



## **FULL SIZE PRO TRUCK DIVISION**

### **BUILDING RULES 2024**

**Sanctioned by D.E.M.O.**

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#### **D.E.M.O - FULL-SIZE PRO TRUCK DIVISION**

**\*\*BUILD TO THE RULES. IF YOU HAVE ANY QUESTIONS, CONTACT THE LEAD INSPECTOR – Brian Wood**

**(419)509-6676**

#### **SECTION I – GENERAL**

1. All rules apply to fresh and pre-ran vehicles as described. NO EXCEPTIONS.
2. This is a FULL-SIZE TRUCK/SUV class ONLY.
3. NO straight rail, semi-truck, or other industrial/commercial/heavy duty truck type frames permitted.  
**\*IF THIS IS QUESTIONABLE, CONTACT LEAD INSPECTOR PRIOR TO BUILDING.\***
4. Frame/body swaps permitted.
5. 12x12 in. roof sign with driver number clearly marked is required.
6. MINIMUM SAFETY REQUIREMENTS TO COMPETE:
  - a. MUST REMOVE FACTORY: lights, glass, chrome, trim, door handles, wheel weights, interior components, dash components, fuel lines, brake lines, gas tanks.
  - b. Fuel lines must be cleanly installed. Rubber fuel lines must be shrouded by additional tubing.
  - c. Must have functioning brakes.
  - d. Must have/wear a functional seat belt or harness.
  - e. Helmets and eye protection are required.
  - f. Hard sole shoes, long sleeved outer garment and pants are required.

#### **SECTION II – FRAME**

1. Frame must be factory manufactured. NO fabricated frames permitted.
2. Frame must NOT be altered as described below:
  - a. No doubling, boxing, plating, seam welding, pinning, pre-bending, or tilting.
  - b. No hump plates.
3. Frame may be shortened to allow for body swap conversions.
  - a. Front frame must NOT be shortened past factory front core support mount locations.
  - b. NO fabricated cross members permitted except, (1) transmission crossmember. (See Sect. VI.)
4. Factory frame body mount pads ONLY. May be re-located for body swap conversions.
5. Frame repair
  - a. Frame repairs must be made with same dimension material.

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- i. Maximum ½ in. coverage around repaired area.
  - b. Frame “stubbing” permitted. (Pre ran vehicles ONLY)
    - i. Repair stub must be factory manufactured frame sections, ONLY.
    - ii. Must be attached as described below:
      - 1. 2 in. max width on either side of connection point.
      - 2. Flat plate ONLY. Maximum thickness is ¼ in.
      - 3. Maximum weld diameter is ½ in. May be welded on all sides of frame.
  - c. Re-stub connection plates will NOT count against fix-it plate allotment.
6. Fix-It-Plates
- a. (6) – 6x6 in. x ¼ in. plates permitted. Same square in. coverage Parallelogram plates permitted.
  - b. Must have a ½ in. gap between each plate.
  - c. Must be on the frame, ONLY. Maximum of 2 sides. (ex. top and outside)

### **SECTION III – ENGINE COMPARTMENT**

- 1. Engine swaps are permitted.
- 2. Full cradles are permitted.
  - a. Cradle components permitted: lower cradle, front plate, mid plate, oil pan protector, halo, distributor protector and pulley protector. (NO metal fan shrouds)
  - b. Distributor protectors must NOT connect to any cage or front dash components.
  - c. Cradle may be welded to the k-member ONLY. (In addition to engine mount pad).
    - i. Maximum of (1) 4x4 in. x ½ in. plate per side.
- 3. Header protectors are permitted.
- 4. Engine mounts may be solid or rubber factory style mounts.
- 5. Maximum of (1) 3x3 in. x ¼ in. piece of angle iron or c channel permitted between frame rails.
  - a. Must be in front of k-member. May be used in conjunction with the core support/radiator mount.
- 6. Core support can be homemade as follows:
  - a. Maximum of (2), 2x2 in. x ¼ in. square tubes. Maximum of (2) 1 ½ in. all thread rods. (1 each rail)
  - b. Must be vertically attached on TOP of frame rail ONLY.
  - c. Tubing must NOT run through hood.
  - d. All thread ONLY, may run through bottom of the frame rail.
  - e. Top of core support may include a maximum of (1) piece of 3x3 in. x ¼ in. angle iron OR c channel.
  - f. Factory headlight openings may be covered with a maximum of ¼ in. plate.
- 7. Radiators must be mounted in the factory location.
- 8. Radiator protectors/guards are permitted. Maximum material thickness of ¼ in.
- 9. Radiator guards MUST be mounted as follows:
  - a. On the front of the core support ONLY, no wider than the frame rails.
    - i. Maximum of (4) 1 in. stitch welds per side permitted. OR;
    - ii. Maximum of (5) ½ in. bolts per side.
- 10. Kickers permitted on coil sprung front suspension trucks, ONLY. (Firewall forward)
  - a. Maximum of 2x2 in. x ¼ in. square tubing. Maximum (1) per side.
  - b. Connections - Front dash bar to the TOP of the frame rail, ONLY.
  - c. Must NOT extend past the center of factory coil pocket or upper a-arm location.
  - d. No gussets permitted.

