



F-53 MOTORHOME/ F-59 COMMERCIAL CHASSIS INDEX

F-53 / F-59

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F-53 MOTORHOME MODEL LINEUP

Drive/WB (in.)	Engine/ Transmission	Maximum GVWR (lbs.)	Maximum Payload (lbs.) (1)	Maximum GCWR/Trailer Weight (lbs.)	GAWR (lbs.) (2)		Base Strip Chassis Curb Weight (lbs.) (3)		
					Front	Rear	Front	Rear	Total
4x2 — 158	6.8L/Auto	16,000	9744	23,000/7000	6500	11,000	3063	3193	6256
4x2 — 178	6.8L/Auto	16,000	9722	23,000/7000	6500	11,000	3067	3211	6278
	6.8L/Auto	18,000	11,689	23,000/5000	7000	12,000	3097	3214	6311
4x2 — 190	6.8L/Auto	16,000	9709	23,000/7000	6500	11,000	3069	3222	6291
	6.8L/Auto	18,000	11,649	23,000/5000	7000	12,000	3134	3217	6351
4x2 — 208	6.8L/Auto	18,000	11,588	23,000/5000	7000	12,000	3181	3231	6412
	6.8L/Auto	20,500	14,022	26,000/5500	7000(4)	13,500	3217	3261	6478
	6.8L/Auto	22,000	15,353	26,000/4000	8000	15,000	3247	3400	6647
4x2 — 228	6.8L/Auto	18,000	11,520	23,000/5000	7000	12,000	3233	3247	6480
	6.8L/Auto	20,500	13,954	26,000/5500	7000(4)	13,500	3269	3277	6546
	6.8L/Auto	22,000	15,267	26,000/4000	8000	15,000	3306	3427	6733
	6.8L/Auto	24,000	16,785	30,000/6000	9000	15,500	3458	3757	7215
	6.8L/Auto	26,000	18,773	30,000/4000	9000	17,500	3458	3769	7227
4x2 — 242	6.8L/Auto	22,000	15,200	26,000/4000	8000	15,000	3348	3452	6800
	6.8L/Auto	24,000	16,718	30,000/6000	9000	15,500	3500	3782	7282
	6.8L/Auto	26,000	18,706	30,000/4000	9000	17,500	3500	3794	7294
4x2 — 252	6.8L/Auto	24,000	16,670	30,000/6000	9000	15,500	3530	3800	7330
	6.8L/Auto	26,000	18,658	30,000/4000	9000	17,500	3530	3812	7342

(1) Load rating represents maximum allowable weight of people, cargo and body equipment and is reduced by optional equipment weight.

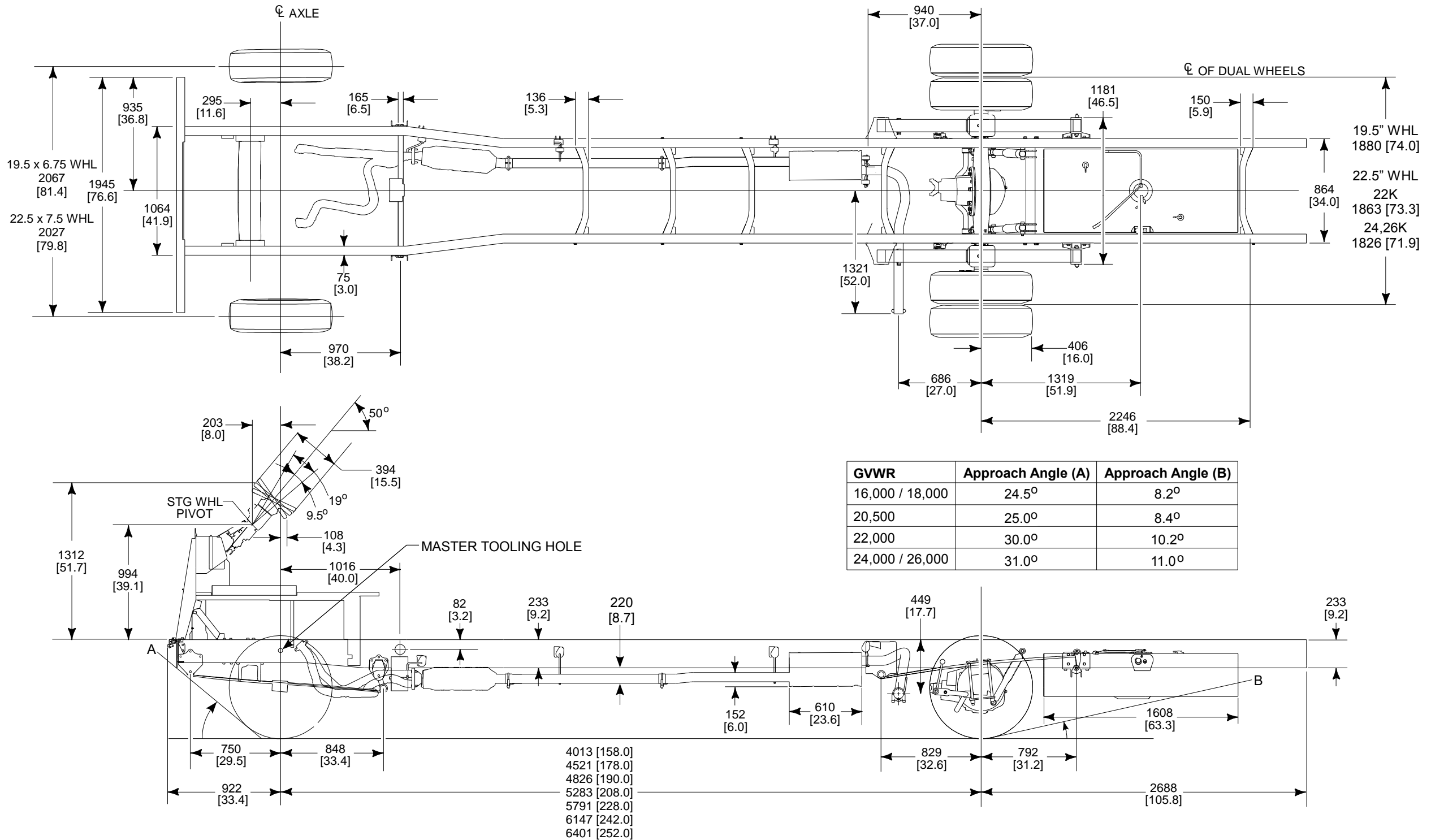
(2) Gross Axle Weight Rating is determined by the rated capacity of the minimum component of the axle system (axle, springs, wheels, tires) of a specific vehicle. Front and rear GAWRs will, in all cases, sum to a number equal to or greater than the GVWR for the particular vehicle. Maximum loaded vehicle (including passengers, equipment and payload) cannot exceed the GVW rating or GAWR (front or rear).

(3) Base Curb Weights shown above consider the strip chassis weight with standard equipment, full fuel tank and other fluids filled to capacity. Optional equipment weights are in pounds as follows (Front/Total): 19.5" x 6.75" Tires and Wheels (optional with 22,000-lb GVWR only) (-39/-76); Track Bar Heavy-Duty Front Suspension (optional with 16,000-lb. GVWR only) (32/32).

(4) Optional F/GAWR 7500 lbs.



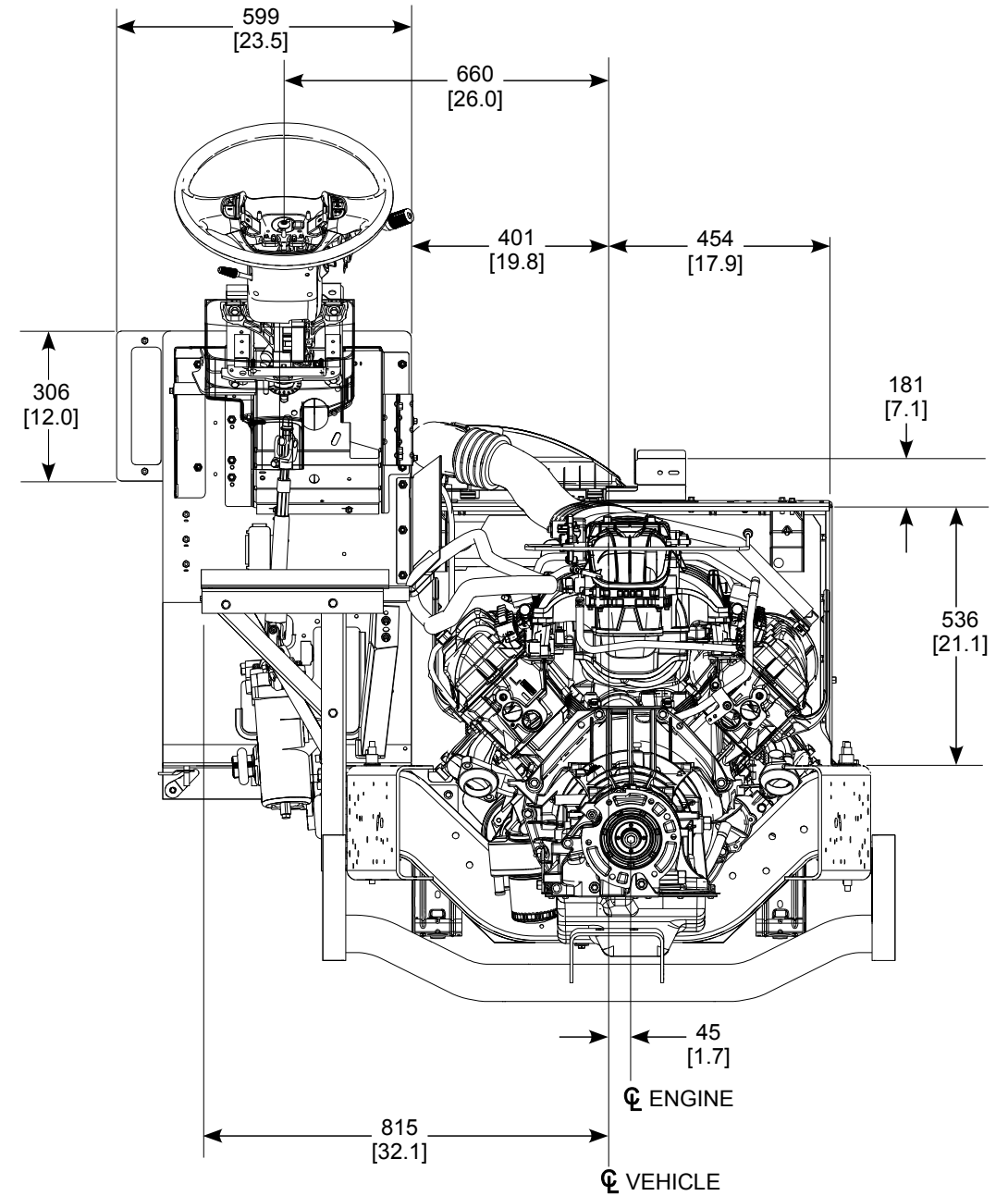
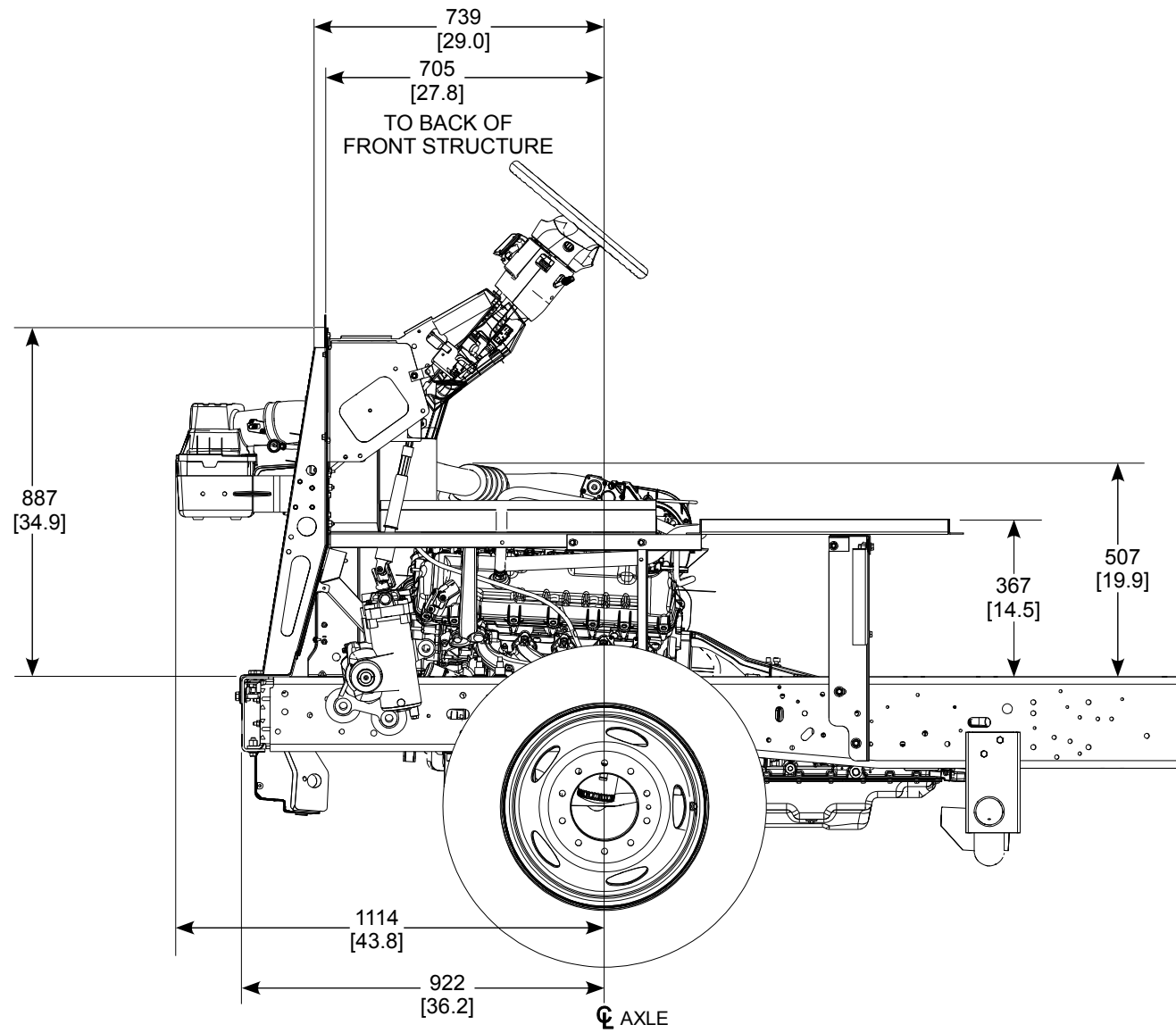
F-53 MOTORHOME DIMENSIONAL DATA



