**  
**NEW BERLIN SOAP BOX DERBY**  
**SUNDAY, SEPTEMBER 13<sup>TH</sup>, 2020**  
**VALLEY VIEW PARK (West side of park)**  
**5150 S. SMALL ROAD, NEW BERLIN**

Please read ALL of the attached documents, "**OFFICIAL DRIVER & EVENT RULES**" and "**OFFICIAL RACECAR SPECIFICATIONS**." By understanding and complying with these rules and specifications, you will help to assure a SAFE and FAIR race for all participants.

The **DERBY** is open to all New Berlin residents between the ages of 6 and 16 inclusive, with birthdays as of August 1<sup>st</sup>, 2020. Registration **DEADLINE** is **Saturday, August 8<sup>th</sup>, 2020**.

**OPEN HOUSE & CAR BUILDING SEMINARS**

TBD - Please watch our website for updates.

These are informal sessions where you can speak with Commission members, see videos of past races, view some race cars, and get tips on building your own car. You can also REGISTER here.

**CAR INSPECTIONS**

At the track in Valley View Park  
Saturday, August 8, 2020, 1 to 3 PM  
Wednesday, August 12, 2020, 6 to 8 PM  
Saturday, August 22, 2020, 1 to 3 PM

**NOTE:** Car inspections are MANDATORY for all cars. See "**OFFICIAL RACECAR SPECIFICATIONS**" PART II, "CAR INSPECTIONS" for complete details.

**AT THE INSPECTION:**

- 1) Drivers will randomly draw for a sponsor.
- 2) Drivers will choose a car number, if one is not carried over from last year.
- 3) Drivers age class will be assigned.
- 4) Drivers will be advised of the time to report to the track on race day.
- 5) Drivers will select the size of T-shirt they will receive on race day.
- 6) Extra T-shirts for family & friends may be ordered. (There will be a charge).
- 7) After the race cars PASS INSPECTION, the wheels, wheel mounting brackets, and a steering wheel, (if one is needed), will be distributed.

Drivers are REQUIRED to wear safety helmets when racing. Personal bicycle safety helmets are allowed. Loaner helmets will also be available.

Should you have any questions regarding the NEW BERLIN SOAP BOX DERBY, you may contact one of the following Commission members:

Chris Lambach (cell) 414-429-7600  
Dale Peterson (cell) 414-248-0153

[www.nbsoapboxderby.org](http://www.nbsoapboxderby.org)

# NEW BERLIN SOAP BOX DERBY OFFICIAL DRIVER & EVENT RULES

(Revised 04/28/2014)

This "OFFICIAL DRIVER & EVENT RULES" document is to be used in conjunction with the "OFFICIAL RACECAR SPECIFICATIONS" document

## PART I – PARTICIPANTS / SPONSORS

### A. ELIGIBILITY

1. The race is open to all New Berlin residents, and children of nonresident members who have supported the Commission for a year, within the age limits prescribed.
2. Each driver will race in the age class as specified by the Commission.
3. Sponsor involvement is limited to support of the New Berlin Soap Box Derby in cooperation with the Commission. Sponsors are prohibited from assisting in building or financing a car they have sponsored.

### B. ENTRY

1. A driver may enter only one car. Each driver must have their own car.
2. A completed entry form, signed by a parent or legal guardian, must be on file with the Commission prior to the pre-race inspection of the car.
3. A completed "Parental Consent Release & Waiver of Liability" form, signed by parent(s) or legal guardian(s), must be on file with the Commission prior to race day.
4. A five dollar (\$5.00) registration fee will be charged for each driver.

### C. DRIVER SUBSTITUTION

1. In the event of illness or other emergency recognized by the Commission, the driver may name a substitute who meets the same requirements as the driver. All substitute drivers must be approved by Commission race officials before racing.
2. In the event an award is won by a car with a substitute driver, it shall be issued only in the name of the driver entrant.
3. Once a substitute driver is named, he / she shall continue to drive the car so long as it remains in competition.

## PART II – SUPPLEMENTARY RULES

### A. DRIVING RULES

1. Drivers must be fully seated in their proper place in the car, with helmets on, before the cars will be released from the starting ramps.
2. Each car must stay in its assigned lane. If a car leaves its lane and interferes with the progress of another car, (as determined by the Chief Steward), the offending car will be assigned a "loss" for that heat. If only one other was racing in that heat, the other car will be assigned a "win." If two other cars were racing in that heat, all three shall race again to determine the winner of the heat. If the interference is the result of, or results in, a damaged or disabled car, the provisions of paragraph B.1. will apply.
3. Any driver displaying unsafe driving or poor sportsmanship may be disqualified.

### B. ACCIDENTS, DISABLED CARS

1. Any car involved in an accident or disabled for any reason, and not too severely damaged in the opinion of race officials, will be given reasonable time to be repaired. The official scorer may delay the start of that car's next race, if necessary. Any delay will not adversely affect the completion of the race segment in process. The repairs must be inspected and approved by race officials before the car is allowed to race.
2. Disabled cars will not be replaced by another car.

