



2006

BODY BUILDERS LAYOUT BOOK

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IMPORTANT NOTICE

The specifications and designs described herein are believed to be correct as of the time that this book was approved for printing, but accuracy cannot be guaranteed. They are intended only to provide basic data regarding such matters as dimensions and weight ratings of Ford-built chassis. The information contained in this book is general and nothing contained herein is to be regarded as providing specific or comprehensive instructions for the completion of a particular vehicle or as authorization by Ford of the specific modifications, alteration or designs of individual vehicles.

Representations regarding the compliance of any Ford-manufactured incomplete vehicle to any rule, regulation or standard issued pursuant to the National Traffic and Motor Vehicle Safety Act or the Canadian Motor Vehicle Safety Act are set forth only in the incomplete vehicle manual which accompanies each incomplete vehicle. Ford reserves the right to discontinue models or change specifications or designs at any time without notice and without incurring any obligation.

Regulations such as those issued by the Federal Highway Administration (FHWA) or issued pursuant to the Occupational Safety and Health Act (OSHA), and/or state, provincial, and local laws and regulations may require installation of additional equipment for the particular use intended for the vehicle. It is the responsibility of the subsequent stage manufacturer or completed vehicle alterer and the vehicle purchaser to ascertain how the vehicle will ultimately be used, if FHA, OSHA or state provincial or local regulations apply and how the vehicle as completed will comply with those requirements.

Nothing contained herein is to be construed as a representation that such equipment required for the particular use intended has been installed on the completed or incomplete vehicle.

For the most recent information and updates to this publication refer to www.fleet.ford.com/truckbbas.

REFERENCE INFORMATION

FORD TRUCK BODY BUILDERS LAYOUT PUBLICATION

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FORD SERVICE PUBLICATIONS

Many Ford Service Publications pertain to a specific Model Year and vehicle types. The following publications are a few of many manuals which are available from Helm Incorporated; call 1-800-782-4356 or contact Helm, Inc. at their website: www.helminc.com

- Ford Truck Shop Manuals
- Ford Towing Manuals
- Ford Wiring Diagrams
- Ford Truck Shop Manuals and Wiring Diagrams on CD-ROM

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The Ford Truck Body Builder Advisory Service assistance may be consulted regarding information contained in this manual. For assistance:

- Call (877) 840-4338
- Fax (313) 594-2633
- E-Mail bbasqa@ford.com or at the BBAS website - www.fleet.ford.com/truckbbas/

Include your name, company and telephone number with all inquiries. If requesting written materials, include your mailing address.

INDEX

TERMINOLOGY / VIN CODING	Page
Definition of Terms.....	4-5
2006 VIN Element Coding Information	6
SAFETY / EMISSIONS	
Occupant Protection Systems	
Seat Restraint System	7
Airbag Supplemental Restraint System	8-10
Vehicle Noise Regulations / Emission Control Modifications	11-15
Emission Compliance Guidelines – Non-OEM Fuel Tank Modifications	16
US and Canada Safety Standards	17-28
FREESTAR	
Dimensional Data	
7 Passenger Wagon	29-30
Cargo Van	31-32
Rear Floor Information – Wagon / Van	33-34

E-SERIES	Page
Wagon / Van	
Model Line Up	35-36
GVWR/Wheelbase/Payload/Base Curb Weight/Engine/Trans	
Dimensional Data	
E-150/350 Super Duty Wagon 7 Passenger	
w/Quad Captain Chairs/3 Passenger Bench.....	37-38
E-150/350 Super Duty Wagon 8/12 Passenger	39-40
E-350 Super Duty Extended Wagon 12/15 Passenger	41-42
E-150/250/350 Super Duty Van	43-44
E-150/250/350 Super Duty Crew Van (Regular/Extended Length)	45-46
Axle/Tire/Vehicle Height Data	47
Fuel System Evaporative Emissions	48
Incomplete E-150/250/350 Super Duty Recreational Van.....	49
Cutaway / Stripped Chassis	
Model Line Up	50
GVWR/Wheelbase/CA/Payload/Base Curb Weight/Engine/Trans	
Dimensional Data – Cutaway	
E-350 138" Wheelbase (SRW/DRW)	51-52
E-350/450 158" Wheelbase (DRW)	53-54
E-350/450 176" Wheelbase (DRW)	55-56
Dimensional Data – Stripped Chassis	
E-350 138" Wheelbase (SRW/DRW)	57
E-350/450 158" Wheelbase (DRW)	58
E-350/450 176" Wheelbase (DRW)	59
Parking Brake Cable Attachment	60
Axle/Tire/Wheelhouse/Vehicle Height Data	61-62
Ground Clearance Data	63
Battery Box Locations	64
Fuel Filler System	65
Aft-of-Axle Fuel Tank.....	66
Fuel System Evaporative Emissions	67
Back of Cutaway Cab – Profile Dimensions	68
Seat Position	69
Seat Track Travel / H-Point Location	70

INDEX

Ranger	Page
Model Line Up	71
GVWR/Wheelbase/Payload/Base Curb Weight/Engine/Trans	
Dimensional Data	
Regular Cab Styleside	72-73
SuperCab Styleside	74-75
Regular/SuperCab Flareside	76-77
Axle/Tire/Wheelhouse/Vehicle Height Data	78
Tire Data	79
Fuel and Vapor System	80
Seat Track Travel / H Point Location	81
F-150	
Model Line Up	82-83
GVWR/Payload/Base Curb Weight/Engine/Trans	
Dimensional Data	
Regular Cab Styleside	84-85
SuperCab Styleside	86-87
Regular Cab Flareside	88-89
SuperCab Flareside	90-91
4-Door SuperCrew Pickup	92-93
Pickup Box	94-97
Axle/Tire/Vehicle Height Data (Regular/Supercab)	98
Axle/Tire/Vehicle Height Data (SuperCrew)	99
Wheel and Tire Data	100
Seat Track Travel / H Point Location	101

SUPER DUTY F-SERIES	Page
Super Duty F-250/350 - Styleside Pickup	
Model Line Up	102-104
GVWR/Payload/Base Curb Weight/Engine/Trans	
Dimensional Data	
Regular Cab/SuperCab/Crew Cab	105-110
Pickup Box Dimensions	111-112
Axle/Tire/Wheelhouse/Vehicle Height Data	113-117
Pickup Box Delete - Wide Frame	
Exhaust / Fuel System	118
Frame Data	119
Fuel Filler Pipe Location and Dimensions	120
Super Duty F-350/450/550 - Chassis Cab	
Model Line Up	121-125
GVWR/Payload/Base Curb Weight/Engine/Trans	
Dimensional Data	
Regular Cab/SuperCab/Crew Cab	126-131
Axle/Tire/Wheelhouse/Vehicle Height Data	132-137
Ground Clearance Data	138-139
Fuel Filler Pipe Location and Dimensions	140
Exhaust / Fuel Systems	141
Frame Data - Extension / Shortening Recommendations	142-143
All Super Duty F-Series	
Fuel System Evaporative Emissions - Gasoline Only	144
Seat Track Travel / H Point Location	145

SNOWPLOW INSTALLATION	Page
F-150 4x4	146
Super Duty F-250/350/450/550	147

SEIC / POWER TAKE OFF (PTO)	
General Information.....	148-149
Circuit Descriptions	150-153
Resistor Charts	154
Wiring Locations.....	155
General System.....	156
Transmission Specifications	157
Guidelines	158

ELECTRICAL	
Customer Access Circuits / General Information	159
E-Series Customer Access Circuits	160
E-Series Trailer Tow Wiring	161-162
E-Series Electrical Plug and Wiring	163-164
Super Duty F-Series Wiring Circuits	
Super Duty F-Series Customer Access Circuits	165
Trailer Tow / Second Unit Body Wiring Tap Schematic.....	166
Power Distribution Junction Box (PDJB) Connectors (A-M)	167
General Practices	168
Bulb Chart	169
Adding Lights or Electrical Devices	170-171

PICKUP BOX REMOVAL / ALTERATIONS	Page
Ranger SuperCab / Super Duty F-Series	
General Guidelines	172-176
Super Duty F-Series Weight Restrictions	177
Ranger SuperCab Weight Restrictions	178
Filler Pipe Location / Rear Lamp Assembly	179-180

SECOND UNIT BODY MOUNTING	
General Information	181
Ranger	182-184
E-Series	185-186
Super Duty F-Series	187-189

DESIGN RECOMMENDATIONS	
Fuel System	190-192
Cooling System	193
Exhaust System / Body Components	194
Wheels / Tires / Suspension / Steering / Engine.....	195
Driveline / Transmission / Frame	196
Ambulance Builder Guidelines	197
New Vehicle Storage Guidelines.....	198

DEFINITIONS OF TERMS

The following definitions are from Title 49, Code of Federal Regulations, Parts 567.3, 568.3 and 571.3 where noted. Canadian definitions are from Canada Motor Vehicle Safety Regulations, Section 2(1), and are in italics. Ford Motor Company definitions are for the purpose of this publication only. Some terms are followed by an abbreviation that is used throughout this publication.

Ambulance — is a vehicle for emergency medical care which provides: A driver's compartment; a patient compartment to accommodate an Emergency Medical Technician (EMT), Paramedic, and two litter patients (one patient on the primary cot and secondary patient on a folding litter located on the squad bench) so positioned that the primary patient can be given intensive life-support during transit; equipment and supplies for emergency care at the scene as well as during transport; two-way radio communication; and, when necessary, equipment for light rescue/extrication procedures. The Ambulance shall be designed and constructed to afford safety, comfort, and avoid aggravation of the patient's injury or illness. (From Federal Specification KKK-A-1822-E). Ford Motor Company also includes within its definition of ambulance any vehicle that is used for transporting life-support equipment, for rescue operations, or for non-emergency patient transfer if the engine of the vehicle is equipped with a "throttle kicker" device, which enables an operator to increase engine speed over normal idle speed when the vehicle is not moving. (Ford Motor Company)

B-Pillar — is the vehicle body structure located directly rearward of each front door. This structure will include the outer panel, all inner panels or reinforcements which support the door opening, the door latching system and/or the roof structure. (Ford Motor Company)

Basic (Stripped) Chassis — an incomplete vehicle, without occupant compartment, that requires the addition of an occupant compartment and cargo-carrying, work performing, or load-bearing components to perform its intended function. (Ford Motor Company)

Bus — a motor vehicle with motive power, except a trailer, designed for carrying more than 10 persons. (49CFR571.3)

Bus (Canada) — *a vehicle having a designated seating capacity of more than 10, but does not include a trailer or a vehicle imported temporarily for special purposes. (autobus)*

Chassis Cab — an incomplete vehicle, with completed occupant compartment, that requires only the addition of cargo-carrying, work-performing or lead-bearing components to perform its intended functions. (49CFR567.3)

Completed Vehicle — a vehicle that requires no further manufacturing operations to perform its intended function, other than the addition of readily attachable components, such as mirrors or tire and rim assemblies, or minor finishing operations such as painting. (49CFR568.3)

Critical Control Item — is a component or procedure which may affect compliance with a federal regulation or, which could directly affect the safe operation of the vehicle. The identifying symbol is an inverted delta (∇). (Ford Motor Company)

Cutaway Chassis Cab — an incomplete vehicle that has the back of the cab cut out for the intended installation of a structure that permits access from the driver's area to the back of the completed vehicle. (Ford Motor Company)

Cutaway Chassis Cab (Canada) — *an incomplete vehicle that has the back of the cab cut out for the intended installation of a structure that permits access from the driver's area to the back of the completed vehicle. (châssis tronqué)*

Designated Seating Position — any plan view location capable of accommodating a person at least as large as a 5th percentile adult female, if the overall seat configuration and design and vehicle design is such that the position is likely to be used as a seating position while the vehicle is in motion, except for auxiliary seating accommodations such as temporary or folding jump seats. Any bench or split-bench seat in passenger car, truck, or multipurpose passenger vehicle with a GVWR less than 4,536 kilograms (10,000 pounds), or having greater than 50 inches of hip room (measured in accordance with SAE Standard J1100(a)) shall have not less than three designated seating positions, unless the seat design or vehicle design is such that the center position cannot be used for seating. (49CFR571.3) (abbreviated by Ford Motor Company)

Designated Seating Position (Canada) — *any plan view position capable of accommodating a person at least as large as a 5th percentile adult female, as defined in section 100 of Schedule IV, where the overall seat configuration and design and the vehicle design are such that the position is likely to be used as a seating position while the vehicle is in motion, but does not include any plan view position of temporary or folding jump seats or other auxiliary seating accommodation. (place assise désignée)*

Final-Stage Manufacturer — a person who performs such manufacturing operations on an incomplete vehicle that it becomes a completed vehicle. (49CFR568.3)

Gross Axle Weight Rating (GAWR) — the value specified by the vehicle manufacturer as the load-carrying capacity of a single axle system, as measured at the tire-ground interfaces. (49CFR571.3)

Gross Combination Weight Rating (GCWR) — the value specified by the manufacturer as the loaded weight of a combination vehicle. (49CFR571.3)

Gross Vehicle Weight Rating (GVWR) — the value specified by the manufacturer as the loaded weight of a single vehicle. (49CFR571.3)

H-Point — the mechanically hinged hip point of a manikin which simulated the actual pivot center of the human torso and thigh, described in SAE Recommended Practice J826, "Manikins For Use in Defining Vehicle Seating Accommodation," November 1962. (49CFR571.3)

H-Point (Canada) — *the mechanically hinged hip point of a manikin that simulates the actual pivot centre of the human torso and thigh, described in SAE Standard J826 APR80, Devices for Use in Defining and Measuring Vehicle Seating Accommodation. (point H)*

Incomplete Vehicle — an assemblage consisting, as a minimum, of frame and chassis structure, power train, steering system, suspension system, and braking system, to the extent that those systems are to be part of the completed vehicle, that requires further manufacturing operations, other than the addition of readily attachable components such as mirrors or tire and rim assemblies, or minor finishing operations, such as painting, to become a completed vehicle. (49CFR568.3)

Incomplete Vehicle (Canada) — *a vehicle (a) other than a vehicle imported temporarily for special purposes, that is capable of being driven and that consists, at a minimum, of a chassis structure, power train, steering system, suspension system, and braking system in the state in which those systems are to be part of the completed vehicle, but requires further manufacturing operations to become a completed vehicle or (b) that is an incomplete trailer. (véhicule incomplet)*

Incomplete Vehicle Manufacturer — a person who manufactures an incomplete vehicle by assembling components none of which, taken separately, constitute an incomplete vehicle. (49CFR568.3)

Intermediate Manufacturer — a person, other than the incomplete vehicle manufacturer or the final stage manufacturer, who performs manufacturing operations on an incomplete vehicle. (49CFR568.3)

Motor Home — a multi-purpose vehicle with motive power that is designed to provide temporary residential accommodations, as evidenced by the presence of at least four of the following facilities: Cooking; refrigeration or ice box; self-contained toilet; heating and/or air conditioning; a potable water supply system including a faucet and a sink; and a separate 110-125 volt electrical power supply and/or an LP gas supply. (49CFR571.3)

Multifunction School Activity Bus (MFSAB) — a school bus whose purposes do not include transporting students to and from home or school bus stops. (49CFR571.3)

Multipurpose Passenger Vehicle (MPV) — a motor vehicle with motive power, except a low-speed vehicle or trailer, designed to carry 10 persons or less which is constructed either on a truck chassis or with special features for occasional off-road operation. (49CFR571.3)

Multipurpose Passenger Vehicle (MPV) (Canada) — *a vehicle having a designated seating capacity of 10 or less that is constructed either on a truck chassis or with special features for occasional off-road operation, but does not include an air cushion vehicle, an all-terrain vehicle, a golf cart, a low-speed vehicle, a passenger car, a truck or a vehicle imported temporarily for special purposes. (véhicule de tourisme à usages multiples)*

School Bus — a bus that is sold, or introduced in interstate commerce, for purposes that include carrying students to and from school or related events, but does not include a bus designed and sold for operation as a common carrier in urban transportation. (49CFR571.3)

School Bus (Canada) — *a bus designed or equipped primarily to carry students to and from school. (autobus scolaire)*

DEFINITIONS OF TERMS

(CONTINUED)

2006
MODEL YEAR

Page 5 DEFINITIONS

Seating Reference Point — the unique design H-point, as defined in SAE J1100 (June 1984), which:

- (a) Establishes the rearmost normal design driving or riding position of each designated seating position in a vehicle;
- (b) Has X, Y, and Z coordinates established relative to the designed vehicle structure;
- (c) Simulated the position of the pivot center of the human torso and thigh; and
- (d) Is the reference point employed to position the two-dimensional drafting template described in SAE J826 (May 1987). (abbreviated by Ford Motor Company)

Seating Reference Point (Canada) — the unique Design H-point, as defined in section 2.2.11.1 of SAE Recommended Practice J1100 (June 1993), that:

- (a) establishes the rearmost normal design driving or riding position of each designated seating position, taking into account all modes of adjustment - horizontal, vertical and tilt - in a vehicle,
- (b) has X, Y, and Z coordinates, as defined in section 2.2.3 of SAE Recommended Practice J1100 (June 1993), established relative to the designed vehicle structure,
- (c) simulates the position of the pivot centre of the human torso and thigh, and
- (d) is the reference point employed to position the H-point template with the 95th percentile leg, as described in section 3.1 of SAE Standard J826 (June 1992), or, if that drafting template cannot be positioned, the reference point when the seat is in its rearmost adjustment position. (point de référence de position assise)

Second Unit Body (SUB) — consists of the body structure and/or all the cargo carrying, work performing, and/or load bearing components and/or equipment installed by a subsequent stage manufacturer on an incomplete vehicle, such that the incomplete vehicle becomes a completed vehicle. (Ford Motor Company)

Subsequent Stage Manufacturer — is a term which means either intermediate or final stage manufacturers or both. (Ford Motor Company)

Trimmed Seat — a complete functional seat assembly including the seat pedestal, seat track, seat base frame, seat back, recliner mechanism, seat padding, all attaching hardware, and the final trim material) (i.e., cloth, leather, or vinyl). (Ford Motor Company)

Truck — a motor vehicle with motive power, except a trailer, designed primarily for the transportation of property or special purpose equipment. (49CFR571.3)

Truck (Canada) — a truck designed primarily for the transportation of property or special-purpose equipment but does not include a competition vehicle, a crawler-mounted vehicle, a trailer, a work vehicle, a vehicle imported temporarily for special purposes or a vehicle designed for operation exclusively off-road. (camion)

Truck Tractor — a truck designed primarily for drawing other motor vehicles and not so constructed as to carry a load other than a part of the weight of the vehicle and the load so drawn. (49CFR571.2)

Truck Tractor (Canada) — a truck designed primarily for drawing other vehicles and not constructed for carrying any load other than part of the weight of the vehicles and load drawn, and includes a vehicle designed to accept a fifth-wheel coupling but does not include a crane-equipped breakdown vehicle. (camion le tracteur)

Unloaded Vehicle Weight (UVW) — the weight of a vehicle with maximum capacity of all fluids necessary for operation of the vehicle, but without cargo, occupants, or accessories that are ordinarily removed from the vehicle when it is not in use. (49CFR571.3)

Unloaded Vehicle Weight (UVW) (Canada) — the weight of a vehicle equipped with the containers for the fluids necessary for the operation of the vehicle filled to their maximum capacity but without cargo or occupants. (poids du véhicule sans charge)

Untrimmed Seat — the structure including the seat pedestal, seat track, seat base frame, seat back, recliner mechanism, seat padding and all attaching hardware required for a functional seat assembly without the final trim material (e.g., cloth, leather or vinyl) and trim material attaching components. (Ford Motor Company)

Walk-In Van — is a step entry city delivery van type vehicle that permits a person to enter the vehicle without stooping. This definition by Ford Motor Company is based on information appearing in 41 FR 54945, published December 16, 1976, and in 42 FR 34288, published July 5, 1977.

Walk-In Van (Canada) — a van type of truck in which a person having a height of 1700 mm can enter the occupant compartment in an upright position by a front door. (fourgon à accès en position debout)

COMPONENTS:

BPP Brake Pedal Position Switch: Supplies the processor a signal for converter clutch operation. A connection here may have an adverse effect on transmission operation. Refer to the ELECTRICAL WIRING SECTION "ADDING LIGHTS OR ELECTRICAL DEVICES" (page 175) for guidelines.

CAUTION: Any connection to the PCM-V system (i.e., wiring, components) or alterations to the system may adversely affect vehicle operation (transmission and/or engine).

BARO/ MAP Barometer Pressure Sensor/Manifold Absolute Pressure Sensor: Must be physically in a higher location than the intake manifold and angled with the vacuum nipple at least 4 degrees downwards. MAP vacuum line must have a downward slope to the manifold without any potential kinking or twisting. BARO has no vacuum line.

DTR Digital Transmission Range Sensor: Located on the outside of the automatic transmission at the manual lever on all models except 6.0L diesel engines. The DTR sensor provides the position of the manual lever (P, R, N, D, 2, 1) to various vehicle circuits. Do not tap into or splice any wire attached to the DTR sensor or engine and transmission damage may occur.

HO₂ Heated Oxygen Sensor: Pigtail wire must be at least 4 inches from the exhaust pipe and exhaust manifold. If necessary, a clip should be used to secure its location.

PCM Powertrain Control Module: Location must be completely shielded from weather and case grounded to sheet metal. It should be oriented such that no moisture can accumulate in the 104-way connector. The ambient temperature at the PCM module should not exceed 80° Centigrade (176° Fahrenheit). Exterior surface shall not exceed 140° F.

NOTE: The powertrain control module requires battery power to be supplied at all times to maintain the keep-alive memory. Keep this in mind when installing load disconnect switches or solenoids.

TP Throttle Position Sensor: Supplies a throttle position signal to the PCM processor. Do not tap into or splice any wire to the TP Sensor. For 6.0L diesel engines use the TPO wire, circuit 1857 (YE/WH).

VSS Vehicle Speed Sensor: The source varies by model. Sources include the Anti-Lock Brake System (ABS) module, a transmission speed sensor or the Transfer Case Speed Sensor (TCSS) for 4x4 model equipped with a manual transfer case. The vehicle speed signal is either a speed variable frequency AC signal, or a SCP Data message depending on the source. The vehicle speed signal must be operational for key sub-systems and the vehicle diagnostics to operate properly. Do not tap into or splice any VSS signal wire, sensors or engine and transmission damage may occur. For 6.0L diesel engines use VSO wire, circuit 239 (WH/OG) for the vehicle speed signal. For all other engines, installation of an additional sensor will be required.

2006 VIN ELEMENT CODING INFORMATION

2006
MODEL YEAR

VIN – What it Means

Universal Vehicle Identification Numbers (VINs) have 17 “positions”. There is a number or a letter in each position (see example below).

“VIN Decoder” is accessible on the Ford Fleet web site: www.fleet.ford.com

Typical VIN	1	F	D	S	F	3	4	S	1	6	E	A	8	6	3	1	1
Position Number	1-3			4	5-7			8	9	10	11	12-17					
Positions 1-3	World Manufacturer Identifier																
Position 4	Restraint System Type (Passenger Car Only)																
	Brake Type, GVWR Class, and Restraint System Type (Trucks, MPVs and Buses)																
Positions 5-7	Line, Series, Body Type																
Position 8	Engine Type																
Position 9	Check Digit																
Position 10	Model Year																
Position 11	Assembly Plant																
Positions 12-17	Production Sequence Number																

For a direct interpretation of a specific VIN, see the reference material at your dealership for the years of your specific interest (the specific meanings of some of the codes used in the VIN can change from year to year.)

OCCUPANT PROTECTION SYSTEMS

SEAT RESTRAINT SYSTEM

2006
MODEL YEAR

Page 7 SAFETY / EMISSION

INFORMATION

The following recommendations are intended to assist in the design of seats and seat belt systems capable of meeting the requirements of the F/CMVSS 207, 208, 209 and 210 except for front seating positions for vehicles having a GVWR of 3855 kg [8500 lb] or less, and an Unloaded Vehicle Weight of 2495 kg [5500 lb] or less. These recommendations are based on testing and analyses performed by Ford Motor Company.

Ford Motor Company cautions subsequent stage manufacturers to note the definition of "Designated Seating Positions" on page 4. If a position can reasonably be used by a 5th percentile adult female for seating and the overall seat configuration and vehicle design make it likely that the position will be used by an occupant while the vehicle is in motion, then the position must be considered to be a "Designated Seating Position" for determination of compliance to U.S. and Canadian motor vehicle safety standards.

Seat and seat belt systems may take many forms; this list of recommendations cannot cover all possibilities. Strict adherence to these suggestions will not ensure that systems will comply with F/CMVSS 207, 208, 209 and 210. Responsibility for determining compliance to appropriate F/CMVSS regulations is that of the final stage manufacturer. Accordingly, Ford Motor Company makes no representation as to the appropriateness of any particular recommendation in its specific application of a particular design or act of intermediate or final stage manufacture.

To confidently verify compliance with F/CMVSS 207, 208, 209 and 210, the testing of representative systems to applicable F/CMVSS 207, 208, 209 and 210 procedures is recommended. Questions regarding compliance with F/CMVSS regulations should be directed to your legal counsel, the National Highway Traffic Safety Administration, or Transport Canada.

SEAT SYSTEMS

1. For Incomplete E-Series Vans and Cutaways with a GVWR over 3855 kg [8500 lb] purchased with the front seat delete option, Ford Motor Company strongly recommends following the practices specified in the compliance representations for F/CMVSS 208 that apply to Incomplete E-Series Vans with a GVWR of 3855 kg [8500 lb] or less and completed units Unloaded Vehicle Weight of 2495 kg [5500 lb] or less that are purchased without front seats.
2. Any additional seats and seat anchorages installed by subsequent stage manufacturers must meet F/CMVSS 207 requirements and specifications.
3. Do not modify or alter Ford Motor Company furnished seating or occupant restraint system. When utilizing the Ford Motor Company driver's seat delete package, care must be taken to insure proper function of the seat adjustment latching mechanism, electrical wiring and seat belt buckle pretensioner. Refer to Bulletin Q-48 for wire routing. Model year 2006 E-Series ordered with Passenger Seat Delete, Air Bag Delete, or RH Door Delete option may have the vehicle wiring modified according to Bulletin Q-93.
4. If the seat or seat belt components are temporarily removed for any reason, they must be reinstalled in accordance with the instructions and specifications found on the following pages for E-Series, Super Duty F-Series or the applicable *Ford Truck Shop Manual*.
5. Seating systems that include the attachment of lap belt or shoulder belt assemblies should also consider the requirements of F/CMVSS 210 as part of the seating system.
6. Seating system components should be free of sharp edges to prevent damage to seat belt systems when the belts could potentially contact the seating system components.
7. Seats should be mounted with appropriate fasteners in the mounting holes provided, since these holes are located to utilized floor pan structural reinforcements. See figures on following pages.
8. If additional holes are required for any reason, their locations should be carefully selected so that the structural integrity of the floor pan will not be compromised and to prevent damage to other components located below the floor.

9. Seating systems should be designed to be compatible with the seat belt systems, so as to permit proper adjustment, allow for occupant movement and provide convenient accessibility of the restraint system buckle release.
10. Seats not designated for occupancy while the vehicle is in motion must be conspicuously labeled as such.

WARNING:

FORD MOTOR COMPANY SAFETY BELTS ARE DESIGNED TO WORK WITH THE SEATS ORIGINALLY DESIGNED FOR THE VEHICLE. IF A MODIFIER USES DIFFERENT SEATS WITH FORD MOTOR COMPANY SEAT BELTS, THAT MODIFIER MUST ENSURE THE SAFETY BELTS AND REPLACEMENT SEATS MEET ALL FMVSS REQUIREMENTS AND WILL PERFORM SAFELY IN THE FIELD. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY IN THE EVENT OF A COLLISION.

LAP AND SHOULDER BELT SYSTEMS

1. The front seats are equipped with a pyrotechnic buckle pretensioner. The buckle pretensioner reduces slack in the lap and shoulder safety belt by pulling the buckle downward. The buckle pretensioners and air bags operate on the same sensors and will function simultaneously.
2. Additional lap and shoulder belt assemblies, including retractors and hardware, must comply with the requirements of F/CMVSS 208 and 209.
3. Additional lap and shoulder belt system anchorages must comply with the requirements of F/CMVSS 210.
4. Lap and shoulder belt systems that are attached to seat frame or base may affect compliance of the seating system with the requirements of F/CMVSS 207.

5. Ford Motor Company lap and shoulder belts, retractors and attaching hardware should not be altered or modified in any way. The reinstallation of these components should follow the instructions and specifications on the following pages, or those in the appropriate *Ford Truck Shop Manual*.
6. Lap and shoulder belt assemblies should be compatible with the seat systems and anchorages so that lap belts will be properly positioned about the occupant's pelvis to provide proper adjustment and fit. The buckle and buckle release are properly located with respect to the occupant and must comply with the requirements of F/CMVSS 208.
7. Seat belt warning system activation/deactivation, where applicable, should be provided by the lap and shoulder belt assembly.

WARNING:

THE SEAT BELT BUCKLE PRETENSIONER, AIRBAGS AND ELECTRONIC SENSOR MODULE ARE BAR CODED WITH A UNIQUE SERIAL NUMBER WHICH IS MATCHED TO THE VEHICLE VIN. TO MAINTAIN THE OCCUPANT PROTECTION SYSTEM PERFORMANCE, THE COMPLETED VEHICLE MUST CONTAIN THE SAME SEAT BELT BUCKLE PRETENSIONER, AIR BAGS AND ELECTRONIC SENSOR MODULE THAT WERE INSTALLED BY FORD MOTOR COMPANY. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY IN THE EVENT OF A COLLISION.

OCCUPANT PROTECTION ZONE AND OVERHEAD CONSOLE

For vehicles completed with an Unloaded Vehicle Weight (UVW) greater than 2495 kg [5500 lb], Ford Motor Company strongly recommends following the practices in the compliance representations for F/CMVSS 208 regarding overhead console specifications that apply to Incomplete E-Series Vans with a GVWR of 3856 kg [8500 lb] or less and completed units have an Unloaded Vehicle Weight of 2495 kg [5500 lb] or less. Refer to the *Incomplete Vehicle Manual* for these compliance representations.

OCCUPANT PROTECTION SYSTEMS

AIRBAG SUPPLEMENTAL RESTRAINT SYSTEM

2006
MODEL YEAR

INFORMATION

Ford Motor Company urges careful consideration of the recommendations that follow. They are based on analyses of component and vehicle tests, actual service situations, and engineering judgments. Disregard of these recommendations may affect the durability, reliability, handling and performance characteristics of a completed vehicle and may result in elevated underbody temperatures, increase the potential for fire, or may affect the safety of the occupants in the event of an accident.

These recommendations are supplemental to U.S. and Canadian Motor Vehicle Safety compliance representations provided in the *Incomplete Vehicle Manual* (IVM). Also, additional information is provided in the *Ford Truck Service Manual* which may be helpful to subsequent stage manufacturers.

The completed vehicle in the “Loaded” condition must not exceed the front GAWR, rear GAWR or the GVWR. (“Loaded” means the completed vehicle weight with the maximum fluid capacity necessary for vehicle operation, plus 150 lb for each designated seating position, and an additional allowance for any cargo weight advertised by the manufacturer). The GAWR and GVWR are on the label affixed to the cover of the *Incomplete Vehicle Manual*.

Subsequent Stage Manufacturers are encouraged to contact the Ford Truck Body Builder Advisory Service if they have any questions concerning these recommendations.

AIRBAG SUPPLEMENTAL RESTRAINT SYSTEM

Some trucks produced by Ford Motor Company are equipped with an Airbag Supplemental Restraint System (SRS). Vehicles equipped with this system will have the words “AIRBAG” and an airbag symbol on the VIN plate located on the top driver-side corner of the instrument panel. System components are shown in their vehicle locations on the following pages.

Included on the vehicle identification number -VIN- plate (visible through the windshield) of the vehicle, manufactured by Ford Motor Company with a driver's airbag, are the words “AIR” and “BAG” and a pictogram for the airbag separating the two (see illustration on this page).



BB0538

Detailed system and service information will be found in the *Ford Truck Service Manual* for the appropriate type and model year. Ford Motor Company urges the subsequent stage manufacturers to become familiar with this system prior to modifying vehicles that are so equipped.

CAUTION:

DO NOT REMOVE THE STEERING COLUMN, STEERING WHEEL, AND AIRBAG MODULE AS AN ASSEMBLY FROM THE VEHICLE UNLESS (1) THE COLUMN IS LOCKED TO PREVENT ROTATION, OR (2) THE LOWER END OF STEERING SHAFT IS SECURED (e.g., by wire) IN SUCH A WAY THAT THE STEERING WHEEL CANNOT BE ROTATED.

WARNING:

THE SEAT BELT BUCKLE PRETENSIONER, AIRBAGS, AND ELECTRONIC SENSOR MODULE ARE BAR CODED WITH A UNIQUE SERIAL NUMBER WHICH IS MATCHED TO THE VEHICLE VIN. TO MAINTAIN THE OCCUPANT PROTECTION SYSTEM PERFORMANCE, THE COMPLETED VEHICLE MUST CONTAIN THE SAME SEAT BELT BUCKLE PRETENSIONER, AIR BAGS, AND ELECTRONIC SENSOR MODULE THAT WERE INSTALLED BY FORD MOTOR COMPANY. FAILURE TO DO SO COULD RESULT IN SERIOUS INJURY IN THE EVENT OF A COLLISION.

If electrical work is performed in the steering column area, the instrument panel of the air bag system, the system must be deactivated to avoid unwanted inflation of the air bag. To do this, follow the procedure described on this page.

DEACTIVATION PROCEDURE

1. Disconnect all negative battery cable(s), and power supplies (if equipped).
2. Wait 1 minute. This is the time required for backup power supply in diagnostic monitor to deplete its stored energy.

WARNING:

TO AVOID ACCIDENTAL DEPLOYMENT AND POSSIBLE PERSONAL INJURY, THE BACKUP POWER SUPPLY MUST BE DEPLETED BEFORE REPAIRING OR REPLACING ANY AIRBAG SUPPLEMENTAL RESTRAINT SYSTEM (SRS) COMPONENTS. TO DEplete THE BACKUP POWER SUPPLY ENERGY, DISCONNECT THE BATTERY GROUND CABLE AND WAIT ONE MINUTE. BE SURE TO DISCONNECT AUXILIARY BATTERIES AND POWER SUPPLIES (IF EQUIPPED).

WARNING:

CARRY A LIVE AIRBAG MODULE WITH THE AIRBAG AND TRIM COVER POINTED AWAY FROM YOUR BODY. THIS WILL REDUCE THE RISK OF INJURY IN THE EVENT OF AN ACCIDENTAL DEPLOYMENT.

WARNING:

DO NOT SET A LIVE AIRBAG MODULE DOWN WITH THE TRIM COVER FACE DOWN.

3. Remove fasteners retaining driver airbag module to steering wheel. Disconnect driver airbag connector and remove the bag from steering wheel. Place the bag on a flat surface with trim cover facing upward. Connect an Airbag Simulator (Part # 105-R0012 in the Rotunda Tool catalog) to the airbag connector on the wire harness in the steering wheel.
4. Disconnect passenger airbag module connector and replace it with an Airbag Simulator (Part # 105-R0012 in the Rotunda Tool catalog) to the airbag connector on the wire harness in the I/P.
5. Reconnect all negative battery cables and power supplies (if equipped).

REACTIVATION PROCEDURE

1. Disconnect all negative battery cable(s) and power supplies (if equipped).
2. Wait 1 minute for backup power supply to deplete stored energy.
3. Remove Airbag Simulator and reconnect driver airbag connector. Position driver airbag on steering wheel and secure with fasteners (10 mm). Tighten fasteners to 2.7-3.7 Nm. [24-32 in-lb].

4. Remove Airbag Simulator and reconnect passenger airbag connector.
5. Reconnect all negative battery cables and power supplies (if equipped).
6. PROVE-OUT the system.

PROVE-OUT SYSTEM PROCEDURE

Prove out system means to turn the ignition switch from OFF to RUN and visually monitor the airbag indicator. The airbag will light continuously for approximately six seconds and then turn off. If an airbag system fault is present, the indicator will either fail to light, remain lit continuously or light in a flashing manner. The flashing manner may not occur until approximately 30 seconds after the ignition switch has been turned from OFF to RUN. This is the time required for the diagnostic monitor to complete the testing of the airbag system. If the airbag indicator is inoperative and an airbag system fault exists, a tone will sound in a pattern of five sets of five beeps. If this occurs, the airbag indicator will need to be serviced before further diagnosis can be done.

E-SERIES ORDERED WITH PASSENGER SEAT/AIR BAG DOOR DELETE OPTIONS

Starting with Job #1 2004, any E-Series vehicle with the Passenger Seat Delete option, RH Door Delete option, or Air Bag Delete option will have a new seat/air bag delete resistor/bracket installed in the front out-board seat pedestal's mounting hole. The intent of this resistor/bracket is to assure installation of the correct air bag/seat restraint actuation module at the assembly plant.

The builder may need to relocate the resistor/bracket in order to provide a “clear” cab floor in the passenger seat area. It is suggested the following procedure be used:

1. Remove resistor/bracket from current mounting hole.
2. Detach wire harness from rear of cab floor.
3. Remove the pushpin from the bracket and enlarge the mounting hole so that the bracket will slip over the M12 stud.
4. Route and neatly bundle wire harness under drivers seat pedestal.
5. Attach resistor/bracket over outboard rear driver's pedestal mounting stud, **using an additional M12 nut** (not provided) to retain the resistor/bracket. **Do not install the bracket under the nut retaining the seat pedestal.**

Note: If bundling the wire harness results in an undesirable package, shorten the harness by cutting, splicing with appropriate butt connectors, and protecting with convolute as necessary. Refer to QVM Bulletin Q93 published on the website www.fleet.ford.com/truckbbas.

OCCUPANT PROTECTION SYSTEMS

AIRBAG SUPPLEMENTAL RESTRAINT SYSTEM

2006
MODEL YEAR

VEHICLE	DRIVER	PASSENGER
	Standard Front Optional Side	Standard Front Optional Side
Ranger	Standard Front	Standard Front (Includes deactivation switch except with Crew Cab models)
F150	Standard Front	Standard Front (Includes deactivation switch except with Crew Cab models)
E-Series Wagon	Standard Front	Standard Front
E-Series Vans	Standard Front	Standard Front
E-Series Cutaway	Standard Front	Standard Front
E-Series Stripped Chassis	—	—
Super Duty F-Series Pickups	Standard Front	Standard Front (Includes deactivation switch except with Crew Cab models)
Super Duty F-Series Pickup Box Delete and Chassis Cabs	Standard Front	Standard Front (Includes deactivation switch except with Crew Cab models)

E-Series Cutaway vehicles equipped with passenger seat delete option refer to QVM Bulletin Q-93 published on the website www.fleet.ford.com/truckbbas. Bulletin provides instructions on relocating resistor/bracket from passenger seat area to driver seat area.

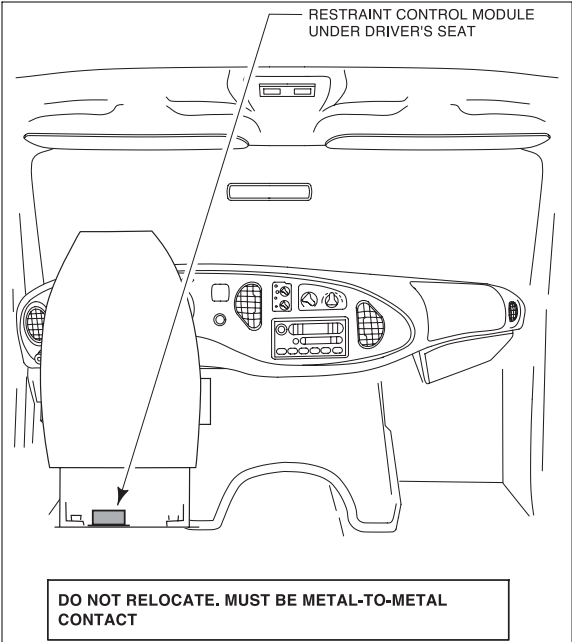


FIGURE A - E-SERIES OCCUPANT PROTECTION ZONE

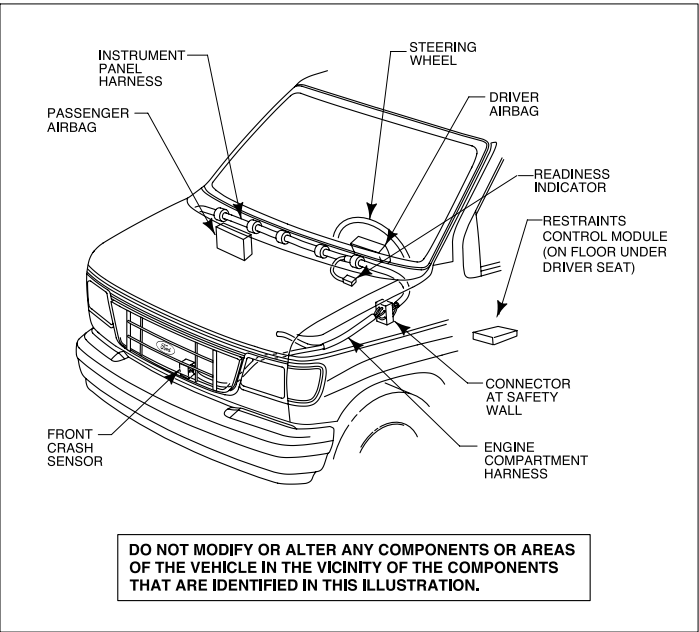


FIGURE B - E-SERIES SUPPLEMENTAL RESTRAINT SYSTEM (AIRBAGS, SENSORS AND WIRING)

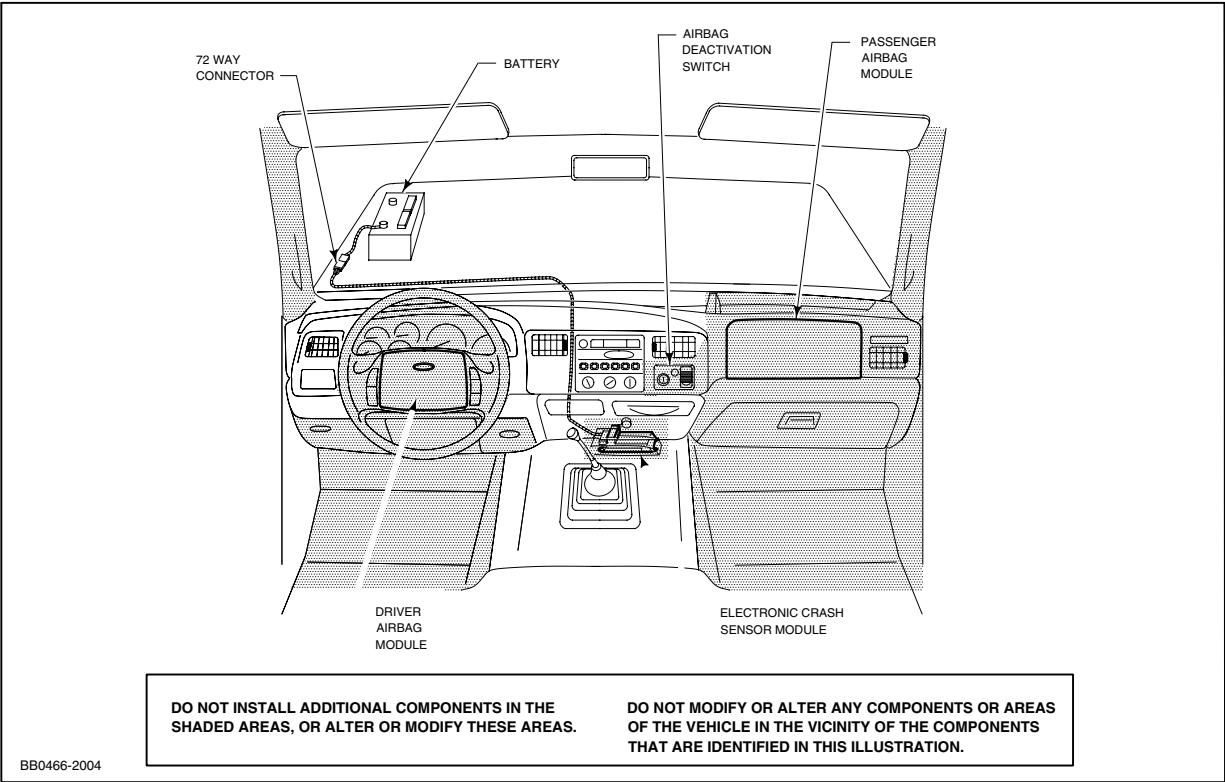


FIGURE C - SUPER DUTY F-SERIES OCCUPANT PROTECTION ZONE

OCCUPANT PROTECTION SYSTEMS

AIRBAG SUPPLEMENTAL RESTRAINT SYSTEM

2006
MODEL YEAR

Page 10

SAFETY / EMISSION

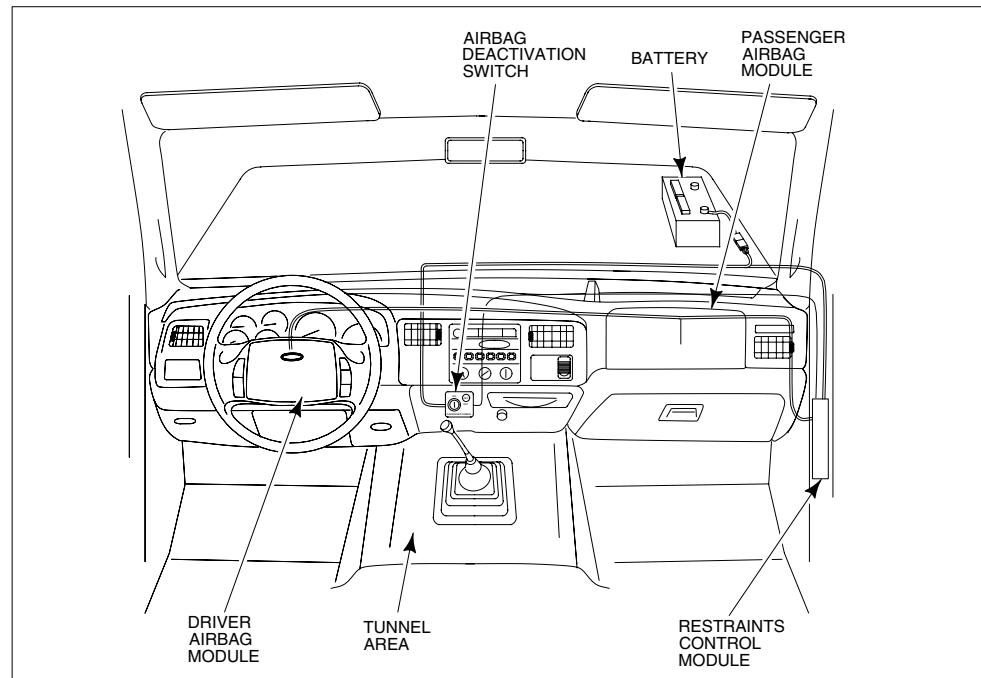


FIGURE A - RANGER OCCUPANT PROTECTION ZONE

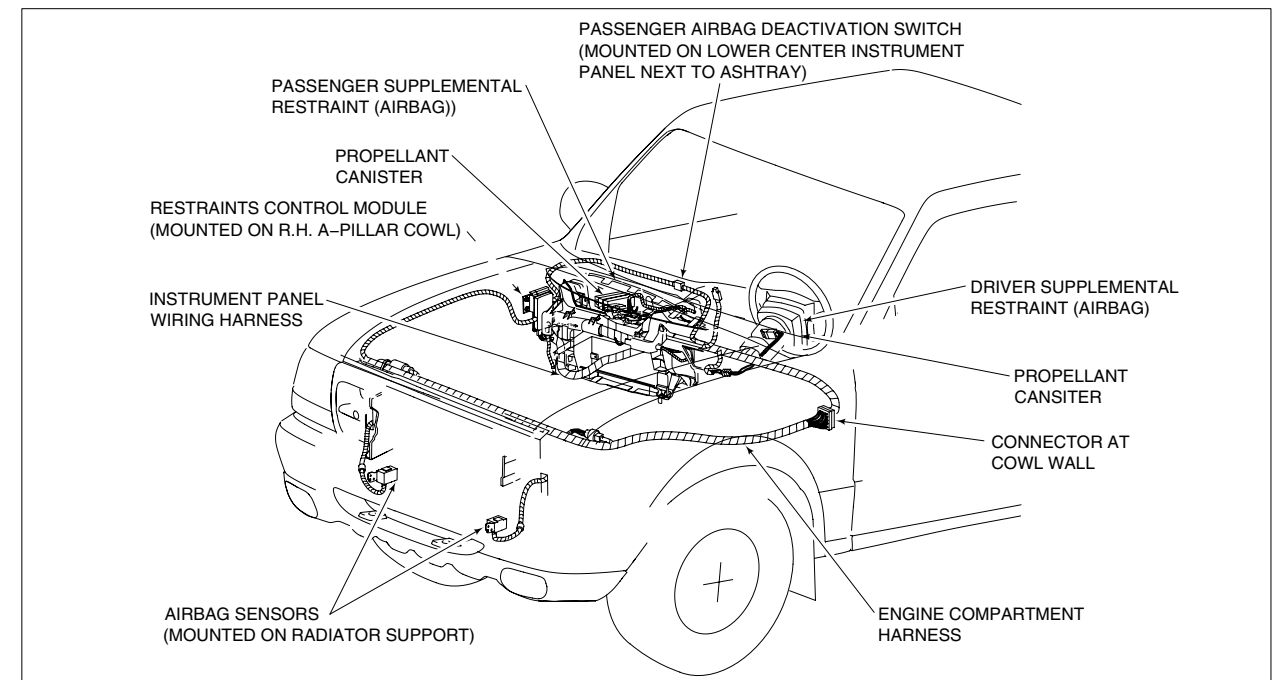


FIGURE B - RANGER SUPPLEMENTAL RESTRAINT SYSTEM (AIRBAGS, SENSORS AND WIRING)

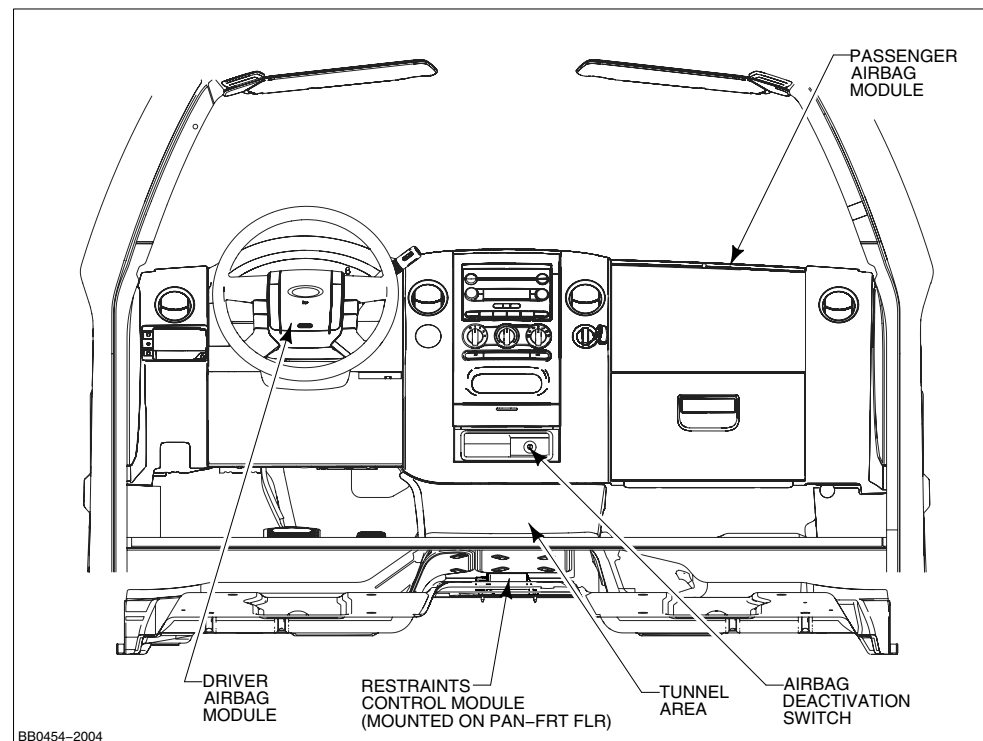


FIGURE C - F-150 OCCUPANT PROTECTION ZONE

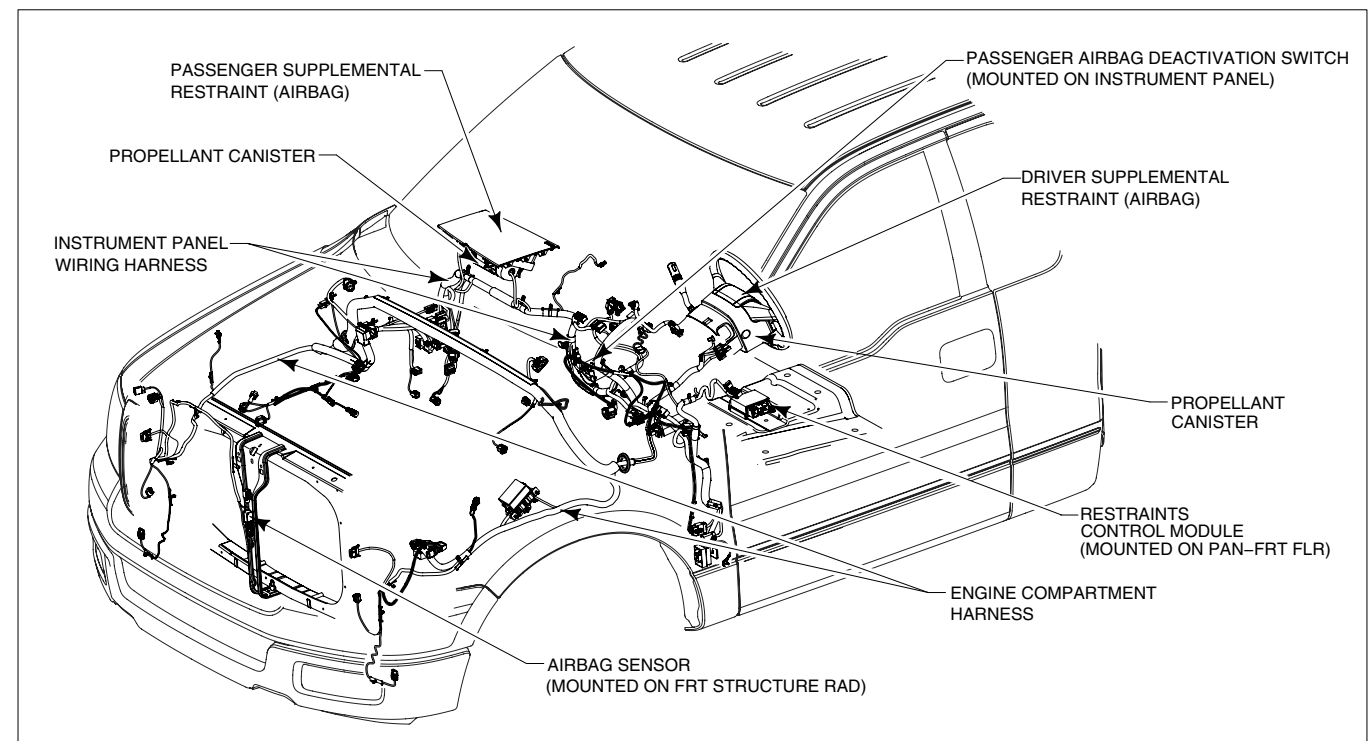


FIGURE D - F-150 SUPPLEMENTAL RESTRAINT SYSTEM (AIRBAGS, SENSORS AND WIRING)

VEHICLE NOISE REGULATIONS

2006

MODEL YEAR

EXTERIOR

The U.S. Federal Government, the Canadian Federal Government, and some states, provinces and municipalities have enacted a variety of noise control laws and regulations which apply to motor vehicles sold or operating within their jurisdictions. Sales Representatives should become familiar with the various sales and user regulations, as required, to alert the individual purchaser. Moreover, the individual purchaser should check and become aware of any applicable regulations. The individual purchaser should be sure that the specifications of the vehicle, which he orders, are appropriate in view of those sales and user noise regulations applicable to his purchase and his anticipated user of that vehicle.

Although vehicles which have GVWRs over 4536 kg (10,000 lb) are designed to comply with Federal Interstate Motor Carrier Noise Emissions Standards, 40 CFR § 325, Ford Motor Company does not represent compliance with this standard under numerous and varying conditions under which such vehicles may be operated.

Furthermore, Ford Motor Company does not represent compliance of any school bus, stripped chassis or chassis-cowl type vehicles with any noise control law or regulation. Because vehicle noise varies with number of tires on total vehicle combination, tire tread pattern, vehicle load, tire wear and the road surface condition, completed vehicles should not be ordered with lug-type tires.

Vehicles, to which alterations or additions are made that may increase noise emissions, must be ascertained to comply with the applicable noise standards after modifications have been completed by the vehicle modifiers.

EXTERIOR NOISE REGULATIONS

APPLICABLE TO SALE OF NEW VEHICLES

The U.S. Environmental Protection Agency (EPA) noise emission standards for medium and heavy trucks in excess of 4536 kg (10,000 lb) GVWR (40 CFR § 205.52) preempts, with certain exceptions, all those state and local noise regulations that are applicable to the sale of such new vehicles, and are not identical to the federal standards. These federal standards, which set a maximum sound emission level 80 dB(A), as measured by the prescribed procedure, are effective in all states, the District of Columbia, Puerto Rico, Virgin Islands, American Samoa, Guam and the Trust Territory of the Pacific Islands. These Federal regulations do not apply to school buses which are required to meet 80 dB(A) in a number of local jurisdictions. They also do not apply to trucks not having a partially or fully enclosed operator's compartment (for example stripped chassis). (See 40 CFR § 205.50, "Applicability" and pertinent definitions in § 205.51. See 40 CFR § 205.55-1 (b) for when incomplete vehicles being completed become subject to the Federal standard.)

SPECIFICATIONS FOR INTERIOR NOISE WHEN BMCS (INTERSTATE COMMERCE) SERVICE IS INDICATED

The Federal Interstate Motor Carrier interior noise standard (49 CFR § 393.94) is applicable to all motor vehicles. This standard requires that the interior sound level at the driver's seating position of any such vehicle not exceed 90db(A), when measured in accordance with the test procedure in 49 CFR § 393.94(c).

Ford Motor Company does not represent that stripped chassis or cutaway vehicles manufactured by Ford Motor Company comply with the Federal Interstate Motor Carrier interior noise standard.

Vehicles subjected to alterations or additions, which may increase interior sound levels, must be ascertained to comply with the interior noise regulation after the modifications have been completed by the vehicle modifiers.

CANADIAN INTERIOR NOISE REGULATION

Trucks and buses over 4536 kg (10,000 lb) GVWR manufactured for use in Canada must meet the noise standard of the Canada Motor Vehicle Safety Standards (Section 1106 (2)) which specifies that the interior sound level at the driver's seating position shall not exceed 90 db(A), as measured in accordance with the test procedure set forth in Section 1106 (2).

Ford Motor Company does not represent that stripped chassis vehicles and vehicles with cut-away operators' compartments comply with the standard.

RADIO FREQUENCY INTERFERENCE (RFI)

The ignition system on your vehicle (if other than a stripped chassis) has been designed to be capable of compliance with RFI requirements established by the Canadian government. However, because Ford Motor Company has no control over how an incomplete vehicle is completed by subsequent-stage manufacturers, Ford Motor Company does not represent that the completed vehicle, incorporating the Ford-built components, will comply with those requirements. Any ignition system component (i.e., spark plugs, ignition wiring, coil suppressor assembly, etc.) that is replaced should be replaced by the same Ford Motor Company part number or equivalent, to maintain RFI suppression. Ford Motor Company does not represent that stripped chassis vehicles comply with the standard.

While there are currently no RFI regulations in the United States, specifically applicable to automotive ignition systems, some Ford Motor Company trucks are built with ignition system components the same or equivalent to those supplied on Canadian vehicles. Ford Motor Company recommends that all ignition system service be performed at a Ford-authorized service facility to help hold RFI emission levels to a minimum.

Devices that emit radio frequency (RF) energy, such as AM/FM radios, mobile telecommunications systems (two-way radios, telephones) and radio-controlled security systems, are subject to the rules and regulations of the Federal Communications Commission (FCC) 47 CFR Parts 2 and 15. Any such system installed in a vehicle should comply with those rules and should be installed only by a qualified technician. In addition, to ensure continued compliance with the FCC's regulations, RF devices must not be modified or changed in a manner not expressly approved by Ford Motor Company.

Mobile communication systems, particularly if not properly installed, may adversely affect vehicle operation. For example, such systems, when operated, may cause the engine to stumble or stall. In addition, such systems themselves may be damaged, or their operation affected by the operation of the vehicle. (Citizens Band [CB] transceivers, garage door openers, and other transmitters whose power output is 5 watts or less, ordinarily will NOT affect vehicle operation.)

Because Ford Motor Company has no control over the operation or manufacture of such systems, or their installation, Ford Motor Company cannot assume responsibility for any adverse effects or damage, if this equipment is used.

Similar radio regulations are in place in Canada: see, e.g., Radio Standards Specification RSS-119 and Radio Standards Procedure RSP-100.

VEHICLE NOISE REGULATIONS/EMISSION CONTROL MODIFICATIONS

2006
MODEL YEAR

NOISE CONTROL MODIFICATIONS


All new Ford Motor Company trucks over 4536 kg (10,000 lb) GVWR (other than stripped chassis) manufactured for use in the United States are designed to comply with the U.S. Environmental Protection Agency's Medium and Heavy Truck Noise Emission Standards (40CFR Part 205). Information pertinent to these noise emission standards appears in the *Ford Truck Owners' Guide* and *Maintenance Schedule and Record Log* supplied with each Ford Motor Company vehicle. Sections of the Guide that specifically relate to the Federal noise regulations are:

1. A statement entitled "Tampering with Noise Control System Prohibited," prescribed by Environmental Protection Agency regulation (40 CFR § 205.58-2(b)), and a list of acts, commission of any of which may be presumed to constitute tampering (Tampering List).
 2. Instructions for the maintenance, use and repair of the vehicle to minimize noise emission degradation* and
 3. A section reserved for recording what maintenance was done, by whom, where and when.
- * *For trucks powered by diesel engines, the engine manufacturer's operation and maintenance manual, supplied with the vehicle, should also be consulted.*

In planning vehicle modifications, the Tampering List should be consulted to identify those parts or systems where the alteration or removal is likely to affect the truck's compliance with the Noise Emission Standards. In addition, prospective modifications not mentioned in the Tampering List may increase the noise emissions of the truck to an impermissibly high level. The Federal regulations require regulated trucks completed by a subsequent-stage manufacturer for use in the United States, to conform to these standards. The Federal Noise Control Act of 1972, as amended, provides civil penalties for distribution in commerce by a manufacturer of non-complying trucks, and criminal penalties where such distribution is willful or knowing. Advice concerning compliance with noise regulations should be obtained from your legal counsel.

A compliance label (see sample) is affixed to each Ford Motor Company truck regulated by the Federal Noise Regulations.

VEHICLE NOISE EMISSION CONTROL INFORMATION

 FORD MOTOR COMPANY

The Vehicle Conforms to U.S. Regulations for Noise Emission Applicable to Medium and Heavy Trucks.

The Following acts or the causing thereof by any person are prohibited by the Noise Control Act of 1972: (A) The removal or rendering inoperative, other than for purposes of maintenance, repair or replacement, of any noise control device or element of design (listed in the owner's manual) incorporated into this vehicle in compliance with the Noise Control Act; (B) The use of this vehicle after such device or element of design has been removed or rendered inoperative.

'Month and Year of Mfr.'

SAMPLE

BB0526

EMISSION CONTROL MODIFICATIONS

All new Ford Motor Company trucks, vehicles, and engines are certified by the U.S. Environmental Protection Agency and/or by the California Air Resources Board (CARB) for compliance with applicable government emission control regulations. A copy of the appropriate *Ford Truck Owner's* or *Operator's Manual and Warranty Facts Booklet* must be installed in every vehicle prior to sale to the ultimate purchaser in order to provide emission systems warranty and maintenance schedules.

CAUTION:
2006 MODEL YEAR VEHICLES ARE EMISSION CERTIFIED FOR REGISTRATION IN SPECIFIC AREAS OF THE UNITED STATES. FOR EXAMPLE, VEHICLES CERTIFIED AND LABELED FOR SALE IN CALIFORNIA MAY NOT BE SOLD IN THE STATES THAT REQUIRE FEDERALLY CERTIFIED VEHICLES AND VEHICLES CERTIFIED TO FEDERAL STANDARDS MAY NOT BE SOLD IN STATES THAT REQUIRE CALIFORNIA CERTIFIED VEHICLES. IT IS THE SUBSEQUENT STAGE MANUFACTURER'S RESPONSIBILITY TO PURCHASE A VEHICLE CERTIFIED FOR THE STATE/AREA IN WHICH THE VEHICLE WILL BE SOLD. EPA HAS STATED THAT UNDER CERTAIN CIRCUMSTANCES THEY WILL NOT ENFORCE THESE REQUIREMENTS. FOR FURTHER GUIDANCE, CONSULT EPA'S "POLICY ON CROSS BORDER SALES OF CALIFORNIA VEHICLES."