GVWR	Approach Angle (A)	Approach Angle (B)
16,000 / 18,000	24.5°	8.2°
20,500	25.0°	8.4°
22,000	30.0°	10.2°
24,000 / 26,000	31.0°	11.0°

NOTE — [] DIMENSIONS ARE INCHES.

F-53 MOTORHOME FRONT STRUCTURE

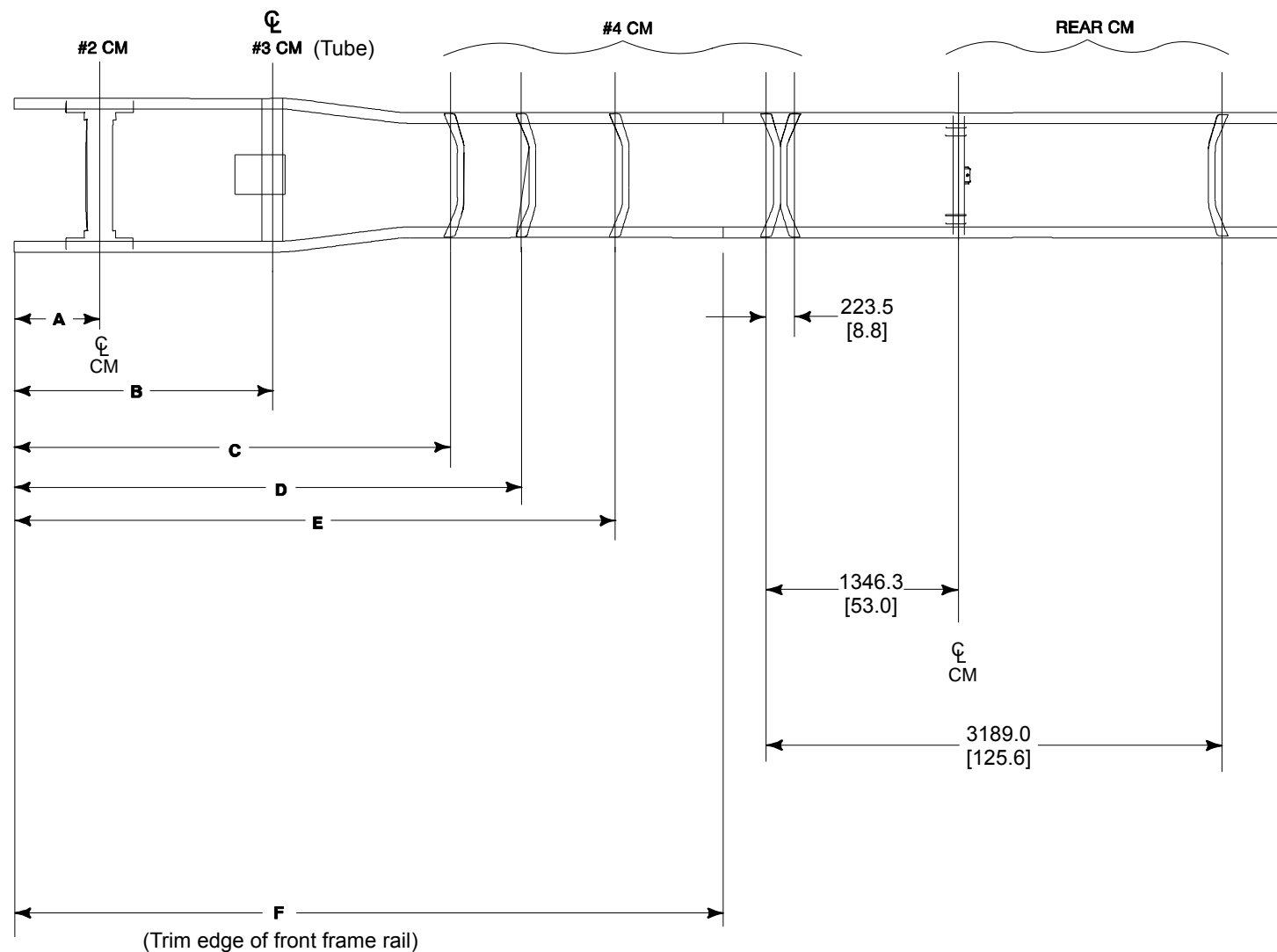


NOTE — [] DIMENSIONS ARE INCHES.



F-53 MOTORHOME FRAME CROSSMEMBER LOCATIONS

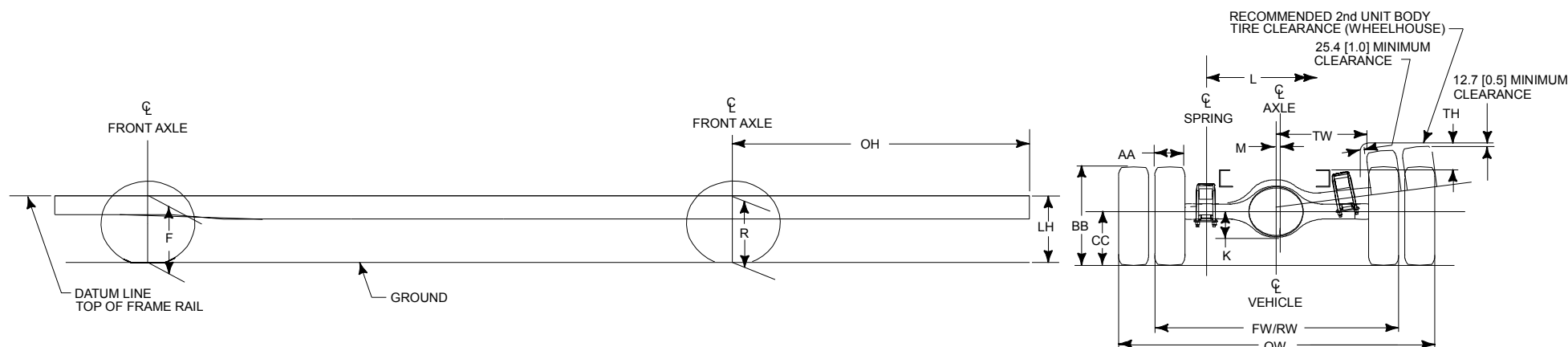
DIM.	158" WB	178" WB	190" WB	208" WB	228" WB	242" WB	252" WB
A	530.6 [20.9]	530.6 [20.9]	530.6 [20.9]	530.6 [20.9]	530.6 [20.9]	530.6 [20.9]	530.6 [20.9]
B	1821 [71.7]	1821 [71.7]	1821 [71.7]	1821 [71.7]	1821 [71.7]	1821 [71.7]	1821 [71.7]
C	NA	NA	NA	3002 [118.2]	3282 [129.2]	3282 [129.2]	3282 [129.2]
D	NA	NA	NA	NA	4004 [157.6]	4004 [157.6]	4004 [157.6]
E	2994.6 [117.9]	3388 [133.4]	3436 [135.3]	4147 [163.3]	4655 [183.3]	4655 [183.3]	4655 [183.3]
F	3828 [150.7]	4336 [170.7]	4640.8 [182.7]	5098 [200.7]	5606 [220.7]	5961.6 [234.7]	6215.6 [244.7]
MEASUREMENTS TAKEN FROM FRONT EDGE OF LOWER FLANGE OF RAIL							



NOTES — UNLESS OTHERWISE NOTED, DIMENSIONS ARE TO THE CENTERLINE OF CROSSMEMBER FASTENERS.
 — MEASUREMENTS FROM FRONT EDGE OF LOWER FRAME. SUBTRACT 9 MM IF MEASURED FROM TOP FRONT EDGE OF FRAME WEB.
 — [] DIMENSIONS ARE INCHES.



F-53 MOTORHOME AXLE / TIRE / VEHICLE HEIGHT DATA



MODEL	WB	GVWR [lbs]	BASE TIRE	F HEIGHT AT FRONT AXLE ⁽¹⁾⁽²⁾	R HEIGHT AT REAR AXLE ⁽¹⁾⁽²⁾	LH ⁽²⁾	OH	K	L	M	AA	BB	CC	FW	RW	REAR WHEEL MEASUREMENTS		
				AT SPRING RATING	AT SPRING RATING	AT SPRING RATING										OW	TH	TW
F-53 Super Duty Class A Motorhome	4013 [158.0]	16,000	245/70R19.5	710 [28.0]	770 [30.3]	803 [31.6]	2688 [105.8]	177 [7.0]	1079 [42.5]	24 [1.0]	236 [9.3]	779 [30.7]	373 [14.7]	2291 [90.2]	1857 [73.1]	2389 [94.0]	270 [10.6]	638 [25.1]
	4521 [178.0]																	
	4826 [190.0]																	
	4521 [178.0]	18,000	245/70R19.5	710 [28.0]	770 [30.3]	782 [30.8]	2688 [105.8]	177 [7.0]	1079 [42.5]	24 [1.0]	236 [9.3]	779 [30.7]	373 [14.7]	2291 [90.2]	1857 [73.1]	2389 [94.0]	270 [10.6]	638 [25.1]
	4826 [190.0]																	
	5283 [208.0]																	
	5791 [228.0]	20,500	245/70R19.5	719 [28.3]	779 [30.7]	790 [31.1]	2688 [105.8]	214 [8.4]	1079 [42.5]	24 [1.0]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1848 [72.8]	2424 [95.4]	283 [11.1]	638 [25.1]
	5283 [208.0]																	
	5791 [228.0]																	
	5283 [208.0]	22,000	245/70R19.5	775 [30.5]	779 [30.7]	866 [34.1]	2688 [105.8]	214 [8.4]	1079 [42.5]	24 [1.0]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1848 [72.8]	2424 [95.4]	283 [11.1]	638 [25.1]
	5791 [228.0]																	
	5791 [228.0]																	
	6147 [242.0]	24,000	235/80R22.5	775 [30.5]	835 [32.9]	866 [34.1]	2688 [105.8]	214 [8.4]	1079 [42.5]	24 [1.0]	233 [9.2]	942 [37.1]	443 [17.4]	2305 [90.7]	1785 [70.3]	2423 [95.4]	221 [8.7]	640 [25.2]
	5791 [228.0]																	
	6147 [242.0]																	
	6401 [252.0]	26,000	255/80R22.5	792 [31.2]	861 [33.9]	894 [35.2]	2688 [105.8]	226.5 [8.9]	1079 [42.5]	24 [1.0]	252 [9.9]	941.5 [37.0]	455.7 [17.9]	2354 [92.7]	1783.4 [70.2]	2418 [95.2]	235 [9.2]	594 [23.4]
	5791 [228.0]																	
	6147 [242.0]																	
	6401 [252.0]																	

(1) — The F and R Height Data represent dimensions from ground to “frame datum line” (top of frame rail) of a base/standard vehicle with no options.