# NEW BERLIN SOAP BOX DERBY OFFICIAL DRIVER & EVENT RULES

(Revised 04/28/2014)

## C. RACE DAY

1. The driver and car must be present at the time assigned for race day registration and inspection. Failure to comply may result in disqualification. Reasonable time may be allowed for late arrivals, at the discretion of race officials.
2. Once a car has passed race day inspection, it will be allowed into the pit area. Cars must not be removed from the pit area except for the purposes of a practice run, competition, or as otherwise directed by race officials.
3. Race officials will call each car by number to the starting ramps. Failure to stage a car in a reasonable time may result in a "loss." Once a car is staged on the starting ramp, the crew must leave the staging area as soon as possible, to allow for timely staging of the next heat.
4. Wheels may be lubricated only with lubricants readily available at any hardware store. Icing of wheels and tires is not allowed. For safety reasons, there shall be no flammable lubricants or cleaning materials at the track site. This includes, but is not limited to, kerosene, fuel oil, gasoline, etc. Other potentially harmful substances, such as dry ice, compressed or liquefied gases, or aerosol cans, shall not be allowed in the pit area. Smoking is not allowed in the pit area. Violation of these safety rules will result in a "loss" for the first offense, and elimination of the car and driver from competition for a second offense.
5. Wheels or axle brackets shall not be removed from the car once the car is brought into the pit area, except as allowed by race officials, such as for faulty or damaged parts. In such cases, replacement parts will be allowed, and the car will be inspected and approved by race officials before the car is allowed to race.
6. Wheels must be held on the axles by cotter pins, properly bent over and secured, by the driver's crew.
7. Once a car is eliminated from competition, the Commission-supplied wheels and axle brackets are to be removed by the driver's crew, and turned back in to the Commission as directed.

## D. SCORING

1. Racing will be on a triple-elimination basis: A driver is not eliminated until he / she has had three losses in a class of races. Finishing second or third in a particular heat is considered a "loss."
2. The top six drivers in each race class will become "finalists."
3. The six finalists in each class will compete to determine the three fastest cars in each class. These three cars will then compete to determine first, second and third place in their class. First place is named the "class champion." (See item 5 below).
4. The class champions in each race class will compete to determine the overall winner for the event. This overall winner is named the "champion of champions." The class champion of classes C and B will move their cars to the impound area once they have been declared class champion. The cars may be covered but may not be worked on. Class A champion will remain in the pit area since the "Champion of Champions" races will begin when the class A races are over. (See item 5 below).
5. Scoring for the "class champion" and "champion of champions" races will be run on a points system: 6 points for the first place driver in a heat, 3 points for second place, and 1 point for third place. Three heats will be run in each of these champion races, with each driver having the opportunity to run in each lane.
6. The decisions of the Chief Steward will be final with respect to the scoring of a race.

# NEW BERLIN SOAP BOX DERBY OFFICIAL DRIVER & EVENT RULES

(Revised 04/28/2014)

## PART III – OFFICIALS

### A. DECISIONS

1. The decisions of the Chief Steward will be final and binding on all concerned. Each driver and crew, by participation in the event, agrees to be bound by the “Official Racecar Specifications, the “Official Driver & Event Rules,” and any and all decisions by the Chief Steward.
2. The authority to approve or disqualify cars and / or drivers rests solely with the race officials.
3. Any car which is judged unsafe, or not in accordance with the “Official Racecar Specifications,” may be disqualified, even though it may have passed previous inspections.

### B. FINAL NOTES

1. The “Official Racecar Specifications” and the “Official Driver & Event Rules” represent the best attempt by the New Berlin Soap Box Derby Commission to provide you with an enjoyable, FAIR and SAFE race. These documents are written to provide for fairness and safety, yet allow creativity and flexibility in design and construction. DRIVER SAFETY is our primary concern.
2. The New Berlin Soap Box Derby is an alcohol free event.
3. Contact a Commission member if you have any questions or would like more information.

## REVISIONS SINCE 2011

2014 Changed Part II, D, 2  
Changed Part II, D, 3  
Added Part III, B, 2

**NEW BERLIN SOAP BOX DERBY**  
**OFFICIAL RACECAR SPECIFICATIONS**

(Revised 5/19/2017)

\*\*\*The Inspection & Specifications Committee has the final authority  
to approve or disqualify cars built to these specifications\*\*\*

This "OFFICIAL RACECAR SPECIFICATIONS" document is to be used in conjunction with the  
"OFFICIAL DRIVER & EVENT RULES" document

PART I – CAR

A. GENERAL

1. The total cost of the car should not exceed one hundred twenty dollars (\$120.00).
2. Building and painting should be done as much as possible by the driver. Adults may help, but keep in mind that the race is for the youngsters. Please don't diminish their enthusiasm or pride in accomplishment.
3. Car numbers, age classes and sponsors will be assigned at inspection. All such identification must be prominently displayed on the car prior to and during the race. (See figure 1).
4. Car numbers and age class identification must be the minimum sizes as shown in figure 1, and must be readable from a distance of ten (10) feet. Please pay attention to background contrast.
5. It is required that steering, braking, and other functional components on the car be attached by through-bolting, rather than with screws or nails.