Modifications, revisions or removal of components may affect the emissions certification status of the vehicle and could cause the body builder, installer or any other subsequent modifier to be considered a manufacturer for purposes of emissions certification, warranty and recall. Modification of the emission control system may result in civil or criminal liability under federal, state, or provincial law. To avoid any question of certification coverage, approval of any modification, revision or removal of components should be sought from the Environmental Protection Agency, California Air Resources Board or Canadian Department of Transportation, as applicable. Advice concerning compliance with applicable standards and regulations should be obtained from your legal counsel.

EMISSION COMPLIANCE

When ordering a vehicle, the body builder must ensure that the vehicle emissions system purchased complies with appropriate emission regulations. Failure to order such a vehicle could result in the inability to register the vehicle in the area of intended use. Examples of areas requiring specific emissions certification are Altitude, SLA-Civil, California, Federal and states adopting California Emissions Regulations.

FUEL VAPOR RECOVERY

The California Air Resources Board has adopted regulations "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks" requiring that all 1977 and later model year gasoline-powered motor vehicles offered for sale in that state meet certain specifications for fill pipes and fuel tank openings.

EMISSION CONTROL MODIFICATIONS

Curb Weight and Frontal Area Restrictions

Vehicle modifiers that add weight to a vehicle or increase the frontal area of a vehicle prior to sale and delivery to the ultimate purchaser may be considered manufacturers for emission purposes (including responsibility for emissions warranty, recall and in-use compliance) and may be required to recertify the vehicle for compliance with applicable federal or California emissions standards.

Federally Certified Vehicles with a GVWR of 8500 Lb or Less

According to U.S. Environmental Protection Agency (EPA) guidance, for all federally certified vehicles and trucks (8500 lb GVWR or less), a vehicle modifier will not be deemed to be a manufacturer, and will not be required to obtain a separate Certificate of Conformity for a modified vehicle, if the following conditions are met:

1. The modified vehicle conforms in all material respects to the design specifications in the original manufacturer's application for certification; and
2. The weight of the modified vehicle, including the weight of fuel at nominal tank capacity, is no more than 500 lb above the maximum vehicle weight.

“Maximum vehicle weight” for a given vehicle is determined by (A) Subtracting 300 lb from the highest loaded vehicle weight (see 40 CFR 86.079-2 for loaded vehicle weight definition and the table at 40 CFR 86.129-80) associated with the test weight listed in the Application for Certification for the vehicle in question; and (B) Adding the weight of all options (in the case of mutually exclusive options only the weight of the heavier option is used) that are offered by the original manufacturer for the applicable truck line that were not included in the curb weight reported in the Application. Vehicle modifiers can refer to the *Ford Source Book* to determine loaded vehicle weights and option weights for Ford Motor Company vehicles.

EPA guidance provides that no frontal area restrictions will apply to secondary manufacturers that comply with the conditions listed above.

NOTE: The information above is derived from guidance contained in U.S. EPA MSAPC Advisory Circular No. 64 (March 7, 1977) and a letter dated July 13, 1979 from Charles N. Freed, EPA Director, Mobile Source Enforcement Division to Maurice H. McBride, Legal Counsel, Recreational Vehicle Industry Association. Vehicle modifiers should refer to these documents directly for specific guidance regarding whether vehicle modifications are within the scope of the original application for certification. Vehicle modifiers should periodically consult with legal counsel to determine whether these documents have been amended or superseded and whether additional guidance exists.

Vehicles (14,000 lb GVWR or less) Certified for Sale, Registration or Use in California

Modifications to passenger cars, trucks, and vehicles (14,000 lb GVWR or less) intended for sale, registration, or use in California will be deemed to be within the original emissions certification only if such modifications do not:

1. increase vehicle weight more than 10 percent above the curb weight, increase frontal area more than 10 percent, or result in a combination increase of weight plus frontal area of more than 14 percent; or
2. include changes in axle ratio, tire size, or tire type resulting in changes in the drivetrain ratio of more than 5 percent; or
3. include any modification to the emission control system.

Modified vehicles that do not satisfy these conditions may not be sold to an ultimate purchaser, offered or delivered for sale to an ultimate purchaser, or registered in California unless the modified vehicle is certified by the California Air Resources Board pursuant to applicable emissions requirements. The vehicle modifier is responsible for obtaining such certification. Refer to “California Exhaust Emission Standards and Test Procedures for 1988 and Subsequent Model Passenger Cars, Trucks, and Vehicles.”

IMPORTANT:

The information above is provided as guidance only. Vehicle modifiers are responsible for compliance with applicable emissions, regulations, including recertification if necessary. Modifiers should refer to the documents referenced above for additional guidance. Questions regarding the above requirements should be directed to your legal counsel, the EPA, or the California Air Resources Board. **In no case can vehicle weight exceed the UVW in Table A, page 182 (Super Duty F-Series), or Table A, page 183 (Ranger), without also recertifying for F/CMVSS No. 105, 135, 204, 208, 212, 219, 301, and 303.**

Incomplete vehicles using engines which are certified as heavy duty engines will not have frontal area or curb weight restrictions based on exhaust emissions regulations. It is important, however, that the final stage manufacturer observe vehicle restrictions from vehicle safety requirements, etc., which are located in the *Incomplete Vehicle Manual*.

WARNING

Any modification should not cause a vehicle to fit into a different weight class, (See Safety/Emission, page 19 for a discussion against revising GAWR). Doing so may require recertification to both FMVSS and Emissions Standards. Also, this type of change voids Ford's warranty.

Modifications not specified by Ford Motor Company, such as changes to the exhaust system, tire size, axle ratio, fuel system, etc., could adversely affect emissions performance of the vehicle and require emissions recertification by the modifier. More details are shown below.

Light-Duty Trucks/Medium-Duty Trucks/Some Heavy-Duty Trucks – Chassis Certified

Includes Ranger, Freestar, E-Series, and F-150 up through 3856 kg (8500 lb) for Federal, California, and Canada.

Examples of emission related parts:

- Engine Assembly
- Air Intake System including Air Cleaner, Duct, Valve, Heat Stove, and Cold Air Inlet Tube
- All EGR, Catalytic Converter(s), Thermactor, or any other emission control system components^{3/4/}
- Transmission including Vacuum Control System
- Axle Ratio
- Tire Size (other than available options)
- Fuel Pump and Lines
- Fuel Tank^{5/6/}
- Fuel Economy Rating (as printed on vehicle invoice as applicable^{7/}
- Filler and Vent Tube Assembly and Hose^{5/6/8/}
- Vapor Control Orifice and/or Float Valve Assembly
- Vapor Control Orifice Seal^{5/}
- Vapor Delivery Lines/Hoses/Clamps^{5/}
- Fuel Vapor Purge Line^{5/}
- Fuel Filler Pipe, Cap, and surrounding Sheet Metal^{5/6/8/}
- Carbon Canister(s) and Hoses^{5/}
- Exhaust Inlet and Outlet Pipe and Attaching Nuts^{9/}
- Exhaust System Joint Clamps/Suspension/Bracket Assemblies^{3/}
- Muffler^{3/4/}
- Tailpipe^{3/4/}
- Important Vehicle Information Label
- Emission Control Information Label^{2/}

Heavy-Duty Engine / Vehicles – Gasoline Powered and Diesel Powered – Engine Certified

Includes all vehicles over 8500 lb GVWR, both Federal and California Medium-Duty vehicle category.

Examples of emission related parts:

- Engine Assembly^{10/}
- Fuel System
- Air Intake System, including Air Cleaner, Duct, Valve, Heat Stove, and Cold Air Inlet Tube
- All EGR, Catalytic Converter(s), Thermactor or any other emission control system components^{3/4/}
- Exhaust Inlet and Outlet Pipes^{3/4/}
- Muffler^{3/4/}
- Tailpipe^{3/4/}
- Important Engine Information Label
- Emission Control Information Label^{2/}
- All gasoline powered units require an evaporative emission control system. Damage to or mislocation of any of the following elements of the evaporative emission control system may render the system inoperative, may invalidate the vehicle emission control system certification, and may result in the release of flammable gasoline fumes.
- Fuel Tank^{5/6/}
- Fuel Filler Pipe and Vent Tube Assembly, Hose, Cap, and surrounding sheet metal^{5/6/8/}
- Vapor Control Orifice Seal^{5/}
- Vapor Delivery Lines/Hoses/Clamps^{5/}
- Fuel Vapor Purge Line^{5/}
- Carbon Canister(s) and Hoses^{5/}
- Vapor Seal in Fuel Tank
- Fastener Seals on All Components Attached to Fuel Tank
- Vapor Control Valves, Solenoids, and Related Wiring in Engine Compartment or Adjacent Thereto
- Vehicle Emission Control Label 49 States Only^{9/}

EMISSION CONTROL MODIFICATIONS

2006

MODEL YEAR

Heavy-Duty Engine / Vehicles – Gasoline Powered and Diesel Powered (Cont'd)

- 1/ For important information regarding radio frequency interference (RFI), see Radio Frequency Interference on pages 175 & 176. Note particularly that Canada has RFI regulations.

2/ EMISSION CONTROL INFORMATION LABEL

To meet United States Environmental Protection Agency regulations, the important vehicle information (tune-up and fuel tank capacity) labels must be affixed in a location that is readily visible after installation and in such a manner that it cannot be removed without destroying or defacing the label. The label shall not be affixed to any equipment that is easily detached from such vehicle.

When emission control labels are supplied but not attached to the vehicle (i.e., tune-up label or fuel tank label), they must be permanently mounted in a readily visible location to meet the preceding requirements. In addition, whether the label is already affixed or to be affixed, no components shall be installed which visibly obscure the label in any way that fails to satisfy the visibility requirements described in the California Emission Control Label Specifications.

CALIFORNIA FUEL VAPOR RECOVERY

California regulations require that the vehicle fuel systems be designed to accommodate a vapor recovery fueling nozzle including unobstructed access to the fill pipe. Fuel filler pipes installed per the sketches on page 65 for E-Series and pages 119-120 for Super Duty F-Series, will comply with the “Specifications For Fill Pipes and Openings of Motor Vehicle Fuel Tanks” referenced in Title 13 California Administrative Code provided no part of the aftermarket body, as installed, intrudes within a 254 mm [10 in] radius cylinder which has its axis parallel to the ground, passing through point “Z” and extends outward from the Ford Motor Company supplied fuel pipe housing component. The fuel pipe housing component is shown on the referenced figures and is attached to the aftermarket body via 4.76 mm [0.188 in] diameter rivets. Fuel filler pipes installed, using the alternative bracket shown in the sketches on Super Duty F-Series, pages 119-120, will comply with the above California vapor recovery regulations provided the aftermarket body does not interfere with the access zone as described by the California Air Resources Board, and the areas adjacent to this opening cannot foreseeably damage the nozzle bellows or face plate of nozzles during insertion, latching, disposing, or removal.

CALIFORNIA MOTOR VEHICLE EMISSION CONTROL LABEL

To meet California emission certification regulations, the Emission Control Information (tune-up) label must be welded, riveted, or otherwise permanently attached to an area within the engine compartment or to the engine in such a way that it will be readily visible to the average person after installation of the engine in a vehicle. In selecting an acceptable location, the manufacturer shall consider the possibility of accidental damage (e.g., possibility of tools or sharp instruments coming in contact with the label). The label shall be affixed in such a manner that it cannot be removed without destroying or defacing the label, and shall not be affixed to any part which is likely to be replaced during the vehicle's useful life. For motor vehicles rated at 3856 kg (8500 lb) GVWR or less, the label shall not be affixed to any equipment which is easily detached from the vehicle. The tune-up label must include the heading “Important Vehicle Information” for Medium-Duty trucks. As used in these specifications, readily visible to the average person shall mean that the label shall be readable from a distance of 460 cm [18 in] without any obstructions from vehicle or engine parts (including all manufacturer available optional equipment), except for flexible parts, (e.g., vacuum hoses, ignition wires). Alternately, information required by these specifications to be printed on the label shall be no smaller than 8 point type size provided that no vehicle or engine parts, (including all manufacturer available optional equipment), except for flexible parts that can be moved out of the way without disconnection, obstruct the label.

Completed vehicles for retail sale in California require a machine-readable vehicle identification number (VIN) bar-code label made of paper, plastic, metal, or other permanent material which shall be affixed in a readily visible location to either the door-latch post next to the driver's seating position, the door edge that meets this door-latch post, or above the instrument panel in a location clearly visible through the lower left corner of the windshield.

- All Incomplete Vehicles except Stripped Chassis Type Vehicles will conform to this standard.

•Stripped Chassis Type Vehicles:

Conformity with CARB Motor Vehicle Emission Control Label specifications for VIN label is not substantially affected by the design of this incomplete vehicle. Accordingly, Ford Motor Company makes no representation as to conformity with this requirement. To assist a subsequent stage manufacturer with conforming to this specification, Ford Motor Company is providing a label which will accompany the *Incomplete Vehicle Manual* inside the protective plastic bag located in the dunnage box.

For the VEC† and VIN labels, sufficient clearance shall be provided to use a non-contact bar-code Reading Wand. For the tune-up label and vacuum hose routing diagram label, the label and any adhesives used shall be designed to withstand, for the vehicle's total expected life, typical vehicle environment conditions in the area where the label is attached. Typical vehicle environmental conditions shall include, but are not limited to, exposure to engine lubricants and coolants (e.g., gasoline, motor oil, brake fluids, water, ethylene glycol), underhood temperatures, steam cleaning, and paints or paint solvents.

To meet U.S. Environmental Protection Agency important engine regulations, the Vehicle Emission Control Information of the Important Vehicle Information label (also referred to as the tune-up label) must be affixed in a readily visible location. The tune-up label must include the heading “Important Vehicle Information” or “Important Engine Information”. See sample labels on the following page.

When the tune-up label is supplied detached from the engine (with the operator's manual), it must be permanently mounted in a readily visible location to meet the preceding requirements. In addition, whether the label is already affixed or to be affixed, no components shall be installed which visibly obscure the label in any way such that the preceding requirements are not satisfied.

- 3/ Some model trucks of Ford Motor Company built since 1981 may exhibit higher engine compartment and exhaust system temperatures in some operating modes than in previous model years. Components, including exhaust heat shielding systems, have been installed on some vehicles in our assembly plants in an effort to provide greater protection against such temperatures. Subsequent manufacturers are responsible for providing thermal protection for any structure and/or equipment added to the vehicle and **should not** remove any components and/or exhaust heat shielding installed on the vehicles by Ford Motor Company.

- 4/ The back pressure at the exhaust manifold **must not** be changed, and vehicle noise intensity (dbA) **must not** be allowed to increase. Catalytic converter **must not** be relocated.
- 5/ If a subsequent manufacturer desires to modify or add to the evaporative emission control system, or add permanent gasoline fuel tank(s) or an evaporative emission control system to a vehicle required to have an evaporative emission control system, the subsequent manufacturer is responsible for installing an appropriate evaporative emission control system. U.S. Environmental Protection Agency (EPA) approval and California Air Resources Board (CARB) approval (for all vehicles which will be delivered for sale and primary use in California) must be obtained by the subsequent manufacturer for any evaporative emission control system installed or modified by the subsequent manufacturer.
- 6/ **Must not** be altered such that CARB fuel vapor recovery regulations are not met.
- 7/ May not be removed until after sale to ultimate customer. Also see Frontal Area and Curb Weight considerations (above).
- 8/ Any rerouting or change in materials cannot be made unless approval is obtained from the California Air Resources Board (CARB) and/or the U.S. Environmental Protection Agency (EPA). Unleaded fuel filler pipe restrictions may not be removed.
- 9/ To meet U.S. EPA Regulation, the Vehicle Emission Control Information label must be affixed in a readily visible location. See sample labels on the following page.
- 10/ The check engine light is required by emissions regulations. It is installed by Ford Motor Company in all vehicles except the commercial stripped chassis. For this vehicle, it is located in the instrument cluster shipped in the dunnage box. The final stage manufacturer must install this light. For information regarding installation of Check Engine Warning Light to the E-350 Stripped Chassis model, see page170, adding Lights and Electrical Devices.

† Vehicle Emission Control

EMISSION CONTROL MODIFICATIONS

2006
MODEL YEAR

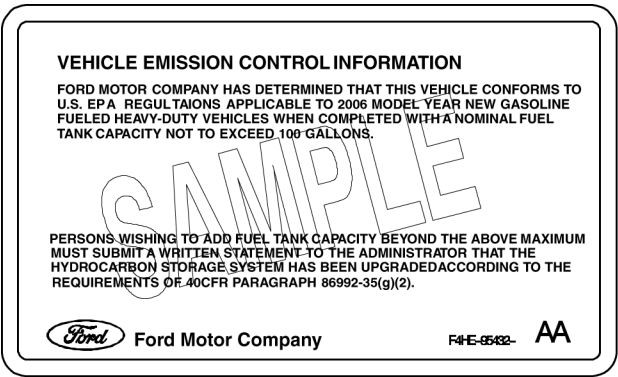
EVAPORATIVE EMISSIONS

All Ford Motor Company Trucks are required to comply with evaporative emissions requirements established by the U.S. Environmental Protection Agency or the California Air Resources Board. Production fuel systems supplied on incomplete vehicles manufactured by Ford Motor Company comply with applicable requirements. **If the subsequent manufacturer adds to or modifies the fuel system in any manner, it becomes that manufacturer’s responsibility to assure compliance with the applicable Federal or California emissions standards.**

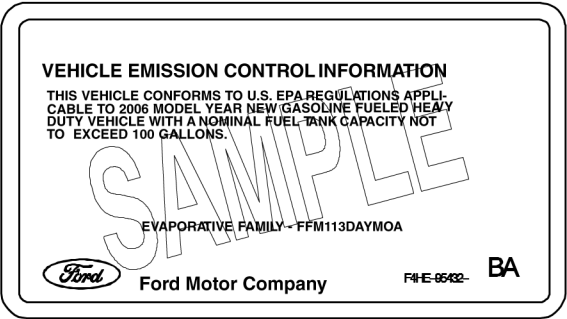
MALFUNCTION INDICATOR LIGHT (MIL)

The MIL light is used to indicate malfunctions of the Electronic Engine Control System and certain emissions related components. For all incomplete vehicles **except** Stripped Chassis (which is not equipped with an instrument panel), it is Ford Motor Company installed and operational.

The Stripped Chassis vehicle has the warning light installed in the instrument cluster, which is shipped in the dunnage box. If an alternate instrument cluster is utilized, the final stage manufacturer must install an operational light in the instrument cluster. This light must glow amber and display the message “Service Engine Soon” or “Check Engine”. It should be recognized that this light is a requirement of emission certification.



BB0434-2005



<i>Ford Motor Company</i>		VEHICLE EMISSION CONTROL INFORMATION	
This vehicle conforms to U.S. EPA regulations applicable to 2006 model year new IT2bin 10 light-duty trucks. OBD II certified.		VACUUM HOSE ROUTING 	
TWC/HO2S/EGR/SFI			
Attention: Dyno Restrictions may apply. Vehicle may have: AWD, ABS, Traction Control			
Adjustments: Spark Plug Gap: .052-.056 No other adjustments needed.			
▽4W7E-9C485- L C P		CATALYST	4.6L-Group: 4FMXT05.4RFC Evap: 4FMXR0240NBN

EMISSIONS COMPLIANCE GUIDELINES

NON-OEM FUEL TANK MODIFICATIONS

2006
MODEL YEAR

Page 16 SAFETY / EMISSION

These guidelines are applicable to those tanks designed to replace the Original Equipment Manufacturer (OEM) fuel tank for the purpose of increasing fuel capacity or to accommodate modifications to the vehicle. These tanks differ in design from the OEM tanks in terms of size, tank material, shape, location or purge strategy. Auxiliary fuel tanks are those tanks added on to the existing OEM tank(s) in order to increase the vehicle's fuel capacity.

WARNING:

Prohibitions Against Uncertified Vehicles, Devices and Tampering

Changes to the size, material, or shape of a fuel tank may cause the certified vehicle to exceed applicable evaporative emissions or not comply with OBD-II monitoring requirements. Such changes may constitute tampering. Changes made to accommodate the installation of non-OEM fuel tanks may also constitute tampering; these include changes in the Filler and Vent Tube Assembly and Hose, Fuel Vapor Purge Line, Vapor Control Orifice and/or Float Valve Assembly, Vapor Delivery Lines/Hoses/Clamps, etc.

Ford Motor Company vehicles are certified as compliant with California's OBD-II (On-Board Diagnostic II) requirements. These requirements (among other diagnostic tests) check the evaporative emission control and fuel tank system for leaks. A decrease or increase in tank size or change in material and shape, may degrade the function of the evaporative leak monitor. Further, decreases below the 25 gallon threshold would make the vehicle ineligible for an alternative to the 0.020" requirement. Degrading of the evaporative leak detection monitor may constitute tampering.

Violation of the applicable Federal, State or Canadian Provincial Laws prohibiting tampering may result in civil or criminal liability.

Exemptions from Tampering Prohibitions for Fuel Tank Modifications

Only those modifications to the evaporative emission control system (which includes the fuel tank) or OBD-II system that are specifically approved or certified by EPA and/or CARB may be exempted from these tampering prohibitions. In general, to obtain an exemption, the aftermarket manufacturer or converter must demonstrate that the replacement or auxiliary fuel tank does not reduce the effectiveness of the vehicle's OBD-II and evaporative emission control systems. This demonstration may require an evaluation using the Federal Test Procedure and enhanced evaporative system test procedures to ensure compatibility with OBD-II system requirements as well as compliance with the applicable evaporative emission standards.

Any conversion made to the vehicle must comply with the applicable Federal and California on-board diagnostic (OBD-II) system regulations. Any changes that potentially affect the OBD-II system must be reported to the Agencies (EPA and/or CARB) for their review and approval.

General Information Relating to EPA/CARB Approval of Aftermarket Conversions

Any conversion made to the vehicle must comply with the applicable Federal and California Emission regulations and laws including EPA's Tampering Prohibition (See EPA Mobile Source Enforcement Memorandum 1A and Addendum thereto as revised at 63 FR 32878) or obtain an "Exemption for Aftermarket from Tampering Prohibition" under Subpart F, 40CFR85. For California, please refer to CARB Mail Out #96-27, subject: "Sales and Installation of Replacement (and Auxiliary) Fuel Tanks", dated September 9, 1996. (See the Section of this Layout Book entitled "Vehicle Noise Regulations/Emissions Control Modifications" for a further explanation of the potential liabilities for the modifier.)

CARB Website

To apply for specific VC 27156 exemptions from the ARB for aftermarket conversions including non-OEM fuel tank replacement, contact Ms. Rose Castro, Manager, Aftermarket Parts Section, at 626-575-6848 or e-mail at rcastro@arb.ca.gov. CARB consumer information on aftermarket performance and add-on parts can be found at the following website: <http://www.arb.ca.gov/msprog/aftermkt/aftermkt.htm>

EPA Website

To apply for an exemption from the tampering provisions of the Clean Air Act, contact Mr. Steven Albrink (albrink.steve@epa.gov) on 202-564-8997. EPA information concerning the conditions that must be satisfied to obtain an EPA exemption for an aftermarket conversion from the tampering prohibition contained in Section 203 of the Clean Air Act can be found at the Code of Federal Regulations and using the search option: <http://www.gpoaccess.gov/cfr/index.html>.

Ford Motor Company Body Builders Advisory Service

Changes to the fuel system can affect the Powertrain Control Module (PCM). The PCM will respond to changes which can result in activation of the check engine light and may result in loss of engine performance. Contact Ford Truck Body Builders Advisory Service for additional information.

Ford Motor Company and SEMA Website

Ford Motor Company and the Specialty Equipment Market Association (SEMA) have established a Powertrain Technology Initiative (PTI) for OBD-II related products. PTI provides manufacturers of performance aftermarket equipment with the opportunity to obtain custom-developed software calibrations needed for the proper use and installation of aftermarket products which could affect emissions, OBD-II compliance, emission compliance and durability, fuel requirements, exhaust temperatures, etc. If these categories are significantly affected, a calibration modification may be appropriate. PTI has established a website by which an aftermarket converter can learn how to obtain the custom calibration for its conversion. The PTI website explains the purpose of the PTI program, how PTI works, basic criteria for approval, what are the steps and expected turnover time, and what are the costs. The PTI website is: <http://www.sema.org/>

General OBD-II Monitoring Requirements:

The EPA has regulations in place establishing requirements for on-board diagnostic (OBD-II) systems on light duty vehicles and light duty trucks beginning with the 1994 model year. The purpose of the OBD-II system is to assure proper emission control system operation for the vehicle's lifetime by monitoring emission-related components and systems for deterioration and malfunction.

NOTE: California has slightly different OBD-II requirements from EPA's OBD-II requirements; however, systems designed to meet California's requirements are also accepted by EPA as meeting the federal requirements.

What is OBD-II and How Does It Work?

Automobile manufacturers developed the first OBD-II systems in the early 1980's as electronic systems replaced mechanical systems. The engines in today's vehicle are largely electronically controlled. Sensors and actuators sense the operation of specific components (e.g., the oxygen sensor) and actuate others (e.g., the fuel injectors) to maintain optimal engine control. An on-board computer, known sometimes as a "powertrain control module" or an "engine control unit" controls all of these systems.

With proper software, the on-board computer is capable of monitoring all of the sensors and actuators to determine whether they are working as intended. It can detect a malfunction or deterioration of the various sensors and actuators, usually well before the driver becomes aware of the problem through a loss in vehicle performance or drivability. The sensors and actuators, along with the diagnostic software in the on-board computer, make up what is called "the OBD-II system".

OBD-II monitoring requirements include the following systems: catalyst, misfire, evaporative, secondary air, air conditioning system refrigerant, fuel, oxygen sensor, Exhaust Gas Recirculation (EGR), Positive Crankcase Ventilation (PCV), thermostat monitoring, and comprehensive component monitoring.

Sources of Information on OBD-II Regulations:

For a comprehensive description of the regulations governing OBD-II systems, visit the EPA and CARB websites shown below.

(EPA) <http://www.epa.gov/oms/obd.htm>

(CARB) <http://www.arb.ca.gov/msprog/obdprog/obdprog.htm>

U.S. AND CANADA SAFETY STANDARDS

2006
MODEL YEAR

The National Traffic and Motor Vehicle Safety Act of 1966 (United States) and the Motor Vehicle Safety Act (Canada) and the standards and regulations issued under authority of these laws impose responsibilities on dealers, intermediate and final stage manufacturers, and vehicle alterers and modifiers, as well as on Ford Motor Company. This section identifies some of these responsibilities. **It is not intended to be comprehensive, nor to provide advice on legal questions applicable to individual situations.** Advice on matters involving particular factual situations should be obtained from your legal counsel or from the National Highway Traffic Safety Administration (United States) or the Ministry of Transport (Canada).

Included among these safety standards and regulations re those applicable to trucks, buses, multipurpose passenger vehicles, passenger cars, vehicles manufactured in tow or more stages, and to certain types of motor vehicle equipment offered for sale in the United States or Canada.

Completed vehicles as manufactured by Ford Motor Company and Ford Motor Company of Canada, Limited, are certified as conforming to all applicable Motor Vehicle Safety Standards issued under the National Traffic and Motor Vehicle Safety Act of 1966 (U.S.) or the Motor Vehicle Safety Act (Canada).

Where the vehicle is incomplete, a dealer or body builder who, after delivery and before retail sale, completes the vehicle is responsible for certification that the completed vehicle conforms to applicable U.S. or Canada Motor Vehicle Safety Standards. Dealers and body builders may be subject to substantial penalties if they sell or offer for sale vehicles which do not conform to all applicable U.S. or Canada Standards.

Certification-related information concerning Ford Motor Company completed vehicles and incomplete vehicles follows:

COMPLETED VEHICLES

All completed vehicles manufactured by Ford Motor Company and Ford Motor Company of Canada, Limited, for use on the public roads are provided with safety compliance certification labels affixed to the vehicles at the assembly plants. These labels contain information required by Part 567 of Title 49 of the Code of Federal Regulations for completed vehicles offered for sale in the United States and by Section 6 of the Canadian Motor Vehicle Safety Regulations for completed vehicles offered for sale in Canada. This information includes, among other things, the Gross Axle Weight Rating (GAWR) for each axle of the vehicle and the Gross Vehicle Weight Rating (GVWR) of the total vehicle. The labels also list the tire and rim data required by FMVSS or CMVSS No.120, Tire Selection And Rims For Motor Vehicles Other Than Passenger Cars.

Completed vehicles, manufactured by Ford Motor Company, for sale in the United States, will have a label similar to the one shown on this page (the label is located on the driver's door latch pillar).

The Canadian Motor Vehicle Safety Act and Regulations require: (1) display of the National Safety mark (below); (2) the expression "Canada Motor Vehicle Safety Standards" or "CMVSS"; and (3) "Poids Nominal Brut du Vehicule" or "PNBV" on vehicles manufactured for sale in Canada. A label containing this information is shown on this page.

Completed vehicles manufactured by Ford Motor Company for sale in Canada, will have a label similar to the one shown on this page containing the Canadian National Safety Mark or a separate National Safety Mark label.

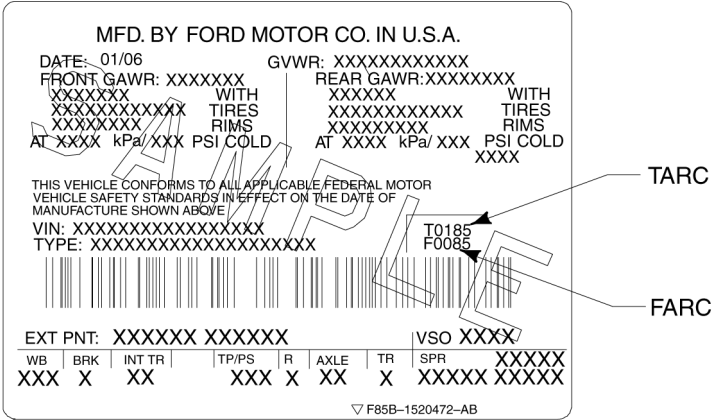
Alteration of completed vehicles before the first purchase of the vehicle for purposes other than resale may affect compliance of the vehicle to certain safety standards. Parts 567 and 568 of Title 49 of the Code of Federal Regulations state requirements for vehicle alterers in the United States. In Canada, Regulation 9 of the Canadian Motor Vehicle Safety Regulations determines the obligations of vehicle alterers under the Canadian Motor Vehicle Safety Regulations.

NOTE: For completed vehicles offered for sale in the province of Quebec, Canada, the label will be printed in French.

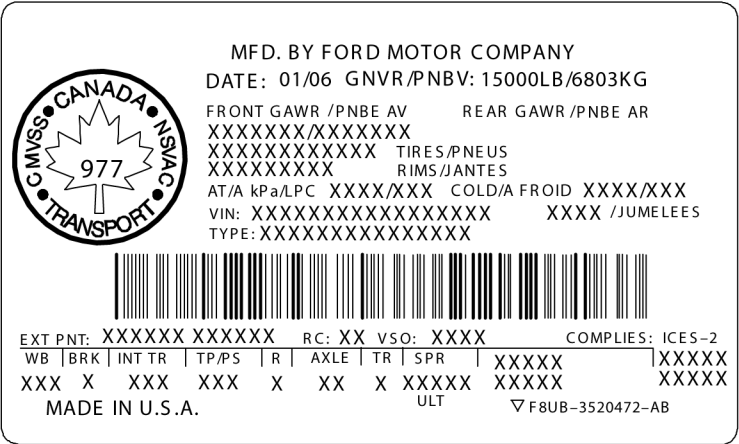
The following section headed "Information For Persons Who Alter Completed Vehicles" explains the "accessory reserve capacity" information printed on the safety compliance certification label and its relationship to FMVSS and CMVSS No. 105 or 135 (Hydraulic Brakes), FMVSS and CMVSS NO. 204 (Steering Column Rearward Displacement), FMVSS and CMVSS 208 (Occupant Crash Protection), FMVSS and CMVSS NO. 212 (Windshield Mounting), FMVSS and CMVSS NO. 219 (Windshield Zone Intrusion), FMVSS and CMVSS NO. 301 (Fuel System Integrity), FMVSS No. 303 (Fuel System Integrity of Compressed Natural Gas Vehicles), CMVSS 301.1 (LPG Fuel System Integrity), and CMVSS NO. 301.2 (CNG Fuel System Integrity) compliance testing for Ford Motor Company completed vehicles.

VEHICLES 4536 kg (10,000 lb) GVWR AND LESS

Trucks, buses and MPVs having GVWRs of 4536 kg (10,000 lb) and less manufactured by Ford Motor Company in the current model year are certified as complying with the requirements of all applicable Federal U.S. and Canadian Motor Vehicle Safety Standards including FMVSS and CMVSS NO. 105 or 135, Hydraulic Brakes; FMVSS and CMVSS No. 204, Steering Column Rearward Displacement (if the vehicles have unloaded vehicle weights of 2495 kg (5500 lb) or less); FMVSS No. 208, Occupant Crash Protection (injury criteria if vehicles GVWR is 3856 kg (8500 lb) or less having an unloaded vehicle weight of 2495 kg (5500 lb) or less); FMVSS and CMVSS No. 212, Windshield Mounting; FMVSS and CMVSS No. 219, Windshield Zone Intrusion; and FMVSS and CMVSS NO. 301, Fuel System Integrity. Ford Motor Company conducts compliance testing and makes compliance representations based on vehicle test weights that include the weights of all available regular production options plus the loads specified by FMVSS and CMVSS Nos. 105, 135, 204, 208, 212, 219, and 301. With the exception of FMVSS and CMVSS No. 105 or 135, the test weight for a particular vehicle is usually less than the GVWR indicated on the vehicle safety compliance certification label.



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U.S. AND CANADA SAFETY STANDARDS

2006
MODEL YEAR

IMPORTANT INFORMATION!
For Persons who Alter Completed Vehicles

The following applies to the alteration of vehicles completed by Ford Motor Company.

The degree of conformity to safety standards of incomplete vehicle chassis produced by Ford Motor Company is represented by the *Incomplete Vehicle Manual* or IVM. An IVM is normally included in dunnage accompanying each Incomplete Vehicle.

Vehicle alterers should exercise caution when adding weight to the vehicle by installing accessories or modifying the vehicle because if the unloaded vehicle weight of the altered vehicle exceeds the unloaded vehicle weight for which Ford Motor Company has established compliance, then the vehicle alterer will be responsible to certify the altered vehicle pursuant to Title 49 of the Code of Federal Regulations Sections 567.7 and 568.8 in the United States or to Section 9 of the Canadian Motor Vehicle Safety Regulations in Canada.

Payload worksheets are provided in the *Ford Truck Source Book* at your Ford Dealer to help prospective purchasers of Ford Motor Company truck products estimate the total weight of accessories, equipment, and modifications that may be added to the completed vehicle without exceeding the allowable weight ratings for the vehicle in question. Specific questions on this or related subjects may be directed to the Ford Truck Body Builder Advisory Service.

For each completed vehicle, Ford Motor Company determines the **TOTAL ACCESSORY RESERVE CAPACITY (TARC)**, which represents the amount of accessory or modification weight in pounds that can be added to a certified vehicle before its unloaded vehicle weight exceeds the unloaded vehicle weight for which Ford Motor Company has established compliance. Total Accessory Reserve Capacity designations assume the use of permanently attached components resulting in center of gravity locations generally similar to those of comparable completed vehicles. Any additions or alterations that significantly affect the center of gravity of the total unit could impose more severe conditions than those for which Ford Motor Company has established compliance to FMVSS and CMVSS requirements. Examples of such extremes would be the installation of relatively heavy devices at the front or rear of the vehicle, particularly if these devices also had very high centers of gravity.

Vehicles having a GVWR greater than 10,000 lb manufactured by Ford Motor Company display a total ARC weight that represents the maximum weight that can be permanently installed without compromising the durability and allow a reasonable minimum cargo for the customer.

Total Accessory Reserve Capacity is provided on the Safety Compliance Certification Label (located on the driver's door latch pillar of Ford Motor Company completed vehicles, as shown in the following example.

Total Accessory Reserve Capacity specifies the total weight of permanently attached accessories or equipment that can be added to the vehicle. T0185 in the illustrated example indicates that 185 lbs of accessories or equipment can be added to the vehicle.

Also specified is the **FRONT AXLE ACCESSORY RESERVE CAPACITY (FARC)** (F0085 in the illustrated example). Although not directly applicable to FMVSS/CMVSS Nos. 204, 208, 212, and 219 conformity representations, this magnitude represents the allowable weight that may be added in various forms (permanently attached equipment and accessories, removable equipment and accessories or any combination thereof) without overloading the front axle. Except for vehicles with the Snowplow Prep Package, this value will usually be less than the Total Accessory Reserve Capacity. Thus in the example, a total of 185 lbs of permanently installed equipment may be added to the vehicle but its distribution must be such that the load on the front axle is not increased by more than 85 lbs. However, although the Front Axle Accessory Reserve Capacity value may be greater than the Total Accessory Reserve Capacity value in some cases, the latter must never be exceeded. For vehicles with the Snowplow Prep Package, the Front Axle Accessory Reserve Capacity may be greater than the Total Accessory Reserve Capacity. This additional front axle capacity can be utilized to accommodate the removable snow plow components, such as the blade assembly.

Should the Front Axle Accessory Reserve Capacity on a Snowplow Package optioned vehicle be less than that which is required to accommodate the snow plow assembly, it should be understood that allowances for carrying persons in at least two designated seating positions (those provided with seat belts) have already been made. Therefore, it may be possible to operate the vehicle with minimum cargo and only one or two persons on board.

To prevent overloading under these circumstances, it is recommended that the vehicle alterer weigh the front axle under the conditions in which the vehicle is to be operated to ensure that the Front Gross Axle Weight Rating is not exceeded. See the Loading Information section of the *Owner's Guide*.

If the weight and weight distribution (front to rear) of the accessories or equipment to be added are not known, it will be necessary to weigh the vehicle before and after accessories or equipment are added to verify that neither the Front Axle Accessory Reserve Capacity nor the Total Accessory Reserve Capacity has been exceeded. When weighing the vehicle, remember to have all fluids necessary for vehicle operation (including fuel) filled to maximum capacity and weigh vehicle by axle so that front axle weight and total vehicle weight can be determined. Subtract the front axle weight of the vehicle before modification from the front axle weight of the vehicle after accessories or equipment have been added; this value must be equal to or less than the Front Axle Accessory Reserve Capacity (for the above example — 85 lb). Subtract the total vehicle weight before modification from the total vehicle weight after accessories or equipment have been added; this value must be equal to or less than the Total Vehicle Accessory Reserve Capacity (for the above example — 185 lb). Use the actual Accessory Reserve Capacity information as it appears on the safety compliance certification label of your vehicle.

If you know the weight and weight distribution of the accessories or equipment (including all fluids, if applicable) to be added, compare these weights with the Accessory Reserve Capacity to ensure that the added accessories or equipment do not exceed the Accessory Reserve Capacity.

Compliance to FMVSS and CMVSS 105 or 135 depends upon, among other things, the location of the center of gravity of the completed vehicle. Therefore, any modification or alteration to a completed vehicle must take into account its effect upon FMVSS and CMVSS 105 or 135 conformance. A set of guidelines are contained at the end of the completed vehicle portion of this section. A section specifically addressing the modification of pickup trucks in ways that include replacing pickup boxes with other equipment is contained in the Appendix section of this book.

Completed vehicles as produced by Ford Motor Company meet the Center High Mounted Stop Lamp (CHMSL) requirements of FMVSS 108, Lamps, Reflector Devices, and Associated Equipment; and the mirror requirements of FMVSS and CMVSS 111, Rearview Mirrors. Removing a pickup box and installing a second unit body could affect compliance of the vehicle to these requirements even though the CHMSL and mirror systems have not been altered. See the detailed discussion on page 174 to determine what must be done to maintain compliance with the CHMSL and mirror requirements of FMVSS 108 and F/CMVSS 111.

MFD. BY FORD MOTOR CO. IN U.S.A.

DATE: 01/06 GVWR: XXXXXXXXXXXX

FRONT GAWR: XXXXXXXX REAR GAWR: XXXXXXXX

WITH Tires RIMS AT XXXX kPa/XXX PSI COLD

THIS VEHICLE CONFORMS TO ALL APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS IN EFFECT ON THE DATE OF MANUFACTURE SHOWN ABOVE

VIN: XXXXXXXXXXXXXXXXXXXX

TYPE: XXXXXXXXXXXXXXXXXXXX

T0185 F0085

TARC

FARC

EXT PNT: XXXXXX XXXXXX VSO XXXX

WB	BRK	INT TR	TP/PS	R	AXLE	TR	SPR	XXXXX
XXX	X	XX	XXX	X	XX	X	XXXXX	XXXXX

▽ F85B-1520472-AB

U.S. AND CANADA SAFETY STANDARDS

2006

MODEL YEAR

Page 19

SAFETY / EMISSION

For Incomplete Vehicles, please refer to the Incomplete Vehicle Manual.

WARNING: The accessory reserve capacity weight limitation found on the safety compliance certification label refers to FMVSS and CMVSS Nos. 204, 208, 212, and 219 compliance only. If the **added weight is 227 kg/ 500 lb or more and the vehicle's GVWR rating is 3856 kg/8500 lb or less, the modifier may be responsible for recertification** to the applicable EPA, CARB, or CMVSS emissions standards (refer to MSAPC [EPA] Advisory Circular No. 64).

GUIDELINES FOR REVISING GAWR CAPACITIES FOR FORD MOTOR COMPANY LIGHT TRUCK VEHICLES

NOTE: GVWR increases may not be made on Ford Motor Company Light Truck vehicles.

These guidelines are provided in response to requests for information on revising the Gross Axle Weight Rating (GAWR) capacities of Ford Motor Company Light Truck vehicles. Dealers or purchasers should first try to obtain a vehicle with the desired GAWR capacities before modifying a vehicle to revise its weight ratings. If circumstances require a vehicle to be altered and the GAWR ratings to be revised, the following guidelines must be followed:

1. This information is provided for new, current model vehicles, to assist vehicle alterers who modify vehicles as described below in determining whether the modified vehicle complies with applicable regulatory requirements.
2. Revised GAWR capacities must be within the currently available capacities in Ford Motor Company production for the particular model to maintain the vehicle's warranty. The **GVWR may be revised downward but must remain in the same GVWR range as coded in the fourth position of the vehicle identification number (VIN) in accordance with the requirements of 49 CFR Part 565 and CMVSS 115.** The VIN is displayed on the driver's side of the instrument panel and is visible from outside the vehicle. For GVWR codes utilized in the fourth position of the VIN, see the list in the chart on this page.

EXAMPLE:

A typical F-Series VIN is **1FTSF31S86EA01784**. The fourth position in the VIN is S. Therefore, the GVWR of the vehicles is in the range 9001 to 10,000 lb and the lowered GVWR of this vehicle must fall in this GVWR range as well.

3. The appropriate chassis component or components (axles, brakes, tires/tire pressure, wheels, springs) are to be modified or changed to provide the revised GAWR capacity desired. All new suspension components installed are to have the same engineering specifications as those used by Ford Motor Company in production (Ford Motor Company service parts meet those specifications) at the GAWR capacities desired and must be installed according to the procedures specified in the applicable model year *Ford Truck Service Manual* to maintain the vehicle's warranty. Refer to the *Ford Source Book* for component specifications information. The person who alters the vehicle should maintain records of the modifications made to obtain the desired revised GAWR capacities in order to document the basis for certification to applicable Federal Motor Vehicle Safety Standards. Besides the suspension components noted above, the specifications for other components that have been altered must also be carefully reviewed to establish that these systems are equivalent to those provided by Ford Motor Company in a production vehicle at the GAWR capacities desired. These systems include brakes, steering, frame, powertrain (engine availability, driveline, transmission, rear axle ratio), and axle capacities (both front and rear) and are also specified in the *Ford Source Book*. For other information concerning the component changes necessary for the desired GAWR capacities, please contact the Ford Truck Body Builders Advisory Service.

GVWR CODES UTILIZED IN VIN POSITION FOUR					
Brake System	GVWR	GVWR Range	Trucks w/o Air Bags	Lt. Trucks & MPV's w/ DRV & Pass Air Bags	Lt. Trucks & MPV's w/ DRV & Pass Air Bags & Side Air Bags, Curtains, or Canopies
Hydraulic	Class A:	Not greater than 3000 pounds		T	
Hydraulic	Class B:	3001 - 4000 lb		U	B
Hydraulic	Class C:	4001 - 5000 lb		Y	C
Hydraulic	Class D:	5001 - 6000 lb		Z	D
Hydraulic	Class E:	6001 - 7000 lb		R	E
Hydraulic	Class F:	7001 - 8000 lb		P	F
Hydraulic	Class G:	8001 - 8500 lb		V	
Hydraulic	Class G:	8501 - 9000 lb	H	N	
Hydraulic	Class H:	9001 - 10,000 lb	J	S	
Hydraulic	Class 3:	10,001 - 14,000 lb	K	W	
Hydraulic	Class 4:	14,001 - 16,000 lb	L	X	
Hydraulic	Class 5:	16,001 - 19,500 lb	M	A	
Hydraulic	Class 6:	19,501 - 26,000 lb	N		
Hydraulic	Class 7:	26,001 - 33,000 lb	P		
Air	Class 3:	10,001 - 14,000 lb	T		
Air	Class 4:	14,001 - 16,000 lb	U		
Air	Class 5:	16,001 - 19,500 lb	V		
Air	Class 6:	19,501 - 26,000 lb	W		
Air	Class 7:	26,001 - 33,000 lb	X		

4. Certification Labels for Altered Vehicles
United States

A person or company who alters a previously certified vehicle before the first purchase by the final customer in such a manner that its stated weight ratings are revised, is required by Federal Regulation (49 CFR Part 567.7) to affix an altered vehicle certification label in addition to the Ford Motor Company completed vehicle certification label.

The label must be affixed to the vehicle in the manner and form described in 49 CFR Part 567.4:

- The label shall, unless riveted, be permanently affixed in such a manner that it cannot be removed without destroying or defacing it.
- The label shall be affixed to either the hinge pillar, door-latch post, or the door edge that meets the door-latch post next to the driver's seating position, or if none of these locations is practicable, to the left side of the instrument panel (other permissible locations are also specified in 49 CFR Part 567.4).
- The lettering on the label shall be of a color that contrasts with the background of the label.
- The label shall contain the required statements in the English language and lettered in block capitals and numerals not less than three thirty-seconds of an inch high.
- The lettering shall be permanent. If typed or written, a protective clear cover may be necessary to prevent information from being wiped off.
- Label must not cover or obscure the chassis manufacturers label.

Canada

"Alterers" of motor vehicles are required to affix a permanent label on vehicles that they manufacture bearing a statement of compliance as provided by Section 9 of the Canadian Motor Vehicle Safety Regulations. The vehicle alterer should affix a corporate label containing information shown on this page.

1. Insert the name of the company that altered the vehicle.
2. Insert the month and year during which the alteration of the vehicle was completed.
3. Insert a drawing of the National Safety Mark which includes their unique manufacturer number.

4. Insert revised GVWR or PNBV capacities in kilograms of the vehicle as altered, where they differ from those shown on the original compliance label.
5. Insert the GAWR/PNBEs of the vehicle as altered, where they differ from those shown on the original compliance label. Also, include the tire size, rim size and tire inflation pressure.
6. Insert the vehicle type stated on the safety standard certification label provided by Ford Motor Company. The type of vehicle, in both official languages, or the word "TYPE" along with one of the following abbreviations, namely,
 - (i) "AT/PA" to refer to an auto transporter,
 - (ii) "ATV/VTT" to refer to an all-terrain vehicle,
 - (iii) "B/A" to refer to a bus,
 - (iv) "BT/RA" to refer to a bus trailer,
 - (v) "CD/CCC" to refer to a C-dolly,
 - (vi) "CMC/MCC" to refer to a competition motorcycle,
 - (ix) "LDD/CRC" to refer to a load divider dolly,
 - (x) "MH/AC" to refer to a motor home,
 - (xi) "MC" to refer to a motorcycle,
 - (xii) "MPV/VTUM" to refer to a multipurpose passenger vehicle,
 - (xiv) "RUM/MUR" to refer to a restricted-use motorcycle,
 - (xv) "SB/AS" to refer to a school bus,
 - (xvi) "TRA/REM" to refer to a trailer,
 - (xvii) "TCD/CDC" to refer to a trailer converter dolly,
 - (xviii) "TRU/CAM" to refer to a truck, and
 - (xix) "TT/CT" to refer to a truck tractor.

The label must meet the following requirements as described in Section 9:

- Shall be permanently attached.
- Shall be affixed adjacent to the original compliance label required by Section 6.
- The lettering of the label shall be clear, indelible, indented, or embossed, or of a color that contrasts with the background color of the label, and in block capitals and numerals not less than 2 mm high.
- The label shall be permanently affixed to the same surface as that to which the National Safety Mark is affixed.

THIS VEHICLE WAS ALTERED BY _____ (1)
IN _____ (2) AND AS ALTERED, IT CONFORMS TO ALL
APPLICABLE FEDERAL MOTOR VEHICLE SAFETY STANDARDS
IN EFFECT IN _____ (3)
TYPE _____ (4)
GVWR: _____ (5) LB
FRONT GAWR: _____ (5) LB WITH _____ (6)
TIRES, _____ (6) RIMS AT _____ (6) PSI COLD _____ (6)
REAR GAWR: _____ (5) LB WITH _____ (6)
TIRES, _____ (6) RIMS AT _____ (6) PSI COLD _____ (6)

- (1) Insert individual or corporate name of vehicle alterer.
- (2) Insert month and year in which alterations were completed.
- (3) Insert appropriate month and year — no earlier than the manufacturing date of the original vehicle and no later than the date alterations were completed.
- (4) Insert "Type" of altered vehicle, i.e., Truck, Bus, MPV, etc.
- (5) Insert revised GAWR capacities in lb.
- (6) Insert appropriate tire, rim and cold inflation pressure information corresponding to the revised GAWR capacities (insert the word "DUAL" after the rear wheel cold inflation pressure information on dual rear wheel vehicles).

Typical Certification Label for altered vehicle
for sale in the United States

THIS VEHICLE WAS ALTERED BY/CE VÉHICULE A ÉTÉ MODIFIÉ PAR
_____ (1)

DATE: _____ (2) _____ (3)

GVWR: _____ (4) KG
FRONT GAWR: _____ (5) KG WITH _____ (5)
TIRES, _____ (5) RIMS AT _____ (5) kPa COLD
REAR GAWR: _____ (5) KG WITH _____ (5)
TIRES, _____ (5) RIMS AT _____ (5) kPa COLD
TYPE: _____ (6)

Typical Corporate Label information for altered vehicles for sale
in Canada (Reference Section 9 of the Canadian Motor Vehicle
Safety Regulations)

U.S. AND CANADA SAFETY STANDARDS

2006
MODEL YEAR

Page 21 SAFETY / EMISSION

FMVSS AND CMVSS 105 and 135 HYDRAULIC BRAKE COMPLIANCE GUIDELINES FOR ALTERED RANGER VEHICLES AND E-SERIES VEHICLES (EXCEPT WHEN COMPLETED AS A SCHOOL BUS)

105 and 135 INFORMATION

Vehicle weight and dimensional information required for center of gravity calculations are available in the *Ford Source Book*. See your local Ford Dealer and refer to appropriate model year and specific vehicle for required information.

Abbreviated definitions and a vehicle diagram to assist with the equations for the FMVSS 105 and 135 segment are shown on page 22 for E-Series and Ranger and page 27 for Super Duty F-Series.

FOR ALL RANGER AND E-SERIES VEHICLES

The vehicle, as altered will conform to FMVSS and CMVSS No. 105 or 135, Hydraulic Brake System. if:

- No alterations, modifications or replacements are made to the service or parking brake system, anti-lock brake system, vacuum system, wheels or tires, brake system, indicator lamp and wiring, brake system reservoir labeling, suspension ride height or spring rate, hydro-boost system, power steering pump and lines if used with hydro-boost, and engine belt drive system.
- Any removal of a Ford Motor Company body or chassis component is accompanied by the addition of equal weight.
- The vertical distance from the ground to the completed vehicle center of gravity should not exceed 36 inches for vehicles < 8000 lb GVWR and 48 inches for vehicles ≥ 8000 lb GVWR. (Restrictions for other standards may also apply).
- For Ranger Pickup Box Removal, the SUB weights found in Table A page 178 are met, as is the maximum Unloaded Vehicle Weight.
- The applicable GAWR's, GVWR, and accessory reserve capacity (ARC) weights (see preceding pages) are not exceeded.
- The applicable center of gravity limitations are met using one of the following calculation methods on this page.

FOR VEHICLES UNDER 3629 KG [8000 LB] GVWR

- The rear weight component (W_{rul}), as measured between the rear tires and the ground, does not exceed 58% of the completed vehicle weight at Unloaded Vehicle Weight plus 397 lb or 400 lb located in the driver and front passenger area (W_{ul}).
Maximum $W_{rul} = .58 \times W_{ul}$ (see definitions on the next page).
- The horizontal center of gravity of the †SUB is rearward of †† L_{min} for the appropriate vehicle description in Table A on this page.
 L_{min} does not apply to a SUB of 120 lb or less when installed rearward of the front seats and forward of the centerline of the rear axle. (Do not restrict seat travel. See IVM for SgRP location and torso angle).

The horizontal center of gravity for the SUB is:

- At or forward of the rear axle centerline. The vertical center of gravity for the completed vehicle at Unloaded Vehicle Weight + 397 lb or 400 lb passenger load CG_v (Equation A) must not exceed 36.0 inches, when measured from the ground.
- Behind the rear axle centerline. The vertical center of gravity of the completed vehicle at Unloaded Vehicle Weight + 400 lb passenger load must fall within the appropriate range determined from Table 5, page 25. The value of CG_h (Equation B), which approximates the horizontal center of gravity of the completed vehicle, is used in Table 5 page 25 to determine the vertical center of gravity limits for the completed vehicle. The value CG_v (Equation A), which approximates the vertical center of gravity of the completed vehicle, must fall within the appropriate range determined from Table 5 page 25.

EQUATION A

$$CG_v = \frac{CG_{vb}W_b + CG_{vc}W_c + 25P}{W_t}$$

EQUATION B

$$CG_h = \frac{(W_{rb} + W_{rc} + (\frac{P \times CG_{hp}}{WB})) \times WB}{W_t}$$

FOR VEHICLES 3629 KG [8000 LB] THROUGH 8618 KG [19,000 LB] GVWR

The horizontal center of gravity for the SUB is:

- E-Series Van with a GVWR of 4536 kg [10,000 lb] or less does not exceed the maximum Unloaded Vehicle Weight value in Table 1 on page 24.
- At or forward of the rear axle centerline. The vertical center of gravity for the completed vehicle at GVWR (CG_v — Equation C) must not exceed 48 inches, when measured from the ground.
- Behind the rear axle centerline. The vertical center of gravity for the completed vehicle at GVWR must fall within the appropriate range determined from Table 5 page 25. The value of CG_h (Equation D), which approximates the horizontal center of gravity of the completed vehicle, is used in Table 5 page 25 to determine the vertical center of gravity limits for the completed vehicle.

EQUATION C

$$CG_v = \frac{CG_{vb}W_b + CG_{vc}(W_c + W_l) + 25P}{GVWR}$$

EQUATION D

$$CG_h = \frac{(W_{rb} + W_{rc} + (\frac{P \times CG_{hp}}{WB}) + W_{rl}) \times WB}{GVWR}$$

TABLE A
HORIZONTAL CENTER OF GRAVITY
FORWARD LIMIT

Vehicle	Wheelbase Millimeter [inch]	L_{min} Millimeter [inch]
E-150	3505 [138]	1473 [58]
E-250	3505 [138]	1524 [60]

TABLE B
PASSENGER LOAD

GVWR [lb]	P [lb]
0 – 7716	397
7717 – 10,000	400
10,001 – 19,000	500

†SUB = Second Unit Body
(See definition next page.)

†† L_{min} = The minimum horizontal center of gravity of the SUB measured in inches rearward from the centerline of the front axle.

U.S. AND CANADA SAFETY STANDARDS

2006
MODEL YEAR

Page 22 SAFETY / EMISSION

FMVSS AND CMVSS 105 and 135 HYDRAULIC BRAKE COMPLIANCE GUIDELINES FOR ALTERED FORD MOTOR COMPANY LIGHT TRUCKS. FOR INCOMPLETE VEHICLES - REFER TO THE /VM.

- L^* = Horizontal distance in inches between the SUB center of gravity and the \mathcal{Q} of the front axle.
- P = Passenger load [See Table B page 21.]
- CG_v = Vertical distance from the ground to the center of gravity [inches] of the completed vehicle.
- CG_h = Horizontal distance from of the front wheels to completed vehicle center of gravity [inches].
- CG_{vb} = Vertical distance from the ground to the center of gravity of the SUB and/or permanently attached equipment [inches].

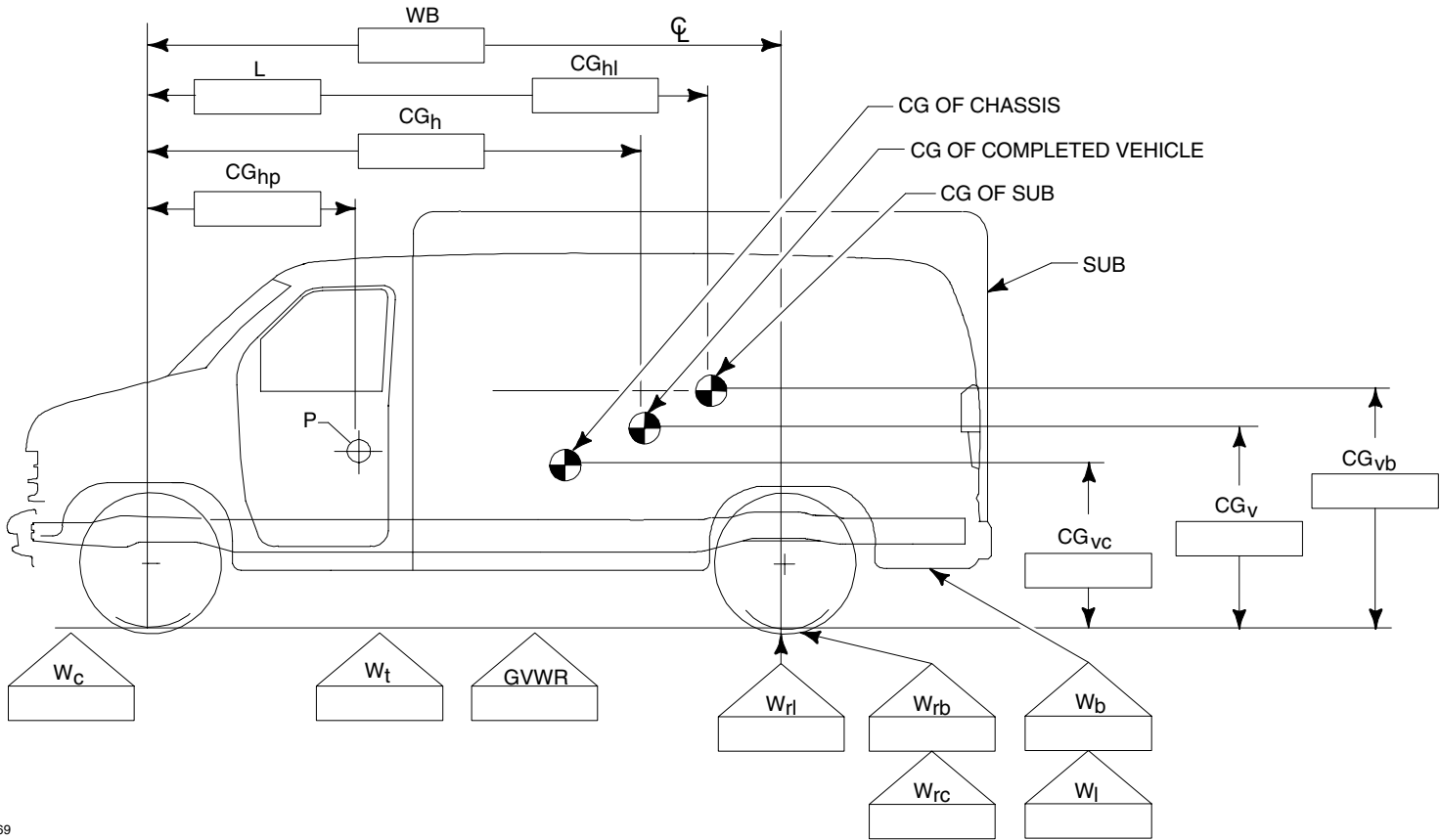
- CG_{vc} = Vertical distance from the ground to the center of gravity of the chassis [inches] (including cab if original equipment). (Taken from Table 4, page 25.)
- CG_{hp} = Horizontal distance from the ground to the center of gravity of the of the front wheels to the P [inches] (passenger load). (Taken from Table 3, page 24.)
- W_b = Weight of the SUB and/or permanently attached added equipment [pounds].
- W_{rb} = Weight on the rear wheels of the SUB and/or permanently attached added equipment [pounds].
- W_{rc} = Weight at the rear wheels of the vehicle (chassis and cab) (fuel tanks full) [pounds], including option weight.

- W_c = Weight of the vehicle (chassis and cab) (fuel tanks full) [pounds], including option weight.
- WB = Vehicle wheelbase [inches].
- W_t = Total unladen weight = $(W_b + W_c + P)$
- $GVWR$ = Gross Vehicle Weight Rating of the vehicle [pounds].
- W_{l}^{**} = Remaining cargo capacity [pounds].
- Where: $W_l = GVWR - (W_b + W_c + P)$
- W_{rl}^{**} = Weight of the remaining cargo capacity on the rear wheels [pounds].

- CG_{hl}^{**} = Horizontal distance from the \mathcal{Q} of the front wheels to the cargo center of gravity [inches], (taken from Table 3, Page 24). For many common vehicles, if the CG_{hl} is not given in the table, then it may be estimated as the distance from the of the front wheel to the horizontal midpoint of the cargo area.
- SUB = A Second Unit Body consists of the body structure and/or all the cargo carrying, work performing and/or load bearing components and/pr equipment installed by a subsequent stage manufacturer on an incomplete vehicle, such that the incomplete vehicle becomes a completed vehicle.

- * Required for < 8000 lb GVWR calculations only.
- ** Required for ≥ 8000 lb GVWR calculations only.

$$W_{rl} = \frac{(CG_{hl}) W_l}{WB}$$



In the case where the rear weight of the SUB and/or added equipment must be reduced and the CG_v is found to be below the allowed minimum CG_v , it may be possible to bring the vehicles into compliance by moving the CG_h forward. Forward movement of the CG_h can be accomplished by:

- Redistributing the weight of the SUB and/or added equipment.
- Adding **permanently** attached ballast forward of the CG_H. In order to reduce the rear weight, the ballast must be forward of the front axle. (Caution must be taken not to exceed the GVWR or front GAWR of the vehicle.)

The following general equations can be used to find the center of gravity of the SUB and added equipment when there are several elements making up the CG.

NOTE: Removal of the components or body parts would be represented by a negative weight being used in these calculations.

$$CG_{vb} = \frac{CG_{vb1}(W_{b1}) + CG_{vb2}(W_{b2}) + \dots + CG_{vbn}(W_{bn})}{W_{b1} + W_{b2} + \dots W_{bn}}$$

and the horizontal CG location of the combined SUB and added equipment is:

$$CG_{hb} = \frac{(W_{rb1} + W_{rb2} + \dots + W_{rnb})WB}{W_{b1} + W_2 + \dots + W_{bn}}$$

The front/rear weight break down can be found with the use of the following equation:

$$W_{rb} = \frac{CG_{hb} (W_{b1} + W_{b2} + \dots + W_{bn})}{WB}$$

Conversely, the front weight component of the SUB and added equipment is:

$$W_{fb} = (W_{b1} + W_{b2} + \dots + W_{bn}) - W_{rb}$$

Vehicles <8000 lb GVWR
Sample (1)
Ranger (4x2) pickup box removal vehicle 118 inch
WB 4800 lb GVWR

Known:
 $W_b = 250 \text{ lb}$ $W_{rb} = 260 \text{ lb}$ (behind rear axle)
 $W_c = 2912 \text{ lb}$; $W_{rc} = 1080 \text{ lb}$
 $CG_{vb} = 28$ $CG_{vc} = 25.5$ $CG_{hp} = 53.9$
 This vehicle falls in the under 7717 lb GVWR category
 and the SUB CG is behind the rear axle.

From equation A & B.

$$CG_v = \frac{(28)(250) + (25.5)(2912) + (25)(397)}{3562} = 25.4 \text{ inches}$$
$$CG_h = \frac{260 + 1080 + \frac{397 \times 53.9}{113.9}}{3562} \times 113.9 = 48.9 \text{ inches}$$

From Table 5, page 25:
Upper Limit $CG_v = 1.39 \times 48.4 - 36.8 = 31.2$ inches
Lower Limit $CG_v = 1.39 \times 48.4 - 51.7 = 16.3$ inches
The 25.4 inches calculated is within the range given so this vehicle is acceptable from a compliance to FMVSS and CMVSS 135 standpoint.