(2) — These dimensions are for reference only. Actual height may vary due to production tolerances.

NOTE — [] DIMENSIONS ARE INCHES.
(Cont'd next page)





F-59 COMMERCIAL CHASSIS MODEL LINEUP

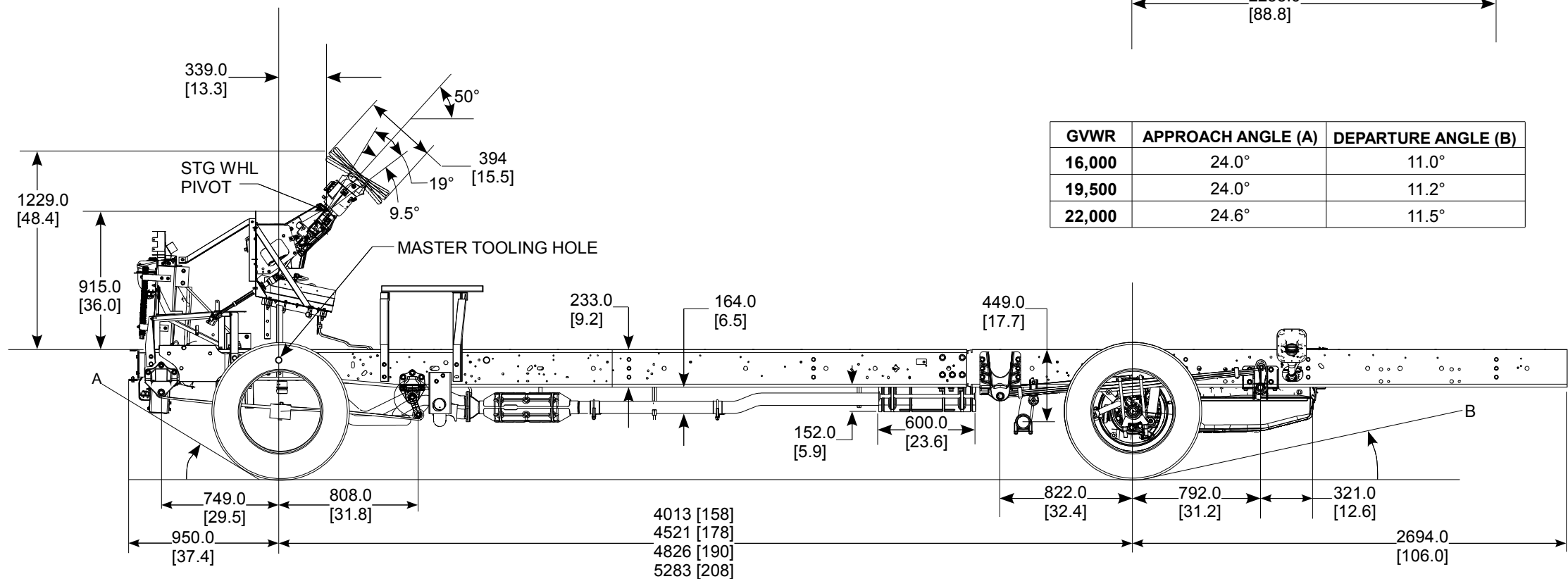
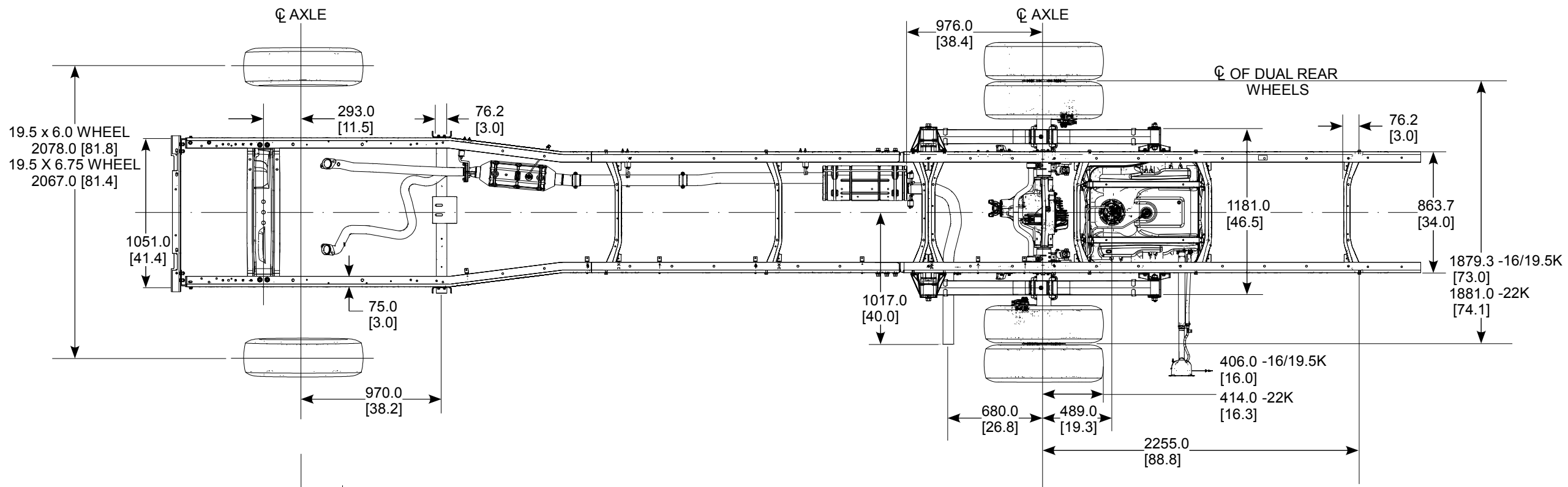
Drive/WB (in.)	Engine/ Transmission	Maximum GVWR (lbs.)	Maximum Payload (lbs.) (1)	Maximum GCWR/Trailer Weight (lbs.)	GAWR (lbs.) (2)		Base Strip Chassis Curb Weight (lbs.) (3)		
					Front	Rear	Front	Rear	Total
4x2 — 158	6.8L/Auto	16,000	10,141	23,000/7000	6500	11,000	3012	2847	5859
	6.8L/Auto	19,500	13,534	26,000/6500	7000	13,500	3155	2811	5966
4x2 — 178	6.8L/Auto	16,000	10,107	23,000/7000	6500	11,000	3149	2744	5893
	6.8L/Auto	19,500	13,519	26,000/6500	7000	13,500	3156	2825	5981
4x2 — 190	6.8L/Auto	19,500	13,456	26,000/6500	7000	13,500	3167	2877	6044
4x2 — 208	6.8L/Auto	19,500	13,363	26,000/6500	7000	13,500	3185	2952	6137
	6.8L/Auto	22,000	15,664	26,000/4000	8000	15,000	3234	3102	6336

(1) Load rating represents maximum allowable weight of people, cargo and body equipment and is reduced by optional equipment weight.

(2) Gross Axle Weight Rating is determined by the rated capacity of the minimum component of the axle system (axle, springs, wheels, tires) of a specific vehicle. Front and rear GAWRs will, in all cases, sum to a number equal to or greater than the GVWR for the particular vehicle. Maximum loaded vehicle (including passengers, equipment and payload) cannot exceed the GVW rating or GAWR (front or rear).

(3) Base Curb Weights shown above consider the strip chassis weight with standard equipment, full fuel tank and other fluids filled to capacity. Optional equipment weights are in pounds as follows (Front/Total): Pull Out Ramp Prep Package (optional with 208" wheelbase only) (50/85)