B. DIMENSIONS

1. Width- The overall width is determined by the wooden axle width. Wooden axles must be 30 inches in length. (See figure 2). Wheel brackets shall be mounted tight to the ends of the axles as shown.
2. Length- All cars must be 72 inches long, plus 0, minus ½ inch. (See figure 2).
3. Front and rear overhang- There must be 6 inches, plus or minus 1/2 inch, from the front of the car to the center of the front axle, and 6 inches, plus or minus 1/2 inch, from the rear of the car to the center of the rear axle. (See figure 2).
4. Road clearance- It is recommended there be at least 3 inches of clearance, measured from a level road to the lowest point on the car, including the axles, and brakes. This is to ensure that the car will clear the starting ramps without dragging. (See figure 2).

C. WHEELS, AXLES, AXLE BRACKETS, BRAKES, STEERING

1. Wheels- The car must run on four (4) wheels, two front and two rear, as on an automobile. The wheels shall only be those supplied by the Commission, on a loan basis. The wheels shall be selected by the driver and his / her crew, only after the car has passed a pre-race inspection. Wheels must not be modified. Painting of the wheel rims are the only allowed form of modification to any part of the wheel. The wheels must be turned back into the Commission after completion of the event, as directed by race officials. The wheel is 10" in diameter.
2. Axles- The axles are to be constructed of unmodified solid wood, minimum 1-1/2 inches by 3-1/2 inches, (known as a 2-by-4). "Unmodified" means there will be no shaving, shaping or tapering of the wood, and no holes drilled that do not serve a functional purpose. The rear axle must be stationary. The front axle must be limited in movement so that the front wheels cannot be moved more than a maximum of 2 inches off center, (from a straight-ahead position), in either direction. This amounts to a total wheel

# NEW BERLIN SOAP BOX DERBY OFFICIAL RACECAR SPECIFICATIONS

(Revised 5/19/2017)

movement of 4 inches, lock-to-lock. (See figure 2). Both front and rear axles must be through-bolted to the floorboard.

3. Axle brackets- Brackets for attaching the wheels shall only be those supplied by the Commission, on a loan basis. The brackets shall be selected by the driver and his / her crew, only after the car has passed inspection. Brackets must be through-bolted to the axles with bolt and nut sets, 5/16 inch size hardware. Lock washers are recommended, Tee-nuts are acceptable provided the bolts pass through the entire thread of the tee-nuts. Lag screws, wood screws, lag bolts, self-locking nuts, etc., are not allowed. The brackets must be turned back into the Commission after completion of the event, as directed by race officials.
4. Brakes- Each car must be equipped with a brake capable of stopping the car in a straight line. A center brake assembly is required for this purpose. (See figure 3). All cars built must have a hand-operated brake system. Cars may only have one brake handle. It is recommended that the brake handle be a minimum of 12 inches long in order to provide proper leverage. Brakes need to have a heavy rubber pad to come in contact with the track surface. A worn, loose, or missing brake pad must be replaced before a car is allowed to race. If needed, Brake Pad material can be provided at the time of pre-race inspections.
5. Steering- The steering wheel must be an unmodified aluminum steering wheel, supplied by the commission. The steering wheel remains the property of the car owner. The steering wheel must be firmly attached to the steering column. A hinged, collapsible or otherwise movable steering system is not permitted. All connections in the cable linkage must be secure and free of excessive play. A turnbuckle on each side is required to connect the steering cable to the front axle, to allow for ease of adjustment. In addition, the turnbuckle shall have a zip tie to prevent the turnbuckle from backing itself apart. Jam nuts are also recommended. The steering cable must be a flexible, woven wire, (known as "aircraft cable"), 1/16 inch in diameter, and must not have a plastic coating. The use of rope, chain, clothesline, or any cable material other than that described above is not permitted. The cable must be wound on the steering column in such a way that the car will steer in the direction that the steering wheel is turned (must wrap onto bottom of the steering column). It is recommended that the cable pass through a hole drilled in the steering column to prevent slippage. The cable must run from the steering column, through pulleys or other similar devices at the sides of the body, so that the cable does not pass between the driver's legs. There shall be no obstructions between the driver's legs, including such things as brake parts, steering system, body covering supports, etc.

