

SECTION 20F LATE MODEL STOCK CAR DIVISION

Open to NASCAR approved automobile manufacturers provided they comply with, and adhere to, specifications as outlined for this Division. Engines may be interchanged within any approved corporate body manufacturers line.

NOTICE

ALL MODEL, ENGINE OR EQUIPMENT CHANGES OR MODIFICATIONS NOT SPECIFICALLY ADDRESSED IN THIS RULE BOOK BY NASCAR MUST BE SUBMITTED TO NASCAR, IN A COMPLETED FORM/ASSEMBLY FOR CONSIDERATION OF APPROVAL, ON OR PRIOR TO SEPTEMBER 3, 2024, UNLESS OTHERWISE AUTHORIZED BY NASCAR TO BE CONSIDERED FOR COMPETITION FOR THE 2025 SEASON. ALL EQUIPMENT IS SUBJECT TO THE APPROVAL OF TRACK OFFICIALS. TRACK OFFICIALS MAY ASSESS WEIGHT PENALTIES FOR RACE EQUIPMENT DEEMED AS NOT IN COMPLIANCE WITH THESE RULES. RACE EQUIPMENT WILL NOT BE CONSIDERED AS HAVING BEEN APPROVED BY REASON OF HAVING PASSED THROUGH INSPECTION AT ANY TIME OR ANY NUMBER OF TIMES UNOBSERVED OR UNDETECTED. ANY RACE EQUIPMENT WHICH DOES NOT CONFORM TO SPECIFICATIONS OR TOLERANCES CONTAINED IN THE 2024 NASCAR RULE BOOK, OR IS NOT OTHERWISE APPROVED BY NASCAR, MAY NOT BE USED IN COMPETITION IN 2024.

PRIOR TO PRODUCTION, ANY NEW RACE EQUIPMENT TO BE CONSIDERED FOR APPROVAL FOR COMPETITION MUST BE SUBMITTED TO NASCAR FOR APPROVAL. AT THE MANUFACTURERS EXPENSE, THE MANUFACTURER MUST PROVIDE ALL INFORMATION, MATERIALS, ELECTRONIC FILES, RACE EQUIPMENT AND FULL SCALE RACE VERSION VEHICLE(S) AS REQUESTED BY NASCAR. MANUFACTURER MUST ALSO PROVIDE TO NASCAR ANY RACE EQUIPMENT TO BE USED AS COMPARISON ITEMS FOR INSPECTION PURPOSES ALONG WITH ANY REQUIRED MANUFACTURER TEMPLATES.

20F - 1 COMPETING MODELS AS SELECTED BY NASCAR

20F - 1.1 Late Model Stock Car Races

Late Model Stock Car Races are open to eligible 2007 through 2020 composite body models. The approved composite body models are the only 2007 through 2020 models permitted. These bodies must remain as manufactured and meet all other specifications as set forth in Section 20F. The 2007 through 2020 composite body panels must have the manufacturer/NASCAR-approved logo imbedded into the composite material. Interchanging of manufacturers parts or components will not be permitted.

All bodies must be mounted on the centerline of the tread width and the frame.

20F - 1.2 Not Applicable for This Division.

20F - 1.3 Approved Competition Models

The following are the only approved composite body models eligible for competition in 2024:

<u>YEAR</u>	<u>MAKE</u>	<u>MODEL</u>
2007 - 2008	Chevrolet	Monte Carlo SS
2008 - 2018	Chevrolet	Impala SS
2007 - 2019	Dodge	Charger
2007 - 2018	Ford	Fusion
2009 - 2019	Toyota	Camry

FIVE STAR RACE CAR BODIES:

<u>YEAR</u>	<u>MAKE</u>	<u>MODEL</u>
2020	Chevrolet	Camaro
2020	Ford	Mustang
2020	Toyota	Camry

All Steel bodied models are no longer be eligible for competition.

20F - 2 GENERAL VEHICLE BODY REQUIREMENTS

20F - 2.1 Vehicle Bodies

The vehicle body must be acceptable to Track Officials and meet the following requirements:

A. The 2007 through 2020 eligible composite bodies will be volume production models as selected and approved. (See sub-section 20F-1.3).

B. The NASCAR-Approved Composite Bodies are the only bodies approved for competition. The Bodies must remain as manufactured and must meet all other specifications as set forth in Section 20F of the NASCAR Rule Book. Alterations, that in the judgment of Track Officials were made to enhance performance, will not be permitted. The composite bodies must contain the approved composite roof (and components), approved composite or plastic type fenders and approved composite or plastic type quarter panels, approved front and rear bumper covers and approved hood. The approved door panels and deck lid must be steel or aluminum.

C. All vehicles must have complete bodies, hoods, front fenders, quarter panels, front and rear bumper covers in top quality condition and must be acceptable to Track Officials.

D. Vehicles must be equipped with approved front and rear bumper covers for the make and model being used and must be in top quality condition.

E. The exterior dimensions of all bodies must remain as manufactured, except for changes that may be necessary for tire clearance, changes must be acceptable to Track Officials.

F. All bodies must be mounted on the centerline of the tread width and the frame.

G. Adjustable body mounts will be permitted. All body mounts must be metal, plastic type, or polycarbonate. Body panel rivets may be aluminum. Body mounting and location must be acceptable to Track Officials.

H. Vehicles must be neat appearing. The interior and exterior of all floors, firewalls, roll cage and frame assemblies and the interior of all body panels should be painted using only light/bright colors. Clear coat only will not be permitted. The type of paint used, whether it be flat, satin or high gloss finish, must provide a smooth surface. The paint or vinyl used on the exterior of the body panels must not be textured and provide a smooth surface. Vinyl may only be used on the exterior of the body panels. Thermal barrier coatings applied to the immediate driver's area may be used. The location of thermal coatings must be acceptable to Track Officials.

I. All front and rear bumper covers must be the same color as the vehicle including the bolts and rivets.

J. The manufacturers label must remain visible and unaltered.

K. Streamlining of the contours of the vehicle such as headlights, front bumper cover, front air dam, grilles, roof, and the top of the windshield and rear window will not be permitted.

L. Installation of air directional devices, underpans, baffles, dividers, shields or the like beneath the vehicle or the vehicle's hood and fender area, front firewall, floor, rear firewall area, rear deck and quarter panel area will not be permitted. Any part or component of the vehicle not previously approved by Track Officials, that has been installed or modified to enhance aerodynamic performance, will not be permitted. Vehicles must remain standard in appearance.

M. All seams of the interior sheet metal and all interior sheet metal to exterior body panel contact points must be sealed and caulked. This includes, but is not limited to, floors, firewalls, wheel wells, package trays, crush panels and any removable covers.

20F - 2.2 Overall Vehicle Weight

A. Throughout the Event, all vehicles must meet the applicable minimum vehicle weight and must maintain the minimum right side weight (as listed below) ready to compete (with fuel, oil, water, etc.) with driver:

<u>MANUFACTURER</u>	<u>TOTAL WEIGHT</u>	<u>RIGHTSIDE WEIGHT</u>
Ford D347SR Crate Engine	3100 lbs.	1400 lbs.
General Motors "Upgrade"	3100 lbs.	1400 lbs.
General Motors "Harrington Enforcer"	3100 lbs.	1400 lbs.
General Motors 88958604 / 19318604 Crate Engine	3050 lbs.	1375 lbs.

B. Unless otherwise authorized by the Track Officials, at all times during an Event, all weights will be measured by Track Officials using the scales provided by the Track. It is the responsibility of each race team to ensure that its vehicle meets the specified minimum weight requirements for this division on these scales.

AT THE DISCRETION OF THE PROMOTER AND TRACK OFFICIALS, OVERALL VEHICLE WEIGHT AND/OR RIGHT SIDE PERCENTAGES MAY BE ADJUSTED TO EQUALIZE COMPETITION. IF ANY ADJUSTMENTS ARE MADE THEY SHOULD BE MADE BEFORE THE FINAL PRACTICE SESSION.

C. On major components, the use of non-magnetic and/or hollow fasteners and component mounting hardware with the intent of weight reduction will not be permitted.

D. Unless otherwise approved, Race Equipment, including vehicle parts and components, that in the judgment of Track Officials have been constructed to increase the components weight beyond normal standards will not be permitted.

E. Before the use of any composite component(s), the component(s) must be submitted to and approved by NASCAR for use in competition.

20F - 2.3 Added Vehicle Weight

A. Added weight must be approved ballast only. Tungsten and other unapproved metals or materials will not be permitted. ADDED WEIGHT MUST BE IN BLOCK FORM OF NOT LESS THAN FIVE (5) POUND BLOCKS AND PAINTED WHITE WITH THE VEHICLE NUMBER AND TEAM IDENTIFICATION PERMANENTLY LEGIBLE ON IT.

B. Added weight must be securely bolted in place inside a 1/8 inch minimum thickness rectangular or square tubular type magnetic steel weight container in a manner acceptable to Track Officials. Weight trays will not be permitted. Added weight may not be added to the outside of the frame rails, below the bottom of the frame rails, ahead of the front spindles, to any suspension parts, behind the rear axle or inside the driver's compartment. Added weight containers may be attached to the inside of the main frame rails and must not be lower than the bottom of the frame rails. Center mounted added weight containers will be permitted but must be securely welded in place and be acceptable to Track Officials. For inspection purposes, all weight containers must have on one (1) end, a metal cap with a weight retention through bolt of not less than 3/8 inch diameter (installed from the top or side of the added weight container) to permit removal of the added weight.

C. Added weight inside an approved weight container, following the guidelines above, may be bolted or welded to the front sub-frame lower suspension mounting crossmember but must be behind the front spindles.

D. Added weight inside an approved weight container, following the guidelines above, may be bolted or welded to the rear suspension crossmember.

E. Added weight will not be permitted inside any crossmember, roll bars or any inaccessible welded chassis component. Electrical, pneumatic, hydraulic, remote control, or any other weight shifting devices will not be permitted at any time.

20F - 2.4 Vehicle Weights After Competition

A. After a vehicle has qualified, only fluids consumed, as determined by Track Officials, may be replaced.

B. Unless otherwise authorized by Track Officials when vehicles are weighed after a Race, only water in the radiator, oil in the engine, and fuel in the fuel cell may be added. Wheels and tires must not be changed, unless otherwise authorized by Track Officials.

C. Track rules may permit a percentage of weight loss per lap after competition.

D. The addition of ballast weight, after competition, will not be permitted.

20F - 3 DETAILED VEHICLE BODY REQUIREMENTS

In addition to the General Vehicle Body Requirements specified in sub-section 20F-2, the following Detailed Vehicle Body Requirements must be maintained. For more detailed body installation and guideline dimensions, refer to the body diagram pages in the rear of the Rule Book.

20F - 3.1 Aerodynamic Devices

All aerodynamic devices must be approved by NASCAR and acceptable to Track Officials.

20F - 3.1.1 Front Air Dam

A. All support brackets must be mounted to the rear of the air dam. Brackets and mounts must not be used or installed as air directional devices.

B. On all approved 2007 through 2019 models the leading edge of the air dam must not extend more than three (3) inches forward of the bumper measured at any point across the bumper.

On all approved 2020 models the leading edge of the air dam must not extend more than 4-3/4 inches forward of the bumper measured at the centerline of the front bumper cover.

C. On all approved 2007 through 2019 models, the leading edge of the air dam, when measured from the centerline of the right front spindle must not exceed 46 inches.

On all approved 2020 models the leading edge of the air dam, when measured from the centerline of the right front spindle must not exceed 47 inches.

D. Front air dam extensions, made of flexible plastic type material, will be permitted to be attached to the bottom of the front air dam (bumper cover). It must be flush mounted, stationary, securely fastened, single layer, not exceeding a maximum of 3/16 inch thick and must be mounted parallel to the bumper cover. The air dam extension must be secured in a manner that will prevent movement of the air dam extension while in competition.

20F - 3.1.2 Rear Spoilers

A. An approved rear spoiler must be installed on the rear of the vehicle. All spoilers must be approved by Track Officials. The spoiler must be a non-adjustable part of the body that controls the flow of air over one (1) surface only. The rear spoiler must be made of aluminum with a minimum thickness of 1/8 inch (0.125 inch) or clear polycarbonate with a minimum thickness of 1/4 inch (0.250 inch). The rear spoiler blade must maintain the same thickness over the entire spoiler blade.

B. On all approved 2007 through 2019 models the rear spoiler must not exceed five (5) inches in height and 54 inches in width.

On all approved 2020 models the rear spoiler must not exceed five (5) inches in height and 64-1/2 inches in width.

The rear spoiler will be measured from the backside. The rear spoiler must be centered on the rear of the vehicle. Rudders or forward mounting brackets will not be permitted.

C. On all approved 2007 through 2019 models the maximum rear spoiler height from the ground to the top of the rear spoiler will be 39 inches.

On all approved 2020 models the maximum rear spoiler height from the ground to the top of the rear spoiler will be 39-7/8 inches.

D. The rear spoiler angle must not be less than 50 degrees or more than 60 degrees.

E. All spoiler heights and angles will be measured with the driver in the vehicle.

F. The spoiler must be slotted 5/8 inch in the center to fit the NASCAR overall template for each make of vehicle and must maintain the same contour as the production deck lid and quarter panels as viewed from above and behind. The spoiler must be mounted in such a way as not to flex or bend under pressure and must be mounted with a minimum of six (6), 1/4 inch diameter or larger bolts evenly spaced across the back of the deck lid. Non-adjustable rear spoiler supports will be permitted inside the trunk area. The spoiler mounting flange must not extend beyond the lower edge of the rear deck lid. The spoiler flange must not extend beyond the outer edge of the spoiler. Spoiler braces, if used, must be mounted on the back of the spoiler with a maximum of three (3) spoiler braces per spoiler half with the spoiler braces located 4-1/2 inches inboard from the end of each spoiler half and 4-1/2 inches to the left and right of each spoiler half at the center split. The remaining spoiler braces must be spaced equally between the side and center spoiler braces on each spoiler half. Each spoiler brace must bolt to the top of the spoiler not more than 1/2 inch down from the top and must bolt to the deck lid below the bottom of the spoiler. Each spoiler brace must not exceed a maximum one (1) inch width, including all mounting brackets and hardware. All spoiler braces, when used, must be acceptable to Track Officials.

20F - 3.2 Windows / Lights / Mirrors

20F - 3.2.1 Windshield / Windshield Braces

A. Only standard production polycarbonate windshields will be permitted. The use of laminated polycarbonate windshields is highly recommended.

B. A full windshield in good condition is required. The windshield must be installed in its original standard position.

C. The windshield must be a minimum of 1/8 inch thick and must be bolted in place with magnetic steel bolts using backup washers. Windshield mounting and fasteners must be acceptable to Track Officials.

D. The windshield when installed must be flush with the windshield mounting bed.

E. A minimum of three (3) metal straps or braces 1/8 inch thick by one (1) inch in width must be installed inside the windshield. The straps must be bolted to the roof panel or roll bar at the top and the dash panel at the bottom with minimum 1/4 inch diameter magnetic steel bolts with backup washers and self-locking nuts. A piece of rubber stripping must be installed between the windshield and straps. The straps must be installed in a manner that will not obstruct the vision of the driver.

F. The windshield must be clear. The windshield may have a maximum of six (6) inches of tint from the top down. Additional windshield tint or tape may be added for adverse sunlight conditions. Unless otherwise authorized by Track Officials, the addition of tint or tape must be confined to the driver's side of the windshield. Additional tint to the right side of the center windshield bar (#4A) will not be permitted. A one (1) inch wide black border may be installed on the sides of the windshield. Windshield tear-off material must be approved by Track Officials.

20F - 3.2.2 Rear Window

A. Only standard production 3/16 inch thick polycarbonate must be used in the rear window opening.

B. A rear window in good condition is required. The rear window must be installed in its original standard position.

C. The rear window must be securely fastened in place with bolts or rivets.

D. The rear window when installed must be flush with the rear window mounting bed.

E. Track Officials may require the outside of the rear window to be secured with a minimum of two (2) metal straps on the outside, not less than 1/8 inch thick by one (1) inch in width, evenly spaced, and bolted to the roof at the top and the deck support panel at the bottom acceptable to Track Officials. The interior side of the rear window must be supported by at least two (2) metal braces acceptable to Track Officials. The inside metal braces may be adjustable but must be secured in place and prevent movement of the rear window.

F. A one (1) inch wide black border may be installed on the sides and top of the rear window. The standard production polycarbonate must be formed to the same shape and size as the original equipment glass. Access holes in the rear window for the rear jacking bolts must not exceed a maximum diameter of 1-1/4 inches.

G. The rear window width will be determined by measuring down three (3) inches from the top of the rear window at the edge of the roof on the roof centerline. The minimum width of the rear window for the following models must be:

<u>YEAR</u>	<u>MODEL</u>	<u>MINIMUM WIDTH</u>
2007	Chevrolet Monte Carlo SS	46 inches
2008 –2018	Chevrolet Impala SS	46 inches
2007 – 2019	Dodge Charger	43 inches
2007 – 2018	Ford Fusion	46 inches
2009 – 2019	Toyota Camry	46 inches
<u>FIVE STAR RACE CAR BODIES:</u>		
2020	Chevrolet Camaro	43-14 inches
2020	Ford Mustang	43-1/4 inches
2020	Toyota Camry	43-1/4 inches

The roof, “B” post and “C” post must remain as manufactured.

20F - 3.2.3 Side Window / Quarter Window

A. Side Windows will not be permitted.

B. A clear flat polycarbonate vent deflector panel may be installed at the bottom of the windshield “A” post. The deflector may extend a maximum of eight (8) inches rearward from the lower rear edge of the “A” post. The rear edge of the vent deflector must be vertical.

C. Quarter window openings must maintain the same size, shape and be located in the stock location for the make and model vehicle being used. Flat, clear, polycarbonate must be installed in the quarter window openings. If quick release fasteners are used, they must be the flush mount type. All other fasteners must be acceptable to Track Officials. Only one (1) air inlet (NACA Duct) in each quarter window will be permitted. The maximum hose size is three (3) inches. Suction ducts will not be permitted.

20F - 3.2.4 Headlights / Parking Lights

Approved headlight, parking light, upper grille manufacturers identification and taillight body graphics (decals) must be installed for brand identity and be acceptable to Track Officials.

20F - 3.2.5 Rear View Mirror

A. Multi-view type mirrors with a maximum width of 26 inches, must be installed at all times during competition.

B. A side mounted rear view mirror may be installed; however, it must be acceptable to Track Officials and must not extend outside of the vehicle at any time.

C. Composite material(s) will not be permitted on the rear view mirror or its mounting hardware.

20F - 3.3 Dash Panel

A. All dash panels must be acceptable to Track Officials. When a complete dash panel is used, all vehicles must have a removable inspection panel, a minimum size of 10 inches by 10 inches or eight (8) inches by 18 inches, on the top of the dash panel on the driver’s side. The inspection panel must be large enough to allow for inspection of all wiring under the dash panel. The inspection panel must be fastened with wing-type quick release fasteners. The lower edge of the dash panel must not be lower than the top of the steering column. The dash panel must be metal. Composite material dash panels will not be permitted.

B. The dash panel from the center of the vehicle to the right side may be stepped down to the top of the dash bar (#8) when the ignition amplifier box and wiring is mounted on top and not more than 18 inches away from the roll bar leg (#2B). The right side of the dash panel from the center windshield bar (#4A) to the right side front roll bar leg (#2B) may be replaced with a flat ignition system mounting plate. The flat ignition system mounting plate must be securely fastened on the top of the dash bar (#8) and mounted parallel to the frame rails. The right side ignition system mounting plate must be constructed of metal.

20F - 3.4 Firewall / Interior Sheet Metal

All firewalls, floors, tunnels, and access panels must be installed and completely secured in place when the vehicle is in competition.

A. All vehicles must have full front and rear firewalls and interior sheet metal constructed of magnetic sheet steel, with a minimum thickness of 0.025 inch and must be welded in place. Firewalls and interior sheet metal installation must be acceptable to Track Officials.

B. The front firewall must extend straight across from the left side to the right side without any offset and extend from the top of the dash panel down to the frame rails. If the floor pan is raised on the right side, a firewall panel must be installed to cover the raised floor pan opening from the inside edge of the main frame rail inward to the bell housing tunnel and extend down to the top of the frame.

C. A rear firewall behind the main roll bar (#1) (rear hoop) must be located between the trunk area and the driver's compartment. The rear firewall must follow the same angle as the rear sub-frame kick ups to the rear inner fender wells and/or be acceptable to Track Officials and continue to the area below the rear window mounting point.

D. The interior area of the vehicle must be completely enclosed. The floor area on the left side must not be lower than the top of the frame rails except directly under the seat where the floor may be dropped not lower than one (1) inch above the bottom of the frame rail. The floor area on the right side of the seat may be raised a maximum of eight (8) inches to the top of the drive shaft tunnel and extend to the right door panel.

E. All seams of the interior sheet metal and all interior sheet metal to exterior body panel contact points must be sealed without any holes and caulked. This includes, but is not limited to, floors, firewalls, wheel wells, package trays, crush panels and any removable covers.

F. Any device or duct work that permits air to pass from one area of the interior to another, or to the outside of the vehicle, will not be permitted. This includes, but is not limited to, the inside of the vehicle to the trunk area, or floors, firewalls, crush panels and wheel wells passing air into or out of the vehicle.

20F - 3.5 Doors

A. The maximum outside width of the door panels must not exceed 77-1/2 inches. When measured the width at the top and bottom of the door panels must be the same. The approved door panel must be a one-piece design only, maintaining the dimensions for the approved model vehicle and be acceptable to Track Officials. The approved composite body aluminum door panels must be a minimum of .040 inch thick and be used as manufactured. All door panels must be securely fastened to the front fender and the rear quarter panel in a manner acceptable to Track Officials.

B. Vehicles must have a magnetic steel anti-intrusion plate, with a minimum thickness of 0.090 inch, installed on the outboard side of the left side door bars and welded or bolted in place. The anti-intrusion plate, if bolted, must be attached with a minimum of four (4) 1/2 inch diameter bolts bolted to tabs constructed of a minimum 1/8 inch thick flat steel that are welded to the door bars. Door bars must not be drilled when attaching the anti-intrusion plate by bolts. The anti-intrusion plate must fill the area between the horizontal centerlines of the top and bottom door bars, and the vertical centerlines of main roll bar (#1), and the left front roll bar leg (#2A). Individual plates welded in the openings between each door bar will be permitted (see Diagram #6, in the rear pages of the Rule Book).

If the anti-intrusion plate is welded in place, to facilitate emergency removal of the left side door bars (#9A), the anti-intrusion plate must have six (6), 2-1/2 inch diameter holes cut in the anti-intrusion plate, with three (3) holes near each end of the plate in the following locations:

The upper two (2) holes must be centered vertically between the left side door bars (#9A-1&2), at an on-center distance of three (3) inches from the center of the left front roll bar leg (#2A) and main roll bar (#1).

The middle two (2) holes must be centered vertically between the left side door bars (#9A-2&3), at an on-center distance of three (3) inches from the center of the left front roll bar leg (#2A) and main roll bar (#1).

The lower two (2) holes must be centered vertically between the left side door bars (#9A-3&4), at an on-center distance of three (3) inches from the center of the left front roll bar leg (#2A) and main roll bar (#1).

C. Race equipment, such as driver cool boxes, OBFSS cylinders, electrical switches, etc. (with the exception of the driver's radio equipment) will not be permitted in the left side door area.

20F - 3.6 Fenders / Quarter Panels / Rocker Panels

The maximum outside width of the front fenders, quarter panels and rocker panels must not exceed 77-1/2 inches with the following exception. The maximum width across the front fenders at the location where the front fenders attach to the front bumper cover must not exceed 78 inches. Front fenders, quarter panels and rocker panels configuration must match from left side to right side. The front fenders, quarter panels, and rocker panels must be acceptable to Track Officials and meet the following minimum requirements:

A. Only approved composite and flexible plastic fenders and rear quarter panels will be permitted. The approved fenders and quarter panels must remain as manufactured except for changes that may be necessary for tire clearance, changes must be acceptable to Track Officials. A maximum of 10 inches measured from the outer edge of the wheel to the edge of the wheel opening will be permitted.

B. When Five Star Race Car Bodies 2007 through 2012 rear quarter panels are used, a quarter panel extension may be added to the lower edge of the rear quarter

panel behind the rear wheel opening. The quarter panel extension on the right side must not be more than 2-3/4 inches in height at the rear of the wheel opening and must not be more than 1-5/8 inches in height at the rear of the lower edge of the rear bumper cover. The quarter panel extension on the left side must not be more than 2-3/8 inches in height at the rear of the wheel opening and must not be more than one (1) inch in height at the rear of the lower edge of the rear bumper cover. The factory flange on the bottom of the rear quarter panels must not be removed.

C. The front fenders and quarter panels must not extend out past the sidewall of the tire. All braces used to support fenders and quarter panels must be straight and be constructed of metal, plastic or polycarbonate material. Adjustable supports and brackets will be permitted.

D. Rocker panels on the left and right sides must match and be the same size and shape. The rocker panels must completely fill in the area between the main frame rails and door panels for the entire length of the main frame rails. The rocker panels must be magnetic sheet steel and remain straight and parallel with the frame rails. Vertical rocker panel extensions, made of plastic type material, a maximum thickness of 3/16 inch and a maximum height of four (4) inches will be permitted. They must be installed vertical and flush with the outer body panel at the bottom of both left side and right side rocker panels. and be the same front to rear length as the rocker panels. The vertical rocker panel extensions must be stationary, securely fastened, single layer and must be mounted parallel to the rocker panel. The rocker panel extension must be secured in a manner that will prevent movement of the rocker panel extension while in competition.

E. If crush panels are used, they must be a maximum of eight (8) inches wide and constructed with aluminum.

20F - 3.7 Grilles

A. All lower grille openings must retain the same shape and size as the standard production original equipment.

B. The simulated upper grille opening in the approved front bumper cover must not be altered or opened for radiator air entry.

C. The grille opening may be covered with two (2) layers of screen wire attached to the grille. Screen wire mesh must be porous. A one (1) inch wide metal strip to hold the screen wire to the bumper cover may be installed only on the outer edges of the grille opening. All air must enter the front of the vehicle through the grille openings only. Installation of air directional devices, underpans, baffles, dividers, shields or the like will not be permitted in the grille or in the ductwork back to the radiator. Any part or component of the vehicle not previously approved by Track Officials that has been installed or modified to enhance aerodynamic performance will not be permitted.

D. Closed grilles for racing will not be permitted.

E. Tape will be permitted to cover the grille opening and the brake cooling openings in the front of the vehicle.

F. The air dam extension must not extend into or cover any part of the grill opening.

20F - 3.8 Hoods / Roof

The hood and roof must remain as manufactured and be from the approved manufacturer and be acceptable to Track Officials. The manufacturers label must remain visible and unaltered. The hood and roof meet the following requirements:

A. The hood must close in the original position. The hood must seal tight to the front bumper cover, fenders and the windshield at all times. The front edge of the hood may fit into a slot a minimum of two (2) inches in depth across the entire width of the front of the hood and be painted the same color as the vehicle.

B. Only flat hoods will be permitted on all models.

C. Openings will not be permitted in the hood.

D. The hood must have positive magnetic solid steel pin fasteners, a minimum of three (3) across the front (one (1) at each corner, one (1) in the center and one (1) at each rear corner and one (1) in the center, if necessary) to seal the hood to the windshield. All removable hood pins must be a minimum of 1/8 inch diameter and have a minimum one (1) inch inside diameter vertical loop to facilitate ease of removal. Metal hood pin bezels must be installed at all times. A minimum of two (2) magnetic solid steel pin fasteners or quick release fasteners, if necessary, must be installed on each front fender, evenly spaced between the front and rear pin fasteners. The location of the hood pins and bezel plates must not interfere with the installation of any inspection templates.

E. Only composite roofs will be permitted. The roof panel must be of a design which will include the windshield bed and "A" posts, and the rear window bed, the "B" and "C" posts and side window(s). The windshield bottom bed, "B" post, "C" post and side windows and the rear window bed may be separate pieces and must be flange-mounted and remain as manufactured. These body panels must conform to the NASCAR-approved body and component specifications. The roof must be securely attached to the roll cage at each corner according to the manufacturers specification. The interior side of the roof at the rear above the rear window mounting bed must be supported by a metal brace(s) The inside metal brace(s) may be adjustable but must be secured in place and prevent movement of the roof.