Altering a completed E-150 vehicle with the addition of a permanently attached tool box and partition can be handled as follows:

The vertical distance above the floor is

$$V = \frac{Wt1(CG_{1V}) + Wt2(CG_{2V})}{Wt1 + Wt2}$$
$$V = \frac{125(24) + 100(25)}{125 + 100}$$
$$= 24.4 \text{ inches}$$

The longitudinal distance aft of the front axle is

$$L = \frac{Wt1(CG_{1h}) + Wt2(CG_{2h})}{Wt1 + Wt2}$$
$$= \frac{125(133) + 100(63)}{125 + 100}$$
$$= 101.9 \text{ inches}$$

Using the value for Min L from Table A on page 21:
 $\text{Min L} = .23 (138) + 21.4 + .72 (24.4)$
 $\text{Min L} = 70.7 \text{ inches}$

Since 101.9 is greater than 58, this meets the L_{MIN} criteria.

If the vehicle curb weight + 397 lb for passengers (before alteration) is: front = 2825 lb; rear = 1888 lb; and, total = 4713 lb, adding the alteration weight of 225 lb which is distributed as follows:

$$\text{Rear Axle Reaction} = \frac{225 + 101.9}{138} = 166lb$$

Rear Axle Reaction = 166 lb
Conversely the Front Axle Reaction = 225 lb - 166 lb
= 59 lb

$$W_{ru} = 1888 \text{ lb} + 166 \text{ lb} = 2054 \text{ lb}$$

$$W_{ul} = 4713 \text{ lb} + 225 \text{ lb} = 4938 \text{ lb}$$

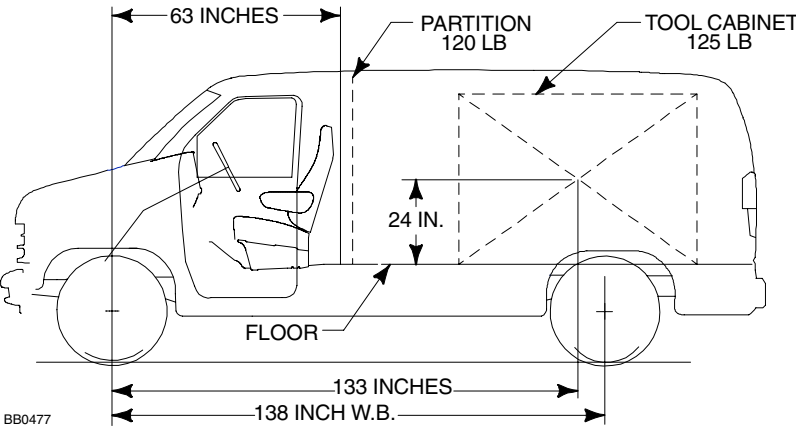
Max $W_{rul} = (.58) (4938) = 2864$ lb using the equation
from page 21

So a W_{rul} of 2054 lb is less than the max.

W_{rul}, therefore, meets the criteria specified for compliance with FMVSS and CMVSS 135.

If the add-on weight of the SUB is forward of the centerline of the rear axle while conforming to GAWR, GVWR, ARC, and for pickup box removal vehicles min/max SUB weight restrictions (Table A page 178) are conformed to, then there are no FMVSS and CMVSS 135 issues.

**E-150 ALTERED COMPLETED VEHICLE
ADD TOOL CABINET AND A PARTITION**



U.S. AND CANADA SAFETY STANDARDS

2006
MODEL YEAR

TABLE 1 Maximum Unloaded Vehicle Weight (UVW) for Incomplete Vehicles When Completed ⁽²⁾ (This information Does Not Apply To Vehicles Over 4536 kg p10,000 lb] GVWR)		
Model	Wheelbase Millimeter [inch]	Maximum Unloaded Vehicle Weights - Kilogram [pound]
E-150 Regular Van	3505 [138]	2699 [5950] ⁽¹⁾
E-150 Regular Wagon	3505 [138]	2699 [5950] ⁽¹⁾
E-250 Regular and Extended Van	3505 [138]	3130 [6900]
E-250 Regular and Extended Van	3505 [138]	3583 [7900]
E-350 Regular and Extended Wagon	3505 [138]	3583 [7900]
E-350 Cutaway	3505 [138]	3586 [8500]
E-350 Basic (Striped) Chassis SRW	3505 [138]	3946 [8700]
E-350 Basic (Striped) Chassis DRW	3505 [138]	3946 [8700]
E-350 Basic (Striped) Chassis SRW	4013 [176]	3946 [8700]
E-350 Basic (Striped) Chassis DRW	4013 [176]	3946 [8700]
E-350 Basic (Striped) Chassis DRW	4470 [176]	3946 [8700]
<i>(1) 2767 kg [6100 lb] When completed with 6 or less designated seating positions.</i>		
<i>(2) Maximum unloaded vehicle weight values shown in this table are limits for purposes of F/CMVSS conformity only. See Emission Certification inofrmation on page 48 for possible additional weight restrictions to meet emission requirements.</i>		

TABLE 2 CG _{hl} = Horizontal distance from front axle cargo CG:		
Model	WB [in]	CG _{hl} [in] †
Super Duty F-Series:		
Regular Cab	137.0	132
SuperCab	141.8	144
SuperCab	158.0	153
Crew Cab	156.2	158
Crew Cab	172.4	165
E-Series:		
Regular Van	138	116
†Extended Van or Extended Wagon	138	126
† If CG _{hl} is not given in the table or if the location of your cargo is not in the normal cargo area, then your CG _{hl} may be estimated as the distance from the \mathcal{C} of the front wheel to the horizontal midpoint of the cargo area.		

TABLE 3 CG _{hp} = Horizontal distance from front wheel \mathcal{C} to Passenger Load. [Dimensions are in inches.]	
All Rangers	53.9
All Super Duty F-Series	61.2
All E-Series †	48.5
† Except E-Series Stripped Chassis where the distance from the \mathcal{C} of the front axle to the H-point of the driver must be measured.	

TABLE 4 CG _{vc} = Vertical distance ground to chassis CG [Dimensions are in inches.]	
Ranger (4x2)	= 24.0
Ranger (4x4)	= 27.0
F-150 (4x2)	= 26.0
F-150 (4x4)	= 28.5
F-250/350 (4x2) SRW > 8500 lb GVWR	= 30.4
F-250/350 (4x4) SRW > 8500 lb GVWR	= 31.4
F-350 (4x2) DRW	= 30.4
F-350 (4x4) DRW	= 31.4
E-150 & E-250 Van < 8000 lb GVWR	= 28.5
E-250/350 SRW Van or Wagon > 8000 lb GVWR	= 32.0

U.S. AND CANADA SAFETY STANDARDS

2006
MODEL YEAR

TABLE 5				
CG _v = Vertical distance from the ground to the completed vehicle center of gravity [inch]. GVWR < 8000 lb use equation A & B, page 21				
Model	WB	Equation for CG _v Range		
		Upper Limit		Lower Limit
Ranger 4x2 GVWR ≤ 4580 lb	112	CG _v =	1.39 x CG _h – 34.8	1.39 x CG _h – 49.0
	118	CG _v =	1.39 x CG _h – 36.8	1.39 x CG _h – 51.7
	126	CG _v =	1.39 x CG _h – 40.3	1.39 x CG _h – 56.7
Ranger 4x2 GVWR ≥ 4580 lb	112	CG _v =	1.39 x CG _h – 36.0	1.39 x CG _h – 42.0
	118	CG _v =	1.39 x CG _h – 38.5	1.39 x CG _h – 44.6
	126	CG _v =	1.39 x CG _h – 45.5	1.39 x CG _h – 48.6
Ranger 4x4 GVWR ≥ 4580 lb	112	CG _v =	1.39 x CG _h – 32.8	1.39 x CG _h – 38.4
	118	CG _v =	1.39 x CG _h – 34.7	1.39 x CG _h – 40.5
	126	CG _v =	1.39 x CG _h – 38.0	1.39 x CG _h – 44.4
GVWR < 8000 lb use equation A & B, page 21 Place the CG _h of the vehicle (from equation B) into the appropriate equations below to determine the allowable range of the CG _v . If the actual CG _v (from equation A) is within the range calculated, the center of gravity location is acceptable.				
Model	WB	Equation for CG _v Range		
		Upper Limit		Lower Limit
E-150	138	CG _v =	1.39 x CG _h – 46.9	1.39 x CG _h – 58.7
E-250 7900 lb GVWR	138	CG _v =	1.39 x CG _h – 47.1	1.39 x CG _h – 59.0
GVWR ≥ 8000 lb use equation C & D, page 21 Place the CG _h of the vehicle (from equation D) into the appropriate equations below to determine the allowable range of the CG _v . If the actual CG _v (from equation C) is within the range calculated, the center of gravity location is acceptable.				
Model	WB	Equation for CG _v Range		
		Upper Limit		Lower Limit
E-250 8600 lb GVWR	138	CG _v =	1.27 x CG _h – 59.0	1.27 x CG _h – 77.5
E-350 (SRW)	138	CG _v =	1.27 x CG _h – 60.0	1.27 x CG _h – 80.0
≤ 9600 lb GVWR	158	CG _v =	1.27 x CG _h – 69.5	1.27 x CG _h – 90.7

TABLE 7			
SUPER DUTY F-SERIES VEHICLES MINIMUM SUB WEIGHTS			
8800 lb to 12,500 lb GVWR WIDE FRAME F-250/350 956 mm [37.7 in] Pickup Box Deletes			
Model and GVWR kg [lb]	Body Style	WB mm [in]	Minimum SUB kg [lb]
F-250/350 SRW	Regular Cab	3480 [137]	172 [380]
	SuperCab	4013 [158]	
	Crew Cab	4380 [172.4]	
	SuperCab	3602 [141.8]	154 [340]
	Crew Cab	3967 [156.2]	
F-350 DRW	Regular Cab	3480 [137]	190 [420]
	SuperCab	4013 [158]	
	Crew Cab	4380 [172.4]	
	SuperCab	3602 [141.8]	172 [380]
	Crew Cab	3967 [156.2]	

TABLE 6						
SUPER DUTY F-SERIES MAXIMUM UNLOADED VEHICLE WEIGHT WITH SECOND UNIT BODY (This Weight Information Does Not Apply to Vehicles Over 4536 kg [10,000 lb] GVWR)						
	MODELS	FRAME WIDTH	SECOND UNIT BODY MAXIMUM CENTER OF GRAVITY HEIGHT‡ millimeter [inch]	MAX. UNLOADED VEHICLE WEIGHT kilogram [pound]		
				Engine Size – liter [cubic inch]		
				5.4L [330]	6.8L [413]	6.0 LD [363]
PICKUP BOX DELETES	F-250 Regular Cab (4x2) 3480 mm [137 in] WB (56" CA)	Wide	447 [17.6]	3120 [6880]	3120 [6880]	3334 [7350]
	F-250 Regular Cab (4x4) 3480 mm [137 in] WB (56" CA)	Wide	447 [17.6]	3302 [7280]	3302 [7280]	3493 [7700]
	F-250 SuperCab (4x2) 4013 mm [158 in] WB (56" CA)	Wide	610 [24]	3312 [7300]	3312 [7300]	3312 [7300]
	F-250 SuperCab (4x4) 4013 mm [158 in] WB (56" CA)	Wide	610 [24]	3403 [7500]	3403 [7500]	3493 [7700]
	F-250 Crew Cab (4x2) 4379 mm [172.4 in] WB (56" CA)	Wide	610 [24]	3585 [7900]	3585 [7900]	3607 [7950]
	F-250 Crew Cab (4x4) 4379 mm [172.4 in] WB (56" CA)	Wide	610 [24]	3585 [7900]	3585 [7900]	3585 [7900]
	F-350 Regular Cab (4x2) 3480 mm [137 in] WB (56" CA)	Wide	447 [17.6]	3120 [6880]	3120 [6880]	3334 [7350]
	F-350 Regular Cab (4x4) 3480 mm [137 in] WB (56" CA)	Wide	447 [17.6]	3302 [7280]	3302 [7280]	3515 [7750]
	F-350 Super Cab (4x2) 4013 mm [158 in] WB (56" CA)	Wide	610 [24]	3312 [7300]	3312 [7300]	3403 [7500]
	F-350 Super Cab (4x4) 4013 mm [158 in] WB (56" CA)	Wide	610 [24]	3402 [7500]	3403 [7500]	3517 [7750]
	F-350 Crew Cab (4x2) 4379 mm [172.4 in] WB (56" CA)	Wide	610 [24]	3606 [7950]	3606 [7950]	3606 [7950]
	F-350 Crew Cab (4x4) 4379 mm [172.4 in] WB (56" CA)	Wide	610 [24]	3606 [7950]	3606 [7950]	3606 [7950]
CHASSIS CABS	F-350 Regular Cab (4x2) 3576 mm [140.8 in] WB (60" CA)	Narrow	447 [17.6]	3674 [8100]	3674 [8100]	3674 [8100]
	F-350 Regular Cab (4x4) 3576 mm [140.8 in] WB (60" CA)	Narrow	447 [17.6]	3538 [7800]	3538 [7800]	3670 [8090]
	F-350 Super Cab (4x2) 4110 mm [161.8 in] WB (60" CA)	Narrow	610 [24]	3739 [8240]	3739 [8240]	3739 [8240]
	F-350 Super Cab (4x4) 4110 mm [161.8 in] WB (60" CA)	Narrow	610 [24]	3739 [8240]	3739 [8240]	3739 [8240]
	F-350 Crew Cab (4x2) 4475 mm [176.2 in] WB (60" CA)	Narrow	610 [24]	3857 [8500]	3857 [8500]	3857 [8500]
	F-350 Crew Cab (4x4) 4475 mm [176.2 in] WB (60" CA)	Narrow	610 [24]	3857 [8500]	3857 [8500]	3857 [8500]

‡ Vertical dimensions are measured from the top surface of the frame at a distance approximately 304.8-457.2 mm [12-18 inches] from the rear of the cab.

U.S. AND CANADA SAFETY STANDARDS

2006
MODEL YEAR

FMVSS and CMVSS 105 HYDRAULIC BRAKE COMPLIANCE GUIDELINES FOR F-SERIES ALTERED VEHICLES WITH A GVWR OVER 3629 kg [8000 lb] INCLUDING PICKUP BOX REMOVAL.

105 INFORMATION

Vehicle weights and dimensional information required for center of gravity calculations are available in the *Source Book*. See your local Ford Dealer and refer to appropriate model year and specific vehicle for the required information.

The abbreviated definitions and a vehicle diagram which are required for the equations in the FMVSS 105 segment of this document are shown on the next page.

The vehicle, as altered, will conform to FMVSS and CMVSS No. 105, Hydraulic and Electric Brake Systems, provided that:

- No alterations, modifications, or replacements are made to the following:
 - Service or parking brake system
 - Antilock brake system
 - Vacuum system
 - Wheels and tires
 - Brake system indicator lamp and wiring
 - Brake system reservoir labeling
 - Suspension ride height or spring rate
 - Hydro-boost system
 - Power steering pump and lines if used with Hydro-boost
 - Engine belt drive system
- Any removal of a Ford Motor Company body or chassis component is accompanied by the addition of equal weight.

- Vehicles with a GVWR of 4536 kg [10,000 lb] or less do not exceed the Maximum Unloaded Vehicle Weight value in Table 6, page 25.
- The applicable GAWRs and GVWR weights are not exceeded.
 - The completed vehicle must have a vertical center of gravity (equation E) of 48.00 inches or less when measured from the ground.
 - The front axle curb weight of the completed vehicle (incomplete vehicle weight + min SUB weight, Table 7, page 25 may be reduced by no more than 10% for SRW or 25% for DRW vehicles, using the front axle ground reaction as manufactured by Ford Motor Company.
 - The rear axle curb weight of the completed vehicle (incomplete vehicle + min SUB weight, Table 7, page 25) must be the same or greater than the rear axle ground reaction as manufactured by Ford Motor Company.
 - REFERENCE: Equation F can be used to determine the completed vehicle's horizontal center of gravity (CG_h). Abbreviated definitions and a vehicle diagram are provided to assist with the equation on page 27.

SUPER DUTY F-SERIES PASSENGER LOAD TABLE		
CG _{hp}	GVWR [lb]	P [lb]
61.2 [in]	8500-10,000	400
	10,001-19,000	500

SUPER DUTY F-SERIES PASSENGER CG _{vp}		
All Seats		
	4x2	4x4
CG _{vp}	40.3 [in]	43.8 [in]

EQUATION E
$CG_v = \frac{CG_{vb} W_b + CG_{vc} (W_c + W_l) + (CG_{vp}) \times P}{GVWR}$
EQUATION F
$CG_h = \frac{(W_{rb} + W_{rc} + (\frac{P \times CG_{hp}}{WB}) + W_{rl}) \times WB}{GVWR}$

Example:
F-250 (4x4) Pickup Box Removal with 137 inch WB and 8800 lb GVWR

Known:
F-250 (4x4) 137 inch WB, 8800 lb GVWR, 5.4L pickup box removal vehicle.
W_b = 675 lb; w_{rb} = 600 lb; w_{rc} = 1531 lb; W_c = 4684 lb;
CG_{vb} = 35 inches;
CG_{vc} = 31.0 inches; W_l = GVWR - W_b + W_c + 400) = 3041 lb

$$W_{rl} = \frac{(132)(3041)}{137} = 2930lb$$

From Equations E & F:

$$CG_v = \frac{35(675) + 31(4684 + 3041) + 43.4 \times (400)}{8800} = 31.9in$$

$$CG_h = \frac{(600 + 1531 + \frac{400(61.2)}{137} + 2930) \times 137}{8800} = 81.6in$$

Since CG_v is less than 48" and CG_h is less than 137", this vehicle is acceptable with the 675 lb SUB.

If CG _v exceeds 48", do one or more of the following, as required to get CG _v ≤ 48"	If CG _h exceeds wheelbase, do one or more of the following, as required to get CG _h ≤ WB
1. Move heavy objects to lower areas to lower the CG.	1. Move heavy objects forward to shift the CG forward.
2. Remove heavy objects with CG's greater than 48" above the ground.	2. Remove heavy objects which are aft of the rear axle.
3. Add weight as low as possible (lower than 48") to bring down CG.	3. Add weight as far forward as possible (forward of the rear axle) to shift the CG forward.

U.S. AND CANADA SAFETY STANDARDS

2006
MODEL YEAR

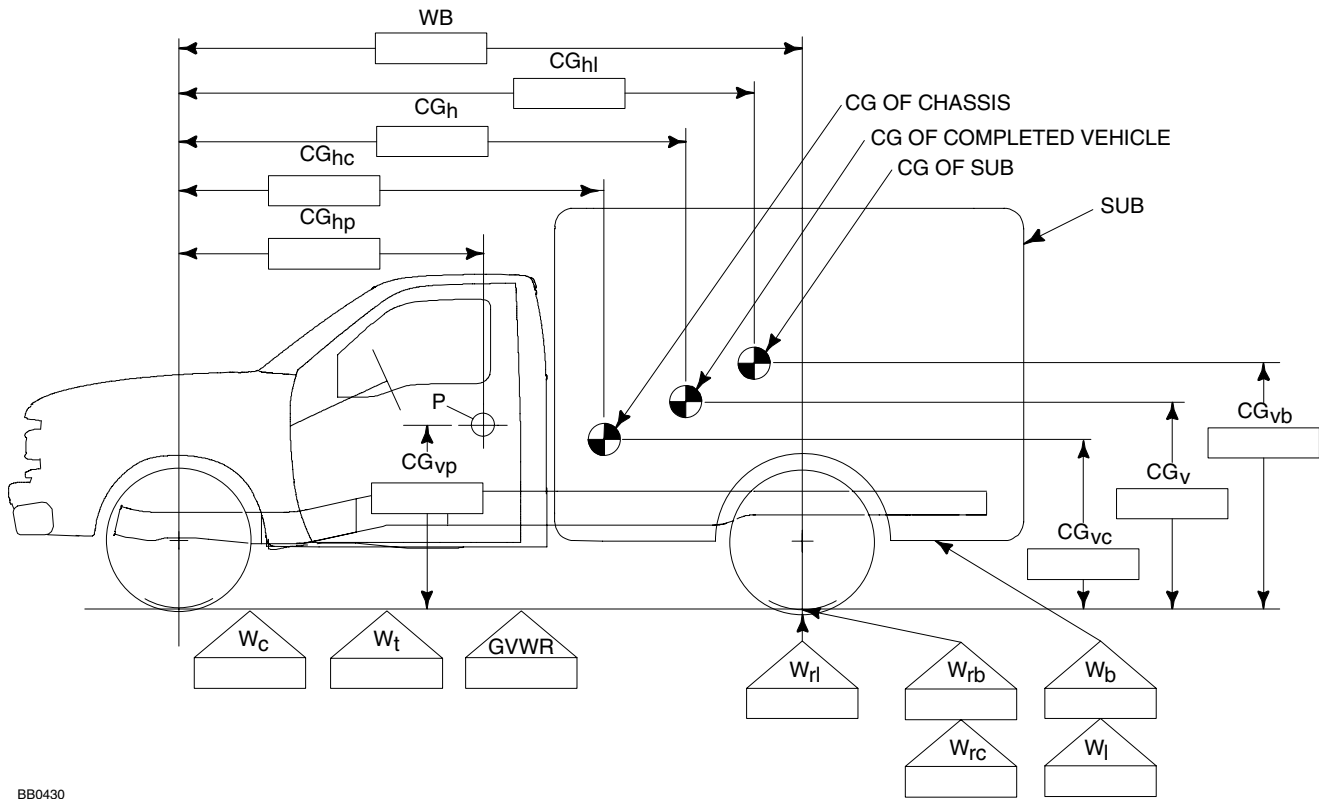
FMVSS AND CMVSS 105 HYDRAULIC BRAKE F-SERIES ALTERED VEHICLES INCLUDING PICKUP BOX REMOVAL.

- P = Passenger load (see table on page 26).
- CG_v = Vertical distance from the ground to the center of gravity [inches] of the completed vehicle.
- CG_h = Horizontal distance from ϕ of the front wheels to the center of gravity [inches] of the completed vehicle.
- CG_{vb} = Vertical distance from the ground to the center of gravity of the SUB and/or permanently attached added equipment [inches].

- CG_{vc} = Vertical distance from the ground to the center of gravity of the chassis [inches] (including cab if original equipment). (Taken from Table 4 page 25).
- CG_{hp} = Horizontal distance from the ϕ of the front wheels to the P (passenger load). (Taken from Passenger Load Table on page 26).
- CG_{vp} = Vertical distance from the ground to the center of gravity of the front and rear seat P (passenger weight). (Taken from Passenger Load Table on page 26).
- W_b = Weight of the SUB and/or permanently attached added equipment [pounds].
- W_{rb} = Weight at the rear wheels of the SUB and/or permanently attached added equipment [pounds].

- W_{rc} = Weight at the rear wheels of the vehicle (chassis and cab) (fuel tanks full) [pounds], including option weight.
- W_c = Weight of the vehicle (chassis and cab) (fuel tanks full) [pounds], including option weight.
- WB = Vehicle wheelbase [inches].
- W_t = Total unladen weight = $(W_b + W_c + P)$
- GVWR = Gross Vehicle Weight Rating of the vehicle [pounds].
- W_l = Remaining cargo capacity [pounds]. Where:
 $W_l = GVWR - (W_b + W_c + P)$
- W_{rl} = Weight of the remaining cargo capacity on the rear wheels [pounds].

- CG_{hl} = Horizontal distance from the ϕ of the front wheels to the cargo center of gravity [inches]. (Taken from Table 2 page 24) for many common vehicles. If the CG_{hl} is not given in the table, then it may be estimated as the distance from the ϕ of the front wheel to the horizontal midpoint of the cargo area.
- SUB = A Second Unit Body consists of the body structure and/or all the cargo carrying, work performing and/or load bearing components and/or equipment installed by a subsequent stage manufacturer on an incomplete vehicle, such that the incomplete vehicle becomes a completed vehicle.
- CG_{hc} = Horizontal distance from the ϕ of the front wheels to the center of gravity [inches] of the chassis.



U.S. AND CANADA SAFETY STANDARDS
INCOMPLETE VEHICLES

2006
MODEL YEAR

Each Ford Motor Company incomplete vehicle product is accompanied by an *Incomplete Vehicle Manual* (see manuals on this page). These manuals contain the information required to comply with Part 568 of Title 49 of the Code of Federal Regulations for vehicles offered for sale in the United States and with Section 6 of the Canadian Motor Vehicle Safety Regulations for vehicles offered for sale in Canada. Ford Motor Company incomplete vehicles offered for sale in the United States and Canada will be provided with an *Incomplete Vehicle Manual*.

The manual must be forwarded with the vehicle until the final stage manufacturer has installed a Safety Compliance label on the completed vehicle.

INCOMPLETE VEHICLE MANUAL COVER

The cover of the IVM identifies the incomplete vehicle configurations for which compliance representations are identified. Also, a label is affixed to the cover which includes the vehicle identification number (VIN) for the specific vehicle to which the manual belongs. The label identifies the following information which pertains only to the vehicle with the corresponding VIN.

- The GVWR
- The front and rear GAWRs
- Tire and wheel size
- Cold tire inflation pressure (PSI)
- Completed vehicle type(s) into which the incomplete vehicle may be manufactured.
- Optional prep package when the vehicle is so equipped.

INCOMPLETE VEHICLE LABEL

Each incomplete vehicle as manufactured by Ford Motor Company, will have an incomplete vehicle label affixed to the driver-door lock pillar. The sample labels on this page are typical of those provided for U.S. production. A detailed explanation of all label information is available in the *Ford Truck Source Book* for the appropriate model year, at your local Ford Dealer.

The 5th, 6th & 7th digits of the Vehicle Identification Number (VIN) will identify the incomplete vehicle type. VIN information is available in the *Ford Truck Source Book* for the appropriate model year.

California Air Resources Board (CARB), requires a Vehicle Emission Control Label with a vehicle identification number (VIN) having a non-contact, bar-code reading wand capability. The bar-code directly below the VIN on the incomplete vehicle label will comply with this regulation.

OPTIONAL PREP PACKAGES

Incomplete vehicles produced by Ford Motor Company, in some instances, are equipped with optional prep packages.

If an incomplete vehicle is equipped with an optional Prep Package, both the incomplete vehicle label affixed to the vehicle and the label on the front of the IVM will identify the Prep Package.

DO NOT DESTROY: THIS MANUAL IS REQUIRED BY LAW. KEEP UNTIL THE VEHICLE IS COMPLETED BY THE FINAL STAGE MANUFACTURER.

2006

E-SERIES

INCOMPLETE VEHICLE MANUAL

Incomplete Vehicle Types For This Manual

INCOMPLETE E-SERIES VANS & WAGONS

E-SERIES CUTAWAY

E-SERIES BASIC CHASSIS

March, 2005

▽6C2S-19A268-AA

DO NOT DESTROY: THIS MANUAL IS REQUIRED BY LAW. KEEP UNTIL THE VEHICLE IS COMPLETED BY THE FINAL STAGE MANUFACTURER.

2006

SUPER DUTY F-SERIES

INCOMPLETE VEHICLE MANUAL

Incomplete Vehicle Types For This Manual

Super Duty F-Series Chassis Cab

March, 2005

▽6C34-19A268-BA

DO NOT DESTROY: THIS MANUAL IS REQUIRED BY LAW. KEEP UNTIL THE VEHICLE IS COMPLETED BY THE FINAL STAGE MANUFACTURER.

2006

F-SUPER DUTY

Class A Motorhome Chassis

INCOMPLETE VEHICLE MANUAL

Incomplete Vehicle Type For This Manual

F-53 Basic Stripped Chassis

December, 2004

▽6C34-19A268-AA

DATE OF MANUFACTURE

VEHICLE TYPE (SEE CHART ON PAGE 8)

OPTIONAL PREP PACKAGE

INCOMPLETE VEHICLE MANUFACTURED BY FORD MOTOR COMPANY

MADE IN U.S.A.

DATE 01/06

GVWR: 11000LB/4989KG

FRONT GAWR: 2300LB

REAR GAWR: 8250LB

WITH 1905KG

WITH 3742KG

WITH 17215/85R16D

WITH 17215/85R16D

WITH 16X6

WITH 16X6

WITH 16X6

VIN: 1FDKE37HZ6HA24639

410047 VSO

BAR CODE VIN (CALIFORNIA)

VSO VEHICLE

EQUIPPED WITH THE FORD AMBULANCE PREP PKG.

EXTERIOR PAINT COLORS

WB 161

TYPESGVW F379

BODY AJ8

TRANS E

AXLE 65

TAPE N

SPRINGS Y

410047 VSO

▽ F65B1520472AB

TYPICAL E-SERIES - U.S.

DATE OF MANUFACTURE

VEHICLE TYPE (SEE CHART ON PAGE 8)

INCOMPLETE VEHICLE MANUFACTURED BY: FORD MOTOR COMPANY

MADE IN U.S.A.

DATE 01/06

GVWR/PNBE: 15000LB/6803KG

FRONT GAWR / REAR GAWR

PNBE AV

PNBE AR

2267KG

4989KG

17215/85R16D

17215/85R16D

16X6

16X6

16X6

VIN: 1FDKE37HZ6HA24639

410047 VSO

VSO VEHICLE

AT/A KP/LFC

65 COL/LA FROD/80

M6284

EXTERIOR PAINT

WB 161

TYPESGVW 1

BODY INT TR

TRANS 668

AXLE 72

TAPE W

SPRINGS H48

410047 VSO

MADE IN U.S.A.

UCI

▽ F65B1520472AA

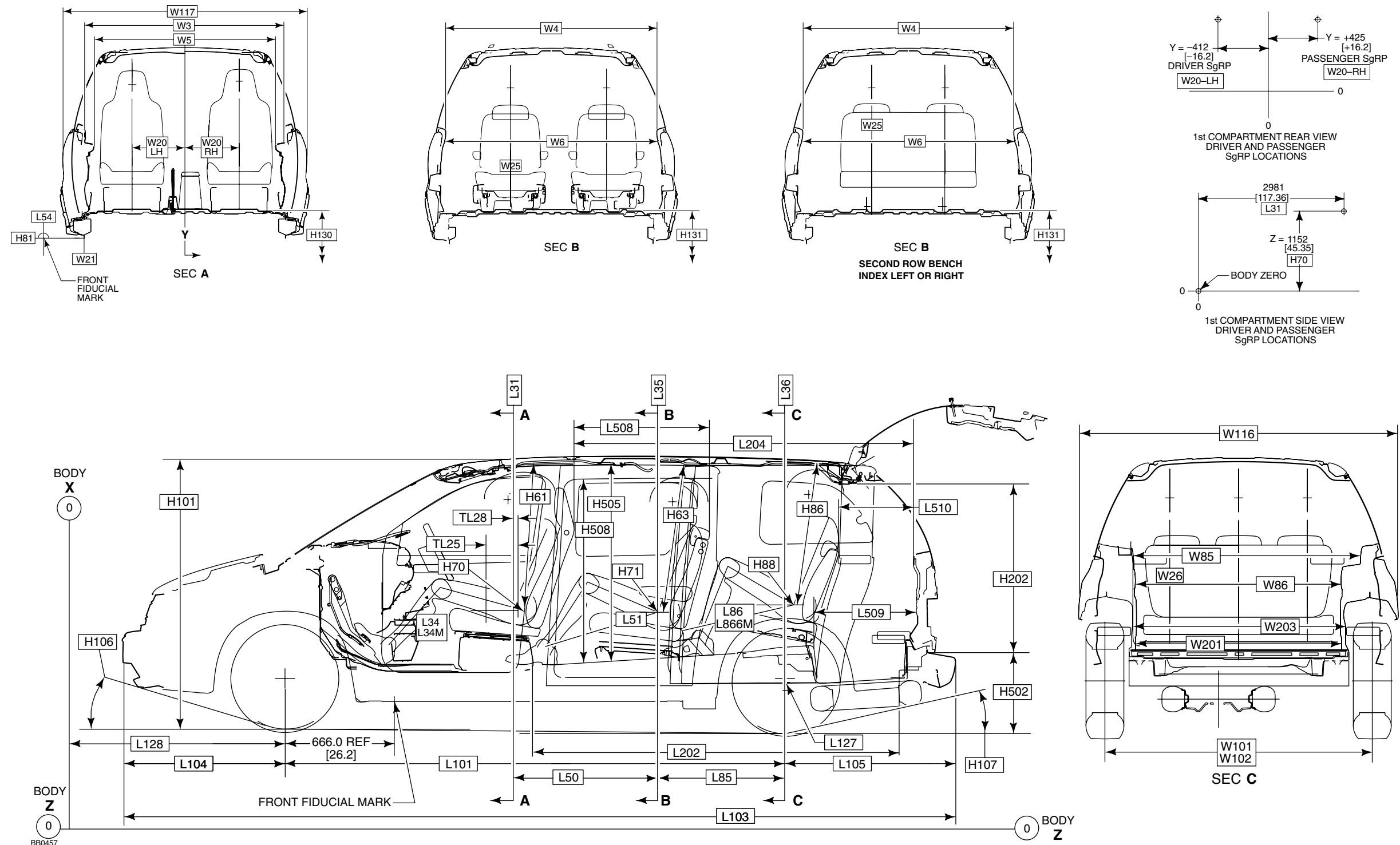
TYPICAL E-SERIES - CANADA

DIMENSIONAL DATA

FREESTAR 7-PASSENGER WAGON

2006
MODEL YEAR

FREESTAR



NOTE — [] DIMENSIONS ARE INCHES.

DIMENSIONAL DATA
FREESTAR 7-PASSENGER WAGON

2006
MODEL YEAR

CODE	DESCRIPTION	4-DOOR
EXTERIOR		
L101	WHEELBASE	3069 [120.8]
L103	OVERALL LENGTH	5105 [201.0]
L104	OVERHANG — FRONT	997 [39.3]
L105	OVERHANG — REAR	1039 [40.0]
L127	REAR WHEELS \varnothing X-COORDINATE	4685 [184.5]
L128	FRONT WHEELS \varnothing X-COORDINATE	1616 [63.6]
W101	TREAD — FRONT	1644 [64.7]
W102	TREAD — REAR	1595 [62.8]
W103	VEHICLE WIDTH MAXIMUM WITH MOLDINGS	1945 [76.5]
W116	VEHICLE WIDTH — MAXIMUM	1917 [75.5]
W117	BODY WIDTH AT DRIVER SgRP	1917 [75.5]
H101C	VEHICLE HEIGHT — CURB (LX)	1740 [68.5]
H101	VEHICLE HEIGHT — LOADED (LX)	1690 [66.5]
H106	ANGLE OF APPROACH (LX)	16.5°
H107	ANGLE OF DEPARTURE (LX)	13.4°
H130	STEP HEIGHT FRONT DOORS AT CURB	412 [16.2]
H131	STEP HEIGHT SLIDING DOOR AT CURB	465 [18.3]
H502	CARGO FLOOR TO GROUND AT CURB	646 [25.5]
FRONT COMPARTMENT		
TL25	DESIGN H-POINT TRAVEL	180 [7.1]
TL28	SEAT TRACK TRAVEL REAR OF H-POINT	30 [1.2]
L34	MAXIMUM EFFECTIVE LEGROOM	1033 [40.7]
L34M	MAXIMUM EFFECTIVE LEGROOM (SgRP AT REARMOST)	1061 [41.8]
W3	SHOULDER ROOM — FRONT	1549[61.0]
W5	HIP ROOM — FRONT	1490 [58.7]
H61	EFFECTIVE HEADROOM — FRONT	986 [38.8]
REAR COMPARTMENT — CARGO		
L202	CARGO LENGTH — CLOSED LIFTGATE TO BACK OF FRONT SEAT AT FLOOR	2307 [90.8]
L204	CARGO LENGTH AT BELT TO FRONT SEAT	2078 [81.8]
L509	CARGO LENGTH 3RD SEAT	568 [22.4]
L510	CARGO LENGTH @ BELT — BEHIND 3RD SEAT	462[18.2]
W201	CARGO WIDTH BETWEEN WHEELHOUSES	1221 [48.0]
W500	CARGO BODY WIDTH AT FLOOR	1691 [66.6]
H202	REAR OPENING HEIGHT	1026 [40.4]
H505	CARGO HEIGHT — MAXIMUM	1321 [52.0]
V6	CARGO VOLUME — CU. FT. — TOTAL (LX)	3810/134.5
V9	CARGO VOLUME BEHIND 3RD SEAT — CU. FT.	732/25.8

CODE	DESCRIPTION	4-DOOR
REAR COMPARTMENT — SEAT		
L50	SgRP COUPLE DISTANCE — FRONT SEAT TO 2ND SEAT	858 [33.7]
L51	EFFECTIVE LEGROOM — 2ND SEAT	966 [38.0]
L85	SgRP COUPLE DISTANCE 2ND TO 3RD SEAT	813 [32.0]
L86	EFFECTIVE LEGROOM — 3RD SEAT	850 [33.5]
L86M	MAXIMUM EFFECTIVE LEGROOM — 3RD SEAT (REARMOST)	850 [33.5]
W4	SHOULDER ROOM — 2ND SEAT	1615 [63.6]
W6	HIP ROOM — 2ND SEAT	1688 [66.5]
W85	SHOULDER ROOM — 3RD SEAT	1293 [50.0]
W86	HIP ROOM — 3RD SEAT	1222 [48.1]
H63	EFFECTIVE HEADROOM — 2ND SEAT	1019 [40.1]
H86	EFFECTIVE HEADROOM — 3RD SEAT	969 [38.1]
DOOR OPENINGS [ENTRANCE]		
L508-R	ENTRANCE LENGTH — CARGO SIDE DOOR	714 [28.1]
L508-L	ENTRANCE LENGTH — CARGO SIDE DOOR	646 [25.4]
W203	REAR OPENING WIDTH AT FLOOR	1263 [49.7]
H508	ENTRANCE HEIGHT — CARGO SIDE DOOR	1115 [43.9]
SEATING REFERENCE POINTS [SgRP]		
L31	SgRP FRONT LH/RH SEAT (X)	2981 [117.36]
L35	SgRP 2ND SEAT (X)	3839 [151.1]
L36	SgRP 3RD SEAT (X)	4650 [183.1]
W20	SgRP FRONT SEAT LH/RH (Y)	– 412 [–16.22]/425 [16.7]
W25	SgRP 2ND SEAT LH/RH QUAD (Y)	– 313 [–12.3]/427 [16.8]
W25	SgRP 2ND SEAT LH/RH (Y) BENCH — INDEX LEFT	– 280 [–11.0]/280 [11.0]
W26	SgRP 3RD SEAT LH/RH (Y)	– 412 [–16.2]/412 [16.2]
H70	SgRP FRONT SEAT LH/RH (Z)	1152 [45.35]
H71	SgRP 2ND SEAT LH/RH (Z) QUAD / BENCH	1124 [44.25]/1130 [44.5]
H88	SgRP 3RD SEAT LH/RH (Z)	1168 [46.0]
FRONT FIDUCIAL MARK		
L54	1ST X-COORDINATE	2285 [89.96]
W21	1ST X-COORDINATE LH/RH (Y)	– 787.4 [–31.0]/787.4 [31.0]
H81	1ST X-COORDINATE	596.5 [23.48]

NOTE — [] DIMENSIONS ARE INCHES.

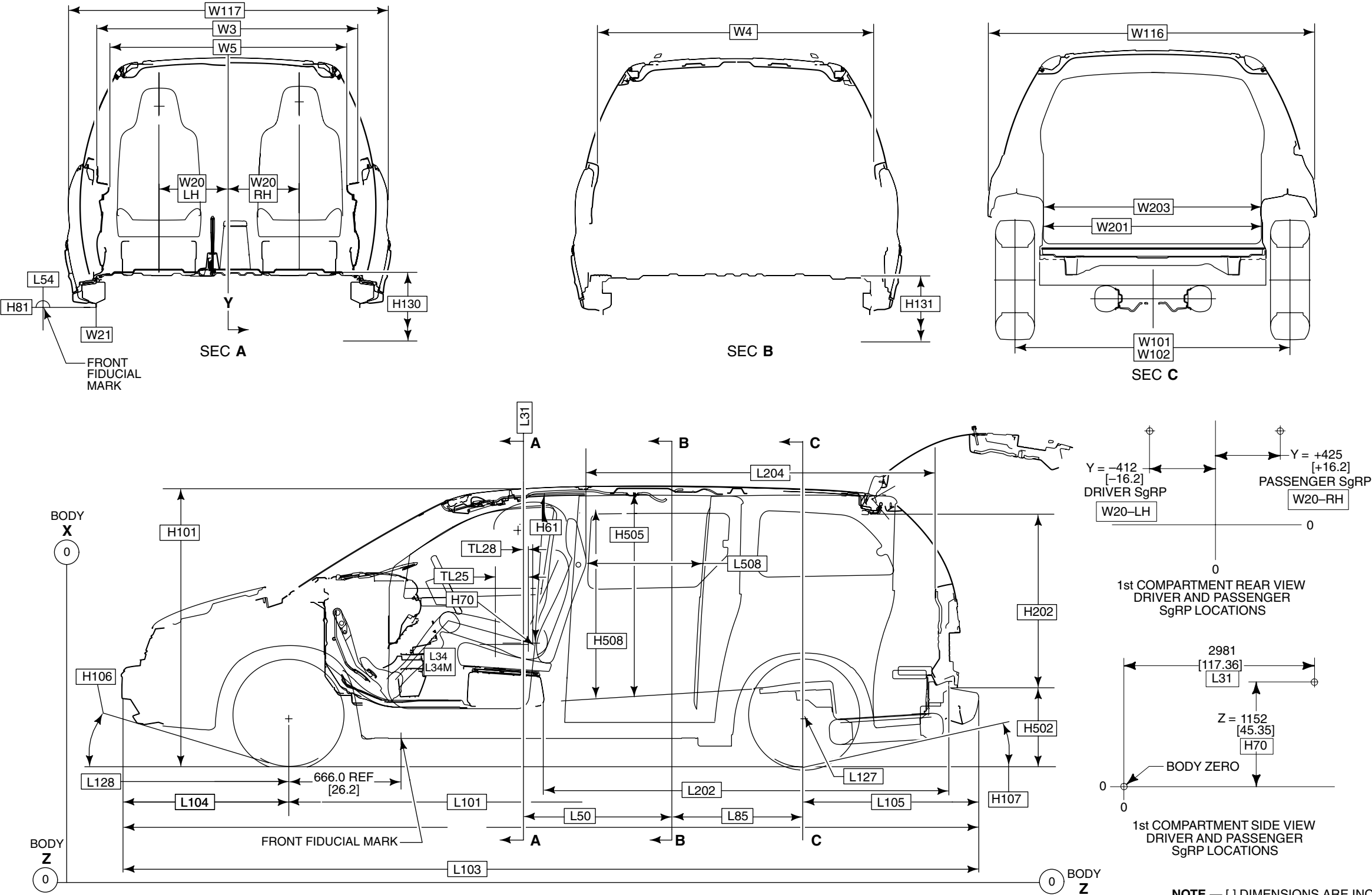
DIMENSIONAL DATA

FREESTAR CARGO VAN

2006
MODEL YEAR

Page 31

FREESTAR



NOTE — [] DIMENSIONS ARE INCHES.

DIMENSIONAL DATA
FREESTAR CARGO VAN

2006
MODEL YEAR

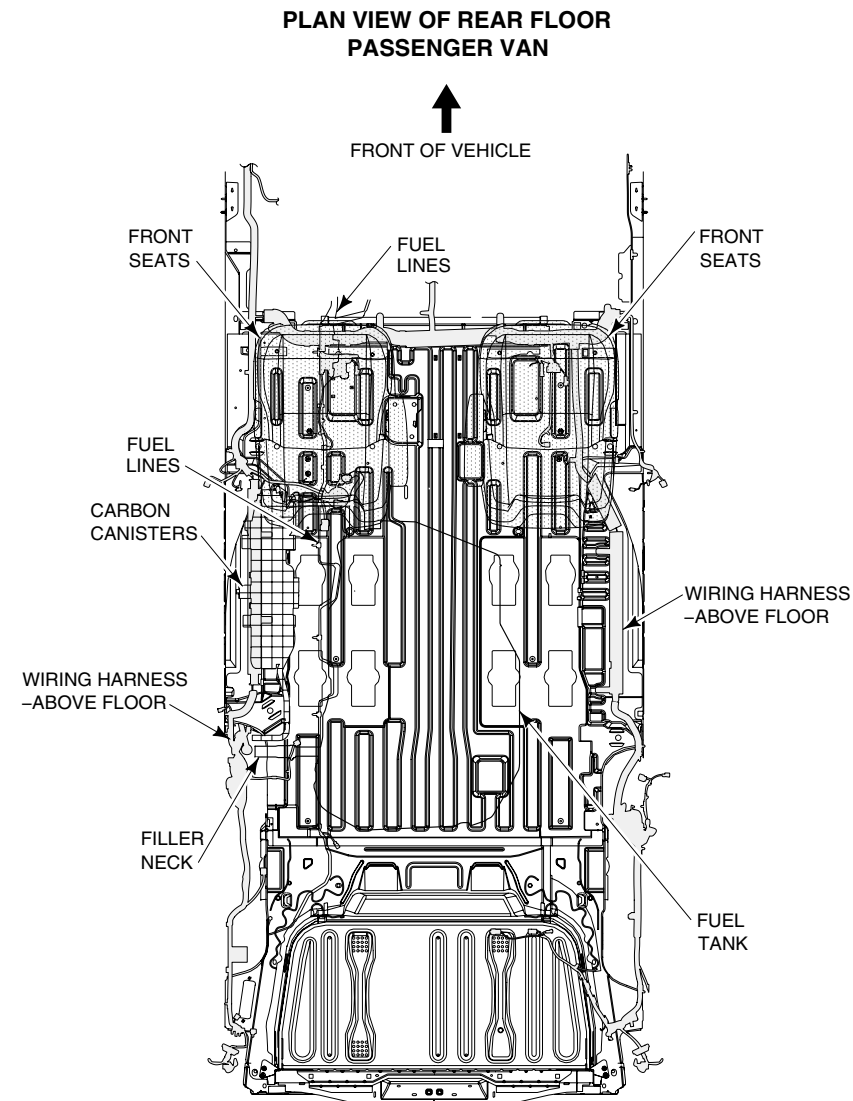
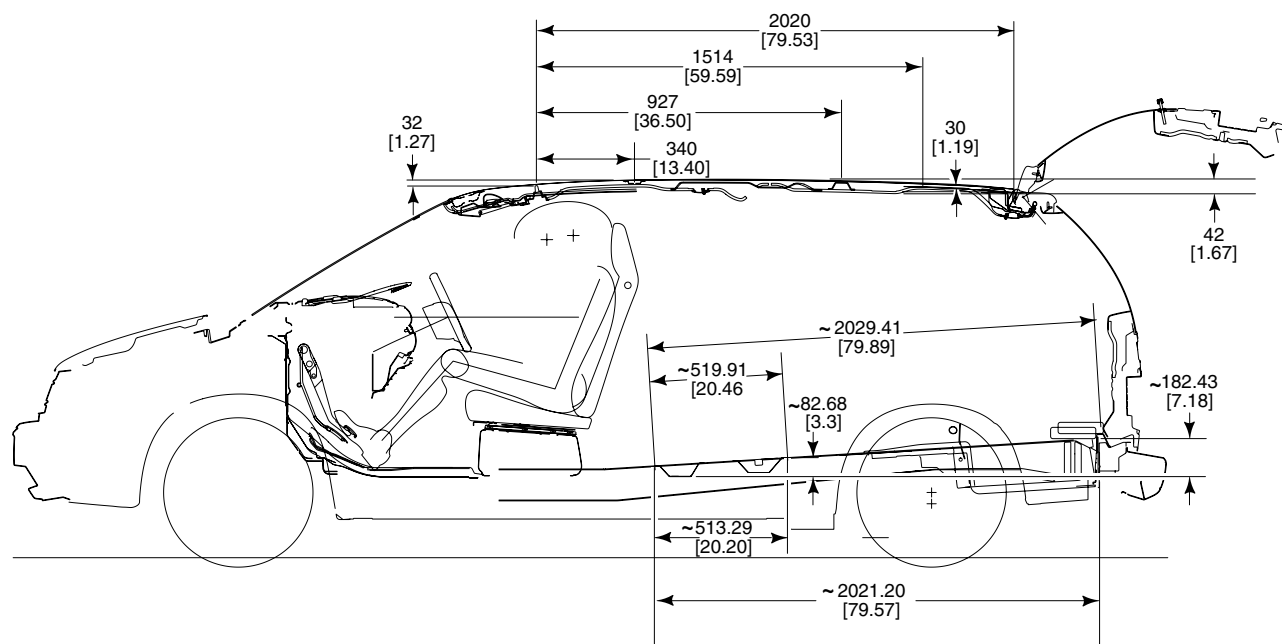
CODE	DESCRIPTION	CARGO
EXTERIOR		
L101	WHEELBASE	3069 [120.8]
L103	OVERALL LENGTH	5105 [201.0]
L104	OVERHANG — FRONT	997 [39.3]
L105	OVERHANG — REAR	1039 [40.9]
L127	REAR WHEELS \mathcal{C} X-COORDINATE	4685 [184.5]
L128	FRONT WHEELS \mathcal{C} X-COORDINATE	1616 [63.6]
W101	TREAD — FRONT	1644 [64.7]
W102	TREAD — REAR	1595 [62.8]
W103	VEHICLE WIDTH MAXIMUM WITH MOLDINGS	1945 [76.5]
W116	VEHICLE WIDTH	1917 [75.4]
W117	BODY WIDTH AT DRIVER SgRP	1917 [75.4]
H101C	VEHICLE HEIGHT — CURB	1742 [68.6]
H101	VEHICLE HEIGHT — LOADED	1687 [66.5]
H106	ANGLE OF APPROACH	16.6°
H107	ANGLE OF DEPARTURE	12.9°
H130	STEP HEIGHT FRONT DOORS AT CURB	414 [16.3]
H131	STEP HEIGHT SLIDING DOOR AT CURB	466 [18.3]
H502	CARGO FLOOR TO GROUND AT CURB	646 [25.5]
FRONT COMPARTMENT		
TL25	DESIGN H-POINT TRAVEL	180 [7.1]
TL28	SEAT TRACK TRAVEL REAR OF H-POINT	30 [1.2]
L34	MAXIMUM EFFECTIVE LEGROOM	1033 [40.7]

CODE	DESCRIPTION	CARGO
REAR COMPARTMENT — CARGO		
L202	CARGO LENGTH — CLOSED LIFTGATE TO BACK OF FRONT SEAT AT FLOOR	2307 [90.8]
L204	CARGO LENGTH — CLOSED LIFTGATE TO BACK OF FRONT SEAT AT BELT	2087 [82.1]
W201	CARGO WIDTH BETWEEN WHEELHOUSES	1276 [50.2]
W500	CARGO BODY WIDTH AT FLOOR	1712 [67.4]
H202	REAR OPENING HEIGHT	1026 [40.4]
H505	CARGO HEIGHT — MAXIMUM	1194 [47.0]
V6	CARGO VOLUME — CU. FT. — TOTAL	132.3
DOOR OPENINGS		
L508	ENTRANCE LENGTH — CARGO SIDE DOOR	714 [28.1]
W203	REAR OPENING WIDTH AT FLOOR	1263 [49.7]
H508	ENTRANCE HEIGHT — CARGO SIDE DOOR	1115 [43.9]
SEATING REFERENCE POINTS (SgRP)		
L31	SgRP FRONT SEAT LH/RH (X)	2981 [117.36]
W20	SgRP FRONT SEAT LH/RH (Y)	−412 [−16.2]/ 425 [16.7]
H70	SgRP FRONT SEAT LG/RH (Z)	1152 [45.35]
FRONT FIDUCIAL MARK		
L54	1ST X-COORDINATE	2285 [89.96]
W21	1ST Y-COORDINATE LH/RH	−787.4 [−31.0]/ 787.4 [31.0]
H81	1ST Z-COORDINATE	596.5 [23.48]

NOTE — [] DIMENSIONS ARE INCHES.

DIMENSIONAL DATA FREESTAR WAGON / VAN

2006
MODEL YEAR



SEAT ANCHORAGE POCKET LOCATIONS

CAUTION - WHEN DRILLING THE FLOOR, UNDERSTAND THE LOCATION OF COMPONENTS BELOW FLOOR & DO NOT DRILL IN AREAS IDENTIFIED IN THE ILLUSTRATION ABOVE.

DIMENSIONAL DATA

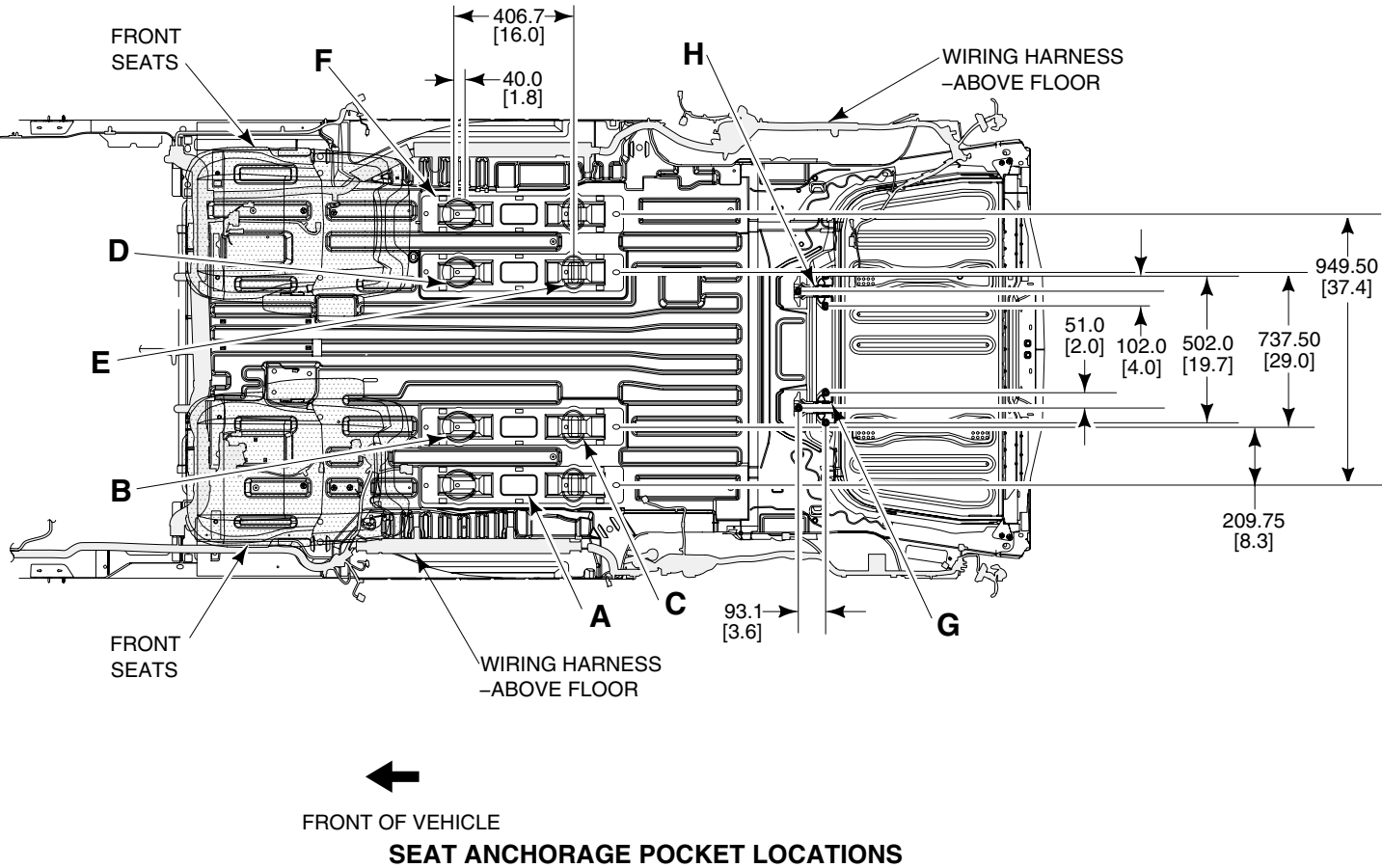
FREESTAR WAGON / VAN

2006
MODEL YEAR

Page 34

FREESTAR

PLAN VIEW OF REAR FLOOR
PASSENGER VAN



SEATING CONFIGURATION/LOCATIONS	
A, B & C:	2ND ROW DRIVER SIDE BUCKET
D, E & F:	2ND ROW PASSENGER SIDE BUCKET
B, C, D & E:	2ND ROW BENCH - NO OFFSET
G & H:	3RD ROW BENCH - NO OFFSET

E-SERIES WAGON MODEL LINEUP

2006
MODEL YEAR

E-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE ⁽¹⁾ liters	STANDARD TRANSMISSION	MAXIMUM GVWR pounds	PASSENGER CAPACITY	BASE CURB WEIGHT ⁽²⁾		
								FRONT pounds	REAR pounds	TOTAL pounds
REGULAR/EXTENDED WAGON										
E-150 Wagon	E11	138	—	4.6L V-6	4-Spd. Auto OD (4R75E)	7000	7	2912	2506	5418
							8	2883	2303	5186
E-350 Super Duty Wagon	E31	138	—	5.4L V-8	4-Spd. Auto OD (4R75E)	8600	7	3279	2647	5926
							8	3195	2526	5721
							12	3178	2640	5818
E-350 Super Duty Extended Wagon	S31	138	—	5.4L V-8	4-Spd. Auto OD (4R75E)	9300	12	2924	3100	6024
						9100	15	2899	3214	6113

(1) Engine/transmission combinations may not be available on all models, or in all areas.
(2) Base curb weight is for standard equipment only.

E-SERIES VAN MODEL LINEUP

2006

MODEL YEAR

E-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE ⁽¹⁾ liters	STANDARD TRANSMISSION ⁽¹⁾	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽³⁾ pounds	BASE CURB WEIGHT ⁽²⁾		
								FRONT pounds	REAR pounds	TOTAL pounds
REGULAR/EXTENDED VAN										
E-150 Van	E14	138	—	4.6L V-6	4-Spd. Auto. OD (4R75E)	6700/7000 ⁽⁴⁾	1930/2275 ⁽⁴⁾	2760/2726 ⁽⁴⁾	2008/1997 ⁽⁴⁾	4768/4723 ⁽⁴⁾
						6700 ⁽⁵⁾	1670 ⁽⁵⁾	2926 ⁽⁵⁾	2101 ⁽⁵⁾	5027 ⁽⁵⁾
E-250 Van	E24	138	—	4.6L V-8	4-Spd. Auto. OD (4R75E)	8600	3435	2875	2287	5162
						8600 ⁽⁵⁾	3255 ⁽⁵⁾	2988 ⁽⁵⁾	2357 ⁽⁵⁾	5345 ⁽⁵⁾
E-250 Extended Van	S24	138	—	4.6L V-8	4-Spd. Auto. OD (4R75E)	8600	3240	2826	2531	5357
						8600 ⁽⁵⁾	3035 ⁽⁵⁾	3114 ⁽⁵⁾	2447 ⁽⁵⁾	5561 ⁽⁵⁾
E-350 Super Duty Van	E34	138	—	5.4L V-8	4-Spd. Auto OD (4R75E)	9500	4165	2997	2335	5332
						9500 ⁽⁵⁾	3955 ⁽⁵⁾	3141 ⁽⁵⁾	2401 ⁽⁵⁾	5542 ⁽⁵⁾
E-350 Super Duty Extended Van	S34	138	—	5.4L V-8	4-Spd. Auto OD (4R75E)	9250 ⁽⁵⁾	3545 ⁽⁵⁾	3084 ⁽⁵⁾	2620 ⁽⁵⁾	5704 ⁽⁵⁾
						9400	3905	2909	2582	5491
						9400 ⁽⁵⁾	2960 ⁽⁵⁾	3712 ⁽⁵⁾	2724 ⁽⁵⁾	6436 ⁽⁵⁾

(1) Engine/transmission combinations may not be available on all models, or in all areas.

(2) Base curb weight is for standard equipment only.

(3) Includes weight of driver, passengers and optional equipment.

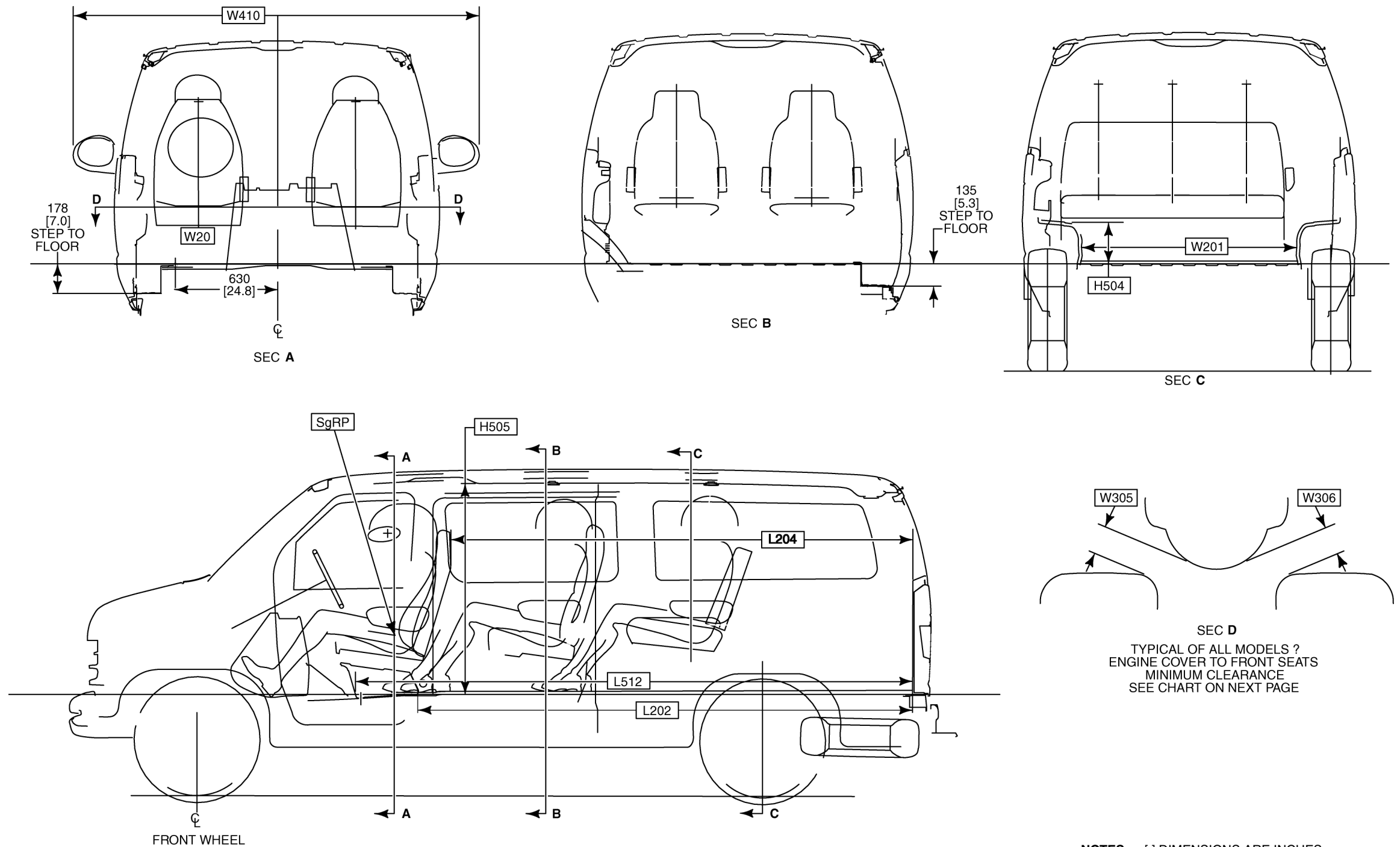
(4) RV Conversion

(5) Crew Van

DIMENSIONAL DATA **E-150/E-350 SUPER DUTY WAGON 7-PASSENGER** **QUAD CAPTAIN'S CHAIRS / 3-PASSENGER BENCH**

2006
MODEL YEAR

E-SERIES



SEC D
 TYPICAL OF ALL MODELS ?
 ENGINE COVER TO FRONT SEATS
 MINIMUM CLEARANCE
 SEE CHART ON NEXT PAGE

NOTES — [] DIMENSIONS ARE INCHES.
 — **CH, LH, F, R, FW AND RW** DIMENSIONS, PAGE 47.
 — **SEAT TRACK TRAVEL**, PAGE 70.