## D. BODY CONSTRUCTION

1. Floorboard- The floorboard is to be constructed of 5/8 inch or thicker plywood, or 3/4 inch or thicker OSB, (oriented strand board). Particle board, other than OSB, is not allowed. There must not be any drilling, slots, holes, or other removal of floorboard material unless it serves a functional purpose. "Functional" is defined to mean "required" for the construction of the car. Weight savings is not considered a functional purpose. Any drilling, slots, or holes still present after modifying a car or after correction of a building error, must be securely filled or plugged.
2. Body covering- There must be a body covering. Steel, sheet metal, sheet aluminum, chicken wire, or any covering deemed not safe by the Commission, is not permitted.
3. Glass- Glass is not allowed anywhere on the car.

# NEW BERLIN SOAP BOX DERBY OFFICIAL RACECAR SPECIFICATIONS

(Revised 5/19/2017)

4. Windshield- Windshields are allowed. However, the following will be closely evaluated at all inspections: Brittle plastics or other unsafe materials, the location and angle of a windshield, and whether or not a windshield could harm the driver or could prevent a quick exit from the car in case of an emergency.
5. Driver protection- Driver's legs and feet must be enclosed within, and must not protrude outside of, the body of the car.
6. Car sides- Cars must have sides, 6 inch minimum height, in the driver cockpit area. (See figure 1).
7. Car width- Cars must have a minimum width of 12 inches in the cockpit area. "Cockpit area" is defined as the area between the dashboard and the base of the seat back, wherever they are located in the car. (See figure 1).
8. Open backs- Cars must not have open backs, and must have a solid backrest for the driver. However, backs and backrests may be adjustable.
9. Weights- Weights are allowed. If used, they must be securely attached to the car.

## PART II – CAR INSPECTIONS

### A. DETAILS

1. Every car must pass a pre-race inspection by the Commission before it can compete. See the cover page for scheduled inspection dates, times and locations. The driver and the car do not need to attend every inspection. (See item 3 below).

### A. DETAILS (Continued)

2. Cars must be completed and assembled with the following components as a minimum, by the date of the last pre-race inspection: Floorboard, axles, basic body framing, steering system and brake system. Body covering, paint, lettering, wheels, axle brackets and steering wheels do not need to be completed or attached at this time.
3. Once the car is pre-race inspected, you will be advised if the car passes or fails. If the car passes, no further pre-race inspections are required. If the car fails, you will be advised of suggested corrections, and the car must be subject to another pre-race inspection. At the discretion of the Commission Inspection Team, the car may be allowed to pass on an interim basis. In this case, you will be advised that some minor corrections are needed, or some suggestions may be made. Also in this case, the car would not need to be brought back for another pre-race inspection. You may bring the car back for another pre-race inspection if you choose.
4. Commission-supplied wheels and axle brackets will be available for selection by the driver and his or her crew at the pre-race inspection, only following the car passing, or passing on an interim basis.
5. All cars will be subject to a final inspection on the day of the event to insure compliance with these Racecar Specifications, and must pass before they are allowed to compete.
6. Special attention will be given to safety-related items at all pre-race and race day inspections, and throughout the duration of the event. Failure to have a safe, strong car may lead to disappointing breakdowns, disqualification, or worse, injury.

Clarifications can be found in the FAQ section on [www.nbsoapboxderby.org](http://www.nbsoapboxderby.org). If more information is needed, please use the "Contact Us" feature on the website.

# NEW BERLIN SOAP BOX DERBY OFFICIAL RACECAR SPECIFICATIONS

(Revised 5/19/2017)

## REVISIONS SINCE 2011

- 2014      Changed Part I, C, 4 (Only one brake handle)  
            Changed Part I, C, 5 (steering cable must be 1/16 inch)
- 2017      Changed Part I, A, 5 (Removed reference to cars built before 2003)  
            Changed Part I, B, 1 (Removed overall width of 35" plus or minus)  
            Changed Part I, B, 4 (Road clearance requirements)  
            Changed Part I, C, 1 (Painting rims and wheel diameter)  
            Changed Part I, C, 3 (Tee nuts are acceptable)  
            Changed Part I, C, 4 (Removed reference to cars built before 2003, brake pads by commission if needed)  
            Changed Part I, C, 5 (Turnbuckle requirements)  
            Changed Part I, D, 1 (Changed floorboard material)



# **NEW BERLIN SOAP BOX DERBY SUGGESTED BILL OF MATERIALS**

(Revised 04/28/2014)

This bill of materials is for suggestion only.  
It is not intended to be complete, only to get you started.