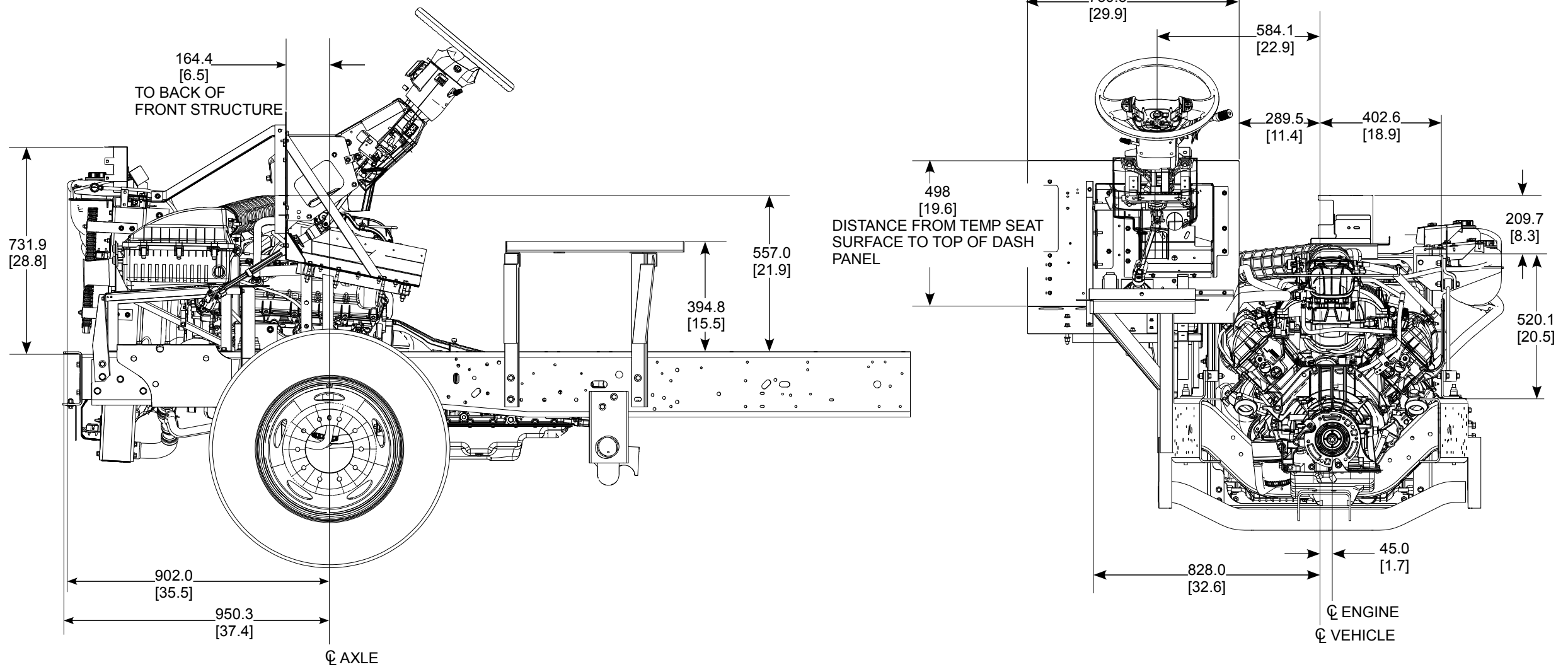
F-59 COMMERCIAL CHASSIS DIMENSIONAL DATA



GVWR	APPROACH ANGLE (A)	DEPARTURE ANGLE (B)
16,000	24.0°	11.0°
19,500	24.0°	11.2°
22,000	24.6°	11.5°

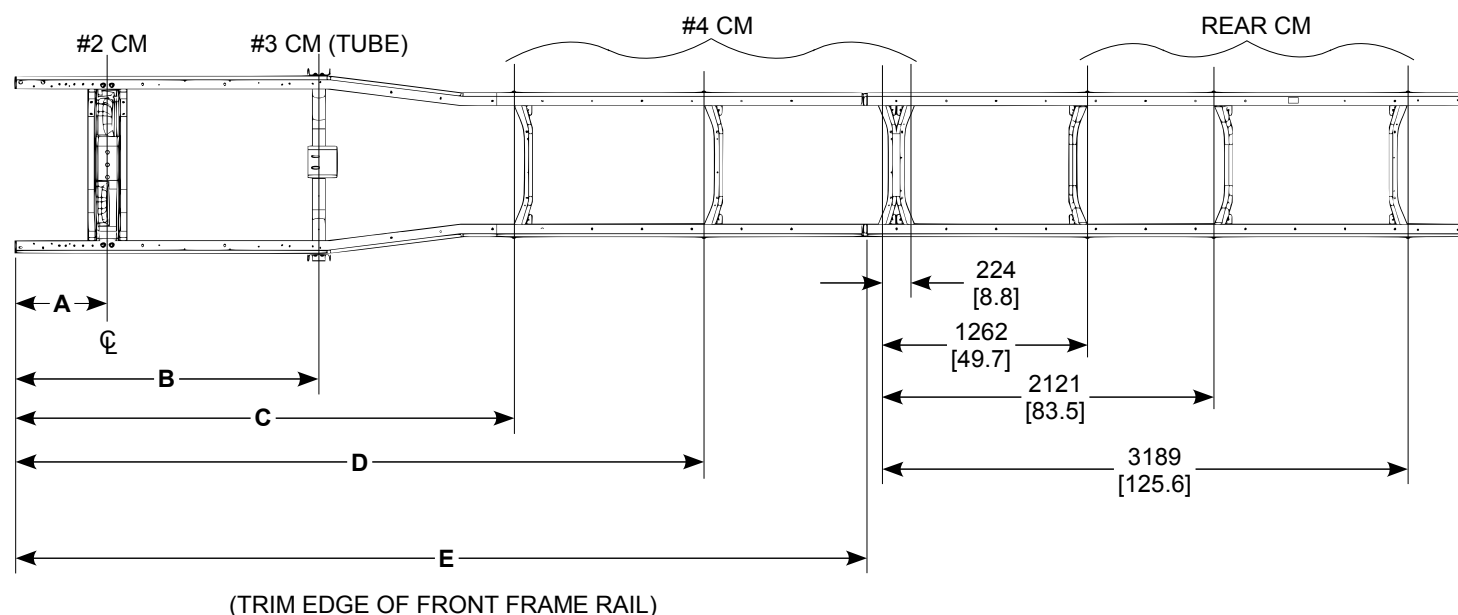
NOTE — [] DIMENSIONS ARE INCHES.

F-59 COMMERCIAL CHASSIS FRONT STRUCTURE



NOTE — [] DIMENSIONS ARE INCHES.

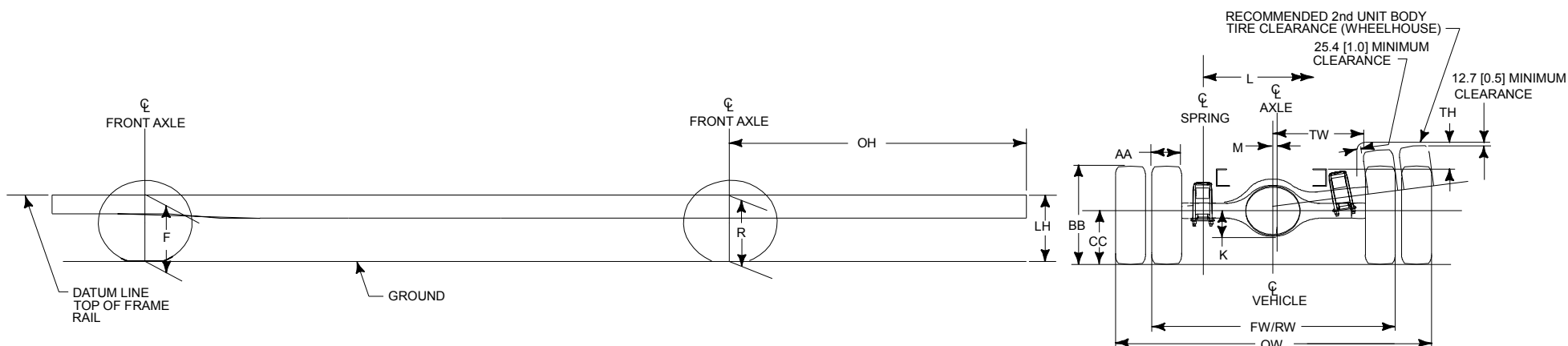
F-59 COMMERCIAL CHASSIS FRAME CROSSMEMBER LOCATIONS



DIMENSION *	158" WB	178" WB	190" WB	208" WB
A	556 [21.9]	556 [21.9]	556 [21.9]	556 [21.9]
B	1821 [71.7]	1821 [71.7]	1821 [71.7]	1821 [71.7]
C	2994 [117.9]	3385 [133.3]	3436 [135.3]	3002 [118.2]
D	NA	NA	NA	4147 [163.3]
E	3828 [150.7]	4336 [170.7]	4640 [182.7]	5098 [200.7]
* NOTE: Measurement taken from front edge of lower rail flange				

NOTES — UNLESS OTHERWISE NOTED, DIMENSIONS ARE TO THE CENTERLINE OF CROSSMEMBER FASTENERS.
 — MEASUREMENTS FROM FRONT EDGE OF LOWER FRAME. SUBTRACT 9 MM IF MEASURED FROM TOP FRONT EDGE OF FRAME WEB.
 — [] DIMENSIONS ARE INCHES.

F-59 COMMERCIAL CHASSIS AXLE / TIRE / VEHICLE HEIGHT DATA



MODEL	WB	GVWR	BASE TIRE	F HEIGHT AT FRONT AXLE (1) (2)	R HEIGHT AT REAR AXLE (1) (2)	LH (2)	OH	K	L	M	AA	BB	CC	FW	RW	REAR WHEEL MEASUREMENTS		
				AT SPRING RATING	AT SPRING RATING	AT SPRING RATING										OW	TH	TW
F-59 SUPER DUTY COMMERCIAL CHASSIS	158	16,000	225/70R19.5	800 [31.5]	830 [32.7]	734 [28.9]	2688 [105.8]	177 [6.9]	1079 [42.5]	27.7 [1.1]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.0]	270 [10.6]	638 [25.1]
	178		225/70R19.5	800 [31.5]	830 [32.7]	734 [28.9]	2688 [105.8]	177 [6.9]	1079 [42.5]	27.7 [1.1]	236 [9.3]	779 [30.7]	373 [14.7]	2299 [90.5]	1857 [73.1]	2389 [94.0]	270 [10.6]	638 [25.1]
	158	19,500	225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2389 [94.0]	274 [10.8]	638 [25.1]
	178		225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2389 [94.0]	274 [10.8]	638 [25.1]
	190		225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2389 [94.0]	274 [10.8]	638 [25.1]
	208		225/70R19.5	787 [31.0]	835 [32.9]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	240 [9.5]	802 [31.6]	383 [15.1]	2299 [90.5]	1857 [73.1]	2389 [94.0]	274 [10.8]	638 [25.1]
	208	22,000	245/70R19.5	794 [31.3]	848 [33.4]	747 [29.4]	2688 [105.8]	179 [7.0]	1079 [42.5]	30.2 [1.2]	248 [9.8]	810 [31.9]	391 [15.4]	2327 [91.6]	1846 [72.8]	2424 [95.4]	283 [11.1]	638 [25.1]

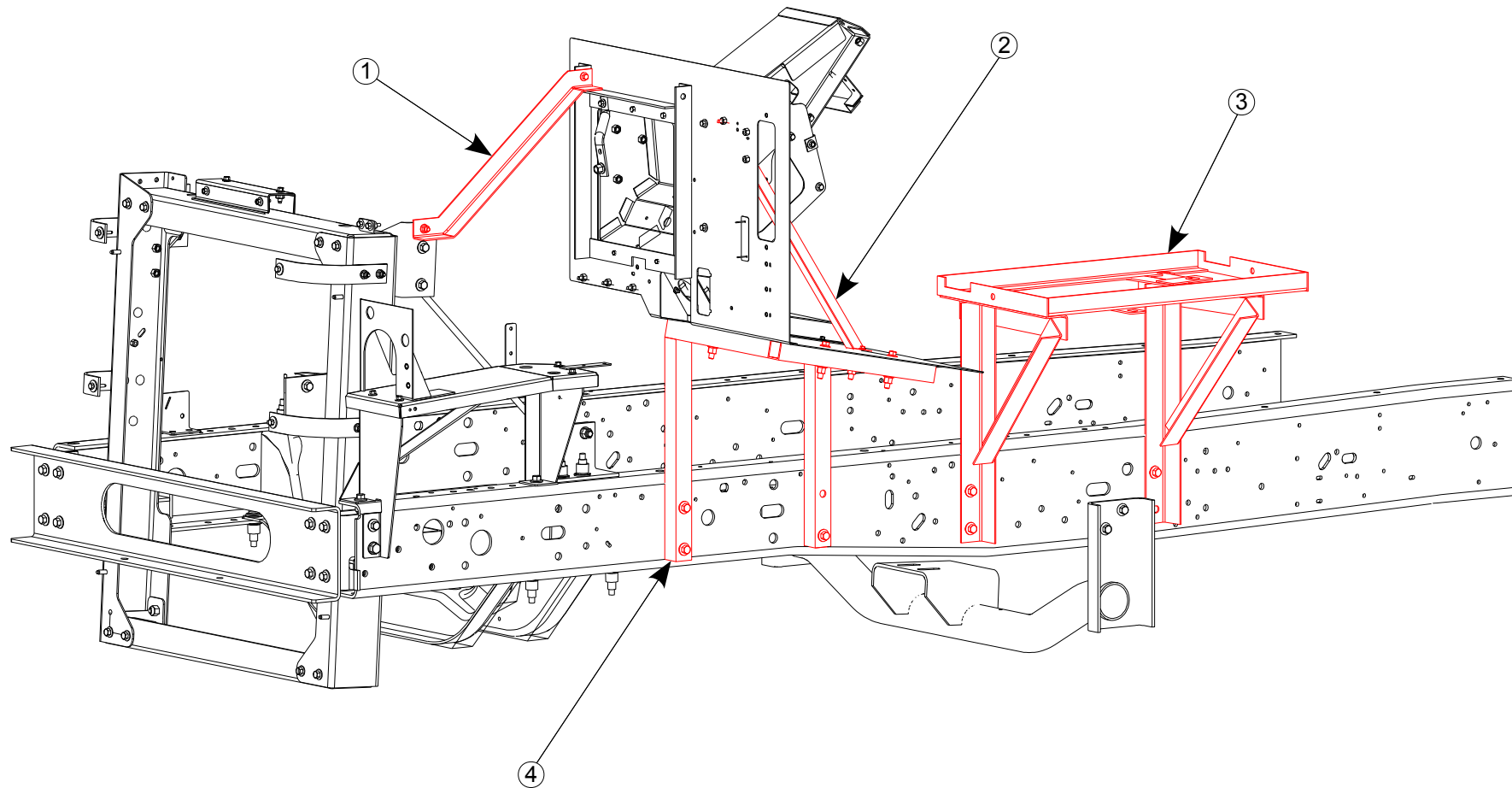
(1) — The **F** and **R** Height Data represent dimensions from ground to “frame datum line” (top of frame rail) of a base/standard vehicle with no options.

(2) — These dimensions are for reference only. Actual height may vary due to production tolerances.

 = measured in CAD @ Stripped Weight

NOTE — [] DIMENSIONS ARE INCHES.