F. An optional, removable or flip-up hatch may be installed in the roof above the driver to be used as an alternate exit. If used, the hatch must be mounted as

to comply with and not interfere with the fit of all required templates. The opening for the hatch may be a maximum of 24 inches long by 24 inches wide and must be located forward of the main roll bar (#1) and to the left of the centerline roof bar (#4). A continuous (piano type) hinge must be used at the front (windshield) edge of the hatch. A quick-release latch is required at the rear of the hatch. Industrial-type Velcro® may be used for the rear latch.

1. The hatch should be constructed from material removed from the roof, or equivalent, with two (2) steel straps, a minimum of 1-1/2 inches wide, running in the longitudinal direction the length of the hatch. These straps serve to maintain the shape of the roof and as material to which the hinges are attached. The straps may be attached using flush-mount rivets in conjunction with bonding adhesive. Additional material should be used close to the outside edges to maintain the shape of the hatch.
2. Two (2) steel straps, a minimum of 1-1/2 inches wide, running in the longitudinal direction the length of the hatch and two (2) steel straps, a minimum of 1-1/2 inches wide, running in the latitudinal direction the width of the hatch must be attached to the remaining portion of the roof. These straps serve to maintain the shape of the roof. The straps may be attached using flush-mount rivets in conjunction with bonding adhesive. Additional material should be used close to the outside edges to maintain the shape of the roof.

20F - 3.9 Rear Deck Lids / Trunks

Only rear deck lids constructed of magnetic sheet steel with a minimum thickness of 0.025 inch or sheet aluminum with a minimum thickness of 0.040 inch will be permitted. Rear deck lids must be acceptable to Track Officials.

A. Positive magnetic solid steel pin fasteners must be used on the right and left sides of the deck lid. All removable deck lid pins must be a minimum of 1/8 inch diameter and must have a minimum one (1) inch inside diameter vertical loop to facilitate ease of removal. Metal deck lid pin bezels must be installed at all times. The location of the pins and bezel plates must not interfere with the installation of any NASCAR inspection templates. Holes and/or other modifications that, in the judgment of the Track Officials, were made with the intent of weight reduction will not be permitted.

B. When closed, the deck lid must be sealed around the entire perimeter of the deck lid opening.

20F - 3.10 Bumper Covers

The bumper covers must be approved by NASCAR, be acceptable to Track Officials and meet the following requirements:

A. The approved front and rear bumper covers must be installed in the same location as far as the height, width, and depth as a stock factory production bumper.

B. Front and rear bumper cover reinforcement bars must be installed and be acceptable to Track Officials. The bumper cover reinforcement bar must be constructed of a minimum one (1) inch outside diameter with a minimum wall thickness of 0.060 inch to a maximum of 1-3/4 inches outside diameter with a maximum wall thickness of 0.095 inch magnetic steel tubing. The bumper reinforcement bars must be attached to the sub-frames by welding a maximum of two (2) horizontal tubes of the same diameter or a minimum of one (1) inch outside diameter steel tube as used for the bumper cover reinforcement bar. The tubing must not be exposed and must remain behind the bumper covers with minimum clearance behind the bumper cover and the bumper cover reinforcement bar. Holes and/or other modifications to the bumper cover reinforcement bars or attaching bars will not be permitted.

C. The front and rear bumper covers must be solid. Holes will not be permitted.

D. All front and rear bumper covers must be a two (2) piece design, separated in the center from top to bottom, and must be made of a flexible, rubberized plastic material. All front and rear bumper covers must be painted the same color as the vehicle including the bolts and rivets.

E. On all approved 2007 through 2019 models the front bumper cover, when measured along the bottom edge of the bumper cover, from the center seam out to the wheel opening, must not be less than 51 inches on both the left and right side. On all approved 2020 models the front bumper cover, when measured along the bottom edge of the bumper cover, from the center seam out to the wheel opening, must not be less than 56-1/2 inches on both the left and right side.

20F - 3.11 Identification / Marking

A. Numbers / Graphics

1. All vehicle number configuration and designs are subject to approval by Track Officials. Only single or double-digit numbers will be permitted. **The size, color, and style of numbers must be adequate to permit prompt identification by Track Officials at all times.** Numbers must be solid, at least 18 inches high, measured vertically, excluding borders and silhouettes, must be neatly attached to or painted on both sides of the vehicle on the center of the door. Door numbers must be a minimum of four (4) inches in width, and slant no more than 30 degrees from vertical.

The tops and bottoms of all numbers must be even (not staggered). Two (2) digit numbers must have a minimum separation of two (2) inches between the numbers including borders. All graphics must have a minimum separation of two (2) inches from any number including borders. A solid number 24 inches high, excluding borders and silhouettes, must be neatly attached to or painted on the roof, reading from the driver's side. Door and roof numbers must be of a different color to most of the background paint scheme. Numbers that are of an outline or border only style will not be permitted. Solid numbers, as large as possible, must be attached to or painted on the uppermost corner of the right side windshield and the right rear taillight cover. The use of number decals is acceptable if Track

Officials determine that the number is legible.

Mirror foil numbers and decals will not be permitted. Paint schemes using a mirrored or holographic appearance will not be permitted.

2. All vehicle numbers are owned by and will be assigned by Track Officials for use by the car owner. Vehicle numbers are not transferable or assignable by the car owner.
3. Track Officials may require a Competitor to use a different number in order to avoid duplication or confusion at an Event.

B. Decals and Advertising

1. At the sole discretion of NASCAR, and/or Promoter and/or Track Officials, they may refuse to permit for any reason, or they may restrict or assign the size or placement of decals, identification, and advertising of any kind including but not limited to the vehicle equipment, personnel, uniforms, garage and pit areas, promotional materials, and/or support vehicles. All NASCAR Members agree to accept NASCAR's and/or Promoter's and/or Track Official's decision in this regard.
2. NASCAR, and/or Promoter and/or Track Officials may refuse to permit a Competitor to participate in an Event if NASCAR, and/or Promoter and/or Track Officials determines that any advertising, sponsorship or similar agreement to which the Competitor (or a car owner, driver or crew member associated with the Competitor) is or will be a party, is detrimental to the sport, to NASCAR, Series Sponsor, or to the Promoter for any reason, including without limitation, the public image of the sport.
3. Decals or adhesive-backed emblems, supplied by NASCAR contingency program sponsors, for advertising or identification on race vehicles are limited in size to the area of a 32 square inch decal. Decal sizes will be determined by multiplying the full width and full length of any decal, regardless of the decal shape. Only decals of participating NASCAR contingency program sponsors will be permitted in those areas of the race vehicle reserved for the required NASCAR contingency program sponsors in sub-section (5) below.
4. Decals, advertising slogans, paint schemes and other graphic designs and text on the vehicle that have not been previously approved by the Promoter and/or Track Officials must not be used unless and until approved by the Promoter and/or Track Officials prior to the Event. Notwithstanding that a Promoter and/or Track Officials may have previously approved decals, advertising slogans, paint schemes and other graphic designs and text on the vehicle, in the best interest of the sport, NASCAR, nonetheless, reserves the right to disapprove of any such decals, advertising slogans, paint schemes and other graphic designs and text on the vehicle, and NASCAR's disapproval shall supersede any previous approval(s).
5. Decals, advertising logos, text or identification of sponsors must not be placed on the front of each door and/or each front fender (between the front of the vehicle and the front of the door) other than (a) decals, advertising logos, text or identification of series sponsors, (b) decals, advertising logos, text or identification of NASCAR contingency program sponsors, or (c) such other decals, advertising or identification as NASCAR may in its sole discretion permit or require. **Teams are required to have in place at a minimum a Series Sponsor decal in the designated area of the vehicle, as specified by NASCAR.**
6. Decals, advertising logos, text or identification of sponsors will not be permitted on the windshield (except across the top), the rear window, rear quarter windows or the rear spoiler.
7. Decals, advertising logos, text or identification of sponsors, other than the vehicle number, will not be permitted on the door of the vehicle from the rear of the vent deflector to the front edge of the "B" post.
8. Decals, advertising logos, text or identification of sponsors will not be permitted on the most rearward vertical portion of the rear bumper cover.
9. Decals, advertising logos, text or identification of sponsors will not be permitted forward of the hood pins on the front of the vehicle.
10. Decals, advertising logos, text or identification of sponsors must not be on the roof panel unless otherwise authorized by the Promoter and/or Track Officials.
11. Decals, advertising logos, text or identification of sponsors must not extend past the seam between the hood and front fenders.

20F - 3.12 Vehicle Body Measurements

For detailed body installation and dimensions, refer to the rear pages of the Rule Book.

20F - 3.12.1 Templates

A. A vehicle must conform to any and all approved templates, comparison pieces and/or other measuring devices as applied and measured by the Track Officials. Once a vehicle has passed inspection at an Event, the vehicle must not be altered in any manner that in the judgment of Track Officials enhances the aerodynamic performance of the vehicle. The decision of the Track Officials will be final.

B. The templates that are currently available for track use for the 2007 through 2020 composite body are:

Template "A" Centerline - front to rear template from the bottom of the windshield back to the rear bumper cover

Template "B" Centerline/Nose - from the windshield base forward across the hood, down the nose to the ground

Template "B-3" Horizontal Nose - following the bumper line approximately 15-1/2 inches up from the ground

Template "D-L" Left Fender/Nose - approximately 24 inches left of the nose centerline on the bumper cover and directed at the "A" post/windshield intersection

Template "D-R" Right Fender/Nose - approximately 26-1/2 inches right of the nose centerline on the bumper cover and directed at the "A" post/windshield intersection

Template "G" Back of Roof (side to side) across the back edge of the roof, down the quarter windows and down around the radius of the quarter panel, 90 degrees to the roof

Template "H" Rear Window (side to side including "C" post) - approximately 16 inches down from the top of the rear window, across the "C" post ending on top of the quarter panel shelf 90 degrees to the rear window.

20F - 4 GENERAL ENGINE REQUIREMENTS

20F - 4.1 General Engine Eligibility

The eligible engines must be production engines as determined, selected, and approved by NASCAR. All major components (engine blocks, heads, etc.) must be produced by the manufacturer for sale to the public in a regular product offering. Prior to being used in competition, all major engine and component parts must be submitted, in a completed form/assembly to the office of the NASCAR Technical Coordinator, Touring Series on or prior to September 3, 2024 for consideration of approval and approved by NASCAR. Each such part may thereafter be used until it is determined that such part is no longer eligible.

A. Only engines of a type approved by NASCAR in sub-section 20F-5.4 will be permitted. The engines listed below are the only engines approved for competition.

- The Ford D347SR crate-type engine will be permitted and must be used as supplied by the manufacturer and/or per the specification's manual provided by the manufacturer.
- The General Motors #88958604 or #19318604 crate-type engine will be permitted and must be used as supplied by the manufacturer and/or per the specification's manual provided by the manufacturer.
- The General Motors "Harrington Enforcer" engine will be permitted and must be used as supplied by the engine supplier and/or per the specification's manual provided by the engine supplier. The engine may be purchased as a complete engine assembly or in kit form.
- The General Motors "Upgrade" engine kit will be permitted and must use engine components as per the specification's manual provided. The Edelbrock part #2701 Performer and part #2975 Victor Jr. intake manifolds will be the only intake manifolds permitted and must remain as supplied without any modifications. The maximum rocker arm ratio permitted will be 1.6. All other engine components and specifications must meet the requirements as described in Section 20F-5 (Detailed Engine Requirements).

The engines listed below are no longer eligible for competition:

Manufacturer
Dodge (Built)
Ford (Built)
General Motors (Built)

B. Engines may be interchanged within any approved corporate body manufacturers line.

C. Any changes or updates by the manufacturers or suppliers must be approved by NASCAR before being permitted to compete in the NASCAR Late Model Stock Car Division.

20F - 4.2 General Engine Characteristics

The following characteristics of the production engine must be maintained in any engine used in competition in a manner acceptable to Track Officials. All parts

listed below must originate from approved stock production castings and forgings that have been machined according to the normal machining schedule utilized for standard production parts. All parts, except spark plugs should utilize fractional English measurement system fasteners and dimensions (non-metric). Coatings will not be permitted on any internal engine components, except rod and main bearings, camshaft bearings and pistons including but not limited to ceramic or Teflon®.

A. ENGINE BLOCK:

- Material
- Number of Cylinders
- Angle of Cylinders
- Cylinder Bore Centerline Spacing
- Number of Main Bearings and Type
- Number of Camshaft Bearings and Type
- Integral or Separate Cylinder Sleeves
- Location of Camshaft
- Overall Configuration

B. CYLINDER HEAD:

- Material
- Number of Valves per Cylinder
- Type of Combustion Chamber
- Location of Spark Plug
- Orientation of Spark Plug
- Arrangement of Valves
- Valve Location in Relation to the Cylinder Bore
- Angle of Valves
- Type of Valve Actuation
- Number of Intake Ports
- Number of Exhaust Ports
- Center Distances of Intake Ports Referenced to the Cylinder Bore
- Center Distances of Exhaust Ports Referenced to the Cylinder Bore
- Shape of Intake and Exhaust Ports at Mating Faces of Manifolds
- Angle of Port Face Relative to Mating Face of Head to Block
- Firing Order

20F - 5 DETAILED ENGINE REQUIREMENTS

A. For purposes of construction, some elements of sub-section 20F-5 are listed below. Changes from the approved standard production automobiles or component parts will not be permitted except as specified in the following Rules for engine preparation. In addition to the General Engine Requirements specified in sub-section 20F-4, the engines must also conform to the following Detailed Engine Requirements.

B. Heating pads, blankets or any other heating devices will not be permitted for warming the engine.

20F - 5.1 Engine Location

A. The engine must be located so the center of the forward most spark plug hole on the right side of the engine block is in line or a maximum of one (1) inch forward of the center of the right front upper ball joint.

B. The longitudinal centerline of the crankshaft must be in the longitudinal centerline of the frame, front sub-frame, and tread width, front and rear.

20F - 5.2 Engine Ground Clearance

The engine ground clearance will be measured (with the driver) from center of the crankshaft accessory drive bolt. A minimum of 12 inches and a maximum of 13 inches from center of crankshaft accessory drive bolt to ground must be maintained at all times.

20F - 5.3 Engine Mounts

All engine mounts must be acceptable to Track Officials and meet the following minimum requirements:

- A. All engine mounts must be reinforced steel or aluminum.
- B. All engine mounts must be securely bolted.
- C. Adjustable engine mounts will not be permitted.

20F - 5.4 Engine Displacement

A. The cubic inch displacement will be as follows:

<u>MANUFACTURER</u>	<u>CUBIC INCH DISPLACEMENT</u>	<u>MAXIMUM OVERBORE</u>
General Motors "Upgrade"	350 CID	0.045 inch

B. The manufacturers stock bore and stroke nominal dimensions will be as follows:

<u>MANUFACTURER</u>	<u>BORE</u>	<u>STROKE</u>
General Motors "Upgrade"	4 inches	3.480 inches

C. The formula for determining cubic inch displacement is as follows: Bore x Bore x Stroke x .7854 equals cubic inch displacement of each cylinder. The cubic inch displacement of each cylinder added together will determine the total cubic inch displacement of the engine.

D. Unless otherwise permitted by Track Officials, a maximum cooling down time of two (2) hours from the official completion time of the Race will be permitted prior to measuring the total cubic inch displacement.

20F - 5.5 Engine Blocks

All engine blocks must be acceptable to Track Officials and meet the following minimum requirements. Track Officials may use an engine block provided by the respective manufacturer as a guide in determining whether a Competitor's engine block conforms to the specifications of the Rule Book.

20F - 5.5.1 Eligibility

A. Engine blocks must be a product of the manufacturer of the make of the approved engine being used in competition.

B. Aftermarket engine blocks will not be permitted.

C. The engine block must retain all standard external dimensions with the exception of the maximum allowable overbore and the surfacing of the engine block deck. Angle cutting of the engine block deck will not be permitted. Removal of material from the engine block, with the intent of weight reduction, will not be permitted.

D. Only cast iron engine blocks will be permitted. Aluminum or compacted graphite engine blocks will not be permitted.

E. The engine block deck height, measured from the center of the crankshaft main bearing journal to the top of the engine block where the cylinder heads bolt on, must be as follows:

<u>MANUFACTURER</u>	<u>BLOCK DECK HEIGHT</u>
General Motors "Upgrade"	9 inches (minimum 8.980 inches)

Any engine block deck height below the minimum tolerance may be assessed a weight penalty of five (5) pounds for every 0.010 inch up to 0.050 inch below the minimum tolerance. Any engine block deck height more than 0.050 inch below the minimum tolerance may be assessed a weight penalty of 50 pounds.

20F - 5.5.2 Internal Changes

Internal polishing of the engine block will not be permitted. De-burring of casting flash from the engine block will be permitted.

20F - 5.5.3 Pistons / Rods

A. All pistons must be configured with two (2) separate compression piston ring grooves located near the top of the piston and one (1) oil ring groove located below the compression ring grooves. A piston compression ring must be used in each compression ring groove and one (1) oil ring groove assembly must be used in the oil ring groove.

B. Any flat top three (3) ring round aluminum piston with three (3) rings in place will be permitted. Minimum compression ring nominal thickness is 1.0 mm and minimum oil ring nominal thickness is 2.0 mm. Valve reliefs for valve clearance only may be cut into the pistons. The piston must not protrude above the top of the engine block surface. The use of coatings on pistons will be permitted.

C. Only magnetic steel piston pins maintaining a minimum diameter of 0.927 inch will be permitted.

D. Piston pin holes must be in a fixed location in the piston and connecting rods.

E. Only two-piece insert style connecting rod bearings will be permitted. Roller bearings will not be permitted.

F. Only solid magnetic steel connecting rods will be permitted. Hollow beam connecting rods will not be permitted. All rods must maintain the minimum/maximum rod lengths listed below:

<u>MANUFACTURER</u>	<u>MINIMUM</u>	<u>MAXIMUM</u>
General Motors "Upgrade"	5.700	6.250

G. Titanium and stainless steel connecting rods will not be permitted.

H. Connecting rods must be machined to normal machining schedule utilized for standard production parts. Piston guided rods will not be permitted. Spacers or

shims will not be permitted between the piston boss and the connecting rod. The maximum side clearance between the connecting rods will be 0.035 inch.

20F - 5.5.4 Oil Pans / Oil Coolers

The oil pans and oil coolers must be acceptable to Track Officials and meet the following requirements:

A. The oil pan must remain as supplied from the approved supplier without any modifications except when the General Motors "Upgrade" is used.

B. When the General Motors "Upgrade" engine is used the oil pans must be constructed of magnetic steel and be a wet sump type and manufactured using a standard production type pan with only a sump reservoir added to the bottom. All bolt holes and bolt hole flanges must be visible. Kick-outs will not be permitted between the bolt on flange and the top of the added sump. Spacers, other than sealing gaskets, will not be permitted between the oil pan side rails and the engine block surface.

C. Engine oil coolers may be either an oil to air or an oil to water heat exchanger mounted forward of the engine firewall. Air ducts will not be permitted. All oil coolers and the installation must be acceptable to Track Officials.

20F - 5.6 Cylinder Head

A. All cylinder heads must be approved and all modifications must be submitted to NASCAR before any proposed modifications will be eligible for approval. Approved manufacturers' identification and part numbers must remain unaltered on the cylinder heads being used in competition.

B. Track Officials may use a cylinder head provided by the approved supplier as a guide in determining whether a Competitor's cylinder head conforms to the approved supplier's specifications.

C. Heating pads, blankets or any other heating devices will not be permitted for warming the cylinder head.

20F - 5.6.1 Eligibility

To be eligible, the cylinder heads must be acceptable to Track Officials and meet the following requirements:

A. The cylinder heads listed in each of the approved engine supplier's parts list/specifications manual are the only cylinder heads eligible and approved for competition. The cylinder heads must remain as supplied from the approved supplier.

B. The combustion chamber volume (cc's) must meet the approved supplier's specifications after the valve maintenance (valve job) has been completed.

C. Angle cutting of the cylinder head to the engine block mating surface will not be permitted.

D. The cylinder head stud or bolt holes must not be offset or drilled off-center for the purpose of moving the cylinder head in any direction.

20F - 5.6.2 External Changes

The cylinder heads must remain as supplied from the approved supplier without any external modifications.

20F - 5.6.3 Internal Changes

The cylinder heads must remain as supplied from the approved supplier unless permitted in the approved suppliers manual.

20F - 5.7 Crankshaft / Harmonic Balancer

20F - 5.7-1 Crankshaft

A. The crankshaft must remain as supplied from the approved supplier without any modifications except when the General Motors "Upgrade" is used.

B. When the General Motors "Upgrade" engine is used only standard magnetic steel or cast iron production design crankshafts will be permitted. If aftermarket crankshafts are used, they must be designed and manufactured the same as an OEM crankshaft for the approved standard production engine. Stroke must not be increased or decreased. Counterweights must be the same shape, may be polished, but they must not be knife-edged, undercut, or drilled to lighten the crankshaft. The rod bearing journals may be drilled. The main bearing journals must not be drilled. When weighing the crankshaft, the minimum weights listed below shall include the timing chain sprocket. The following dimensions are the minimum specifications for the crankshaft:

<u>Main Journal</u>	<u>Rod Journal</u>	<u>Weight</u>
2.450 minus 0.030	2.100 minus 0.030	50 Pounds

C. On all approved engines, balancing of the crankshaft will be permitted. A solid material must be used to balance the crankshaft.

D. Only two-piece insert style crankshaft bearings will be permitted. Roller bearings will not be permitted.

20F – 5.7-2 Harmonic Balancer

A. The harmonic balancer must remain as supplied from the approved supplier without any modifications except when the General Motors “Upgrade” is used.

B. When the General Motors “Upgrade” engine is used harmonic balancers must be used and must be used as manufactured and be acceptable to Track Officials. Only standard OEM magnetic steel elastomer type harmonic balancers will be permitted. The use of “O” rings or other devices that deviate from the standard OEM elastomer rubber insert will not be permitted. Outer covers, lips, etc. to prevent the separation of the outer ring will be permitted provided they do not deviate from the standard OEM elastomer rubber insert.

C. On all approved engines, electronic switching devices or sensors will not be permitted on the harmonic balancer, crankshaft, or flywheel.

20F - 5.8 Camshaft / Valve Lifters / Rocker Arms

20F - 5.8.1 Camshaft

A. The camshaft and timing chain must remain as supplied and meet the specifications per the approved supplier’s manual. Camshaft timing must be set to approved supplier’s settings.

B. On all approved engines the camshaft bearing journal size must be the same as the standard production design for the NASCAR-approved production engine being used.

C. When the General Motors “Upgrade” engine is used only standard production design timing chains will be permitted. Belt drive and gear drive systems will not be permitted. Camshaft timing must be fixed, variable timing devices will not be permitted.

D. When the General Motors “Upgrade” engine is used only standard production sleeve type cam bearings will be permitted and must be the standard inside diameter for the NASCAR-approved production engine being used. The cam bearing bores in the block may be machined a maximum of 0.030 inch oversize from standard bore. Needle or roller bearings will not be permitted.

E. Camshafts must be driven in the same direction of rotation as the NASCAR-approved standard production engine. The camshaft must maintain the same firing order as the NASCAR-approved production engine.

The approved firing orders using approved cylinder identification are as follows:

Ford	1-3-7-2-6-5-4-8
General Motors	1-8-4-3-6-5-7-2

F. The manufacturers cylinder identification sequence is as follows:

<u>General Motors</u>		<u>Ford</u>	
(Front)		(Front)	
1	2	5	1
3	4	6	2
5	6	7	3
7	8	8	4

G. When the General Motors “Upgrade” engine is used front engine cover material must be acceptable to Track Officials.

20F - 5.8.2 Valve Lifters

A. The valve lifters, push rods and push rod guide plates must remain as supplied and/or specified by the approved supplier without any modifications.

B. Any type of mechanical assistance exerting a force to assist in closing the valve and/or push rod, commonly known as rev-kits will not be permitted.

20F - 5.8.3 Rocker Arms / Valve Covers

A. The rocker arms and rocker arm ratio must remain as supplied and /or meet the specifications per the approved supplier’s manual without any modifications.

B. When the General Motors “Upgrade” engine is used roller rocker arms will be permitted. The maximum rocker arm ratio permitted will be 1.6. Rocker arms must be an independent single stud type. Dual shaft rocker arms will not be permitted. Offset rocker arms will not be permitted. Stud girdles will be permitted. All aftermarket rocker arm assemblies must be acceptable to Track Officials.

C. Valve covers must be made of steel or aluminum. Magnesium and other exotic materials will not be permitted.

20F - 5.9 Intake Manifold

A. The intake manifold(s) listed in each of the approved engine supplier’s parts list/specifications manual are the only intake manifolds eligible and approved for competition. The intake manifold must remain as supplied from the approved supplier.

B. When the General Motors “Upgrade” engine is used the Edelbrock part #2701 Performer and part #2975 Victor Jr. intake manifolds will be the only intake manifolds permitted and must remain as supplied without any modifications.

C. Track Officials may use an intake manifold provided by the respective manufacturer as a guide in determining whether a Competitor's intake manifold conforms to the specifications of the Rule Book.

D. Only one (1) paper-type intake manifold gasket per side, a maximum compressed thickness of 0.075 inch, may be used between the cylinder head and the intake manifold. Metal shim type or metal impregnated intake manifold gaskets will not be permitted.

E. Intake manifolds must not be painted or coated.

20F-5.10 Carburetor

The carburetor must be NASCAR-approved. Track Officials may use a carburetor provided by the respective manufacturer as a guide in determining whether a Competitor's carburetor conforms to the specifications of the Rule Book.

20F-5.10.1 Eligibility

A. All engines in the Late Model Stock Car Division:

1. When the General Motors "Upgrade" Engine is used the carburetors listed below are the only carburetors permitted.

- Holley 500 CFM-HP two (2) barrel, part # 80583-1
- Holley 500 CFM Ultra HP two (2) barrel (aluminum body) Part # 4412HB (Hard Core™ Gray)
- Holley 500 CFM Ultra XP two (2) barrel (aluminum body) Part # 4412HBX (Hard Core™ Gray)
- Holley 500 CFM Ultra HP two (2) barrel (aluminum body) Part # 4412BK (Tumble polished aluminum with Black™ Metering block & baseplate)
- Holley 500 CFM Ultra XP two (2) barrel (aluminum body) Part # 4412BKX (Tumble polished aluminum with Black™ Metering block & baseplate)

See B. and C. below for Holley carburetor rework guidelines.

2. When the Ford D347SR, General Motors (part #'s #88958604 or #19318604) crate and the "Harrington Enforcer engines are used the carburetors listed below are the only carburetors permitted.

- Holley 650 CFM four (4) barrel, Part # 80541-1
- Holley 650 CFM four (4) barrel, Part # 80541-2
- Holley 650 CFM four (4) barrel, Part # 80541-3

See D. below for Holley carburetor rework guidelines.

B. Holley 500 CFM-HP two (2) barrel Carburetor Rework Guidelines:

1. Carburetor Main Body:

Reshaping, polishing, grinding, drilling of additional holes or plugging of holes will not be permitted. Screw in air bleed jets of different hole sizes will be permitted for the 500 CFM-HP main body. For the Holley 500 CFM-HP main body, the number of holes and passages must remain as manufactured.

2. The choke plate may be removed, but all screw holes must be permanently sealed.

3. Choke Horn:

The choke horn may be removed. If the choke horn is removed it must be flush cut with the air cleaner ring. The air cleaner ring must not be altered and remain as manufactured.