**Refer to the OFFICIAL RACECAR SPECIFICATIONS**  
for minimum car building requirements.

To avoid the disappointment of a broken car on race day,  
**for cars built 2011 and after it is required that steering and brake  
systems and other functional components be attached to the car  
by through-bolting, rather than with screws or nails.**

## **FRAME / AXLES**

- 5/8" plywood or 3/4" OSB (oriented strand board) for floor
- 1-1/2" X 3-1/2" wood for axles, 2 pieces, each 30" long  
("two-by-four")
- 1/2" bolts, nuts, washers for attaching axles
- 5/16" bolts, nuts, lock washers for attaching wheel brackets

## **STEERING**

- 3/4" inside diameter copper or steel pipe for steering shaft
- 1/16" diameter woven steel wire, not plastic coated.  
("aircraft cable")
- Turnbuckles with lock nuts
- Eye bolts, nuts, washers for attaching cable system to axles
- Swivel pulleys or brake line
- Cable clamps

## **BRAKE**

- Copper pipe, elbows, tees
- Mounting brackets and bolts, nuts, washers
- Heavy duty return spring
- Heavy rubber pad or discarded tire

## **BODY**

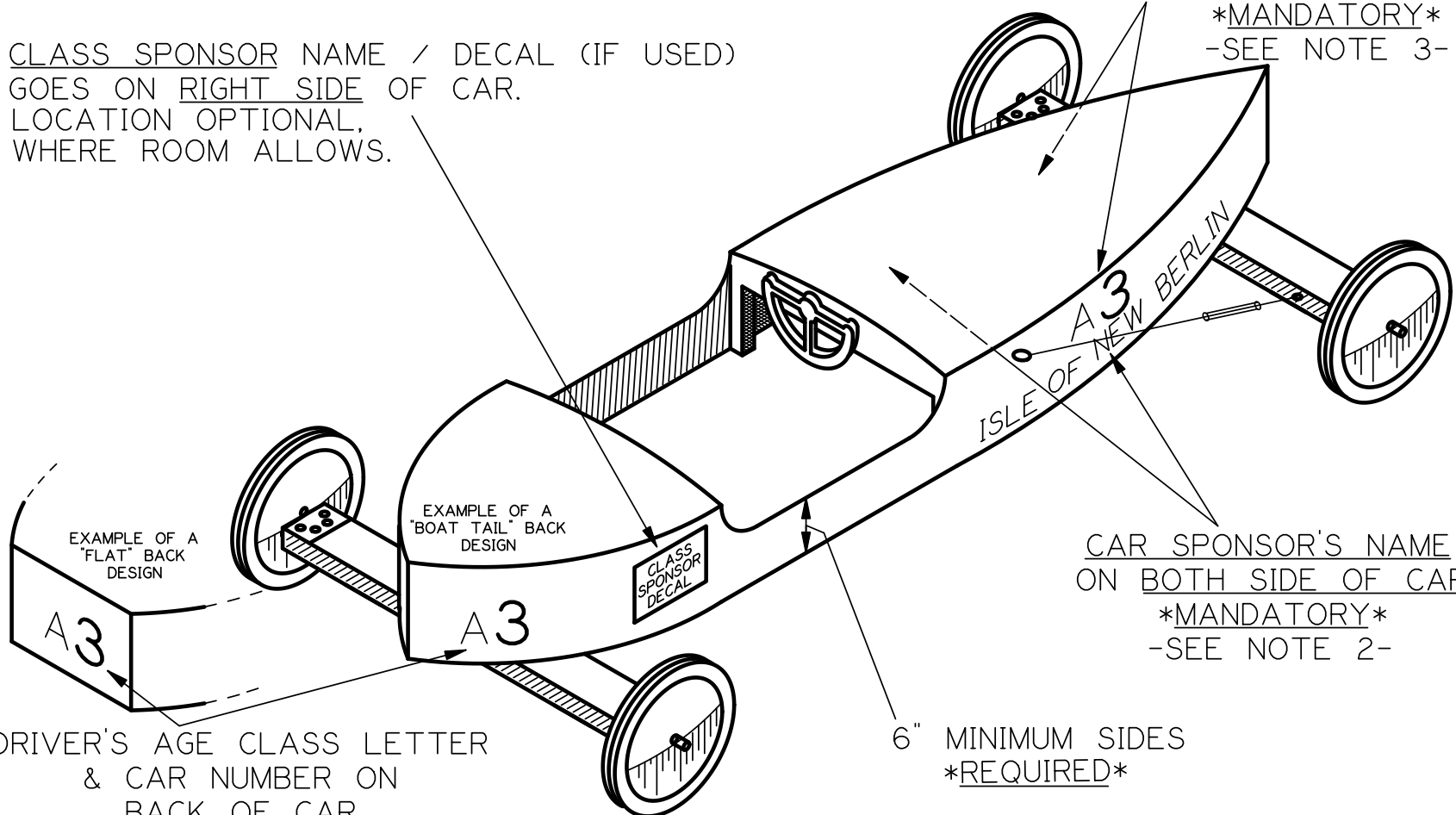
- Body covering to suit your design
- Paint
- Car numbers, 3 sets, 4" MINIMUM SIZE
- Sponsor name letters, 2 sets, 2" MINIMUM SIZE

## **MISCELLANEOUS**

- Adhesives, glues, etc.
- Other hardware as your design may require
- IMAGINATION, INGENUITY, AND CHILDREN'S  
PARTICIPATION

CLASS SPONSOR NAME / DECAL (IF USED)  
GOES ON RIGHT SIDE OF CAR.  
LOCATION OPTIONAL,  
WHERE ROOM ALLOWS.