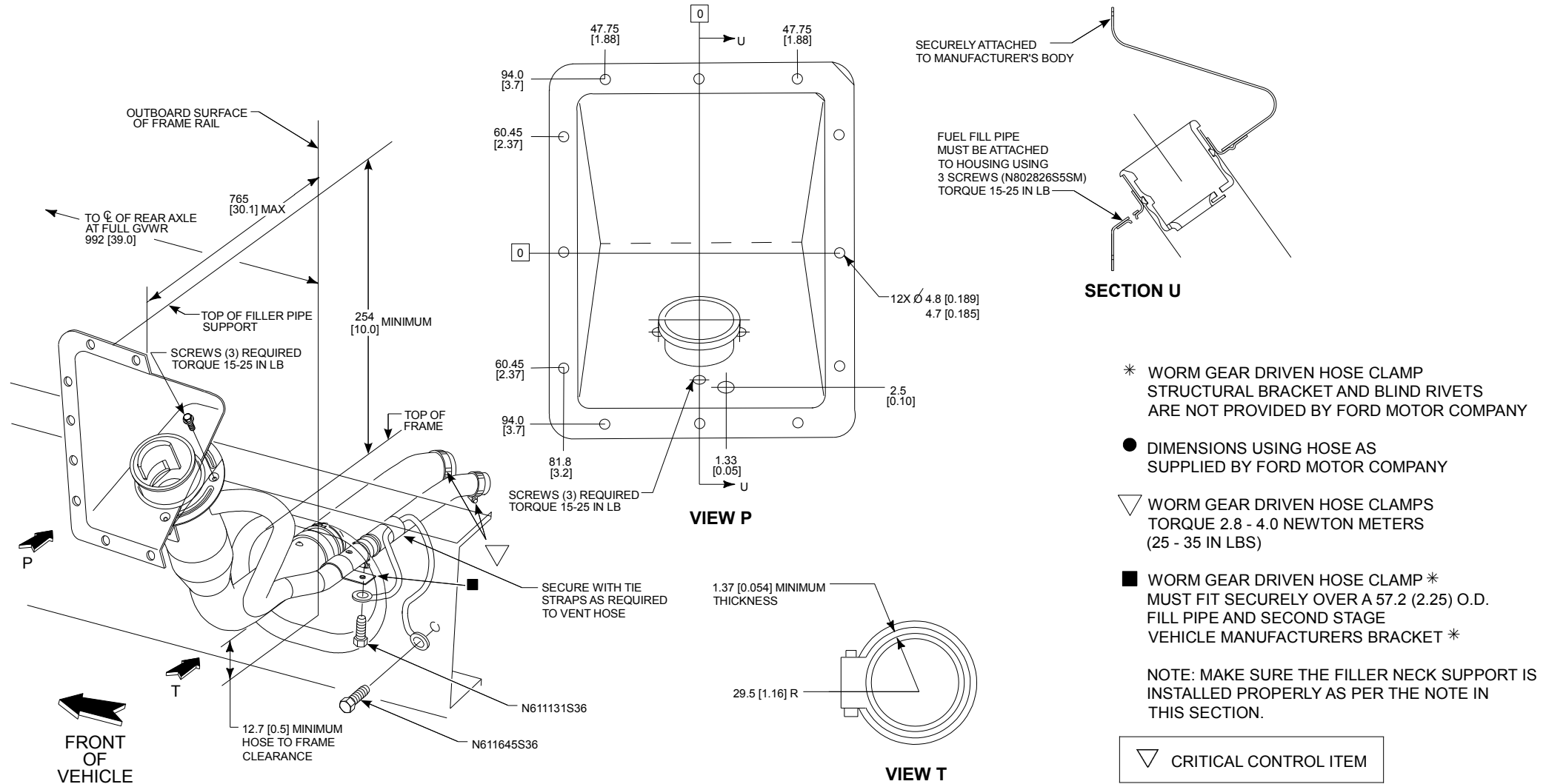
F-59 COMMERCIAL CHASSIS TEMPORARY SHIPPING COMPONENTS



NOTE: Temporary Shipping Components

Remove all temporary covers, brackets and structures prior to vehicle completion.

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS FUEL FILLER PIPE



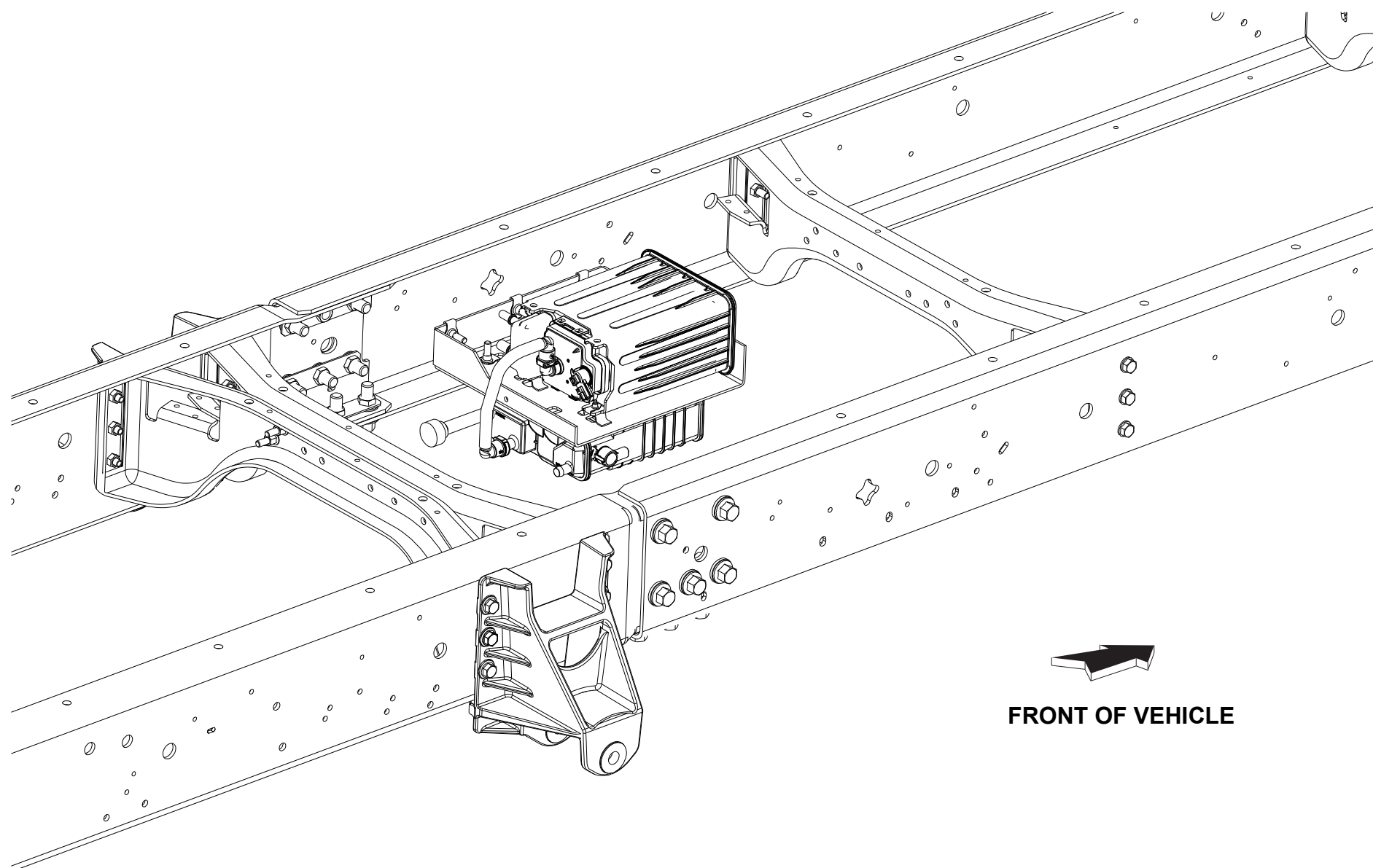
WARNING:

It is mandatory to use the supplied rubber hose for installing the fuel pipe. Any increase in length or change in material of the supplied rubber hose will result in voiding the evaporate emissions certification.

NOTE — [] DIMENSIONS ARE INCHES.



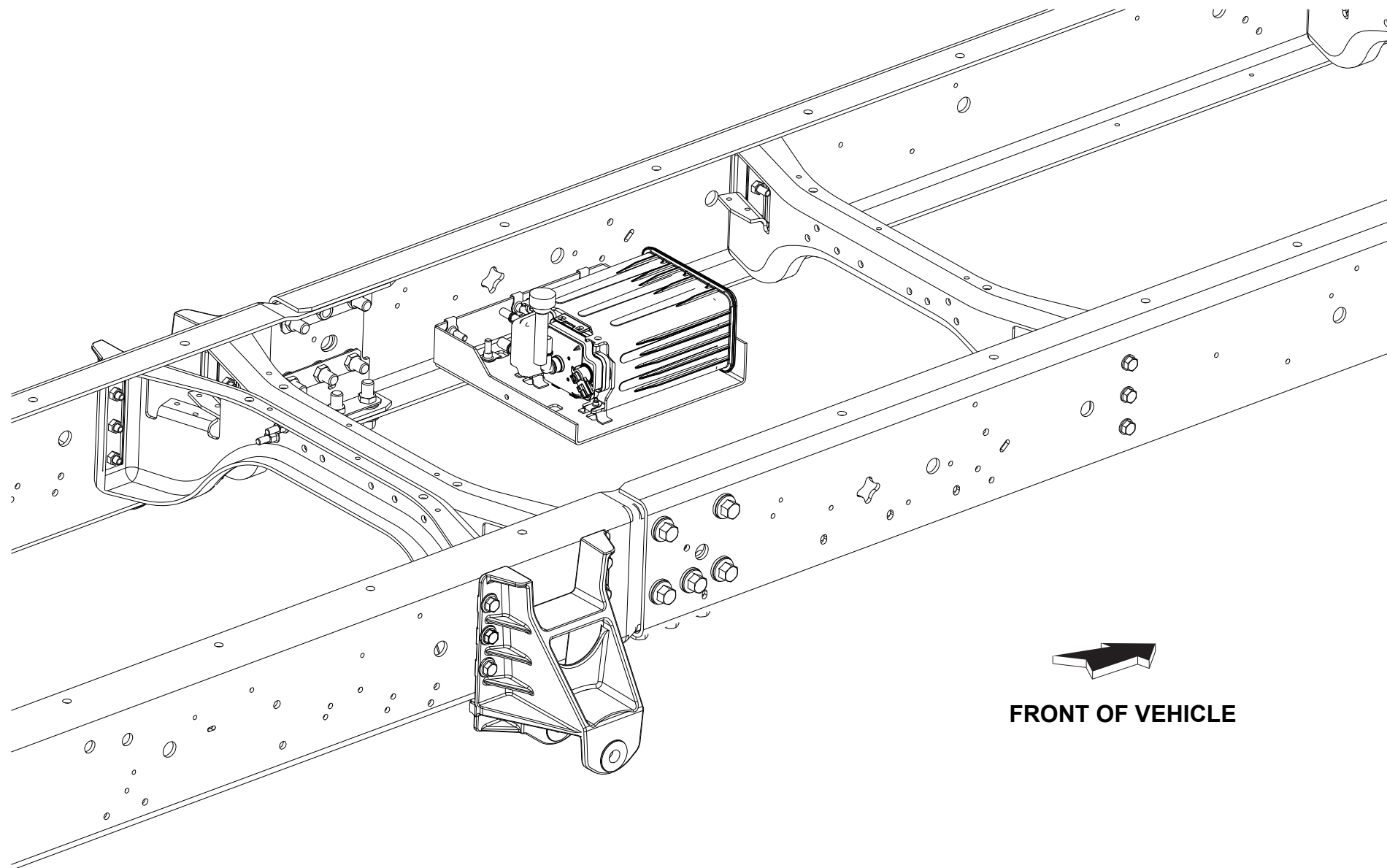
**F-53 MOTORHOME
EVAPORATIVE EMISSIONS
DUAL CANISTERS**



FRONT OF VEHICLE



**F-59 COMMERCIAL CHASSIS
EVAPORATIVE EMISSIONS
SINGLE CANISTER**



FRONT OF VEHICLE



F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS

GENERAL NOTES

1. Adherence to the following suggestions and warnings should not be construed as implying compliance with any particular U.S. or Canadian regulation. See the Incomplete Vehicle Manual (IVM) for specific information regarding compliance with U.S. or Canadian regulations.
2. The weight of the basic vehicle plus the sum of the weights of:
 - (a) additions to the basic vehicle (body and equipment),
 - (b) other cargo,
 - (c) fuel sufficient to fill all tanks, and
 - (d) the maximum number of occupants (at 150 lb per occupant)

must not exceed the GVWR of the vehicle as specified on the Incomplete Vehicle Label attached to the IVM and must be distributed so that neither the front nor rear GAWR (as specified on the Incomplete Vehicle Label) is exceeded. Also see the IVM for further instructions. All heavy equipment installed by the body builder should be placed as close to the floor as practical to maintain a minimum vertical center of gravity. Side-to-side loading should be as symmetrical as possible about the vehicle longitudinal centerline to prevent vehicle lean and adverse steering and braking characteristics.