4. Carburetor Boosters:

a. The boosters may be changed but must be of the same type. Size or shape must not be altered. The fuel supply passage inside the booster must not be changed. The booster feed hole (fuel supply hole) size may be changed. The booster casting ring must be visible and remain as manufactured. Height and location of the boosters must remain as manufactured.

b. Each carburetor booster must be secured by a small amount of epoxy and a steel wire not less than 0.025 inch in diameter. The wire must be installed in such a manner that in the case of a carburetor booster failure, the carburetor booster should remain suspended in the carburetor without any interference to the operation of the throttle shaft and the throttle plates (butterflies). A minimum size hole, acceptable to Track Officials, must be drilled through the top of the booster barrel, inboard of the booster attaching stem and in the top of the choke horn on each side of the vent tube. The 0.025 inch diameter steel wire must loop through the hole in the booster barrel and then be tied to the holes in the choke horn. As an alternative to drilling a hole in the booster, the 0.025 inch diameter steel wire must pass through the booster barrel from top to bottom and then be tied to the holes in the choke horn.

5. Carburetor Venturi:

The venturi area must not be altered or reshaped in any manner. The venturi must maintain a circular (round) cross section. The casting ring must not be removed. The location of the venturi must remain as produced by the manufacturer.

6. Alterations that, in the judgment of Track Officials, were made to allow additional air to be picked up below the opening of the venturi such as altered gaskets, base plates, and drilling holes into the carburetor will not be permitted.
 7. Carburetor Throttle Body (base plate):
The carburetor throttle body (sales number 112-111) must be used as provided by the manufacturer. The positioning of the throttle bores in the carburetor throttle body must be the same as provided by the manufacturer. The throttle bores must be completely round. The throttle bores must be straight without taper from top to bottom. The throttle bores must remain perpendicular to the top and bottom of the carburetor throttle body. The throttle body (base plate) must not be altered in shape or size. All vacuum holes must be threaded and plugged or sealed and must be acceptable to Track Officials. Idle transfer slots must remain as manufactured.
 8. Throttle Plates (butterflies):
Stock throttle plates (butterflies) must not be thinned or tapered. Idle holes may be drilled in butterflies. Screw ends may be cut even with the shafts, but the screw heads must remain standard.
 9. Throttle Shafts:
Throttle shafts must remain stock and must not be thinned or cut in any manner. Welding of the lever to the throttle shaft will be permitted.
 10. Carburetor Metering Blocks:
Only Holley 500 CFM-HP metering blocks (sales number 134-280) (part number 12201) will be permitted. For the Holley 500 CFM-HP-approved metering block, the number of holes and passages and the location must remain as manufactured. Additional holes or passages or plugging of holes or passages will not be permitted in the Holley 500 CFM-HP-approved metering block. Existing hole sizes may be enlarged but must not be reduced in size in any way and must not be plugged. When existing hole sizes are drilled beyond a desired size, a bushing may be installed in the existing hole and re-drilled but must not be smaller than original size.
 11. Accelerator Pump:
Accelerator discharge nozzles of any hole size will be permitted but must be of the same type. Only Holley replacement parts may be used. The retaining screw must not be drilled for a discharge passage. The accelerator pump cam may be changed but the pump diaphragm must remain a 30 CC pump and remain as manufactured without any changes inside the pump body. Additional diaphragms will not be permitted. A hole may be drilled in the accelerator pump fuel passage on the float bowl side of the metering block above the fuel level to relieve any siphoning through the nozzles. The hole must not be larger than .050 inch diameter.
 12. Power Valves and Floats:
Power valves and floats may be changed. Only Holley replacement parts may be used.
- C. Holley 500 CFM Ultra HP and XP 2BBL aluminum body carburetor Rework Guidelines:
1. Carburetor Main Body:
Reshaping, polishing, grinding, drilling of additional holes or plugging of holes will not be permitted. Screw in air bleed jets of different hole sizes will be permitted in the main body. For the 500 CFM Ultra HP and XP 2BBL aluminum body carburetor main body, the number of holes and passages must remain as manufactured.
 2. Carburetor Boosters:
 - a. The boosters may be replaced. The type of booster must not be changed. The Holley booster machine number 45R206-4 with the casting number 45R168 is the only booster that will be permitted. The Holley casting numbers must remain legible on the booster stems. The boosters must remain as manufactured with no modifications. The inside diameter of the booster stem must remain as manufactured. Size or shape must not be altered. The booster casting ring must be visible and remain as manufactured. Height and location of the boosters must remain as manufactured.
 - b. Each carburetor booster must be secured by a small amount of epoxy and a steel wire not less than 0.025 inch in diameter. The wire must be installed in such a manner that in the case of a carburetor booster failure, the carburetor booster should remain suspended in the carburetor without any interference to the operation of the throttle shaft and the throttle plates (butterflies). A minimum size hole, acceptable to Track Officials, must be drilled through the top of the booster barrel, inboard of the booster attaching stem. The 0.025 inch diameter steel wire must loop through the hole in the booster barrel and then be tied around the vent tube. As an alternative to drilling a hole in the booster, the 0.025 inch diameter steel wire must

pass through the booster barrel from top to bottom and then be tied around the vent tube.

3. Carburetor Venturi:
The venturi area must not be altered or reshaped in any manner. The venturi must maintain a circular (round) cross section. The location of the venturi must remain as manufactured.
 4. Alterations that, in the judgment of Track Officials, were made to allow additional air to be picked up below the opening of the venturi such as altered gaskets, base plates, and drilling holes into the carburetor will not be permitted.
 5. Carburetor Throttle Body (base plate):
The carburetor throttle body must be used as manufactured. The positioning of the throttle bores in the carburetor throttle body must be the same as manufactured. The throttle bores must be completely round. The throttle bores must be straight without taper from top to bottom. The throttle bores must remain perpendicular to the top and bottom of the carburetor throttle body. The throttle body (base plate) must not be altered in shape or size. Idle transfer slots must remain as manufactured.
 6. Throttle Plates (butterflies):
Stock throttle plates (butterflies) must not be thinned or tapered. Idle holes in the butterflies must remain as manufactured. Screw heads and screw ends must remain standard.
 7. Throttle Shafts:
Throttle shafts must remain as manufactured and must not be thinned or cut in any manner.
 8. Carburetor Metering Blocks:
Only Holley 500 CFM Ultra HP and XP 2BBL aluminum body carburetor billet metering blocks will be permitted. For the Holley 500 CFM Ultra HP and XP 2BBL aluminum body carburetor approved billet metering block, the number of holes and passages and the location must remain as manufactured. Existing hole sizes must not be enlarged or reduced in size in any way and must not be plugged. Screw in emulsion bleeds of different hole sizes will be permitted in the metering block.
 9. Accelerator Pump:
Accelerator discharge nozzles of any hole size will be permitted but must be of the same type. Only Holley replacement parts may be used. The accelerator pump cam must not be changed and the pump diaphragm must remain a 30 CC pump and remain as manufactured without any changes inside the pump body. Additional diaphragms will not be permitted.
 10. Power Valves and Floats:
Power valves may be changed. Only Holley replacement parts may be used. Floats must remain as manufactured.
- D. Holley 650 CFM four (4) barrel Carburetor Rework Guidelines:
1. Carburetor Main Body:
Reshaping, polishing, grinding, drilling of additional holes or plugging of holes will not be permitted. Screw in air bleed jets of different hole sizes will be permitted for the main body. For the main body, the number of holes and passages must remain as manufactured.
 2. Carburetor Boosters:
 - a. The boosters may be changed but must be of the same type. Size or shape must not be altered. The fuel supply passage inside the booster must not be changed. The booster feed hole (fuel supply hole) size may be changed. The booster casting ring must be visible and remain as manufactured. Height and location of the boosters must remain as manufactured.
 - b. Each carburetor booster must be secured by a small amount of epoxy and a steel wire not less than 0.025 inch in diameter. The wire must be installed in such a manner that in the case of a carburetor booster failure, the carburetor booster should remain suspended in the carburetor without any interference to the operation of the throttle shaft and the throttle plates (butterflies). A minimum size hole, acceptable to Track Officials, must be drilled through the top of the booster barrel, inboard of the booster attaching stem. The 0.025 inch diameter steel wire must loop through the hole in the booster barrel and then be tied to the respective float bowl vent tube. As an alternative to drilling a hole in the booster the 0.025 inch diameter steel wire must pass through the booster barrel from top to bottom and then be tied to the respective float bowl vent tube.
 3. Carburetor Venturi:
The venturi area must not be altered or reshaped in any manner. The venturi must maintain a circular (round) cross section. The casting ring must not be removed. The location of the venturi must remain as produced by the manufacturer.
 4. Alterations that, in the judgment of Track Officials, were made to allow additional air to be picked up below the opening of the venturi such

- as altered gaskets, base plates, and drilling holes into the carburetor will not be permitted.
5. Carburetor Throttle Body (base plate):
The carburetor throttle body must be used as provided by the manufacturer. The positioning of the throttle bores in the carburetor throttle body must be the same as provided by the manufacturer. The throttle bores must be completely round. The throttle bores must be straight without taper from top to bottom. The throttle bores must remain perpendicular to the top and bottom of the carburetor throttle body. The throttle body (base plate) must not be altered in shape or size. All vacuum holes must be threaded and plugged or sealed and must be acceptable to Track Officials. Idle transfer slots must remain as manufactured.
 6. Throttle Plates (butterflies):
Stock throttle plates (butterflies) must not be thinned or tapered. Idle holes may be drilled in butterflies. Screw ends may be cut even with the shafts, but the screw heads must remain standard.
 7. Throttle Shafts:
Throttle shafts must remain stock and must not be thinned or cut in any manner. Welding of the lever to the throttle shaft will be permitted.
 8. Carburetor Metering Blocks:
Only metering blocks with part number 11978 will be permitted for use on Part #'s 80541-1 and 80541-2 carburetors. Only metering blocks with Part #'s 11978 and 34R11978 will be permitted for use on Part # 80541-3 (Aluminum) carburetors. The number of holes and passages and the location must remain as manufactured. Additional holes or passages or plugging of holes or passages will not be permitted in the approved metering block. Existing hole sizes may be enlarged but must not be reduced in size in any way and must not be plugged. When existing hole sizes are drilled beyond a desired size, a bushing may be installed in the existing hole and re-drilled but must not be smaller than original size.
 9. Accelerator Pump:
Accelerator discharge nozzles of any hole size will be permitted but must be of the same type. Only Holley replacement parts may be used. The retaining screw must not be drilled for a discharge passage. The accelerator pump cam may be changed but the pump diaphragm must remain a 30 CC pump and remain as manufactured without any changes inside the pump body. Additional diaphragms will not be permitted. A hole may be drilled in the accelerator pump fuel passage on the float bowl side of the metering block above the fuel level to relieve any siphoning through the nozzles. The hole must not be larger than .050 inch diameter.
 10. Power Valves and Floats:
Power valves and floats may be changed. Only Holley replacement parts may be used.

20F - 5.10.2 Carburetor Spacer / Gaskets

A. A one-piece, solid, aluminum two (2) hole tapered (super sucker style) carburetor spacer, one (1) inch maximum thickness will be permitted on the General Motors "Upgrade" engine. The spacer must be centered on the intake manifold. A one-piece, two (2) hole non-metallic gasket, maximum 0.065 inch thickness that matches the exterior dimensions of the carburetor throttle base plate, must be installed between the carburetor and spacer. A one-piece non-metallic gasket maximum 0.065 inch thickness must be installed between the spacer and intake manifold. The gasket must not be larger than the top of the intake manifold.

B. A one-piece, solid, open aluminum carburetor spacer, one (1) inch in thickness, will be permitted between intake manifold and carburetor on the General Motors #88958604, #19318604 crate-type and the General Motors "Harrington Enforcer" engines. The carburetor spacer opening must be perpendicular to the base plate of the carburetor with no taper or bevel. The gasket surfaces of the spacer must conform to the shape of the carburetor base plate. Only two (2) non-metallic standard open hole mounting gaskets with a maximum thickness of 0.065 inch will be permitted.

C. When the Ford D347SR crate engine is used, the use of a carburetor spacer will not be permitted.

20F - 5.10.3 Carburetor Restrictor

Track Officials may add or remove restrictor plates, spacer plates and/or tapered spacer plates on all engine combinations for the purpose of leveling competition during an event. Final adjustments being completed before the last practice before qualifying. A carburetor restrictor or tapered spacer plate must be used when required by Track Officials.

20F - 5.10.4 Carburetor Fuel Filter

Only one (1) fuel cartridge type filter may be used between the fuel cell and the fuel pump. The fuel filter on the pressure side of the fuel pump must only be used at

the carburetor fuel bowl inlet. The location and size of the filter must be acceptable to Track Officials.

20F - 5.11 Forced Air Induction

Fuel injection, superchargers, and turbochargers will not be permitted.

20F - 5.12 Carburetor Air Filter / Air Intake

The air filter housing, including the filter, must be installed at all times during practice or competition. Performance enhancing additives or chemicals will not be permitted in the air filter housing, air filter, or the air intake area.

20F - 5.12.1 Carburetor Air Filter / Air Filter Housing

A. Only a round dry type, unaltered paper or dry type gauze air filter element maintaining a minimum of 12 inches and a maximum of 14 inches in diameter will be permitted. The air filter element must maintain a minimum of 1-1/2 inches and a maximum four (4) inches in height. All air must be filtered through the air filter element. The air filter elements must not be sprayed or soaked with any type of chemicals or liquids.

B. Only a round, commercially manufactured, stamped or spun metal air filter housing will be permitted. Air filter housings must be acceptable to Track Officials. The top and bottom of the air filter housing must be solid and must be the same diameter. Lips or expanded edges will not be permitted. The center stud hole in the top of the air filter housing must not be recessed more than one (1) inch. The air filter housing must be the same diameter as the air filter element. The air filter housing must be centered and set level on the carburetor. The bottom of the air filter housing must be lower than the top of the carburetor choke horn. When the choke horn has been removed or the Holley 500CFM Ultra HP 2BBL aluminum body carburetor is used, the bottom of the air filter housing must not be higher than 1.375 inches above the top of the carburetor main body. Tubes, funnels, or any device that may control the flow of air will not be permitted inside of the air filter or between the air filter housing and the carburetor.

20F - 5.12.2 Air Intake

Cowl air induction will not be permitted. Ducts, baffles, or air dividers will not be permitted on or leading to the air cleaner or element. Fresh air openings of any type will not be permitted in the hood or cowl area.

20F - 6 ENGINE / VEHICLE ELECTRICAL SYSTEM

All engine/vehicle electrical systems must be approved by NASCAR and be acceptable to Track Officials. Prior to being used in competition, all major engine/vehicle electrical system components must be submitted, in a completed form/assembly, to the office of the NASCAR Technical Coordinator, Touring Series for consideration of approval and approved by NASCAR. Each such part may thereafter be used until NASCAR determines that such part is no longer eligible.

20F - 6.1 Ignition System

A. Electronic distributors will be permitted. All electronic distributors must be stock type housings, equipped with a magnetic pickup, gear driven, and mounted in the stock location.

B. Magnetos will not be permitted.

C. Crank trigger systems will not be permitted.

D. Computerized, multi coil or dual electronic firing module ignition boxes will not be permitted.

E. Adjustable timing controls will not be permitted.

F. Retard or ignition delay devices will not be permitted.

G. Ignition amplifier boxes and RPM limiters that are analog only which do not contain programmable, computerized, or memory circuits will be permitted in standard ignition systems.

H. Only one (1) ignition amplifier box will be permitted (if used), and it must be mounted on the right hand side on the front of the dash panel not more than 18 inches from the front roll bar leg (#2B) or on an ignition system mounting panel as described in sub-section 20F-3.3B.

I. Modifications to ignition amplifier boxes will not be permitted. Track Officials may use ignition amplifier boxes provided by the respective manufacturer as a guide in determining whether or not modifications have been made.

J. The ignition amplifier must have a six (6) pin female connector attached to its output leads of the Packard Electric type (MSD part #8170) to facilitate manual operation and testing of the ignition components during inspection. The wiring sequence must be the same as the General Motors or Ford ignition amplifier.

K. Only one (1) ignition coil will be permitted and it must be mounted on the engine side of the firewall or inside the vehicle on the ignition system mounting plate.

L. External RPM limiters will not be permitted unless an ignition amplifier box is not used. If used, the external RPM limiter must be analog only.

M. All ignition wiring harnesses, switches, and connectors must be acceptable to Track Officials. All wiring must be point-to-point and each wiring connection must be

easily traceable and removable from the vehicle for inspection purposes. Splices, bare and punctured wires will not be permitted in the ignition system. Ignition system wiring should remain visible and accessible. Taping wires together, heat shrink wrap, and/or banded wire looms should not be used. Terminated wiring must be sealed to prevent connection.

N. A heavy red wire (positive to the battery) and a heavy black wire (negative to the ground) will be permitted. Any other wires will not be permitted to enter or exit the amplifier box.

O. Accessories to regulate the power supply will not be permitted.

P. Track Officials may at their discretion inspect, test, and/or destructively test ignition system components including ignition amplifier boxes, tachometers, distributors, etc.

Q. All connectors must allow for the application of a sealing device applied by Track Officials.

20F – 6.1.1 Interrupt Switch

A. An optional auxiliary on/off button that will shut off the ignition system should be mounted on the steering wheel within reach of the driver's thumb when the hands are in the normal driving position. The auxiliary switch must shut off the engine immediately when depressed and the engine must not restart until the button is depressed again.

B. A NASCAR-approved ignition interrupt system which contains a manifold vacuum switch and a brake line pressure switch (and may include a brake pedal position switch) may be used at the driver's option, in conjunction with or to replace the auxiliary on/off button on the steering wheel.

C. A NASCAR-approved throttle override system (Tigor Switch) mounted in the throttle linkage may be used and is highly recommended. If the throttle override system is used it may be used in conjunction with the auxiliary on/off button mounted on the steering wheel or a NASCAR-approved ignition interrupt system which contains a manifold vacuum switch and a brake line pressure switch (and may include a brake pedal position switch).

D. The button/interrupter should be mounted inline of the red 16-18 gage power between the main ignition switch and the primary/backup switch. When the button/interrupter is engaged, the ignition amplifier box must automatically shut off. If the ignition amplifier box is originally equipped with a single, white points trigger wire, this wire may be used with an interrupt switch/system.

E. The button/interrupter must use a connector of the Packard Electric type (MSD part #8173), or NASCAR-approved equivalent, to facilitate testing of the ignition system during inspection.

F. Unless otherwise authorized by Track Officials or NASCAR, switches and/or any device other than those described above that are designed to interrupt the operation of the engine will not be permitted.

20F - 6.2 Spark Plugs

Any make or brand of spark plugs may be used. All spark plugs must thread into the cylinder heads using only M14 x 1.24 threads.

20F - 6.3 Alternator

A single alternator system with an internal voltage regulator and one (1) output wire must be used. The alternator system when used must be mounted on the front of the engine in the standard location with the center of the alternator higher than the center of the water pump and must not exceed 14.9 volts of output.

20F - 6.4 Starter

The self-starter must be in working order and in the stock location. Only standard factory OEM type production starters will be permitted. After the Race is underway, vehicles may be started by hand pushing in the pit area only but under no circumstances is any vehicle permitted to be pushed onto the race track from the pit area.

20F - 6.5 Battery

A. Only one (1) battery with a maximum nominal voltage of 12 volts will be permitted. Accessories to regulate the power supply will not be permitted. Each battery must be of the gel cell or absorption glass mat design.

B. The battery must be installed in an enclosed battery box, complete with a cover, located behind the front spindle in front of the firewall or in front of the rear axle housing behind the rear firewall. The battery box must be mounted inside the outside edge of the frame rails and must not extend below the bottom of the frame rail. The battery mounting position must be acceptable to Track Officials. Any battery that would be installed during the Race must be installed in the battery box.

20F - 6.6 Electrical Switch Locations

All electrical switches must be operable and must be located on the dash panel within reach of the driver, or in the left side door area, except the labeled on/off rotary-type master switch with "on" being in the clockwise direction, which must be

located at or on the front of the dash panel near the centerline of the vehicle while remaining within the reach of the driver, when secured by the seat belts in the seat. If switches are mounted in the door area, they must be located on a metal plate mounted on the top or bottom of a door bar forward of the steering wheel. The on/off switch must be wired to the battery cable and alternator lead in a manner that would cut off all electrical power in the vehicle. A separate switch for each brake cooling fan will be permitted. All brake cooling fan switches must be mounted on the dash panel and labeled "brake cooling fan" and "on/off". All electrical switches must be labeled.

20F - 6.7 Accessories

A. Except as provided below, vehicles and drivers will not be permitted to carry onboard computers, automated electronic recording devices, electronically actuated devices, smartphones/cell phones, watches, micro-processors, recording devices, filming devices, electronic digital memory chips, traction control devices, digital readout gauges and the like, even if inoperable or incomplete. Competitors will not be permitted to have or have had on his/her person or in his/her possession or in his/her vehicle a device(s) at an Event designed specifically to enhance the traction capabilities of the vehicle, even if inoperable or incomplete.

B. For broadcasting and media-related purposes only, Track Officials may allow or require selected vehicles to compete with broadcast telemetry or other positioning and informational systems. Unless otherwise authorized or required by Track Officials, the broadcast telemetry signal from these systems will be limited to the following parameters:

1. RPM (inductive pickup on the secondary wire only).
2. Transmission gear selection.
3. MPH (taken from sensors on the driveshaft or rear wheel only).
4. Brake pedal application.
5. Throttle position indicator (must not be attached to the carburetor).
6. Camera positioning and video switching.
7. All camera locations and styles must be acceptable to Track Officials.
8. All Competitors shall cooperate with Track Officials in connection with the installation and operation of such broadcast systems.

C. NASCAR, at their discretion may require a vehicle(s) to carry a NASCAR-approved IDR (Incident Data Recorder) mounted in a standard location and manner determined by NASCAR. When required competitors and track Officials must cooperate with NASCAR Officials or designated personnel and must take whatever necessary steps provided for the installation of the IDR (Incident Data Recorder). NASCAR shall own any and all data generated and/or collected by such accelerometers and shall control the use and dissemination of such data.

D. Remote lap timing or speed sensing devices will not be permitted.

E. The tachometer control or reset switches must be built into the unit. Remote switches will not be permitted.

F. All electrical wiring harnesses, switches, and connectors must be acceptable to Track Officials. All wiring must be point-to-point and each wiring connection must be easily traceable and removable from the vehicle for inspection purposes.

G. Filming devices will not be permitted to extend beyond the pit wall.

H. A timing and scoring transponder bracket is recommended and, if used, must be installed on the right side of the rear sub-frame side rail, (beside the fuel cell) 14 feet, two (2) inches rearward of the leading edge of the front of the vehicle to the front edge of the transponder bracket. The transponder bracket must be mounted vertically with the square tab on the bottom.

I. Water bottles must not be in the vehicle during qualifying. Hydration systems, when used, must be installed in the same location for qualifying and the Race. The containers must be securely mounted to the chassis in a manner acceptable to Track Officials.

20F- 6.8 In-Vehicle Radio Communications

A. The in-vehicle radio must be analog only and must not be capable of transmitting or receiving in a digitized, encrypted, or scrambled format as determined by NASCAR. Keypad style and/or password protected radios will not be permitted. Scanning and/or channel hopping transmissions to or from the in-vehicle radio will not be permitted. All transmissions to and from the in-vehicle radio must be in the 450.000MHz-470.000MHz range, and all in-vehicle radio transmitting and receiving frequencies (including squelch codes), must be acceptable to Track Officials. All frequency changes must be updated prior to being used during an Event and be acceptable to Track Officials. The in-vehicle radio is not permitted to transmit or receive any type of telemetry (data) signal or information other than audio communications and must remain independent from any electronic system in the vehicle. Competitors will not be permitted to rebroadcast transmissions to or from the in-vehicle radio at any time during an Event. It is strongly recommended that all in-vehicle radio frequencies be licensed for use by the Federal Communications Commission (FCC) and meet all applicable regulations and guidelines.

B. Only one (1), NASCAR-approved, two-way radio will be permitted in the vehicle for audio communications to team members only. It is not permitted to

have any frequency of any Competitor installed in the radio at any time. The vehicle is permitted only one (1), approved radio wiring harness system. The radio wiring harness system will connect to the radio, driver helmet connector and a push to talk switch. Only one (1), push to talk switch will be permitted.

C. Other than for broadcasting and media related purposes only, a single, NASCAR-approved radio antenna, will be permitted to be mounted on the exterior roof of the body and must be acceptable to Track Officials. A second NASCAR-approved radio antenna (back-up) may be used inside the driver compartment.

D. Driver to driver radio communications will not be permitted.

20F - 7 ENGINE COOLING SYSTEM

The engine cooling system and components must be acceptable to Track Officials and meet the minimum requirements set forth in this sub-section.

A. Icing, freon type chemicals or refrigerants must not be used in or near the engine compartment.

B. Additional water lines to or from the water pump or intake manifold to the cylinder heads or engine block will not be permitted.

C. Portable cooling machines or devices will not be permitted.

D. Heating pads, blankets or any other heating devices will not be permitted for warming the cooling system.

20F - 7.1 Water Pump

A. Only aluminum or cast steel mechanical water pumps, in the stock location, turning in the same direction of crankshaft rotation, will be permitted.

B. Water pump impellers may be altered.

C. Coolant flow must be in the same direction as the approved production engine.

D. Only standard production V-type or flat type V-ribbed belts and pulleys will be permitted.

20F - 7.2 Fan

A. Engine-driven fans, if used, must be operational and belt driven from the crankshaft. Free spin or clutch type fans will not be permitted.

B. An electric engine cooling fan is optional. When an electric fan is used, it must be mounted parallel to the radiator.

C. If an engine-driven fan is used, it must be a standard magnetic steel fan with a minimum of four (4) blades. Removal of the fan blades or fan belt will not be permitted.

1. The minimum diameter of the fan must not be less than 14 inches.

2. The fan blades must be a minimum of 3-1/2 inches wide. Flat fan blades will not be permitted.

D. The installation and location of the fan must be acceptable to Track Officials.

20F - 7.3 Fan Shroud / Ducts

A. When an electric fan is used, shrouds or panels rearward of the radiator will not be permitted. When a standard steel fan is used, the shroud must follow the entire circumference of the fan and must not extend more than one (1) inch rearward of the trailing edge of the fan blade.

B. A rectangular shaped metal or flexible rubber and/or plastic type air box, the width of the radiator, must be attached from the front of the bumper cover to the trailing edge of the radiator. The bottom and the sides of the air box must be straight and be acceptable to Track Officials. Installation of air directional devices, underpans, baffles, dividers, shields or the like will not be permitted in the grille or in the ductwork back to the radiator. Any part or component of the vehicle that has been installed or modified to enhance aerodynamic performance will not be permitted. All air that enters the grille area must flow through the radiator core.

20F - 7.4 Radiator

A. The radiator must remain stock appearing and remain in the standard position not to exceed two (2) inches from vertical.

B. Radiator dust or shaker screens will be permitted.

C. Radiator installation must be acceptable to Track Officials.

D. The radiator overflow tube may be located at the rear cowl area ahead of the windshield directed upward or may be relocated to the rear of the vehicle.

E. All radiator cooling tubes must be operational. All cooling fins must be evenly spaced top to bottom and side to side and must remain at a 90 degree angle to the side tanks. The spacing and width must be acceptable to Track Officials.

F. Radiator cores and tanks must be constructed from aluminum material. The radiator core must be a standard automotive fin and tube design acceptable to Track Officials. Bar and plate radiator cores will not be permitted. Radiator tanks must be installed on the sides of the radiator core only.

20F - 8 ENGINE LUBRICATION

20F - 8.1 Oil

Any oil is permissible. Combustion enhancing additives will not be permitted.

20F - 8.2 Oil Pressure

Oil pressure may be regulated at the discretion of the owner or driver.

20F - 8.3 Oil Filters

Oil filters and breather caps acceptable to Track Officials will be permitted.

20F - 8.4 Oiling System

A. Dry sump or air over oil systems will not be permitted. During the running of the Race, oil must be added from the engine compartment. External oil pumps will not be permitted.

B. Oil drain lines will not be permitted.

C. Inside valve cover oiling systems will not be permitted.

D. Quick disconnect fittings will not be permitted.

E. Heating pads, blankets or any other heating devices will not be permitted for warming the oiling system.

20F - 9 ENGINE EXHAUST SYSTEM

The exhaust systems and components must be acceptable to Track Officials and meet the following minimum requirements.