DIMENSIONAL DATA

E-150/E-350 SUPER DUTY WAGON 7-PASSENGER
QUAD CAPTAIN’S CHAIRS / 3-PASSENGER BENCH

2006

MODEL YEAR

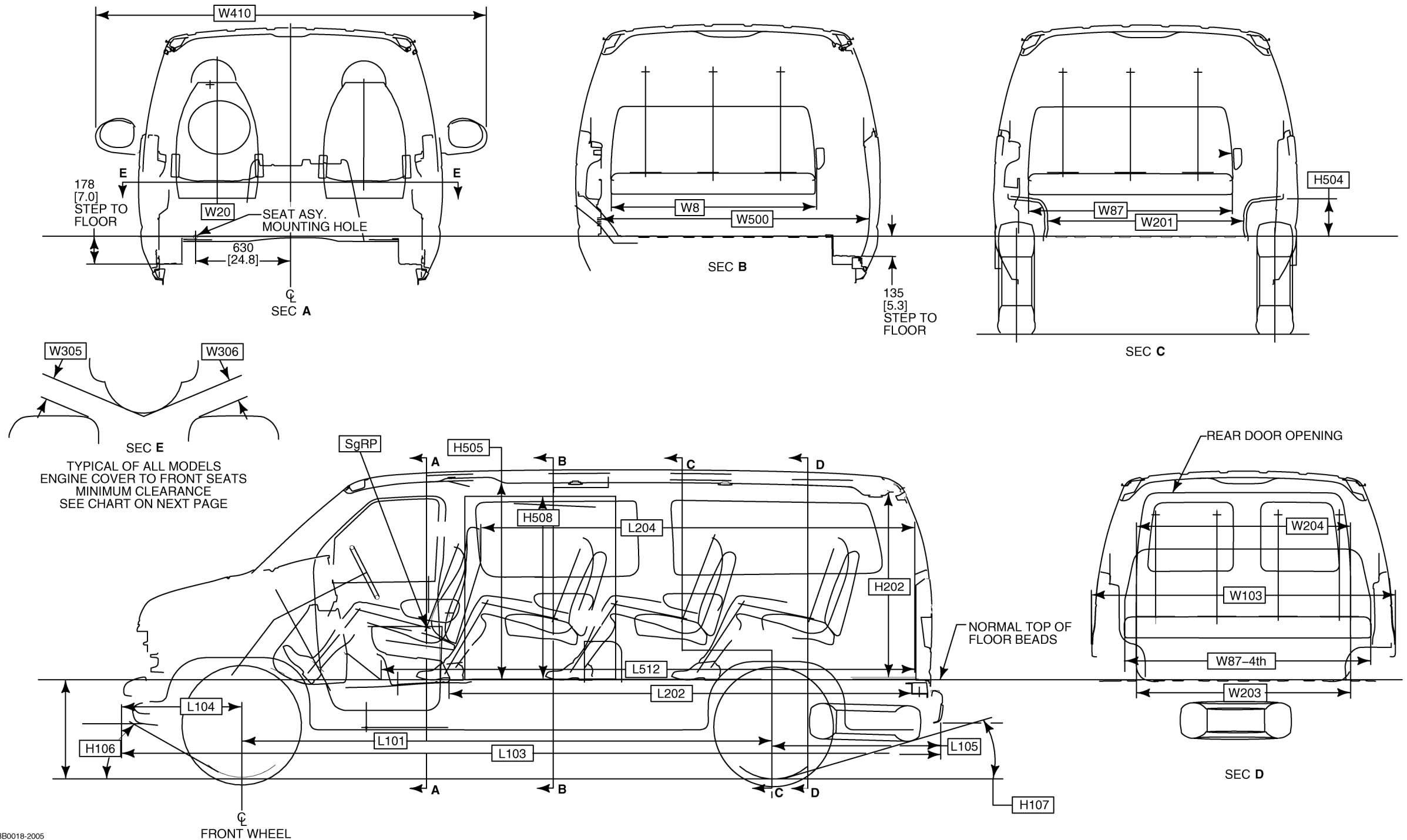
CODE	DESCRIPTION	7-PASSENGER QUAD CAPTAIN’S CHAIRS/ 3-PASSENGER BENCH
EXTERIOR		
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: SAIL MOUNT – MANUAL/POWER MIRROR)	2431 [95.7]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRROR)	2605 [102.6]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRROR EXTENDED)	2753 [108.4]
FRONT COMPARTMENT		
W305	SEAT TO ENGINE COVER – DRIVER	167.5 [6.6]
W306	SEAT TO ENGINE COVER – PASSENGER	155 [6.1]
REAR COMPARTMENT – CARGO		
H504	WHEELHOUSE HEIGHT	224 [8.8]
H505	CARGO HEIGHT – MAXIMUM	1349 [53.1]
L202	CARGO LENGTH – CLOSED FRONT	3064 [120.6]
L204	CARGO LENGTH @ BELT – FRONT	2802 [110.3]
L512	CARGO LENGTH TO ENGINE COVER	3512 [138.3]
W201	CARGO WIDTH BETWEEN WHEELHOUSE	1298 [51.1]
W500	CARGO BODY WIDTH @ FLOOR	1721 [67.8]
V6	CARGO VOLUME – REAR OF FRONT SEAT – CU. FT.	212.8

NOTE — [] DIMENSIONS ARE INCHES.

DIMENSIONAL DATA

E-150/350 SUPER DUTY WAGON 8/12-PASSENGER

2006
MODEL YEAR



NOTES — [] DIMENSIONS ARE INCHES.
— CH, LH, F, R, FW AND RW, PAGE 47.
— SEAT TRACK TRAVEL, PAGE 70.

DIMENSIONAL DATA
E-150/350 SUPER DUTY WAGON 8/12-PASSENGER

2006
MODEL YEAR

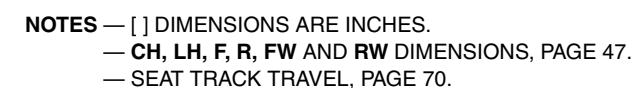
CODE	DESCRIPTION	BASE BUCKET 8-PASS CARGO DOOR	BASE BUCKET 12-PASS CARGO DOOR	CAPTAIN'S CHAIR 8-PASS SLIDING DOOR	CAPTAIN'S CHAIR 12-PASS SLIDING DOOR
EXTERIOR					
H106C	APPROACH ANGLE @ CURB (DEGREES)	27.5	31.4	26.5	31.0
H107C	DEPARTURE ANGLE @CURB (DEGREES)	18.0	22.9	19.2	23.4
L101	WHEELBASE	3504 [138.0]			
L103	VEHICLE LENGTH	5384 [212.0]			
L104	FRONT OVERHANG	762 [30.0]			
L105	REAR OVERHANG	1116 [43.9]			
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/MOLDINGS)	2014 [79.3]			
W410	VEHICLE WIDTH (CAB WIDTH MAX W/ SAIL MOUNT — MANUAL/POWER MIRROR)	2431 [95.7]			
W410	VEHICLE WIDTH (CAB WIDTH MAX W/ TRAILER TOW MIRROR)	2605 [102.6]			
W410	VEHICLE WIDTH (CAB WIDTH MAX W/ TRAILER TOW MIRROR EXTENDED)	2753 [108.4]			
FRONT COMPARTMENT					
W305	SEAT TO ENGINE COVER — DRIVER	167.5 [6.6]			
W306	SEAT TO ENGINE COVER — PASSENGER	155 [6.1]			

CODE	DESCRIPTION	BASE BUCKET 8-PASS CARGO DOOR	BASE BUCKET 12-PASS CARGO DOOR	CAPTAIN'S CHAIR 8-PASS SLIDING DOOR	CAPTAIN'S CHAIR 12-PASS SLIDING DOOR
REAR COMPARTMENT — CARGO					
H504	WHEELHOUSE HEIGHT	228 [9.0]			
H505	CARGO HEIGHT — MAXIMUM	1349 [53.1]			
L202	CARGO LENGTH — CLOSED FRONT	3064 [120.6]			
L204	CARGO LENGTH @ BELT — FRONT	2802 [110.3]			
L512	CARGO LENGTH TO ENGINE COVER	3512 [138.3]			
W201	CARGO WIDTH BETWEEN WHEELHOUSE	1298 [51.1]			
W500	CARGO BODY WIDTH @ FLOOR	1721 [67.8]		1772 [69.8]	
V6	CARGO VOLUME — REAR OF FRONT SEAT - CU.FT.	211.6		213.5	
REAR COMPARTMENT — SEATING					
W8	SEATING WIDTH — 2ND	1346 [53.0]			
W87	SEATING WIDTH — 3RD	1346 [53.0]			
W87-4TH	SEATING WIDTH — 4TH	—	1623 [63.9]	—	1623 [63.9]
DOOR OPENINGS (ENTRANCE ROOM)					
H202	REAR OPENING HEIGHT	1189 [46.8]			
H508	ENTRANCE HEIGHT — CARGO SIDE	1198 [47.2]			
L508	ENTRANCE LENGTH — CARGO SIDE	1138 [44.8]		1006 [39.6]	
W203	REAR OPENING WIDTH @ FLOOR	1381 [54.4]			
W204	REAR OPENING WIDTH @ BELT	1377 [54.2]			

NOTE — [] DIMENSIONS ARE INCHES.

DIMENSIONAL DATA
E-350 SUPER DUTY
EXTENDED WAGON 12/15-PASSENGER

2006
MODEL YEAR



DIMENSIONAL DATA

E-350 SUPER DUTY

EXTENDED WAGON 12/15-PASSENGER

2006
MODEL YEAR

CODE	DESCRIPTION	12/15 PASS EXTENDED BASE BUCKET CARGO DOOR	12/15 PASS EXTENDED CAPTAIN'S CHAIR SLIDING DOOR
EXTERIOR			
H106C	APPROACH ANGLE @ CURB (DEGREES)	32.0°	
H107C	DEPARTURE ANGLE@ CURB (DEGREES)	16.3°	
L101	WHEELBASE	3505 [138.0]	
L103	VEHICLE LENGTH	5892 [232.0]	
L104	FRONT OVERHANG	762 [30.0]	
L105	REAR OVERHANG	1624 [64.0]	
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS)	2014 [79.3]	
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: SAIL MOUNT — MANUAL/POWER MIRROR)	2431 [95.7]	
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRROR)	2605 [102.6]	
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRROR EXTENDED)	2753 [108.4]	
FRONT COMPARTMENT			
W305	SEAT TO ENGINE COVER — DRIVER	167.5 [6.6]	
W306	SEAT TO ENGINE COVER — PASSENGER	155 [6.1]	

CODE	DESCRIPTION	12/15 PASS EXTENDED BASE BUCKET CARGO DOOR	12/15 PASS EXTENDED CAPTAIN'S CHAIR SLIDING DOOR
REAR COMPARTMENT — CARGO			
H504	WHEELHOUSE HEIGHT	228 [9.0]	
H505	CARGO HEIGHT — MAXIMUM	1349 [53.1]	
L202	CARGO LENGTH — CLOSED FRONT	3572 [140.6]	
L204	CARGO LENGTH @ BELT — FRONT	3310 [130.3]	
L512	CARGO LENGTH TO ENGINE COVER	4020 [158.3]	
W201	CARGO WIDTH BETWEEN WHEELHOUSE	1298 [51.1]	
W500	CARGO BODY WIDTH @ FLOOR	1772 [69.8]	1721 [67.8]
V6	CARGO VOLUME — REAR OF FRONT SEAT — CU.FT.	254.4	247.2
REAR COMPARTMENT — SEATING			
W8	SEATING WIDTH — 2ND	1346 [53.0]	
W87	SEATING WIDTH — 3RD	1346 [53.0]	
W87-4TH	SEATING WIDTH — 4TH (3-PASSENGER)	1346 [53.0]	
W87-5TH	SEATING WIDTH — 5TH (4-PASSENGER)	1623 [63.9]	
DOOR OPENINGS (ENTRANCE ROOM)			
H202	REAR OPENING HEIGHT	1220 [48.0]	
H508	ENTRANCE HEIGHT — CARGO SIDE	1198 [47.2]	
L508	ENTRANCE LENGTH — CARGO SIDE	1138 [44.8]	1006 [39.6]
W203	REAR OPENING WIDTH @ FLOOR	1381 [54.4]	
W204	REAR OPENING WIDTH @ BELT	1377 [54.2]	

NOTE — [] DIMENSIONS ARE INCHES.

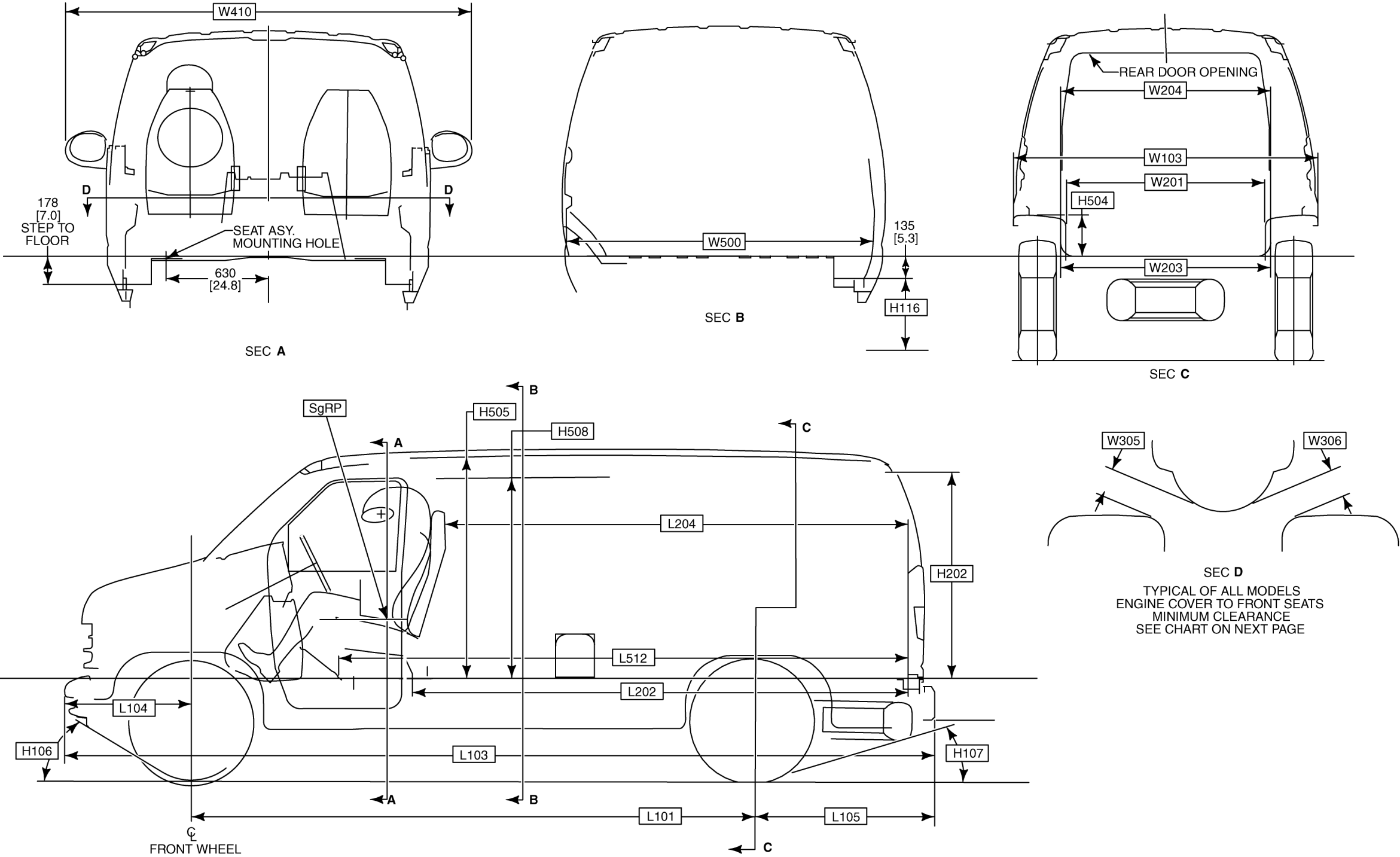
DIMENSIONAL DATA

E-150/250/350 SUPER DUTY VAN

2006
MODEL YEAR

Page 43

E-SERIES



NOTES — [] DIMENSIONS ARE INCHES.
— CH, LH, F, R, FW AND RW, PAGE 47.
— SEAT TRACK TRAVEL, PAGE 70.

DIMENSIONAL DATA

E-150/250/350 SUPER DUTY VAN

2006
MODEL YEAR

Page 44

E-SERIES

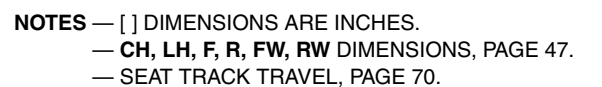
CODE	DESCRIPTION	REGULAR VAN BASE BUCKET 2-PASS SLIDING DOOR	REGULAR VAN BASE BUCKET 2-PASS CARGO DOOR	EXTENDED LENGTH VAN CAPTAIN'S CHAIR 2-PASS CARGO DOOR
EXTERIOR				
H106C	APPROACH ANGLE @ CURB (DEGREES)	32.2°		32.0°
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	22.0°		16.3°
L101	WHEELBASE	3504 [138.0]		
L103	VEHICLE LENGTH	5384 [212.0]		5892 [232.0]
L104	FRONT OVERHANG	762 [30.0]		
L105	REAR OVERHANG	1116 [43.9]		1624 [63.9]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS)	2014 [79.3]		
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: SAIL MOUNT — MANUAL/POWER MIRROR)	2430 [95.7]		
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRROR)	2605 [102.6]		
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRROR EXTENDED)	2753 [108.4]		
FRONT COMPARTMENT				
W305	SEAT TO ENGINE COVER — DRIVER	167.5 [6.6]		
W306	SEAT TO ENGINE COVER — PASSENGER	155 [6.1]		

CODE	DESCRIPTION	REGULAR VAN BASE BUCKET 2-PASS SLIDING DOOR	REGULAR VAN BASE BUCKET 2-PASS CARGO DOOR	EXTENDED LENGTH VAN CAPTAIN'S CHAIR 2-PASS CARGO DOOR
REAR COMPARTMENT — CARGO				
H504	WHEELHOUSE HEIGHT	224 [8.8]		
H505	CARGO HEIGHT — MAXIMUM	1366 [53.8]		1366 [53.8]
L202	CARGO LENGTH — CLOSED FRONT	3075 [121.1]		3583 [141.1]
L204	CARGO LENGTH @ BELT — FRONT	2818 [110.9]		3325 [130.9]
L512	CARGO LENGTH TO ENGINE COVER	3512 [138.3]		4031 [158.7]
W201	CARGO WIDTH BETWEEN WHEELHOUSE	1334 [52.5]		
W500	CARGO BODY WIDTH @ FLOOR	1870 [73.6]		1871 [73.7]
W506	CARGO WIDTH @ ROOF RAIL	1559 [61.4]		
V6	CARGO VOLUME — REAR OF PARTITION — CU.FT.	230		268.1
DOOR OPENINGS (ENTRANCE ROOM)				
H116	STEP HEIGHT — 2ND	522 [20.6]		510 [20.1]
H202	REAR OPENING HEIGHT	1258 [49.5]		
H508	ENTRANCE HEIGHT — CARGO SIDE	1225 [48.2]		1221 [48.1]
L508	ENTRANCE LENGTH — CARGO SIDE	1006 [39.6]		1138 [44.8]
W203	REAR OPENING WIDTH @ FLOOR	1381 [54.4]		1380 [54.3]
W204	REAR OPENING WIDTH @ BELT	1377 [54.2]		

NOTE — [] DIMENSIONS ARE INCHES.

DIMENSIONAL DATA
E-150/250/350 SUPER DUTY
CREW VAN – REGULAR / EXTENDED LENGTH

2006
MODEL YEAR



DIMENSIONAL DATA
E-150/250/350 SUPER DUTY
CREW VAN – REGULAR / EXTENDED LENGTH

2006
MODEL YEAR

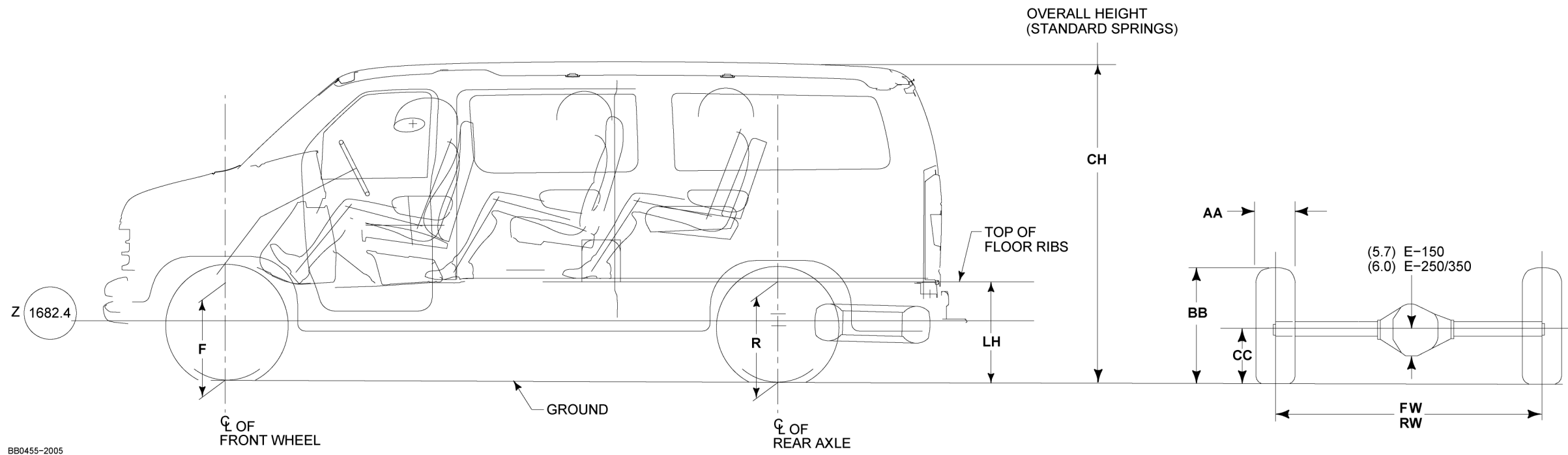
Page 46 E-SERIES

CODE	DESCRIPTION	REGULAR LENGTH BASE BUCKET 5-PASS CARGO DOOR	EXTENDED LENGTH BASE BUCKET 5-PASS CARGO DOOR
EXTERIOR			
H106C	APPROACH ANGLE @ CURB (DEGREES)	27.5°	32.0°
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	18°	16.3°
L101	WHEELBASE	3504 [138.0]	3505 [138.0]
L103	VEHICLE LENGTH	5384 [212.0]	5892 [232.0]
L104	FRONT OVERHANG	762 [30.0]	
L105	REAR OVERHANG	1116 [43.9]	1625 [64.0]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS)	2014 [79.3]	
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: SAIL MOUNT – MANUAL/POWER MIRROR)	2430 [95.7]	
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRROR)	2605 [102.6]	
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRROR EXTENDED)	2753 [108.4]	
FRONT COMPARTMENT			
W305	SEAT TO ENGINE COVER – DRIVER	167.5 [6.6]	
W306	SEAT TO ENGINE COVER – PASSENGER	155 [6.1]	

CODE	DESCRIPTION	REGULAR LENGTH BASE BUCKET 5-PASS CARGO DOOR	EXTENDED LENGTH BASE BUCKET 5-PASS CARGO DOOR
REAR COMPARTMENT – SEATING			
H504	WHEELHOUSE HEIGHT	224 [8.8]	
H505	CARGO HEIGHT — MAXIMUM	1368 [53.9]	
L202	CARGO LENGTH — CLOSED FRONT	1850 [72.8]	2358 [92.8]
L204	CARGO LENGTH @ BELT — FRONT	1851 [72.9]	2359 [92.9]
L512	CARGO LENGTH TO ENGINE COVER	3523 [138.7]	4031 [158.7]
W201	CARGO WIDTH BETWEEN WHEELHOUSE	1334 [52.5]	
W500	CARGO BODY WIDTH @ FLOOR	1870 [73.6]	1869 [73.6]
W506	CARGO WIDTH @ ROOF RAIL	1559 [61.4]	
V6	CARGO VOLUME — REAR OF PARTITION — CU.FT.	146.3	187
DOOR OPENINGS (ENTRANCE ROOM)			
H116	STEP HEIGHT – 2ND	4638 [18.2]	510 [20.1]
H202	REAR OPENING HEIGHT	1258 [49.5]	
H508	ENTRANCE HEIGHT – CARGO SIDE	1225 [48.2]	
L508	ENTRANCE LENGTH – CARGO SIDE	1138 [44.8]	
W203	REAR OPENING WIDTH @ FLOOR	1381 [54.4]	1380 [54.3]
W204	REAR OPENING WIDTH @ BELT	1377 [54.2]	

NOTE — [] DIMENSIONS ARE INCHES.

AXLE/TIRE/VEHICLE HEIGHT DATA
E-SERIES VAN / WAGON



MODEL	WB [in]	GVWR [lb]	BASE TIRE ⁽⁵⁾	F HEIGHT AT WHEEL FRONT ⁽¹⁾		R HEIGHT AT AXLE REAR ⁽¹⁾		LH ⁽¹⁾		CH ⁽¹⁾		AA	BB	CC*	FW	RW
				CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED ⁽³⁾	EMPTY	LOADED	EMPTY	LOADED					
E-150 VAN	138	6700	P235/70R16XL	614 [24.2]	585 [23.0]	675 [26.6]	593 [23.3]	717 [28.2]	622 [24.5]	2062 [81.2]	1987 [78.2]	218 [8.6]	676 [26.6]	328 [12.9]	1765 [69.5]	1709 [67.3]
E-150 VAN ⁽⁴⁾	138	7000	P235/70R16XL	614 [24.2]	585 [23.0]	675 [26.6]	593 [23.3]	717 [28.2]	622 [24.5]	2062 [81.2]	1987 [78.2]	236 [9.3]	754 [29.7]	333 [13.1]	1765 [69.5]	1709 [67.3]
E-250 VAN	138	7200	LT225/75R16E	658 [25.9]	627 [24.7]	745 [29.3]	646 [25.4]	765 [30.1]	669 [26.3]	2126 [83.7]	2049 [80.7]	236 [9.3]	752 [29.6]	345 [13.6]	1763 [69.4]	1691 [66.6]
E-250 VAN EXTENDED VAN	138	7300	LT225/75R16E	666 [26.2]	635 [25.0]	719 [28.3]	645 [25.4]	783 [30.8]	658 [25.9]	2148 [84.6]	2049 [80.7]	236 [9.3]	752 [29.6]	345 [13.6]	1763 [69.4]	1691 [66.6]
E-350 SUPER DUTY VAN	138	9500	LT245/75R16E	666 [26.2]	635 [25.0]	741 [29.2]	658 [25.9]	765 [30.1]	669 [26.3]	2126 [83.7]	2049 [80.7]	263 [10.3]	767 [30.2]	358 [14.1]	1763 [69.4]	1687 [66.4]
E-350 SUPER DUTY EXTENDED VAN	138	9400	LT245/75R16E	666 [26.2]	635 [25.0]	756 [29.8]	657 [25.9]	814 [32.1]	690 [27.2]	2148 [84.6]	2049 [80.7]	263 [10.3]	767 [30.2]	358 [14.1]	1763 [69.4]	1687 [66.4]
E-150 WAGON	138	7000	P235/70R16XL	614 [24.2]	585 [23.0]	675 [26.6]	593 [23.3]	717 [28.2]	622 [24.5]	2062 [81.2]	1987 [78.2]	236 [9.3]	754 [29.7]	333 [13.1]	1765 [69.5]	1709 [67.3]
E-350 SUPER DUTY WAGON	138	8600	LT225/75R16E	658 [25.9]	627 [24.7]	733 [28.8]	648 [25.5]	777 [30.6]	680 [26.8]	2118 [83.4]	2040 [80.3]	236 [9.3]	752 [29.6]	345 [13.6]	1765 [69.5]	1687 [66.4]
E-350 SUPER DUTY EXTENDED WAGON	138	9100 9300	LT245/75R16E	666 [26.2]	635 [25.0]	756 [29.8]	657 [25.9]	814 [32.1]	690 [27.2]	2148 [84.6]	2049 [80.7]	263 [10.3]	780 [30.7]	358 [14.1]	1763 [69.4]	1687 [66.4]

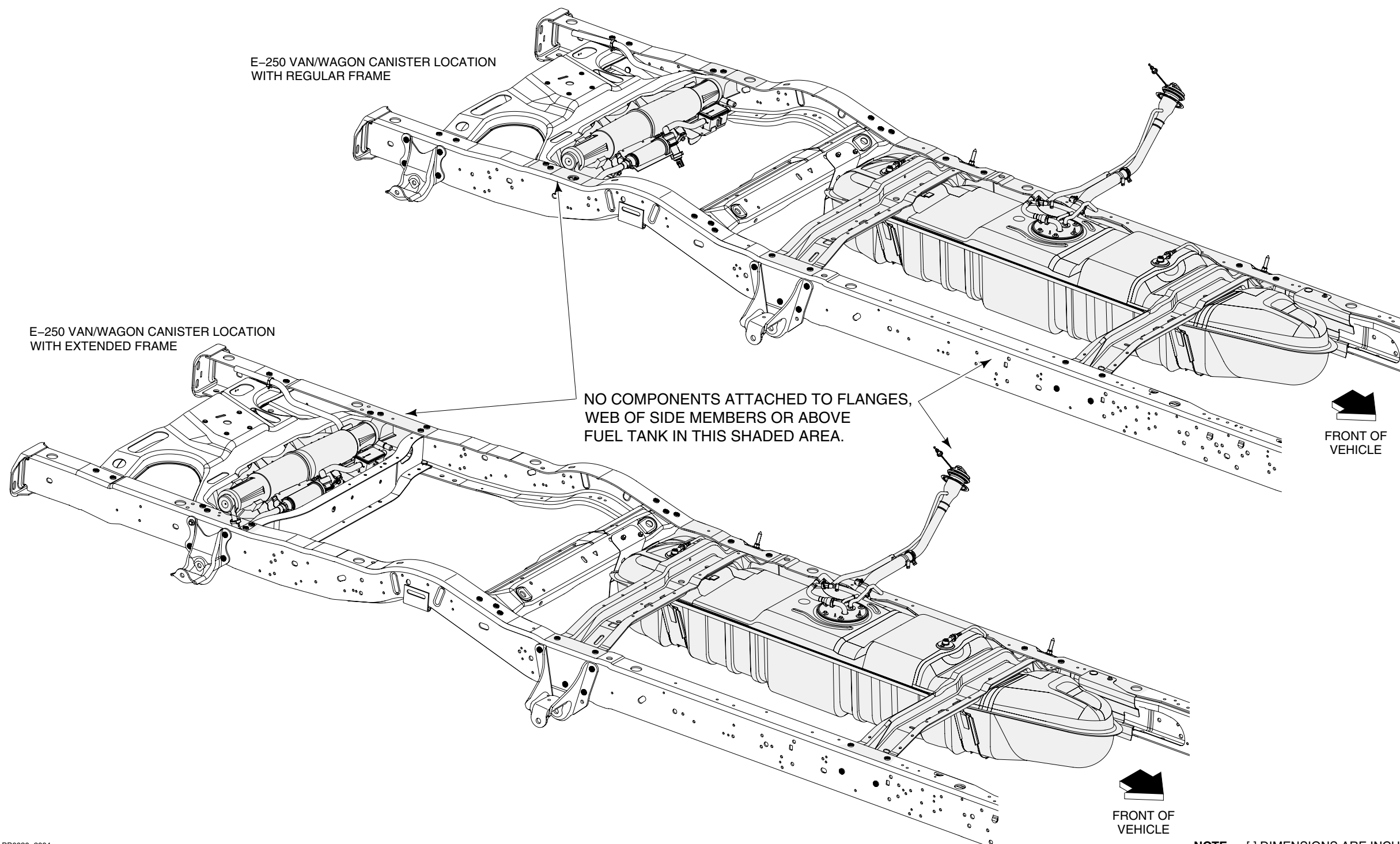
(1) THE HEIGHT DATA SHOWN REPRESENTS DIMENSIONS OF A BASE/STANDARD VEHICLE WITH NO OPTIONS, ACTUAL HEIGHT MAY VARY DUE TO PRODUCTION TOLERANCES.
(2) HEIGHT AT BASE CURB WEIGHT WITH STANDARD SPRINGS.
(3) LOADED HEIGHT AT SPRING RATING WITH STANDARD SPRINGS.
(4) RV CONVERSION.
(5) ADDITIONAL TIRE DATA, PAGE 63.

* — STATIC LOADED RADIUS REPRESENTS AXLE ϕ TO GROUND WITH MAXIMUM RATED LOAD ON TIRE AT MAXIMUM PRESSURE.

NOTES — [] DIMENSIONS ARE INCHES.
— F/R - TO FRAME DATUM LINE 633.7 MM (24.95 INCHES);
TO TOP OF FLOOR BEADS ADD 113.2 MM (4.46 INCHES).

E-SERIES FUEL SYSTEM EVAPORATIVE EMISSIONS

2006
MODEL YEAR



INCOMPLETE E-150/250/350 SUPER DUTY RECREATIONAL VAN

2006
MODEL YEAR

Page 49

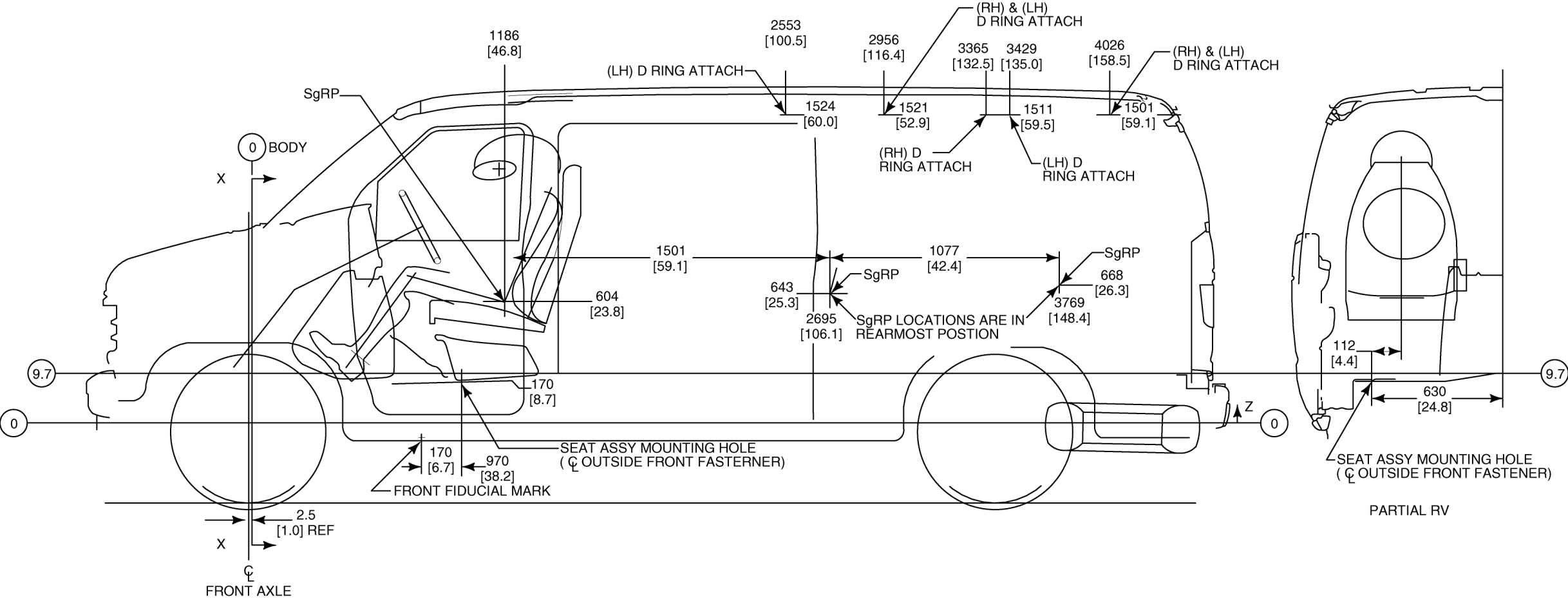
E-SERIES

NOTE: This sketch identifies the locations in 138-inch wheelbase regular length E-Series Recreational vans where Ford Motor Company provides anchorages for attachment of the upper or “D-ring” ends of the torso restraints for second and third row seats that

maybe installed by subsequent-stage manufacturers. The longitudinal distances from the vertical reference line for the second and third row seat anchorages are 116.4 inches and 158.5 inches, respectively.

NOTE: If a left-hand, second-row seat is installed, an anchorage must be installed by the subsequent-stage manufacturer on the left side of the vehicle at 16.4 inches. (This anchorage should be located symmetrically opposite the corresponding right-hand anchorage installed by Ford Motor Company.) A nut mounted to a reinforcement plate and four rivets are

furnished for this purpose with the incomplete vehicle as part of the Recreational trim. The sketch also identifies the rearmost seating reference points (SgRP's) for second and third row seats that may be installed. These are 106.1 inches and 148.4 inches (longitudinal), respectively. Call the Ford Truck Body Builders Advisory Service if there are any questions regarding this sketch.



BB0126-2005

NOTES — [] DIMENSIONS ARE INCHES.
— CH, LH, F, R, FW AND RW, SEE PAGE 47.
— SEAT TRACK TRAVEL, PAGE 70.

E-SERIES SUPER DUTY CUTAWAY / STRIPPED CHASSIS MODEL LINEUP

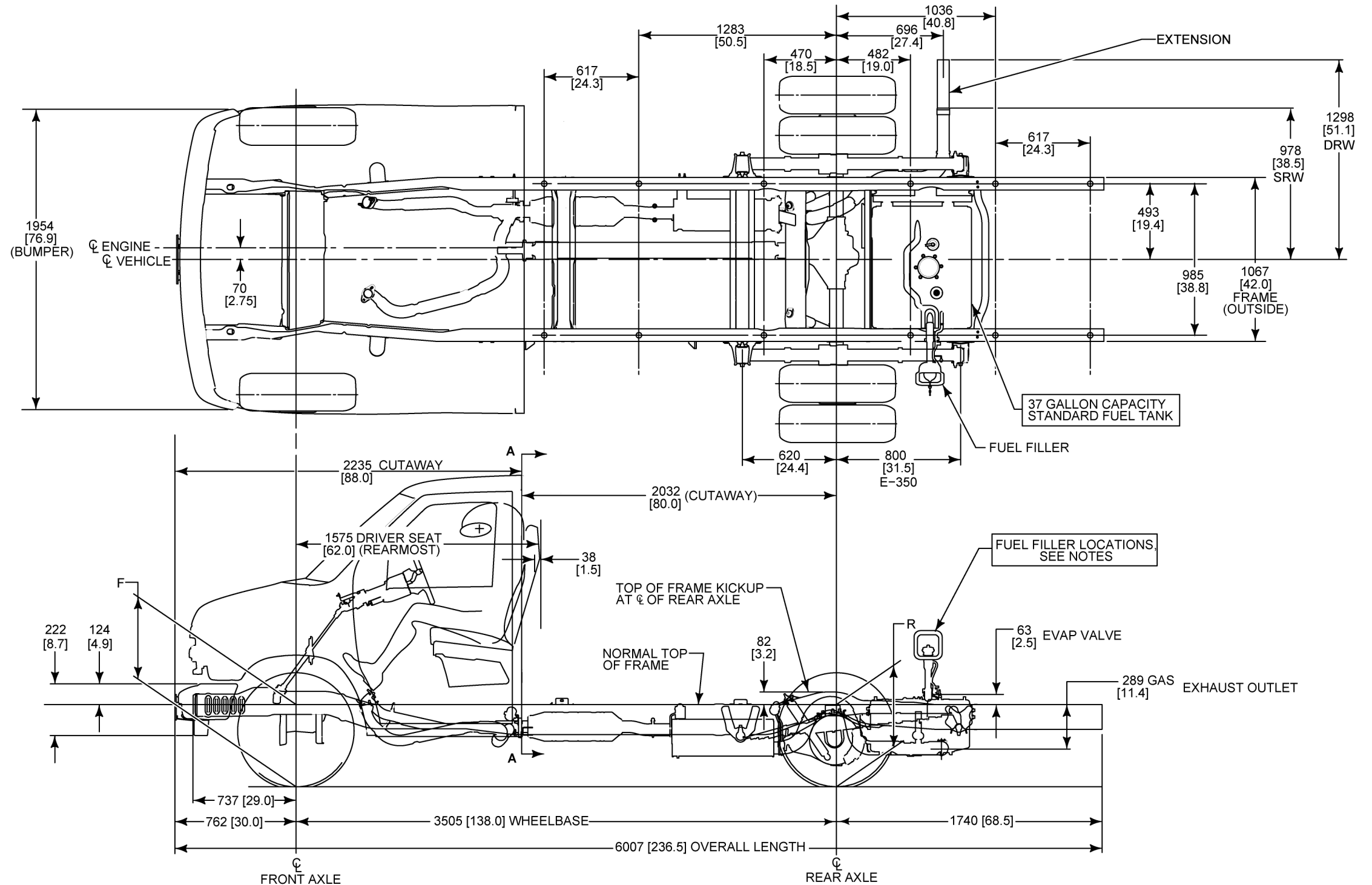
2006
MODEL YEAR

E-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE ⁽¹⁾ liters	STANDARD TRANSMISSION	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽³⁾ pounds	BASE CURB WEIGHT ⁽²⁾		
								FRONT pounds	REAR pounds	TOTAL pounds
COMMERCIAL/RV CUTAWAY										
E-350 Super Duty Cutaway	E35	138	80	5.4L V-8	5-Spd. Auto OD (TorqShift™)	9600 SRW	4795	2895	1907	4802
				6.0L V-8 ⁽⁴⁾		10,700 DRW	5765	2909	2022	4931
						11,500 ⁽⁴⁾ DRW	6000 ⁽⁴⁾	3390 ⁽⁴⁾	2110 ⁽⁴⁾	5500 ⁽⁴⁾
		158	100	5.4L V-8	5-Spd. Auto OD (TorqShift™)	11,500 DRW	6420	2987	2089	5076
		176	118				6480	3026	1994	5020
E-450 Super Duty Cutaway	E45	158	100	6.8L V-10	5-Spd. Auto OD (TorqShift™)	14,050 DRW	8435	3088	2525	5613
		176	118				8410	3160	2477	5637
COMMERCIAL STRIPPED CHASSIS										
E-350 Super Duty Commercial Stripped Chassis	E39	138	—	5.4L V-8	5-Spd. Auto OD (TorqShift™)	9600 SRW	5600	2169	1828	3997
						10,000 DRW	5735	2178	2085	4263
		158	—	5.4L V-8	5-Spd. Auto OD (TorqShift™)	9600 SRW	5515	2278	1804	4082
						10,000 DRW	5665	2290	2044	4334
						11,000 DRW	6665	2290	2044	4334
		176	—	5.4L V-8	5-Spd. Auto OD (TorqShift™)	10,000 DRW	5630	2287	2083	4370
						11,000 DRW	6625	2287	2086	4373
E-450 Super Duty Commercial Stripped Chassis	E49	158	—	6.8L V-10	5-Spd. Auto OD (TorqShift™)	14,050 DRW	9315	2394	2341	4735
		176					9315	2452	2281	4733

(1) Engine/transmission combinations may not be available on all models, or in all areas.
 (2) Base curb weight is for standard equipment only.
 (3) Includes weight of driver, passengers and optional equipment.
 (4) School Bus only.

DIMENSIONAL DATA **E-350 SUPER DUTY CUTAWAY** **138" WHEELBASE (SRW/DRW)**

2006
MODEL YEAR



NOTES — [] DIMENSIONS ARE INCHES.
 — FOR SECTION A, SEE PAGE 68.
 — FOR DIMENSIONS NOT SHOWN, SEE PAGE 62-63.
 — FOR FUEL FILLER LOCATIONS, SEE PAGE 64.
 — FOR CA DIMENSIONS, SEE MODEL LINE UP.

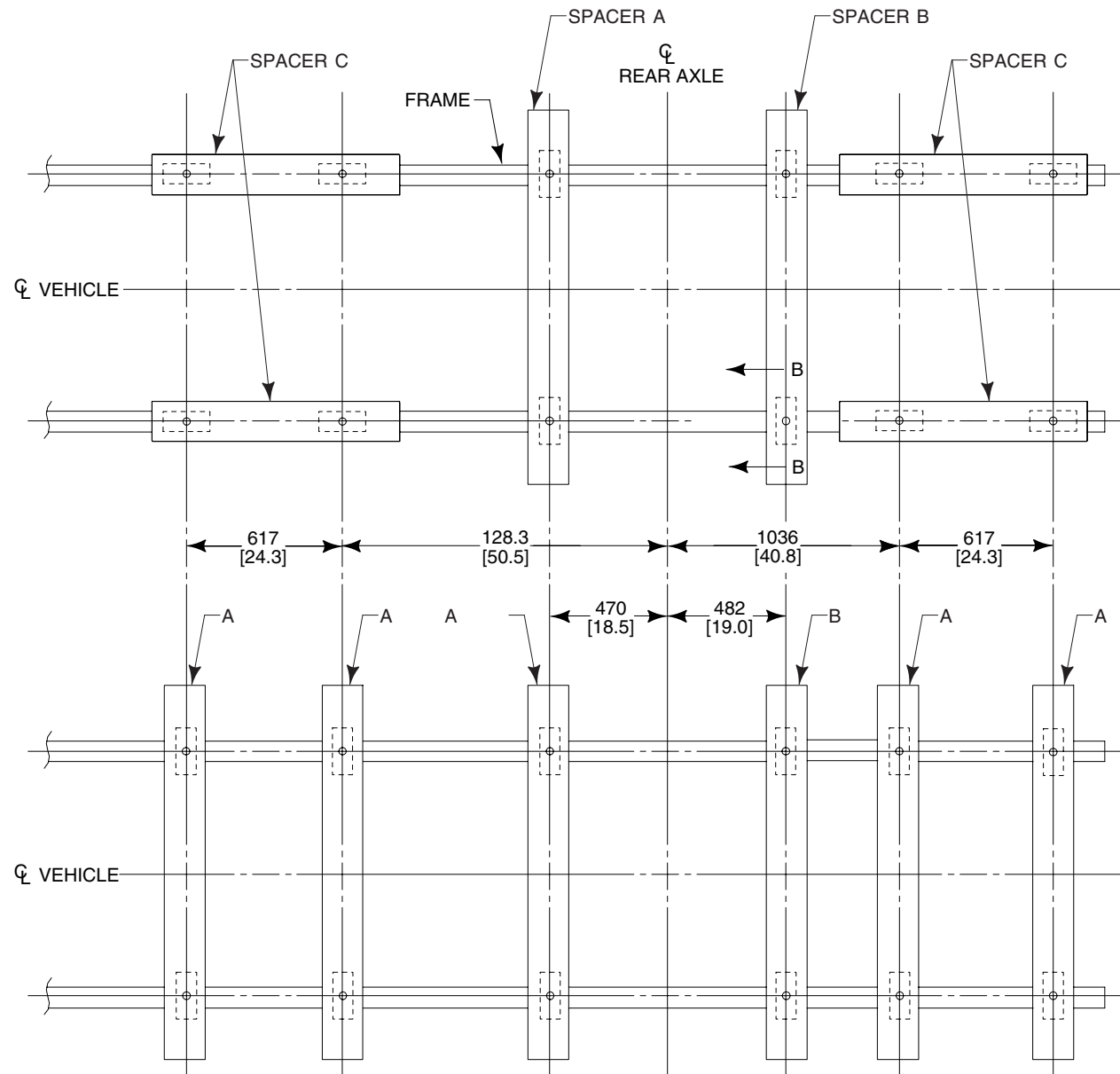
DIMENSIONAL DATA

E-350 SUPER DUTY CUTAWAY

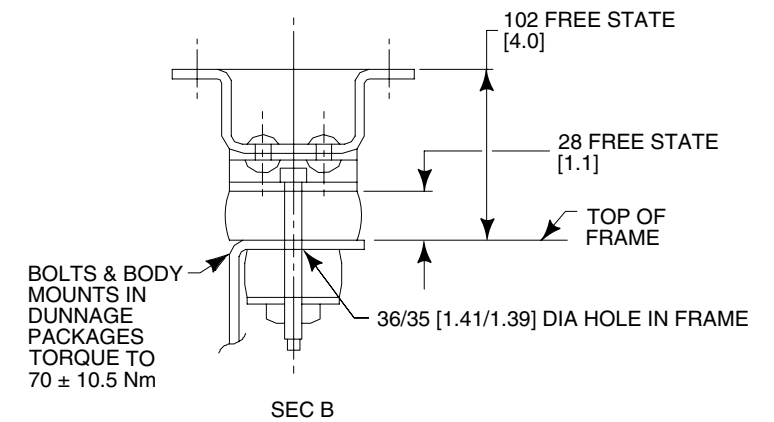
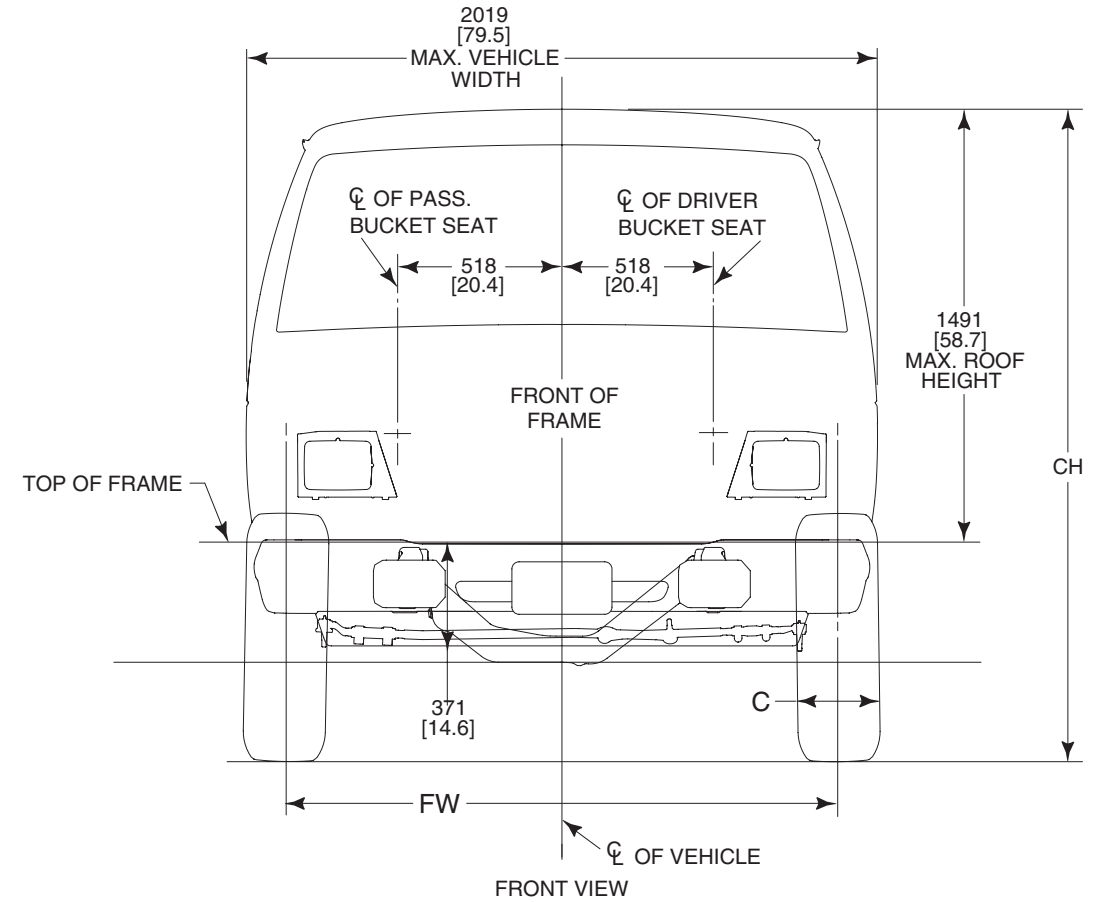
138" WHEELBASE (SRW/DRW)

2006
MODEL YEAR

Revised 11-10-05



INCLUDES 6 LATERAL FRAME SPACERS WITH 12 BODY MOUNTS. USES SAME FRAME HOLES FOR LONGITUDINAL/LATERAL FRAME SPACER STANDARD SYSTEM.



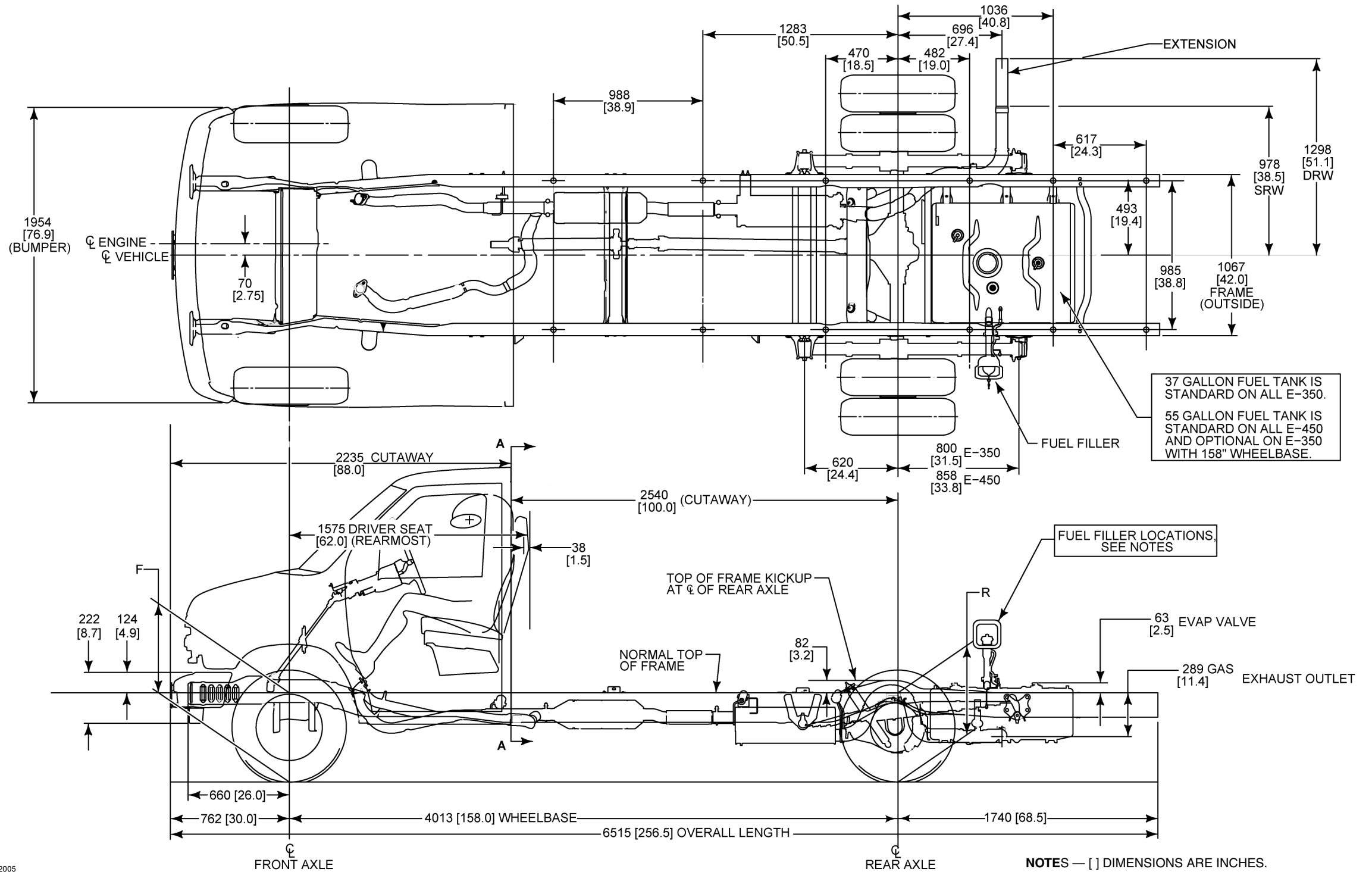
NOTES — [] DIMENSIONS ARE INCHES.
 — FOR SECTION A, SEE PAGE 68.
 — FOR DIMENSIONS NOT SHOWN, SEE PAGE 62-63.

DIMENSIONAL DATA

E-350/450 SUPER DUTY CUTAWAY

158" WHEELBASE (DRW)

2006
MODEL YEAR



NOTES — [] DIMENSIONS ARE INCHES.
 — FOR SECTION A, SEE PAGE 68.
 — FOR DIMENSIONS NOT SHOWN, SEE PAGE 62-63.
 — FOR FUEL FILLER LOCATIONS, SEE PAGE 64.
 — FOR CA DIMENSION, SEE MODEL LINE UP.

DIMENSIONAL DATA

E-350/450 SUPER DUTY CUTAWAY

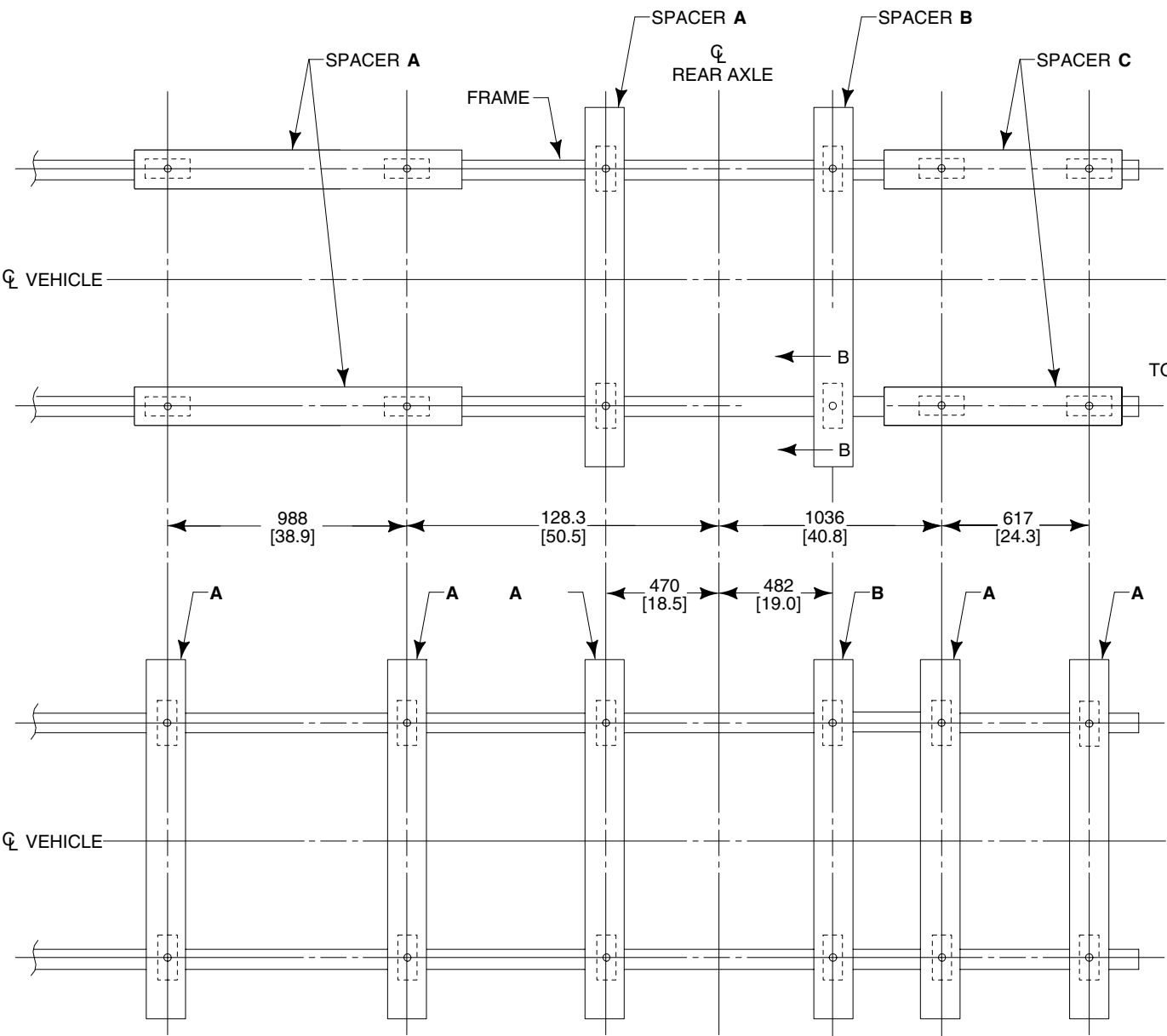
158" WHEELBASE (DRW)

Page 54

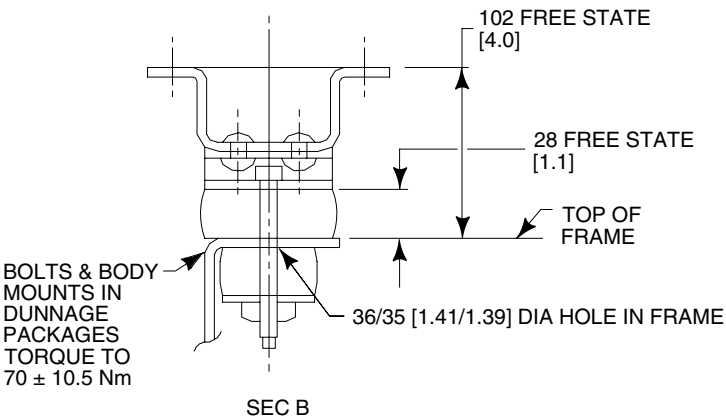
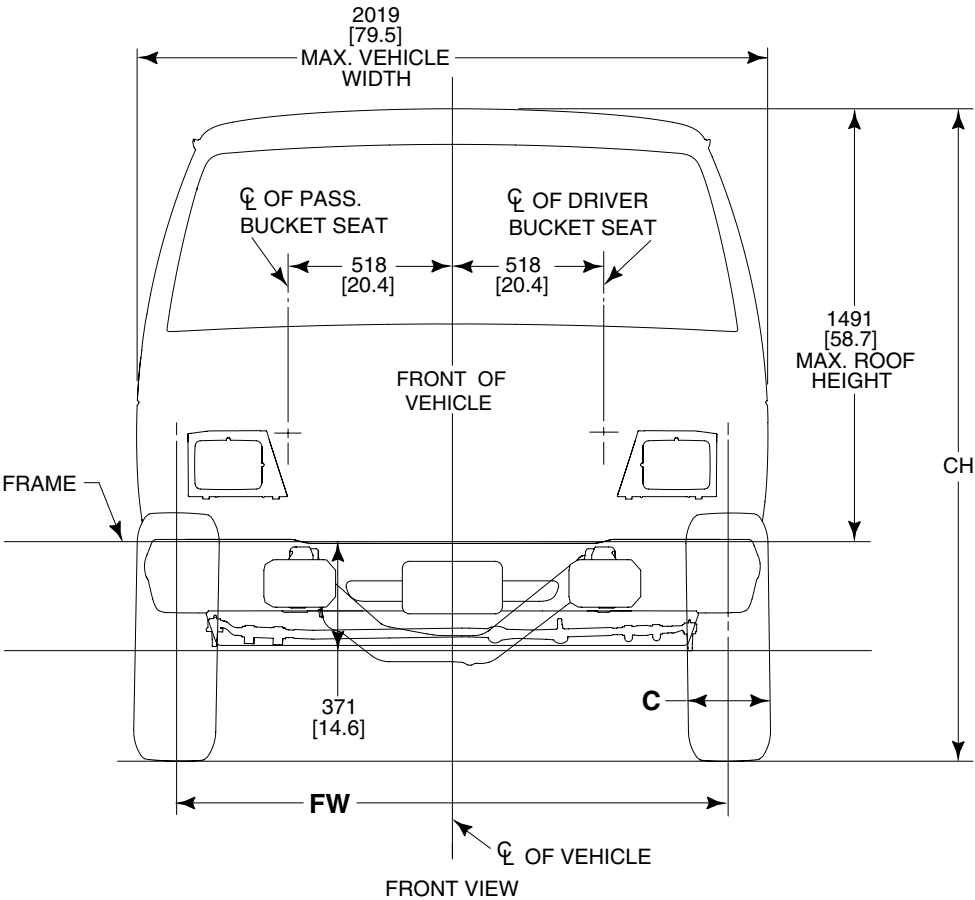
E-SERIES

2006
MODEL YEAR

Revised 11-10-05



INCLUDES 6 LATERAL FRAME SPACERS WITH 12 BODY MOUNTS. USES SAME FRAME HOLES FOR LONGITUDINAL/LATERAL FRAME SPACER STANDARD SYSTEM.