### **SECTION IV – FRONT / REAR BUMPER**

- 1. Front bumper:
  - a. Auto manufacturer, homemade or vendor bumper is permitted.

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- b. Must NOT exceed dimensional requirements below:
    - i. **8 in. tall** - from the top to the bottom of the bumper at any measurable point.
    - ii. **14 in. wide** - from the front to the back of the bumper at any measurable point.
    - iii. The front “point” of bumper must be tapered over 30 in. from center, minimum.
    - iv. No sharp points or jagged edges.
  - c. May be seam welded, loaded, and capped.
  - d. Front bumper attachment:
    - i. Must be welded, bolted, or wired directly to the frame. (All sides of frame permitted)
    - ii. Gussets are permitted. Maximum of 2x2 in. x ¼ in. square tube OR 4x4 in. x ½ in. plate.
      - 1. Maximum of (2) gussets per side. (4 total)
      - 2. Must not extend onto frame more than 4 in. from back of bumper.
    - iii. May use bumper shocks OR mounting plates. Must connect to back of bumper.
    - iv. Bumper shocks:
      - 1. Maximum of (2) 3x3 in. x ¼ in. square tube x 10 in. long. (1) per side.
      - 2. If inside frame rail, ½ in. inspection hole is required to inspect length.
    - v. Mounting plates:
      - 1. Maximum of (2) 4 in. tall x 10 in. long x ½ in. thick, FLAT plate. (1) per side.
    - vi. Front bumper MUST NOT connect to the core support or any other components.
  - e. NO “anti-climber” configurations are permitted.
2. Rear bumper:
- a. Auto manufacturer, homemade or vendor bumper is permitted.
  - b. Must NOT exceed dimensional requirements below:
    - i. **8 in. tall** – from the top to the bottom of the bumper at any measurable point.
    - ii. **8 in. wide** – from the front to the back of the bumper at any measurable point.
    - iii. The center point of the bumper must be tapered over 16 in., minimum.
    - iv. NO sharp points or jagged edges.
  - c. NO “wedged” or “slanted” rear bumper is permitted.
  - d. May be seam welded, loaded, and capped.
  - e. Rear bumper attachment:
    - i. Must be welded, bolted, or wired directly to the frame. (All sides permitted)
  - f. Bumper shocks ONLY permitted: Maximum of (1) each frame rail.
    - i. Maximum of 3x5 in. x ¼ in. square tube x 10 in. long from back of bumper.
    - ii. Must be welded on the INNER side of frame ONLY.
  - g. Gussets are permitted. Maximum of 2x2 in. x ¼ in. square tube OR 4x4 in. x ½ in. plate.
    - i. Maximum of (2) gussets per side. (4 total)
    - ii. Must NOT extend onto frame more than 4 in. from back of bumper.
  - h. Must be no wider than the rear bed sides OR fenders.
  - i. May be welded to tailgate/rear doors. Maximum of 3 in. x ¼ in. door strap material. (1 per seam).

## **SECTION V - SUSPENSION / AXLES / STEERING**

- 1. ALL suspension components MUST BE factory. NO fabricated components unless specified.
- 2. Suspension height requirements (ON LEVEL GROUND):
  - a. **Front suspension – Maximum of 34 in. from ground to top of bumper.**
  - b. **Rear suspension – Minimum of 16 in. from ground to bottom of bumper.**
- 3. Leaf hangers:
  - a. Must be factory leaf hanger.
  - b. May be relocated from factory location. Must be mounted on the frame ONLY.