20F - 9.1 Exhaust Headers

A. Exhaust headers will be permitted. The exhaust headers must be manufactured using a magnetic steel primary tube size of 1-5/8 inches outside diameter, maximum 30 inches in length cut off square, no cones or pyramids will be permitted, with a collector tube size of three (3) inches outside diameter. The header collector pipe must not be reduced at any point between the primary tubes and the exhaust pipe. Primary tubes must exit down and turn to the rear into the collector pipe. Those tubes that do not must be mounted parallel, or angle down, in reference to the cylinder head, then turn down and turn to the rear into the collector pipe. The maximum thickness permitted on the header mounting flange will be 3/8 inch.

B. Stainless steel, stepped, 180 degree, merge, or crossover equalizer tube systems will not be permitted.

C. Spacers will not be permitted between the cylinder head and the exhaust header. Only one (1) gasket, with a maximum thickness of 0.075 inch, may be used between the cylinder head and exhaust header.

D. Thermal wrap will not be permitted.

E. Scavenge lines and/or hoses will not be permitted between the engine and exhaust system.

F. Internal coatings will not be permitted.

20F - 9.2 Exhaust Pipes

A. **Two (2) separate exhaust pipes are used exiting the vehicle:** When two (2) separate exhaust pipes are used, the exhaust pipes from the exhaust header collector must not be less than three (3) inches and must not exceed four (4) inches outside diameter and must be the same diameter for the entire length. Exhaust pipes may be round or oval. When oval pipe is used it must not be less than 1-1/2 inches in cross section. When the oval pipe is used the outside circumference must be the same as the round exhaust pipe of the same outside diameter. Any device to reduce or enlarge the inside diameter of the exhaust pipe will not be permitted. The use of expanded slip joints on the leading edge of the exhaust pipe at the header collector will be permitted. The exhaust pipe sections must be attached in a manner acceptable to Track Officials. The exhaust must exit the collector and turn either right or left and may join into one (1) pipe that must exit the vehicle either beneath or above the frame rail and must be acceptable to Track Officials.

B. **“Two into one” or “Y” exhaust section:** When the “two into one” or “Y” exhaust system is used, only round exhaust pipes will be permitted. The exhaust pipes from the header collectors extending rearward to the “two into one” or “Y” exhaust section must be three (3) inches outside diameter. The “two into one” or “Y” exhaust section must not exceed twelve inches in overall length. The “two into one” or “Y” exhaust section will transition the two 3 inch inlet pipes to a single exit of a minimum of 3 inches or a maximum of 4 inches. The single pipe (exit pipe) must not be smaller than three (3) inches and must not be larger than four (4) inches outside diameter. The single pipe must be the same outside diameter from front to rear. Any device to reduce the interior diameter of the exhaust pipes including the “two into one” or “Y” exhaust section, from the entrance of the exhaust pipes to the exit of the exhaust pipes, will not be permitted. The exhaust inlet pipes must be routed underneath the transmission. The use of expanded slip joints on the leading edge of the exhaust pipe at the header collector, “two into one” or “Y” exhaust section and the exhaust pipe attaching to the “two into one” or “Y” exhaust section will be permitted. The exhaust pipe sections must be attached in a manner acceptable to

Track Officials. Any exhaust pipe exiting through the inside of the vehicle, under the raised floor-pan, must exit the vehicle through the right side door or quarter panel and be completely sealed and not extend more than 1/2 inch outside the body or be installed in a recessed or flat panel in the right side door or quarter panel in front of the right rear tire and must be acceptable to Track Officials. Frames, rocker and quarter panels must not be notched to accommodate exhaust pipes.

C. Exhaust pipes must be made of magnetic steel, fastened to the header collector and to the frame in a secure manner acceptable to Track Officials.

D. Thermal wrap will be permitted on the exhaust pipes under the driver compartment area only.

E. Crossover pipes or merge systems will not be permitted.

20F - 9.3 Heat Shields

Heat shields will not be permitted.

20F - 10 DRIVE TRAIN

The drive train systems and components must be acceptable to Track Officials and meet the following minimum requirements. All drive train fasteners and mounting hardware must be made of solid magnetic steel.

20F - 10.1 Clutch

A. Only mechanical foot pedal, cable or hydraulic operated clutches will be permitted. Pneumatic assisted clutches will not be permitted.

B. The clutch assembly must be bolted to the flywheel located inside the bell housing.

C. Multiple disc clutches will be permitted up to a maximum of three (3) discs. The disc clutch housing assembly and cover must be made from aluminum or steel. The clutch cover must be the push type design.

D. Only solid magnetic steel discs and solid magnetic steel floater plates will be permitted.

E. The minimum clutch disc diameter permitted is 5-1/2 inches.

F. Clutches must be a positive engagement design. Slider or slipper clutch designs will not be permitted.

20F - 10.2 Flywheel / Flexplate

A. Only a magnetic steel flywheel/flexplate, bolted to the crankshaft, will be permitted.

B. Holes and/or other modifications that, in the judgment of Track Officials, have been made with the intent of weight reduction will not be permitted.

C. The minimum starter ring gear outside diameter permitted will be 12-7/8 inches for General Motors and 13-1/4 inches for Ford models except as specified below.

D. As an option, the following flywheels will be permitted. When used they must remain as manufactured with no modifications.

<u>MANUFACTURER</u>	<u>PART NUMBER</u>	<u>TYPE</u>
Quartermaster	505172 (105T)	Early General Motors
Quartermaster	505272 (105T)	Late General Motors
Quartermaster	505372 (105T)	Ford (Small Block)
Tilton Engineering	51-052-5 (104T)	Early General Motors
Tilton Engineering	51-053-5 (104T)	Late General Motors (Neutral)
Tilton Engineering	51-054-5 (104T)	Late General Motors (Ext. Balance)
Tilton Engineering	51-055-5 (104T)	Ford (Small Block)

20F - 10.3 Bell Housing

A. Only special production all magnetic steel bell housings will be permitted.

B. The maximum distance from the machined surface at the back of the engine block to the machined surface at the front of the transmission case must be 6-3/8 inches including any spacers.

C. Bell housings must be the same design as an OEM type production bell housing. The bottom of the bell housing may be cut off horizontally a maximum of one (1) inch below the bottom of the transmission. Cutting on the sides of the bell housing, above this cut off line, will not be permitted.

D. Holes and/or other modifications that, in the judgment of Track Officials, have been made with the intent of weight reduction will not be permitted.

E. The starter mounting position must remain on the right side for Ford and General Motors engines.

20F - 10.4 Transmission

A. Only standard production OEM type Muncie or T-10 manual four (4) speed transmissions will be permitted. Special production transmissions will not be permitted. Top loader type transmissions will not be permitted.

B. Only cast iron, magnesium or aluminum transmission housings will be permitted. The rear housing of the transmission may be changed but must be cast iron, magnesium or aluminum and must be similar in design to the standard production OEM transmission. The side cover (shifter plate) must be the same design and operation as

the standard production OEM transmission. Billet or special production side covers will not be permitted.

C. Only OEM type, steel, angle cut forward gears manufactured for the transmission being used will be permitted. Straight-cut forward gears will not be permitted. Synchronizers must be the standard production type.

D. Holes and/or other modifications to the transmission case, gears or internal components including but not limited to, narrowing of gears, that, in the judgment of Track Officials have been made with the intent of weight reduction will not be permitted.

E. Track Officials may use a transmission provided by the respective manufacturer as a guide in determining whether a Competitor's transmission conforms to the specification of the Rule Book.

F. All forward gears and reverse gear must be in working order. All forward gears and reverse gear must be operational from inside the driver's compartment.

G. Fourth gear ratio must be 1.00:1 (direct). Transmission gear ratios between 1.00:1 and 1.23:1 will not be permitted for the remaining forward transmission gears. Overdrive gears will not be permitted.

H. Track Officials may, at their discretion, require that all vehicles compete with a final drive gear ratio specified by Track Officials for each Event.

I. Fourth gear must be the primary gear engaged on all tracks during competition.

J. All transmissions must have the input shaft and its main drive gear constantly engaged. This assembly must be constantly engaged with the countershaft and its cluster and reverse gears.

K. Only manual shift linkage using the H-pattern type will be permitted on the transmission. The shift lever must be made of metal. All shift rods connecting the shifter mechanism to the transmission must be made of metal.

L. Only fire resistant type shifter boots, secured with fasteners, acceptable to Track Officials will be permitted. The shifter boots should meet the SFI 48.1 specification and display a valid SFI 48.1 label visible on the outside surface of the shifter boot. Quick release fasteners should not be used to secure the shifter boot. The shifter boot should be completely sealed to the floor of the vehicle. Installation of the shifter boot must be acceptable to Track Officials. Shifter boots should not be used beyond two (2) years from the date of manufacture.

M. External oil pumps and oil coolers will not be permitted. Transmission lubricating systems must be of the wet sump design only.

N. Heating pads, blankets or any other heating devices will not be permitted for warming the transmission.

O. Transmission vent/breather hose and filter assemblies must be located within the transmission tunnel and must not extend forward of the vertical front firewall. Remote transmission reservoirs and/or fill tubes will not be permitted.

20F - 10.5 Drive Shaft

A. The drive shaft, universal joints, and yokes must be magnetic steel and be similar in design to the standard production type. Only a one-piece magnetic steel drive shaft with a minimum diameter of 2-3/4 inches and 4 inches maximum diameter will be permitted.

B. All drive shafts must be painted white.

C. Two (2) 360 degree solid magnetic steel brackets, with no holes or slots, not less than two (2) inches wide and 1/4 inch thick, must be placed around the drive shaft. The front bracket must be welded to the rear suspension crossmember and the rear bracket must be welded or bolted, with a minimum of two (2) minimum 3/8 inch diameter bolts on each side, to the horizontal tunnel bar (#6).

20F - 10.6 Rear Axle

A. The axle housing must be centered between the frame rails (+/-) 1/2 inch.

B. Only quick change rear end center sections with a minimum cross section height of 12 inches at the center of the rear axle with a side bell minimum diameter of 12 inches and magnetic steel spur gears on the back side will be permitted. Only a magnetic steel lower jackshaft and driveshaft yoke will be permitted in the quick change rear end center section. All cap screws attaching the ring gear to the differential locker housing must be installed at all times during competition.

C. Only the following differentials will be permitted:

1. Only Detroit locker ratchet type differentials will be permitted. When this type differential is used, either wheel, when jacked up with the transmission engaged, must turn freely by hand for one (1) full turn, 360 degrees, while the opposite wheel remains stationary. The locker-type differential must be from an approved manufacturer. Design modifications to a locker assembly will not be permitted.

2. Locked rear drive axle assemblies (solid spool) will be permitted. When jacked up, both rear wheels must rotate in the same direction and the same rotational distance at all times. One (1) wheel, when jacked up, must not rotate in any direction.

D. Full floating rear axle must be used but must not alter the tread width or general appearance.

E. Only solid, one-piece, magnetic steel axle housings will be permitted. Bolt on spindles will be permitted. Axle housings must not be altered and must remain as

manufactured. Weight added internally or externally to the axle housings or suspension parts will not be permitted.

F. Only one-piece, magnetic steel axles will be permitted. Crown type axles will not be permitted.

G. Cambered rear axle housings or rear axle housings with toe will not be permitted. The method used to check camber and toe will be at the Track Officials' discretion.

H. Only metal drive plates, the same thickness on the left and right side, will be permitted and the drive plates must be one-piece with a single internal spline. Grease fittings will not be permitted on the drive plates or axle caps.

I. Rear axle housing support bars or alignment bars will not be permitted during competition. Alignment bar "brackets" will be permitted on the rear axle housing. These brackets will be permitted to be used for attachment of alignment bars for straightening of the axle housing but the alignment bars must be removed for competition.

J. External oil pumps and oil coolers will not be permitted. Rear end lubricating systems must be of the wet sump design only.

K. Heating pads, blankets or any other heating devices will not be permitted for warming the rear end assembly.

L. All drive train fasteners and mounting hardware must be made of solid magnetic steel.

M. Track Officials may, at their discretion, require that all vehicles compete with a final drive gear ratio specified by Track Officials for each Event.

20F - 10.7 Wheels / Lug Bolts / Lug Nuts

A. Only 15 inch diameter five (5) lug magnetic steel wheels with a 10 inch rim width and a reinforced center will be permitted.

B. All wheels must be the same width and offset (backspacing).

C. Only solid, one-piece, heavy-duty 5/8 inch magnetic steel lug bolts and standard one (1) inch hex by minimum 0.650 inch thick, fully-threaded, solid, one-piece magnetic steel lug nuts will be permitted. The first thread on each lug bolt must be visible from the front of the lug nut when the lug nut is installed. Design modifications to the lug bolt or lug nut will not be permitted.

D. All valve stem hardware must be used in accordance to the tire manufacturers specifications.

E. Any device, modification or procedure to the tire, wheel, or valve stem hardware that, in the judgment of Track Officials, is used to release pressure (beyond normal pressure adjustments) from the tire, will not be permitted.

F. Bleeder valves/air bleeds will not be permitted.

G. Tape will not be permitted on the wheels.

20F - 10.8 Tires

Only track-approved tires will be permitted. Approved tires are those tires that comply with the requirements of this rule and are recommended by a tire manufacturer for use by Competitors in the Event.

20F - 10.8.1 Physical Requirements

A. Any track-approved tire will be permitted provided the tire does not exceed a maximum side wall measurement of 13.35 inches mounted on a 15 inch wheel with a 10 inch rim width.

B. Hand grooving, buffing, grinding, and/or cutting on any area of racing tire will not be permitted.

C. Tire or wheel warming, using heaters, blankets, micro-wave or any other method will not be permitted.

20F - 10.8.2 Tire Manufacturer Obligations

A. Unless notified otherwise, all tires must be used in approved positions. Approved positions are those positions on the vehicle which are recommended by a tire manufacturer for its tires used by Competitors in the Event.

B. The tire identification markings must be unique to one particular size, construction, and rubber compound combination.

C. The same tires must be made available to each Competitor.

20F - 10.8.3 Tire Measurement Procedure

A measuring device may be used to determine the maximum size of the tire. New tires may be selected at each Event by Track Officials for measurements. Tires to be measured must be mounted on a 15 inch wheel of the proper rim width. Thirty pounds tire pressure will be required for the measurements. All four (4) tires must be the same make.

20F - 10.8.4 Tire Usage Rules

The following rules govern the use of approved and qualified tires:

A. All vehicles qualified for any Late Model Stock Car Division Race may be required to start the Race on the same tires used for qualifying.

B. All vehicles qualified for any Event will be required to start and run the entire Race on the same brand of tires used for qualifying and qualifying Races.

C. During the running of any Late Model Stock Car Division Race, only one (1) jack and only one (1), 1/2 inch drive air wrench with a single socket capable of removing or attaching one (1) lug at a time will be permitted. The socket must not have the capability of retaining or dispensing any lug nuts.

D. Should identification numbers, or serial numbers be defaced on any previously approved tire, the tire will be ruled ineligible for competition.

E. Explanation of qualifying tire rule:

When an Official detects a change in the tires before the start of the Race, the Competitor will be permitted to change the tires back to the original tires used in qualifying and the vehicle will be permitted to start the Race at the rear of the field.

F. Tires that, in the judgment of Track Officials, have been altered by unauthorized treatment will not be permitted.

20F - 11 FRAMES

All frames and frame components must be approved by NASCAR. Prior to being used in competition, all frames and frame components must be submitted to the office of the NASCAR Technical Coordinator, Touring Series for consideration of approval and thereafter approved by NASCAR. Each such part may thereafter be used until NASCAR determines that such part is no longer eligible.

All frames must be acceptable to Track Officials. Any frame rejected by the Track Officials will not be approved until necessary corrections have been made. The frame used must meet the minimum requirements described in the following sub-sections.

20F - 11.1 General Frame Eligibility

All frame components must be made of magnetic steel and welded. The frame must consist of a front and rear sub-frame connected to the main frame on which the roll cage is welded. Sub-frames must not be offset from the main frame centerline. The front and rear sub-frame rails must be parallel, both vertically and horizontally, to the main frame rails. Holes and/or other modifications to the frame, frame supports, front and rear sub-frames, crossmembers, and any other frame components that, in the judgment of Track Officials, were made with the intent of weight reduction will not be permitted. Tubing used for frame rail sections must be the same size and thickness for the entire length.

20F - 11.2 Frame Requirements

A. Main Frame

The main frame and crossmember assembly must meet the specifications and dimensions as described in this sub-section and shown in Diagrams #1, 2, & 3 in the rear pages of the Rule Book. The main frame must consist of two (2) side rails of magnetic steel box tubing, equal height, width, and length on each side, inserted in standard rocker panels. The main frame rails must be parallel and located an equal distance from the chassis longitudinal centerline. When measured from the outside edge of the left side main frame rail to the outside edge of the right side main frame rail, a minimum width of 57 inches and a maximum width of 64 inches must be maintained on all frames. The main frame must be constructed using magnetic steel box tubing measuring two (2) inches in width by three (3) inches in height or three (3) inches by four (4) inches with a minimum wall thickness of 1/8 inch meeting ASTM A-500 specification.

A rear suspension crossmember which may include truck trailing arm mounting brackets and must include the front driveshaft hoop, must be constructed and located between the left and right main frame rails. The rear suspension crossmember must be constructed using a minimum two (2) inches wide by two (2) inches high square magnetic steel tubing with a wall thickness of 1/8 inch meeting the ASTM A-500 specification. The rear suspension crossmember must be straight from left side to right side and welded perpendicular to the inside vertical walls of the main frame rails. Added weight will not be permitted inside any crossmember.

B. Front Sub-Frame

A General Motors type front steer, tubular front sub-frame must be constructed using two (2) inches wide by four (4) inches high magnetic steel box tubing with a wall thickness of 0.083 inch meeting the ASTM A-500 specification. The front sub-frame left and right side connecting rails must be located at or near the front ends of the main frame rails. The front sub-frame rails must continue forward from the connecting rails incorporating attachments for the steering linkage, suspension and engine, ending at a location forward of the steering gear mount and sway-bar tube. The connecting rails must be constructed using minimum two (2) inches or three (3) inches wide by maximum four (4) inches high rectangular box tubing with a wall thickness of 1/8 inch meeting ASTM A-500 specification. The mounting location of the connecting rails must match on the left and right side. The measurement from the front of the front connecting rails to the rear of the rear connecting rails must be the same on the left side and the right side and be in the same location from side to side and front to rear. The connecting rails must be welded perpendicular to the inside vertical walls of the main frame rails. The front sub-frames must extend forward from the connecting rails with the side rails located parallel, left side to right side, and an equal distance from the chassis longitudinal centerline at a width of 32 inches, center to center. The right side and left

side front sub-frame rear side rails must rise going forward between 22 degrees and 25 degrees with one side a length of 16 inches and the opposite side with a length between 15 inches and 17 inches. The right side and left side front sub-frame forward side rails must weld to the rear side rails and continue forward a minimum length of 27 inches and a maximum length of 29 inches. The front sub-frame forward rails must be parallel to the main frame rails and located an equal distance from the chassis longitudinal centerline.

Optional right and left side front frame extensions may be welded or bolted to the front sub-frame forward side rails. If bolted, the frame extensions must be attached using a minimum of 3/8 inch diameter bolts in a manner acceptable to Track Officials. These extensions must be constructed using two (2) inches wide by three (3) inches high by 0.083 thick magnetic steel box tubing. When installed, the extensions should angle down a maximum of 18 degrees.

A front sub-frame lower suspension mounting crossmember must be located a distance of 25 inches plus or minus (+/-) 1/2 inch measured from the leading edge of the front sub-frame connecting rails to the centerline of the front crossmember. The front sub-frame lower suspension crossmember must be constructed using two (2) inches high by three (3) inches wide magnetic steel tubing with a minimum wall thickness of 0.083 inch meeting the ASTM A-500 specification. The lower suspension crossmember must be welded perpendicular to the front sub-frame forward side rails. The left and right sides of the lower suspension crossmember must be connected under the engine oil pan using one of the following options.

- a. A securely welded center section made of 1/2 inch thick by three (3) inches wide magnetic steel plate with a 1/4 inch by two (2) inches wide support plate at each end must be welded in place.
- b. A removable center section made of three (3) pieces of one (1) inch by one (1) inch by a minimum of 0.120 wall thickness square tubing welded together to form a three (3) inch wide center section. The center section and crossmember ends must be reinforced with 3/8 inch thick by three (3) inches wide welded steel plate. A minimum of four (4), 3/8 inch diameter bolts (two (2) on each end) must be used to attach the center section. Installation must be acceptable to Track Officials.

The front mounting points for the lower A-frames must be located 8-3/4 inches when measured from the longitudinal centerline of the front sub-frame to the centerline of the mounting bolt. The rear mounting points for the lower A-frames must be located 14-1/4 inches, plus or minus (+/-) 1/2 inch, when measured from the longitudinal centerline of the front sub-frame to the centerline of the mounting bolt. An eccentric type adjuster or adjustable inserts (slugs) may be used on the rear mounting bolt to maintain a distance of 25-1/2 inches, plus or minus (+/-) 1/2 inch from the center of the lower ball joint to the leading edge of the main frame side rail connecting rails. When measuring either the right or left side, the distance from the centerline of the lower ball joint to the longitudinal centerline of the sub-frame must be equal. The mounting plates for the upper A-frames must be welded to the top of the sub-frame rails and be parallel with the longitudinal centerline of the front sub-frame rails.

C. Rear Sub-Frame

The rear sub-frame side rails must be minimum two (2) inches in width by three (3) inches in height magnetic steel box tubing with a wall thickness of 0.083 inch meeting the ASTM A-500 specification. The rear sub-frame rail forward ends must be welded to left and right side connecting rails. The measurement from the front of the front connecting rails to the rear of the rear connecting rails must be the same on the left side and the right side and be in the same location from side to side and front to rear. The connecting rails must be welded perpendicular to the inside vertical walls of the main frame rails near the rear edge of the main frame rails. The connecting rails must be constructed using two (2) inches or three (3) inches wide by four (4) inches high rectangular box tubing with a wall thickness of 1/8 inch meeting ASTM A-500 specification. The mounting locations of the connecting rails must match on the left and right sides. The rear sub-frame rails must extend rearward from the connecting rails up and over the rear axle and down to the fuel cell mounting location then rearward to the rear crossmember. The rear sub-frame rails must be concentric in shape, mounted parallel to each other, left side to right side, and the sections above the rear axles and next to the fuel cell must remain parallel to the main frame rails. Left side and right side rear sub-frame rails must be located an equal distance from and parallel to the chassis longitudinal centerline. The rear sub-frame must incorporate the mounting locations for the rear springs, shocks, track bar, and fuel cell ending with a crossmember constructed of a minimum of one (1) inch in width by three (3) inches in height with a minimum wall thickness of 0.083 inch meeting the ASTM A-500 specification.

A round tubular reinforcement bar, constructed of a minimum 1-1/2 inches outside diameter by a minimum wall thickness of 0.083 inch, must extend below the rear frame rear crossmember. This reinforcement bar must be the width of the rear sub-frame rear side rails and must extend down to a location that is flush with the bottom of the fuel cell recessed well. Two vertical supports must be installed evenly spaced between the rear sub-frame rails and welded to the bottom of the rear sub-frame rear crossmember and the top of the reinforcement bar. Two (2) support bars

constructed of like material must be located and welded in place between each lower corner of the reinforcement bar and angle up to the bottom surface of the rear sub-frame rear side rails near the fuel cell recessed well.

20F - 12 SUSPENSION

A. All suspension systems, components, and parts must be acceptable to Track Officials. Unless otherwise authorized by Track Officials, non-ferrous suspension parts will not be permitted. All suspension fasteners and mounting hardware must be made of magnetic steel. The following minimum requirements must be met:

B. Rear Suspension Trailing Arms

1. Only a conventional two (2) link truck trailing arm type with the same configuration on both sides or a three (3) link passenger vehicle type suspension will be permitted. Bushings for truck trailing arms that, in the judgment of Track Officials, allow excessive vertical or horizontal movement will not be permitted.
2. Truck trailing arms must be attached to the rear axle housing, with one (1) solid round, 3/4 inch outside diameter "U" bolt on each side over the rear axle housing and through the truck trailing arm, with nuts securing the truck trailing arm to the axle housing. The rear truck trailing arm mount, where the truck trailing arm attaches to the rear axle housing, must be the same on both the left and right sides when measured from the center of the rear end pinion shaft outward to the alignment pin for the rear truck trailing arm. Any spacers used between the rear axle housing and the truck trailing arms must be made of a magnetic steel or aluminum solid block. Truck arm U-bolt retainers must be adequately tightened as defined by industry standard torque recommendations for a 3/4 inch diameter fine threaded fastener. Two (2) maximum 13/16 inch inside diameter, steel tubes must be installed in the longitudinal centerline of the truck trailing arm at the U-bolt mounting location. These tubes are a welded component of the truck trailing arm assembly and must be completely welded to both halves of the truck trailing arm. ANY DEVICE(S) THAT WILL PERMIT MOVEMENT OR ROTATION OF THE REAR END HOUSING WILL NOT BE PERMITTED. Truck trailing arms must be attached to the chassis in the front with monoballs mounted in a solid, one-piece truck trailing arm welded sleeve. The monoballs must be the same on both sides. Each truck trailing arm must be attached with a solid, one-piece, minimum 3/4 inch diameter magnetic steel bolt. An eccentric-type adjuster may be used on only one (1) of the front truck trailing arm mounting points for vertical and/or horizontal adjustments. Adjustable insert plates may be used on the other front truck trailing arm mounting point for vertical and/or horizontal adjustments. The maximum horizontal adjustment will be limited to 3/4 inch. Truck trailing arms using heim joints (spherical rod ends) will not be permitted. The front truck trailing arm mounting brackets must be one-piece, welded magnetic steel. Hydraulic or spring loaded mounting points or links will not be permitted. The front truck trailing arm mounting brackets must be an equal distance from the longitudinal centerline of the main frame rails.
3. Mounting points on the axle housing must be evenly spaced and welded to prevent movement and must be equal distance from the longitudinal centerline of the rear frame rails. Truck trailing arms, when measured from the center of the front mounting bushing to the center of the rear axle tube, in a straight line, must be within 1/4 inch of equal length, with a minimum length of 45 inches and a maximum length of 51 inches. All truck trailing arms must rise at a single angle, a minimum of twelve degrees and a maximum of eighteen degrees, at the center of the rear axle tube when compared to the forward length of the truck trailing arm. Pickup truck OEM trailing arms may be cut down to a minimum two (2) inches wide by three (3) inches high.
4. I-Beam style truck trailing arms may be used. Truck trailing arms must be constructed using two (2) C-channels of a minimum one (1) inch in width by three (3) inches in height magnetic steel with a minimum wall thickness of 1/8 inch meeting the ASTM-500 specification, welded back to back, creating a vertical wall of two (2), 1/8 inch minimum wall thickness with a completed overall size of two (2) inches in width by three (3) inches height. Both the left side and right side truck trailing arms wall thickness must be the same. Truck trailing arms must be welded on the top and bottom with a 1/2 minimum stitch weld every eight (8) inches maximum along the entire length of the truck trailing arm. The minimum thickness of truck trailing arm material acceptable to Track Officials will be 0.117 inch. Box tube truck trailing arms will not be permitted. Adjustable truck trailing arms will not be permitted.
5. All truck trailing arms and mounting brackets must be acceptable to Track Officials. Holes and/or other modifications to the truck trailing arms and mounting brackets that, in the judgment of Track Officials, have been made with the intent of weight reduction will not be permitted.