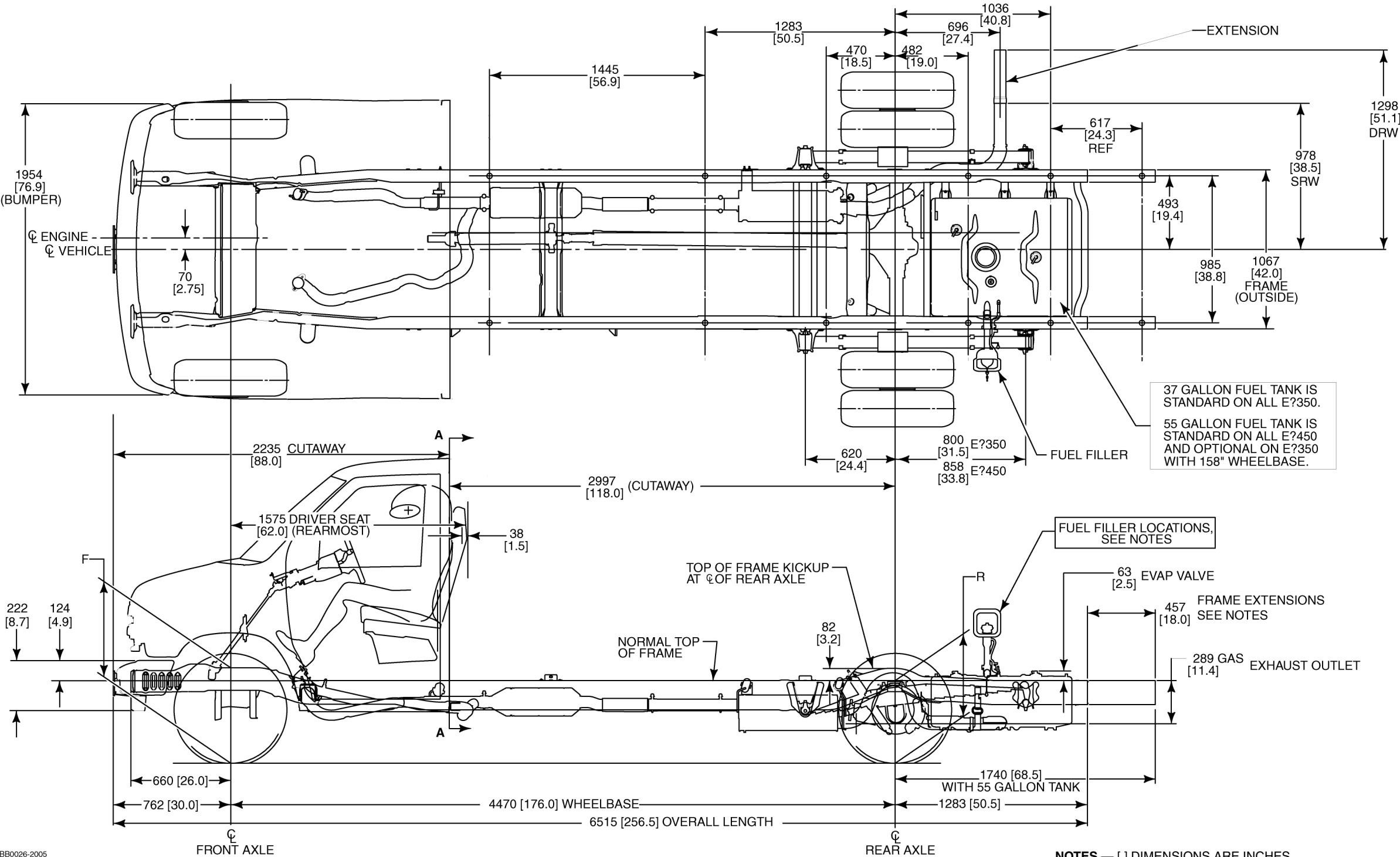
NOTES — [] DIMENSIONS ARE INCHES.
 — FOR DIMENSIONS NOT SHOWN, SEE PAGE 62-63.
 — FOR DETAILED SPACER INFORMATION, SEE PAGE 56.

DIMENSIONAL DATA E-350/450 SUPER DUTY CUTAWAY 176" WHEELBASE (DRW)

2006
 MODEL YEAR

Page 55

E-SERIES



NOTES — [] DIMENSIONS ARE INCHES.
 — FOR SECTION A, SEE PAGE 68.
 — FOR SPACER/FRAME INFORMATION, SEE PAGE 56.
 — FOR FUEL FILLER LOCATIONS, SEE PAGE 64.
 — FOR CA DIMENSION, SEE MODEL LINE UP.

DIMENSIONAL DATA

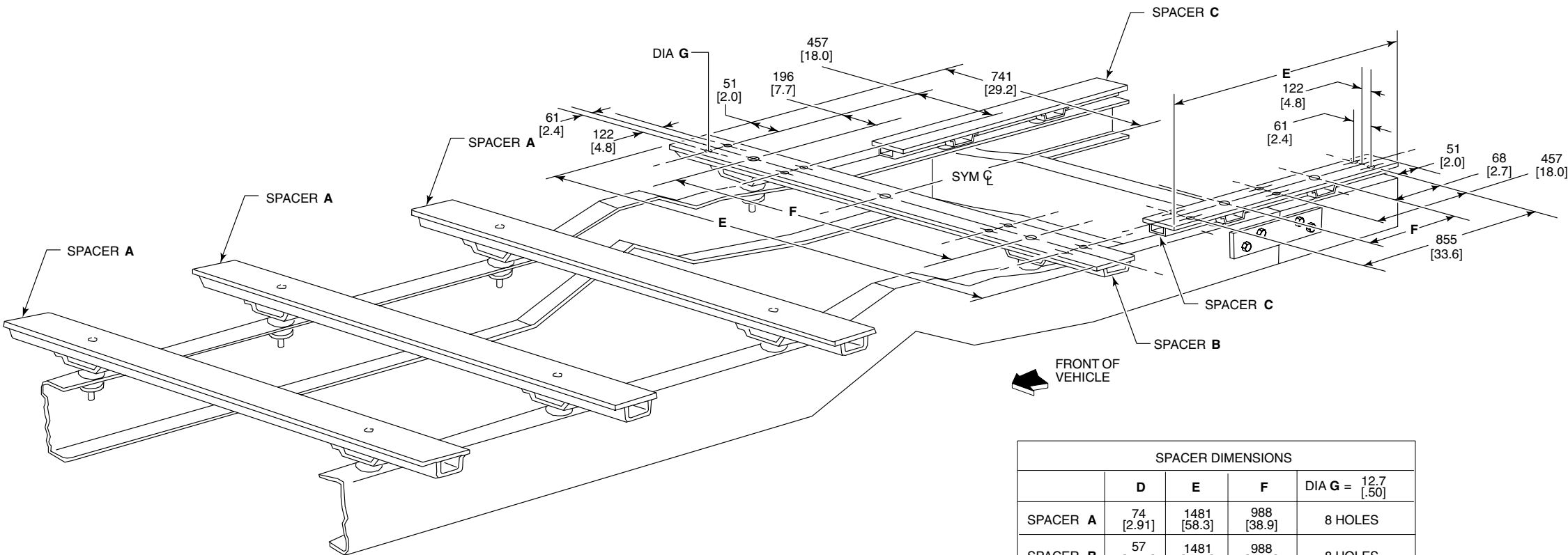
E-350/450 SUPER DUTY CUTAWAY

176" WHEELBASE (DRW)

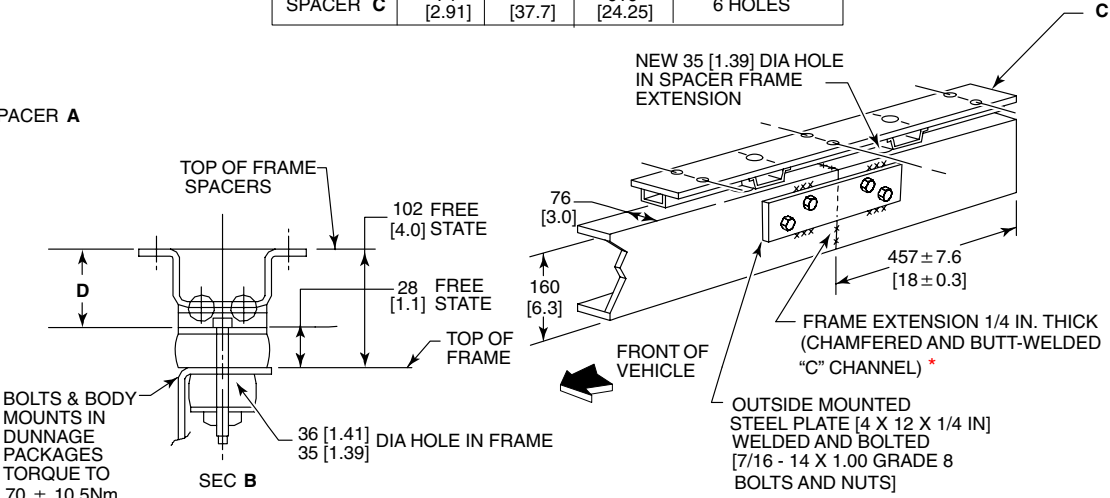
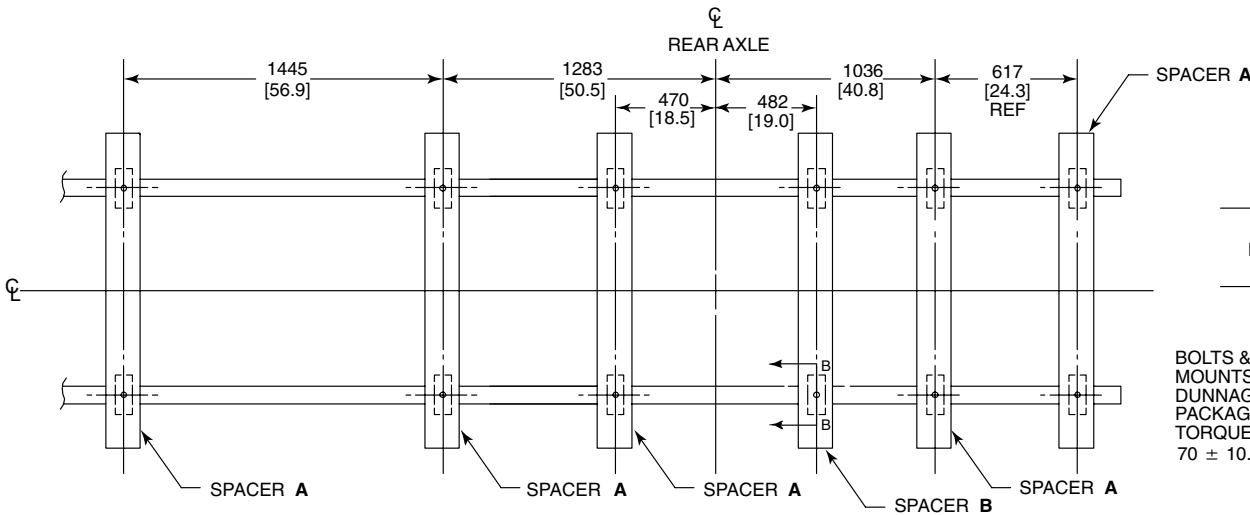
2006
MODEL YEAR

Page 56

E-SERIES



SPACER DIMENSIONS				
	D	E	F	DIA G = 12.7 [1.50]
SPACER A	74 [2.91]	1481 [58.3]	988 [38.9]	8 HOLES
SPACER B	57 [2.26]	1481 [58.3]	988 [38.9]	8 HOLES
SPACER C	74 [2.91]	204 [37.7]	616 [24.25]	6 HOLES



NOTES — [] DIMENSIONS ARE INCHES.
* FOR NGV VARIANT A "C" CHANNEL FRAME REINFORCEMENT IS REQUIRED ALONG WITH THE FRAME EXTENSION.

DIMENSIONAL DATA

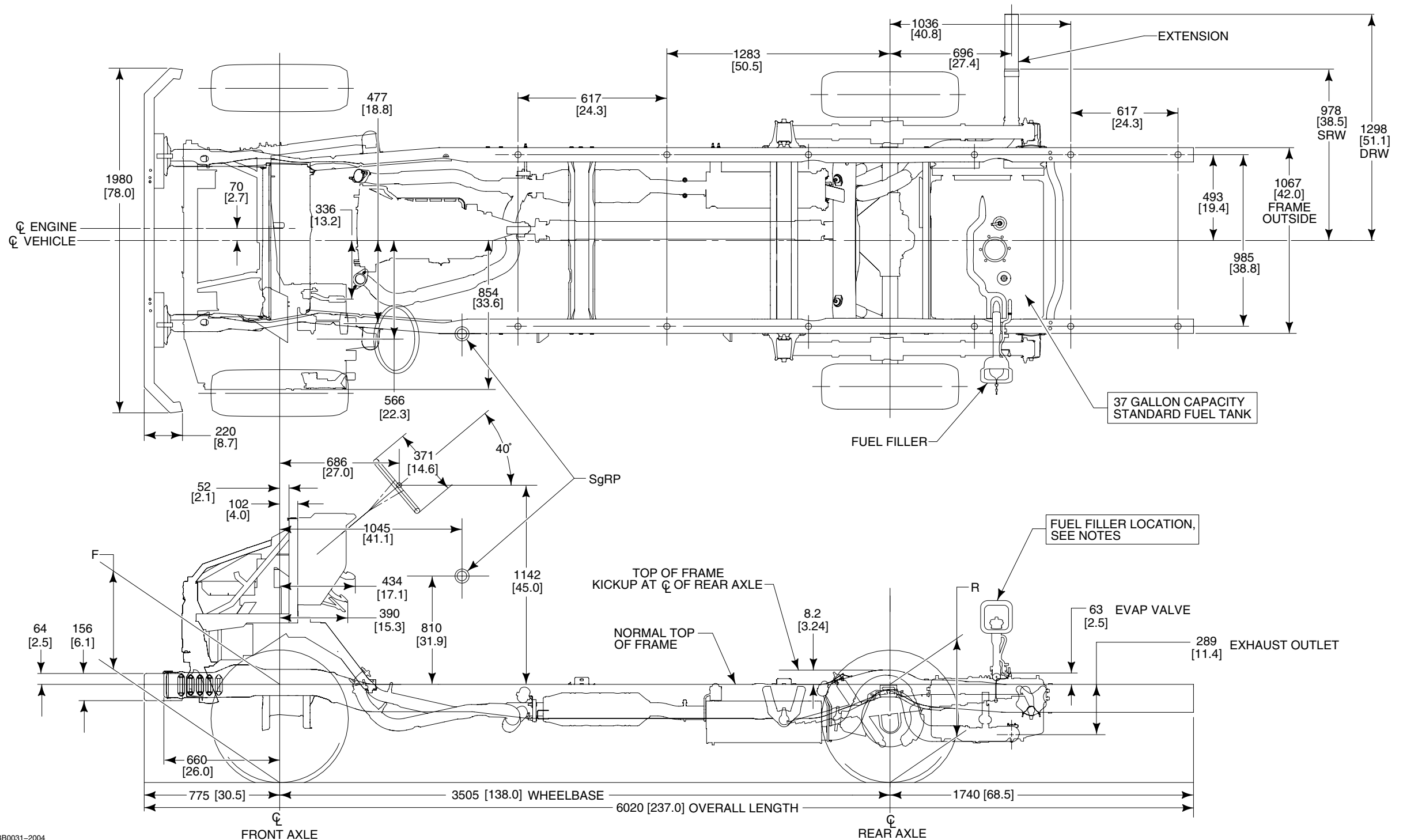
E-350 SUPER DUTY STRIPPED CHASSIS

138" WHEELBASE (SRW/DRW)

2006
MODEL YEAR

Page 57

E-SERIES



BB0031-2004

NOTES — [] DIMENSIONS ARE INCHES.
 — FOR FUEL FILLER LOCATIONS, SEE PAGE 64.
 — FOR DIMENSIONS NOT SHOWN, SEE PAGE 62-63.

DIMENSIONAL DATA

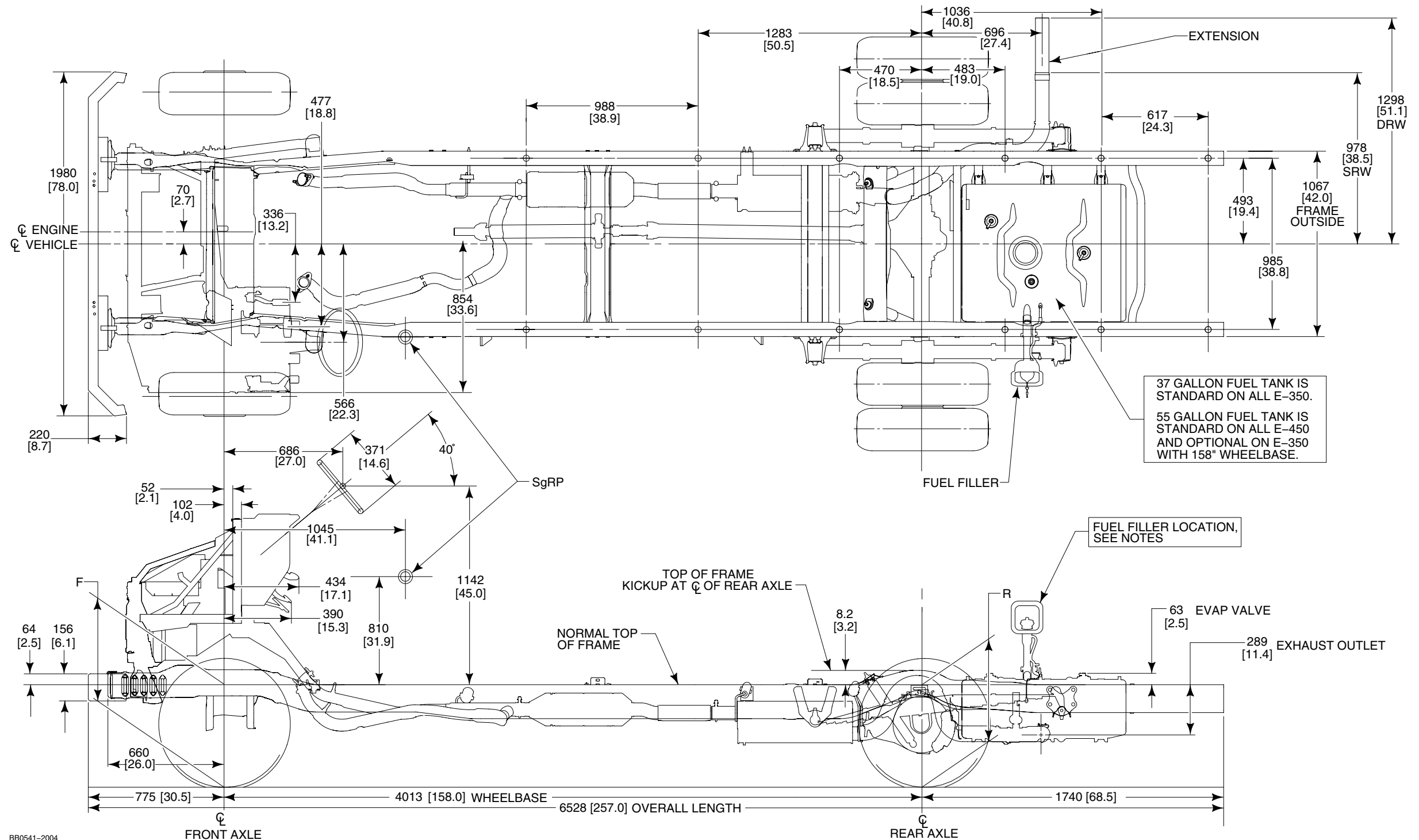
E-350/450 SUPER DUTY STRIPPED CHASSIS

158" WHEELBASE (DRW)

2006
MODEL YEAR

Page 58

E-SERIES



BB0541-2004

NOTES — [] DIMENSIONS ARE INCHES.
— FOR FUEL FILLER LOCATIONS, SEE PAGE 64.
— FOR DIMENSIONS NOT SHOWN, SEE PAGE 62-63.

DIMENSIONAL DATA

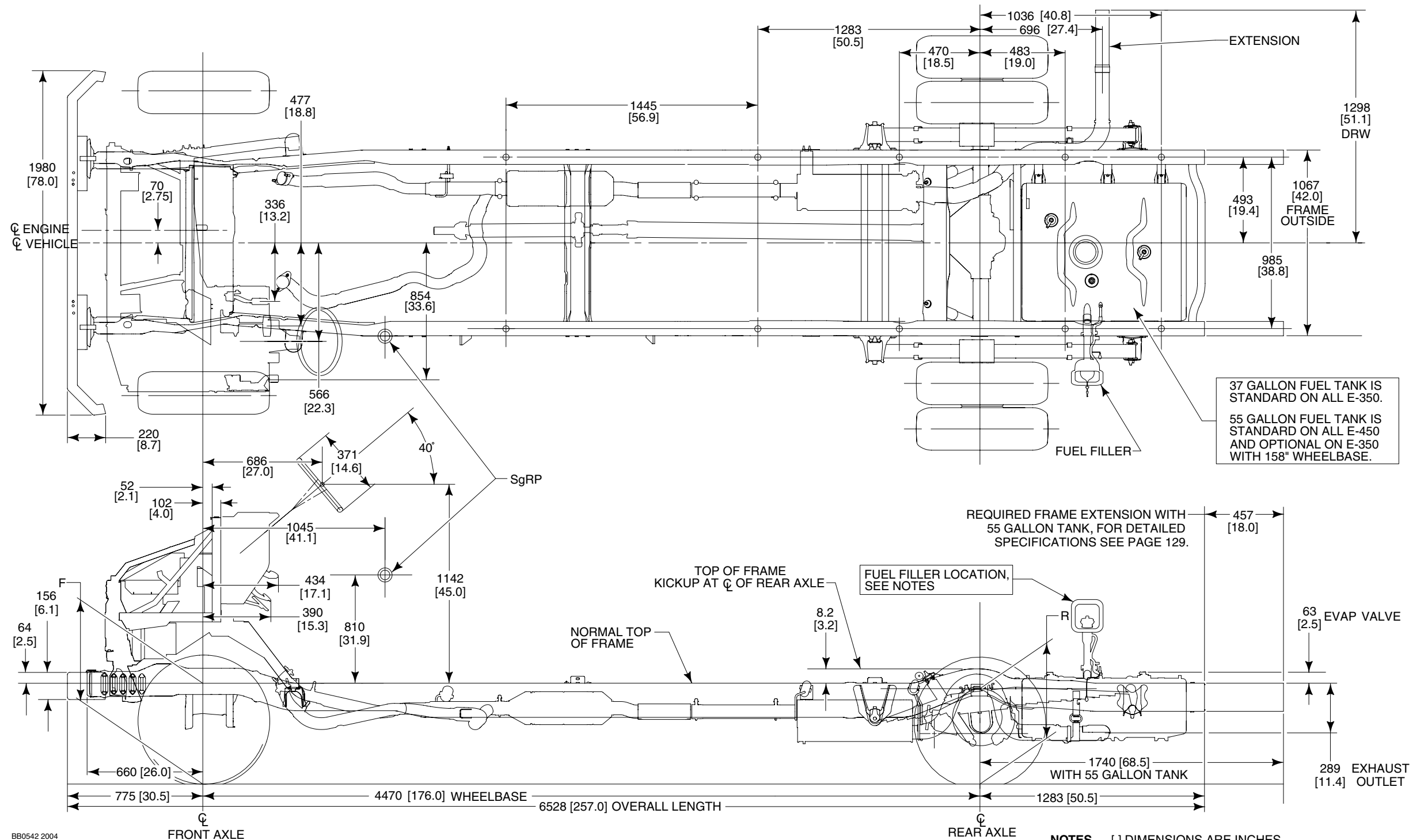
E-350/450 SUPER DUTY STRIPPED CHASSIS

176" WHEELBASE (DRW)

2006
MODEL YEAR

Page 59

E-SERIES



BB0542 2004

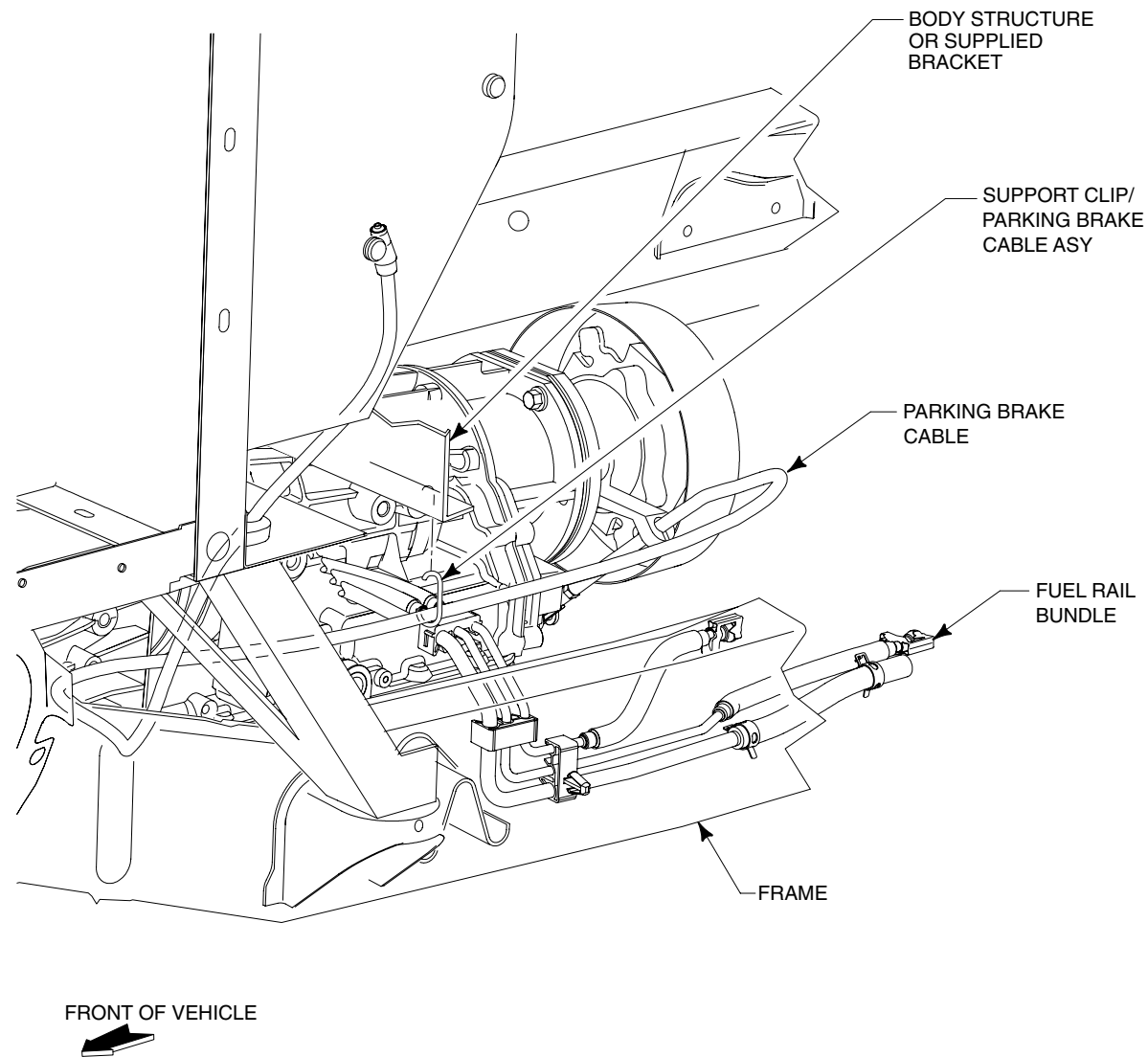
NOTES — [] DIMENSIONS ARE INCHES.
 — FOR DIMENSIONS NOT SHOWN, SEE PAGE 62-63.
 — FOR FUEL FILLER LOCATIONS, SEE PAGE 64.
 — FOR FRAME EXTENSIONS, SEE PAGE 56.

PARKING BRAKE CABLE ATTACHMENT E-450 SUPER DUTY STRIPPED CHASSIS 158"/176" WHEELBASE (DRW)

2006
MODEL YEAR

Page 60

E-SERIES



FRONT OF VEHICLE

BB0548

RECOMMENDED PARKING BRAKE CABLE ATTACHMENT TO BODY

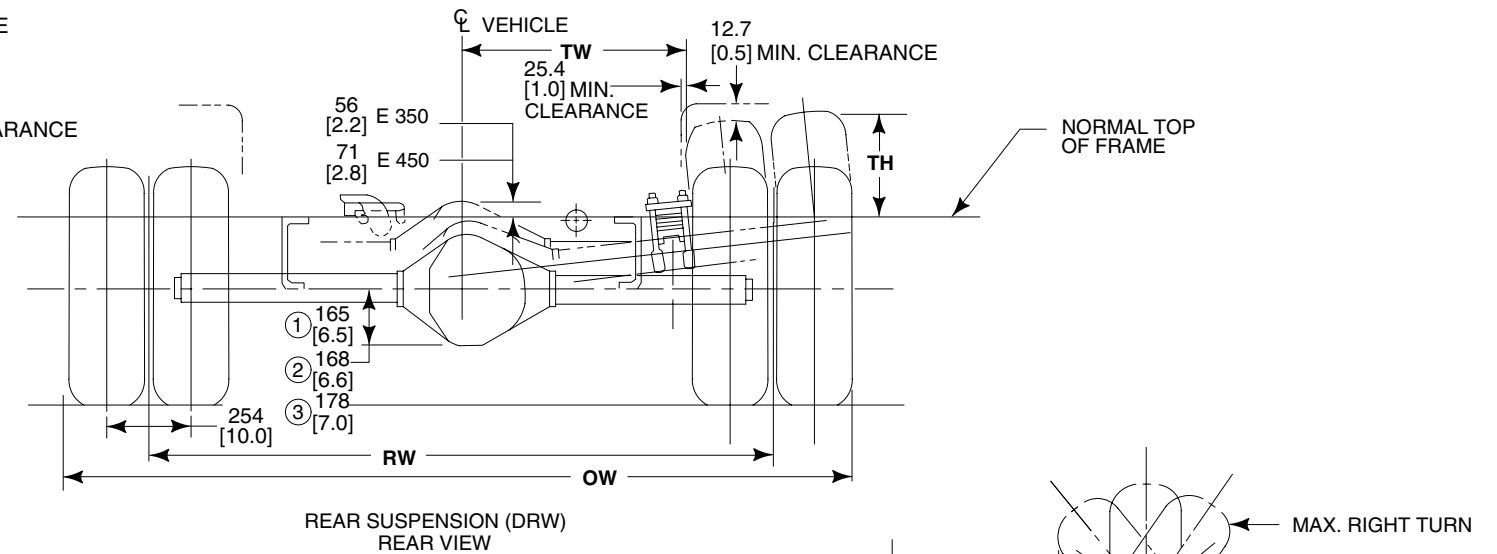
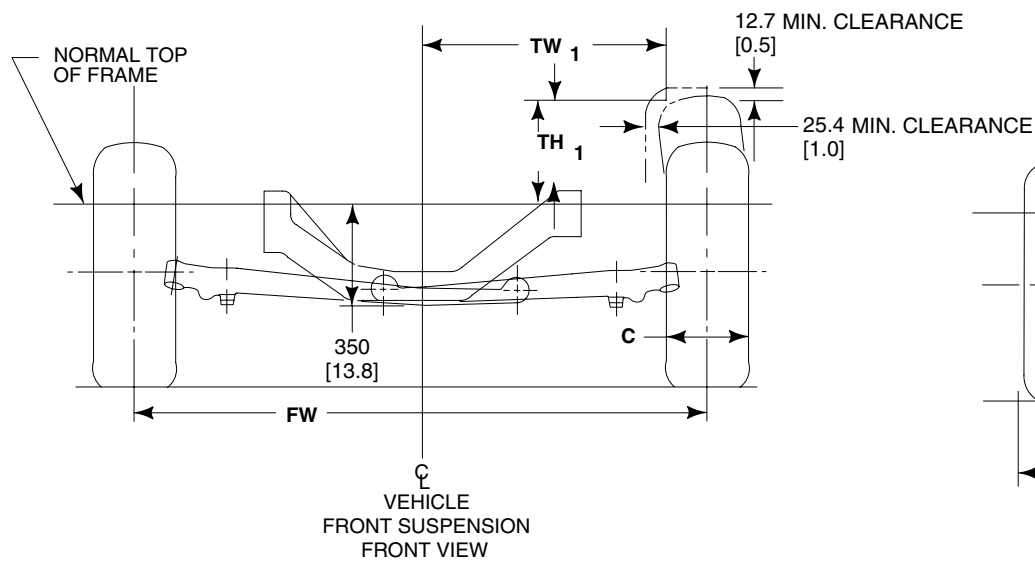
1. REMOVE TIE STRAP SECURING PARKING BRAKE CABLE TO FUEL BUNDLE.
2. USING CLIP SUPPLIED ON PARKING BRAKE CABLE, ATTACH CABLE TO BODY STRUCTURE OR BRACKET SUPPLIED BY BODY BUILDER IN AREA SHOWN.
3. TO ASSURE PROPER PARKING BRAKE FUNCTION THE CABLE SHOULD NOT DEVIATE FROM CURRENT PATH BY MORE THAN 2" SIDE TO SIDE.
4. NO PAINT IS ALLOWED ON CABLE ATTACHMENT ENDS OR ON PARKING BRAKE PEDAL ASSEMBLY.

AXLE / TIRE / WHEELHOUSE / VEHICLE HEIGHT DATA E-350/450 SUPER DUTY CUTAWAY / STRIPPED CHASSIS ALL WHEELBASES (SRW/DRW)

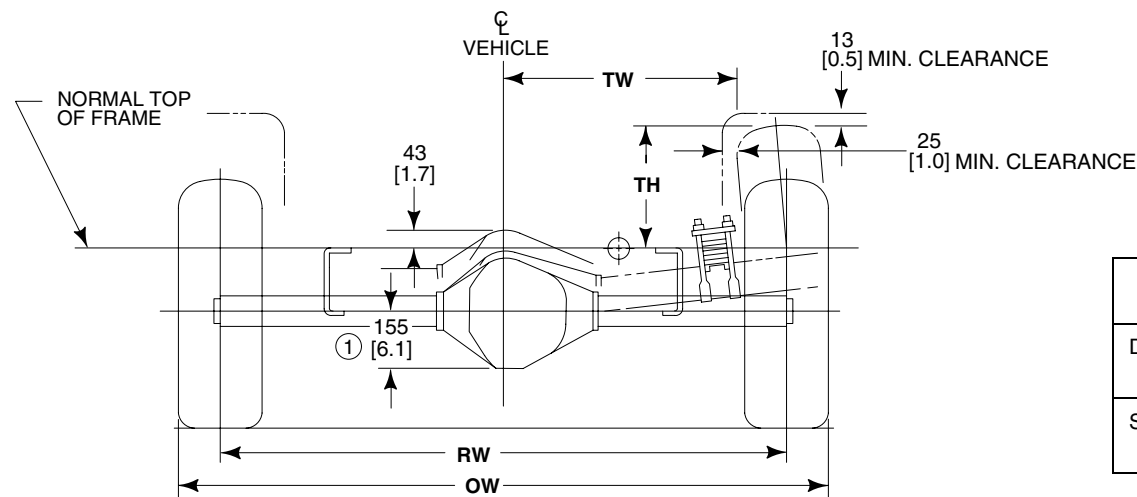
2006
MODEL YEAR

Page 61

E-SERIES



- ① 7800 LB AXLE USED AT 10,000 11,000 LB GVWR FOR RPO APPLICATIONS
- ② 8000 LB AXLE DSO USE ONLY
- ③ 9450 LB AXLE USED AT 14,050 LB GVWR FOR E 450



- ① 7800 LB AXLE USED AT 10,000 11,000 LB GVWR FOR ALL RPO APPLICATIONS

	TW ₁	TH ₁	TW _L	TW _R
DRW LT225/75R16E	655 [25.8]	302 [11.9]	549 [21.6]	521 [20.5]
SRW LT245/75R16E	655 [25.8]	320 [12.6]	549 [21.6]	521 [20.5]

TW = DISTANCE FROM ϕ OF VEHICLE TO SIDE OF TIRE IN MODIFIED JOUNCE.
TH = DISTANCE FROM NORMAL TOP OF FRAME TO TOP OF TIRE IN MODIFIED JOUNCE.

NOTES — [] DIMENSIONS ARE INCHES.
— REFER TO PAGE 56 FOR DETAIL INFORMATION ON FRAME EXTENSION METHOD.
— FOR DIMENSIONS NOT SHOWN, SEE PAGE 63.

AXLE / TIRE / WHEELHOUSE / VEHICLE HEIGHT DATA
E-SERIES SUPER DUTY
CUTAWAY / STRIPPED CHASSIS

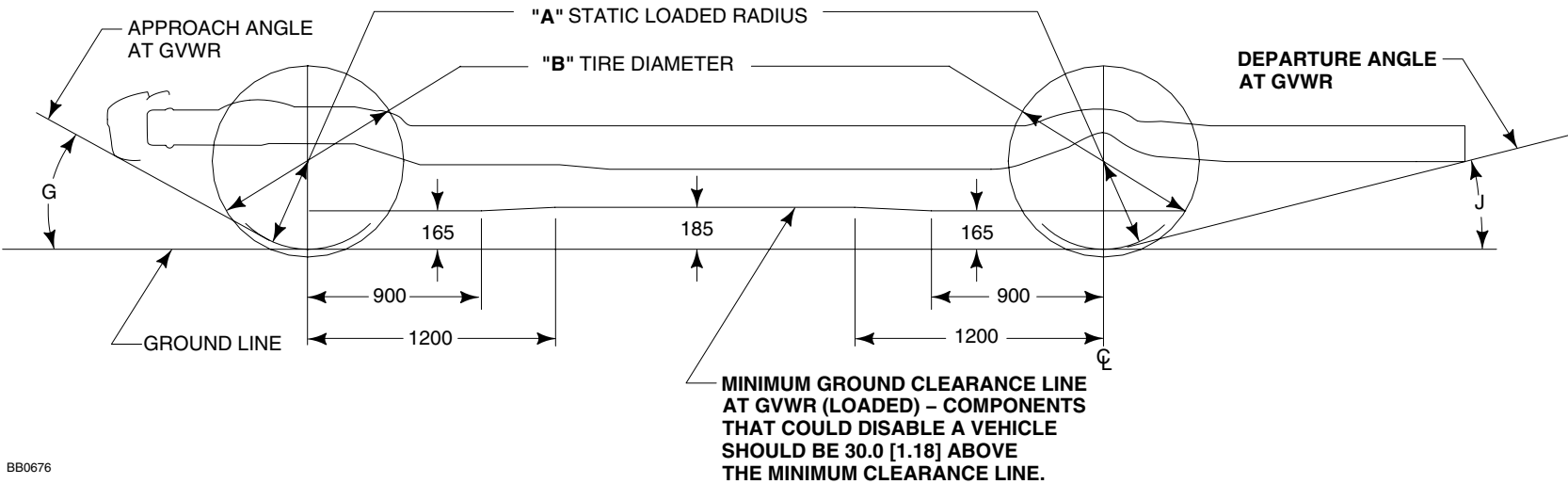
2006
MODEL YEAR

MODEL	WB inches	GVWR pounds	MINIMUM TIRE	FRONT GAWR MIN/MAX pounds		F HEIGHT AT FRONT AXLE ⁽¹⁾		REAR GAWR MIN/MAX pounds	COMBINED REAR SPRING CAPACITY RATE pounds	R HEIGHT AT REAR AXLE ⁽¹⁾		CH OVERALL HEIGHT OF VEHICLE (STANDARD SPRINGS) ⁽¹⁾ mm [in]	
					COMBINED FRONT SPRING CAPACITY RATE pounds	BASE CURB WEIGHT mm [in]	LOADED mm [in]			BASE CURB WEIGHT mm [in]	LOADED mm [in]		
					STD SPRING	STD SPRING	STD SPRING			STD SPRING	STD SPRING	STD SPRING	CURB
CUTAWAY													
E-350 SD	138	9600 ⁽²⁾	LT245/75R16E	3700/4600 ⁽³⁾	3700/4600 ⁽³⁾	561 [22.1]	530 [20.9]	6084	7810	666 [26.2]	586 [23.1]	2096 [82.5]	2045 [80.5]
		10,700	LT225/75R16E	3700/4600 ⁽³⁾	3700/4600 ⁽³⁾	553 [21.8]	522 [20.6]	7800	7810	658 [25.9]	576 [22.7]	2085 [82.1]	2035 [80.1]
		11,500 ⁽⁴⁾	LT225/75R16E	4050	4050	553 [21.8]	522 [20.6]	7800	7810	658 [25.9]	576 [22.7]	2085 [82.1]	2035 [80.1]
	158	11,500	LT225/75R16E	4050/4600 ⁽³⁾	4050/4600 ⁽³⁾	553 [21.8]	522 [20.6]	7800	7810	658 [25.9]	576 [22.7]	2080 [81.9]	2032 [80.0]
	176	11,500	LT225/75R16E	4050/4600 ⁽³⁾	4050/4600 ⁽³⁾	553 [21.8]	522 [20.6]	7800	7810	658 [25.9]	576 [22.7]	2078 [81.8]	2030 [79.9]
E-450 SD	158	14,050	LT225/75R16E	4600	4600	553 [21.8]	522 [20.6]	9450	9450	662 [26.0]	577 [22.7]	2083 [82.0]	2032 [80.0]
	176	14,050	LT225/75R16E	4600	4600	553 [21.8]	522 [20.6]	9450	9450	662 [26.0]	577 [22.7]	2078 [81.8]	2030 [79.9]
STRIPPED CHASSIS													
E-350 SD	138	9600 ⁽²⁾	LT245/75R16E	3550/3800	3550/3900	—	530[20.9]	6084	7810	—	586 [23.1]	—	—
		10,000	LT225/75R16E	3700/3800	3700/3900	—	522 [20.6]	7800	7810	—	576 [22.7]	—	—
	158	9600 ⁽²⁾	LT245/75R16E	3550/3800	3550/3800	—	530[20.9]	6084	7810	—	586 [23.1]	—	—
		10,000	LT225/75R16E	3550/3800	3550/3800	—	522 [20.6]	7800	7810	—	576 [22.7]	—	—
		11,000	LT225/75R16E	3800/4200	3800/4200	—	522 [20.6]	7800	7810	—	576 [22.7]	—	—
	176	10,000	LT225/75R16E	3800/4050	3800/4050	—	522 [20.6]	7200	7810	—	576 [22.7]	—	—
		11,000	LT225/75R16E	4050/4400	4050/4400	—	522 [20.6]	7800	7810	—	576 [22.7]	—	—
E-450 SD	158	14,050	LT225/75R16E	4600	4600	—	522 [20.6]	9450	9450	—	577 [22.7]	—	—
	176	14,050	LT225/75R16E	4600	4600	—	522 [20.6]	9450	9450	—	577 [22.7]	—	—

(1) The Height Data shown represents dimensions of a nominal vehicle with no options. Actual height may vary due to production tolerances.
(2) Single Rear Wheels.
(3) 4600 lb. Standard with Ambulance Prep Package.
(4) School Bus Prep Package.

GROUND CLEARANCE DATA
SUPER DUTY CUTAWAY/STRIPPED CHASSIS

2006
MODEL YEAR



BASE VEHICLE LOADED

MODEL	TIRE SIZE	ALL SEASON TIRE DATA				TREAD WIDTH		OW	TH	TW	GROUND CLEARANCE					
		A	B	C		FW	RW	OVERALL WIDTH	STD	STD	G			J		
											APPROACH ANGLE			DEPARTURE ANGLE		
											138" WB	158" WB	176" WB	138" WB	158" WB	176" WB
E-350 Cutaway SRW	LT245/75R16E	356 [14.0]	787 [31.0]	263 [10.3]	178 [7.0]	1763 [69.4]	1831 [72.1]	2094 [82.4]	307 [12.1]	710 [28.0]	34°	N/A	N/A	18°	N/A	N/A
E-350 Cutaway DRW	LT225/75R16E	346 [13.6]	757 [29.8]	236 [9.3]	152 [6.0]	1763 [69.4]	1860 [73.2]	2349 [92.5]	329 [12.9]	684 [26.9]	33°	33°	33°	18°	15°♦	18°♦
E-350 Stripped Chassis SRW	LT245/75R16E	356 [14.0]	787 [31.0]	263 [10.3]	178 [7.0]	1763 [69.4]	1831 [72.1]	1950 [76.7]	298 [11.7]	638 [25.1]	34°	34°	N/A	18°	18°	N/A
E-350 Stripped Chassis DRW	LT225/75R16E	346 [13.6]	757 [29.8]	236 [9.3]	152 [6.0]	1763 [69.4]	1860 [73.2]	2349 [92.5]	329 [12.9]	684 [26.9]	33°	33°	34°	18°	18°	24°
E-450 Cutaway DRW	LT225/75R16E	346 [13.6]	757 [29.8]	236 [9.3]	152 [6.0]	1763 [69.4]	1974 [77.7]	2464 [97.0]	325 [12.8]	743 [29.2]	N/A	33°	33°	N/A	15°♦	18°♦
E-450 Stripped Chassis DRW	LT225/75R16E	346 [13.6]	757 [29.8]	236 [9.3]	152 [6.0]	1763 [69.4]	1974 [77.7]	2464 [97.0]	325 [12.8]	743 [29.2]	N/A	33°	35°	N/A	15°♦	18°♦

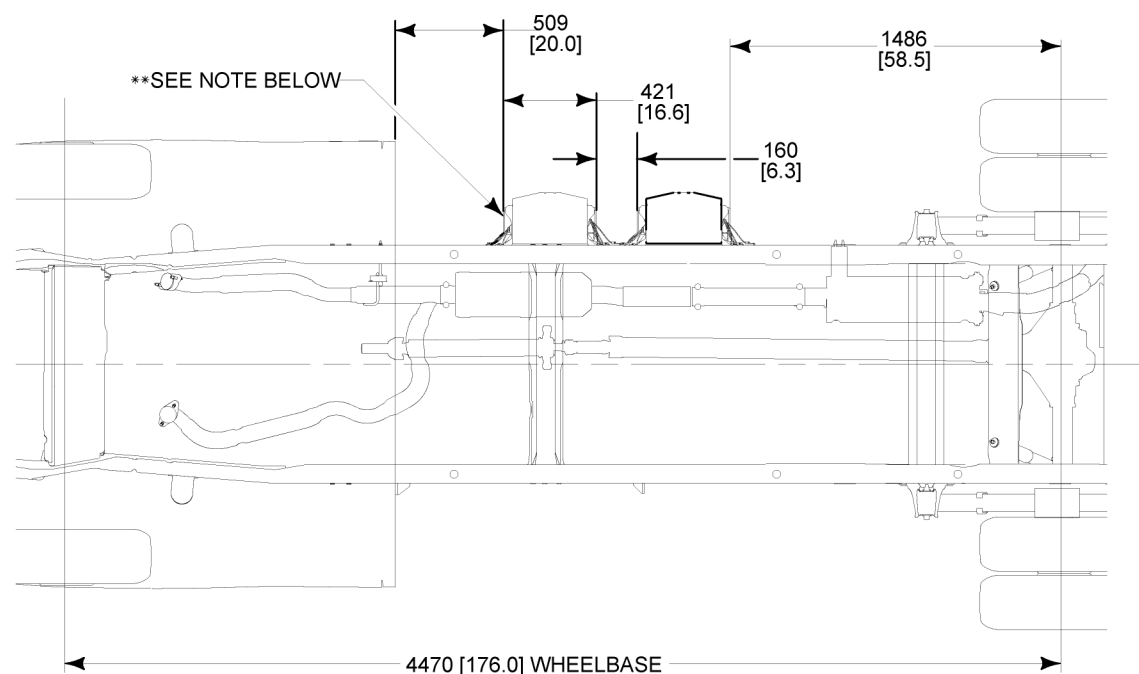
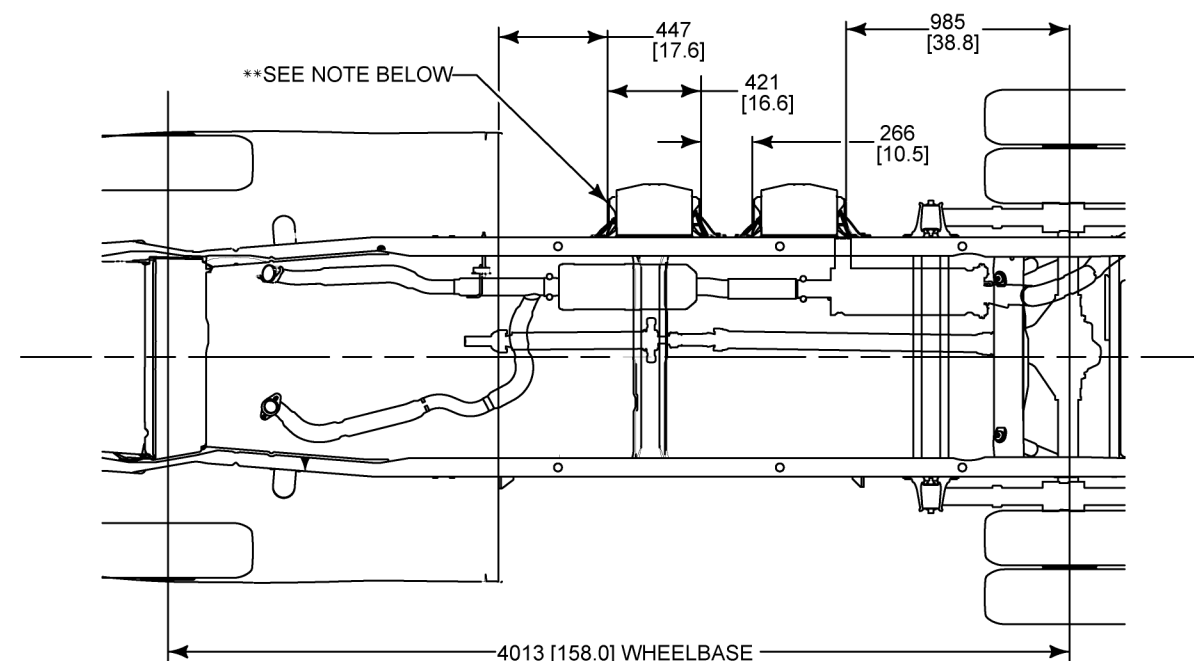
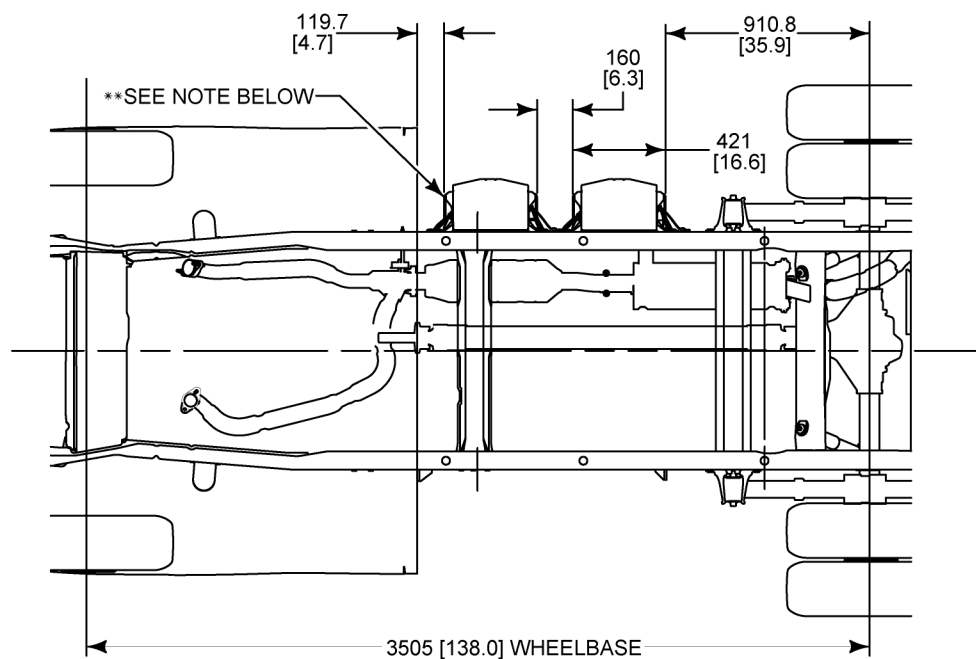
♦ 55-gallon tank and 18 inch frame extension.

NOTE — [] DIMENSIONS ARE INCHES.

BATTERY BOX LOCATIONS

E-350/450 6.0L DUAL AND GAS AUXILIARY

2006
MODEL YEAR



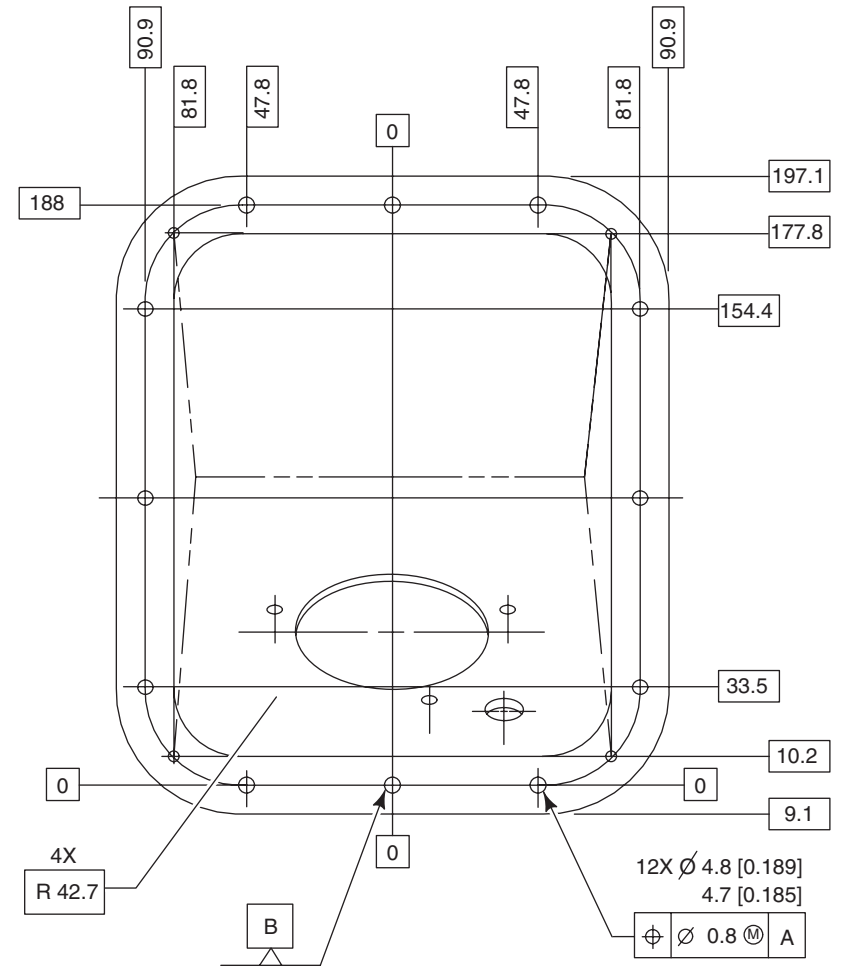
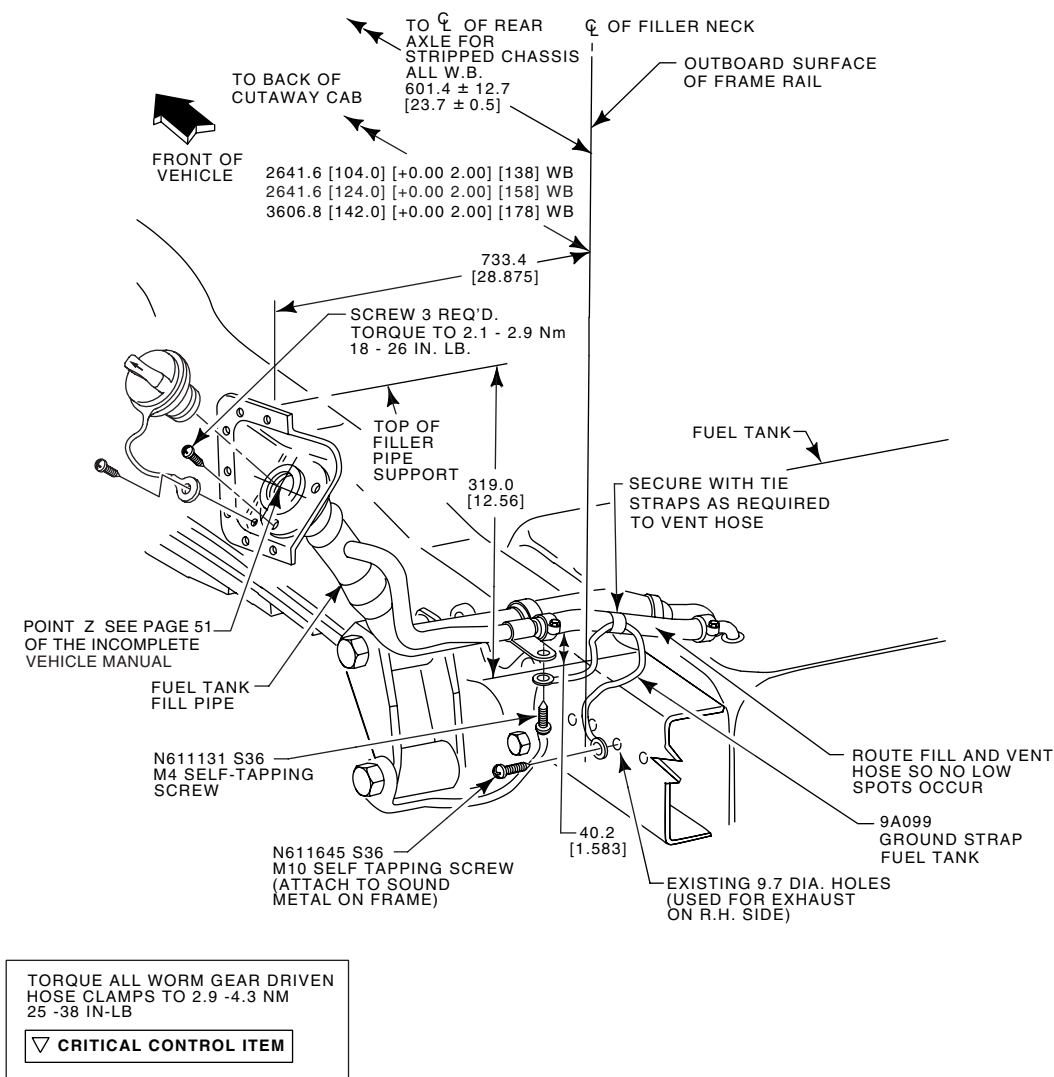
The guidelines below must be followed when repositioning the battery box

- Maintain attachment hole diameter of (12 mm)
- Maintain use of existing OEM bolts (M10)
- The battery box must NOT be packaged any lower in vehicle position than is provided by Ford
- All new frame holes must be at least 1x hole diameter away from all other holes & 1½ diameter away from the edge of a radius tangent
- Battery boxes may not be moved rearward of position provided by Ford

FUEL FILLER SYSTEM

E-SERIES E-SERIES SUPER DUTY CUTAWAY / STRIPPED CHASSIS

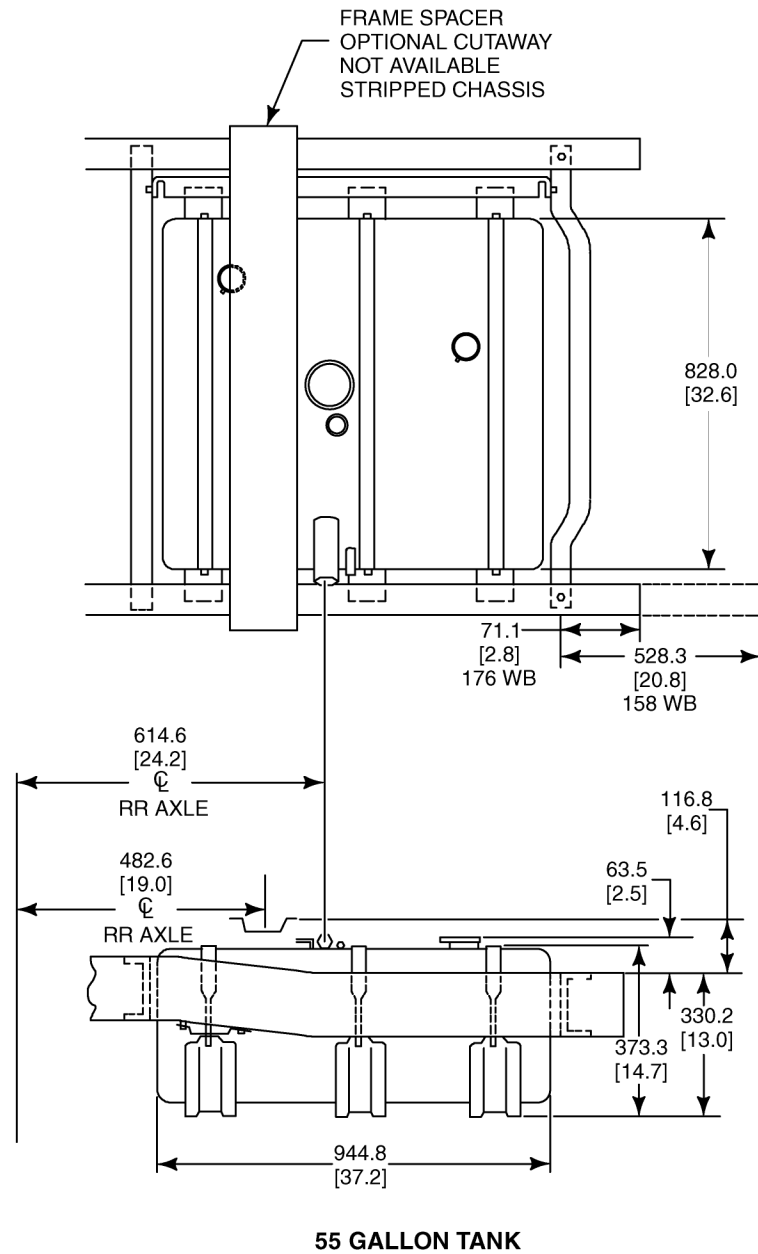
2006
MODEL YEAR



NOTE — [] DIMENSIONS ARE INCHES.