3. Rear departure angle of 8.1° minimum for the motorhome chassis should be maintained to protect the fuel tank at GVWR. Rear bumpers or underbody skids should be considered to minimize interference to ground.
4. All subsequent manufacturer-installed items must be at least 3/4 inch away from fuel tank(s), rotating driveline components, and all other moving components. Also, they must be clear of all axle total movements.
5. EMISSIONS CONTROLS – See the Incomplete Vehicle Manual.
6. NOISE REGULATIONS – See the Incomplete Vehicle Manual.
7. SAFETY CERTIFICATION INFORMATION – See the Incomplete Vehicle Manual.

BODY

1. Any structural member removed from the body or cowl assembly areas, except for the dunnage box supports, must be replaced or included in the body structure of any special body installed.
2. It is mandatory that the body builder establish a structurally sound combination of body and vehicle structure by securely fastening together the body and the frame. This requires a rigid body design and

a thoroughly planned system of bolts, welds and other fastenings between the frame and body. To ensure structural integrity is maintained, the vehicle's front structure must not be modified.

3. To avoid interference problems with suspension components, body attachments to frame should not protrude below side member flange.
4. An access panel may be provided in the vehicle floor by the body builder to service the in-tank fuel pump.
5. The body builder should consider the addition of sound insulation to minimize engine and fan noise in the driver compartment.

BRAKE COMPONENTS:

WARNING: Brake line damage or corrosion

Do not wrap brake lines with any material that could cause water, dirt, sand or other foreign material to accumulate around the lines, which could potentially result in brake line damage or corrosion.

FRAME

1. 2-PIECE FRAME – piece frame. The bolt together joint is located just ahead of the forward rear spring hanger on all models/GVWR's.
 - The two frame sections are assembled by fixture at the assembly plant and are not intended to be adjusted in service.
 - The fasteners are not re-useable. If the bolts are removed, both the bolts and nut plates must be replaced.
 - The bolts are torqued to 350 Nm +/- 50 [258 ft lb +/- 37]
 - For measuring frame straightness, refer to the F-53/F-59 Workshop Manual.
 - The 24/26K GVWR frame utilizes 50,000 psi high-strength steel.
 - For high-strength steel welding recommendations, refer to QVM Bulletin Q-140.
2. FRAME WEB – holes to mount brackets, outriggers, and supports may be drilled in the vertical side rail web with the following restrictions:
 - Material between edge of hole and inside of upper or lower flange must be at least 1.50 inch.
 - Minimum edge distance between any two holes must be at least twice the diameter of the largest hole.
 - Holes must be no larger than 0.75 inch in diameter. Avoid close vertical succession of fasteners.
 - All attaching fasteners, including flat washers, must be of high strength steel (Grade 8 or metric equivalent).

3. FRAME FLANGE – holes may be drilled in the horizontal frame flanges with the following restrictions:
 - Material between edge of hole and radius/edge of flange must be at least 1.0 inch.
 - Minimum edge distance between any two holes must be at least twice the diameter of the largest hole.
 - Holes must be no larger than 0.5 inch in diameter.

4. Welding to the vertical side web is preferred. Welding is not recommended on frame flanges or bend radii, however, a series of tack welds is allowed on frame flanges, e.g., to attach heat shields. Tack welds must be no greater than 0.4 inches in diameter and they must be at least 1.5 times the weld diameter away from both the edge of the frame and the radius bend tangent line.

5. The frame for the F-53 / F-59 chassis is designed to permit removal of the engine and transmission out-the-bottom. This is facilitated by bolt-in No. 2 and No.3 crossmembers. Body builders should not add permanent structures which preclude powertrain removal.

ENGINE

1. Engine compartments must be designed to eliminate any air circulation restriction that would affect the air induction and cooling systems. F-53 / F-59 engine compartments must provide adequate flow-through ventilation to prevent local temperatures from exceeding recommended maximums. Limits for critical engine components are shown in the table (see Cooling) on next page.
2. No modification of the air cleaner inlet duct is permissible. Removal or modification of this duct will affect function of the mass air meter, possibly causing driveability problems and increased tailpipe emissions.
3. The air induction inlet should not be closed off from fresh air; underhood air should not be the primary source of air into the inlet. Fresh dry air should be provided to the air box inlet. This can be accomplished in various manners, such as, providing a vent opening in the front of the vehicle, closing off the engine compartment to prevent recirculation of underhood air, and/or ducting of air from grill opening to inlet.

SUSPENSION AND STEERING

1. No vehicle or component alterations are allowed which restrict or prevent steering wheel, column, intermediate shaft, or coupling assembly collapse/stroke travel during crash.
2. Relocating the power steering fluid reservoir is not recommended. If the reservoir is moved, care must be taken to ensure that the power steering hoses are not kinked; hoses should have generous radii. Keep

the reservoir upright in a vertical position while in the process of relocating it to ensure that no air enters the system.

3. If the suspension spacers are used between the spring and axle seats to accommodate side-to-side variations, they should not exceed 0.75 inch. Addition of spacers is not covered under warranty.

TRANSMISSION

1. Transmission components are sensitive to ambient temperatures. Underbody ventilation is critical and temperatures in specific areas should not exceed those listed in the table (see Cooling) on the next page.
2. TorqShift® wire harness routing location, wire harness locating clips, all heat shielding, and minimum clearance to the exhaust must be maintained as installed from the assembly plant. Failure to maintain minimum clearances may result in heat damage to the wiring, assembly and loss of transmission controls.
3. It is mandatory that the shift linkage be readjusted after linkage repair, engine mount replacement or shimming, steering column replacement or repositioning, transmission replacement, or any repair which could change the linkage adjustment.

WHEELS AND TIRES

1. Use only wheels with the same load capacity, rim width, rim offset, and mounting configuration as those originally installed on the vehicle. Consult an authorized Ford Dealer for correct wheel load capacity, size, and usage. Wheels used must conform to the F/CMVSS 120. The use of anywheel or tire, other than those originally installed on the vehicle as manufactured by Ford Motor Company, may adversely affect load carrying capacity, handling, bearing life, ride, braking performance, speedometer/odometer accuracy, automatic transmission shift timing, and tire/wheel clearance of the body and chassis.
2. Use only tires with the equivalent load-carrying capacity as those originally installed on the vehicle. Use only tires of a type and size that are on the vehicle certification label. Do not over or under inflate tires, always maintain tire pressure identified on certification label. Never mix radial, bias-belted, or conventional bias type tires, and avoid mixing P and LT metric tires with alphanumeric tires whenever possible. Consult an authorized Ford Dealer for correct tire load capacity, type, size, and inflation pressure for the vehicle. Tires used must conform to FMVSS 119 (non-passenger car type tires) in the United States, or to the Motor Vehicle Tire Safety Regulations in Canada.



F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS

BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS (Cont'd)

COOLING

NOTE: Refer also to "Design Recommendations - Cooling System" section.

1. Cooling inlet area revisions (grille, bumper slots, etc.) must not significantly alter air flow and should be free from blockage such as spare tires, added brackets, etc. Restricted air flow can result in possible engine damage for which the installer maybe held liable, should any claims arise.
2. A minimum frontal grille opening of 370 square inches is required to provide satisfactory engine cooling. The grille opening should be directly in front of the radiator or ducted in such a manner to direct airflow through the radiator core. Battery(s) or other components should not be mounted in front of the radiator or impede airflow through the radiator.
3. Engine and Automatic Transmission temperatures may be affected by completed front-end design. Component temperature limitations should not be exceeded (See table below).

**F-53 and F-59 STRIPPED CHASSIS
MAXIMUM ALLOWABLE
COMPONENT TEMPERATURE**

Components	Temperature
Fuel Rails / Pressure Regulator	200 F
Engine Ignition Sensors	250 F
EEC Module	175 F
Fuel Pump Delivery Module	167 F
Auto Transmission Sensors	250 F
Lower Transmission Area (mounts, gaskets, etc.)	250 F

NOTE: Use only Ford Factory Coolers / Heat Exchangers

EXHAUST

1. Any changes to the existing exhaust pipe length should be accomplished by welding or use of 3/8 inch U-bolt. Pipe added to the exhaust outlet must be of 0.053 inch minimum wall thickness. Extending the outlet pipe 10 inches or more requires an additional support bracket of a type similar to those provided with the original chassis.

WARNING: It is mandatory that the side outlet tailpipe configuration be retained when any modification is made to the exhaust system, to reduce the possibility of exhaust fume entry through rear openings. The pipe outlet should not be located near any vent, window, door or body opening. The tailpipe or attenuator of any modified system should be above the departure angle of the finished vehicle.

2. Do not remove, reposition, or otherwise modify any existing OEM chassis or exhaust mounted heat shielding. These shields are there to ensure heat protection from underbody components as well as occupant comfort. Changes in the exhaust pipe length should be accompanied by a similar lengthening of the heat shielding where it exists. Additional underbody heat shielding is required to be installed by the builder as specified in the Ford Truck Quality Program Guidelines binder.

FUEL SYSTEM - LEV II COMPLIANT

1. The fuel tank for the F-53 / F-59 chassis is located between the frame rails aft of the rear axle, and is supported by straps and frame crossmembers. The body builder should consider skid plates or protective bars if the body structure does not adequately protect the lower and rear surfaces of the tank.
2. Avoid relocating fuel tanks. Relocated fuel tanks must meet FMVSS requirements. Use torque specifications and controls for reinstalling tanks (refer to service manual).

- To avoid electrical sparking at tank, disconnect the battery ground cable(s) from the vehicle battery(ies) before removing tank.
- Fuel tank clearance to body or frame components is 0.75 inches minimum. The size of any flexible body mounts must not be considered as part of this clearance.
- Suspension components must clear the fuel tank by 2.00 inches minimum through their functional geometry.
- Unfriendly surfaces by fuel tanks are unacceptable (i.e., any fastener used to install back-up alarm, seats, etc., to floor or chassis components must not point toward fuel tank).
- Revisions and welding to fuel filler pipes, filler necks and tanks must be avoided. Prior to welding in the vicinity of the fuel system, verify no fuel is dripping from disconnected components, thoroughly clean up any fuel drips/spills, protect any fuel system component in the vicinity (including evaporative emissions components) or remove the system components (including fuel tank) from the vehicle.

- When removing tanks for processing, tanks should be stored where protected and caps should be installed on all openings. Dirt/dust will plug fuel filters and could result in engine damage.
- Reinstallation of fuel sender units always requires a new gasket (fastener torque of 85-115 in-lb is specified).
- Auxiliary generator systems that are installed with their own fuel supply, or with a fuel supply provided by means other than using the tank auxiliary port, must meet FMVSS requirements.
- Tapping into fuel tanks for an extra fuel source is unacceptable.

A fuel filler kit is provided with the F-Super Duty F-53 / F-59 Stripped Chassis. This filler kit is installed and then tested on a representative chassis to verify that it is capable of providing acceptable fuel fill function without spray, spitback or premature shutoff. However, Ford Motor Company has no control over how the filler pipe and vent line are installed or modified by the Vehicle Modifier. Consequently, the Vehicle Modifier must ensure that the fuel filler pipe and any extensions added to the fill or vent lines are adequately supported to prevent sagging that could cause spray, spitback or premature shutoff during normal fueling operations. The Final Stage Manufacturer is responsible for verifying acceptable fuel fill function on the completed vehicle.