6. Passenger vehicle type trailing arms must be a maximum of 25 inches in length at the center of the mounting holes. The trailing arms must be fabricated using a minimum 1-1/4 inch by two (2) inches steel box tubing with a minimum wall thickness of 1/8 inch meeting the ASTM A-500 specifications. Both trailing arms must be the same length and be made in one (1) piece. Both trailing arms must be parallel with each other when attached to the frame and rear axle housing. Mounting points on the axle housing must be evenly spaced and welded to prevent movement and must be equal distance from the centerline of the rear frame rails. Standard type rubber or metal bushings must be used. Adjustable rear trailing arms will not be permitted. All trailing arm mounting brackets must be magnetic steel. All trailing arms and mounting brackets must be acceptable to Track Officials. Holes and/or other modifications to the passenger type trailing arms that, in the judgment of Track Officials, have been made with the intent of weight reduction or weight addition will not be permitted. Any other modifications, that in the judgment of Track Officials, such as but not limited to weight addition will not be permitted. The third link (torque rod) must be a single one-piece, straight, round, solid or tubular bar with heim-joints (spherical rod ends) on each end. Rubber bumpers, springs or spring loaded bars will not be permitted.
7. The rear axle housing must be held in the center of the vehicle side to side by a single one-piece straight tubular track bar, with adjustable heim-joints (spherical rod ends) on each end, behind the rear axle connected to the frame on the right side and the rear axle housing on the left side. The difference in the mounting locations of the track bar centerline, forward or rearward from the centerline of the rear axle assembly must not be more than 1-1/2 inches. The track bar mounting bolt, at each end of the track bar, must be 3/4 inch in diameter and must include a 1/8 inch thick magnetic steel washer with an outside diameter larger than the body of the heim-joint (spherical rod end). Movable threaded-screw adjusters will be permitted on the track bar. If used the movable threaded-screw adjuster must be mounted on the frame mount side. The upper adjustment to the threaded-screw bracket (located just under the rear window) must share the same vertical centerline with the threaded-screw bracket. The track bar, track bar brackets and/or components, must not be lower than the lowest edge of the wheel (rim).

20F - 12.1 Coil Springs / Spring Mounts / Jacking Bolts

Only coil spring suspension will be permitted. All coil springs must be constructed using round magnetic steel wire, wound in a clockwise direction. Ovate and flat wire will not be permitted. The coil spring wire diameter must be the same size from the top to the bottom of the springs. All of the coils in a spring must be active. The coil springs in all four (4) wheels must be active in any and all suspension movement.

Coil spring suspension will be limited to either conventional type coil springs or coil over springs. The use of either type of spring on both the front and rear suspension, such as coil springs on the front and coil over springs on the rear, will be permitted. The use of a combination of spring types on both the front and rear suspension, such as a conventional coil spring on one side and a coil over spring on the opposite side, will not be permitted.

A. Coil-Over Springs

1. Front coil-over springs must mount to the stock appearing lower A-frames on the centerline of the lower ball joint. The front coil-over assembly must mount through the upper A-frame and remain vertical front to rear with the lower mount. Adjustable mounts of any type will not be permitted. The use of jacking bolts on the coil over assembly will not be permitted. Coil-over spring seats, if used, must be flat nylon or flat steel washer type or top hat style only. Thrust-type bearing plates will be permitted on the spring seats. Load centering spring perches of any type, including but not limited to hydraulic or rubber will not be permitted. Front coil over springs must not exceed a maximum outside diameter of 4-3/4 inches for the entire length of the spring. The coil-over springs may be less than the nominal three (3) inches inside diameter at each end only to match the spring seat diameter. The free height of the bare front coil-over springs must not be more than 16 inches and must not be less than 10 inches. All coils must be evenly spaced after the first coil at the end of the spring.
2. Strut bars will not be permitted for mounting of the coil-overs.
3. Rear coil-overs must be permanently mounted on the outside of the rear sub-frame rails in the same location on the left and right side. Adjustable mounts of any type will not be permitted. The use of jacking bolts on the coil-over assembly will not be permitted. Coil-over spring seats, if used, must be flat nylon or flat steel washer type or top hat style only. Thrust-type bearing plates will be permitted on the spring seats. Load centering spring perches of any type, including but not limited to hydraulic or rubber will not be

permitted. Both springs must be mounted to brackets on the rear axle housing in the same location on the left and on the right side. Rear coil over springs must not exceed a maximum outside diameter of 4-3/4 inches for the entire length of the spring. The coil-over springs may be less than the nominal three (3) inches inside diameter at each end only to match the spring seat diameter. The free height of the bare rear coil-over springs must not be more than 16 inches and must not be less than 12 inches. All coils must be evenly spaced after the first coil at the end of the spring.

4. Only one (1) spring per wheel will be permitted.
5. Coil-over springs must be heavy-duty magnetic steel and must be constructed with both coil ends closed and ground.
6. Progressive or digressive rate springs will not be permitted.
7. One (1) spring rubber insert, not to exceed one (1) full coil, acceptable to Track Officials will be permitted. Coil spring wire wrap will not be permitted.
8. Spring Pre-loaders will not be permitted.

B. Front Coil Springs

1. The front coil springs must be heavy-duty magnetic steel and must be constructed with one closed, ground coil end and one (1) open coil end. The closed end of the coil spring should not have a gap larger than 1/8 inch. Grinding of the open coil should not be permitted beyond the first inch of the open coil and should not exceed 1/2 of the coil spring wire diameter.
2. All coils must be evenly spaced after the first coil on the closed end of the spring. All coils must be wound producing the same inside and outside coil diameter plus or minus (+/-) 1/8 inch.
3. The free height of the bare front coil springs must not be more than 10-1/2 inches and must not be less than 7-1/2 inches.
4. All front coil springs must maintain a minimum outside diameter of 5-1/4 inches and a maximum outside diameter of 5-3/4 inches.
5. Progressive or digressive rate springs will not be permitted.
6. The front coil spring mounts must be located on the lower A-frame for the bottom mount and the top mount must be a bucket-type and be welded to the front sub-frame rails and be the same on both the left and right side. The front coil spring upper mount plate must be attached to the front jacking bolt in a manner acceptable to Track Officials. Monoball(s), excessive taper, bevels, or other devices on the end of the front jacking bolt, the front coil spring mounting plate, the front coil spring mounting bolt or in the front upper spring mount will not be permitted. The hole in the front coil spring upper mount plate must be round and must not be larger than 1/16 inch diameter than the front coil spring mounting plate bolt. The upper and lower coil spring mount must support the front coil spring for 360 degrees of each coil spring mount when the vehicle is set at the specified inspection heights. The lower coil for the front spring must be in contact for 270 degrees with the lower spring seat (helix) at all times. The upper coil spring seat must be flat. Thrust-type bearing plates with a maximum diameter of 1-1/8 inches will be permitted between the end of the jacking bolt and the face of the spring seat.
7. Heavy-duty solid metal bolts (jacking bolts), with a minimum diameter of 1-1/8 inches, utilizing right-hand threads, and a single thread count of not less than 12 threads per inch for the entire length of the jacking bolt, must be used. The jacking bolts must be installed, using a solid threaded sleeve welded completely into the frame spring bucket, in a manner acceptable to Track Officials for the purpose of raising or lowering the vehicle. Jacking bolts and the threaded sleeves must be the same thread configuration on the left and right side.
8. Front jacking bolts will not be permitted to be located through the frame rails. The front jacking bolts when measured from the inside wall of the front sub-frame rail to the center of the jacking bolt mount must not be less than three (3) inches and not more than four (4) inches. The front jacking bolts must be mounted on the centerline of the front crossmember, plus or minus (+/-) one (1) inch. The front jacking bolts must be in the same location on both sides. The front jacking bolts must be perpendicular to the sub-frame rails. The front jacking bolts must be mounted on the vertical centerline of the lower spring bucket.
9. One (1) spring rubber insert, not to exceed one (1) full coil, acceptable to Track Officials will be permitted. Coil spring wire wrap will not be permitted.

C. Rear Coil Springs

1. The rear coil springs must be heavy-duty magnetic steel and must be constructed with both coil ends closed and ground. The closed ends of the coil spring must not have a gap larger than 1/8 inch.
2. All coils must be evenly spaced between the top and bottom closed ends of the spring. All coils must be wound producing the same inside and outside coil diameter.
3. The free height of the bare rear coil springs must not be more than 16 inches and must not be less than 11 inches.

4. Coil springs mounted on the truck trailing arms must not be located outside the rear frame rail kick-ups and must be equal distance from the centerline of the rear frame rails.
5. All upper and lower rear coil spring mounts must be located between the rear frame side rails. Only one (1) rear jacking bolt frame mount per side will be permitted. Jacking bolts will be permitted to be located through the frame rails. The center of the jacking bolt must not extend further than the center of the frame rail from the inside edge. Jacking bolts located through the frame rails must have a solid sleeve extending through the frame from top to bottom and be welded completely into the frame rails. Heavy-duty solid metal bolts (jacking bolts), with a minimum diameter of 1-1/8 inches, utilizing right-hand threads, and a single thread count of not less than 12 threads per inch for the entire length of the jacking bolt, must be used. Jacking bolts and threaded sleeves must be the same on the left and right side. The rear jacking bolts must be mounted on the vertical centerline of the lower spring mount. Monoball(s), excessive taper, bevels or other devices on the end of the rear jacking bolt, the rear coil spring mounting bolt or in the rear upper spring mount will not be permitted. The hole in the rear coil spring upper mount plate must be round and must not be larger than 1/16 inch diameter than the rear coil spring mounting bolt. The upper and lower coil spring mount must support the coil spring for 360 degrees of each coil spring mount. The upper coil spring seat must be flat. Thrust-type bearing plates with a maximum diameter of 1-1/8 inches will be permitted between the end of the jacking bolt and the face of the spring seat.
6. The rear coil spring lower mounts must be located in front of the rear axle housing.
7. The rear coil spring upper mounts must be located and welded on the chassis directly above the lower mounts.
8. One (1) spring rubber insert, not to exceed one (1) full coil, acceptable to Track Officials will be permitted. Coil spring wire wrap will not be permitted.
9. All coil springs must maintain a minimum outside diameter of 4-3/4 inches and a maximum outside diameter of 5-1/4 inches.
10. Only one (1) spring per wheel will be permitted.
11. Progressive or digressive rate springs will not be permitted.

20F – 12.1.1 Travel Limiting Devices

A. Track approved, external travel limiting devices (bump stops) will be permitted on the front suspension only, one (1) on the left side and one (1) on the right side. Travel limiting devices (bump stops) on the rear suspension will not be permitted. Any travel limiting device or procedure that, in the judgment of Track Officials attempts to detract from or compromise the above, will not be permitted.

B. Any device(s) such as chains, cables, etc. that limit the travel of the suspension either up or down will not be permitted. When jacking the vehicle, a minimum of two (2) inches of chassis movement is required before movement of the axle/tire assembly.

20F - 12.2 Sway Bars (Anti-Roll Bars)

Sway bars, when used must be used for the purpose of anti-roll only. The front sway bar must freely rotate in their mounts. The movement of the front sway bar arms must not be prevented or restricted beyond that of normal use as an anti-roll bar.

A. The main body of the front sway bar must be one-piece, magnetic steel and must be mounted centered under the front sub-frame. The sway bar must be mounted perpendicular to the front sub-frame rails. The maximum outside diameter of the sway bar splined ends will be 1-3/4 inches. The nominal length of the sway bar will be 37-1/2 inches. The maximum inside diameter of the sway bar will be 3/4 inch for the entire length of the sway bar.

B. The sway bar arms must be constructed of metal and may be splined for attaching to the main body. Only two (2) one-piece sway bar arms, one (1) per side, may be used on the front sway bar. Fabricated sway bar arms will be permitted. Sway bar arms must be acceptable to Track Officials. The minimum length of the sway bar arms will be 11 inches and the maximum length of the sway bar arms will be 16 inches. The sway bar arms may be angled or straight but must be the same length and configuration on each side. The sway bar arms must mount to the front edge of the lower A-frame at the same location on each side. The sway bar arms must not extend rearward of the mounting location on the front edge of the lower A-frame. Heim joints (spherical rod ends) may be used for attaching the sway bar arms to the lower A-frames. Quick release pins will not be permitted.

C. Sway bars (anti-roll bars) will not be permitted on the rear suspension.

20F - 12.3 Shock Absorbers

Shock absorbers and components must be from an approved manufacturer. The approved shock absorbers will be of the revalvable, rebuildable, gas pressurized, mono-tube, deflective disc valve type with an integral gas reservoir. Shock absorbers must provide a resultant force dependent upon piston velocity and must be acceptable to Track Officials. Shock absorbers and components must be used as supplied by the manufacturer and all components must be used in only

their respective manufacturers shock absorber. Modifications or changes to the shock absorber and internal components will not be permitted. Shock absorbers and components must be available to all Competitors and must meet the following requirements.

As per local Track Rules, oil type shock absorbers will be permitted. Specifications and rules for these oil type shock absorbers will be developed, implemented, governed and enforced by the individual Track Rules.

The approved shock absorbers and pistons are as follows:

<u>MANUFACTURER</u>	<u>PART NUMBER</u>
Advanced Racing Suspensions 4000 Series	40094 (Linear) 40098 (Digressive) 40099 (High Flow)
Bilstein AS2 Series	<u>Non-Adjustable</u> E4-B46-20SNCT (Linear) E4-AK1-Z033A00 (Digressive) E4-MWP-0846A01 (High Flow)
	<u>Single-Adjustable</u> E4-B46-20SNDT (Linear) E4-AK1-Z024A01 (Digressive) E4-MWP-1246A03 (High Flow)
JRI ST/08 Series	JRI13109439 (Linear) JRI13109698 (Linear) JRI131130925 (High Flow)
Penske 7500 Series	PI-XX005 (Linear) PI-DL005-1DG (Digressive) PI-HFXX005 (High Flow)

A. Changes in shock absorber force must not be made by the position of the shock absorber shaft, only by the velocity of the shaft through the compression and rebound stroke.

B. Track Officials may use a shock absorber and internal components provided by the respective manufacturer as a guide in determining whether a Competitor's shock absorber and internal components conforms to the specification of the Rule Book.

C. The only shock absorbers and internal components permitted will be those approved by NASCAR and Track Officials.

NOTE: The internal bore of the shock absorber body must remain as supplied by the manufacturer. The internal bore diameter of the shock absorber body must be the same from top to bottom. Tapers, steps, grooves and other misalignments will not be permitted. Modifications which provide position sensitive piston travel will not be permitted.

D. A single manual external shaft bleed adjustment through a tapered needle into a fixed orifice in the hollow shaft, acceptable to Track Officials will be permitted on the shock absorbers.

E. Shock absorber base valves will not be permitted.

F. "Steel" deflective disc valve shims must seal the primary metering faces of the single piston in the main shock body. The only shims permitted will be those manufactured, produced and/or recommended by the specific shock absorber manufacturer. Shims must be used in only their respective shock absorbers. Ring shims and bleed shims will be permitted. Floating shims will not be permitted. The shim stack must be of the single pyramid type with the exception that multiple shims of the same size may be stacked together. The inside diameter of the shims must match the shaft diameter with the exception of the outer ring of the ring shim.

G. Only a single one-piece piston is permitted in the main body with one (1) shim stack on the compression side, and one (1) shim stack on the rebound side. A maximum of three (3) bleed holes may be drilled in the piston. If bleed holes are drilled into the piston, they must be drilled into the port of the piston only. The piston band must be the original band for the approved manufacturers piston. The piston band and piston band groove in the piston must remain the standard size and must not be altered.

H. One-piece open style jets that bleed equally in both compression and rebound will be permitted. One-piece jets that control flow in compression only or rebound only will be permitted. Solid plugs in place of open jets will be permitted. Plugs with fixed bleed holes will be permitted. Check ball jets that control flow in compression or rebound only will be permitted.

I. The gas reservoir maximum outside diameter must not exceed 2.300 inches. External shock absorber gas reservoirs will not be permitted.

J. The single floating divider piston in the integral gas reservoir must be installed to the manufacturers specifications without any modifications.

K. The gas reservoir must not be filled with any material other than in an inert-gas form. Oils or any other types of liquid or materials that are not approved by NASCAR or Track Officials will not be permitted in the gas reservoir side of the shock absorber divider piston.

L. The shock absorber nitrogen gas pressure must not be less than 50 psi or greater than 150 psi. Gas pressure will be measured at ambient temperature (not to exceed 100 degrees Fahrenheit) by temperature monitoring devices used by Track Officials. Gas pressure will be checked with the shock absorber removed from the race vehicle and fully extended. After being charged, at any time, the shock absorbers must fully compress and fully extend the entire length of the shock absorber shaft with the external adjustment (if used) set in any position without any type of mechanical assistance. An external Schrader valve, needle valve, etc. will be required to pressurize the shock absorber with gas. The competitor must have the equipment required to adapt to the technical inspection equipment to check the gas pressure in the shock absorber.

M. Oils that the viscosity can be changed by any type of electro-magnetic field or by any other means will not be permitted.

N. Shock absorber shaft diameter must not exceed 0.630 inch and the shaft must not have any sleeves or spacers that could limit the travel of the shaft into or out of the main body. Shock absorber shafts must be solid on all non-adjustable shock absorbers. When single adjustable shock absorbers are used hollow shock absorber shafts will be permitted.

O. Suspension travel must not be limited by the shock absorber and/or components, or shock absorber mounting location.

P. Coil over shock absorbers will be permitted.

Q. Remote or electronically controlled shock absorbers will not be permitted.

R. A maximum of one (1) shock absorber per wheel will be permitted.

S. Quick disconnect shock absorber mounts will not be permitted. The shock absorber must be attached with positive nut and bolt mounting fasteners. Adjustable shock absorber mounts of any type will not be permitted. Shock absorbers must be mounted on the vehicle with the gas reservoir to the top. Shock absorber eyelets of different length will be permitted but must not limit the travel of the chassis.

T. Shock absorbers will not be permitted inside of the front or rear coil springs, with the exception of the coil over type springs.

U. All rear shock absorbers must be mounted behind the rear axle.

V. The rear shock absorbers must not angle inboard towards the center of the vehicle more than 30 degrees from vertical.

W. Heating pads and/or blankets will not be permitted for warming the shock absorbers.

X. Shock absorbers and internal components are subject to inspection at any time by Track Officials.

Y. It is the responsibility of the driver, not NASCAR or Track Officials, to ensure the shock absorbers are used in accordance with the manufacturer's instructions and specifications.

20F - 12.4 A-Frames

A. A-frames must have a stock appearance and be made of magnetic tubular steel. Holes and/or other modifications that, in the judgment of Track Officials, have been made with the intent of weight reduction will not be permitted. Modifications that, in the judgment of Track Officials, have been made with the intent of weight addition will not be permitted. Added weight must not be attached to the A-frames.

B. Upper and lower A-frames may be altered for tire clearance. Heim joints (spherical rod ends) will not be permitted on upper and lower A-frames.

C. Lower A-frames must have a stock appearance for the type front sub-frame being used and mounted in the stock location. The length of the lower A-frames must be a minimum of 15-1/8 inches and a maximum of 16-1/8 inches, from the center of the ball joint to the centerline of the mounting points. The location of the center of the lower ball joints must be an equal distance from the centerline of the front sub-frame rails plus or minus (+/-) 3/8 inch. Both lower A-frames must be the same length (no offsets permitted). The General Motors type lower A-frames must be constructed using a minimum 3/4 inch wide by two (2) inches high magnetic steel tubing.

D. The distance from the centerline of the tread width and frame rails, front and rear, to the front mounting points of the lower A-frames, left and right, must be the same.

E. The lower A-frames must attach to the chassis using two (2), minimum 1/2 inch diameter magnetic steel bolt and nut assemblies per side. Only one (1) non-adjustable lower A-frame front mounting hole per side in the chassis or A-frame will be permitted. Vertical adjustments for lower A-frames will be permitted and do not have to be welded; left and right must be the same. An eccentric type adjuster or plate may be used on the rear mounting bolt.

F. Offset bushings will not be permitted in the chassis or lower A-frame.

G. Ball joints must be stock appearing, heavy-duty magnetic steel construction and must be acceptable to Track Officials. The ball joints must not have any

adjustment with the exception of a free play adjustment in the housing for the ball and socket.

H. The spring bucket in the lower A-frame must be round magnetic steel and must not exceed a maximum of 6-5/8 inches inside diameter. The spring bucket must not be flared or scalloped at the top or bottom. The distance from the center of the spring bucket to the center of the ball joint must not be less than 6-1/2 inches or more than 7-1/2 inches and must be the same on the left and right sides. A metal spring seat (helix) may be used in the bottom of the spring bucket. The metal spring seat (helix) must be bolted securely in place. When coil springs are used, the lower coil for the front spring must be in contact for 270 degrees with the lower spring seat (helix) at all times.

I. The upper A-frames must attach to the chassis using two (2), minimum 1/2 inch diameter magnetic steel bolt and nut assemblies per side. The upper A-frame cross-shaft must be a one-piece magnetic steel straight shaft and must not be offset. The upper A-frame must pivot on the centerline of the cross-shaft.

20F - 12.5 Spindles / Wheel Bearings / Hubs

A. Forged or fabricated tubular non-adjustable, heavy-duty magnetic steel spindles must be used. Spindle beams (excluding spindle snout) and steering arms must be manufactured as a separate piece. Steering arms must be bolted or welded to the spindle beam. Spindles manufactured from one-piece Billet materials will not be permitted. Holes and/or other modifications that, in the judgment of Track Officials, are made or used with the intent of weight reduction will not be permitted.

B. Offset spindles will not be permitted.

C. Wheel bearings must be magnetic steel, tapered roller bearings and bearing races. The bearings, races and seals must be assembled separately in the hubs. Oil bath hubs will not be permitted.

D. Wide five (5) pattern hubs will be permitted.

E. Front and rear hubs must have the same dimensions on the left and right side. Offset hubs will not be permitted.

F. Spindle adjustment bushings will be permitted and do not have to be welded.

20F - 12.6 Tread Width Requirements

A. Vehicles must not exceed the maximum allowable tread width of 64-1/2 inches, front and rear, measured at the center of the tire, zero toe in, at spindle height. Tread Width may also be measured at the outside of the left side wheel bead to outside of the right side wheel bead and must not exceed 74-1/4 inches. A tolerance of 1/2 inch will be permitted between the front tread width and rear tread width, but the tread width must not exceed 64-1/2 inches.

B. Magnetic steel or aluminum wheel spacers will be permitted to utilize the maximum allowable tread width. Spacers, if used, must be the same thickness left and right; however, the front and rear do not have to be the same thickness.

20F - 12.7 Wheelbase Requirements

All vehicles must compete with a wheelbase of 105 inches. The left side must be between a minimum of 104-1/2 inches and a maximum of 105-1/2 inches. The right side must be between a minimum of 104-1/2 inches and a maximum of 105-1/2 inches. Any device or procedure which has the ability to dynamically change the wheelbase beyond normal travel parameters will not be permitted.

20F - 12.8 Body Height / Ground Clearance Requirements

All measurements will be with the driver in the vehicle and ready to compete.

20F - 12.8.1 Body Height Requirements

A. Vehicles must maintain a minimum roof height of not less than 48 inches. The vehicle height off the ground and body height, including rake or degrees of body angle, shall be determined by measuring the overall height of the vehicle at a distance of 10 inches behind the top of the windshield on the roof centerline.

B. Competitors presenting vehicles for inspection of the minimum body height and the minimum ground clearance will be measured using a four (4) inch block under the main frame rail(s). This will apply to pre-qualifying, Pre-Race, and post-race inspection. When the vehicle is setting on the four (4) inch blocks the weight of the vehicle including the driver will determine the body heights. The pushing down or lifting up of the vehicle to meet the body heights will not be permitted.

C. For more detailed body height dimensions, refer to the rear pages of the Rule Book under Construction Guidelines.

20F - 12.8.2 Ground Clearance Requirements

A. The frame rail, sheet metal, front air dam extensions and rocker panel extensions ground clearance must be a minimum of four (4) inches.

B. The front air dam ground clearance must be a minimum of four (4) inches.

C. All suspension parts ground clearance must be a minimum of four (4) inches.

D. The exhaust pipe ground clearance must be a minimum of three (3) inches.

E. The engine ground clearance from the center of the leading edge of the crankshaft accessory drive bolt must be a minimum of 12 inches and a maximum of 13 inches.

- F. Ground clearance requirements will be with the driver in the vehicle.
- G. Devices and/or procedures designed to, or used to, reduce or hold the vehicle lower than the specified heights will not be permitted.

20F - 12.9 Vehicle Height Adjustment / Handling Devices

- A. Any devices for adjusting the handling characteristics or the vehicle's height will not be permitted inside of the driver's compartment.
- B. Hydraulic or electronic weight shifting devices will not be permitted at any time.
- C. Electrical, pneumatic, hydraulic, remote control, or any other devices that change the handling characteristics or height of the vehicle, will not be permitted.
- D. Vehicle height adjustments will not be permitted on the left front suspension during a Race unless approved by Track Officials.

20F - 13 STEERING COMPONENTS

The vehicle steering components must be acceptable to Track Officials and meet the following minimum requirements:

- A. Steering wheels must have a minimum of three (3) magnetic steel spokes securely attached to a magnetic steel rim structure.
- B. The center top of the steering post must be padded with at least two (2) inches of resilient material acceptable to Track Officials.
- C. A quick-release steering wheel coupling with a metal housing, acceptable to Track Officials, must be used. Three magnetic steel bolts must be used to secure the steering wheel to the quick release steering wheel coupling. The steering wheel coupling should meet the SFI 42.1 specification. Spacers between the quick release coupling and the steering wheel will not be permitted.
- D. All vehicles must be equipped with a magnetic steel steering shaft. A collapsible steering section in the steering shaft should be used and must be acceptable to Track Officials.
- E. The use of a minimum of two (2) universal joints, a minimum of 12 inches apart, in front of the firewall should be used and must be acceptable to Track Officials.
- F. Rack and pinion steering will not be permitted.
- G. The power steering pump must be mounted and driven off the front of the engine.
- H. All steering boxes must be mounted in the stock location and the stock position at an angle of not less than 10 degrees on GM type front sub-frames. Any means of raising or changing the steering box position will not be permitted.
- I. All steering boxes must be constructed of magnetic cast steel.
- J. Tie rods, drag links, pitman arms, idler arms, and component parts must be heavy-duty magnetic steel. Holes and/or other modifications in steering components that, in the judgment of Track Officials, have been made with the intent of weight reduction will not be permitted. Heim joints (spherical rod ends) will not be permitted on any steering linkage.

20F - 14 BRAKES / BRAKE COOLING

The vehicle braking, brake cooling systems and components must be acceptable to Track Officials and meet the following minimum requirements. Holes and/or other modifications that, in the judgment of Track Officials, are made or used with the intent of weight reduction will not be permitted.

20F - 14.1 Brake Components

- A. Single piston disc brakes with stock (OEM) type calipers will be permitted front and rear. As an option the following brake calipers will be permitted:

<u>MANUFACTURER</u>	<u>PART NUMBER</u>	<u>TYPE</u>
Wilwood	120-15611	GM D52-R Single Piston (Aluminum)
Wilwood	120-15612	GM D52-R Single Piston (Aluminum)
Wilwood	120-10936	GM D52 Dual Piston (Aluminum)
Wilwood	120-10937	GM D52 Dual Piston (Aluminum)

Brakes must be operational on all four (4) wheels. Floating brake calipers will not be permitted.

- B. Only magnetic cast iron or magnetic cast steel circular brake rotors will be permitted. Rotors must maintain a minimum of 3/4 inch thickness. Slotted, drilled or grooved rotors will be permitted. Rotors scalloped on the inside diameter will be permitted. Floating Rotors will not be permitted.
- C. Master cylinder(s) and reservoir(s) must be mounted on the engine side of the front firewall. Pull type or swing type master cylinders will not be permitted. Only metal brake pedals will be permitted. Only single-stage master cylinders will be permitted. Only one (1) bore size, per master cylinder, will be permitted.
- D. Brake pressure proportioning systems and their locations, acceptable to Track Officials, will be permitted. The brake pressure proportioning systems will be permitted inside the driver's compartment within reach of the driver. Electronic or remote control devices will not be permitted.
- E. Electronic wheel speed sensors or brake actuators will not be permitted.
- F. Power assisted braking systems will not be permitted.

- G. Brake fluid re-circulatory systems will not be permitted.
- H. Brake rotors must be attached to the mounting hat or hub with positive fasteners.
 - I. Quick disconnect fittings on the brake lines will not be permitted.
 - J. Only one (1) brake caliper per wheel using only two (2) brake pads per caliper will be permitted.
 - K. Brake pads must have a magnetic steel backing plate. Brake pad retraction devices will not be permitted.