DRIVER'S AGE CLASS LETTER  
& CAR NUMBER ON  
BOTH SIDES OF CAR  
\*MANDATORY\*  
-SEE NOTE 3-



CAR SPONSOR'S NAME  
ON BOTH SIDE OF CAR  
\*MANDATORY\*  
-SEE NOTE 2-

DRIVER'S AGE CLASS LETTER  
& CAR NUMBER ON  
BACK OF CAR

6" MINIMUM SIDES  
\*REQUIRED\*

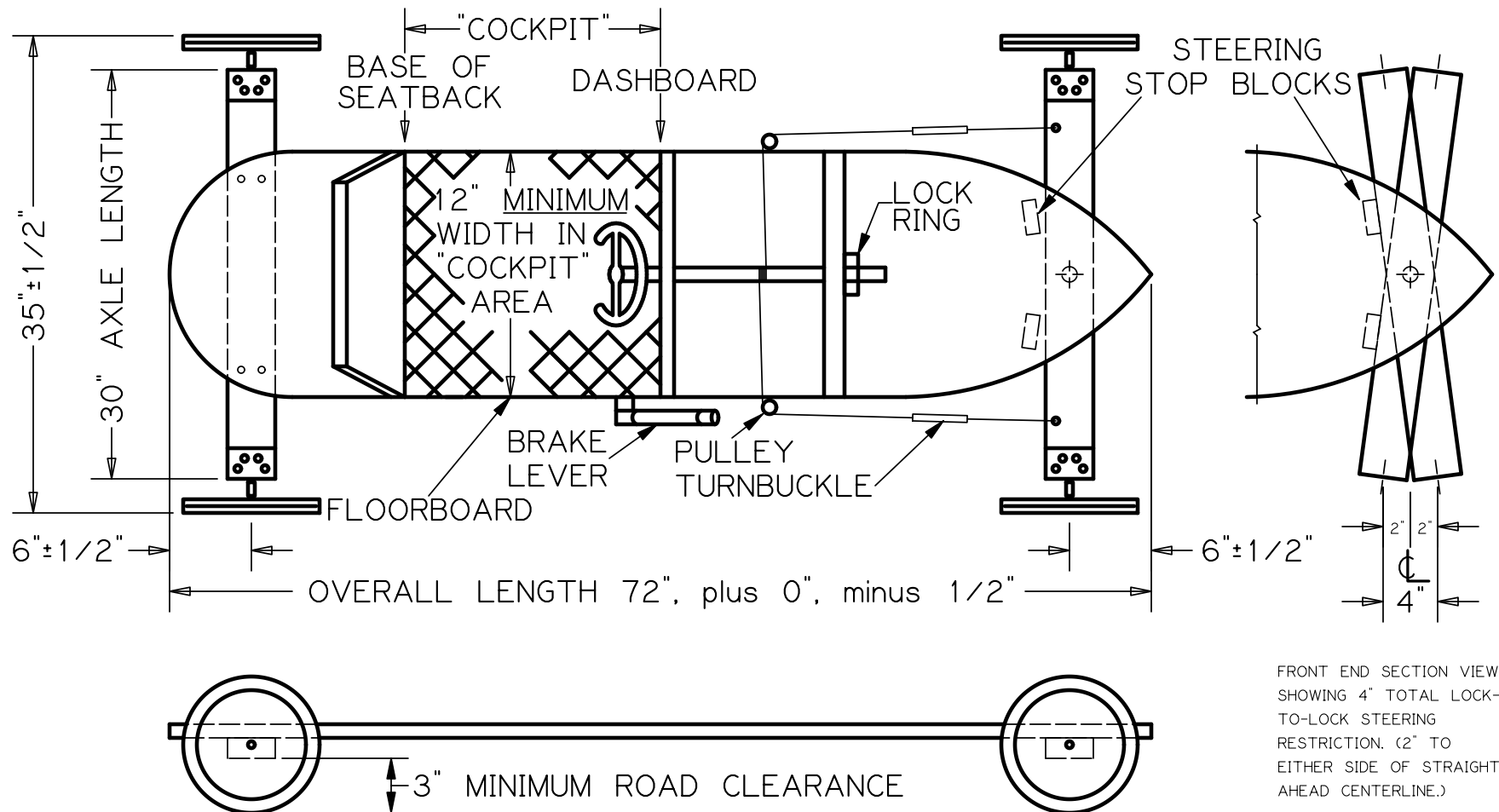
\*MANDATORY\* (EXAMPLES SHOWN FOR "FLAT" BACK & "BOAT TAIL" BACK)  
-SEE NOTE 3-

NOTES:

1. CAR BODY DESIGN OPTIONAL
2. CAR SPONSOR'S NAME: BOTH SIDES OF CAR. MINIMUM LETTER HEIGHT IS 2". READABLE FROM 10 FEET.
3. CLASS LETTER: BOTH SIDES & ON BACK. MINIMUM HEIGHT IS 2".  
CAR NUMBER: BOTH SIDES & ON BACK. MINIMUM HEIGHT IS 4".  
BOTH READABLE FROM 10 FEET.