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4. Front suspension / axle:
  - a. Maximum of 8 lug front axles permitted.
  - b. Suspension may be welded solid as described:
    - i. Maximum of (2) 2x2 in. x ¼ in. square tubes from axle to frame. (1) per frame rail.
    - ii. Maximum of (2) 4x4 in. x ¼ in. straps from upper a-arm to the frame rail on each side.
  - c. A-arms may have a maximum of 1 in. all thread from lower to upper-arm inside of coil spring.
  - d. Leaf springs:
    - i. Must be factory FRONT leaf springs. (1 leaf pack per side permitted.)
    - ii. Maximum of (6) total per leaf pack.
    - iii. Must have a minimum 1 in. stagger between each leaf spring. (Top 2 springs excluded).
    - i. Maximum of (5) leaf clamps per side.
      1. Maximum of 3 in. wide x ¼ in. thick material.
  - e. Front suspension conversions permitted as described:
    - i. Leaf to coil – factory leaf hangers/brackets must be removed.
    - ii. Coil to leaf – factory coil pockets/radius arm brackets must be removed.
5. Rear suspension / Rear axle:
  - a. Maximum of 8 lug rear axles permitted.
  - b. Suspension may be welded solid as described: Chosen method must be vertically attached.
    - i. Maximum of (2) 2x2 in. x ¼ in. square tubes from axle to frame. (1) per frame rail. OR;
    - ii. Maximum of (4) 1 in. pieces of all thread from axle to frame. (2) per frame rail.
    - iii. No gussets permitted.
  - c. Leaf springs
    - i. Must be factory REAR leaf springs. (1 leaf pack per side permitted.)
    - ii. Maximum of (10) leaf springs per pack.
    - iii. Must have a minimum 1 in. stagger between each spring. (Top 2 springs excluded).
    - iv. Maximum of (5) leaf clamps per side.
    - v. Maximum of 3 in. wide x ¼ in. thick material.
  - d. Beds/rear passenger compartments must not connect to the rear axle.
  - e. Rear axle braces, pinon brakes and aftermarket yokes are permitted.
6. Steering
  - a. Factory, homemade, and vendor steering setups are permitted.
  - b. Steering / front suspension components must be connected by bolts/hardware ONLY.
  - c. Steering / front suspension components must NOT be connected to any other components.
  - d. NO skid plates or steering component protectors permitted.

## **SECTION VI – TRANSMISSION**

1. Any automatic or manual transmission is permitted.
2. 4-wheel drive is NOT permitted.
3. Full transmission braces, protectors, coolers are permitted.
4. Aftermarket bellhousings are permitted.
  - a. Bellhousings may be bolted to the rear engine block/mid plate and transmission ONLY.
5. (1) Transmission cross member is permitted. Must run straight across.
  - a. Cross member must be factory OR a maximum of 3x3 in. x ¼ in. square tubing.
    - i. May be welded OR bolted to the inside of the frame at (1) location on each rail.
    - ii. Must NOT connect to any components other than transmission.
6. Aftermarket tail shafts / yokes are permitted.
7. Aftermarket / slider driveshafts are permitted.

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## **SECTION VII – CAGE / PASSENGER COMPARTMENT**