20F - 14.2 Brake Cooling

- A. All brake cooling parts, components, and installation must be acceptable to Track Officials.
- B. A maximum of two (2) air ducts per brake, with a maximum three (3) inch diameter flexible hose to the brake, may be used for front brake cooling. The air duct flexible hose and/or inline fans must be attached at one end to a brake duct housing that is connected to the brake assembly on the front spindle assembly and attached at the other end to an air inlet brake duct housing that is attached to the lower front bumper cover/air dam.
- C. One (1) inline fan per side for front brake cooling will be permitted. A "Y" type connector may be mounted to the rear of the inline fan to allow the use of two (2) brake air ducts per wheel. Inline fans must be mounted in such a way as to draw air to the brakes only. All air entering the brake ducts must enter through the front of the lower vertical wall of the front bumper cover. Brake ducts must not be installed in the radiator duct work or in the grille opening. Inline fans in the front of the vehicle must not be lower than the bottom of the sub-frame rail(s). Mounting of brake cooling components must be acceptable to Track Officials.
- D. The maximum size for the front brake air duct housing is six (6) inches by eight (8) inches by six (6) inches in depth, and when installed they must not extend forward of the leading edge of the front bumper cover/air dam. All air entering the brake cooling ducts must enter through the front of the lower front bumper cover or air dam through openings separate from the radiator ductwork.
- E. Openings above the uppermost horizontal surface of the front bumper including the headlight openings must not be used to pick up air for brake cooling.
- F. Inline fans in the rear of the vehicle must be mounted to the sub-frame rail(s) or the rear trailing arms and must not be mounted lower than the bottom of the main frame rail or the bottom rear trailing arms. A maximum three (3) inch diameter flexible hose to the brake may be used for front brake cooling. Mounting of brake cooling components must be acceptable to Track Officials.
- G. Liquid or gas cooling of the brakes will not be permitted.
- H. Brake ducts must be used for cooling of the brake rotors and calipers only.
- I. Mechanical magnetic steel brake cooling fan assemblies that mount between the wheel and hub will be permitted.

20F - 15 FUEL

20F - 15.1 Definition

The word "Fuel", wherever used in this document, shall be understood to mean automotive gasoline that complies with the specifications given in sub-section 20F-15.2.

20F - 15.2 Specifications

- A. The fuel must be automotive gasoline only.
- B. The gasoline must comply with ASTM D-4814 entitled, "Standard Specification for Automotive Spark Ignition Engine Fuel," except limited to liquid hydrocarbons only, Class A, B, C, D, or E, but without regard to geographical or seasonal limitation.
- C. The gasoline must not be blended with alcohols, ethers or other oxygenates and it must not be blended with aniline or its derivatives, nitro compounds or other nitrogen containing compounds.
- D. Icing or cooling of the fuel or the fuel system will not be permitted during the Event, in the garage, pit, or racing premises.

20F - 15.3 Fuel Samples

Track Officials have the right to sample a Competitor's fuel at any time during the Event. Samples will be impounded for observation and/or testing at the discretion of the Track Officials.

20F - 16 FUEL SYSTEM

- A. Track Officials will not permit the use of any previously approved fuel cells, containers, or check valves that appear to be damaged, defective, or do not function properly. Fuel cell vent pipe check valves are recommended. Check valves and the fuel cell must be acceptable to Track Officials.
- B. Pressure systems will not be permitted. Any concealed pressure type containers, feed lines or actuating mechanisms will not be permitted, even if inoperable.
- C. Icing, freon type chemicals or refrigerants must not be used in or near the fuel system.

20F - 16.1 Fuel Cell

The use of a commercially manufactured fuel cell acceptable to Track Officials must be used.

A. The fuel cell capacity, including the filler spout and overflow, must be 22 gallons nominal. The nominal fuel cell bladder size must be 32-5/8 inches by 16-5/8 inches by 8-7/8 inches.

B. Materials other than standard foam, as provided by an approved fuel cell manufacturer, will not be permitted. Filler blocks or other materials, containers, etc., inside the fuel cell or fuel cell container to reduce the capacity of the 22 gallon fuel cell, will not be permitted.

C. Fuel cell check valve is required and must be acceptable to Track Officials.

(STEEL BALL TYPE)

1. The fuel cell check valve housing must be manufactured of aluminum or magnetic steel plate not less than 1/4 inch thick. A cast aluminum check valve housing assembly will not be permitted. The bottom surface of the check valve plate must be flat. Spacers will not be permitted between the check valve plate and the fuel cell bladder. Only one (1) gasket, with a maximum thickness of 0.065 inch will be permitted between the check valve plate and the fuel cell container.
2. The solid steel ball check valve must be encased in a four (4) rail carriage. The carriage rails must be constructed of solid aluminum or magnetic steel not less than 1/4 inch thick by not less than 3/4 inch wide material. The carriage rails must be positioned such that the surface of the 1/4 inch thick edge rides against the steel check ball. Outside surfaces of the carriage must not have any sharp edges. The carriage must not be altered in any way and must remain perpendicular to the fuel cell check valve top flange plate.
3. The fuel filler check valve carriage must not exceed a maximum depth of 8-1/2 inches. The maximum inside diameter of the filler neck including the check ball seat must not exceed 2-1/8 inches. When seated at least 1/2 of the check ball must be visible. The diameter of the solid steel check ball must be 2-3/8 inches. The filler neck must not be made of cast aluminum.
4. The fuel vent check valve carriage must not exceed a maximum depth of 8-1/2 inches. The maximum inside diameter of the vent pipe neck including the check ball seat must not exceed 1-1/4 inches. When seated, at least 1/2 of the check ball must be visible. The diameter of the solid steel check ball must be 1-3/8 inches. The fuel vent check valve must not be made of cast aluminum.

(FLAP TYPE)

1. The fuel cell check valve housing must be from an approved manufacturer and be made of aluminum or magnetic steel plate not less than 3/16 inch thick. A cast aluminum check valve housing assembly will not be permitted. The bottom surface of the check valve plate must be flat. Spacers will not be permitted between the check valve plate and the fuel cell bladder. Only one (1) gasket with a maximum thickness of 0.065 inch will be permitted between the check valve plate and the fuel cell bladder.
2. The fuel filler check valve assembly equipped with a fuel resistant flap, must maintain a minimum outside diameter of 3-1/2 inches. The maximum inside diameter of the fuel filler inlet must not exceed 2-1/8 inches. The fuel filler check valve assembly must not be made of cast aluminum.
3. The fuel vent check valve carriage must not exceed a maximum depth of four (4) inches. The maximum inside diameter of the vent pipe neck including the check ball seat must not exceed 1-1/4 inches. The diameter of the solid steel ball/poppet must be 1-3/8 inches. The fuel vent check valve neck must not be made of cast aluminum.

D. Fuel cells should not be used beyond five (5) years after the date of manufacture.

20F - 16.2 Fuel Cell Container

A. A fuel cell container must be used and must be acceptable to Track Officials and meet the following minimum requirements:

B. The fuel cell must be encased in a container of not less than 22 gage (0.031 inch thick) magnetic sheet steel. Fuel cells must be fitted within the container so that the maximum capacity, including filler spout, will not exceed 22 gallons.

C. The 22 gallon capacity fuel cell container size must be 33 inches by 17 inches by 9-1/4 inches (outside dimensions).

D. Handles should be attached to the top at each end in the center of the fuel cell container for removal from the recessed well.

E. The exterior of the fuel cell container must be coated red.

20F - 16.3 Fuel Cell / Fuel Cell Container Installation

The fuel cell and fuel cell container must be installed in a manner acceptable to Track Officials in accordance with the following minimum requirements:

A. The fuel cell and the fuel cell container must be fastened in the trunk compartment in a recessed well of not less than 0.025 inch thick magnetic sheet steel welded or attached to the sub-frame rails.

B. The fuel cell and the fuel cell container must be installed as far forward as possible in the trunk compartment equal distance between frame rails.

C. The fuel cell container, installed in the recessed well, welded or attached to the sub-frame rails, from the top, must be secured on the top by a flat fuel cell top rack made of one (1) inch by one (1) inch by 0.065 inch minimum thick square magnetic steel tubing meeting the ASTM A-500 specifications bolted without removable spacers through the tubing on the top side with the bolts continuing through the tubing of the bottom support frames with a minimum of eight (8), 3/8 inch diameter bolts. The flat fuel cell top rack must consist of two (2) tubes lengthwise and two (2) crosswise equally spaced across the top of the fuel cell container.

D. The fuel cell container installed from the bottom of the trunk compartment must be inside a recessed well that covers the bottom and all four (4) sides. The fuel cell container and recessed well must be secured on the top by the fuel cell top rack made of one (1) inch by one (1) inch by 0.065 inch minimum thick square magnetic steel tubing meeting the ASTM A-500 specifications bolted or welded without spacers into the tubing on the top side with the bolts continuing through the tubing of the bottom support frames with a minimum of eight (8) 3/8 inch diameter bolts. The fuel cell top rack must consist of two (2) tubes lengthwise and two (2) crosswise equally spaced across the top of the fuel cell container.

E. The front and rear fuel cell crossmembers must be constructed using a one (1) inch wide by three (3) inches in height with a minimum wall thickness of 0.065 inch magnetic steel tubing meeting the ASTM A-500 specifications.

F. The bottom support frame must be constructed using three (3) tubes, one (1) inch by one (1) inch with a minimum wall thickness of 0.065 inch square magnetic steel tubing meeting the ASTM A-500 specifications and must be equally spaced across the recessed well. These tubes must be welded or bolted to the fuel cell front and rear crossmembers. The support tubes must extend down the front and rear equally spaced and under the fuel cell container recessed well. (refer to the Construction Guidelines at the rear of the Rule Book).

G. The bottom of the fuel cell recessed well must have a minimum ground clearance of eight (8) inches.

H. A reinforcement bar, minimum 1-1/2 inches in diameter and with a minimum wall thickness of 0.083 inch magnetic steel tubing, must extend below the rear frame section behind the fuel cell. This reinforcement bar must be attached to the rear frame rails on both the left and right side with magnetic steel stubbing, a minimum 1-1/2 inches in diameter and with a minimum wall thickness of 0.083 inch. This reinforcement bar must be as wide as the rear frame rails and extend as low as the bottom of the fuel cell with two (2) vertical uprights. The vertical uprights must be magnetic steel tubing, a minimum 1-1/2 inches in diameter and with a minimum wall thickness of 0.083 inch, evenly spaced between the frame rails and attached to the rear crossmember. Two (2), magnetic steel support bars, a minimum 1-1/2 inches in diameter and with a minimum wall thickness of 0.083 inch, one (1) located on each corner, must angle upwards and be welded to the rear frame rails. The reinforcement bar may be installed in the position of the angled support bars but must still have vertical upright bars at each corner and two (2) evenly spaced between the frame rails.

I. A rear firewall constructed of magnetic sheet steel with a minimum thickness of 0.025 inch must be located between the trunk compartment and the driver's compartment and must be welded in place.

20F - 16.4 Fuel Filler / Vent Requirements

20F - 16.4.1 Fuel Filler

Dry coupling fuel connectors are eligible for use in the Late Model Stock Car Division. The fuel filler must meet the following minimum requirements:

A. The dry coupling fuel filler, if used, must be bolted from the inside of the left quarter panel and be located in the side as high and as far back as possible or on top as far to the left as possible but not in the deck lid. When composite body panels are used there must be a ground cable installed from the metal mounting flange of the fuel filler spout to the fuel cell filler plate. Only steel or galvanized steel funnels are permitted in order to reduce the possibility of static electricity. Plastic funnels will not be permitted.

B. Fueling by opening the rear deck lid will only be permitted under red flag or non-competition conditions.

C. The check valve filler neck inside diameter must not exceed 2-1/8 inches. The outside diameter must not be less than 2-1/4 inches and not more than 2-1/2 inches.

D. The maximum filler spout size is 4-1/4 inches outside diameter by eight (8) inches long then tapering over the next 8-1/2 inches to 2-1/2 inches outside diameter extending to an overall length of 18 inches.

E. A minimum of 12 inches of clear flex hose must be used between the end of the fuel filler spout and the fuel cell filler plate.

20F - 16.4.2 Fuel Cell Vent

The fuel cell must be vented as follows:

A. A single one (1) inch maximum inside diameter vent to outside of body must be installed at the left rear corner in the taillight area only. A fuel vent flap valve is recommended on all tracks.

B. The fuel cell check valve vent hose neck should not exceed one (1) inch inside diameter and three (3) inches in length. The fuel cell check valve vent hose neck should have a bead around its outside circumference for hose retention. The fuel cell vent flexible hose must have a maximum inside diameter of 1-1/4 inches and a maximum length of 60 inches when measured from the outside end of the fuel cell vent pipe to the top of the fuel cell fill plate. The hose should be secured with two (2) hose clamps at the fuel cell fill plate. Supports for the fuel cell vent hose must be made of non-metallic material.

C. When fuel is added during a pit stop, a crew member must catch any overflowing fuel into a container acceptable to Track Officials. The catch can must be metal and coated red.

20F - 16.5 Fuel Lines / Fuel Pump

Electrical devices or electrical connections will not be permitted on the fuel cell, fuel lines or between the fuel pump and the fuel line assembly. Fuel pressure may only be measured from the rear of the carburetor fuel line assembly.

20F - 16.5.1 Fuel Lines

The fuel lines and fuel line connections must be acceptable to Track Officials and meet the following requirements:

A. The size, material, and location of the fuel cell pickup must be acceptable to Track Officials.

B. Only one (1) fuel line, a maximum AN-10 fitting, maximum 5/8 inch inside diameter steel braided fuel line, should be used from the fuel cell to the fuel pump.

C. The fuel line from the fuel cell to the fuel pump may be relocated to prevent vapor lock. If the fuel line runs through the right side of the driver's compartment, it should be enclosed in a straight or parallel to the drive shaft and transmission tunnel (as viewed from above) one (1) inch outside diameter metal tube, coated red and labeled "FUEL LINE".

D. It is highly recommended that a check valve, acceptable to Track Officials, mounted at the fuel line outlet on the fuel cell be used.

E. Additional lines or extra length must not be used on the fuel system. Extra fuel lines or fuel cells, concealed or otherwise, will not be permitted.

F. Quick disconnect fittings will not be permitted.

20F - 16.5.2 Fuel Pump

The fuel pump must be acceptable to Track Officials and meet the following minimum requirements:

A. Electric fuel pumps will not be permitted.

B. Cooling of the fuel pump will not be permitted.

C. Only mechanical, lever-action, camshaft actuated fuel pumps in the stock location will be permitted.

D. A magnetic steel plate is required between the engine block and the fuel pump on General Motors engines. Thermal plates or gaskets will not be permitted.

20F - 16.6 Fuel Filler Cans

A. Only two (2) approved 12 gallon fuel filler cans will be permitted in the pits for refueling. Fuel filler cans must be coated red. (See the diagram in the rear pages of the Rule Book.)

B. The use of two (2) fuel filler cans at the same time while refueling the vehicle will not be permitted.

C. Elevated fuel drums or refueling towers will not be permitted. The fuel filler can must be metal, ventilated, and equipped with a flexible filler nozzle.

D. Fuel filler cans must only be transported from the fuel station to the pit area in a cart acceptable to Track Officials.

E. When installing or removing fuel can couplers, power tools MUST NOT be used. It is recommended that a non-conductive nut driver be used.

20F - 17 Personal Safety Equipment Recommendations - Refer to sub-section 6-3 of the Rule Book.

20F - 17.1 Recommendations for Helmets / Head & Neck Restraint Devices / Systems - Refer to sub-section 6-3-1 of the Rule Book.

20F - 17.2 Recommendations for Seat Belts - Refer to sub-section 6-3-2 of the Rule Book.

20F - 17.3 Recommendations for Seats - Refer to sub-section 6-3-3 of the Rule Book.

20F - 18 Roll Bars

A. As a minimum, all vehicles are required to have the basic and typical roll cage configured as shown in diagrams #2, #3, #4, and #5. Unless otherwise specified below, all roll bars must be made from round magnetic steel seamless tubing 1-3/4 inches by 0.090 inch minimum wall thickness meeting ASTM A-519 specifications. Electric resistance welded tubing, aluminum and/or other soft metals will not be permitted. Roll bar joints and intersections must be welded according to ASTM specifications for the material being welded. A maximum of one (1), maximum 1/8 inch diameter hole may be drilled at each welded roll cage joint for the purpose of purging the tubes when welding. Once constructed and installed, the roll cage must be acceptable to Track Officials. Holes and/or other modifications that, in the judgment of Track Officials, were made with the intent of weight reduction will not be permitted. Any roll bars in addition to the basic and typical roll cage design as shown in diagrams #2, #3, #4, and #5 must be made from a minimum of 1-1/2 inches diameter by 0.065 inch minimum wall thickness magnetic steel seamless round tubing. Any additional roll bars must be approved by NASCAR and Track Officials. Modifications or alterations which detract from or compromise the integrity or effectiveness of any roll cage component will not be permitted.

B. Basic NASCAR Roll Cage Structure

1. The main roll bar (#1 in diagram #5) must be a continuous length of tubing with one end welded perpendicular to the top of the right frame rail and one end welded perpendicular to the top of the left frame rail and with both rising vertically a minimum of 20 inches before bending inward and following along the inner surface of the "B" post to maintain a minimum clearance with the "B" posts and follow along the inner surface of the roof panel, the left and right side must be the same, with minimum clearance for the roof panel. The main roll bar (#1) must also be braced with one (1) diagonal bar (#5) and two (2) horizontal bars (#6) and (#7). All bends in the main roll bar (#1) must be as symmetrical as minimum clearances permit.
2. The distance from the center of each of the front roll bar legs (#2 A & B) to the center of the main roll bar (#1) must not measure less than 43 inches. Each of the front roll bar legs (#2 A & B) must be constructed from a continuous length of tubing. One leg must be welded perpendicular to the top of the right frame rail and one leg welded perpendicular to the top of the left frame rail with both legs rising vertically a minimum of 20 inches before bending inward and rearward to maintain a minimum clearance with the "A" posts. Both legs must follow along the inner surface of each respective "A" post. The front roll bar legs (#2 A & B) must be welded to the roof bar (#3) near the upper corners of the windshield.
3. The roof bar (#3) must be a continuous length of tubing extending forward from the outer edges of the main roll bar (#1) with minimum clearance to the roof panel and remain parallel to the main frame rails. The roof bar must follow the contour of the windshield as it bends across the front maintaining a minimal clearance to the top of the windshield. The center to center width of the roof bar (#3) must be a minimum of 43-1/4 inches, and a minimum distance of 29 inches must be maintained from the centerline of the roof bar (#3) to the centerline of the main roll bar (#1). A minimum distance of 36-1/2 inches must be maintained from the top of the frame side rails to the centerline of the roof bar (#3) in the center of the door.
4. The centerline roof bar (#4) must be welded from the main roll bar (#1) forward to the roof bar (#3) near the vehicle's centerline. The center windshield bar (#4A) must extend forward from the roof bar (#3) near the vehicle's centerline and bend downward following the back of the windshield with minimum clearance. The center windshield bar (#4A) must pass through the top of the dash panel and attach to a support bar under the dash panel at the firewall.
5. The main roll bar diagonal bar (#5), must form a straight line with no bends and must begin near the upper left bend of the main roll bar (#1) behind the driver's head and after intersecting the horizontal shoulder bar (#7), it must be welded to the lower right side of the main roll bar (#1) where the horizontal tunnel bar (#6) is welded to the main roll bar (#1).
6. **TWO (2) HORIZONTAL BARS (#6 AND #7) MUST EACH** be a continuous length of tubing. The two (2) horizontal bars (#6 and #7) must be welded with no bends, inside the vertical legs of the main roll bar (#1) with the horizontal tunnel bar (#6) welded just above the drive shaft tunnel and the horizontal shoulder bar (#7) at a minimum height of 20 inches above the main frame rails. An additional shoulder belt bar (#7B) may be added above the horizontal shoulder bar (#7) to facilitate shoulder harness mounting height. The shoulder belt bar (#7B) must be a continuous length of tubing and must be welded to the main roll bar (#1) and the main roll bar diagonal bar (#5) or it may be a bent tube constructed of 1-3/4 inches by 0.090 inch minimum wall thickness steel, round tubing, meeting ASTM – 519

specifications, welded at each end to the horizontal shoulder bar (#7) to form a loop above the horizontal shoulder bar (#7). The shoulder belt bar (#7B) must not be forward of the plane of main roll bar (#1).

7. The diagonal bar (#7A) must be welded near the center of the horizontal shoulder bar (#7). The diagonal bar then extends forward to a junction with the roof support bar (#12) and continues through the firewall. This diagonal bar must be welded to the right front sub-frame rearward of the spring bucket or shock mount and must be made from 1-3/4 inches by 0.065 inch minimum wall thickness magnetic steel seamless round tubing.
8. The dash panel bar (#8) must be a continuous length of tubing, with no bends, welded beneath the dash panel between the two (2) front roll bar legs (#2 A & B) at a minimum height of 20 inches above the main frame rail.
9. The door bars (#9 A & B), on both the left and right sides, must have a minimum of four (4) bars equally spaced from top to bottom that must be welded horizontally between the vertical uprights of the main roll bar (#1) and the front roll bar legs (#2 A & B). All door bars must each be a continuous length of tubing. The top door bar on each side must maintain a minimum vertical height of 20 inches from the top of the main frame rails and match up with the intersection of the dash panel bar (#8) at the roll bar legs (#2A & B) at the front and the intersection of the horizontal shoulder bar (#7) at the main roll bar (#1) at the rear. All door bars must be convex in shape except the bottom door bar on each side which may be straight. The door bars (#9 A & B) must have a minimum of six (6) vertical supports per side with two (2) equally spaced between each door bar. These supports must be made from a minimum of 1-3/4 inches by 0.090 inch wall thickness magnetic steel seamless round tubing (not numbered but shown in the left side view of diagrams #3, #4 & #5). Vehicles must have a magnetic steel anti-intrusion plate, minimum 0.090 inch thick, installed on the outboard side of the left side door bars and welded or bolted in place. The anti-intrusion plate, if bolted, must be attached with not less than four (4) minimum 1/2 inch diameter bolts bolted to tabs of not less than 1/8 inch thick that are welded to the door bars. Door bars must not to be drilled when attaching the anti-intrusion plate by bolts. This anti-intrusion plate must fill the area between the horizontal centerlines of the top and bottom door bars, and the vertical centerlines of main roll bar (#1), and the left front roll bar leg (#2A). Individual plates welded in the openings between each door bar will be permitted (see Diagram #6, in the rear pages of the Rule Book).

If the anti-intrusion plate is welded in place, to facilitate emergency removal of the left side door bars (#9A), the anti-intrusion plate must have six (6), 2-1/2 inch diameter holes cut in the anti-intrusion plate, with three (3) holes near each end of the plate in the following locations:

The upper two (2) holes must be centered vertically between the left side door bars (#9A-1&2), at an on-center distance of three (3) inches from the center of the left front roll bar leg (#2A) and main roll bar (#1).

The middle two (2) holes must be centered vertically between the left side door bars (#9A-2&3), at an on-center distance of three (3) inches from the center of the left front roll bar leg (#2A) and main roll bar (#1).

The lower two (2) holes must be centered vertically between the left side door bars (#9A-3&4), at an on-center distance of three (3) inches from the center of the left front roll bar leg (#2A) and main roll bar (#1).

A foot protection bar must be installed on the left side of the roll cage. The foot protection bar must be located at or in front of the pedal assembly, when viewed from the left side and above. The foot protection bar must be completely welded to the left front roll bar leg (#2A) and extend forward and be completely welded to the main frame rail or front sub-frame. A magnetic sheet steel anti-intrusion plate, with a minimum thickness of 0.090 inch, must be installed on the outside of the foot protection bar extending from the front roll bar leg (#2A) and down to the main frame rail. The anti-intrusion plate may be welded or bolted to the foot protection bar, front roll bar leg (#2A) and main frame rail. If the plate is bolted it must be attached with a minimum of four (4) 3/8 inch minimum diameter bolts, bolted to tabs, the tabs must be a minimum 1/8 inch thick so as to secure the plate at all four corners.

10. The vertical vent window bars (#10 A & B) must each be a continuous length of tubing and be welded from the upper surface of the top door bars (#9 A & B) on the right side and left side to the front roll bar legs (#2 A & B). The vertical vent window bars (#10 A & B) when mounted perpendicular to the top door bars (#9 A & B), must be mounted a minimum of eight (8) inches rearward of the front roll bar legs (#2 A & B) measuring from the vertical centerline of the front roll bar legs (#2 A & B) where the top door bars (#9 A & B) intersect with the front roll bar legs (#2A & B) to the centerline of the vertical vent window bars (10A & B). The vertical vent window bars (#10 A & B), when mounted at a top forward angle, must be mounted with the bottom mounting location in line with the vertical supports of the door bars

and the top location a minimum of eight (8) inches rearward of the front roll bar legs (#2 A & B) measuring from the vertical centerline of the front roll bar legs (#2 A & B) where the top door bars (#9 A & B) intersect with the front roll bar legs (#2A & B) to the centerline of the vertical vent window bars (10A & B). The vertical vent window bars (10A & B) must be straight (no bends). An optional vertical bar may extend from the roof hoop bar (#3) radiused outward and turn down to the top of the horizontal door bar (#9A) on the driver's side. The optional vertical bar must be a minimum 1-1/2 inch diameter by 0.090 inch wall thickness magnetic steel seamless round tubing and must be located in line with the driver and must not extend forward of the left side headrest/head surround assembly.

11. The two (2) angular supports (#11 A & B) must be welded to the top of the main frame rail and to the bottom surface of the second door bar from the bottom.
12. The roof support bar (#12) must extend from the right front corner of the roof bar (#3) intersecting the diagonal bar (#7A) and down to the rear suspension crossmember. The roof support bar (#12) must be welded near the area of the intersection with the front roll bar leg (#2B) and the roof bar (#3).
13. The rear support bars (#13 A & B) must be continuous lengths of tubing welded to the left and the right back side of the main roll bar (#1) near the roof panel at the top. They must extend to and be welded to the top of the rear sub-frame rail within one (1) inch of the rear edge of the fuel cell.
14. The trunk reinforcement bar (#14) must be a continuous length of tubing forming a loop directly above the rear sub-frame side rails and the rearmost crossmember and be welded to the rear support bars (#13 A & B). The trunk reinforcement bar (#14) must maintain a minimum height of five (5) inches from the top of the rear crossmember to trunk reinforcement bar (#14's) center. The trunk reinforcement bar (#14) must remain parallel to the rear sub-frame rear side rails and rear crossmember.
15. Three (3) rear vertical support bars (#15), evenly spaced, must be welded perpendicular to the top of the rear crossmember and to the bottom surface of the trunk reinforcement bar (#14). These vertical supports must be made from a minimum of 1-3/4 inch diameter by 0.090 inch wall thickness magnetic steel seamless round tubing.
16. The two (2) front sub-frame bars (#16 A & B) must each be a continuous length of tubing a minimum 1-3/4 inch diameter by 0.083 inch wall thickness magnetic steel seamless round tubing. They must be welded to the right side and the left side of the front roll bar legs (#2 A & B) at a minimum height of 20 inches. The front sub-frame bars (#16 A & B) must extend forward through the firewall, in a similar design as the diagram in the rear pages of Rule Book, turn down, and must be welded to the front sub-frame rails forward of the spring buckets or shock mounts near the radiator mount. All other support bars to the front sub-frame must be 1-3/4 inch diameter round magnetic steel seamless tubing by 0.083 inch minimum wall thickness.

C. Gussets

1. Gussets must be used at the intersection where the main roll bar (#1) and the front roll bar legs (#2 A & B) meet the main frame, and the gussets must be constructed using a minimum one (1) inch wide by two (2) inches high magnetic steel box tubing.
2. Gussets must be used at the intersection where the front roll bar legs (#2 A & B) intersect the roof bar (#3), and the gussets must be constructed from a minimum 0.095 inch thick triangular-shaped magnetic steel flat plate measuring a minimum of 1-1/2 inches long on each side that is to be welded.
3. Gussets must be used at the intersection of main roll bar (#1) and the front roll bar legs (#2 A & B) with door bars (#9 A & B) and the gussets must be constructed from a minimum 0.095 inch thick triangular-shaped magnetic steel flat plate measuring a minimum of 1-1/2 inches long on each side that is to be welded.
4. Gussets must be used at the intersection of main roll bar (#1) and the rear support bars (#13 A & B), and the gussets must be constructed from a minimum 0.095 inch thick triangular-shaped magnetic steel flat plate measuring a minimum of 1-1/2 inches long on each side that is to be welded.