NEW BERLIN SOAP BOX DERBY COMMISSION		
RACE CAR DRIVER'S AGE CLASS LETTER, CAR NUMBER AND SPONSOR NAME SPECIFICATIONS		
SCALE: NONE	FIGURE 1	05/10/11

\*IT IS REQUIRED THAT STEERING, BRAKE, OR OTHER FUNCTIONAL COMPONENTS BE ATTACHED BY THROUGH-BOLTING.



FRONT END SECTION VIEW  
SHOWING 4" TOTAL LOCK-  
TO-LOCK STEERING  
RESTRICTION. (2" TO  
EITHER SIDE OF STRAIGHT  
AHEAD CENTERLINE.)

NOTES:

1. CAR BODY DESIGN OPTIONAL
2. DIMENSION MUST BE HELD.
3. NO OBSTRUCTIONS BETWEEN DRIVER'S LEGS.
4. ONLY THE BASIC FRAME IS SHOWN.

NEW BERLIN SOAP BOX DERBY COMMISSION  
RACE CAR  
DESIGN DIMENSIONS

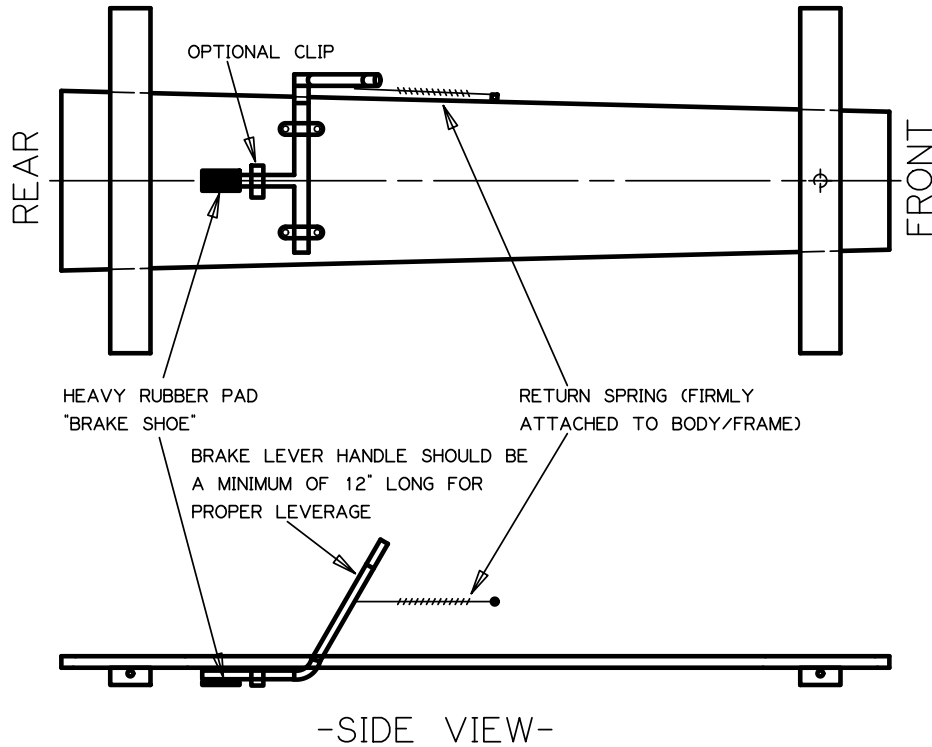
SCALE:  
NONE

FIGURE 2

05/12/19

\*IT IS REQUIRED THAT STEERING, BRAKE, OR OTHER FUNCTIONAL COMPONENTS BE ATTACHED BY THROUGH-BOLTING.

-VIEW OF BOTTOM OF CAR-



"BRAKE SHOE" TO BE LOCATED IN CAR'S CENTERLINE TO PREVENT CAR VEERING TO SIDE WHEN BRAKE IS APPLIED.

FIGURE 3: SUGGESTED BRAKE ASSEMBLY

(CABLE WRAP IS SHOWN "EXPANDED" FOR CLARITY OF THIS SKETCH. IN REALITY, IT WILL BE TIGHTLY WOUND AROUND COLUMN).