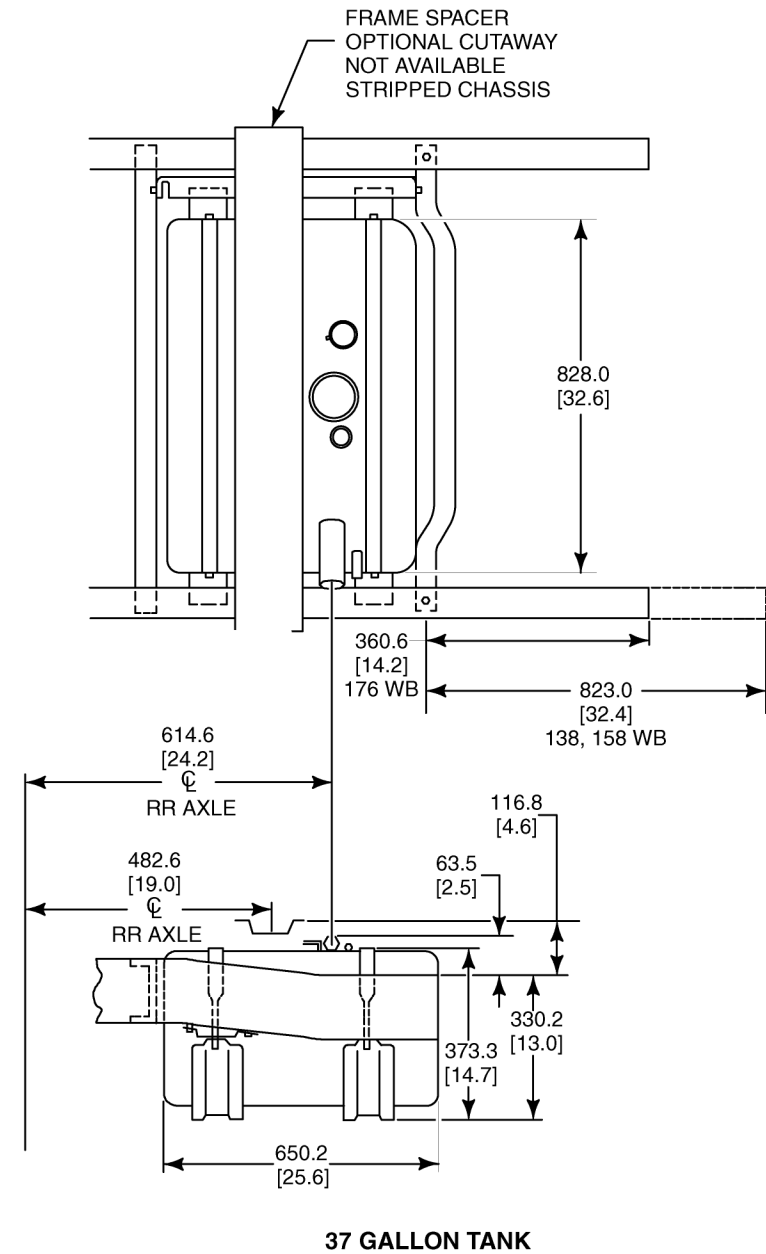
AFT-OF-AXLE FUEL TANK E-350/450 SUPER DUTY CUTAWAY / STRIPPED CHASSIS

2006
MODEL YEAR



WARNING

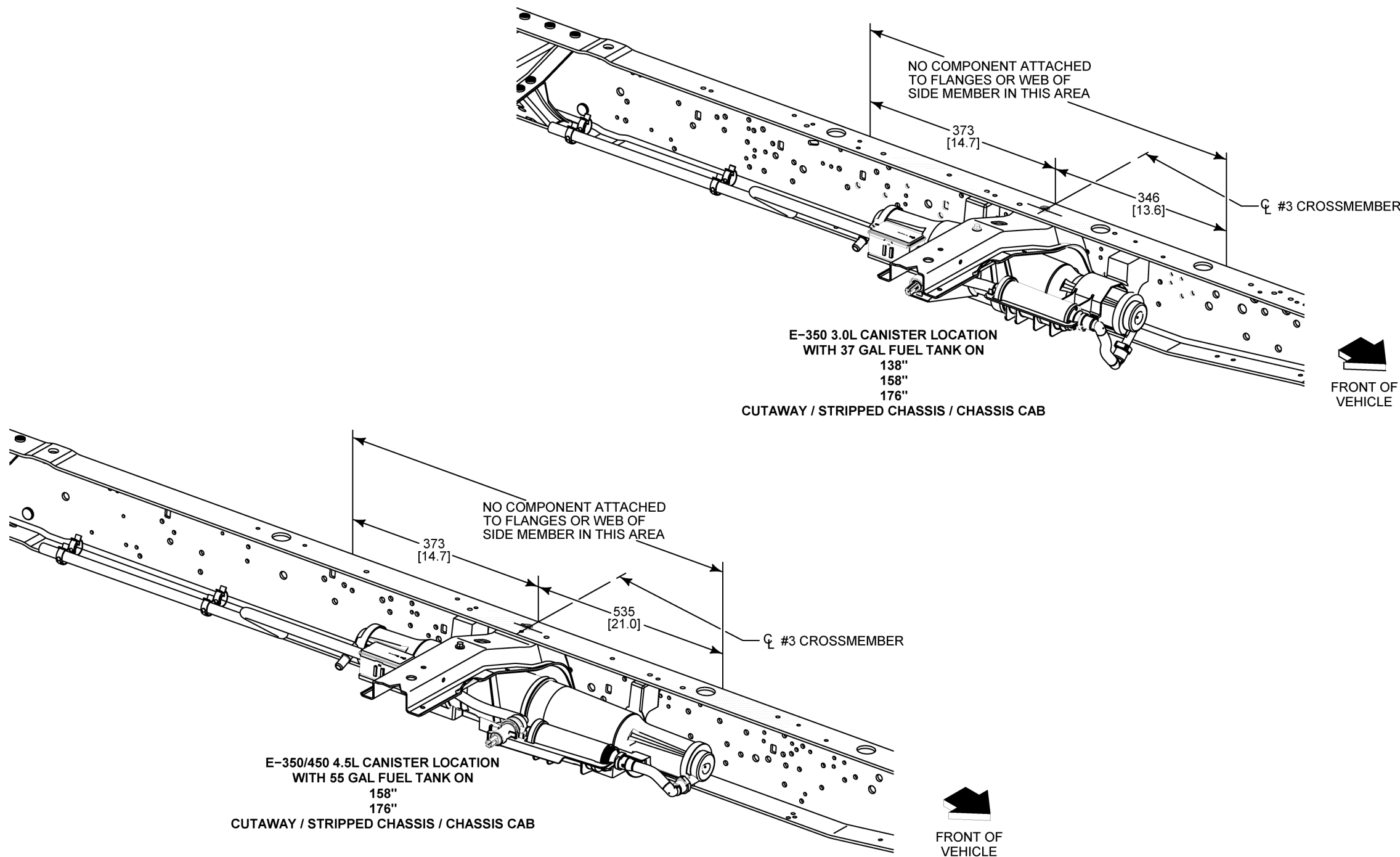
18 INCH MIN. FRAME
EXTENSION REQUIRED
WITH THE 55 GAL. TANK
AND THE 176"
WHEELBASE ONLY



FUEL SYSTEM EVAPORATIVE EMISSIONS

E-SERIES SUPER DUTY CUTAWAY / STRIPPED CHASSIS

2006
MODEL YEAR



BACK OF CUTAWAY CAB — PROFILE DIMENSIONS

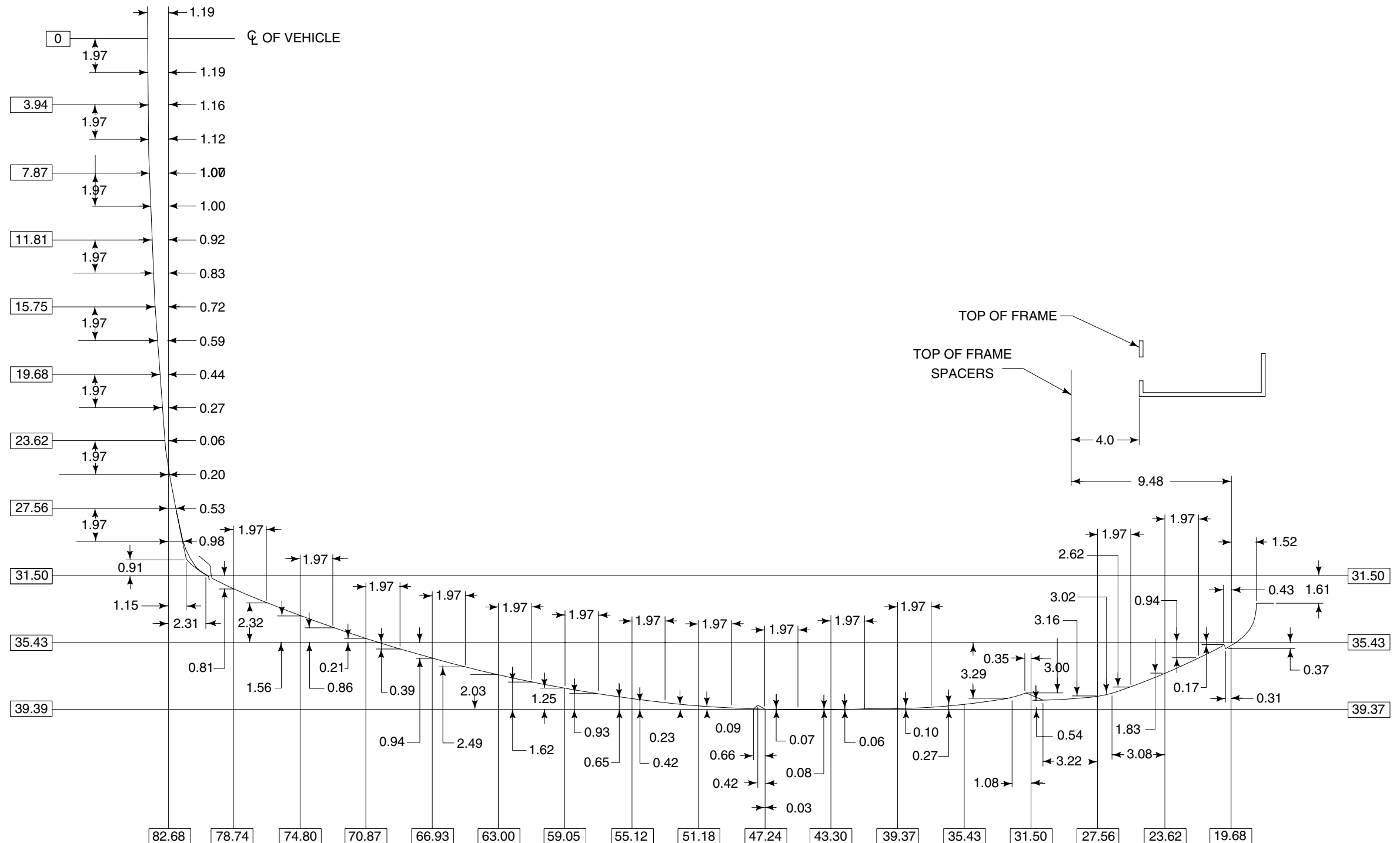
E-350/450 SUPER DUTY CUTAWAY

BODY "SECTION A"

2006
MODEL YEAR

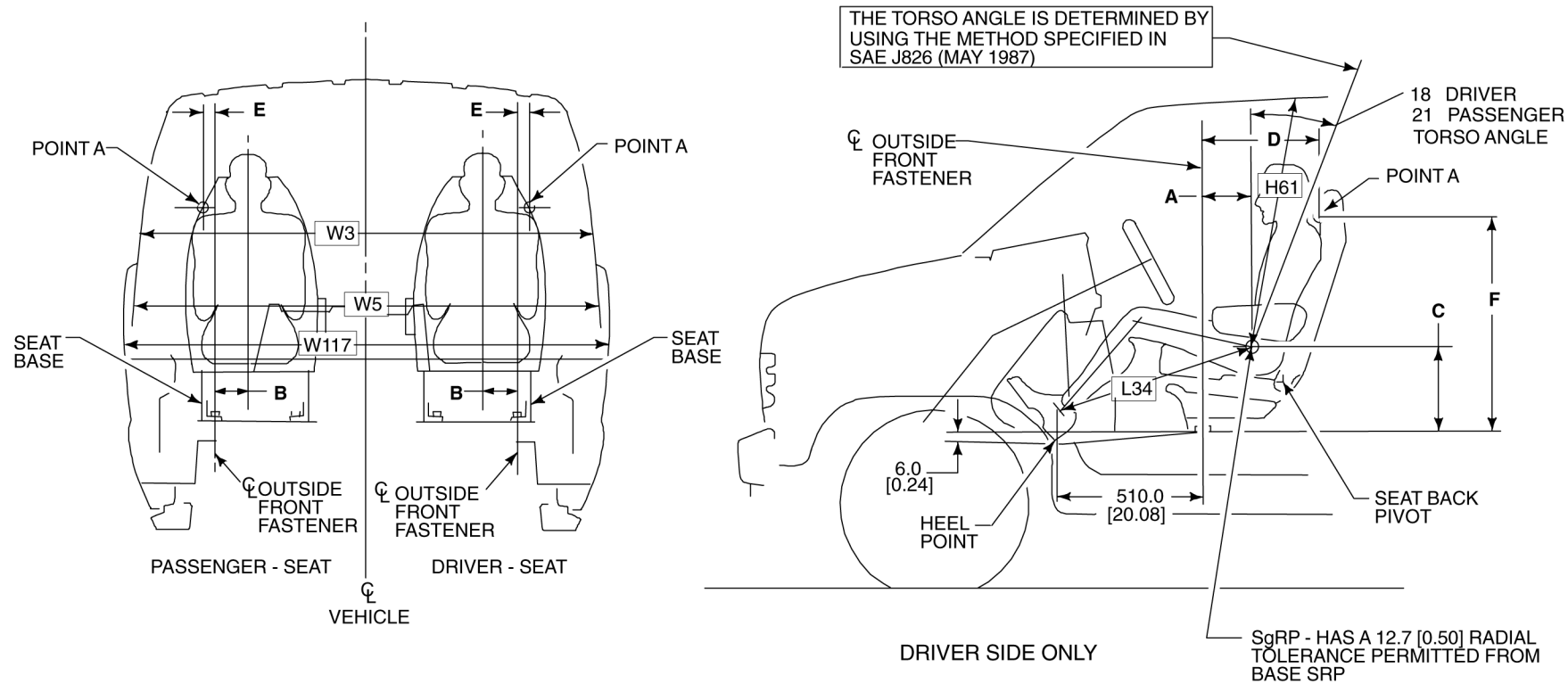
Page 68

E-SERIES



SEAT POSITION
E-350/450 SUPER DUTY CUTAWAY

2006
MODEL YEAR



IMPORTANT:
THE DIMENSIONS IN THIS FIGURE REQUIRE THE VEHICLE TO BE AT DESIGN POSITION. E-SERIES VEHICLES AT DESIGN POSITION WILL BE LEVEL FRONT TO REAR, AND SIDE TO SIDE, ON THE UPPER SURFACE OF THE RIBBED FLOOR PANEL FROM THE B-PILLAR REARWARD.

BB0672-2005

SRP INFORMATION (SEAT POSITION IS 10.0 mm [0.39] FORWARD OF REARMOST POSITION)				POINT A (SEAT POSITION IS AT THE MIDPOINT OF AVAILABLE TRAVEL)		
	A	B	C	D	E	F
DRIVER – SEAT	217.8 [8.57]	105.0 [4.13]	384.2 [15.13]	356.0 [14.01]	67.0 [2.64]	937.4 [36.90]
PASSENGER – SEAT	277.3 [10.92]	103.0 [4.06]	377.0 [14.84]	412.0 [16.22]	65.0 [2.56]	960.1 [37.80]

CODE	DESCRIPTION	
FRONT COMPARTMENT		
L34	MAXIMUM EFFECTIVE LEG ROOM – FRONT	1016 [40.0]
W3	SHOULDER ROOM – FRONT	1729 [68.1]
W5	HIP ROOM – FRONT	1664 [65.5]
W117	BODY WIDTH AT H-POINT	1999 [78.6]
H61	EFFECTIVE HEAD ROOM – FRONT	1070 [42.1]

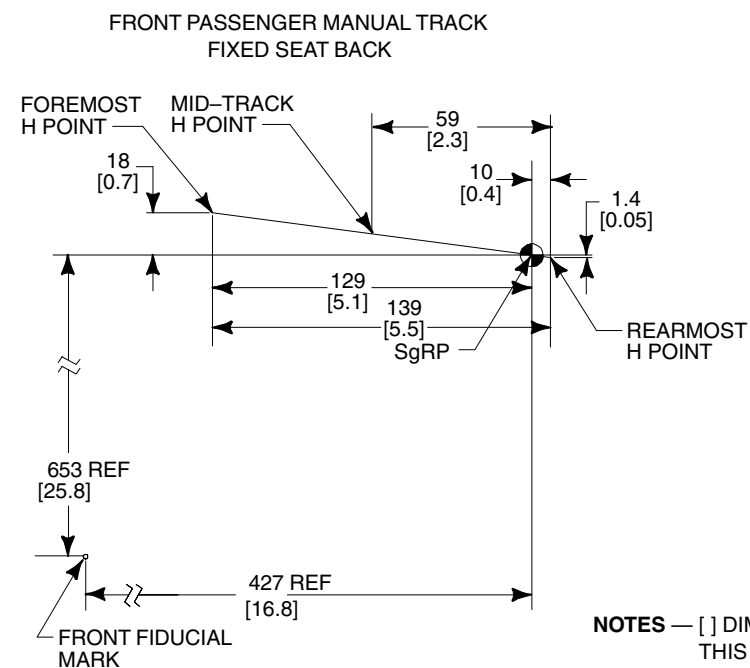
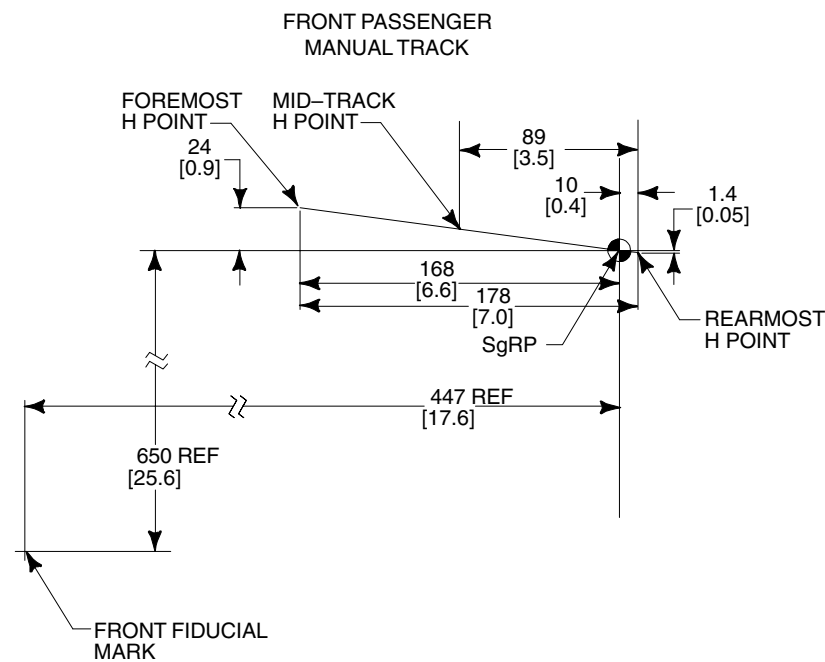
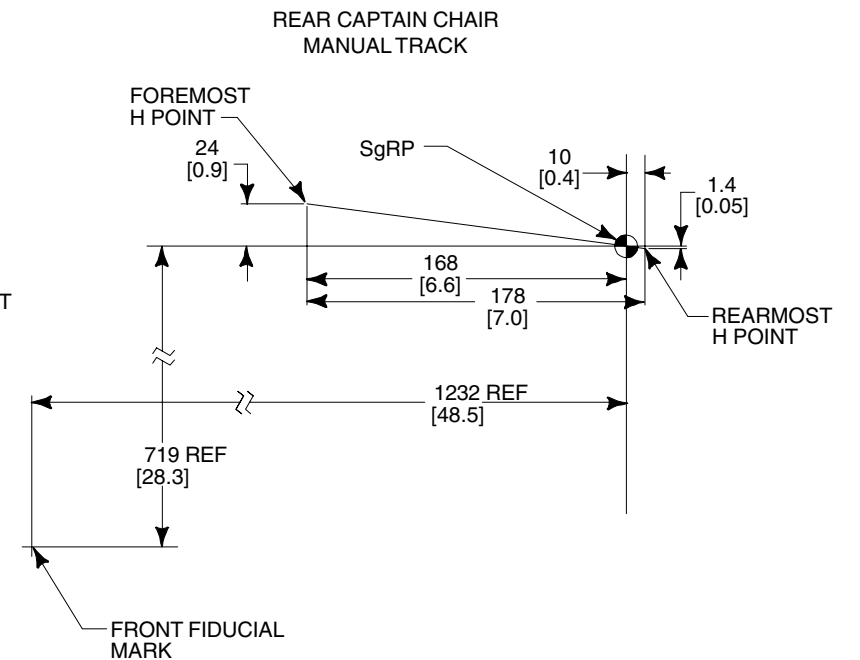
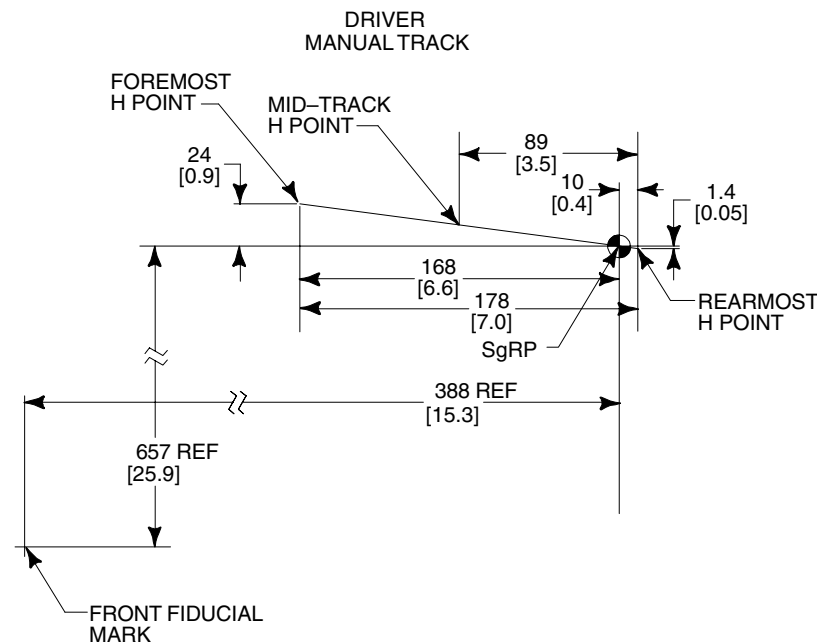
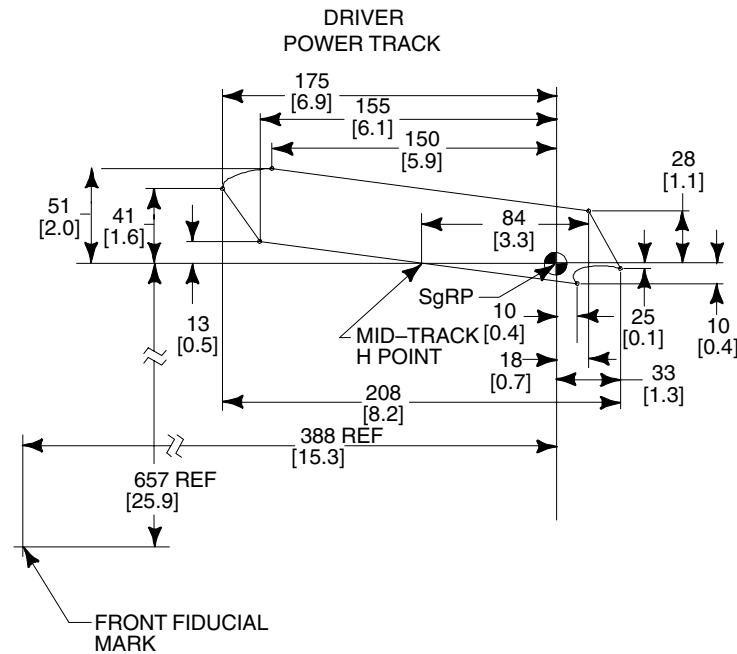
NOTE — [] DIMENSIONS ARE INCHES.

SEAT TRACK TRAVEL / H-POINT LOCATION E-SERIES

2006
MODEL YEAR

Page 70

E-SERIES



NOTES — [] DIMENSIONS ARE INCHES.
THIS INFORMATION IS PROVIDED TO ASSIST IN THE INSTALLATION OF SEATS OTHER THAN FORD INSTALLED SEATS AND TO HELP PRESERVE THE INTENDED PERFORMANCE OF THE SAFETY AND ERGONOMIC FEATURES OF THE 2006 E-SERIES. THE MID-TRACK H-POINT LOCATION MUST BE MAINTAINED IN ORDER TO COMPLY WITH F/CMVSS 208 AIRBAG REQUIREMENTS.

RANGER MODEL LINEUP

2006
MODEL YEAR

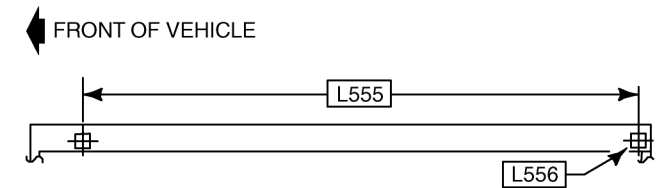
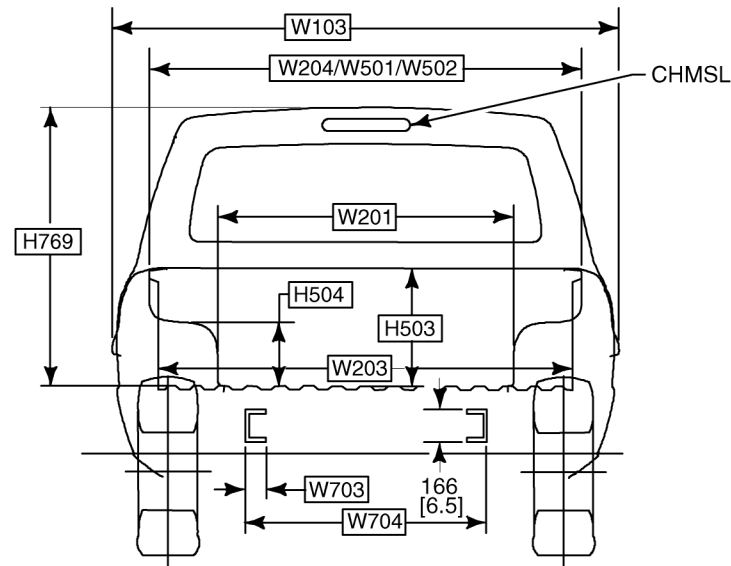
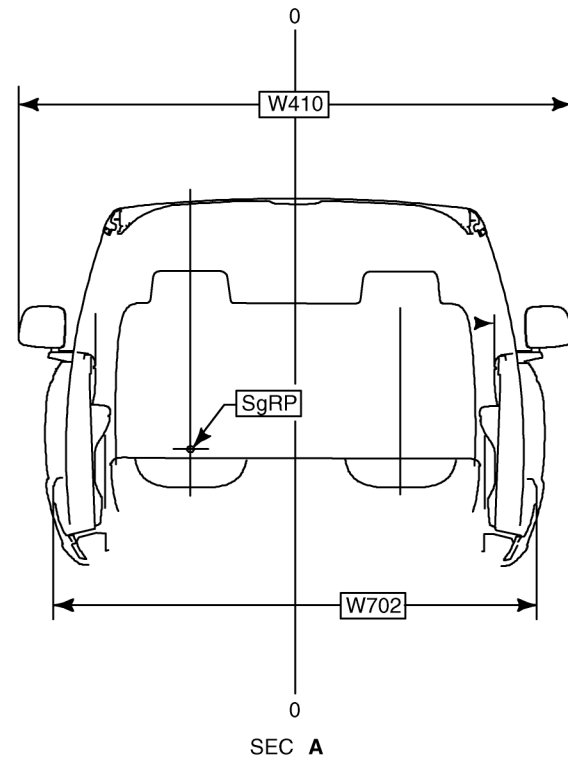
RANGER MODEL	TRIM LEVEL	BODY CODE	WHEELBASE inches	STANDARD ENGINE ⁽¹⁾ liters	TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAX GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾			PICKUP NOMINAL LENGTH feet
									FRONT pounds	REAR pounds	TOTAL pounds	
REGULAR CAB PICKUP												
4x2 SWB	XL,XLT	R10	112	2.3L I-4	5-Spd. Manual OD	—	4380	1260	1749	1263	3012	6
	Sport			3.0L V-6			4700	1640	1749	1263	3012	
							4740	1260	1958	1352	3310	
4x2 LWB	XLT	R10	118	2.3L I-4	5-Spd. Manual OD	—	4380	1260	1761	1290	3051	7
				3.0L V-6	5-Spd. Automatic OD		4720	1580	1924	1311	3235	
4x4 SWB	XL,XLT	R11	112	3.0L V-6	5-Spd. Manual OD	BW1354	4760	1260	2061	1393	3454	6
	Sport						5000	1500	2061	1393	3454	
4x4 LWB	XLT	R11	118	4.0L V-6	5-Spd. Manual OD	BW1354	4840	1260	2082	1426	3508	7
							5040	1480	2082	1426	3508	
SUPERCAB PICKUP												
4x2 LWB without jump seats	XL,XLT	R14/R44	126	2.3L I-4	5-Spd. Manual OD	—	4600	1260	1828	1343	3171	6
	Sport	R14		3.0L V-6			4900	1540	1960	1361	3321	
							4800	1260	2052	1412	3464	
4x2 LWB with jump seats	XL,XLT	R14/R44	126	3.0L V-6	5-Spd. Manual OD	—	4760	1260	1838	1360	3198	6
	Sport						5040	1680	1970	1378	3348	
							4960	1260	2062	1429	3491	
4x4 LWB without jump seats	XL,XLT	R15/R45	126	4.0L V-6	5-Spd. Manual OD	BW1354	5000	1260	2210	1462	3672	6
							5160	1440	2210	1464	3672	
4x4 LWB with jump seats	XL,XLT	R15/R45	126	4.0L V-6	5-Spd. Manual OD	BW1354	5140	1260	2220	1479	3699	6
	FX4/Level II						5300	1580	2220	1479	3699	
							5420	1260	2356	1608	3964	

(1) Engine/transmission combinations may not be available on all models, or in all areas.
(2) Includes weight of driver, passengers and optional equipment.
(3) Base curb weight is for standard equipment only.

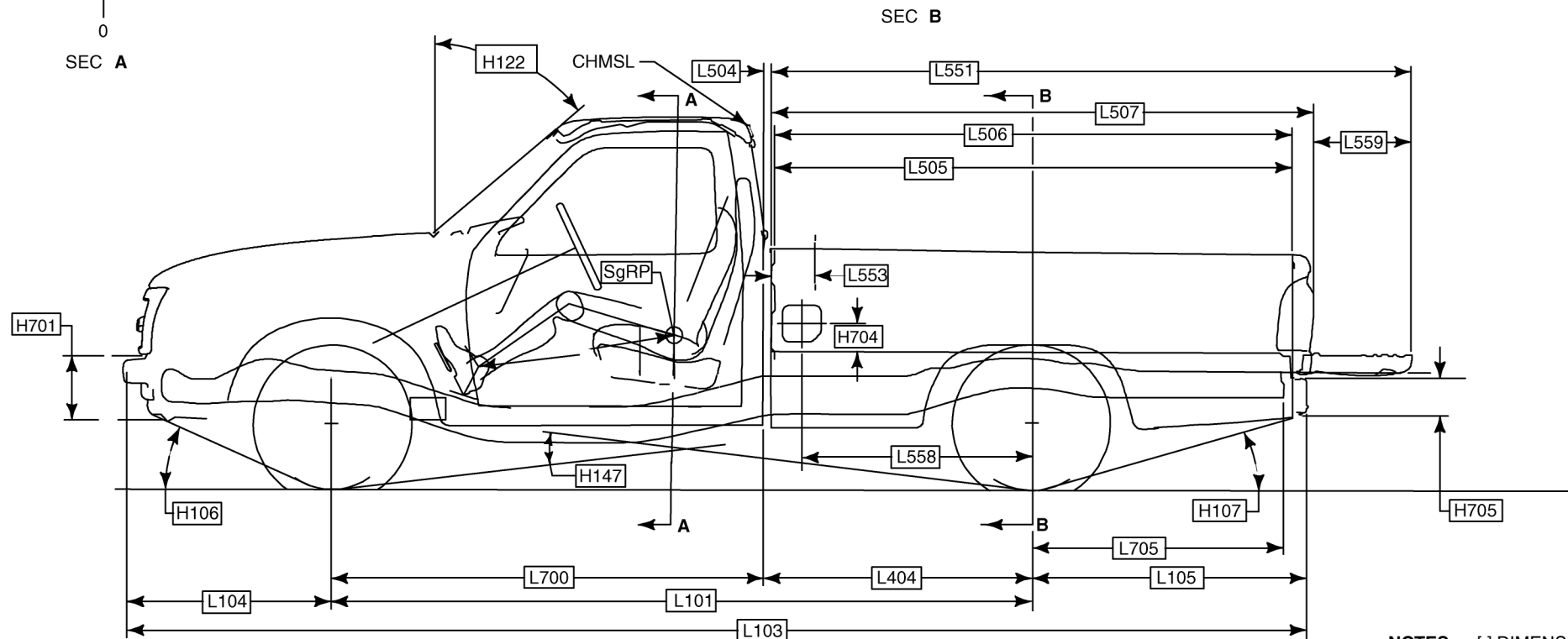
DIMENSIONAL DATA **RANGER REGULAR CAB 4X2/4X4**

2006
MODEL YEAR

Revised 01-13-06



PARTIAL PLAN VIEW OF PICKUP BOX



NOTES — [] DIMENSIONS ARE INCHES.
 — CH, LH, F, R, FW AND RW DIMENSIONS, PAGE 79.
 — TIRE DATA, PAGE 80.
 — SgRP X AND Z LOCATIONS, PAGE 73.

DIMENSIONAL DATA
RANGER REGULAR CAB 4X2/4X4

2006
MODEL YEAR

Revised 01-13-06

Page 73
RANGER
CHASSIS

CODE	DESCRIPTION	SWB		LWB	
		4X2	4X4	4X2	4X4
H103	BOTTOM OF FRONT BUMPER VALANCE TO GROUND @ CURB	279 [11.0]	329 [13.0]	288 [11.3]	329 [13.0]
H105	BOTTOM OF REAR BUMPER VALANCE TO GROUND @ CURB	480 [18.9]	535 [21.1]	469 [18.5]	529 [20.8]
H106C	APPROACH ANGLE @ CURB (DEGREES)	23.5	27.7	24.2	27.7
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	24.8	27.6	22.7	25.6
H147C	RAMP BREAKOVER ANGLE @ CURB (DEGREES)	22.4	23.8	20.9	22.8
H507	TOP OF FRAME TO GROUND @ CURB (DEGREES)	847 [33.3]	847 [33.3]	847 [33.3]	847 [33.3]
L101	WHEELBASE	2831 [111.5]	2834 [111.6]	2983 [117.4]	2987 [117.6]
L103	VEHICLE LENGTH	4812 [189.4]	4798 [188.9]	5039 [198.4]	5039 [198.4]
L104	FRONT OVERHANG	864 [34.0]	850 [33.5]	864 [34.0]	863 [34.0]
L105	REAR OVERHANG	1116 [43.9]	1114 [43.9]	1189 [46.8]	1189 [46.8]
L403	FRONT OF BUMPER TO BACK OF CAB	2732 [107.6]			
L404	CAB TO \varnothing OF REAR AXLE	948 [37.3]		1106 [43.5]	
L700	\varnothing OF FRONT AXLE TO BACK OF CAB	1880 [74.0]			
L705	\varnothing OF REAR AXLE TO REAR END OF FRAME	1046 [41.2]			
W703	FRAME RAIL WIDTH	74 [2.9]			
W704	REAR FRAME WIDTH	837 [33.0]			

PICKUP BODY

CODE	DESCRIPTION	SWB	LWB
NOMINAL CARGO BODY SIZE		6 FT.	7 FT.
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	132 [5.2]	
H705	REAR BUMPER HEIGHT	178 [7.0]	
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT TO TOP OF CAB @ \varnothing OF REAR AXLE	975 [38.4]	
L504	CAB TO PICKUP BOX	23 [0.9]	
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	2345 [92.3]	2650 [104.3]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR	777 [30.6]	
L559	LENGTH TO OPEN TAILGATE	409 [16.1]	

PICKUP BOX

CODE	DESCRIPTION	SWB	LWB
H503	CARGO BODY HEIGHT W/MOLDING	425 [16.7]	
H503A	CARGO BODY HEIGHT W/O MOLDING	418 [16.5]	
H504	WHEELHOUSE HEIGHT	229 [9.0]	
L505	CARGO BODY LENGTH @ FLOOR	2150 [84.6]	
L506	CARGO BODY LENGTH @ TOP (BELT)	2135 [84.1]	
L507	CARGO BODY OVERALL LENGTH	1942 [76.5]	2246 [88.4]
L553	INSIDE FRONT OF BOX TO \varnothing OF STAKE #1	180 [7.1]	
L554	\varnothing OF STAKE #1 TO \varnothing OF STAKE #2	1623 [63.9]	1925 [75.8]
L555	\varnothing OF STAKE #1 TO \varnothing OF STAKE #3	NA	NA
L556	STAKE POCKET SIZE (L x W)	52 x 40 [2 x 1.6]	
W201	CARGO WIDTH @ WHEELHOUSE	1028 [40.5]	
W203	REAR OPENING WIDTH @ FLOOR	1320 [52.0]	
W204	REAR OPENING WIDTH @ TOP (BELT)	1381 [54.4]	
W500B	CARGO BODY MAXIMUM INSIDE WIDTH @ FLOOR	1382 [54.4]	
W500C	CARGO BODY WALL WIDTH @ TOP, FRONT OF BOX	0.0	
W501	CARGO BODY WIDTH @ TOP OF BOX	1377 [54.2]	
W502A	CARGO BODY MAXIMUM INSIDE WIDTH @ \varnothing OF REAR AXLE	1382 [54.4]	
V5	CARGO VOLUME — LITERS/CU.FT.	1059 / 37.4	1234 / 43.6

CAB

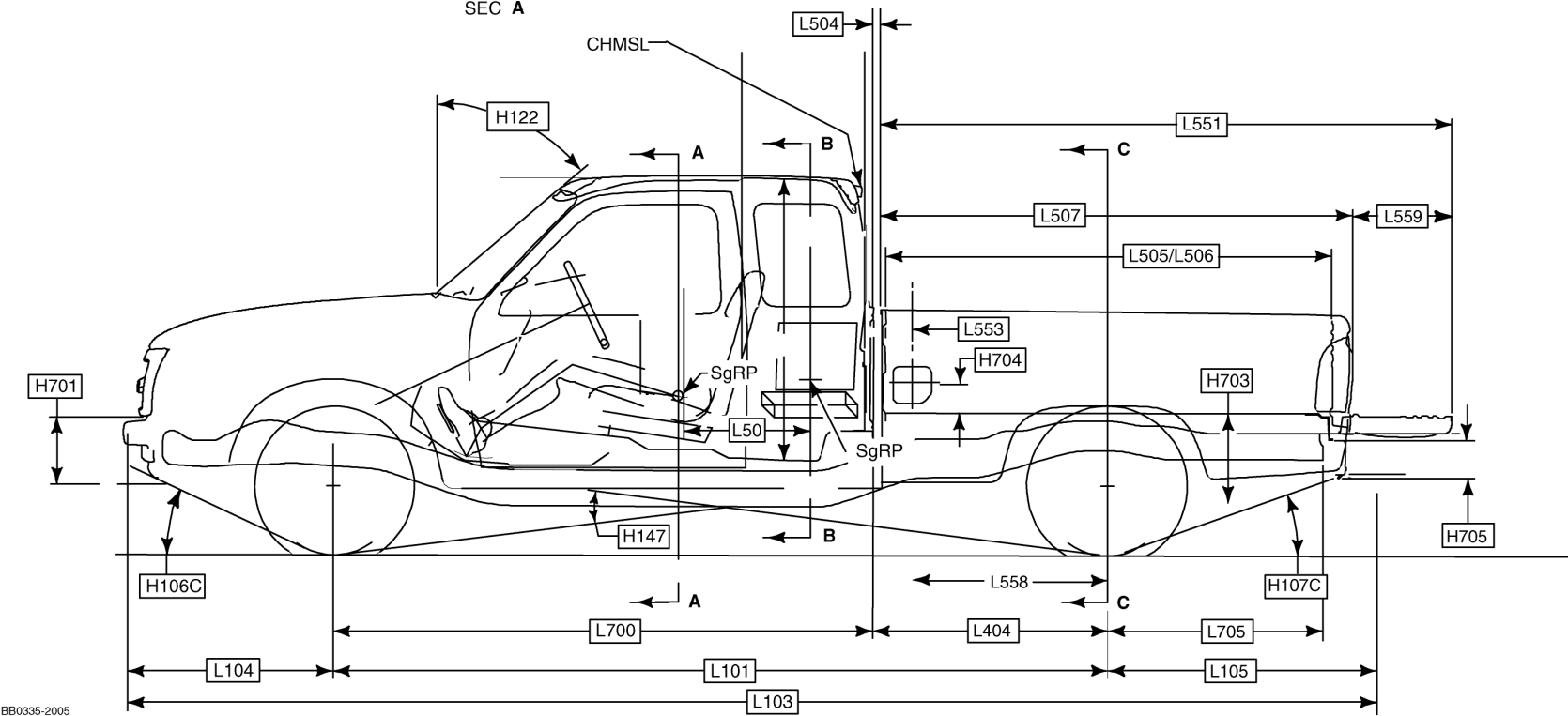
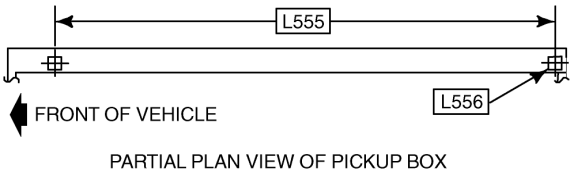
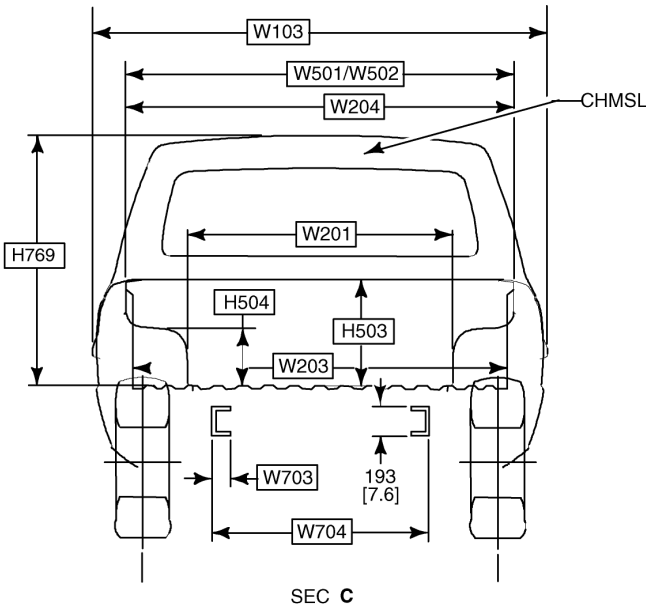
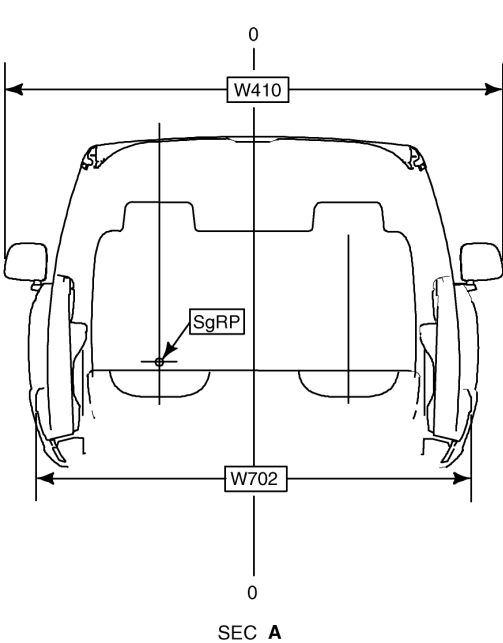
CODE	DESCRIPTION	SWB 4x2	SWB 4x4	LWB 4x2	LWB 4x4
H122	WINDSHIELD ANGLE (DEGREES)	49.5			
H701	FRONT BUMPER HEIGHT (INCLUDING LOWER VALANCE PANEL)	333 [13.1]	349 [13.7]	333 [13.1]	349 [13.7]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/MOLDINGS) — 4x2	1761 [69.3]	1788 [70.4]	1762 [69.4]	1791 [70.53]
W410	VEHICLE WIDTH (MAX W/ STANDARD MIRRORS)	2066 [81.3]			
W702	FRONT BUMPER WIDTH	1696 [66.8]			

NOTES — [] DIMENSIONS ARE INCHES.
— DIMENSIONS ARE AT CURB HEIGHTS.

DIMENSIONAL DATA
RANGER SUPERCAB 4X2/4X4

2006
MODEL YEAR

Revised 01-13-06



NOTES — [] DIMENSIONS ARE INCHES.
— CH, LH, F, R, FW AND RW DIMENSIONS, PAGE 79.
— TIRE DATA, PAGE 80.
— SgRP X AND Z LOCATIONS, PAGE 72.

DIMENSIONAL DATA

RANGER SUPERCAB 4X2/4X4

2006
MODEL YEAR

Revised 01-13-06

Page 75

RANGER

CHASSIS

CODE	DESCRIPTION	4X2	4X4
H103	BOTTOM OF FRONT BUMPER VALANCE TO GROUND @ CURB	282 [11.1]	371 [14.6]
H105	BOTTOM OF REAR BUMPER VALANCE TO GROUND @ CURB	463 [18.2]	564 [22.2]
H106C	APPROACH ANGLE @ CURB (DEGREES)	23.8	28.0
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	24.3	29.6
H147C	RAMP BREAKOVER ANGLE @ CURB (DEGREES)	19.5	22.5
H507	TOP OF FRAME TO GROUND @ CURB (DEGREES)	847 [33.3]	847 [33.3]
L101	WHEELBASE	3192 [125.7]	3197 [125.9]
L103	VEHICLE LENGTH	5172 [203.6]	
L104	FRONT OVERHANG	864 [34.0]	863 [34.0]
L105	REAR OVERHANG	1117 [44.0]	1112 [43.8]
L403	FRONT OF BUMPER TO BACK OF CAB	3089 [121.6]	3079 [121.2]
L404	CAB TO \varnothing OF REAR AXLE	958 [37.7]	960 [37.8]
L700	\varnothing OF FRONT AXLE TO BACK \varnothing OF CAB	2235 [88.0]	
L705	\varnothing OF REAR AXLE TO REAR END OF FRAME	894 [35.2]	
W703	FRAME RAIL WIDTH	74 [2.9]	
W704	REAR FRAME WIDTH	834 [32.8]	

PICKUP BODY

CODE	DESCRIPTION	
NOMINAL CARGO BODY SIZE		6 FT.
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	132 [5.2]
H705	REAR BUMPER HEIGHT	178 [7.0]
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @ \varnothing OF REAR AXLE	978 [38.5]
L504	CAB TO PICKUP BOX	21 [0.8]
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	2345 [92.3]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR	777 [30.6]
L559	LENGTH TO OPEN TAILGATE	409 [16.1]

PICKUP BOX

CODE	DESCRIPTION	
H503	CARGO BODY HEIGHT WITH MOLDING	425 [16.7]
H503A	CARGO BODY HEIGHT WITHOUT MOLDING	418 [16.5]
H504	WHEELHOUSE HEIGHT	228 [9.0]
L505	CARGO BODY LENGTH @ FLOOR	1847 [72.7]
L506	CARGO BODY LENGTH @ TOP (BELT)	1832 [72.1]
L507	CARGO BODY OVERALL LENGTH	1942 [76.5]
L553	INSIDE FRONT OF BOX TO \varnothing OF STAKE #1	180 [7.1]
L554	\varnothing OF STAKE #1 TO \varnothing OF STAKE #2	1623 [63.9]
L555	\varnothing OF STAKE #1 TO \varnothing OF STAKE #3	NA
L556	STAKE POCKET SIZE (L X W)	52 x 40 [2 X 1.6]
W201	CARGO WIDTH @ WHEELHOUSE	1028.1 [40.5]
W203	REAR OPENING WIDTH @ FLOOR	1320 [52.0]
W204	REAR OPENING WIDTH @ TOP (BELT)	1381 [54.4]
W500B	CARGO BODY MAXIMUM INSIDE WIDTH @ FLOOR	1382.01 [54.4]
W502A	CARGO BODY MAXIMUM INSIDE WIDTH @ \varnothing OF REAR AXLE	1382 [54.4]
V5	CARGO VOLUME - LITERS CU. FT.	1059 37.4

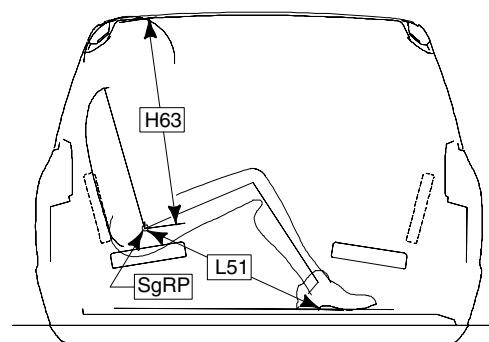
CAB

CODE	DESCRIPTION	4x2	4x4
H122	WINDSHIELD ANGLE (DEGREES)	49.5	
H701	FRONT BUMPER HEIGHT (INCLUDING LOWER VALANCE PANEL)	333 [13.1]	349 [13.7]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/MOLDINGS)	1762 [69.4]	1810 [71.3]
W410	VEHICLE WIDTH (MAX W/ STANDARD MIRRORS)	2066 [81.3]	
W702	FRONT BUMPER WIDTH	1696 [66.8]	

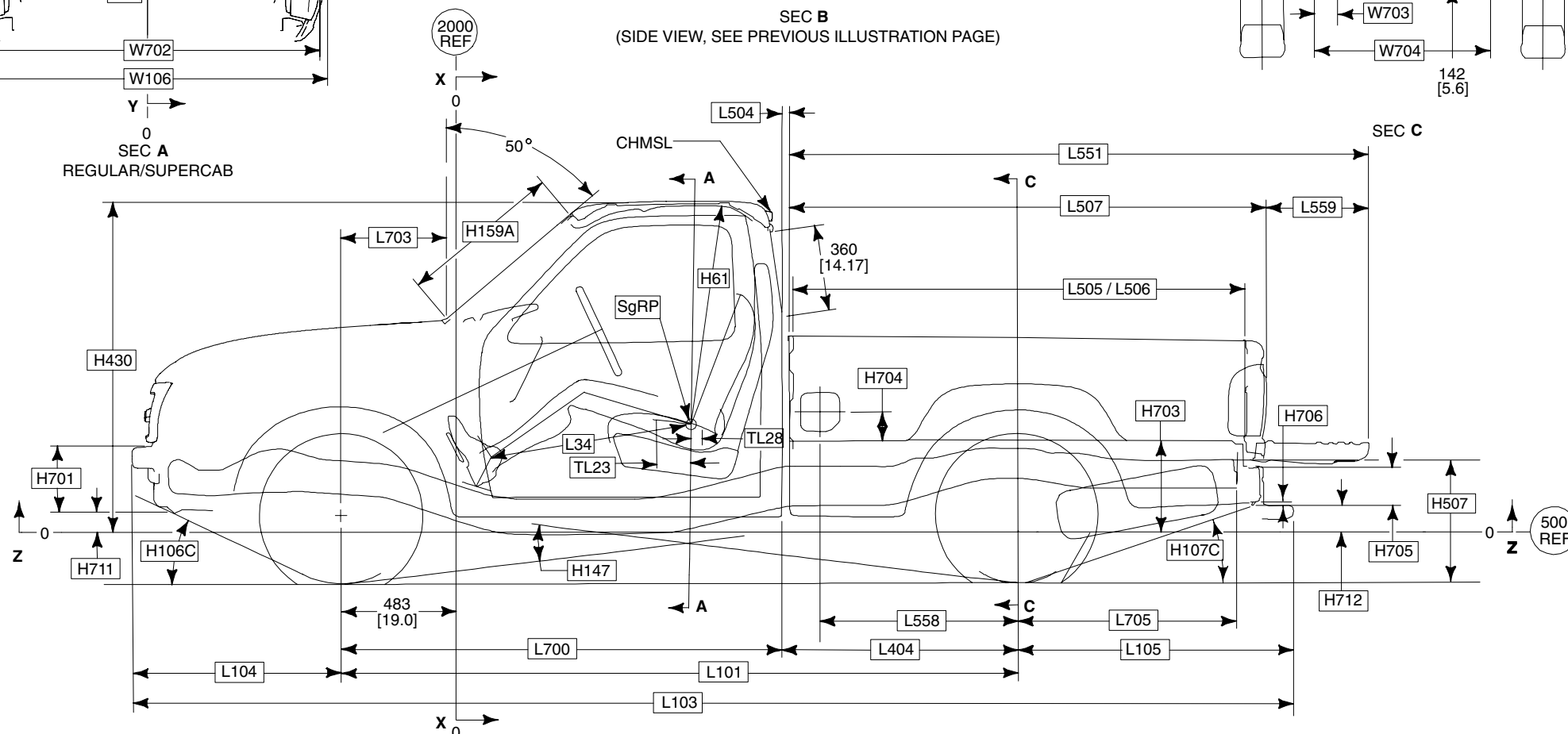
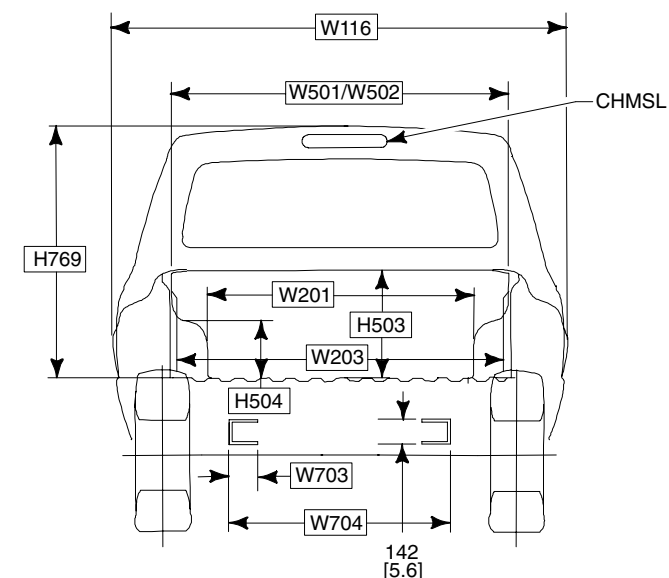
NOTES — [] DIMENSIONS ARE INCHES.
— DIMENSIONS ARE AT CURB HEIGHTS.

DIMENSIONAL DATA
RANGER REGULAR/SUPERCAB FLARESIDE 4X2/4X4

2006
MODEL YEAR



SEC B
(SIDE VIEW, SEE PREVIOUS ILLUSTRATION PAGE)



BB0336

- NOTES** — [] DIMENSIONS ARE INCHES.
- **CH, LH, F, R, FW AND RW** DIMENSIONS, PAGE 79.
 - TIRE DATA, PAGE 80.
 - FIDUCIAL DATA, PAGE 73.
 - SgRP X AND Z LOCATIONS, PAGE 72.
 - FLARESIDE BOX DOES NOT HAVE STAKE POCKETS.

DIMENSIONAL DATA

RANGER REGULAR/SUPERCAB FLARESIDE 4X2/4X4

2006
MODEL YEAR

RANGER

PICKUP BODY

CAB

CODE	DESCRIPTION	REGULAR CAB		SUPERCAB	
		4X2	4X4	4X2	4X4
H106C	ANGLE OF APPROACH	22.5°	26.4°	20.0°	27.0°
H107C	ANGLE OF DEPARTURE	23.3°	27.6°	22.3°	26.9°
H147	RAMP BREAKOVER ANGLE	21.6°	20.9°	18.7°	19.4°
H507	TOP OF FRAME TO GROUND	846 [33.3]	892 [35.1]	846 [33.3]	892 [35.1]
L101	WHEELBASE	2831 [111.4]	2836 [111.6]	3192 [125.7]	3197 [125.9]
L103	OVERALL LENGTH	4787 [188.6]	4787 [188.6]	5153 [202.9]	5153 [202.9]
L104	FRONT OVERHANG	845 [33.3]	845 [33.3]	845 [33.3]	845 [33.3]
L105	REAR OVERHANG	1116 [43.9]	1112 [43.7]	1116 [43.9]	1112 [43.7]
L404	CAB TO \varnothing OF REAR AXLE	948 [37.3]	948 [37.3]	958 [37.7]	960 [37.8]
L700	\varnothing OF FRONT AXLE TO END OF CAB	1880 [74.0]	1880 [74.0]	2235 [88.0]	2235 [88.0]
L705	\varnothing REAR AXLE TO END OF FRAME	894 [35.2]	894 [35.2]	894 [35.2]	894 [35.2]
W703	FRAME RAIL WIDTH	74 [2.9]	74 [2.9]	74 [2.9]	74 [2.9]
W704	WIDTH — REAR FRAMES	834 [32.8]	834 [32.8]	834 [32.8]	834 [32.8]

CODE	DESCRIPTION	REGULAR CAB		SUPERCAB	
NOMINAL CARGO BODY SIZE		4X2 6 FT.	4X4 6 FT.	4X2 6 FT.	4X4 6 FT.
H503	CARGO BODY HEIGHT	424 [16.7]	424 [16.7]	424 [16.7]	424 [16.7]
H504	WHEELHOUSE HEIGHT	231 [9.1]	231 [9.1]	231 [9.1]	231 [9.1]
H703	Z DATUM LINE TO CARGO BODY FLOOR	363 [14.3]	363 [14.3]	363 [14.3]	363 [14.3]
H704	TOP OF FLOOR TO \mathbb{C} OF FUEL FILLER	132 [5.2]	132 [5.2]	132 [5.2]	132 [5.2]
H705	REAR BUMPER HEIGHT	178 [7.0]	178 [7.0]	178 [7.0]	178 [7.0]
H706	BOTTOM OF REAR BUMPER TO TOP OF HITCH PLATE	43 [1.7]	43 [1.7]	43 [1.7]	43 [1.7]
H712	Z DATUM LINE TO BOTTOM OF REAR BUMPER	99 [3.9]	99 [3.9]	99 [3.9]	99 [3.9]
H769	TOP OF FLOOR TO TOP OF CAB @ \mathbb{C} REAR WHEELS	975 [38.4]	975 [38.4]	978 [38.5]	978 [38.5]
L504	CAB TO PICKUP BODY	23 [0.9]	23 [0.9]	28 [1.1]	28 [1.1]
L505	CARGO BODY LENGTH @ FLOOR	1834 [72.2]	1834 [72.2]	1834 [72.2]	1834 [72.2]
L506	CARGO BODY LENGTH @ BELT	1816 [71.5]	1816 [71.5]	1816 [71.5]	1816 [71.5]
L507	CARGO BODY OVERALL LENGTH	1943 [76.5]	1943 [76.5]	1943 [76.5]	1943 [76.5]
L551	OVERALL LENGTH TO OPEN TAILGATE	2351 [92.5]	2351 [92.5]	2351 [92.5]	2351 [92.5]
L558	\mathbb{C} REAR AXLE TO \mathbb{C} FUEL FILLER	775 [30.5]	777 [30.6]	775 [30.5]	777 [30.6]
L559	OPEN TAILGATE	409 [16.1]	409 [16.1]	409 [16.1]	409 [16.1]
W116	MAXIMUM OUTSIDE FENDER	1763 [69.4]	1763 [69.4]	1763 [69.4]	1763 [69.4]
W201	CARGO WIDTH BETWEEN WHEELHOUSE	1026 [40.4]	1026 [40.4]	1026 [40.4]	1026 [40.4]
W203	REAR OPENING WIDTH AT FLOOR	1117 [44.0]	1117 [44.0]	1117 [44.0]	1117 [44.0]
W501	CARGO BODY WIDTH AT BELT	1164 [45.8]	1164 [45.8]	1164 [45.8]	1164 [45.8]
W502	MAXIMUM INSIDE BOX	1273 [50.1]	1273 [50.1]	1273 [50.1]	1273 [50.1]
V5	CARGO VOLUME — LITERS/ CU.FT.	982 34.7	982 34.7	982 34.7	982 34.7

CODE	DESCRIPTION	REGULAR CAB		SUPERCAB	
		4X2	4X4	4X2	4X4
H61	EFFECTIVE HEADROOM WITH HEADLINER	999 [39.3]	999 [39.3]	999 [39.3]	999 [39.3]
H63	EFFECTIVE HEADROOM — REAR SIDE FACING	—	—	845 [33.3]	845 [33.3]
H159A	WINDSHIELD HEIGHT	673 [26.5]	673 [26.5]	673 [26.5]	673 [26.5]
H430	Z DATUM LINE TO TOP OF CAB	1347 [53.0]	1347 [53.0]	1351 [53.2]	1351 [53.2]
H505	INTERIOR CARGO HEIGHT — MAX. (NOT SHOWN)	—	—	1095 [43.1]	1095 [43.1]
H701	FRONT BUMPER HEIGHT *	333 [13.1]	349 [13.7]	333 [13.1]	349 [13.7]
H711	Z DATUM LINE TO BOTTOM OF FRONT BUMPER *	39 [1.5]	23 [0.9]	39 [1.5]	23 [0.9]
TL23	SEAT TRACK TRAVEL	200 [7.8]	200 [7.8]	209 [8.2]	209 [8.2]
TL28	TRUE TRACK TRAVEL LENGTH REAR OF SgRP — BENCH SEAT	28 [0.1]	28 [0.1]	38 [1.5]	38 [1.5]
L34	MAXIMUM EFFECTIVE LEG ROOM	1075 [42.4]	1075 [42.4]	1077 [42.4]	1077 [42.4]
L50	H POINT COUPLE DISTANCE (NOT SHOWN)	—	—	543 [21.4]	543 [21.4]
L51	EFFECTIVE LEG ROOM — REAR	—	—	1023 [40.3]	1023 [40.3]
L703	C FRONT AXLE TO COWL POINT	442 [17.4]	442 [17.4]	442 [17.4]	442 [17.4]
W3	SHOULDER ROOM — FRONT	1367 [53.8]	1367 [53.8]	1367 [53.8]	1367 [53.8]
W4	SHOULDER ROOM — REAR SIDE FACING (NOT SHOWN)	—	—	388 [15.3]	388 [15.3]
W5	HIP ROOM	1338 [52.7]	1338 [52.7]	1338 [52.7]	1338 [52.7]
W6	HIP ROOM — REAR SIDE FACING (NOT SHOWN)	—	—	489 [19.3]	489 [19.3]
W20	SgRP (Y)	−365 [−14.4]	−365 [−14.4]	−365 [−14.4]	−365 [−14.4]
W103	VEHICLE WIDTH	1762 [69.4]	1762 [69.4]	1762 [69.4]	1762 [69.4]
W106	FRONT FENDER WIDTH	1756 [69.1]	1756 [69.1]	1756 [69.1]	1756 [69.1]
W410	OVERALL WIDTH WITH STANDARD MIRRORS	1954 [76.9]	1954 [76.9]	1954 [76.9]	1954 [76.9]
W702	FRONT BUMPER WIDTH	1696 [66.8]	1696 [66.8]	1696 [66.8]	1696 [66.8]

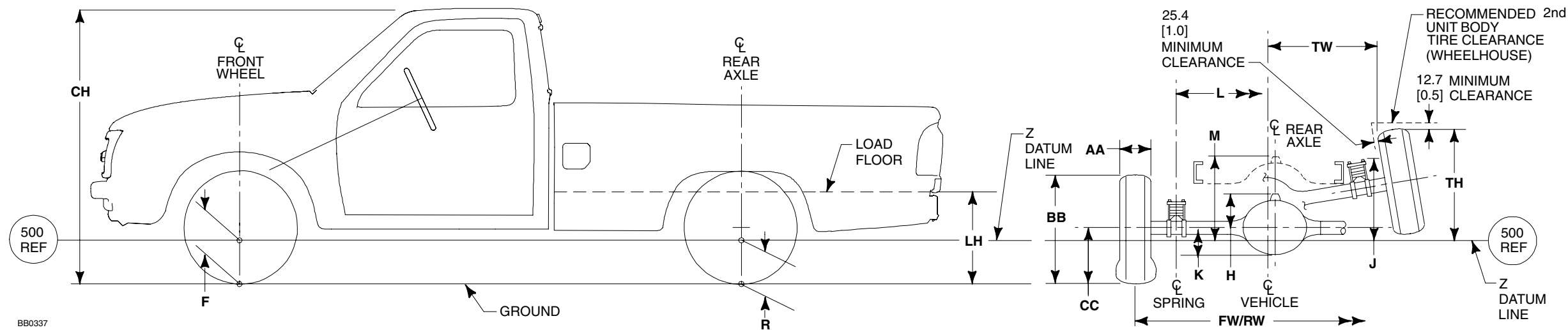
* Includes lower valance panel.

NOTES — [] DIMENSIONS ARE INCHES.
— DIMENSIONS ARE AT CURB HEIGHTS.

AXLE / TIRE / WHEELHOUSE / VEHICLE HEIGHT DATA
RANGER

2006
MODEL YEAR

Page 78 RANGER



Model	WB [in]	GVWR	Base Tire	F Height @ Front Wheel ⁽¹⁾		R Height @ Rear Axle ⁽¹⁾		LH ⁽¹⁾		CH ⁽¹⁾		H ⁽²⁾⁽³⁾	J	K ⁽⁴⁾	L	M ⁽²⁾⁽³⁾	CC ⁽⁵⁾	FW At Base Curb Weight	RW	TW	TH
				Height at Base Curb Weight	Loaded Height @ Spring Rating	Height at Base Curb Weight	Loaded Height @ Spring Rating	Empty	Loaded	Empty	Loaded										
Regular Cab Styleside 4x2	112	4360 4680	P225/70R-15SL	305 [12.0]	263 [10.4]	360 [14.2]	245 [9.6]	750 [29.5]	613 [24.1]	1682 [66.2]	1603 [63.1]	157 [6.2]	338 [13.3]	130 [5.10]	986 [38.8]	335 [13.2]	300 [11.8]	1486 [58.5]	1455 [57.3]	559 [22.0] 546 [21.5]	411 [16.2]
	118	4360 4700	P225/70R-15SL	311 [12.2]	262 [10.3]	354 [13.9]	245 [9.6]	741 [29.2]	613 [24.1]	1680 [66.1]	1603 [63.1]	157 [6.2]	338 [13.3]	130 [5.10]	986 [38.8]	335 [13.2]	300 [11.8]	1486 [58.5]	1455 [57.3]	559 [22.0] 546 [21.5]	411 [16.2]
SuperCab Styleside 4x2	126	4740 5020	P225/70R-15SL	315 [12.4]	260 [10.2]	352 [13.9]	244 [9.6]	735 [28.9]	614 [24.2]	1685 [66.3]	1604 [63.1]	157 [6.2]	338 [13.3]	130 [5.10]	986 [38.8]	335 [13.2]	300 [11.8]	1486 [58.5]	1455 [57.3]	559 [22.0] 546 [21.5]	411 [16.2]
Regular Cab Styleside 4x4	112	4740 5020	P235/75R-15	356 [14.0]	312 [12.3]	415 [16.3]	314 [12.4]	805 [31.7]	687 [27.0]	1735 [68.3]	1662 [65.4]	157 [6.2]	302 [11.9]	130 [5.10]	986 [38.8]	249 [9.8]	328 [12.9]	1486 [58.5]	1455 [57.3]	569 [22.4]	348 [13.7]
	118	4800 5040		354 [13.9]	312 [12.3]	410 [16.1]	314 [12.4]	801 [31.5]	687 [27.0]	1730 [68.1]	1662 [65.4]	157 [6.2]	302 [11.9]	130 [5.10]	986 [38.8]	249 [9.8]	328 [12.9]	1486 [58.5]	1455 [57.3]	569 [22.4]	419 [16.5]
SuperCab Styleside 4x4	126	5120 5300	P235/75R-15	350 [13.8]	311 [12.2]	423 [16.7]	328 [12.9]	814 [32.0]	705 [27.8]	1738 [68.4]	1670 [65.7]	157 [6.2]	302 [11.9]	130 [5.10]	986 [38.8]	249 [9.8]	328 [12.9]	1486 [58.5]	1455 [57.3]	569 [22.4]	374 [14.7]

(1) — The Height Data shown represents dimensions of a base/standard vehicle with no options.
Actual height may vary due to production tolerances.
(2) — Add 0.5" on vehicles equipped with 4.0L engine.

(3) — To top of brake tube union.
(4) — 5.7" on vehicles equipped with 4.0L engine.
(6) — Minimum loaded radius.

NOTES — [] DIMENSIONS ARE INCHES.
— VEHICLE RIDE HEIGHTS ARE GIVEN AT TIRE MINIMUM LOAD RADIUS.
— TIRE DATA ON PAGE 80.