3. Fuel filler and vent hoses must not be exposed to sharp corners and should have a minimum of 1.00 inch clearance to the body and surrounding body and chassis components (except frame). If fuel filler hoses are in the vicinity of edges or corners, then shield/abrasion protection should be used. Sink traps (low spots in fuel filler and/or vent hose) are unacceptable. Lengthening/relocating the fuel filler pipe can only be done with the hoses supplied in the dunnage box and steel tube provided by the body builder. No substitute hose material is allowed. Total length of the hose used in the system cannot exceed that of the original hose supplied in the dunnage box. The short shipping hoses provided on the chassis, as received, is for shipment only and should not be used in the final assembly of the fuel filler pipe. Failure to comply may void the evaporative emissions certification.

- If fuel hoses or vent hoses are replaced, the new hoses must meet Ford Engineering specifications.
- Extra connections in the fuel filler hose or vent hose, caused by the use of extensions, should be avoided.
- Use only the Ford-specified fuel cap. Caps other than the Ford original (such as aftermarket locking gas caps) are unacceptable.

4. Splicing of fuel lines with clamps and rubber hoses is unacceptable. When drilling or welding in areas where there are fuel or vapor lines, the lines should be removed. Bolts installed into the chassis near fuel/vapor lines should have protective caps or other means of protection for the lines. Kinking or collapsing of fuel or vapor lines, while handling or after installation, is unacceptable. If line has been kinked, it must be replaced. If carbon canisters are relocated:

- Heat shields should be added if they are located in the vicinity of the catalyst and/or muffler.
- No additional hose can be added to the canister purge lines. Lengthening of the system can only be accomplished by replacing one or more of the steel tubes with a longer tube. The number of joints and length of hose in the system cannot be increased. If any of the hose is damaged, it must be replaced with CADBAR II low permeability hose meeting Ford Engineering Specification ESA-M2D50-B. Failure to comply may void the evaporative emissions certification.
- Fastener torque specs are 14 to 22 ft-lb for remounting of canister brackets to frame.

Avoid routing of fuel or vapor lines near any sharp edges or corners. Protect lines if near any sharp edges or corners.

FRONT AXLE

No drilling or welding to the front axle "I" beam is permissible. Special equipment mounting or attaching brackets, requiring attachment to the front axle, may be clamped to axle "I" beam only.

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS (Cont'd)

ELECTRICAL

Although there are many points in the electrical system to connect additional circuits, certain connection points provided are recommended for reliability and convenience. This section defines the recommended connection points for the F-Super Duty Class A Motorhome (F-53) & Commercial Chassis (F-59) and the maximum allowable electrical loads.

CAUTION: Improper electrical tie-ins may affect vehicle operation (i.e., engine, transmission).

Alternative connections or wiring practices are not recommended as certain modifications may result in other circuits becoming non-functional. Disconnect the battery negative (ground) cable and remove it from the battery carrier prior to any vehicle modification. Upon completion of body or equipment installation, all wiring should be checked for proper routing, etc., to preclude electrical shorts upon re-installation of the battery negative cable. The vehicle wiring and protection were designed for the following lighting loads - additional loads to any circuit must be installed in accordance with the detailed electrical wiring instructions provided later in this book.

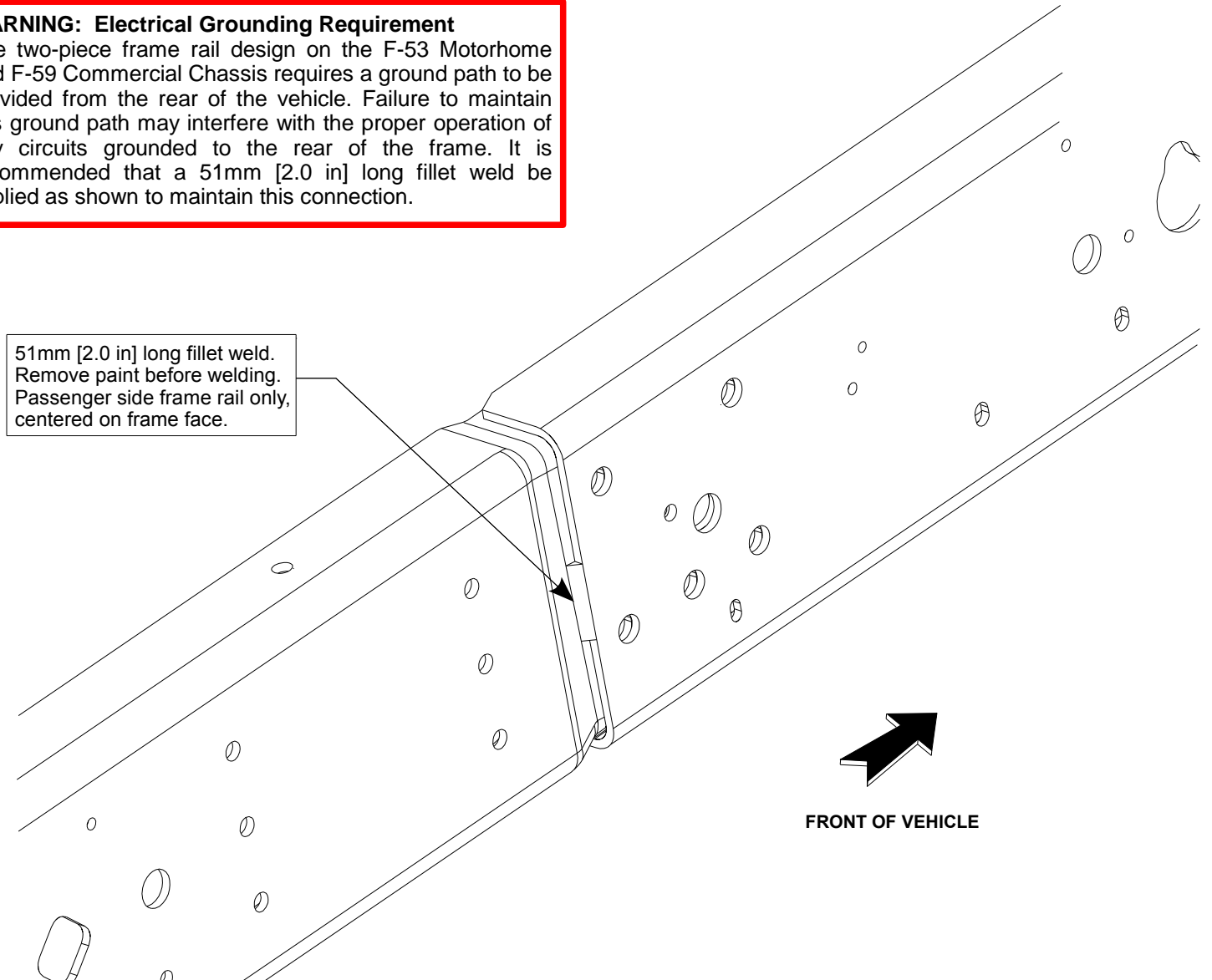
NOTE: When chassis wheelbases are lengthened, the body builder must maintain the original slack length in the wire harness leads that are affected by suspension movement (jounce & rebound).

Qty	Components	Trade No.
2	Halogen Headlamp Bulbs	9004
10	Combination Rear Lamp Bulbs (tail, brake, turn signal)	1157
2	Back-up Lamps	1156
4	Side Marker Bulbs	194
2	License Plate Illumination Bulbs	194
2	Interior Dome Bulb	561
16 5	Instrument Cluster Bulbs - Small Bulb - Large Bulb	37 194

WARNING: Electrical Grounding Requirement

The two-piece frame rail design on the F-53 Motorhome and F-59 Commercial Chassis requires a ground path to be provided from the rear of the vehicle. Failure to maintain this ground path may interfere with the proper operation of any circuits grounded to the rear of the frame. It is recommended that a 51mm [2.0 in] long fillet weld be applied as shown to maintain this connection.

51mm [2.0 in] long fillet weld.
Remove paint before welding.
Passenger side frame rail only,
centered on frame face.



FRONT OF VEHICLE

F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS (Cont'd)

ELECTRICAL COMPONENTS:

LIGHTS CONTROLLED BY HEADLAMP SWITCH

The headlamp switch on the F-Super Duty Class A Motorhome Chassis (F-53) utilizes one 20 amp fuse for the headlamp high beam circuit and two 10 amp fuses for low beam.

NOTE: Do not add marker lamps to the headlamp circuit; a separate circuit is provided for the marker lamps. Adding the marker lamps to the headlamp circuit can result in an overload of the circuit. For full service temperature range, the headlamp switch load should not exceed 15 amps.

Wiring access for lights to be controlled by the headlamp switch are provided at the front of the dash panel and at the rear of the vehicle, and are identified by tags attached to these wires.

Splices and electrical loading (fusing and wire size requirements) of these circuits must be in accordance with general practices previously identified.

LIGHTS CONTROLLED BY STOP LAMP SWITCH AND TURN INDICATOR SWITCH

NOTE: Splicing into the stop lamp switch on vehicles with TorqueShift® transmissions can interfere with the proper functioning of the PCM and speed control. This can:

- Affect engine idle speed quality
- Affect torque converter operation
- Prevent the speed control from disengaging upon braking

If your application involves splicing into the stop lamp switch of a TorqueShift® equipped vehicle, please contact the Body Builders Advisory Service at <http://www.fleet.ford.com/truckbbas>.

The F-Super Duty Class A Motorhome Chassis (F-53) has a mechanical stop lamp switch mounted on the brake pedal arm. These switches and associated wiring are designed for a maximum load of 10.5 amps, which is less than the fuse in the circuit, but ample for normal stop lamp loads. Under no circumstances are total loads in excess of this value permissible.

If only turn signal function is desired for the added lights, splice into the taillamp loom located at the rear of the vehicle. Splice into wires tagged "RH turn signal only" or "LH turn signal only." If both the turn signal and stop lamp function are desired for the added lights, splice into the taillamp loom at the rear of the vehicle into wires tagged "RH turn w/brake" and "LH turn w/brake."

NOTE: The turn signal switch used on light trucks has a maximum rated current of 6.5 amps for right and left turning functions and 10 amps for stop lamp function. Do not exceed these values on the turn signals.

The turn signal and emergency flasher system on the F-Super Duty Class A Motorhome Chassis (F-53) utilizes an electronic flasher. For the turn signal function, the electronic flasher is designed to accommodate five 2.1 amp lights and for the emergency flasher function, it is designed to accommodate ten 2.1 amp lights for combination stop/turn and trailer lamps.

NOTE: Adding more lights than what is specified above can result in reduced life and performance of the flasher.

ADDED LIGHTS OR ACCESSORIES CONTROLLED BY ADDED SWITCHES

The added electrical switches and wiring must have sufficient electrical capacity for the accessory load and must be protected by appropriate fuses or circuit breakers. Also, added current draw must not cause total loads to exceed capabilities of the base vehicle wiring.

State, provincial and local laws may regulate the manner in which the fog and driving lamps are used, or may require additional equipment for the particular use intended for the vehicle. It is the buyer's/owner's responsibility to determine the applicability of such laws to the buyer's/owner's intended use for the vehicle and to arrange for the installation of required equipment.

When horns are installed, the location must be as high as possible with bell mouth of horn pointed downward.

BATTERIES AND VOLTAGE REGULATOR

The battery location must be adequately ventilated, accessible for servicing, protected from road splash, and must also incorporate a shockless mounting.

The coach or chassis battery must not be located under the air cleaner inlet to prevent ingesting any gas that may be emitted from the battery.

Batteries should not be mounted in front of the radiator or impede air flow through the radiator.

If the original equipment battery is replaced by more than one battery, or a battery of a larger capacity, the battery charging power supply circuit must be checked and revised to carry the additional loads.

F-Super Duty Class A Motorhome Chassis (F-53) has a separate wire to maintain "Keep Alive Power"; the addition of a battery cut-off switch must not affect the operation of this circuit.