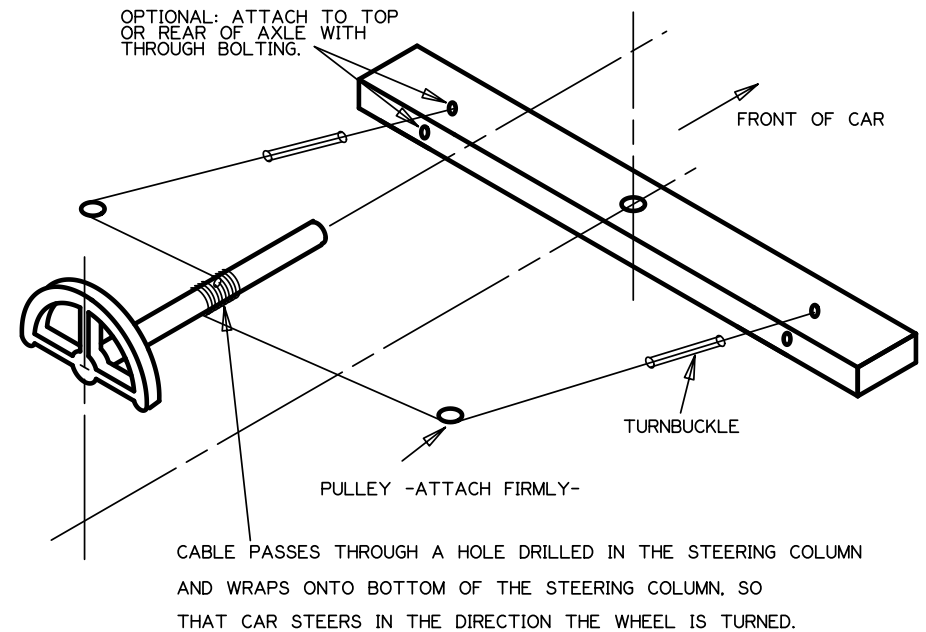


FIGURE 4: SUGGESTED STEERING ASSEMBLY

NOTES:

1. CAR BODY DESIGN OPTIONAL
2. ONLY BASIC COMPONENTS ARE SHOWN.

NEW BERLIN SOAP BOX DERBY COMMISSION

SUGGESTED BRAKE AND STEERING ASSEMBLIES

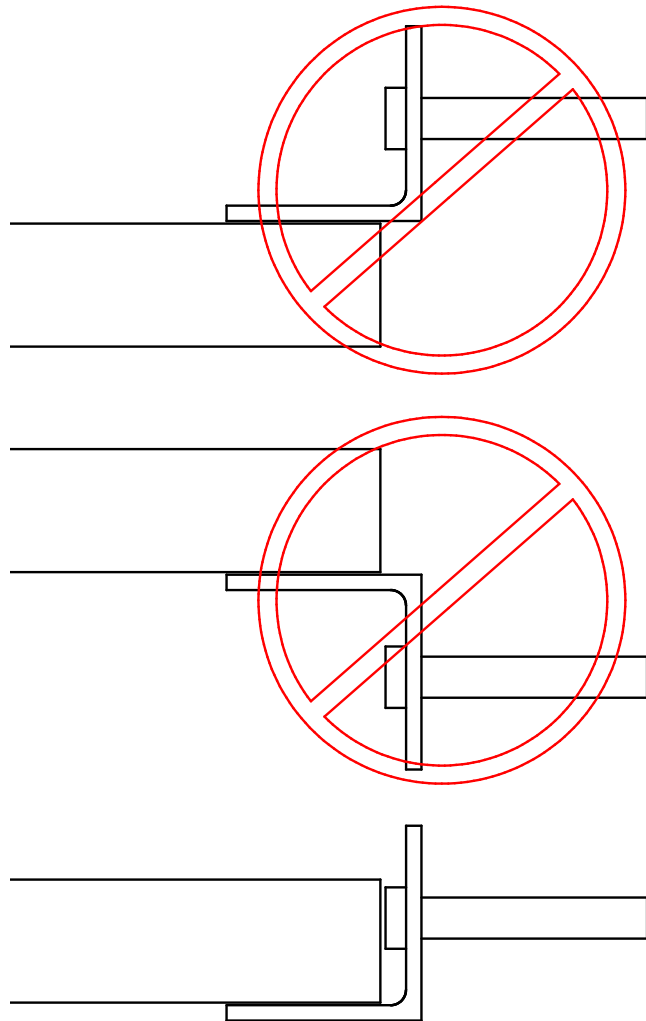
SCALE:  
NONE

FIGURE 3 & 4

05/10/11

**What is the suggested method on how to mount the axle bracket to the 2 x 4 axle?**

It is suggested that the axle bracket be mounted as pictured below.



**Do you have any suggestions to improve the braking distance of the soap box derby car?**

A couple suggestions:

1. The handle length should be longer than the length of the brake arm.
2. Mount the axle bracket as suggested.

These suggestions do not guarantee that the car will stop in a shorter distance but should help. There are many factors that affect the stopping distance.