TIRE DATA
RANGER

2006

MODEL YEAR

ALL-SEASON TIRE DATA				
Tire Size	Rim Width	AA Maximum Section Width	BB Minimum Height	*CC Minimum Loaded Radius
P225/70R-15SL	178 [7.0]	241 [9.3]	702 [27.5]	315 [12.2]
P235/70R16	178 [7.0]	240 [9.5]	737 [29.0]	332 [13.1]
ALL-TERRAIN TIRE DATA				
P235/75R-15SL ⁽¹⁾	178 [7.0]	245 [9.9]	744 [29.2]	328 [13.0]
P255/70R-16	178 [7.0]	263 [10.37]	775 [30.5]	342 [13.5]
31x10.50R-15SL ⁽³⁾	178 [7.0]	259 [10.2]	783 [30.8]	355 [14.0]

* This number represents Radius – Axle centerline to ground with maximum rated load on tire at maximum pressure.

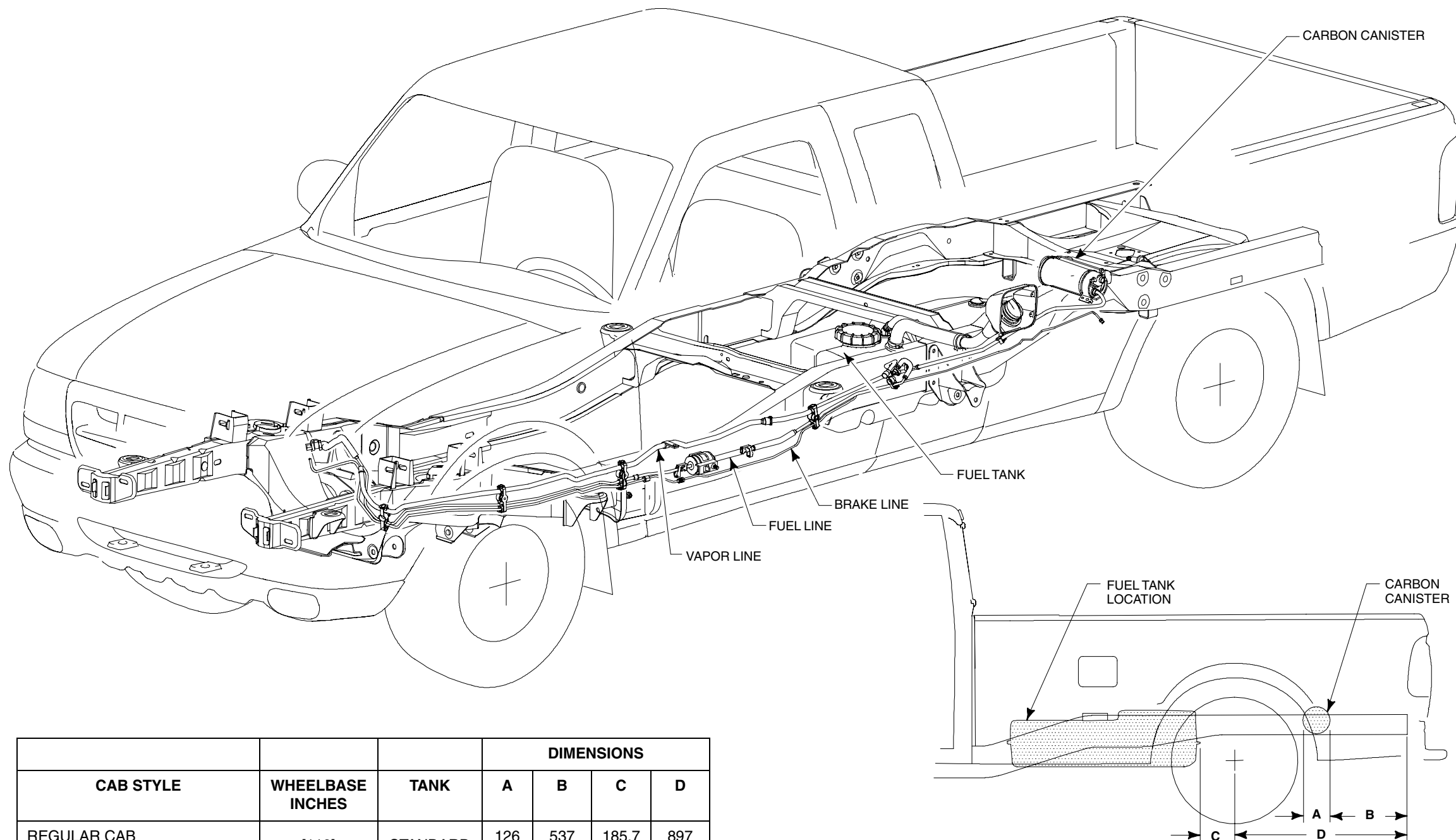
⁽¹⁾ Available XL 4x4, Edge 4x2 and XLT 4x2.

⁽²⁾ Available XLT 4x4 and Edge 4x4.

⁽³⁾ Available FX4/Level II 4x4 only.

FUEL AND VAPOR SYSTEM TYPICAL FOR ALL LENGTHS OF RANGER

2006
MODEL YEAR



CAB STYLE	WHEELBASE INCHES	TANK	DIMENSIONS			
			A	B	C	D
REGULAR CAB STYLESIDE/FLARESIDE	[112]	STANDARD	126 [5.0]	537 [21.4]	185.7 [7.3]	897 [35.3]
REGULAR CAB STYLESIDE	[118]	STANDARD	126 [5.0]	689.9 [27.2]	185.7 [7.3]	1050 [41.3]
SUPERCAB STYLESIDE/FLARESIDE	[126]	STANDARD	126 [5.0]	536.2 [21.1]	181.9 [7.2]	897 [35.3]

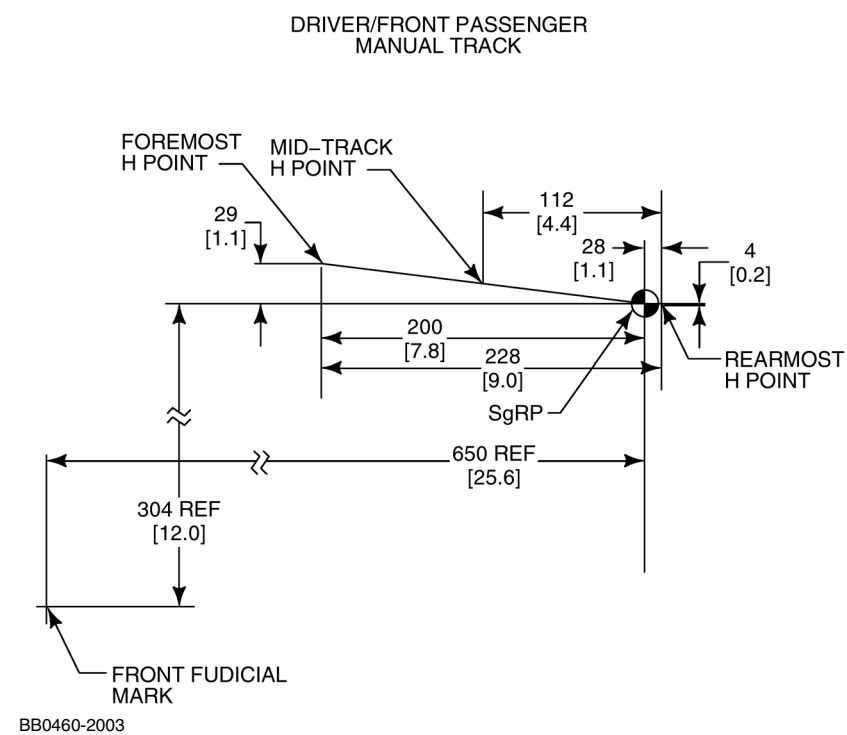
NOTE — [] DIMENSIONS ARE INCHES.

SEAT TRACK TRAVEL / H-POINT LOCATION RANGER

2006
MODEL YEAR

Page 81

RANGER



NOTE — [] DIMENSIONS ARE INCHES.

F-150 MODEL LINEUP

2006
MODEL YEAR

F-150

F-SERIES MODEL	BODY CODE	WHEELBASE inches	ENGINE ⁽¹⁾ liters	TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾			PICKUP BOX NOMINAL LENGTH feet
								FRONT pounds	REAR pounds	TOTAL pounds	
REGULAR CAB FLARESIDE PICKUP											
F-150 4x2	F02	126.0	4.2L V-8	4-Spd. Auto OD	—	6500	1880	2588	2003	4591	6½
F-150 4x2	F02	126.0	4.6L V-8	4-Spd. Auto OD	—	6650	1940	2656	2007	4663	6½
F-150 4x2	F02	126.0	5.4L V-8	4-Spd. Auto OD	—	6650	1800	2751	2045	4796	6½
F-150 4x4	F04	126.0	4.6L V-8	4-Spd. Auto OD	Warner 44-06	6800	1790	2889	2067	4956	6½
F-150 4x4	F04	126.0	5.4L V-8	4-Spd. Auto OD	Warner 44-06	6850	1700	2990	2101	5091	6½
REGULAR CAB STYLESIDE PICKUP											
F-150 4x2	F12	126.0	4.2L V-8	5-Spd. Manual OD	—	6500	1900	2549	1976	4525	6½
F-150 4x2	F12	126.0	4.6L V-8	4-Spd. Auto OD	—	6650	1960	2650	1993	4643	6½
F-150 4x2	F12	126.0	5.4L V-8	4-Spd. Auto OD	—	6650	1820	2745	2031	4776	6½
F-150 4x2	F12	144.5	4.2L V-8	5-Spd. Manual OD	—	6650	1920	2679	1979	4658	8
F-150 4x2	F12	144.5	4.6L V-8	4-Spd. Auto OD	—	6800	1970	2786	1990	4776	8
F-150 4x2	F12	144.5	5.4L V-8	4-Spd. Auto OD	—	7050	2090	2884	2025	4909	8
F-150 4x2	F12	144.5	5.4L V-8	4-Spd. Auto OD	—	8200	3060	2949	2132	5081	8
F-150 4x4	F14	126.0	4.6L V-8	4-Spd. Auto OD	Warner 44-06	6800	1810	2883	2053	4936	6½
F-150 4x4	F14	126.0	5.4L V-8	4-Spd. Auto OD	Warner 44-06	6850	1720	2984	2087	5071	6½
F-150 4x4	F14	144.5	4.6L V-8	4-Spd. Auto OD	Warner 44-06	6950	1820	3026	2045	5071	8
F-150 4x4	F14	144.5	5.4L V-8	4-Spd. Auto OD	Warner 44-06	6950	1690	3122	2081	5203	8
F-150 4x4	F14	144.5	5.4L V-8	4-Spd. Auto OD	Warner 44-06	8200	2710	3206	2221	5427	8

(1) Engine/transmission combinations may not be available on all models, or in all areas.
(2) Includes weight of driver, passengers and optional equipment.
(3) Base curb weight is for standard equipment only.

F-150 MODEL LINEUP

2006
MODEL YEAR

F-SERIES MODEL	BODY CODE	WHEELBASE inches	ENGINE ⁽¹⁾ liters	TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾			PICKUP BOX NOMINAL LENGTH feet
								FRONT pounds	REAR pounds	TOTAL pounds	
SUPERCAB FLARESIDE PICKUP											
F-150 4x2	X02	144.5	4.6L V-8	4-Spd. Auto OD	—	6700	1620	2884	2137	5021	6½
F-150 4x2	X02	144.5	5.4L V-8	4-Spd. Auto OD	—	7050	1870	2947	2179	5126	6½
F-150 4x4	X04	144.5	4.6L V-8	4-Spd. Auto OD	Warner 44-06	6950	1570	3119	2198	5317	6½
F-150 4x4	X04	144.5	5.4L V-8	4-Spd. Auto OD	Warner 44-06	7200	1720	3180	2240	5420	6½
SUPERCAB STYLESIDE PICKUP											
F-150 4x2	X12	132.5	4.6L V-8	4-Spd. Auto OD	—	6650	1680	2763	2151	4914	5½
F-150 4x2	X12	132.5	5.4L V-8	4-Spd. Auto OD	—	6950	1810	2874	2213	5087	5½
F-150 4x2	X12	144.5	4.6L V-8	4-Spd. Auto OD	—	6700	1640	2878	2123	5001	6½
F-150 4x2	X12	144.5	5.4L V-8	4-Spd. Auto OD	—	7050	1890	2941	2165	5106	6½
F-150 4x2	X12	163.0	5.4L V-8	4-Spd. Auto OD	—	8200	2710	3130	2299	5429	8
F-150 4x4	X14	132.5	4.6L V-8	4-Spd. Auto OD	Warner 44-06	6900	1630	3000	2209	5209	5½
F-150 4x4	X14	132.5	5.4L V-8	4-Spd. Auto OD	Warner 44-06	7150	1710	3116	2269	5385	5½
F-150 4x4	X14	144.5	4.6L V-8	4-Spd. Auto OD	Warner 44-06	6950	1600	3113	2184	5297	6½
F-150 4x4	X14	144.5	5.4L V-8	4-Spd. Auto OD	Warner 44-06	7200	1740	3174	2226	5400	6½
F-150 4x4	X14	163.0	5.4L V-8	4-Spd. Auto OD	Warner 44-06	8200	2360	3378	2397	5775	8
SUPERCREW STYLESIDE PICKUP											
F-150 4x2	W12	138.5	4.6L V-8	4-Spd. Auto OD	—	6800	1630	2870	2239	5109	5½
F-150 4x2	W12	138.5	5.4L V-8	4-Spd. Auto OD	—	7050	1780	2938	2277	5215	5½
F-150 4x2		150.5 ⁽⁴⁾	4.6L V-8	4-Spd. Auto OD	—	6800	1520	2953	2267	5220	6½
F-150 4x2		150.5 ⁽⁴⁾	5.4L V-8	4-Spd. Auto OD	—	7050	1670	3020	2303	5323	6½
F-150 4x4	W14	138.5	4.6L V-8	4-Spd. Auto OD	Warner 44-06	6900	1430	3107	2299	5406	5½
F-150 4x4	W14	138.5	5.4L V-8	4-Spd. Auto OD	Warner 44-06	7200	1630	3171	2338	5509	5½
F-150 4x4		150.5 ⁽⁴⁾	4.6L V-8	4-Spd.	Warner 44-06	6900	1300	3178	2357	5535	6½
F-150 4x4		150.5 ⁽⁴⁾	5.4L V-8	4-Spd.	Warner 44-06	7200	1500	3243	2396	5639	6½
SUPERCREW FLARESIDE PICKUP											
F-150 4x2		150.5 ⁽⁴⁾	4.6L V-8	4-Spd.	—	6800	1500	2959	2281	5240	6½
F-150 4x2		150.5 ⁽⁴⁾	5.4L V-8	4-Spd.	—	7050	1650	3026	2317	5343	6½
F-150 4x4		150.5 ⁽⁴⁾	4.6L V-8	4-Spd.	Warner 44-06	6900	1280	3184	2371	5555	6½
F-150 4x4		150.5 ⁽⁴⁾	5.4L V-8	4-Spd.	Warner 44-06	7200	1480	3249	2410	5659	6½

(1) Engine/transmission combinations may not be available in all models, or in all areas.

(2) Includes weight of driver, passengers and optional equipment.

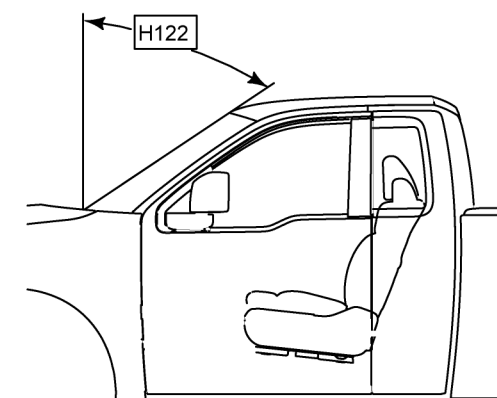
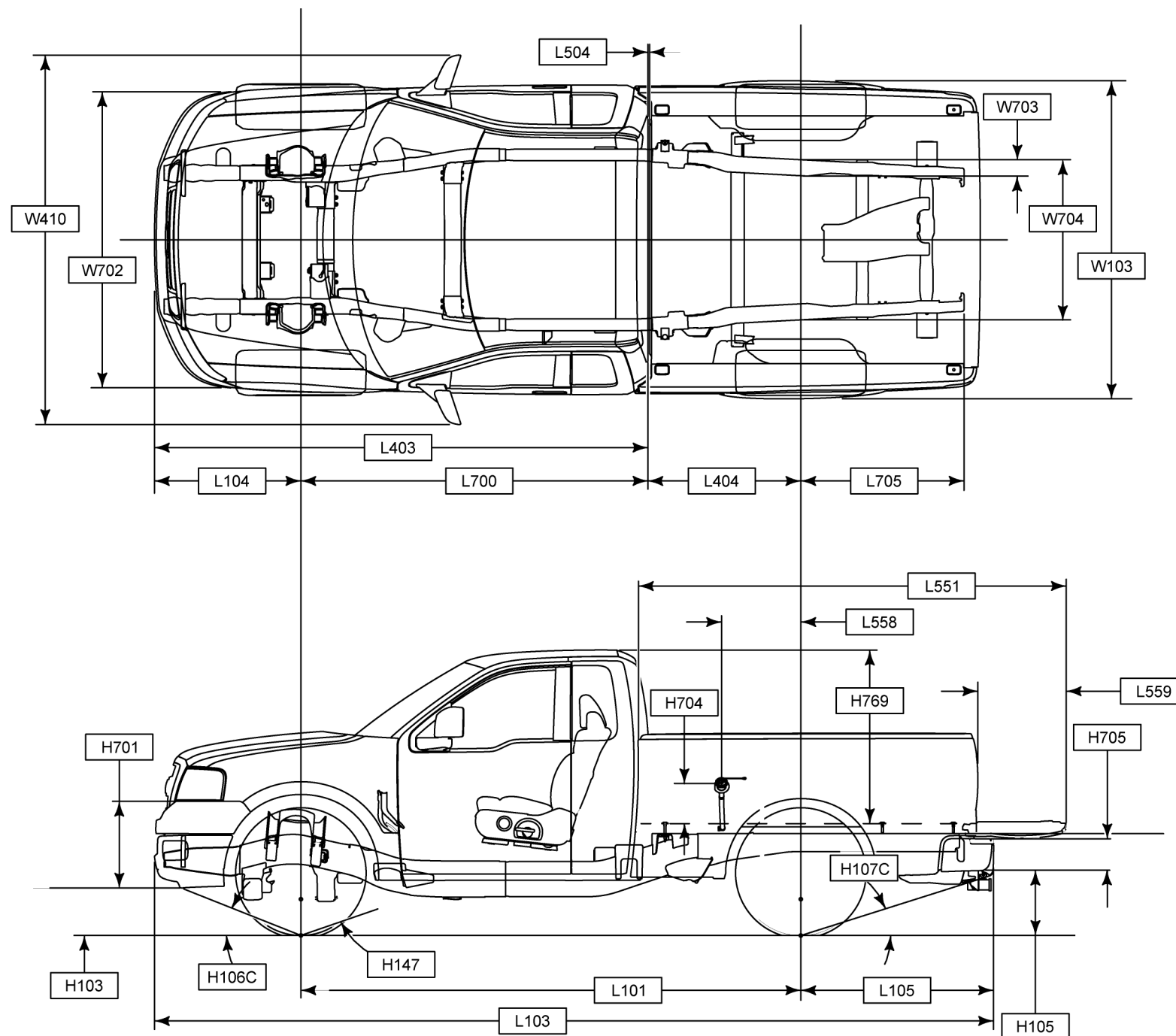
(3) Base curb weight is for standard equipment only.

(4) Late availability.

DIMENSIONAL DATA

F-150 REGULAR CAB STYLE SIDE 4X2/4X4

2006
MODEL YEAR



NOTES — [] DIMENSIONS ARE INCHES.
 — CH, LH, F, R, FW, RW DIMENSIONS, SEE PAGE 98.
 — TIRE DATA, PAGE 100.
 — INTERIOR BOX DIMENSIONS, PAGE 94-95.

DIMENSIONAL DATA
F-150 REGULAR CAB STYLE SIDE 4X2/4X4

2006
MODEL YEAR

CHASSIS

CODE	DESCRIPTION	126" WB		144.5" WB	
		4x2	4x4	4x2	4x4
H103	BOTTOM OF FRONT BUMPER VALANCE TO GROUND @ CURB	399 [15.7]	444 [17.5]	414 [16.3]	443 [17.4]
H105	BOTTOM OF REAR BUMPER VALANCE TO GROUND @ CURB	490 [19.3]	547 [21.5]	502 [19.8]	560 [22.0]
H106C	APPROACH ANGLE @ CURB (DEGREES)	19.5	24.0	21.0	25.5
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	23.3	26.0	23.9	26.5
H147C	RAMP BREAKOVER ANGLE @ CURB (DEGREES)	20.1	22.0	17.1	20.1
H507	TOP OF FRAME TO GROUND @ CURB (DEGREES)	705 [27.8]	755 [29.7]	736 [29.0]	786 [30.9]
L101	WHEELBASE	3198 [125.9]		3671 [144.5]	
L103	VEHICLE LENGTH	5364 [211.2]		5837 [229.8]	
L104	FRONT OVERHANG	936 [36.9]			
L105	REAR OVERHANG	1230 [48.4]			
L403	FRONT OF BUMPER TO BACK OF CAB	3172 [124.9]			
L404	CAB TO \varnothing OF REAR AXLE	963 [37.9]		1436 [56.5]	
L700	\varnothing OF FRONT AXLE TO BACK OF CAB	2235 [88.0]			
L705	\varnothing OF REAR AXLE TO REAR END OF FRAME	1041 [41.0]			
W703	FRAME RAIL WIDTH	102 [4.0]			
W704	REAR FRAME WIDTH	1024 [40.3]			

PICKUP BODY

CODE	DESCRIPTION	126" WB	144.5" WB
NOMINAL CARGO BODY SIZE		6.5 FT.	8 FT.
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	267 [10.5]	
H705	REAR BUMPER HEIGHT	258 [10.2]	
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @ \varnothing OF REAR AXLE	1103 [43.4]	
L504	CAB TO PICKUP BOX	6 [0.2]	
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	2632 [103.6]	3104 [122.2]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR	508 [20.0]	
L559	LENGTH OF OPEN TAILGATE	557 [21.9]	

CAB*

CODE	DESCRIPTION	
H122	WINDSHIELD ANGLE (DEGREES)	54.5
H701	FRONT BUMPER HEIGHT	351 [13.8]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS)	2005 [78.9]
W410	VEHICLE WIDTH (MAX W/STANDARD MIRRORS)	2351 [92.6]
W702	FRONT BUMPER WIDTH	1901 [74.8]

* Common cab dimensions between 126" WB & 144.5" WB

NOTE — [] DIMENSIONS ARE INCHES.

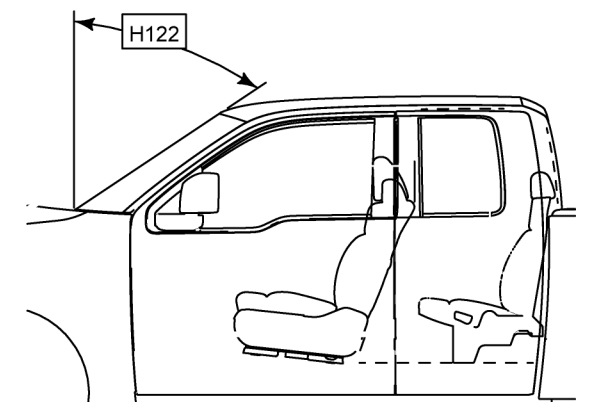
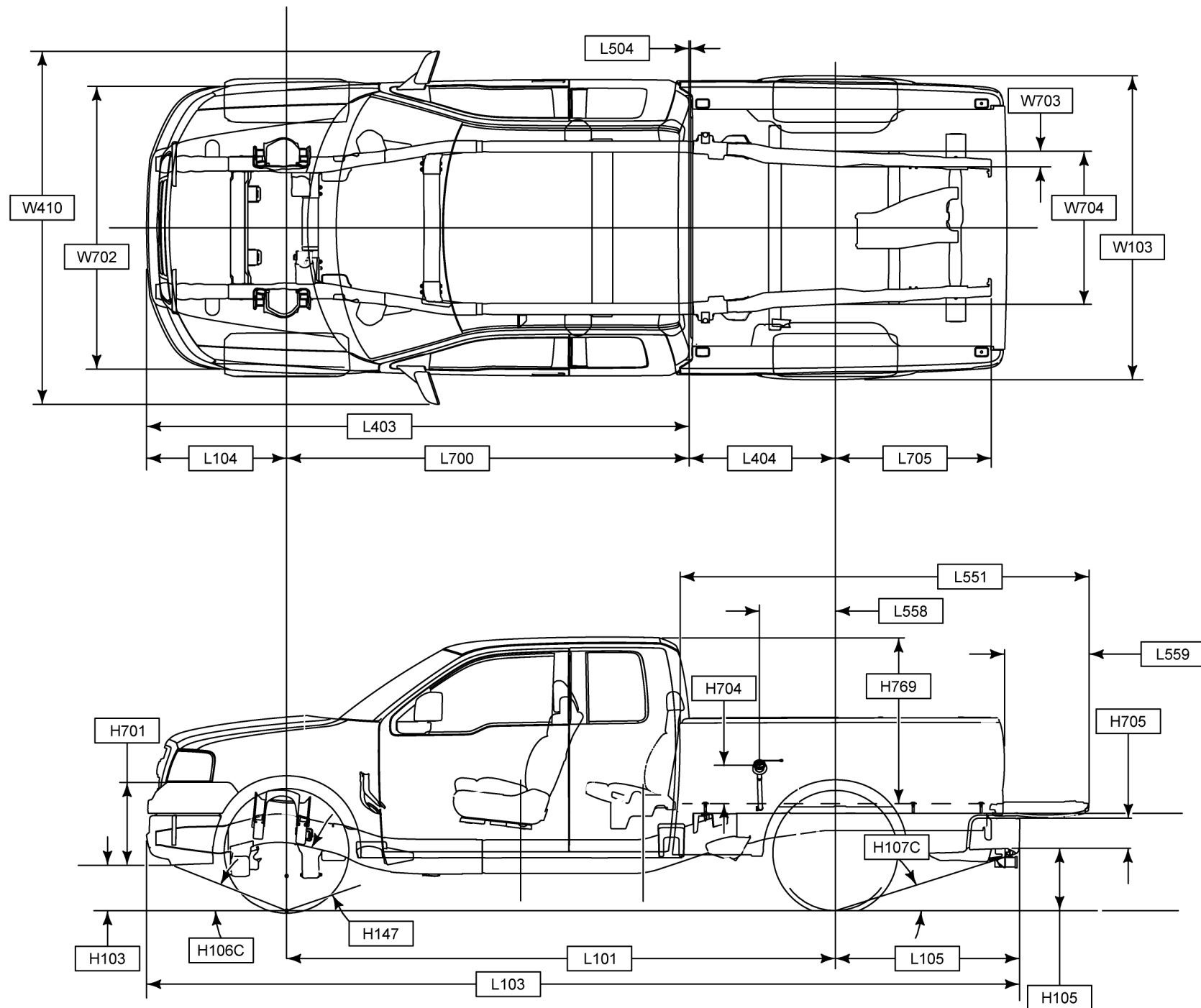
DIMENSIONAL DATA

F-150 SUPERCAB STYLE SIDE 4X2/4X4

2006
MODEL YEAR

Page 86

F-150



BB0010-2005

NOTES — [] DIMENSIONS ARE INCHES.
— CH, LH, F, R, FW, RW DIMENSIONS, SEE PAGE 98.
— TIRE DATA, PAGE 100.
— INTERIOR BOX DIMENSIONS, PAGE 94-95.

DIMENSIONAL DATA

F-150 SUPERCAB STYLE

4X2/4X4

2006
MODEL YEAR

CHASSIS

CODE	DESCRIPTION	132.5" WB		144.5" WB		163.0" WB	
		4x2	4x4	4x2	4x4	4x2	4x4
H103	BOTTOM OF FRONT BUMPER VALANCE TO GROUND @ CURB	410 [16.1]	489 [19.3]	394.1 [15.5]	447.1 [17.6]	383.7 [15.1]	437.7 [17.2]
H105	BOTTOM OF REAR BUMPER VALANCE TO GROUND @ CURB	484.9 [19.1]	534.5 [21.0]	472.2 [18.6]	526.8 [20.7]	499.1 [19.6]	542.5 [21.4]
H106C	APPROACH ANGLE @ CURB (DEGREES)	20.5°	27.0°	19.5°	24.0°	21.0°	25.5°
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	23.1°	25.4°	22.5°	25.0°	23.8°	25.7°
H147C	RAMP BREAKOVER ANGLE @ CURB (DEGREES)	18.9°	21.1°	16.9°	20.4°	16.2°	18.9°
H507	TOP OF FRAME TO GROUND @ CURB (DEGREES)	707 [27.8]	746 [29.4]	701 [27.6]	761 [30.0]	720 [28.3]	767 [30.2]
L101	WHEELBASE	3366 [132.5]		3671 [144.5]		4143 [163.1]	
L103	VEHICLE LENGTH	5532 [217.8]		5837 [229.8]		6309 [248.4]	
L104	FRONT OVERHANG	936 [36.9]					
L105	REAR OVERHANG	1230 [48.4]					
L403	FRONT BUMPER TO BACK OF CAB	3644 [143.5]					
L404	CAB TO C OF REAR AXLE	659 [25.9]	659 [25.9]	963 [37.9]	963 [37.9]	1436 [56.5]	1436 [56.5]
L700	C OF FRONT AXLE TO BACK OF CAB	2708 [106.6]					
L705	C OF REAR AXLE TO REAR END OF FRAME	1041 [41.0]					
W703	FRAME RAIL WIDTH	102 [4.0]					
W704	REAR FRAME WIDTH	1024 [40.3]					

PICKUP BODY

CODE	DESCRIPTION	132.5" WB	144.5" WB	163.0" WB
NOMINAL CARGO BODY SIZE		5.5 FT.	6.5 FT.	8 FT.
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	267 [10.5]		
H705	REAR BUMPER HEIGHT	258 [10.2]		
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @ \varnothing OF REAR AXLE	1103 [43.4]		
L504	CAB TO PICKUP BOX	6 [0.2]		
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	2332 [91.8]	2632 [103.6]	3104 [122.2]
L558	\varnothing REAR AXLE TO \varnothing FUEL FILLER DOOR	508 [20.0]		
L559	LENGTH OF OPEN TAILGATE	557 [21.9]		

CAB

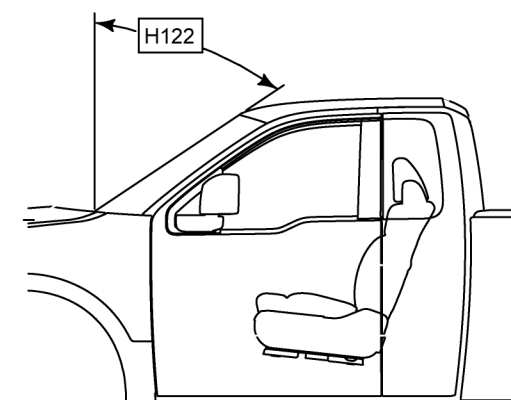
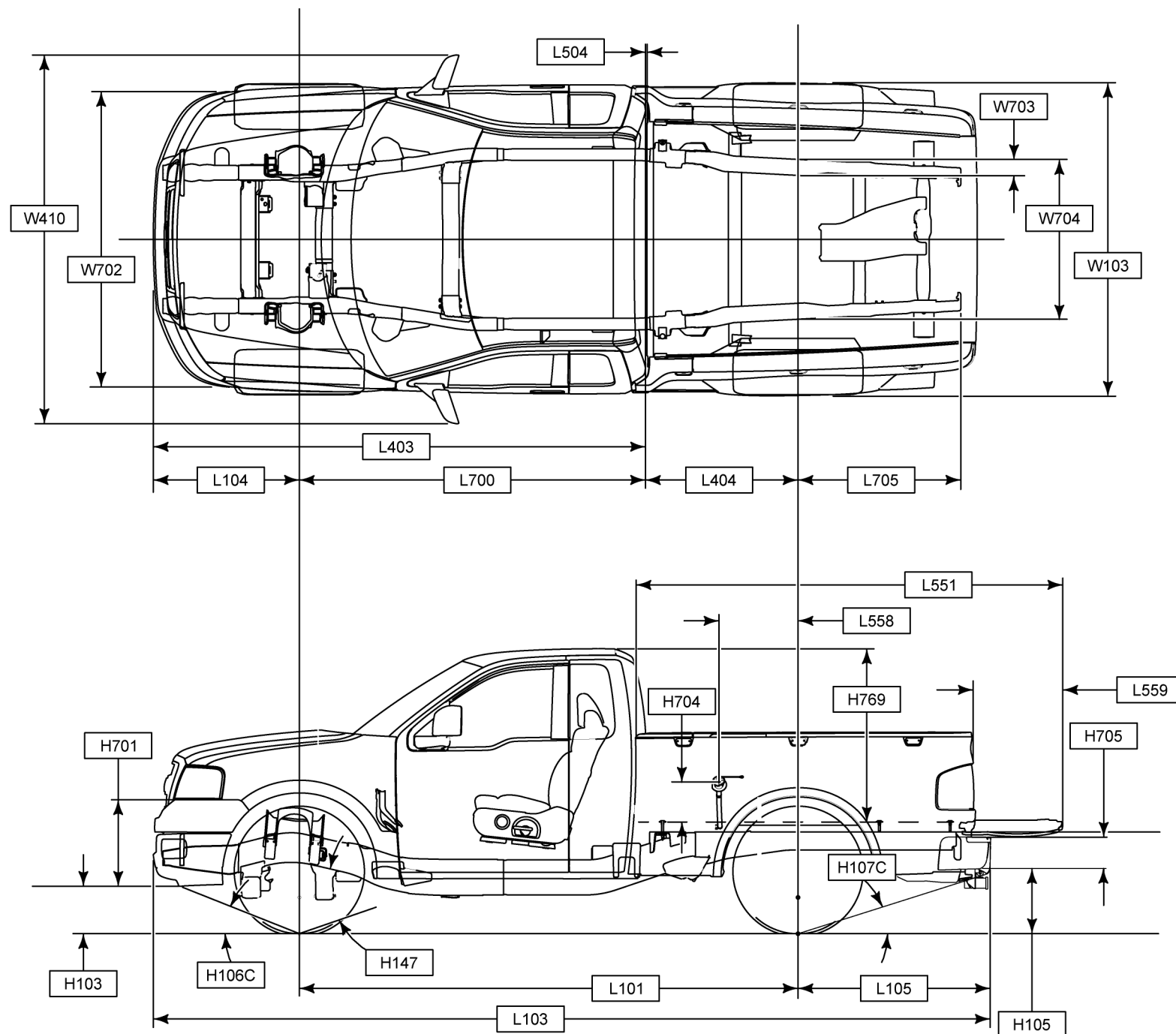
CODE	DESCRIPTION	
H122	WINDSHIELD ANGLE (DEGREES)	54.5°
H701	FRONT BUMPER HEIGHT	351 [13.8]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS)	2005 [78.9]
W410	VEHICLE WIDTH (MAX W/STANDARD MIRRORS)	2351 [92.6]
W702	FRONT BUMPER WIDTH	1901 [74.8]

* Common cab dimensions between 126" WB, 144.5" WB, 163" WB

DIMENSIONAL DATA

F-150 REGULAR CAB FLARESIDE 4X2/4X4

2006
MODEL YEAR



NOTES — [] DIMENSIONS ARE INCHES.
 — CH, LH, F, R, FW, RW DIMENSIONS, SEE PAGE 98.
 — TIRE DATA, PAGE 100.
 — INTERIOR BOX DIMENSIONS, PAGE 97.

DIMENSIONAL DATA
F-150 REGULAR CAB FLARESIDE 4X2/4X4

2006
MODEL YEAR

CHASSIS

CODE	DESCRIPTION	126" WB	
		4X2	4X4
H103	BOTTOM OF FRONT BUMPER VALANCE TO GROUND @ CURB	385 [15.2]	445 [17.5]
H105	BOTTOM OF REAR BUMPER VALANCE TO GROUND @ CURB	463 [18.2]	510 [20.1]
H106C	APPROACH ANGLE @ CURB (DEGREES)	21.2	26.0
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	23.2	19.9
H147C	RAMP BREAKOVER ANGLE @ CURB (DEGREES)	20.7	21.7
H507	TOP OF FRAME TO GROUND @ CURB (DEGREES)	705 [27.8]	
L101	WHEELBASE	3198 [125.9]	
L103	VEHICLE LENGTH	5364 [211.2]	
L104	FRONT OVERHANG	936 [36.9]	
L105	REAR OVERHANG	1230 [48.4]	
L403	FRONT OF BUMPER TO BACK OF CAB	3172 [124.9]	
L404	CAB TO \varnothing OF REAR AXLE	963 [37.9]	
L700	\varnothing OF FRONT AXLE TO BACK OF CAB	2235 [88.0]	
L705	\varnothing OF REAR AXLE TO REAR END OF FRAME	1041 [41.0]	
W703	FRAME RAIL WIDTH	102 [4.0]	
W704	REAR FRAME WIDTH	1024 [40.3]	

PICKUP BODY

CODE	DESCRIPTION	
NOMINAL CARGO BODY SIZE		6.5 FT.
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	267 [10.5]
H705	REAR BUMPER HEIGHT	258 [10.2]
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @ \varnothing OF REAR AXLE	1103 [43.4]
L504	CAB TO PICKUP BOX	6 [0.2]
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	2630 [103.5]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR (4X2)	508 [20.0]
L559	LENGTH OF OPEN TAILGATE	557 [21.9]

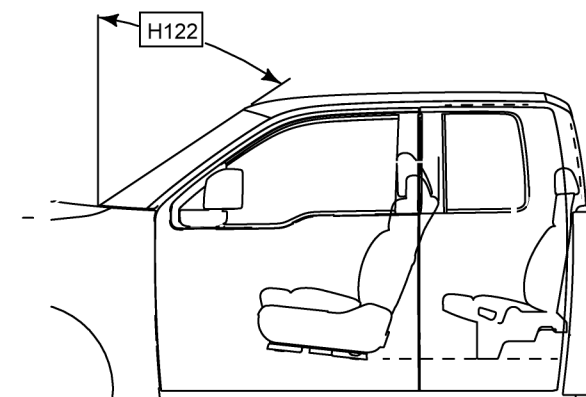
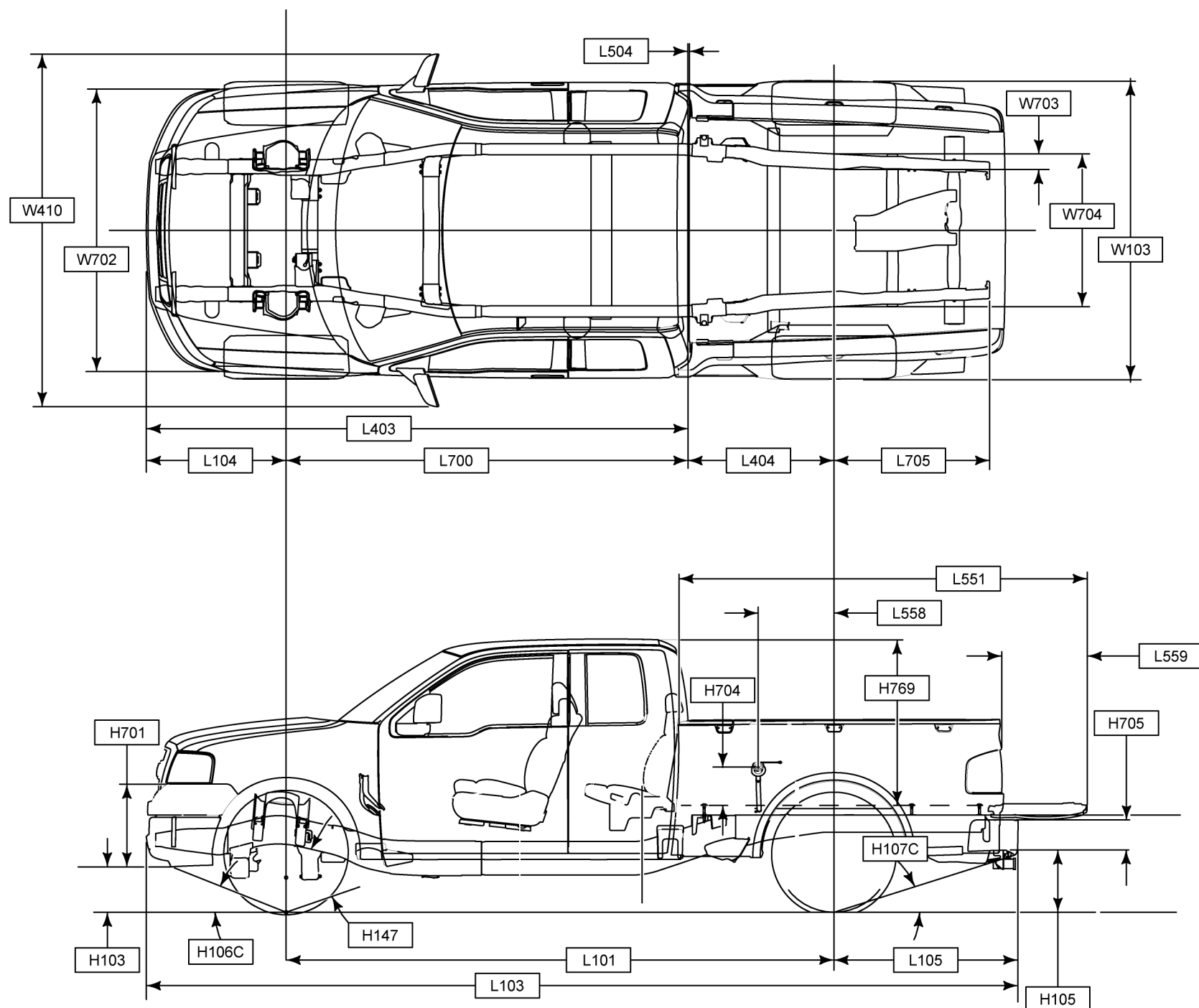
CAB

CODE	DESCRIPTION	
H122	WINDSHIELD ANGLE (DEGREES)	50
H701	FRONT BUMPER HEIGHT	351 [13.8]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS)	2005 [78.9]
W410	VEHICLE WIDTH (MAX W/STANDARD MIRRORS)	2351 [92.6]
W702	FRONT BUMPER WIDTH	1901 [74.8]

DIMENSIONAL DATA

F-150 SUPERCAB FLARESIDE 4X2/4X4

2006
MODEL YEAR



NOTES — [] DIMENSIONS ARE INCHES.
 — CH, LH, F, R, FW, RW DIMENSIONS, SEE PAGE 98.
 — TIRE DATA, PAGE 100.
 — INTERIOR BOX DIMENSIONS, PAGE 97.

DIMENSIONAL DATA

F-150 SUPERCAB FLARESIDE 4X2/4X4

2006
MODEL YEAR

Page 91

F-150

CHASSIS

CODE	DESCRIPTION	144.5" WB	
		4X2	4X4
H103	BOTTOM OF FRONT BUMPER VALANCE TO GROUND @ CURB	279 [11.0]	458.2 [18.0]
H105	BOTTOM OF REAR BUMPER VALANCE TO GROUND @ CURB	450 [17.7]	536.5 [21.1]
H106C	APPROACH ANGLE @ CURB (DEGREES)	21.1	25.5
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	21.8	25.5
H147C	RAMP BREAKOVER ANGLE @ CURB (DEGREES)	16.6	20.4
H507	TOP OF FRAME TO GROUND @ CURB (DEGREES)	700 [27.6]	749 [29.5]
L101	WHEELBASE	3671 [144.5]	
L103	VEHICLE LENGTH	5837 [229.8]	
L104	FRONT OVERHANG	936 [36.9]	
L105	REAR OVERHANG	1230 [48.4]	
L403	FRONT BUMPER TO BACK OF CAB	3644 [143.5]	
L404	CAB TO \varnothing OF REAR AXLE	963 [37.9]	
L700	\varnothing OF FRONT AXLE TO BACK OF CAB	2708 [106.6]	
L705	\varnothing REAR AXLE TO REAR END OF FRAME	1041 [41.0]	
W703	FRAME RAIL WIDTH	102 [4.0]	
W704	REAR FRAME WIDTH	1024 [40.3]	

PICKUP BODY

CODE	DESCRIPTION	
NOMINAL CARGO BODY SIZE		6.5 FT.
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	267 [10.5]
H705	REAR BUMPER HEIGHT	258 [10.2]
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @ \varnothing OF REAR AXLE	1103 [43.4]
L504	CAB TO PICKUP BOX	6 [0.2]
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	2630 [103.5]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR (4x2)	508 [20.0]
L559	LENGTH OF OPEN TAILGATE	557 [21.9]

CAB

CODE	DESCRIPTION	
H122	WINDSHIELD ANGLE (DEGREES)	50
H701	FRONT BUMPER HEIGHT	351 [13.8]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS)	2005 [78.9]
W410	VEHICLE WIDTH (MAX W/STANDARD MIRRORS)	2351 [92.6]
W702	FRONT BUMPER WIDTH	1901 [74.8]

NOTE — [] DIMENSIONS ARE INCHES.

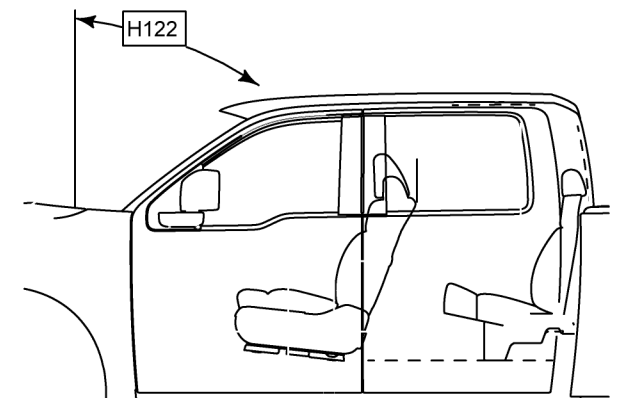
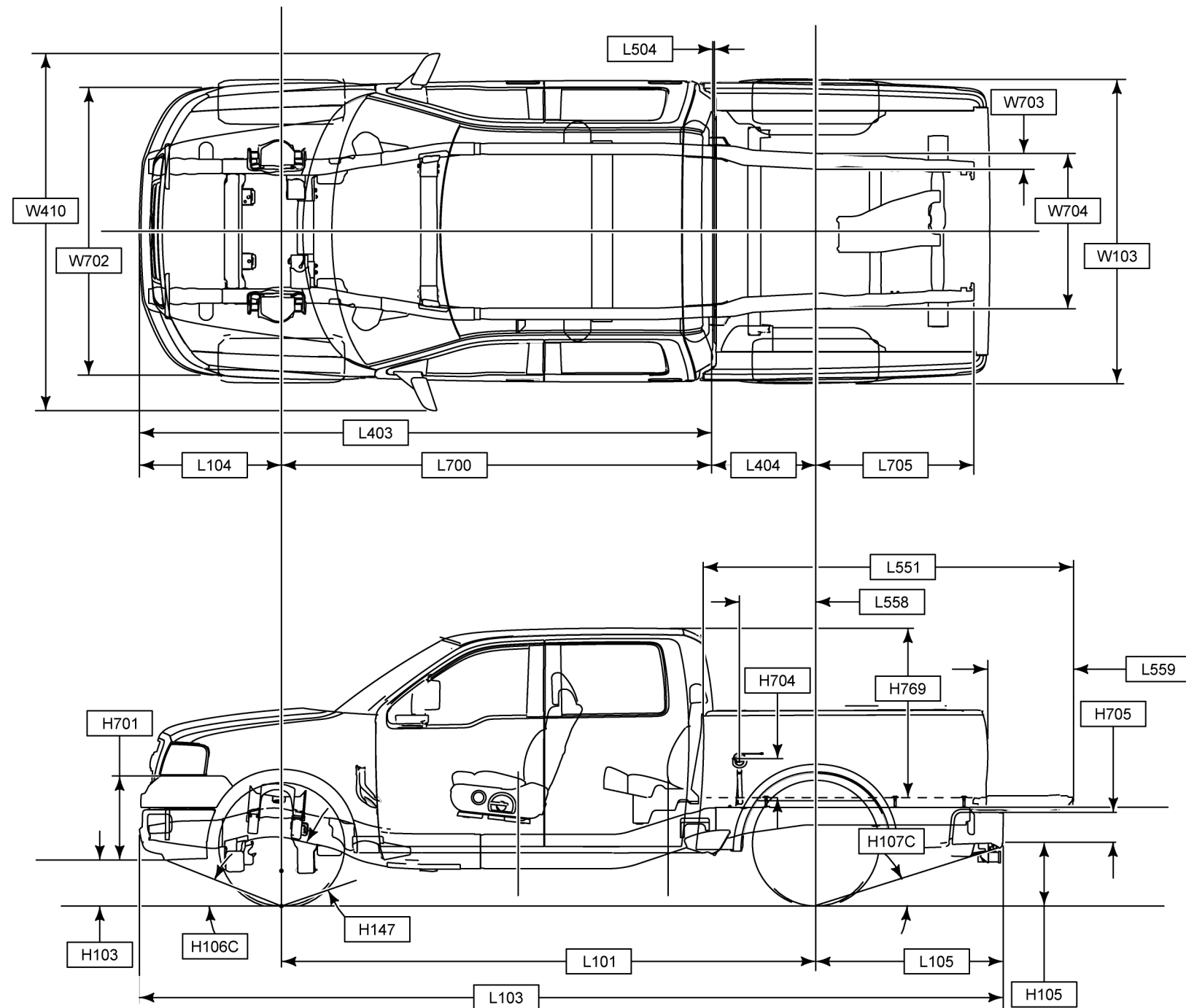
DIMENSIONAL DATA

F-150 4-DOOR SUPERCREW PICKUP 4X2/4X4

2006
MODEL YEAR

Page 92

F-150



NOTES — [] DIMENSIONS ARE INCHES.
 — CH, LH, F, R, FW, RW DIMENSIONS, SEE PAGE 98.
 — TIRE DATA, PAGE 100.
 — INTERIOR BOX DIMENSIONS, PAGE 94.

DIMENSIONAL DATA
F-150 4-DOOR SUPERCREW PICKUP 4X2/4X4

2006
MODEL YEAR

Page 93 F-150

CHASSIS

CODE	DESCRIPTION	138.5" WB		150.5" WB	
		4X2	4X4	4X2	4X4
H103	BOTTOM OF FRONT BUMPER VALANCE TO GROUND @ CURB	268 [10.6]	323 [12.7]	304 [12.0]	367.6 [14.5]
H105	BOTTOM OF REAR BUMPER VALANCE TO GROUND @ CURB	463 [18.2]	486 [19.1]	504 [19.8]	562 [22.1]
H106C	APPROACH ANGLE @ CURB (DEGREES)	21.5	26.0	21.8	26.3
H107C	DEPARTURE ANGLE @ CURB (DEGREES)	22.1	25.3	23.6	26.2
H147C	RAMP BREAKOVER ANGLE @ CURB (DEGREES)	17.7	21.2	16.6	20.2
H507	TOP OF FRAME TO GROUND @ CURB (DEGREES)	706 [27.8]	773 [30.4]	706 [27.8]	773 [30.4]
L101	WHEELBASE	3518 [138.5]		3823 [150.5]	
L103	VEHICLE LENGTH	5685 [223.8]		5994 [236.0]	
L104	FRONT OVERHANG	936 [36.9]			
L105	REAR OVERHANG	936 [36.9]			
L403	FRONT OF BUMPER TO BACK OF CAB	3791 [149.3]			
L404	CAB TO \varnothing OF REAR AXLE	663 [26.1]		963 [37.9]	
L700	\varnothing OF FRONT AXLE TO BACK OF CAB	2855 [112.4]			
L705	\varnothing OF REAR AXLE TO REAR END OF FRAME	1041 [41.0]			
W703	FRAME RAIL WIDTH	102 [4.0]			
W704	REAR FRAME WIDTH	1024 [40.3]			

PICKUP BODY

CODE	DESCRIPTION	138.5" WB	150.5" WB
NOMINAL CARGO BODY SIZE		5.5 FT.	6.5 FT.
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	267 [10.5]	
H705	REAR BUMPER HEIGHT	258 [10.2]	
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @ \varnothing OF REAR AXLE	1103 [43.4]	
L504	CAB TO PICKUP BOX	6 [0.2]	
L551	OVERALL LENGTH OF CARGO BODY FLOOR WITH OPEN TAILGATE	2332 [91.8]	2632 [103.6]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR	508 [20.0]	
L559	LENGTH OF OPEN TAILGATE	557 [21.9]	

CAB*

CODE	DESCRIPTION	
H122	WINDSHIELD ANGLE (DEGREES)	54.5
H701	FRONT BUMPER HEIGHT	479 [18.9]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS)	2005 [78.9]
W410	VEHICLE WIDTH (MAX W/STANDARD MIRRORS)	2458 [96.8]
W702	FRONT BUMPER WIDTH	1901 [74.8]

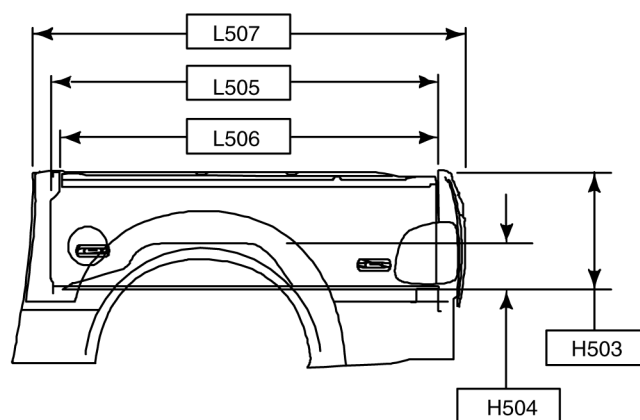
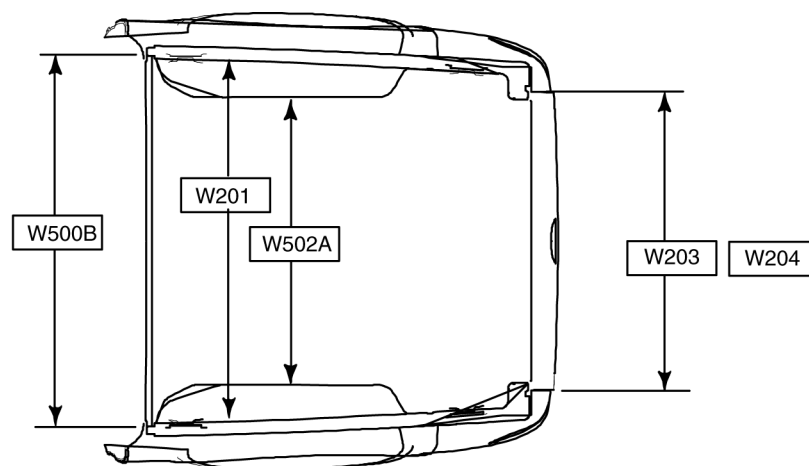
* Common cab dimensions between 138.5" WB & 150.5" WB

NOTE — [] DIMENSIONS ARE INCHES.

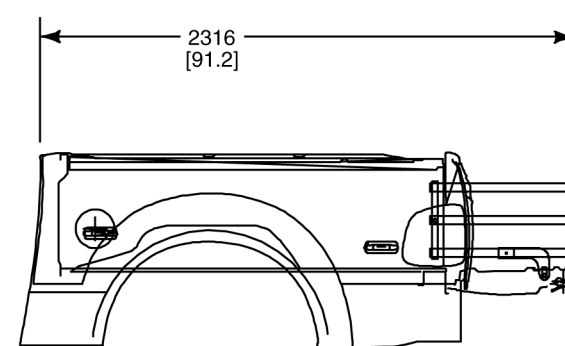
DIMENSIONAL DATA

F-150 5 ½' STYLESIDE PICKUP BOX

2006
MODEL YEAR



5½' BOX



5½' BOX WITH OPTIONAL BOX EXTENDER

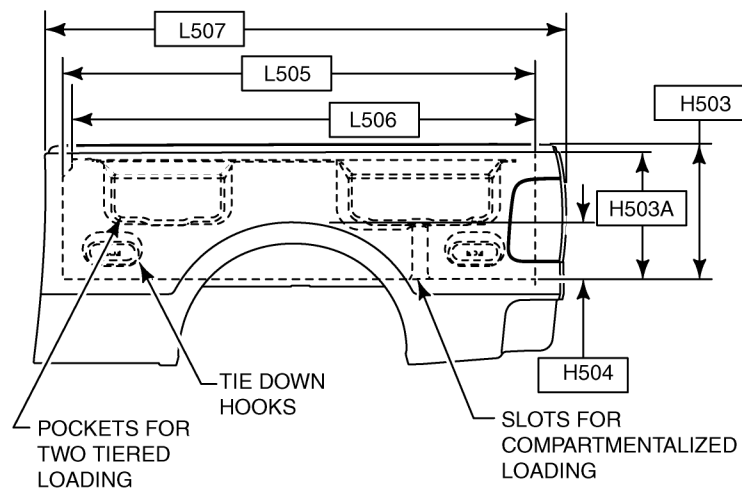
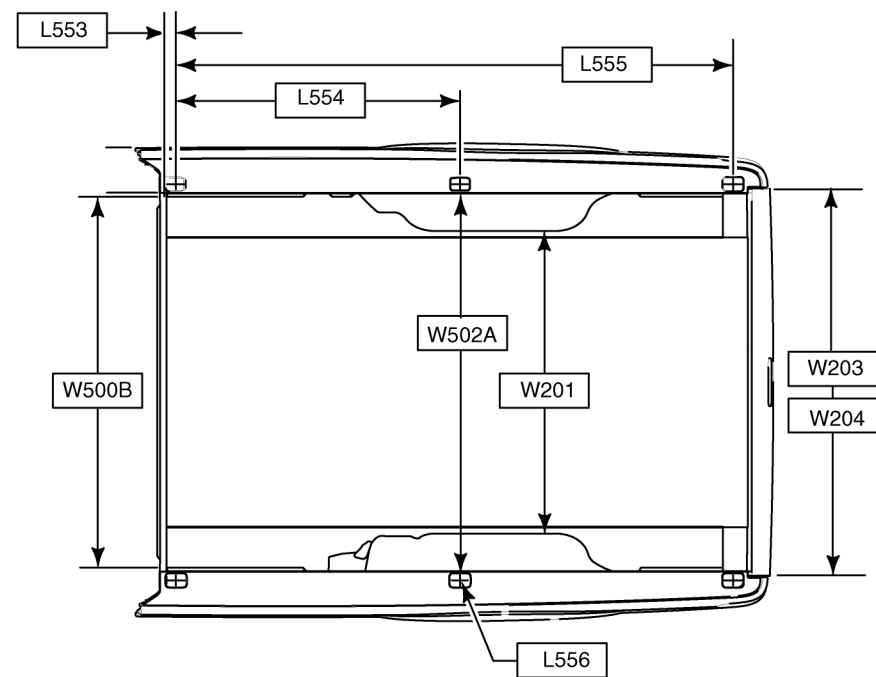
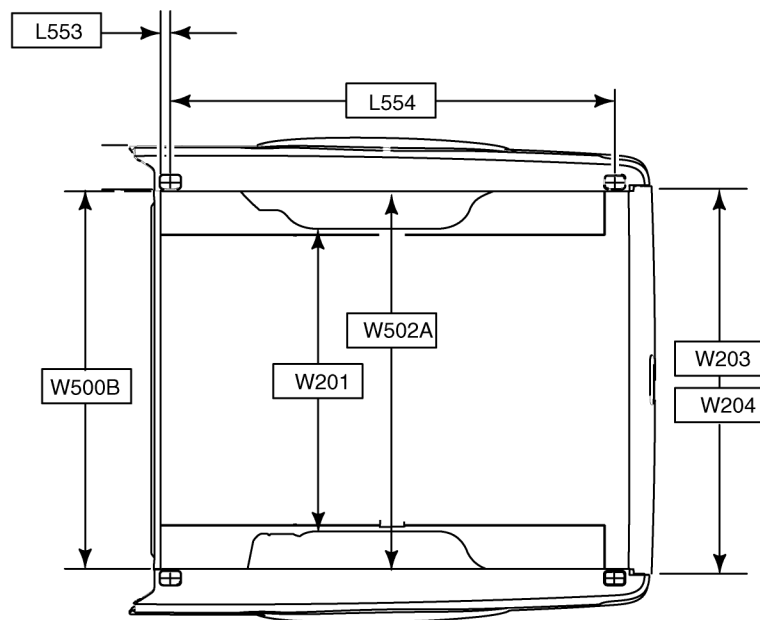
BB0553-2005

NOTES — [] DIMENSIONS ARE INCHES.
— SEE PAGE 95 FOR DIMENSIONS.

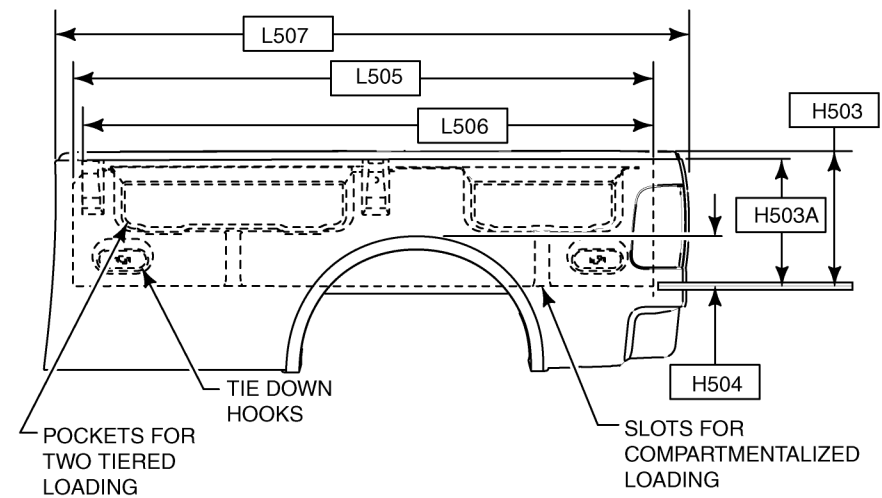
DIMENSIONAL DATA

F-150 6 1/2 & 8 FT. STYLESIDE PICKUP BOX

2006
MODEL YEAR



6 1/2 FT. BOX



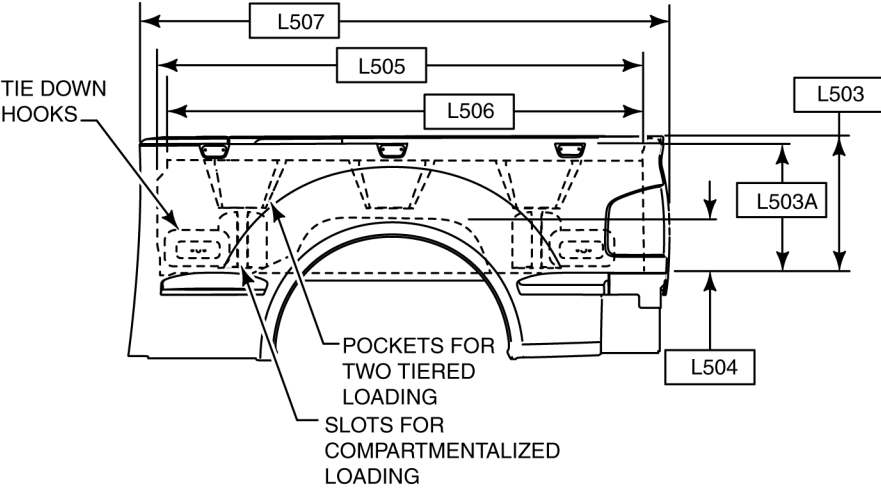
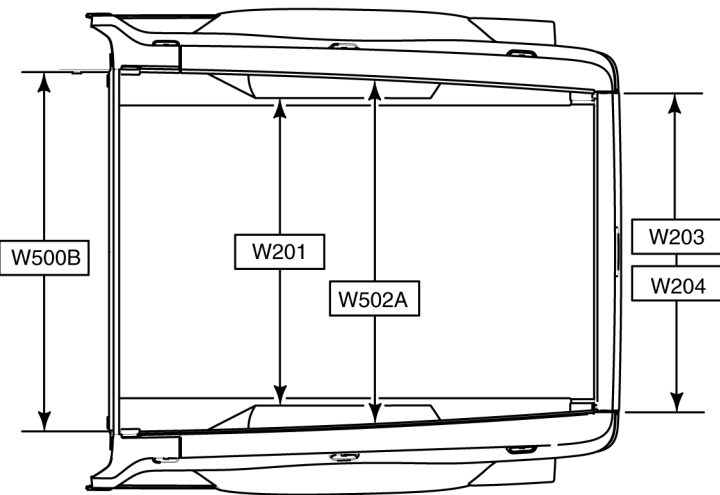
8 FT. BOX

BB0013-2005

NOTES — [] DIMENSIONS ARE INCHES.
— SEE PAGE 95 FOR DIMENSIONS..

DIMENSIONAL DATA
F-150 6 ½' FLARESIDE PICKUP BOX

2006
MODEL YEAR



BB0014-2005

NOTES — [] DIMENSIONS ARE INCHES.
— SEE PAGE 95 FOR DIMENSIONS.