D. For the approved location of the various roll bars, please reference both the basic roll cage diagrams and the typical roll cage diagrams at the back of the Rule Book.

E. Modifications to the basic and typical roll cage design described above must be submitted in blueprint and/or computer aided design (CAD) files for acceptance to the office of the NASCAR Technical Coordinator, Touring Series at least 60 days before the design can be entered in competition. If the Technical Coordinator accepts the modification as set forth in the submitted blueprints and/or computer aided design (CAD) files, the Competitor must submit for inspection a completed frame and roll cage at least 30 days prior to the date of intended competition. Acceptance of the submitted blueprint and/or computer aided design (CAD) files does not guarantee acceptance of the completed frame and roll cage design, and the Technical Coordinator may decide not to accept such design even if it is the same as the submitted form. If the

Technical Coordinator accepts the completed frame and roll cage, it may then be used in competition in the form accepted, unless and until the form is no longer approved by the Technical Coordinator.

F. All roll bars within the driver's reach should be covered with an impact absorbent material recommended to be manufactured to the SFI 45.1 specification and should have the SFI logo imprinted on the outside surface and be acceptable to Track Officials.

G. All references to the roll cage, roll bars, roll cage bars or the roll cage bar design specified in other sections of the Rule Book refer to sub-section 20F-18.

H. At the discretion of Track Officials, additional material and/or tubing may be required to be welded to any vehicle that does not conform to the January 1, 2024 roll cage or roll bar specifications as described in sub-section 20F-18.

SECTION 20G CHARGER DIVISION

THE PROMOTING TRACKS AND TRACK OFFICIALS WILL DETERMINE AND PUBLISH SPECIFICATIONS FOR THE CHARGER DIVISIONS IN THEIR LOCAL TRACK RULE BOOKS. NASCAR IS NOT RESPONSIBLE FOR THE ENACTMENT OF, ENFORCEMENT OF, OR CONSEQUENCES FROM THE OPERATION OF, LOCAL TRACK RULES, WHICH SHALL BE ENACTED AND ENFORCED IN THE SOLE DISCRETION OF THE PROMOTER OR ITS AUTHORIZED REPRESENTATIVE AND TRACK OFFICIALS.

The Promoting Tracks will determine and publish specifications for the following sub-sections:

- 20G – 1 **COMPETING MODELS**
- 20G – 2 **GENERAL BODY REQUIREMENTS**
- 20G – 3 **DETAILED BODY REQUIREMENTS**
- 20G – 4 **GENERAL ENGINE REQUIREMENTS**
- 20G – 5 **DETAILED ENGINE REQUIREMENTS**
- 20G – 6 **ENGINE / VEHICLE ELECTRICAL SYSTEM**
- 20G – 7 **ENGINE COOLING SYSTEM**
- 20G – 8 **ENGINE LUBRICATION**
- 20G – 9 **ENGINE EXHAUST SYSTEM**
- 20G – 10 **DRIVE TRAIN**
- 20G – 12 **SUSPENSION**
- 20G – 13 **STEERING COMPONENTS**
- 20G – 14 **BRAKES / BRAKE COOLING**
- 20G – 15 **FUEL**
- 20G– 16 **FUEL SYSTEM**
- 20G – 17 **PERSONAL SAFETY EQUIPMENT Recommendations - Refer to Section 6 of the front of the Rule Book.**
- 20G – 18 **ROLL BARS**
- 20G - 11 **Metric Frame Vehicles**

The following are guidelines that may be used by Local Tracks and Track Officials for an optional tubular Metric type frames. (See Diagram #7, in the rear pages of the Rule Book).

20G – 11.1 General Metric Frame Eligibility

A. All Frame components must be made of magnetic steel and welded. The frame must consist of a front and rear sub-frame connected to the main frame on which the roll cage is welded. Sub-frames must not be offset from the main frame rails. Holes and/or other modifications to the frame, frame supports, crossmembers, and any other components that, in the judgment of Track Officials, were made with the intent of weight reduction will not be permitted.

B. Any frame competing with factory OEM main frame side rails must remain OEM factory frame from the front sub-frame kick out to the centerline of the rear axle. Factory OEM rear suspension mounts must be used in the standard location.

20G – 11.2 Metric Frame Requirements

ALL VERTICAL MEASUREMENTS WILL BE ON FIVE (5) INCH RIDE HEIGHT BLOCKS

A. Main Frame

1. A tubular magnetic steel frame must be used. Offset frames will not be permitted. The main frame side rails must be parallel and be an equal distance from the centerline of the frame. The main frame side rails must be the same size (left and right, height and width), constructed using a single tube, and must be magnetic steel box tubing three (3) inches in width by four (4) inches in height with a minimum wall thickness of not less than 1/8 inch meeting ASTM A-500 specification. The main frame side rails start at a distance of 20 inches forward of the rear axle centerline and extend forward a length of 66 inches. When measured from the outside of the left frame rail to the outside of the right frame rail, a width of 54 inches, plus or minus (+/-) 1/2 inch, must be maintained. The distance from the outside edge of the main frame side rails, left and right, must be the same, measured from the centerline of the tread width, front and rear.

2. Sub-frame kick outs must be constructed using a single tube and must be magnetic steel box tubing three (3) inches in width by four (4) inches in height with a minimum wall thickness of 1/8 inch meeting ASTM A-500 specification. The sub-frame kick-outs must turn in 90 degrees to the main frame side rails and be welded to the inside ends of the main frame rails. The open ends of the sub-frame kick-outs must be closed by welding caps on the ends or bolting weight containment caps. The distance from the front of the front kick-out to the rear of the rear kick-out must be 66 inches. The front kick-out must measure 86 inches from the rear axle centerline.
3. A crossmember constructed of magnetic steel box tubing, two (2) inches by two (2) inches with a minimum wall thickness of 0.083 inch meeting ASTM A-500 specification, must be welded between the main frame side rails at a distance of 48 inches from the rear axle centerline.
4. All frames must have diagonal cross bracing constructed of a minimum one (1) inch by one (1) inch by 0.065 wall thickness tubing.
5. All crossmembers and diagonal bracing must be installed flush to the top of the main frame side rails. The center of the crossmembers may be dropped a maximum of 12 inches for driveline clearance. No part of the crossmembers or diagonal bracing will be permitted to extend lower than the main frame side rails.
6. On race tracks 3/4 mile or more in length, a rear transmission crossmember will be mandatory.
7. If the optional tubular metric frame is used, the center to center dimension of the main roll bar #1 and the rear axle must be a minimum of 23-1/2 inches.

B. Rear Sub-Frame

1. The rear sub-frame rails must be configured and attached in the same location on the left side and right side to the sub-frame kick-outs four (4) inches in from the outside edge of the main frame rails. The rear sub-frame when measured from the outside edge of the left sub-frame rail to the outside edge of the right sub-frame rail must measure 46 inches, and this width must be maintained for the entire length of the sub-frame. The rear sub-frame must angle rearward and upward at an angle between 45 degrees and 50 degrees to a maximum height of 22 inches from the ground (on five (5) inch blocks), then angle rearward parallel to the main frame rails a maximum distance of 16 inches, then angle down to a minimum height of 11 inches and a maximum height of 14 inches from the ground. The rear sub-frame must be constructed using magnetic steel box tubing, two (2) inches in width by three (3) inches in height, with a minimum wall thickness of 1/8 inch and must be similar in design and configuration to standard OEM automotive rear kick-ups.
2. The rear sub-frame tail section must extend rearward at a minimum height of 11 inches and a maximum height of 14 inches, to a maximum length of 38 inches from the centerline of the rear axle. The rear sub-frame tail section side rails must be parallel to the main frame side rails and have a minimum length of 24 inches. The rear sub-frame tail section must be constructed using magnetic steel box tubing two (2) inches in width by three (3) inches in height with a minimum wall thickness of 0.083 inches.
3. The rear sub-frame must incorporate the mounting locations for the rear springs, shock absorbers, panhard bar, and fuel cell, ending with a crossmember constructed of magnetic steel box tubing two (2) inches in width by three (3) inches in height with a minimum wall thickness of 0.083 inches a maximum length of 38 inches from the centerline of the rear axle.
4. A reinforcement bar, made from round magnetic steel tubing, minimum 1-1/2 inches in diameter with a minimum wall thickness of 0.083 inches, must extend below the rear sub-frame section behind the fuel cell. This reinforcement bar must be as wide as the rear sub-frame rails and extend as low as the bottom of the fuel cell with two (2) vertical uprights evenly spaced between the sub-frame rails and attached to the rear crossmember. Two (2) support bars, one (1) located on each corner, must angle upwards and be welded to the rear sub-frame side rails. (See the Construction Guidelines in the rear pages of the Rule Book)
5. Weight containers, if used, must only be attached to the inside of the frame rails and must not be lower than the bottom of the frame rails.

C. Front Sub-Frame – **Optional Tubular Front Sub-Frame**

The front sub-frame must be constructed by the following guidelines:

ALL VERTICAL DIMENSIONS WILL BE ON FIVE (5) INCH RIDE HEIGHT BLOCKS.

Many Dimensions will come from a front frame kick-out that is 86 inches from the rear axle centerline constructed of three (3) inches wide by four (4) inches high magnetic steel tubing with a minimum wall thickness of 0.125 inch meeting ASTM A-500 specification.

A **GM-METRIC** type front steer tubular front sub-frame must be constructed using two (2) inches wide by four (4) inches high magnetic steel tubing with a wall thickness of 0.125-inch meeting ASTM A-500 specification. The front sub-frame rails must be parallel to each other both vertically and horizontally. The front sub-frame rails must be parallel both vertically and horizontally to the main frame rails from the jacking bolts forward. All front steer assemblies must maintain a dimension of 31 inches from the center of the left side frame rail to the center of the right side frame rail at a point from the center of the jacking bolt extending forward in front of the steering assemblies. Spring buckets and jacking bolts may be cut into left side and right side frame rails. The top of the spring buckets must maintain a vertical height of 15-1/4 inches, plus or minus (+/-) 1/2 inch. Jacking bolts must maintain a centerline distance of 33-1/2 inches, plus or minus (+/-) 1/2 inch measured at the top of the spring bucket from left side to right side and be located equal distance from centerline left and right. A distance of 21 inches, plus or minus (+/-) 1/4 inch, must be maintained from the front frame kick-outs forward to the jacking bolt centerline. Jacking bolts will be permitted a maximum angle of five (5) degrees from vertical. The front sub-frame rails may angle outward and rearward from the jacking bolts to the front frame kick-out to a maximum distance of 43 inches, plus or minus (+/-) 1/2 inch. If the frame rails are angled outward, a wishbone made from round magnetic steel seamless tubing, 1-1/2 inch in diameter by 0.083 inch minimum wall thickness meeting ASTM A-519 specification, must extend from dash bar (#8) to an area at the rear lower A-frame mount and continue to connect at an intersection of the roof support bar (#12) and diagonal bar (#7A). The front frame extensions using magnetic steel box tubing, two (2) inches in width by three (3) inches in height with a minimum wall thickness of 0.083 inch, meeting ASTM A-500 specification must angle out and forward and extend a distance of 12 inches forward of the forward most top steering box bolt to a minimum distance of 33 inches from the center of the left side frame rail extension to the center of the right side frame rail extension. This forward top steering box bolt must be a horizontal distance of 39 inches from the front frame rail kick-out and a vertical height of 15 inches, plus or minus (+/-) 1/2 inch. (Steering box bolt location will be inspected with a fixture that will read zero (0) degrees with the frame on five (5) inch ride height blocks). At a point four (4) inches in front of the top steering box bolt, a two (2) inches wide by four (4) inches high magnetic steel box tubing with a minimum wall thickness of 1/8 inch, meeting ASTM A-500 specification, must extend rearward a distance of 34 inches then angle down 30 degrees to the front frame rail kick-out. A distance of 24-1/2 inches, plus or minus (+/-) 1/8 inch, must be maintained from the sub-frame kick-out to the center of an O.E.M. 3/4 inch pin boss located on the main frame centerline at the front of the front sub-frame crossmember. (O.E.M. pin boss will be used for locating inspection fixtures.) The front sub-frame crossmember must be mounted at the centerline of the front sub-frame at a 90 degree angle against the back of the 3/4 inch pin boss and be constructed using two (2) inches high by four (4) inches wide magnetic steel box tubing with a minimum wall thickness of 1/8 inch meeting the ASTM A-500 specification. A minimum thickness of one hundred thousandths (0.100) 12 gage magnetic steel must be used to construct the remainder of the front sub-frame crossmember. The front mounting points for the front lower A-frames must be constructed using a minimum 3/16 inch thick magnetic sheet steel. The front mounting points for the front lower A-frames must be 9-3/8 inches, measured from the centerline of the front sub-frame to the centerline of the mounting bolt hole at the front side of the mount and a vertical height of seven (7) inches, plus or minus (+/-) 1/4 inch. The rear mounting points for the lower A-frames must be constructed using a minimum 3/16 inch thick magnetic sheet steel. The rear mounting points for the lower A-frame must be 13 inches, plus or minus (+/-) 1/4 inch, measured from the centerline of the front sub-frame to the centerline of the mounting bolt hole at the rear side of the mount and the vertical height must be seven (7) inches, plus or minus (+/-) 1/4 inch. Adjustable insert slugs may be used on the rear-mounting bolt hole to maintain a distance of 22 inches, plus or minus (+/-) 1/2 inch, from the center of the lower ball joint to the leading edge of the main frame side rail and kick-out. A 7/16 inch diameter round by 15-inch long solid steel pin must pass freely through these holes during inspection. When measuring either the right side or left side, the distance from the centerline of the bottom ball joint to the centerline of the sub-frame must be equal. The mounting plates for the upper A-frames must be welded to the top of the front sub-frame rails and be parallel with the centerline of the sub-frame rails. A distance of 36-3/4 inches must be maintained from the top idler arm bolt centerline to the front sub-frame kick-out with a vertical height of 14-1/4 inches, plus or minus (+/-) 1/4 inch. **The GM-**

METRIC FRONT SUB-FRAME MUST WEIGH A MINIMUM OF 95 lbs. A bare front sub-frame must be submitted to Track Officials for weigh in and approval. The front sub-frame must be acceptable to Track Officials before it can be used in competition.

20G - 19 Identification / Marking

- 1. Teams are required to have in place at a minimum a Series Sponsor decal in the designated area of the vehicle, as specified by NASCAR.**
2. At the sole discretion of NASCAR, and/or Promoter and/or Track Officials, they may refuse to permit for any reason, or they may restrict or assign the size or placement of decals, identification, and advertising of any kind including but not limited to the vehicle equipment, personnel, uniforms, garage and pit areas, promotional materials, and/or support vehicles. All NASCAR Members agree to accept NASCAR's, and/or Promoter's and/or Track Official's decision in this regard.
3. NASCAR, and/or Promoter and/or Track Officials may refuse to permit a Competitor to participate in an Event if NASCAR, and/or Promoter and/or Track Officials determines that any advertising, sponsorship or similar agreement to which the Competitor (or a car owner, driver or crew member associated with the Competitor) is or will be a party, is detrimental to the sport, to NASCAR, Series Sponsor, or to the Promoter for any reason, including without limitation, the public image of the sport.

CONSTRUCTION GUIDELINES

DIAGRAM #1 - TYPICAL NASCAR FRAME (PLAN VIEW)

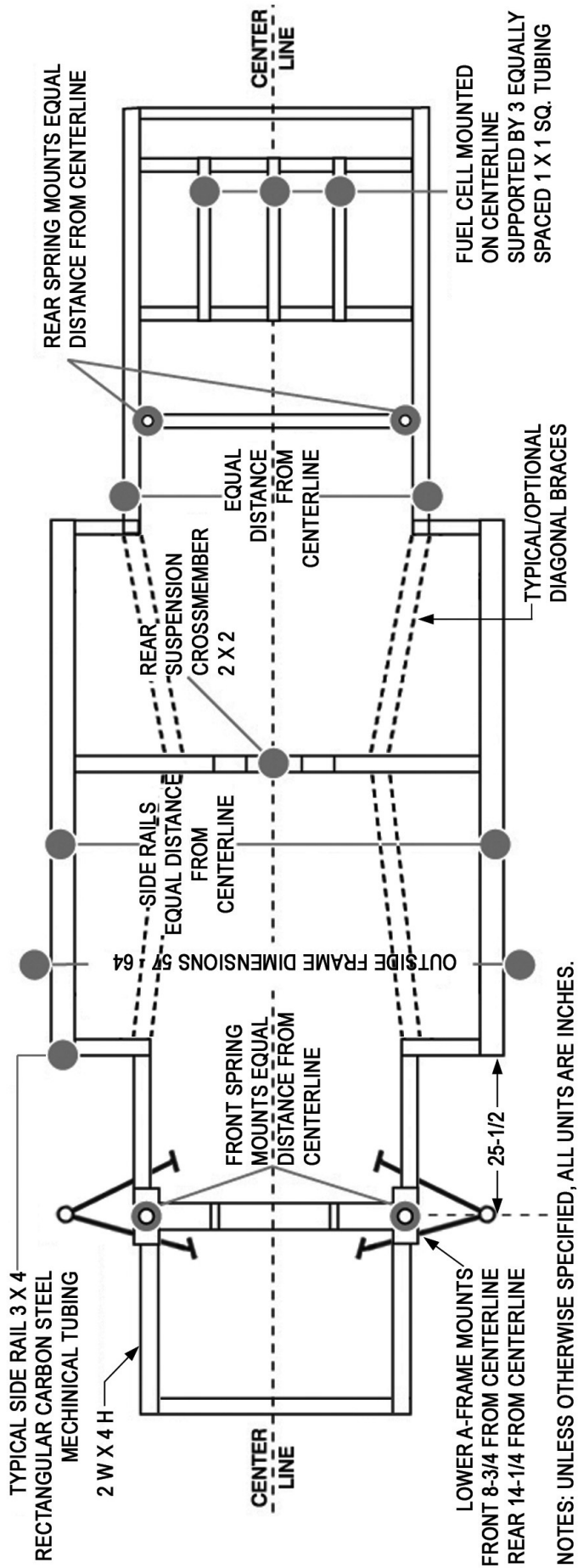
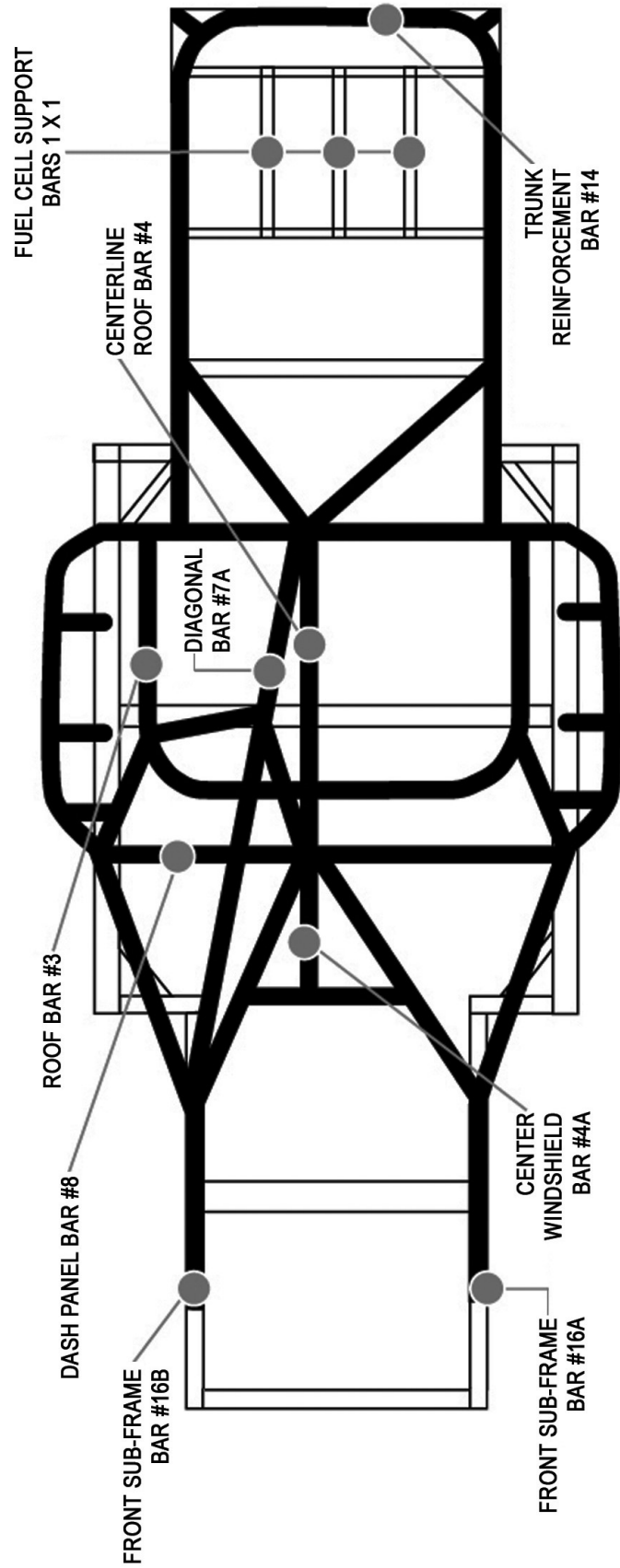
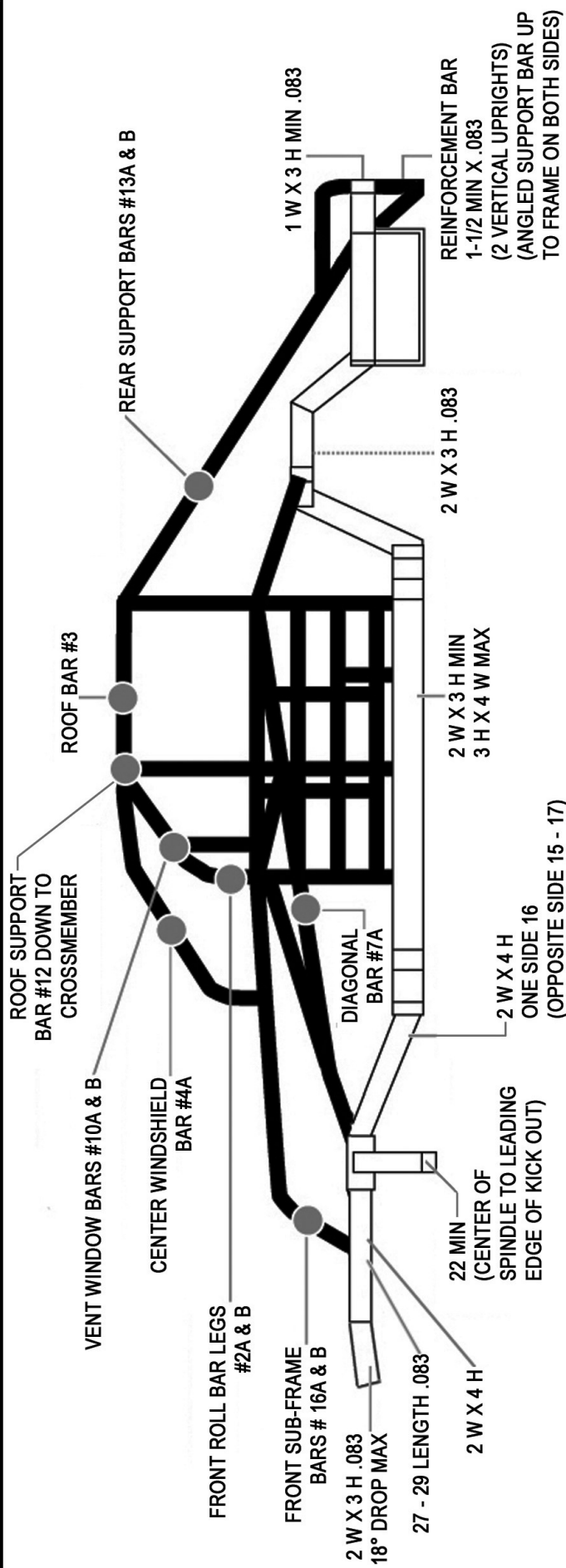


DIAGRAM #2 - TYPICAL ROLL CAGE AND FRAME CONSTRUCTION (PLAN VIEW)



NOTES: UNLESS OTHERWISE SPECIFIED, ALL UNITS ARE INCHES.