The electronic voltage regulator base must always be connected to the battery, engine chassis ground when the ignition switch is in either the ON or START position. The voltage regulator will be damaged if the connection does not exist when the ignition switch is energized.

WIPER DELAY MODULE

The Wiper Delay Module on the F-Super Duty Class A Motorhome Chassis (F-53) is not internally protected for a continuous high current load greater than 9 amps and must be protected via a properly sized circuit breaker. The existing 30 amp Wiper/Washer Module & Wiper Feed fuse in the fuse panel is sized for the maximum allowable in-rush current and does not provide appropriate protection to the Wiper Delay Module. The Wiper Delay Module must use a relay to control power to the wiper motor.

A/C PREP PACKAGE

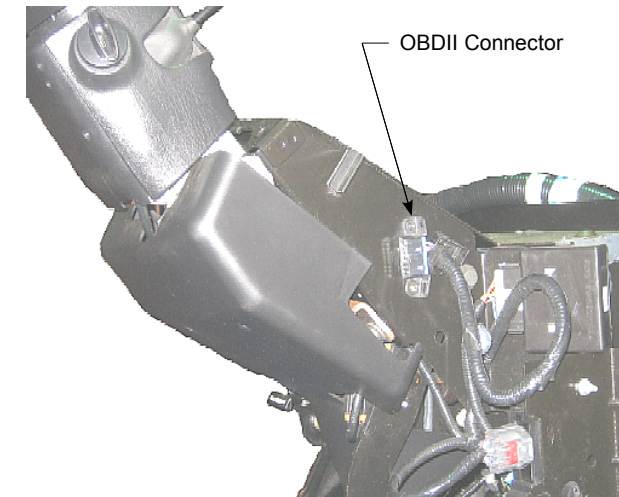
The F-Super Duty Class A Motorhome Chassis (F-53) comes standard with an R134a (non-CFC) air conditioning prep package (optional on the F-59 Commercial Chassis) for use with a thermostatic expansion valve (TXV) controlled A/C system. This package consists of a compressor, condenser, high side lines with high pressure switch, air recirculation baffles, and front end accessory drive which are mounted to the chassis, and a receiver/dryer with low pressure cutoff switch.

OUTSIDE AIR TEMPERATURE PROBE

An outside air temperature probe is provided in dunnage for installation by the final stage manufacturer. The probe provides data to the instrument panel's message center. The probe should be mounted in the path of outside ambient airflow in order to provide appropriate data to the message center.

OBDII DIAGNOSTIC CONNECTOR LOCATION

The OBDII diagnostic service port connector is attached to the right hand side of the steering column support during chassis assembly. This is intended to be a "temporary shipping location". It is the responsibility of the body builder to relocate the OBDII diagnostic connector to the bottom of the dash panel (not supplied by Ford). For additional information, see SVE Bulletin Q-178 on the BBAS website at www.fleet.ford.com/truckbbas under the "Bulletins" tab.





F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS (Cont'd)

CHASSIS WIRING CIRCUITS						
Circuit	Circuit #	Gauge	Color	Location	Fuse Location	Fuse Size
• Accessory Feed (Accy's & Run)	296	18	White-Purple	Top Side of Dash Panel (Part of 14A318)	F/P #5	10A
• Accessory Feed (Off & Run)	294	18	White-Lt. Blue	Top Side of Dash Panel (Part of 14A318)	F/P #38	10A
• A/C Switch	441	16	Red-Yellow	Top Side of Dash Panel (Part of 14A318)	—	—
• Backup Lamp	140	18	Black-Pink	Rear of Vehicle (Part of 14408)	F/P #33	10A
• Battery Feed	1049	16	Brown-Pink	Top Side of Dash Panel (Part of 14A318)	F/P #16	20A
• Blower Motor Feed	181	10	Brown-Orange	Top Side of Dash Panel (Part of 14401)	PDB #23	40A
• Brake Lamp Feeds	511	16	Lt. Green	Top Side of Dash Panel (Part of 14A318), Front Side of Dash Panel (Part of 14A348) -and Rear of Vehicle (Part of 14408)	F/P #8	10A
• Cigarette Lighter Feed	40	14	Lt. Blue-White	Top Side of Dash Panel (Part of 14A318)	PDB #22	20A
• Electric Brake Power	43	12	Dark Blue	Rear of Vehicle (Part of 14408)	PDB #13	30A
• Fuel Pump Delivery Module Relay	1059	14	Lt. Blue-Orange	Power Distribution Box Relay #2	PDB #21	20A
• Ground During Start	41	20	Black-Lt. Blue	Top Side of Dash Panel (Part of 14A318)	—	—
• Headlamp High Beam Feed	12	16	Lt. Green-Black	Front Side of Dash Panel (Part of 14290)	F/P #35	20A
• Headlamp Low Beam Feed (Left) (Right)	160	18	Dark Brown and White	Front Left Side of Dash Panel (Part of 14290)	F/P #31	10A
	161	18	Dark Green-Orange	Front Right Side of Dash Panel (Part of 14290)	F/P #25	10A
• Horn Feed	6	16	Yellow-Lt. Green	Front Side of Dash Panel (Part of 14290)	PDB #17	20A
• Instrument Panel Lamp Feed	19	20	Lt. Blue-Red	Top Side of Dash Panel (Part of 14A318)	F/P #41	10A
• Interior Lamp Feed	53	18	Black-Lt. Blue	Top Side of Dash Panel (Part of 14A318) and Rear of Vehicle (Part of 14408)	—	—
• Interior Lamp Feed (Ground)	402	20	Orange-Lt. Green	(Part of 14A318)	—	—
• LH Turn Signal (only) Feed	3	16	Lt. Green-White	Front Side of Dash Panel (Part of 14290) and Rear of Vehicle (Part of 14408)	F/P #15	15A
• LH Turn w/Brake Signal Feed (Turn)	9	16	Lt. Green-Orange	Rear of Vehicle (Part of 14408)	F/P #1	20A
• Marker Lamp Feed (Park Lamp)	14	16	Brown	Front Side of Dash Panel (Part of 14290)	PDB #6	20A
	14	16	Brown	Front Side of Dash Panel (Part of 14A348)		
	14	16	Brown	Top Side of Dash Panel (Part of 14A318)		
	14	16	Brown	Middle of Vehicle (Part of 14405)		
	14	16	Brown	Rear of Vehicle (Part of 14408)		
• Park Brake Switch (Ground)	162	20	Lt. Green-Red	Top Side of Dash Panel (Part of 14A318)	—	—
• Radio Feed	137	18	Yellow-Black	Top Side of Dash Panel (Part of 14A318)	F/P #17	5A
• RH Turn Signal (only) Feed	2	16	White-Lt. Blue	Front Side of Dash Panel (Part of 14290) and Rear of Vehicle (Part of 14408)	F/P #21	15A
• Climate Control Customer Demand Switch	391	16	Red-Lt. Blue	(Part of 12A581)	PDB #3	20A

NOTES — 14A032, 14A318, 17B587, 14408, 13A840, and 18A840 wire harness assemblies are provided in dunnage box.

Fuse panel (F/P) is located on 14A032-A wire harness provided in dunnage box.

Power Distribution Box (PDB) is located on 12A581 wire harness assembly located in engine compartment.

Refer to Owners Guide for a complete list of fuse and relay circuits/components.

(Table Continued Next Page)



F-53 MOTORHOME / F-59 COMMERCIAL CHASSIS BODY & SPECIAL EQUIPMENT INSTALLATION RECOMMENDATIONS (Cont'd)

CHASSIS WIRING CIRCUITS (Cont'd)

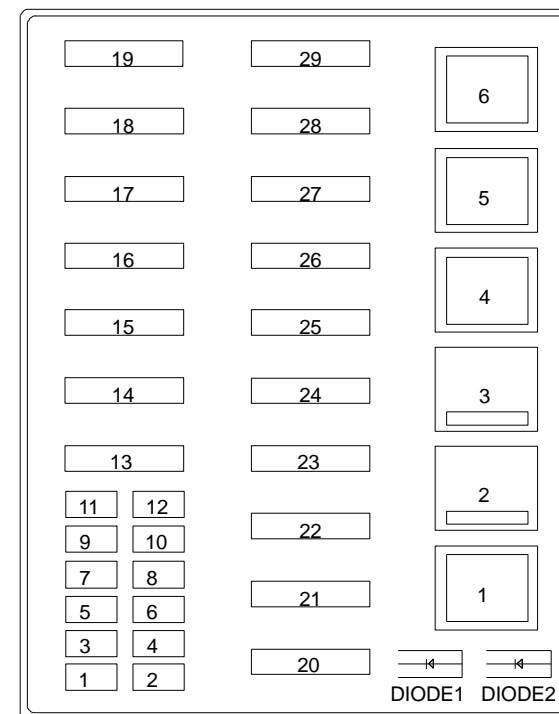
Circuit	Circuit #	Gauge	Color	Location	Fuse Location	Fuse Size
• Blower Motor Relay Ground	753	18	Yellow-Red	Top Side of Dash Panel (Part of 14401)	—	—
• Electric Brake Controller	50	12	Red	Front Side of Dash (Part of 14A348)	PDB #13	30A
• Electric Brake Ground	206	14	White	Front Side of Dash (Part of 14A348)	—	—
• Hot During Start	113	10	Yellow-Lt. Blue	Top Side of Dash Panel (Part of 14401)	PDB #28	30A
• LH Turn w/Brake Signal Feed (Turn/Brake)	9	16	Lt. Green-Orange	Rear of Vehicle (Part of 14408)	F/P #1	20A
• RH Turn w/Brake Signal Feed (Turn/Brake)	5	16	Orange-Lt. Blue	Rear of Vehicle (Part of 14408)	F/P #1	20A
• Tach Output Clean	76	20	Lt. Green-White	Top Side of Dash Panel (Part of 14401)	—	—
• Trailer Backup Lamp	963	16	Black-Lt. Green	Top Side of Dash Panel (Part of 14A318) and Rear of Vehicle (Part of 14408)	F/P #34	10A
• Trailer Ground	206	10	White	Rear of Vehicle (Part of 14408)	—	—
• Trailer LH Turn/Stop Lamp	52	16	Yellow	Rear of Vehicle (Part of 14408)	F/P #22	20A
• Trailer RH Turn/Stop Lamp	64	16	Dark Green	Rear of Vehicle (Part of 14408)	F/P #22	20A
• Trailer Running/Park Lamps	962	16	Brown-White	Rear of Vehicle (Part of 14408)	PDB #15	20A
• Trans Tach Output (Park)	1146	20	Lt. Green-Red	Top Side of Dash Panel (Part of 14401)	—	—
• Trans Tach Output (Neutral)	463	20	Red-White	Top Side of Dash Panel (Part of 14401)	—	—
• Vehicle Speed Output	239	20	White-Orange	Top Side of Dash Panel (Part of 14401)	—	—
• Warning Chime — Seat Belt	85	20	Brown-Lt. Blue	Top Side of Dash Panel (Part of 14A318-A)	—	—
• Washer Pump Feed	941	14	Black-White	Front Side of Dash Panel (Part of 17B587)	F/P #11	30A
• Wiper Motor Feed — Common	61	14	Yellow-Red	Front Side of Dash Panel (Part of 17B587)	F/P #11	30A
• Wiper Motor Feed — High	58	14	White			
• Wiper Motor Feed — Ignition	65	14	Dark Green			
• Wiper Motor Feed — Low	56	14	Dark Blue-Orange			
• Wiper Motor Feed — Switch	28	14	Black-Pink Stripe			
• Brake Transmission Shift Interlock (BTSI)	32	10	Red-Lt. Blue	Top Side of Dash Panel (Connects to 14401)	F/P #F4	10A

NOTES — 14A032, 14A318, 17B587, 14408, 13A840, and 18A840 wire harness assemblies are provided in dunnage box.

Fuse panel (F/P) is located on 14A032-A wire harness provided in dunnage box.

Power Distribution Box (PDB) is located on 12A581 wire harness assembly located in engine compartment.

Refer to Owners Guide for a complete list of fuse and relay circuits/components.



POWER DISTRIBUTION BOX