1. A 4-point cage is REQUIRED.
  - a. Maximum cage/down bar material dimensions: (2x2 in. x 1/4 tubing and smaller not permitted).
    - i. Front dash bar, rear bar(s), down bar(s), halo bar – 2x6, 3x5 or 4x4 in. x 1/2 in. square tubing.
    - ii. Door bar(s) – 2x8, 3x6 in. x 1/2 in. square tubing.
  - b. Cage design criteria:
    - i. Minimum of (1) front dash bar, (1) passenger door bar, (1) driver door bar, (1) rear bar.
    - ii. Maximum of (2) door bars on each side and (2) rear bars.
      1. Door bars must NOT extend past rear seam of SIDE passenger doors.
      2. Door bars must NOT connect to gas tank protector.
      3. Rear bars must NOT connect to door bars more than 8 in. behind driver's seat.
  - c. Cage down bars to frame:
    - i. Must be vertically attached. Maximum of (2) on each frame rail. (4) total permitted.
    - ii. Must NOT connect to cage/frame more than 8 in. behind driver's seat.
    - iii. No added material permitted.
  - d. Cage gussets are permitted.
2. Halo/Rollover bar REQUIRED.
  - a. Maximum of (1) per vehicle.
  - b. Must connect to the cage on each side of the vehicle in (1) location ONLY. (2 total)
  - c. May be connected to the gas tank protector at a maximum of (2) locations.
3. Cab/front body mounts. (4) maximum.
  - a. Maximum of 1 in. bolts and (2) standard washers per location.
  - b. Factory rubber body mounts may be removed.
  - c. Body mount spacers are permitted.
4. Doors may be welded completely shut.
  - a. Maximum of 3 in. x 1/4 in. strapping material permitted. Maximum of (1) per seam.
  - b. Door skins may be welded together on the top of front driver/passenger doors.
  - c. Driver and front passenger door may be reinforced with:
    - i. Outer door plate/skin OR Inner door plate – Maximum of 1/4 in. plate material.
5. Firewall may be cut out to allow for engine cradle fitment.
6. Batteries must be securely fastened in the front passenger side of the vehicle.
7. Transmission tunnel must be covered.
8. Driver's seat must be secured in the factory location area. (May adjust slightly for driver)
9. Aftermarket pedals, hand brakes, and shifters are permitted.
10. Switch boxes, gauges, and fuel pump boxes are permitted.

## **SECTION VIII – GAS TANK / PROTECTOR**

1. Gas tank MUST be constructed of aluminum or steel.
2. Must be mounted securely behind driver seat in the front center of bed or rear compartment.
3. Gas tank protectors are permitted as follows:
  - a. Maximum material dimensions are the same as rear cage bar dimensions.
  - b. May ONLY be connected to the halo/rollover bar and rear cage bar – (2) locations each.
  - c. May be connected vertically to each frame rail in (1) location ONLY. No added material permitted.
  - d. Must NOT be wider than frame rails.
  - e. Must NOT extend rearward any further than:
    - i. 24 in. behind cab into truck bed OR;
    - ii. 24 in. behind rear cage bar in SUV's.

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## **SECTION IX – BODY SHEET METAL**

1. Creasing, forming, and molding permitted.
2. NO doubling of body panels permitted.
3. NO welding/bolting or wiring doors, fenders, or bed sides directly to the frame permitted.
4. Rust repair is permitted. (Maximum of 14 ga. sheet metal permitted)
  - a. Maximum of 2 in. coverage on all sides of repair.
5. Wheel wells may be bolted together. Maximum (6) locations and ½ in. hardware, each.
6. Fuel doors may be welded shut.
7. Hoods will be inspected as follows:
  - a. Must have a minimum 10x10 in. hole cut out above engine intake.
  - b. Maximum of (1) 3x3 in. x ¼ in. washer may be welded on hood at each attachment location.
  - c. Maximum of (6) attachment locations permitted. (Includes core support locations)
    - i. Maximum of 3x3 in. x ¼ in. plate OR 3x3 in. x ¼ in. angle iron on hood AND front fenders.
    - ii. Maximum of (4) locations. (Hood and fenders each).

## **SECTION X – BED / REAR COMPARTMENT**

1. Bed must connect to the cab as described below:
  - b. MUST be welded to the cab behind the doors. Maximum of 3x ¼ in. strapping material AND;
  - c. May be welded OR bolted to the back of the cab.
2. Bed/rear compartment body mounts. (8) maximum.
  - d. Bolts/all thread ONLY may be welded to the frame. Maximum hardware size is 1 in.
  - e. Maximum of (1) 4x4 in. x ¼ in. washer permitted at each body mount.
3. Bed/rear compartment floor ONLY seam welding is permitted.
4. Bed sides/rear fenders may be rolled/formed inwards.
  - f. Sheet metal must remain a minimum of 6 in. above the bed/rear compartment floor.
  - g. **NO WEDGING PERMITTED.**
5. SUV rear compartment roof may be “sedagoned”.
6. Bed sides/rear fenders may be 9 wired together in (2) locations each side.
  - h. Must ONLY attach to body sheet metal.

## **SECTION XI – WHEELS / TIRES**

1. Tires may consist of the following:
  - a. Any DOT, industrial, off-road, or solid rubber tire is permitted.
  - b. May be doubled and tubed.
2. Wheels may consist of the following:
  - a. Lip/valve stem protectors, full centers, bead locks.
3. NO foam filled tires, dual wheels, or split rims.