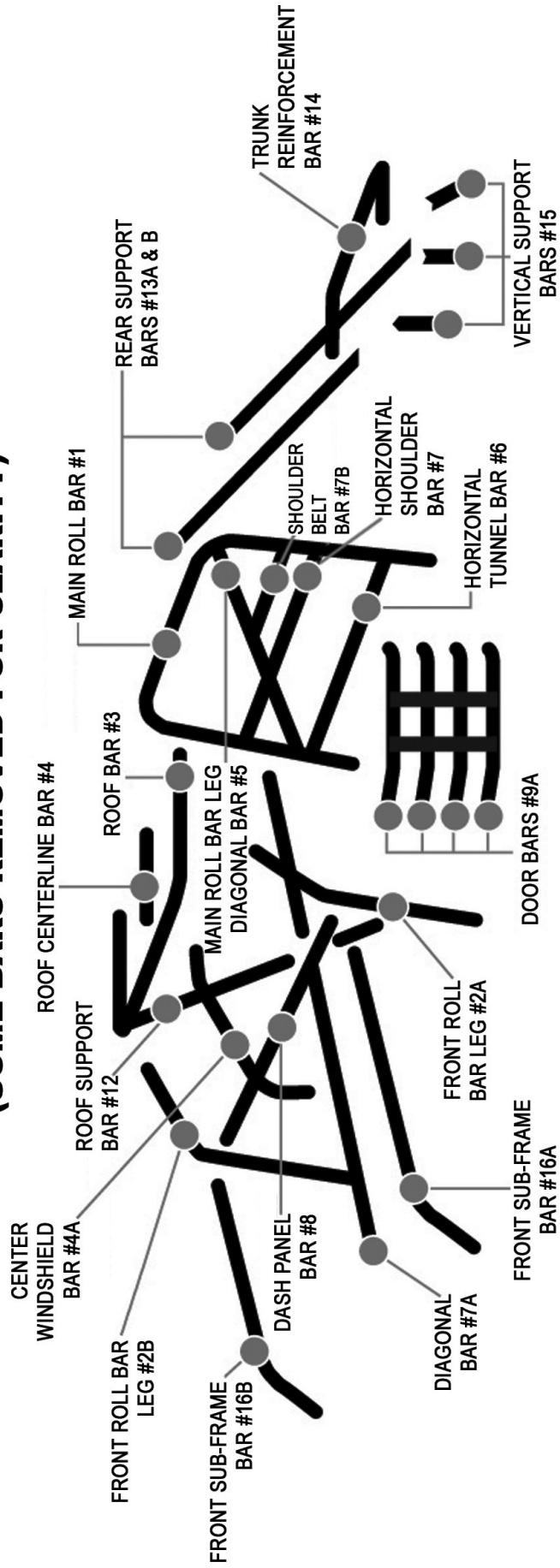
DIAGRAM #3 - TYPICAL LATE MODEL ROLL CAGE & FRAME CONSTRUCTION



NOTES: UNLESS OTHERWISE SPECIFIED, ALL UNITS ARE INCHES. 22-25 DEGREES RISE .083

DIAGRAM #4 - EXPLODED VIEW OF BASIC ROLL CAGE

(SOME BARS REMOVED FOR CLARITY)



**DIAGRAM #5 - BASIC NASCAR ROLL CAGE STRUCTURE
(SOME BARS REMOVED FOR CLARITY)**

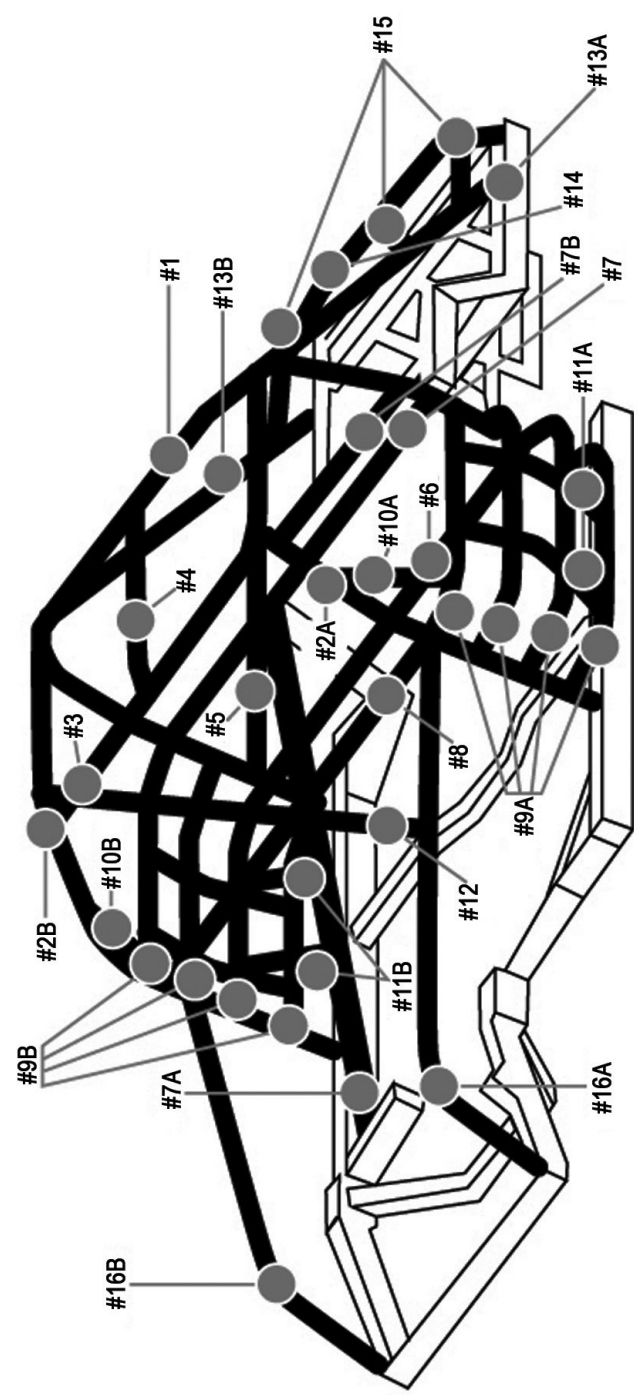
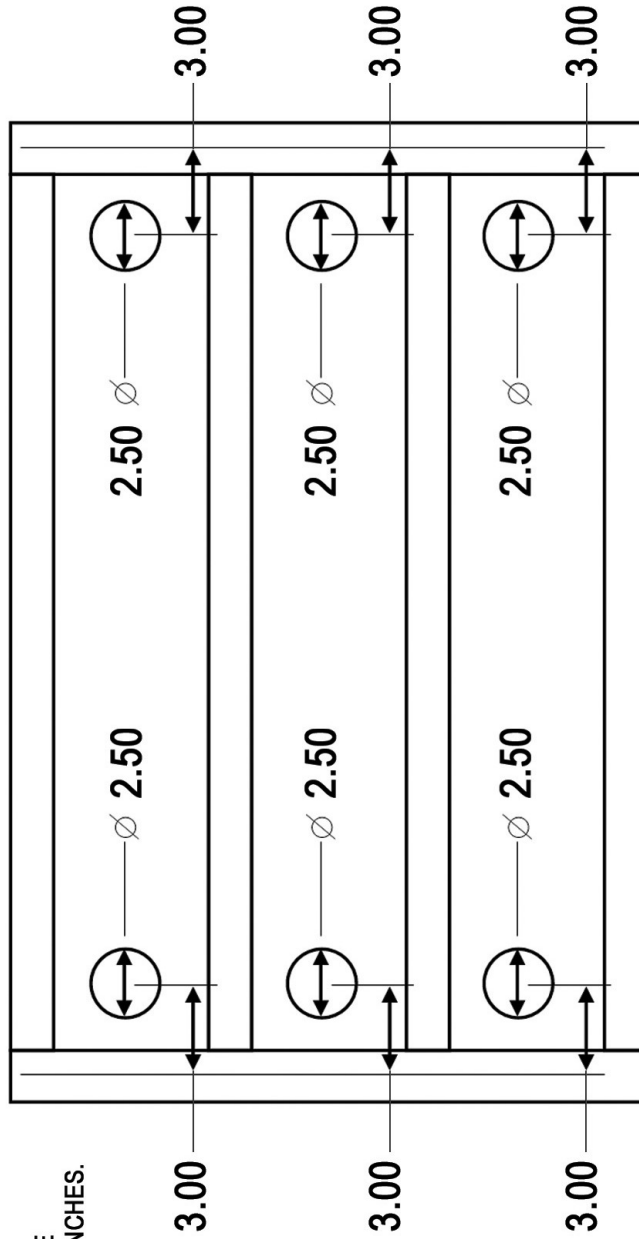


DIAGRAM #6 ANTI-INTRUSION PLATE HOLE LOCATION

NOTES: UNLESS OTHERWISE SPECIFIED, ALL UNITS ARE INCHES.



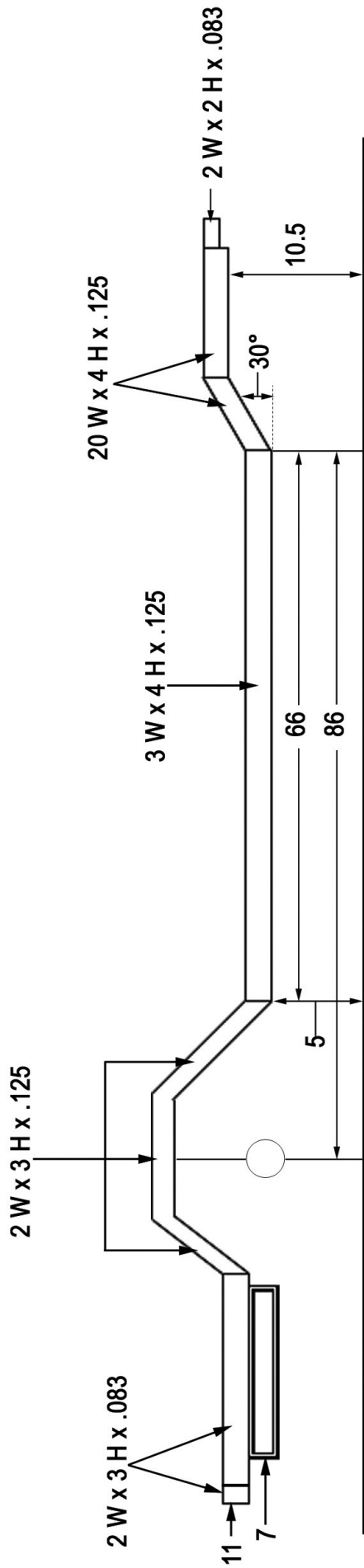
VERTICAL BAR 2A

VERTICAL BAR 1

DIAGRAM #7 - CHARGER DIVISION - TYPICAL FRAME CONSTRUCTION

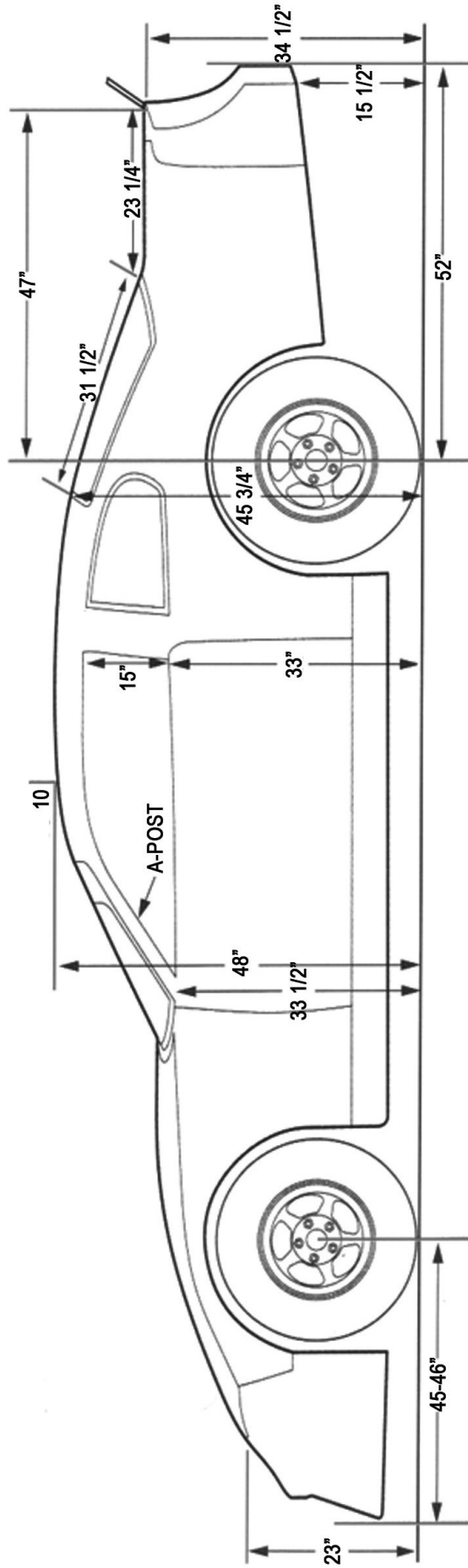
SIDE VIEW

NOTES: UNLESS OTHERWISE SPECIFIED, ALL UNITS ARE INCHES.



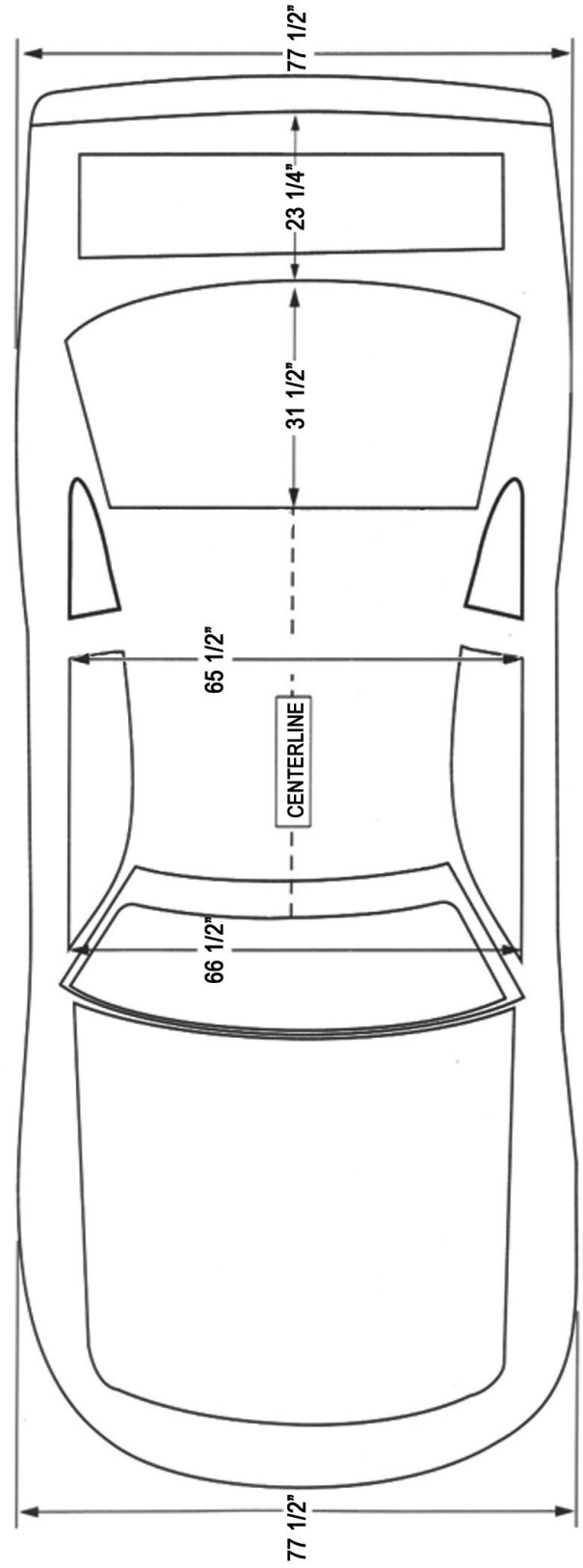
FRONT AND REAR SUB-FRAME SIDE RAILS
MAY BE FORMED OR WELDED SECTIONS

BASIC LATE MODEL STOCK CAR DIAGRAM - SIDE VIEW

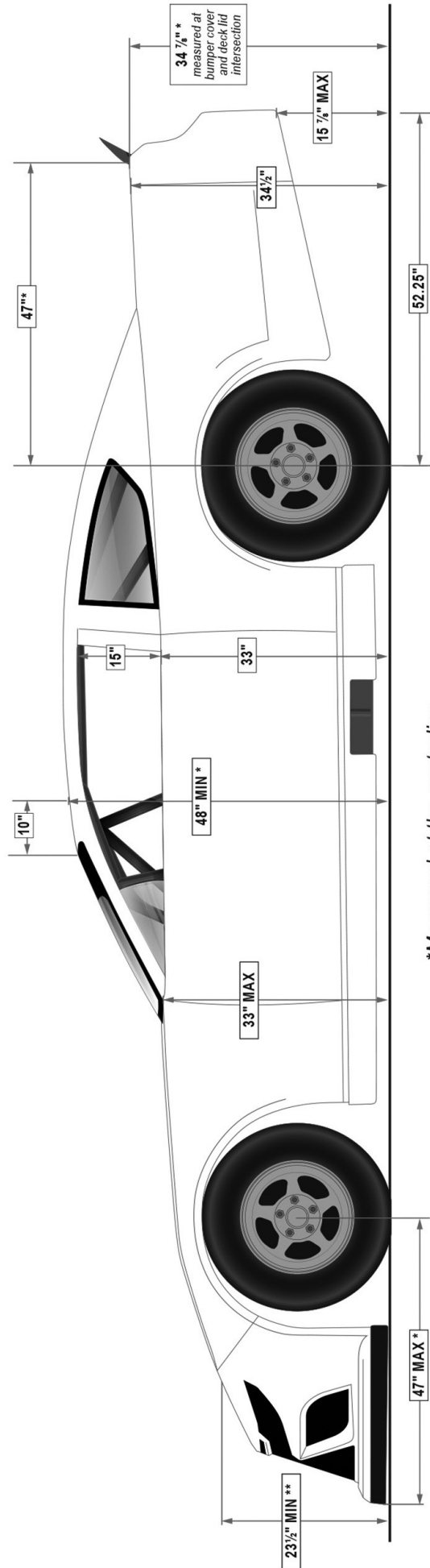


NOTES: UNLESS OTHERWISE SPECIFIED, ALL UNITS ARE INCHES.

BASIC LATE MODEL STOCK CAR DIAGRAM - TOP VIEW



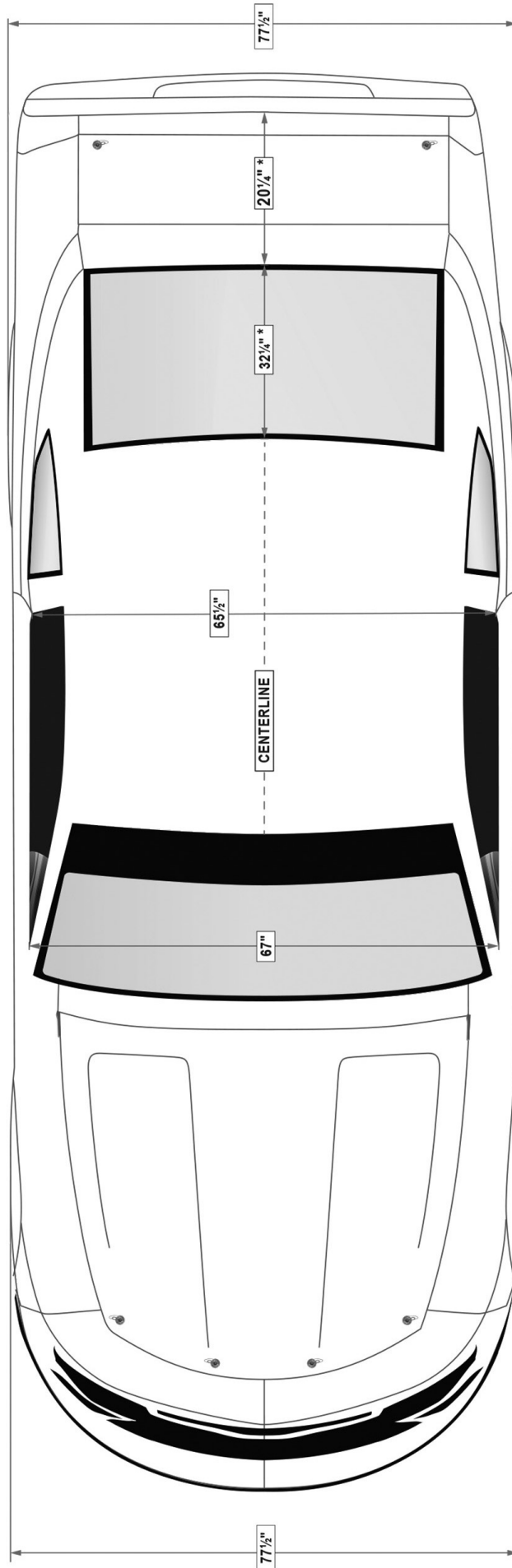
FIVE STAR RACE CAR BODIES 2020 LATE MODEL STOCK BODY



*Measured at the centerline.

** Measured at nose/hood seam on centerline, with nose on 4" blocks.

FIVE STAR RACE CAR BODIES 2020 LATE MODEL STOCK BODY



**Measured at the centerline.*



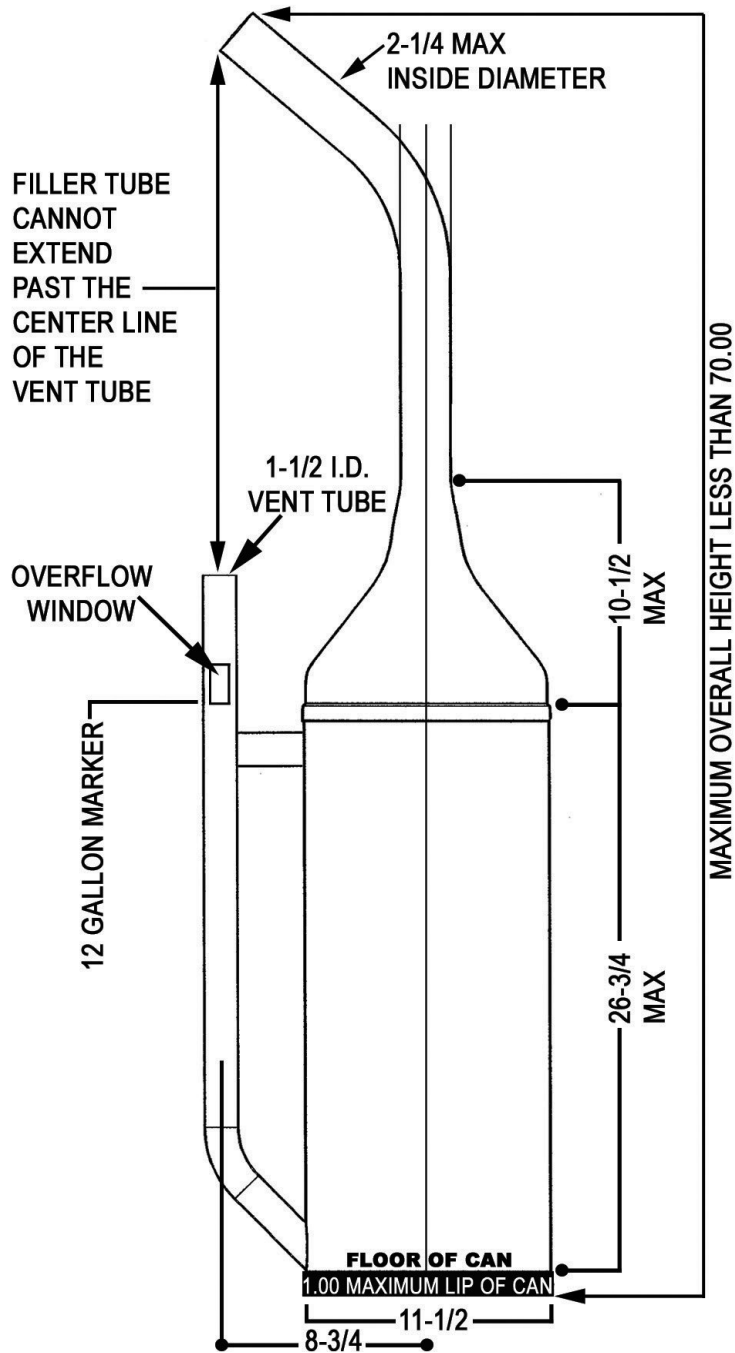
APPROVED REFUELING CAN

**APPROVED
MAXIMUM CAPACITY
12 GALLONS**



**MATERIAL:
MIN 0.050 THICK ALUMINUM**

NOTES: UNLESS OTHERWISE SPECIFIED,
ALL UNITS ARE INCHES.



VEHICLE REQUIREMENTS INDEX

This is an alphabetical order subject index. To use this index, prefix the referenced subsection number for a given subject with the appropriate section number given below to obtain the complete subsection number. For example, to look up “Carburetor Air Cleaner” for the Late Model Stock Car Division, simply add number “20F” to the referenced subsection number “-5.12.1” to obtain the complete subsection number 20F-5.12.1.

<u>Index Topic</u>	<u>Subsection</u>
Accessories	-6.7
Advertising (Identification and Marking)	-3.11
A-Frames	-12-4
Air Ducts (Side Window)	-3.2.3
Air Intake	-5.12.2
Alternator	-6.3
Auxiliary On/Off Switch	-6.6
Ball Joints	-12.4
Battery	-6.5
Battery Box	-6.5
Bell Housing	-10.3
Body Dimensions	-2.1 and Diagrams
Body Detailed Requirements	-3
Body General Requirements	-2
Body Height Requirements	-12.8.1
Body Templates	-3.12.1
Bore and Stroke	-5.4
Brakes and Brake Cooling	-14
Brake Components	-14.1
Brake Cooling	-14.2
Brake Fluid Re-circulating Device	-14.1
Brake Pedal	-14.1
Brake Pressure Proportioning System	-14.1
Broadcast Telemetry System	-6.7
Bumper Covers	-2.1; -3.10
Camera (In Vehicle)	-6.7
Camshaft	-5.8.1
Carburetor	-5.10
Carburetor Air Filter	-5.12.1
Carburetor Eligibility	-5.10.1
Carburetor Gaskets	-5.10.2
Carburetor Fuel Filter	-5.10.4
Carburetor Restrictor	-5.10.3
Carburetor Spacer	-5.10.2
Clutch	-10.1
Coil Spring Inserts	-12.1
Coil Springs	-12.1
Competition Models	-1
Compression Ratio	-5.4
Computerized Systems	-6.1
Cowl Air Induction (Cold Air Box)	-5.12.2
Crankshaft	-5.7.1
Crush panels	-3.6
Cylinder Head Eligibility	-5.6.1
Cylinder Head External Changes	-5.6.2
Cylinder Head Internal Changes	-5.6.3

Cylinder Head Detailed	-5.6
Cylinder Head General	-4.2
Dash Panel	-3.3
Decals	-3.11
Doors	-3.5
Drive Shaft	-10.5
Drive Train	-10
Electrical System	-6
Engine Block Eligibility	-5.5.1
Engine Block Internal Changes	-5.5.2
Engine Blocks	-5.5
Engine Characteristics General	-4.2
Engine Cooling System	-7
Engine (Displacement)	-5.4
Engine Eligibility	-4.1
Engine Ground Clearance	-5.2
Engine Location	-5.1
Engine Lubrication	-8
Engine Mounts	-5.3
Engine Detailed Requirements	-5
Engine General Requirements	-4
Exhaust Headers	-9.1
Exhaust Header Heat Shields	-9.3
Exhaust Pipes	-9.2
Exhaust System	-9
Fan	-7.2
Fan Shroud	-7.3
Fenders	-3.6
Fire Resistant Uniforms & Accessories	-17
Firewall	-3.4
Floors	-2.1
Flywheel	-10.2
Forced Air Induction	-5.11
Frame Requirements	-11.2
Frame Eligibility	-11.1
Frame Modification	-11.2
Frames	-11
Fuel	-15
Fuel Cell	-16.1
Fuel Cell Container	-16.2
Fuel Cell Installation	-16.3
Fuel Cell Vent	-16.4.2
Fuel Definition	-15.1
Fuel Filler Cans	-16.6
Fuel Filler	-16.4.1
Fuel Injection	-5.11
Fuel Lines	-16.5.1
Fuel Pump	-16.5.2
Fuel Specifications	-15.2
Fuel System	-16
Grilles	-3.7
Ground Clearance Requirements	-12.8.2
Gussets (Roll Bars)	-18
Harmonic Balancer	-5.7.2
Headlights	-3.2.4

Head & Neck Restraint Devices	-17.1
Headrest	-17.3
Headrest Supports & Nets	-17.3
Heat Shields	-9.3
Helmets	-17.1
Hoods	-3.8
Hubs	-12.5
Identification and Marketing	-3.11
Ignition System	-6.1
Intake Manifold	-5.9
Lights	-3.2
Lug Bolts and Nuts	-10.7
Mirrors	-3.2
On Board Fire Suppression System	-17
Oil	-8.1
Oil Coolers	-5.5.4
Oil Filters	-8.3
Oil Pans	-5.5.4
Oil Pressure	-8.2
Oiling System	-8.4
Padding (Roll Bar)	-18
Panhard Bar (Track Bar)	-12
Parking Lights	-3.2.4
Personal Safety Equipment	-17
Pistons	-5.5.3
Pitman Arm	-13
Quarter Panels	-2.1; -3.6
Radiator	-7.4
Radio	-6.8B
Radio Antenna	-6.8B
Rear Axle	-10.6
Rear Deck Lids	-3.9
Rear View Mirrors	-3.2.5
Rear Window	-2.1; -3.2.2
Remote Control Device	-12.9
Remote Lap Timing Devices	-6.7
Restrictor Plates (Carburetor)	-5.10.3
Rocker Arms	-5.8.3
Rocker Panels	-3.6
Rocker Panel Extension	-3.6
Rods	-5.5.3
Roll Bars	-18
Roof	-3.8
Seats & Seat Mounts	-17.3
Seat Belts	-17.2
Shifter Boots	-10.4
Shock Absorbers	-12.3
Shoulder Harness	-17.2
Side Windows	-3.2.3
Spark Plugs	-6.2
Speed Sensing Devices	-6.7
Spindles	-12.5
Spoilers Front Air Dam	-3.1.1
Spoilers Rear	-3.1.2
Starter	-6.4

Steering Components	-13
Steering Linkage	-13
Steering Shaft	-13
Steering Wheel	-13
Streamlining	-2.1
Sub-Frame (Front & Rear).	-11.2
Suspension	-12
Sway Bars (Anti-Roll Bars)	-12.2
Switch Locations	-6.6
Tire Usage Rules	-10.8.4
Tires	-10.8
Tires Measurement Procedure.	-10.8.3
Tires Physical Requirements	-10.8.1
Traction Control Devices	-6.7
Transmission	-10.4
Travel Limiting Devices	-12.1.1
Tread Widths Requirements.	-12.6
Valve Lifters	-5.8.2
Vehicle Bodies	-2.1
Vehicle Height Adjustment Devices.	-12.9
Vehicle Numbers	-3.11
Water Pump	-7.1
Weight Added	-2.3
Weight Overall	-2.2
Wheel Bearings.....	-12.5
Wheel Spacers.....	-12.6
Wheelbase Requirements.....	-12.7
Wheels.....	-10.7
Windows.....	-3.2
Window Net.....	-17
Windshield.....	-2.1; -3.2.1