DIMENSIONAL DATA

F-150 PICKUP BOX

2006
MODEL YEAR

Page 97

F-150

PICKUP BOX

CODE	DESCRIPTION	5.5' STYLESIDE	6.5' STYLESIDE	8' STYLESIDE	6.5' FLARESIDE
H503	CARGO BODY HEIGHT W/MOLDING	566 [22.3]	565 [22.2]	568 [22.4]	565 [22.2]
H503A	CARGO BODY HEIGHT W/O MOLDING	556 [21.9]	556 [21.9]	556 [21.9]	551 [21.7]
H504	WHEELHOUSE HEIGHT	235 [9.3]	235 [9.3]	235 [9.3]	235 [9.3]
L505	CARGO BODY LENGTH @ FLOOR	1703 [67.0]	2002 [78.8]	2475 [97.4]	2002 [78.8]
L506	CARGO BODY LENGTH @ TOP (BELT)	1675 [65.9]	1975 [77.8]	2448 [96.4]	1968 [77.5]
L507	CARGO BODY OVERALL LENGTH	1800 [70.9]	2101 [82.7]	2571 [101.2]	2098 [82.6]
L553	INSIDE FRONT OF BOX TO ℄ OF STAKE #1	41 [1.6]	41 [1.6]	41 [1.6]	NA
L554	℄ OF STAKE #1 TO ℄ OF STAKE #2	1566 [61.7]	1867 [73.5]	1192 [46.9]	NA
L555	℄ OF STAKE #1 TO ℄ OF STAKE #3	NA	NA	2338 [92.0]	NA
L556	STAKE POCKET SIZE (L x W)	58 x 43 [2.3 x 1.7]	58 x 43 [2.3 x 1.7]	58 x 43 [2.3 x 1.7]	NA
W201	CARGO WIDTH @ WHEELHOUSE	1269 [50.0]	1269 [50.0]	1269 [50.0]	1270 [50.0]
W203	REAR OPENING WIDTH @ FLOOR	1531 [60.3]	1531 [60.3]	1531 [60.3]	1250 [49.2]
W204	REAR OPENING WIDTH @ TOP (BELT)	1524 [60.0]	1524 [60.0]	1524 [60.0]	1323 [52.1]
W500B	CARGO BODY MAXIMUM INSIDE WIDTH @ FLOOR	1656 [65.2]	1656 [65.2]	1656 [65.2]	1507 [59.3]
W502A	CARGO BODY MAXIMUM INSIDE WIDTH @ ℄ OF REAR AXLE	1656 [65.2]	1656 [65.2]	1656 [65.2]	1463 [57.6]
V5	CARGO VOLUME - LITERS / CU.FT.	1570 / 55.4	1856 / 65.5	2302 / 81.3	1673 / 59.1

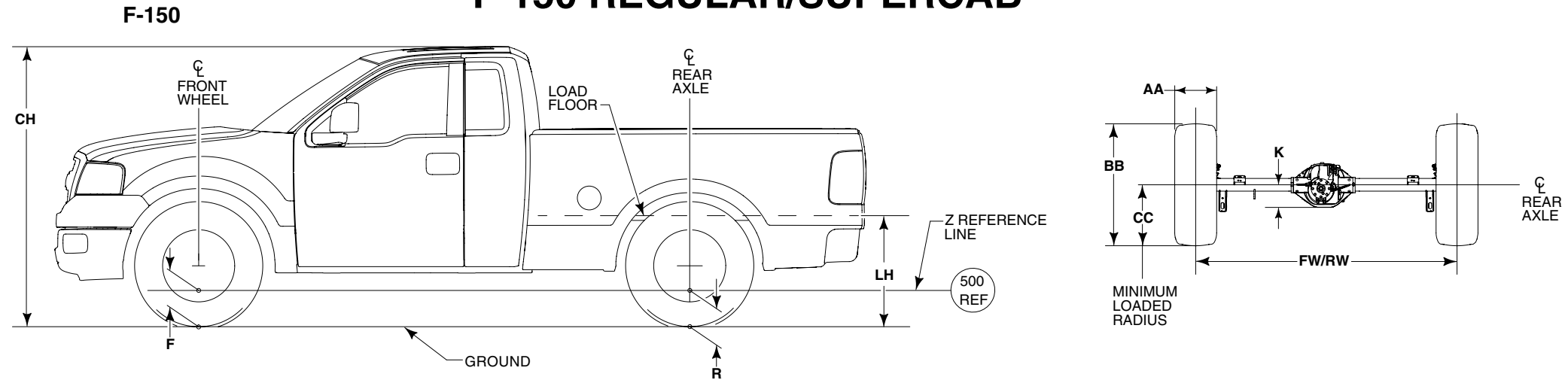
NOTE — [] DIMENSIONS ARE INCHES.

AXLE / TIRE / VEHICLE HEIGHT DATA

F-150 REGULAR/SUPERCAB

2006
MODEL YEAR

Page 98



BB0017 2004

Model	WB inches	GVWR pounds	Base Tire	F Height @ Front Wheel ⁽¹⁾⁽²⁾ mm [in]		R Height @ Rear Axle ⁽¹⁾⁽²⁾ mm [in]		LH ⁽¹⁾⁽²⁾ mm [in]		CH ⁽¹⁾⁽²⁾ mm [in]		K mm [in]	AA mm [in]	BB mm [in]	CC mm [in]	FW mm [in]	RW mm [in]
				Height at Base Curb Weight	Loaded Height @ Spring Rating	Height at Base Curb Weight	Loaded Height @ Spring Rating	Empty	Loaded	Empty	Loaded						
F-150 Regular Cab 4x2 Styleside	126.0	6600	P235/70R-17A/S	293 [11.5]	253 [9.9]	379 [14.9]	263 [10.3]	802 [31.6]	684 [26.9]	1872 [73.7]	1779 [70.0]	147 [5.8]	246 [9.6]	732 [28.8]	351 [13.8]	1701 [66.9]	1701 [66.9]
	144.5	6800	P235/70R-17A/S	283 [11.1]	252 [9.9]	377 [14.8]	261 [10.2]	835 [32.9]	698 [27.5]	1875 [73.8]	1794 [70.6]	147 [5.8]	246 [9.6]	732 [28.8]	351 [13.8]	1701 [66.9]	1701 [66.9]
F-150 Regular Cab 4x2 Flareside	126.0	6600	P255/65R-17A/S	293 [11.5]	254 [10.0]	380 [14.9]	264 [10.3]	802 [31.6]	684 [26.9]	1875 [73.8]	1779 [70.0]	147 [5.8]	275 [10.8]	778 [30.6]	343 [13.5]	1701 [66.9]	1701 [66.9]
F-150 SuperCab 4x2 Styleside	132.5	6650	P235/70R-17A/S	295 [11.6]	252 [9.9]	371 [14.6]	262 [10.3]	814 [32.0]	697 [27.4]	1881 [74.0]	1793 [70.6]	147 [5.8]	246 [9.6]	732 [28.8]	351 [13.8]	1701 [66.9]	1701 [66.9]
	144.5	6700	P235/70R-17A/S	289 [11.3]	250 [9.8]	367 [14.4]	262 [10.3]	791 [31.1]	685 [27.0]	1866 [73.5]	1782 [70.2]	147 [5.8]	246 [9.6]	732 [28.8]	351 [13.8]	1701 [66.9]	1701 [66.9]
	163.0	8200	LT245/70R-17D A/S	287 [11.3]	249 [9.8]	388 [15.3]	257 [10.1]	810 [31.9]	697 [27.4]	1865 [73.4]	1796 [70.7]	167 [6.5]	263 [10.3]	790 [31.1]	360 [14.1]	1701 [66.9]	1701 [66.9]
F-150 SuperCab 4x2 Flareside	144.5	6700	P255/65R-17A/S	290 [11.4]	252 [9.9]	368 [14.4]	260 [10.2]	791 [31.1]	685 [27.0]	1856 [73.1]	1782 [70.2]	147 [5.8]	275 [10.8]	778 [30.6]	343 [13.5]	1701 [66.9]	1701 [66.9]
F-150 Regular Cab 4x4 Styleside	126.0	6800	P235/75R-17A/T	345 [13.5]	311 [12.2]	435 [17.1]	322 [12.6]	850 [33.5]	744 [29.3]	1921 [75.6]	1837 [72.3]	147 [5.8]	251 [9.8]	752 [29.6]	359 [14.1]	1701 [66.9]	1701 [66.9]
	144.5	6950	P235/75R-17A/T	339 [13.3]	309 [12.1]	435 [17.1]	321 [12.6]	888 [35.0]	750 [29.5]	1921 [75.6]	1844 [72.6]	147 [5.8]	251 [9.8]	752 [29.6]	359 [14.1]	1701 [66.9]	1701 [66.9]
F-150 Regular Cab 4x4 Flareside	126.0	6800	P255/70R-17A/T	346 [13.6]	312 [12.2]	436 [17.1]	323 [12.7]	850 [33.5]	744 [29.3]	1903 [74.9]	1837 [72.3]	147 [5.8]	275 [10.8]	804 [31.6]	357 [14.0]	1701 [66.9]	1701 [66.9]
F-150 SuperCab 4x4 Styleside	132.5	6900	P235/75R-17A/T	347 [13.6]	309 [12.1]	419 [16.4]	321 [12.6]	860 [33.9]	757 [29.8]	1943 [76.5]	1852 [72.9]	147 [5.8]	251 [9.8]	752 [29.6]	359 [14.1]	1701 [66.9]	1701 [66.9]
	144.5	6950	P235/75R-17A/T	346 [13.6]	307 [12.0]	427 [16.8]	321 [12.6]	854 [33.6]	745 [29.3]	1919 [75.6]	1841 [72.5]	147 [5.8]	251 [9.8]	752 [29.6]	359 [14.1]	1701 [66.9]	1701 [66.9]
	163.0	8200	LT245/70R-17D A/T	341 [13.4]	300 [11.8]	425 [16.7]	310 [12.2]	854 [33.6]	753 [29.6]	1916 [75.4]	1848 [72.8]	167 [6.5]	263 [10.3]	790 [31.1]	360 [14.1]	1701 [66.9]	1701 [66.9]
F-150 SuperCab 4x4 Flareside	144.5	6950	P255/70R-17A/T	347 [13.6]	309 [12.1]	428 [16.8]	323 [12.7]	854 [33.6]	745 [29.3]	1912 [75.3]	1841 [72.5]	147 [5.8]	275 [10.8]	804 [31.6]	357 [14.0]	1701 [66.9]	1701 [66.9]

(1) The Height Data shown represents dimensions of a base/standard vehicle with no options. Actual height may vary due to production tolerances.

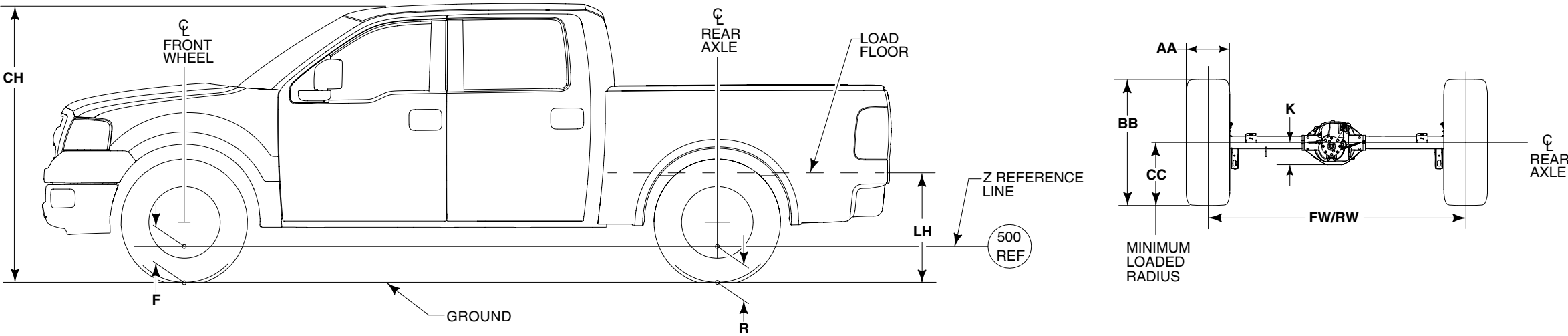
(2) Vehicle ride heights are given at tire minimum loaded radius.

NOTES — [] DIMENSIONS ARE INCHES.
— TIRE DATA, PAGE 100.

AXLE / TIRE / VEHICLE HEIGHT DATA
F-150 SUPERCREW

2006
MODEL YEAR

Page 99 F-150



BB0554 2004

Model	WB inches	GVWR pounds	Base Tire	F Height @ Front Wheel ⁽¹⁾⁽²⁾ mm [in]		R Height @ Rear Axle ⁽¹⁾⁽²⁾ mm [in]		LH ⁽¹⁾⁽²⁾ mm [in]		CH ⁽¹⁾⁽²⁾ mm [in]		K mm [in]	AA mm [in]	BB mm [in]	CC mm [in]	FW mm [in]	RW mm [in]
				Height @ Base Curb Weight	Loaded Height @ Spring Rating	Height @ Base Curb Weight	Loaded Height @ Spring Rating	Empty	Loaded	Empty	Loaded						
F-150 SuperCrew 4x2	138.5	6800	P255/65R-17A/S	288 [11.3]	249 [9.8]	360 [14.1]	259 [10.1]	802 [31.6]	684 [26.9]	1867 [73.5]	1781 [70.1]	147 [5.8]	275 [10.8]	778 [30.6]	343 [13.5]	1701 [66.9]	1701 [66.9]
F-150 SuperCrew 4x4	138.5	6900	P255/70R-17A/T	327 [12.8]	291 [11.4]	406 [15.9]	305 [12.0]	826 [32.5]	730 [28.7]	1931 [76.0]	1827 [71.9]	147 [5.8]	251 [9.8]	752 [29.6]	359 [14.1]	1701 [66.9]	1701 [66.9]

(1) The Height Data shown represents dimensions of a base/standard vehicle with no options. Actual height may vary due to production tolerances.
(2) Vehicle ride heights are given at tire minimum loaded radius.

NOTES — [] DIMENSIONS ARE INCHES.
— TIRE DATA, PAGE 100.

WHEEL AND TIRE DATA
F-150

2006
MODEL YEAR

F-150 REGULAR/SUPERCAB/SUPERCREW TIRE DATA

Tire Size	Rim Width (in)	AA Maximum Section Width (mm)		BB Minimum Tire Height (mm)		*CC Minimum Loaded Radius (mm)	
		All-Season	All-Terrain	All-Season	All-Terrain	All-Season	All-Terrain
P235/70R17XL	7.5	246	—	732	—	351	—
P235/75R17	7.5	—	251	—	752	—	359
P255/65R17	7.5	275	—	778	—	343	—
P255/70R17	7.5	—	275	—	804	—	357
P265/60R18	7.5	260	—	778	—	354	—
P275/65R18	7.5	—	271	—	810	—	362
LT275/65R18C	7.5	—	318	—	826	—	383
LT245/70R17D	7.5	263	—	790	—	360	—
P275/55R20	8.5	—	282	—	770	—	366
P275/45R22	9.0	276	—	781	—	374	—

* This number represents Radius — Axle centerline to ground with maximum rated load on tire at maximum pressure.

F-150 REGULAR/SUPERCAB/SUPERCREW WHEEL DATA

Wheel Type	Wheel Size	Inset (mm)	No. of Studs	Bolt Circle (mm)	Max. Wheel Capacity
Painted Styled Steel	17x7.5J	44	6	135	2100
Al 5 Spoke Machined w/ Satin Nickel Accents	18x7.5J	44	6	135	2100
Al 5 Spoke Fabricated	17x7.5J	44	6	135	2100
Al 5 Spoke Fully Painted	17x7.5J	44	6	135	2100
Al 5 Spoke Center Fluted	17x7.5J	44	6	135	2100
Al 5 Spoke Machine Finish	17x7.5J	44	6	135	2100
Al 5 Spoke Machined Finish	18x7.5J	44	6	135	2100
Argent Steel (8200#)	17x7.5J	44	7	150	2450
Steel Wheel Spare	17x7.5J	44	6	135	2100
Steel Wheel Spare	18x7.5J	44	6	135	2100
Cast Aluminum	20x8.5J	44	6	135	2100
Forged Aluminum	22x9.0J	44	6	135	2100

NOTE — [] DIMENSIONS ARE INCHES.

SEAT TRACK TRAVEL / H-POINT LOCATION

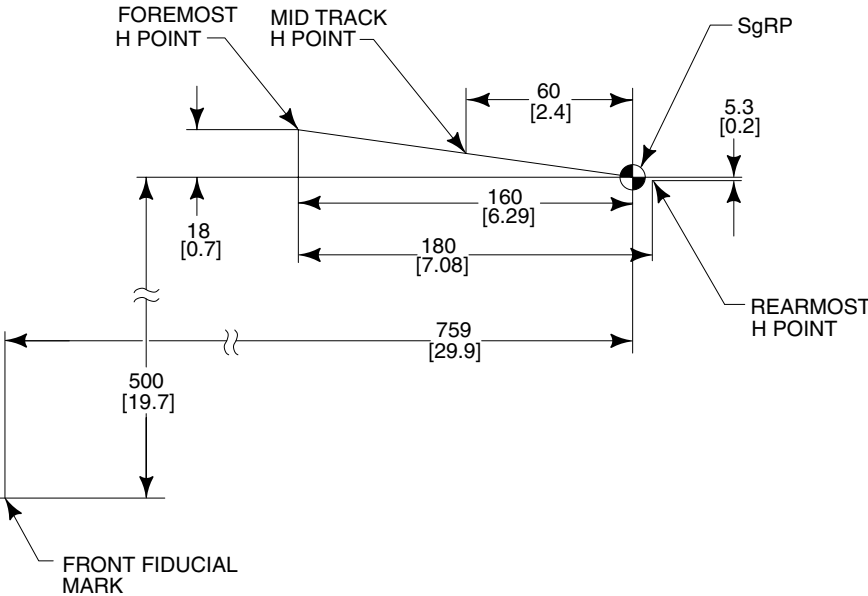
F-150

2006
MODEL YEAR

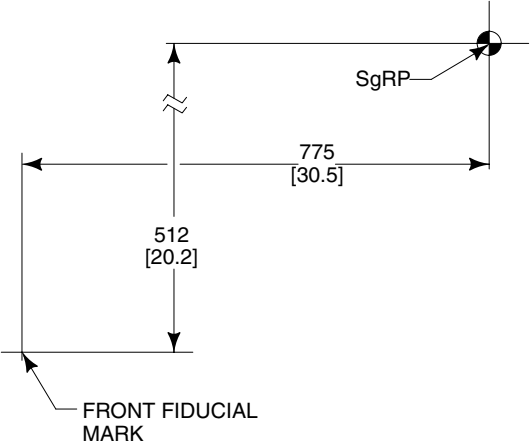
Page 101

F-150

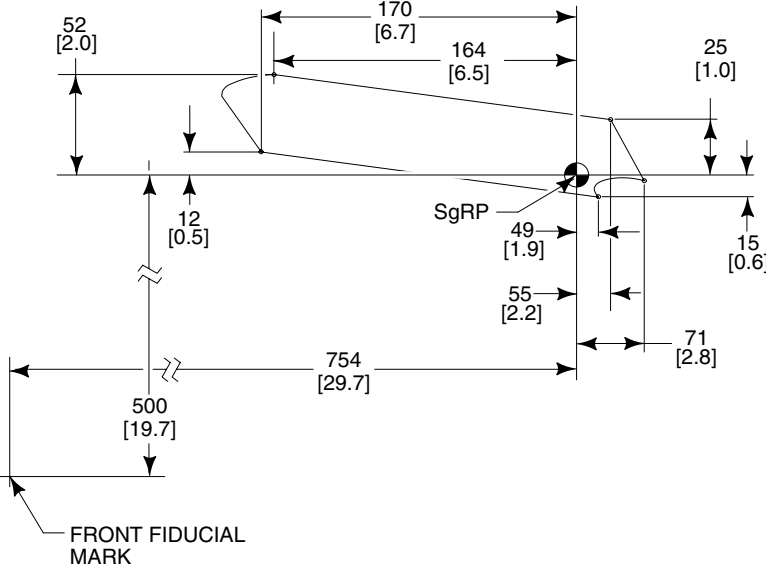
SUPERCREW/REGULAR CAB/SUPERCAB
BENCH SEAT MANUAL TRACK



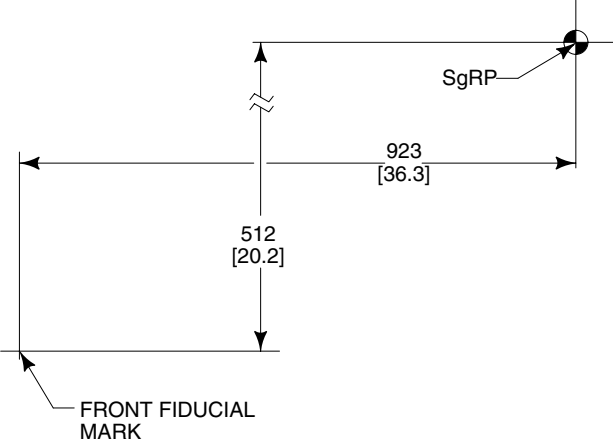
SUPERCAB
REAR PASSENGER SEAT



SUPERCREW/REGULAR CAB/SUPERCAB
DRIVER SEAT POWER TRACK



SUPERCREW
REAR PASSENGER SEAT



SUPER DUTY F-250/350 STYLESIDE PICKUP

MODEL LINEUP

2006
MODEL YEAR

Page 102 SUPER DUTY F-SERIES

SUPER DUTY F-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE ⁽¹⁾ liters	STANDARD TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾			PICKUP NOMINAL LENGTH feet
									FRONT pounds	REAR pounds	TOTAL pounds	
REGULAR CAB STYLESIDE PICKUP												
F-250 4X2	F20	137	56.3 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	—	8800	3200	3111	2393	5504	8
				6.8L V-10			9000	3200	3264	2393	5657	8
				6.0L V-8			9400	3000	3762	2445	6207	8
F-250 4X4	F21	137	56.3 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	NV271	9000	2900	3517	2453	5970	8
				6.8L V-10			9200	2900	3673	2447	6120	8
				6.0L V-8			9600	2800	4160	2514	6674	8
F-350 4X2 SRW	F30	137	56.3 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	—	10,100	4400	3139	2467	5606	8
				6.8L V-10			10,300	4400	3292	2467	5759	8
				6.0L V-8			10,700	4200	3790	2519	6309	8
F-350 4X4 SRW	F31	137	56.3 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	NV271	10,500	4300	3545	2527	6072	8
				6.8L V-10			10,700	4300	3701	2521	6222	8
				6.0L V-8			11,100	4200	4188	2588	6776	8
F-350 4X2 DRW	F32	137	56.3 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	—	11,800	5700	3161	2793	5954	8
				6.8L V-10			12,000	5800	3314	2793	6107	8
				6.0L V-8			12,400	5600	3812	2845	6657	8
F-350 4X4 DRW	F33	137	56.3 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	NV271	12,000	5400	3567	2853	6420	8
				6.8L V-10			12,200	5500	3723	2847	6570	8
				6.0L V-8			12,600	5300	4210	2914	7124	8

(1) Engine/transmission combinations may not be available on all models, or in all areas.
 (2) Includes weight of driver, passengers and optional equipment.
 (3) Base curb weight is for standard equipment only.
 (4) Available with Pickup Box Delete Regular Production Option (RPO) with 5.4L V-8 or 6.0L diesel only.

SUPER DUTY F-250/350 STYLESIDE PICKUP

MODEL LINEUP

2006
MODEL YEAR

Page 103 SUPER DUTY F-SERIES

SUPER DUTY F-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE ⁽¹⁾ liters	STANDARD TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾			PICKUP NOMINAL LENGTH feet
									FRONT pounds	REAR pounds	TOTAL pounds	
SUPERCAB STYLESIDE PICKUP												
F-250 4X2	X20	141.8	40	5.4L V-8	6-Spd. Manual OD	—	9000	3100	3204	2548	5752	6¾
				6.8L V-10			9200	3200	3340	2544	5884	6¾
				6.0L V-8			9600	3000	3854	2576	6430	6¾
		158	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	—	9200	3200	3300	2556	5856	8
				6.8L V-10			9400	3300	3434	2550	5984	8
				6.0L V-8			9800	3100	3955	2608	6563	8
F-250 4X4	X21	141.8	40	5.4L V-8	6-Spd. Manual OD	NV271	9200	2800	3606	2601	6207	6¾
				6.8L V-10			9400	2900	3757	2594	6351	6¾
				6.0L V-8			9800	2800	4244	2636	6880	6¾
		158	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	NV271	9400	2900	3713	2606	6319	8
				6.8L V-10			9600	3000	3872	2609	6481	8
				6.0L V-8			10,000	2800	4360	2668	7028	8
F-350 4X2 SRW	X30	141.8	40	5.4L V-8	6-Spd. Manual OD	—	10,200	4200	3232	2622	5854	6¾
				6.8L V-10			10,400	4300	3368	2618	5986	6¾
				6.0L V-8			10,800	4100	3882	2650	6532	6¾
		158	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	—	10,400	4300	3328	2630	5958	8
				6.8L V-10			10,600	4400	3462	2624	6086	8
				6.0L V-8			11,000	4200	3983	2682	6665	8
F-350 4X4 SRW	X31	141.8	40	5.4L V-8	6-Spd. Manual OD	NV271	10,600	4100	3634	2675	6309	6¾
				6.8L V-10			10,800	4200	3785	2668	6453	6¾
				6.0L V-8			11,200	4100	4272	2710	6982	6¾
		158	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	NV271	10,800	4200	3741	2680	6421	8
				6.8L V-10			11,000	4300	3900	2683	6583	8
				6.0L V-8			11,400	4100	4388	2742	7130	8
F-350 4X2 DRW	X32	158	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	—	12,200	5700	3350	2956	6306	8
				6.8L V-10			12,400	5800	3484	2950	6434	8
				6.0L V-8			12,800	5600	4005	3008	7013	8
F-350 4X4 DRW	X33	158	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	NV271	12,400	5500	3763	3006	6769	8
				6.8L V-10			12,600	5500	3922	3009	6931	8
				6.0L V-8			13,000	5400	4410	3068	7478	8

(1) Engine/transmission combinations may not be available on all models, or in all areas.
(2) Includes weight of driver, passengers and optional equipment.
(3) Base curb weight is for standard equipment only.
(4) Available with Pickup Box Delete Regular Production Option (RPO) with 5.4L V-8 or 6.0L diesel only.

SUPER DUTY F-250/350 STYLESIDE PICKUP

MODEL LINEUP

2006
MODEL YEAR

Page 104 SUPER DUTY F-SERIES

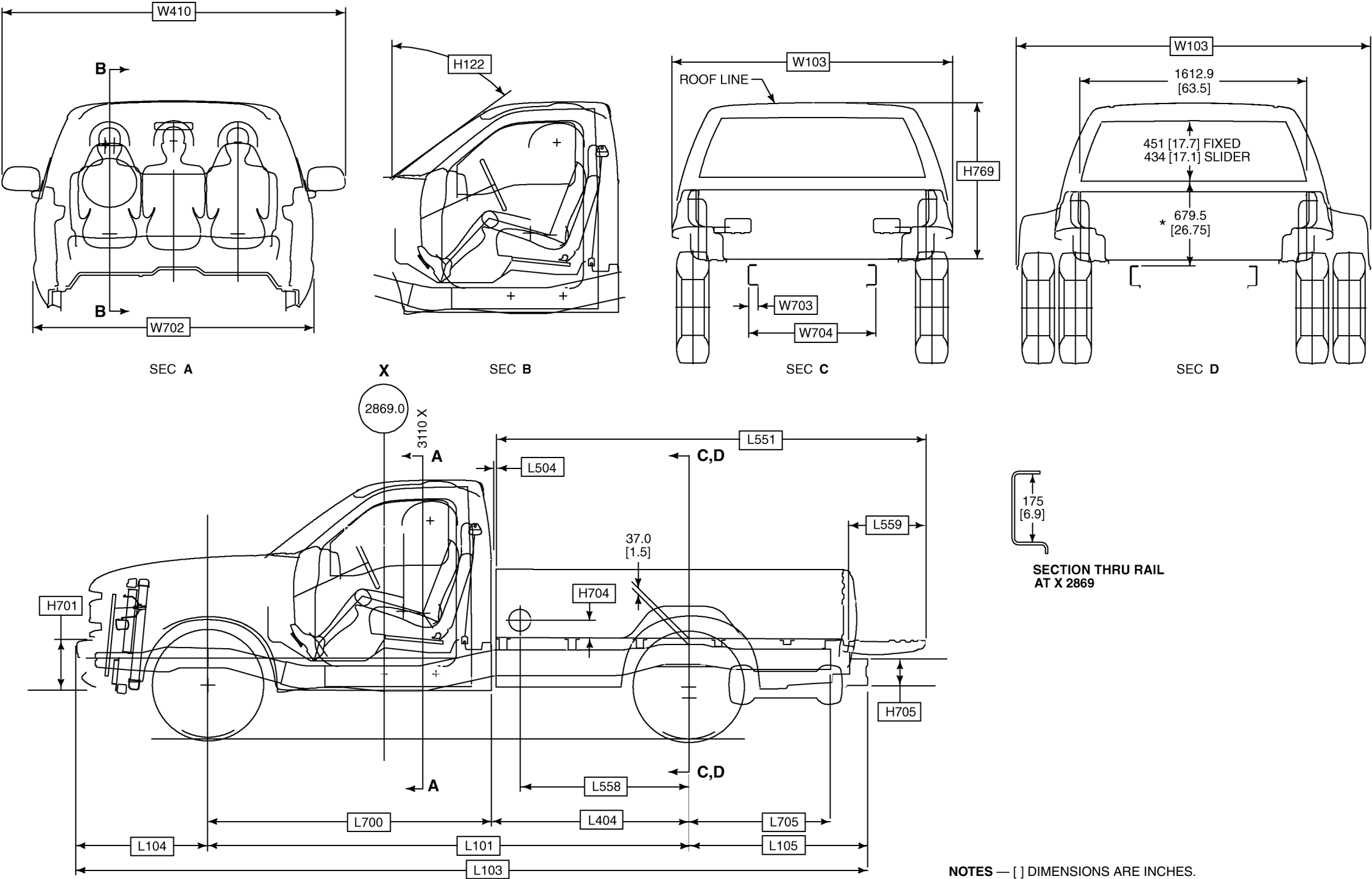
SUPER DUTY F-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE ⁽¹⁾ liters	STANDARD TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾			PICKUP NOMINAL LENGTH feet
									FRONT pounds	REAR pounds	TOTAL pounds	
CREW CAB STYLESIDE PICKUP												
F-250 4X2	W20	156.2	40	5.4L V-8	6-Spd. Manual OD	—	9200	3100	3306	2621	5927	6¾
				6.8L V-10			9400	3200	3445	2603	6048	6¾
				6.0L V-8			9800	3000	3958	2644	6602	6¾
		172.4	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	—	9400	3200	3413	2615	6028	8
				6.8L V-10			9600	3300	3556	2609	6165	8
				6.0L V-8			10,000	3100	4053	2671	6724	8
F-250 4X4	W21	156.2	40	5.4L V-8	6-Spd. Manual OD	NV271	9400	2900	3721	2674	6395	6¾
				6.8L V-10			9600	2900	3870	2677	6547	6¾
				6.0L V-8			10,000	2800	4356	2713	7069	6¾
		172.4	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	NV271	9600	3000	3825	2670	6495	8
				6.8L V-10			9800	3000	3974	2677	6651	8
				6.0L V-8			10,000	2600	4462	2735	7197	8
F-350 4X2 SRW	W30	156.2	40	5.4L V-8	6-Spd. Manual OD	—	10,400	4200	3334	2695	6029	6¾
				6.8L V-10			10,600	4300	3473	2677	6150	6¾
				6.0L V-8			11,000	4100	3986	2718	6704	6¾
		172.4	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	—	10,600	4300	3441	2689	6130	8
				6.8L V-10			10,800	4400	3584	2683	6267	8
				6.0L V-8			11,200	4200	4081	2745	6826	8
F-350 4X4 SRW	W31	156.2	40	5.4L V-8	6-Spd. Manual OD	NV271	10,800	4200	3749	2748	6497	6¾
				6.8L V-10			11,000	4200	3898	2751	6649	6¾
				6.0L V-8			11,400	4100	4384	2787	7171	6¾
		172.4	56.2 ⁽⁴⁾	5.4L V-8	6-Spd. Manual OD	NV271	11,000	4300	3853	2774	6597	8
				6.8L V-10			11,200	4300	4002	2751	6753	8
				6.0L V-8			11,500	4000	4490	2809	7299	8
F-350 4X2 DRW	W32	156.2	40	6.8L V-10	6-Spd. Manual OD	—	12,400	5800	3495	3003	6498	6¾
				6.0L V-8			12,800	5600	4008	3044	7052	6¾
		172.4	56.2 ⁽⁴⁾	6.8L V-10	6-Spd. Manual OD	—	12,600	5800	3606	3009	6615	8
				6.0L V-8			13,000	5700	4103	3071	7174	8
F-350 4X4 DRW	W33	156.2	40	6.8L V-10	6-Spd. Manual OD	NV271	12,600	5400	3920	3077	6997	6¾
				6.0L V-8			13,000	5300	4406	3113	7519	6¾
		172.4	56.2 ⁽⁴⁾	6.8L V-10	6-Spd. Manual OD	NV271	12,600	5300	4024	3077	7101	8
				6.0L V-8			13,000	5200	4512	3135	7647	8

(1) Engine/transmission combinations may not be available on all models, or in all areas.
(2) Includes weight of driver, passengers and optional equipment.
(3) Base curb weight is for standard equipment only.
(4) Available with Pickup Box Delete Regular Production Option (RPO) with 5.4L V-8 or 6.0L diesel only.

DIMENSIONAL DATA
SUPER DUTY F-250/350 REGULAR CAB
STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR

Page 105 SUPER DUTY F-SERIES



NOTES — [] DIMENSIONS ARE INCHES.
— INTERIOR BOX DIMENSIONS, PAGES 111-112.
— AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 113-114.
* MEASURED FROM TOP OF FRAME TO BOTTOM OF REAR WINDOW.

DIMENSIONAL DATA
SUPER DUTY F-250/350 REGULAR CAB
STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR

CHASSIS

CODE	DESCRIPTION	4X2 / 4X4
L101	WHEELBASE	3480 [137.0]
L103	VEHICLE LENGTH	5751 [226.4]
L104	FRONT OVERHANG	945 [37.2]
L105	REAR OVERHANG	1326 [52.2]
L403	FRONT OF BUMPER TO BACK OF CAB	3002 [118.2]
L404	CAB TO \varnothing OF REAR AXLE	1431 [56.3]
L700	\varnothing OF FRONT AXLE TO BACK OF CAB	2052 [80.8]
L705	\varnothing OF REAR AXLE TO REAR END OF FRAME	1026 [40.4]
W703	FRAME RAIL WIDTH	72 [2.8]
W704	REAR FRAME WIDTH	956 [37.6]

PICKUP BODY

CODE	DESCRIPTION	4X2 / 4X4
NOMINAL CARGO BODY SIZE		
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	125 [4.9]
H705	REAR BUMPER HEIGHT	219 [8.6]
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @ \varnothing OF REAR AXLE	1139 [44.8]
L504	CAB TO PICKUP BOX	33 [1.3]
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	3109 [122.4]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR	1223 [48.1]
L559	LENGTH OF OPEN TAILGATE	598 [23.5]

CAB

CODE	DESCRIPTION	4X2 / 4X4
H122	WINDSHIELD ANGLE (DEGREES)	52.8
H701	FRONT BUMPER HEIGHT — W/O VALANCE	337 [13.3]
H701	FRONT BUMPER HEIGHT — W/ VALANCE	361 [14.2]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS — SRW)	2029 [79.9]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS — DRW)	2426 [95.5]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: MANUAL MIRRORS)	2522 [99.3]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: ELECTRIC MIRRORS)	2522 [99.3]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRRORS)	2677 [105.4]
W702	FRONT BUMPER WIDTH	2006 [79.0]

NOTE — [] DIMENSIONS ARE INCHES.

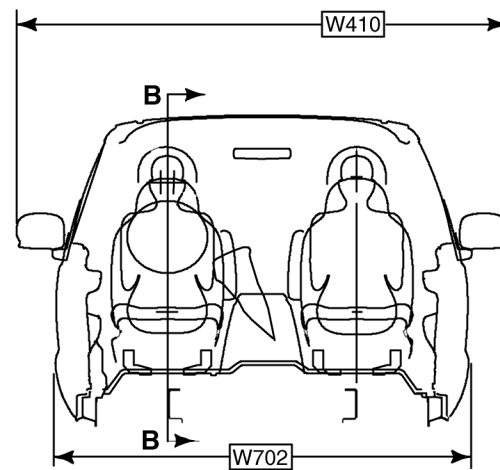
DIMENSIONAL DATA

SUPER DUTY F-250/350 SUPERCAB

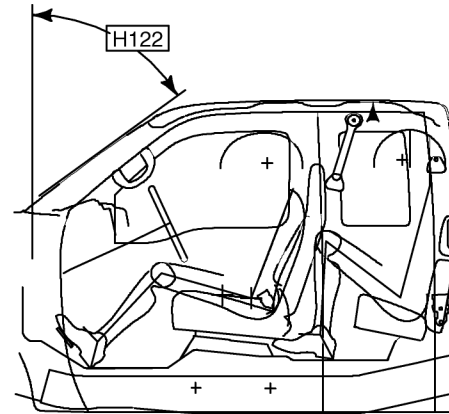
STYLESIDE PICKUP – 4X2/4X4

Page 107 SUPER DUTY F-SERIES

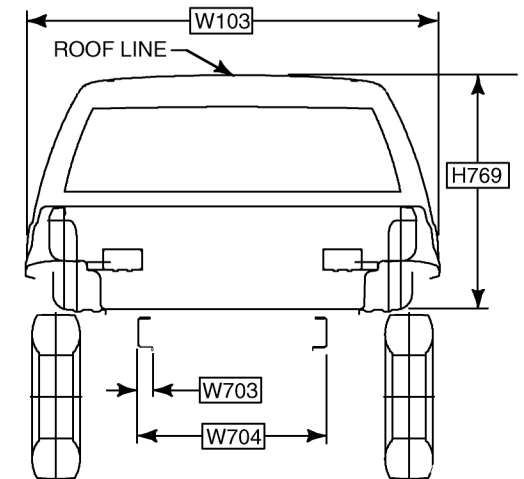
2006
MODEL YEAR



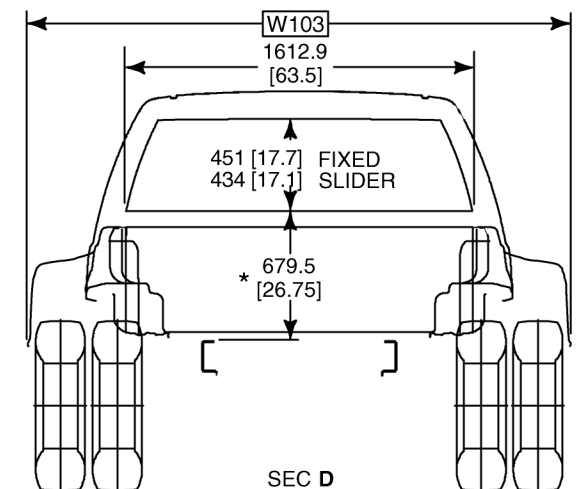
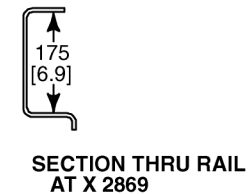
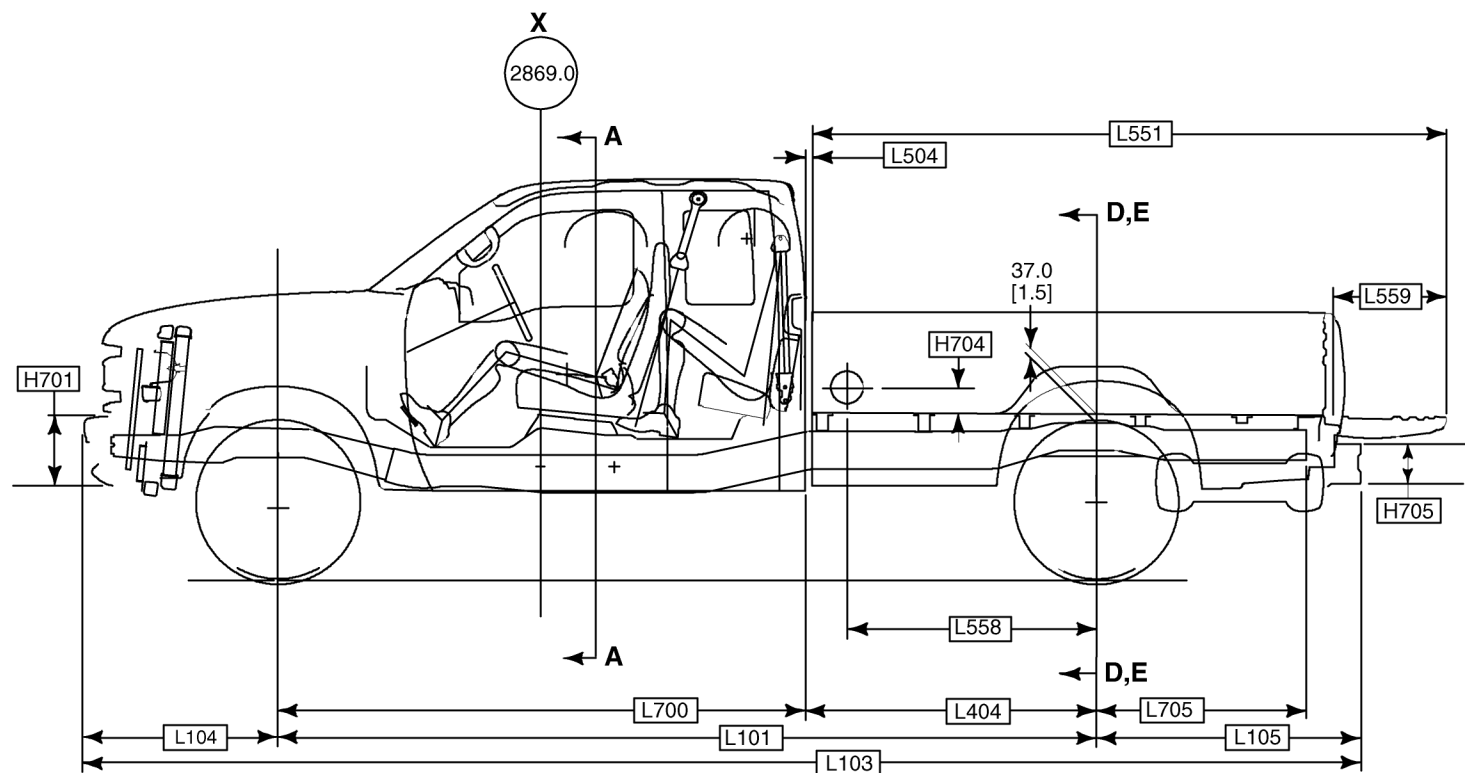
SEC A



SEC B



SEC C



SEC D

NOTES — [] DIMENSIONS ARE INCHES.
 — INTERIOR BOX DIMENSIONS, PAGES 111-112.
 — AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 113-114.
 * MEASURED FROM TOP OF FRAME TO BOTTOM OF REAR WINDOW.

DIMENSIONAL DATA
SUPER DUTY F-250/350 SUPERCAB
STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR

CHASSIS

CODE	DESCRIPTION	SWB	LWB
L101	WHEELBASE	3602 [141.8]	4013 158.0]
L103	VEHICLE LENGTH	5872 [231.2]	6284 [247.4]
L104	FRONT OVERHANG	945 [37.2]	945 [37.2]
L105	REAR OVERHANG	1325 [52.2]	1326 [52.2]
L403	FRONT OF BUMPER TO BACK OF CAB	3533.4 [139.1]	3533.4 [139.1]
L404	CAB TO  OF REAR AXLE	1016 [40.0]	1427 [56.2]
L700	 OF FRONT AXLE TO BACK OF CAB	2583 [101.7]	2583 [101.7]
L705	 OF REAR AXLE TO REAR END OF FRAME	1026 [40.4]	1026 [40.4]
W703	FRAME RAIL WIDTH	72 [2.8]	72 [2.8]
W704	REAR FRAME WIDTH	956 [37.6]	956 [37.6]

PICKUP BODY

CODE	DESCRIPTION	SWB	LWB
NOMINAL CARGO BODY SIZE			
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO  OF FUEL FILLER DOOR	133 [5.2]	
H705	REAR BUMPER HEIGHT	219 [8.6]	
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @  REAR AXLE	1151 [45.3]	
L504	CAB TO PICKUP BOX	20 [0.8]	
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	2683 [105.6]	3109 [122.4]
L558	 OF REAR AXLE TO  OF FUEL FILLER DOOR	597 [23.5]	1223 [48.1]
L559	LENGTH OF OPEN TAILGATE	598 [23.5]	

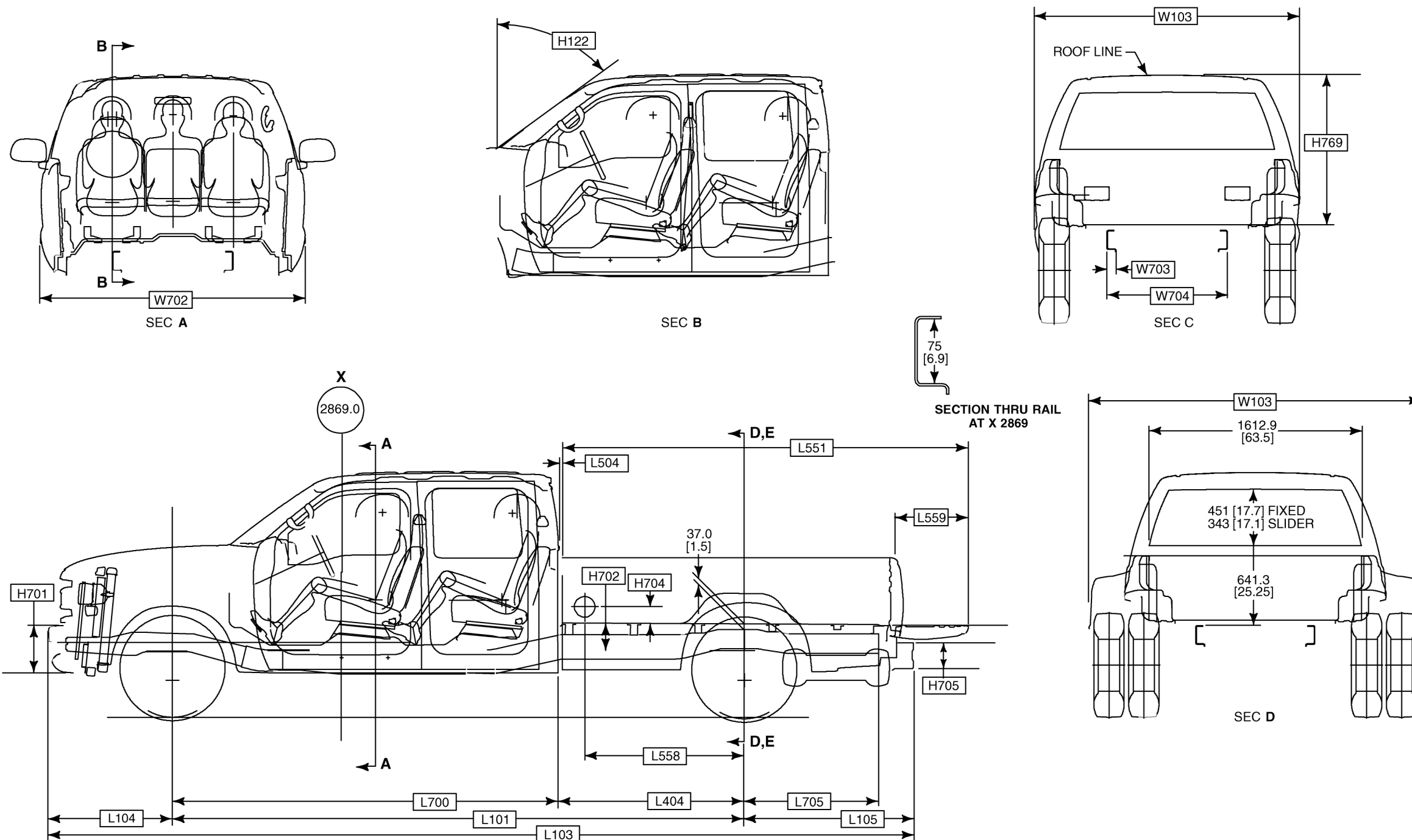
CAB

CODE	DESCRIPTION	4X2 / 4X4
H122	WINDSHIELD ANGLE (DEGREES)	52.8
H701	FRONT BUMPER HEIGHT — W/O VALANCE	337 [13.3]
H701	FRONT BUMPER HEIGHT — W/VALANCE	361 [14.2]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS) — SRW	2029 [79.9]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS) — DRW	2426 [95.5]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: MANUAL MIRRORS)	2522 [99.3]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: ELECTRIC MIRRORS)	2522 [99.3]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRRORS)	2677 [105.4]
W702	FRONT BUMPER WIDTH	2006 [79.0]

NOTE — [] DIMENSIONS ARE INCHES.

DIMENSIONAL DATA **SUPER DUTY F-250/350 CREW CAB** **STYLESIDE PICKUP – 4X2/4X4**

2006
MODEL YEAR



NOTES — [] DIMENSIONS ARE INCHES.
 — INTERIOR BOX DIMENSIONS, PAGES 111-112.
 — AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 116-117.
 * MEASURED FROM TOP OF FRAME TO BOTTOM OF REAR WINDOW.

DIMENSIONAL DATA
SUPER DUTY F-250/350 CREW CAB
STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR

Page 110 SUPER DUTY F-SERIES
CHASSIS

CODE	DESCRIPTION	SWB	LWB
L101	WHEELBASE	3967 [156.2]	4379 [172.4]
L103	VEHICLE LENGTH	6238 [245.6]	6650 [261.8]
L104	FRONT OVERHANG	945 [37.2]	945 [37.2]
L105	REAR OVERHANG	1326 [52.2]	1326 [52.2]
L403	FRONT OF BUMPER TO BACK OF CAB	3901.8 [153.6]	3901.8 [153.6]
L404	CAB TO \varnothing OF REAR AXLE	1013 [39.9]	1430 [56.3]
L700	\varnothing OF FRONT AXLE TO BACK OF CAB	2951 [116.2]	2951 [116.2]
L705	\varnothing OF REAR AXLE TO END OF FRAME	1026 [40.4]	1026 [40.4]
W703	FRAME RAIL WIDTH	72 [2.8]	72 [2.8]
W704	REAR FRAME WIDTH	956 [37.6]	956 [37.6]

PICKUP BODY

CODE	DESCRIPTION	SWB	LWB
NOMINAL CARGO BODY SIZE			
H704	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO \varnothing OF FUEL FILLER DOOR	126 [5.0]	
H705	REAR BUMPER HEIGHT	219 [8.6]	
H769	TOP OF PICKUP BOX FLOOR (HIGHEST POINT) TO TOP OF CAB @ \varnothing OF REAR AXLE	1164 [45.8]	
L504	CAB TO PICKUP BOX	20 [0.8]	
L551	BOX OVERALL LENGTH TO OPEN TAILGATE	2688 [105.8]	3109 [122.4]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR — SRW	597 [23.5]	1223 [48.1]
L558	\varnothing OF REAR AXLE TO \varnothing OF FUEL FILLER DOOR — DRW	667 [26.3]	1223 [48.1]
L559	LENGTH OF OPEN TAILGATE	598 [23.5]	

CAB

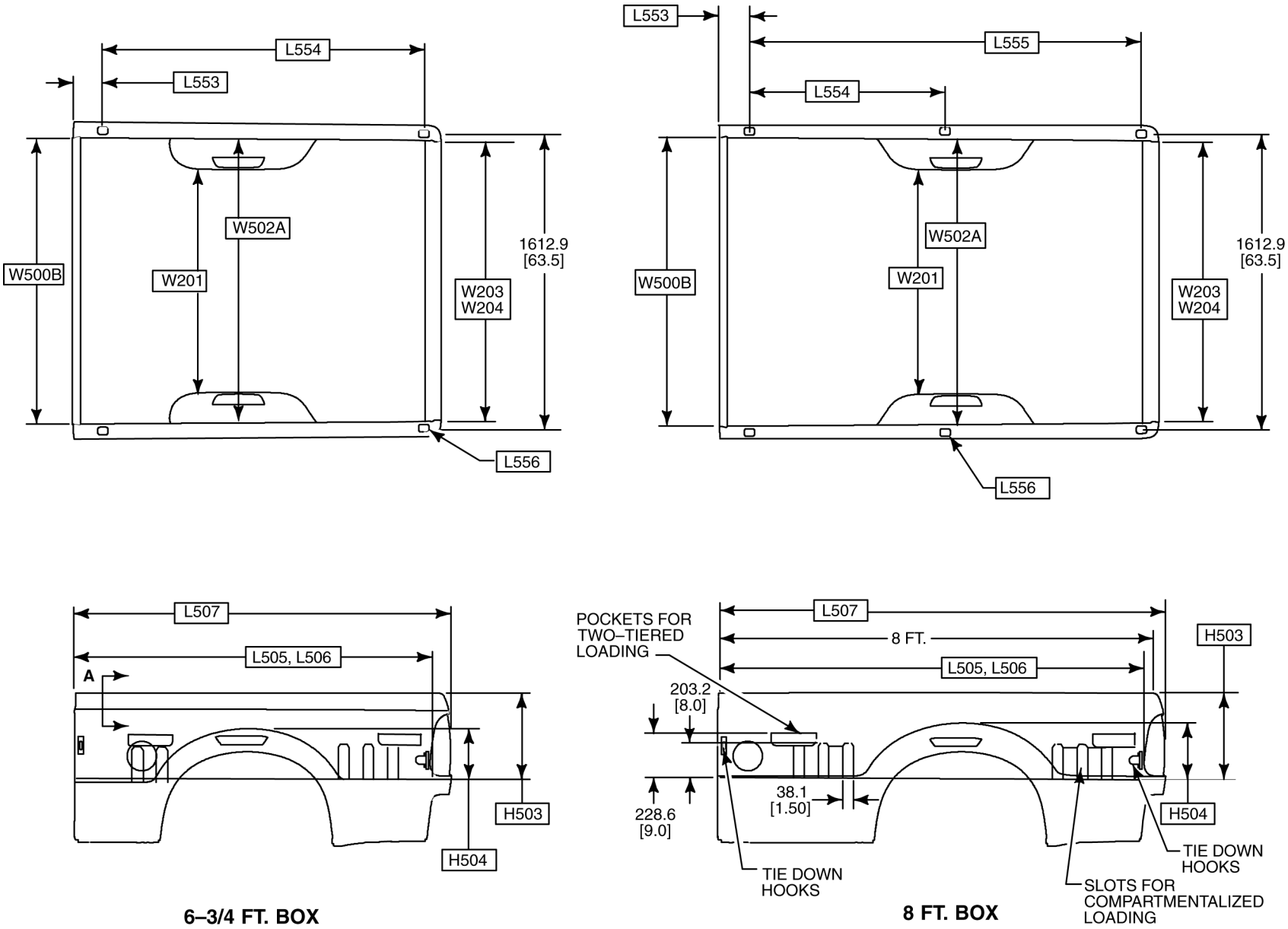
CODE	DESCRIPTION	4X2 / 4X4
H122	WINDSHIELD ANGLE (DEGREES)	52.8
H701	FRONT BUMPER HEIGHT — W/O VALANCE	337 [13.3]
H701	FRONT BUMPER HEIGHT — W/VALANCE	361 [14.2]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS) — SRW	2029 [79.9]
W103	VEHICLE WIDTH (MAX W/O MIRRORS & W/ MOLDINGS) — DRW	2426 [95.5]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: MANUAL MIRRORS)	2522 [99.3]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: ELECTRIC MIRRORS)	2522 [99.3]
W410	VEHICLE WIDTH (CAB WIDTH MAX WITH: TRAILER TOW MIRRORS)	2677 [105.4]
W702	FRONT BUMPER WIDTH	2006 [79.0]

NOTE — [] DIMENSIONS ARE INCHES.

DIMENSIONAL DATA SUPER DUTY F-250/350 STYLESIDE PICKUP BOX

2006

MODEL YEAR



6-3/4 FT. BOX

8 FT. BOX

BB0439-2005

NOTE — [] DIMENSIONS ARE INCHES.

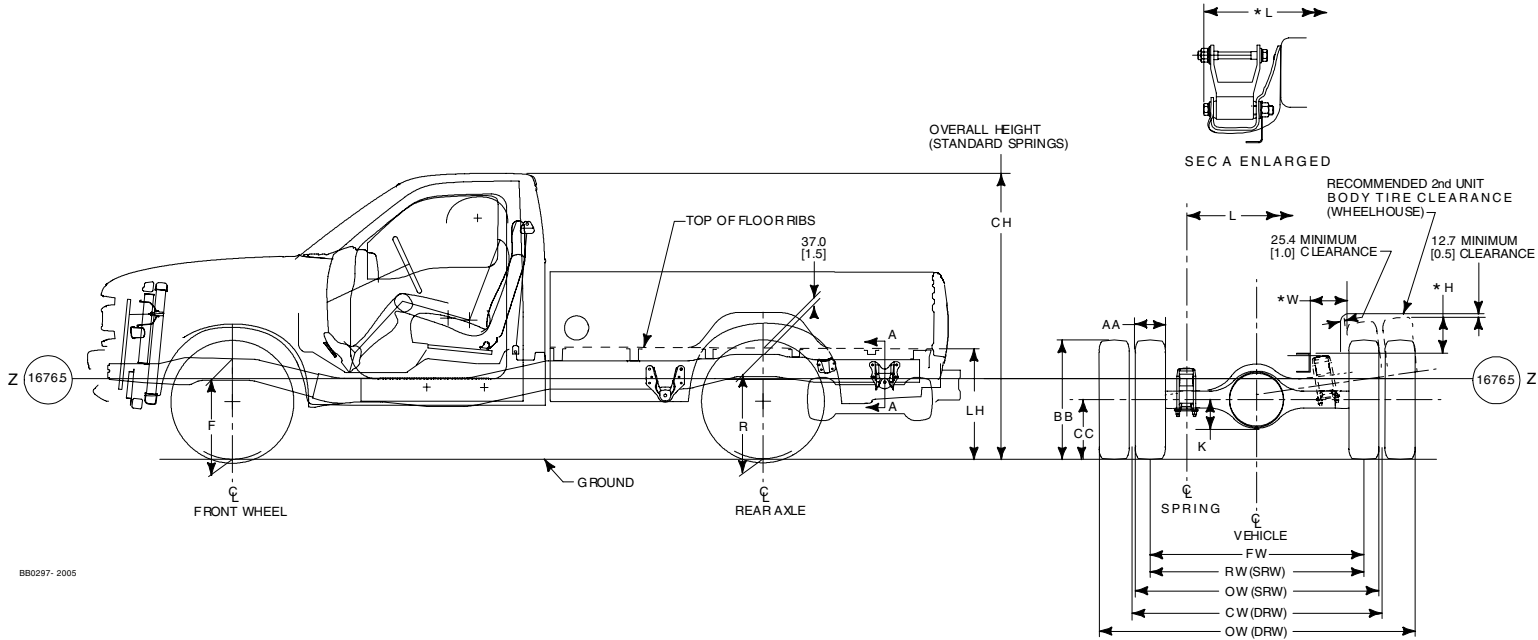
DIMENSIONAL DATA **SUPER DUTY F-250/350** **STYLESIDE PICKUP BOX**

CODE	DESCRIPTION	6¾' STYLESIDE	8' STYLESIDE
H503	CARGO BODY HEIGHT (MEASURED FROM TOP OF FLOOR BEADS)	507 [20.0]	507 [20.0]
H504	WHEELHOUSE HEIGHT	233 [9.2]	233 [9.2]
L505	CARGO BODY LENGTH @ FLOOR	2092 [82.4]	2504 [98.6]
L506	CARGO BODY LENGTH @ TOP (BELT)	2052 [80.8]	2464 [97.0]
L507	CARGO BODY OVERALL LENGTH	2197 [86.5]	2609 [102.7]
L553	INSIDE FRONT OF BOX TO \varnothing OF STAKE #1	137 [5.4]	137 [5.4]
L554	\varnothing OF STAKE #1 TO \varnothing OF STAKE #2	1859 [73.2]	1138 [44.8]
L555	\varnothing OF STAKE #1 TO \varnothing OF STAKE #3	NA	2270 [89.4]
L556	STAKE POCKET SIZE (L x W)	59 x 44 [2.3 x 1.7]	59 x 44 [2.3 x 1.7]
W201	CARGO WIDTH @ WHEELHOUSE	1292 [50.9]	1292 [50.9]
W203	REAR OPENING WIDTH @ FLOOR	1540 [60.6]	1540 [60.6]
W204	REAR OPENING WIDTH @ TOP BELT	1613 [63.5]	1613 [63.5]
W500B	CARGO BODY MAXIMUM INSIDE WIDTH @ FLOOR	1760 [69.3]	1760 [69.3]
W502A	CARGO BODY MAXIMUM INSIDE WIDTH @ \varnothing OF REAR AXLE	1623 [63.9]	1623 [63.9]
V5	CARGO VOLUME — LITERS / CU.FT.	1835 / 64.8	2203 / 77.8

NOTE — [] DIMENSIONS ARE INCHES.

AXLE/TIRE/VEHICLE HEIGHT DATA
SUPER DUTY F-250/350 REGULAR CAB
STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR



MODEL	WB	STANDARD GVWR	BASE TIRE	F HEIGHT AT FRONT WHEEL ⁽³⁾		R HEIGHT AT REAR AXLE ⁽³⁾		LH ⁽³⁾⁽⁴⁾		CH ⁽³⁾		K	L	* L	AA ⁽⁵⁾	BB	CC	FW	RW	OW	CW	* H	* W
				CURB ⁽¹⁾	LOADED ⁽²⁾	CURB ⁽¹⁾	LOADED ⁽²⁾	CURB ⁽¹⁾	LOADED	CURB ⁽¹⁾	LOADED												
F-250 Regular Cab 4x2	3480 [137.0]	8800	LT245/75R17E	691 [27.2]	645 [25.4]	795 [31.3]	671 [26.9]	848 [33.4]	701 [27.6]	1943 [76.5]	1854 [73.0]	165 [6.5]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1734 [68.3]	1706 [67.2]	1983 [78.1]	—	240 [9.4]	203 [8.0]
F-250 Regular Cab 4x4	3480 [137.0]	9000	LT245/75R17E	777 [30.6]	732 [28.8]	843 [33.2]	719 [28.3]	884 [34.8]	738 [29.0]	2009 [79.1]	1923 [75.7]	165 [6.5]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1736 [68.3]	1706 [67.2]	1983 [78.1]	—	175 [6.9]	208 [8.2]
F-350 Regular Cab 4x2	3480 [137.0]	10,100	LT275/65R18E	699 [27.5]	663 [26.1]	805 [31.7]	688 [27.1]	856 [33.7]	719 [28.3]	1951 [76.8]	1875 [73.8]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	794 [31.3]	376 [14.8]	1734 [68.3]	1706 [67.2]	2007 [79.0]	—	235 [9.3]	188 [7.4]
		11,800 DRW	LT245/75R17E	691 [25.4]	645 [25.4]	803 [31.6]	673 [26.5]	859 [33.8]	701 [27.6]	1948 [76.7]	1872 [73.7]	177 [7.0]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1751 [68.9]	—	2380 [93.7]	1896 [74.6]	253 [10.0]	188 [7.4]
F-350 Regular Cab 4x4	3480 [137.0]	10,500	LT275/70R18E	762 [30.0]	762 [30.0]	909 [35.8]	795 [31.3]	965 [38.0]	826 [32.5]	2052 [80.8]	1976 [77.8]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	827 [32.5]	394 [15.5]	1736 [68.3]	1706 [67.2]	2007 [79.0]	—	150 [5.9]	197 [7.8]
		12,000 DRW	LT245/75R17E	732 [28.8]	732 [28.8]	851 [33.5]	719 [28.3]	894 [35.2]	737 [29.0]	2022 [79.6]	1946 [76.6]	177 [7.0]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1753 [69.0]	—	2405 [94.7]	1896 [74.6]	187 [7.4]	174 [6.9]

DRW — Dual Rear Wheels

- (1) — Height at base curb weight with standard springs.
(2) — Loaded height at spring rating with standard springs.
(3) — The Height Data shown represents dimensions of a base/standard vehicle with no options.
Actual height may vary due to production tolerances [completed vehicles only].

- (4) — Distance from Pickup Box Floor to Frame Datum Line is 211 [8.3] at front, 199 [7.8] at rear.
(5) — AA is max. grown width at max. tire pressure and load.
BB — Half of TRA* maximum grown tire diameter plus average SLR** available for that tire size.
SLR** is measured as maximum TRA* pressure and load.
CC — Static load rating maximum TRA* load and pressure.
*TRA — Tire and Rim Association.
*SLR — Static Loaded Radius.

- @ — The top of the spring seat is below datum line.
*H — Top of frame at ϕ of rear axle to top of tire in jounce
*L — From outside edge of shackle eyebolt
*W — Outside of frame to top of tire in jounce

NOTES — [] DIMENSIONS ARE INCHES.
— F AND R VEHICLE HEIGHT DIMENSIONS ARE FROM GROUND TO TOP OF FRAME.
— LH IS FROM GROUND TO TOP OF FLOOR RIBS.

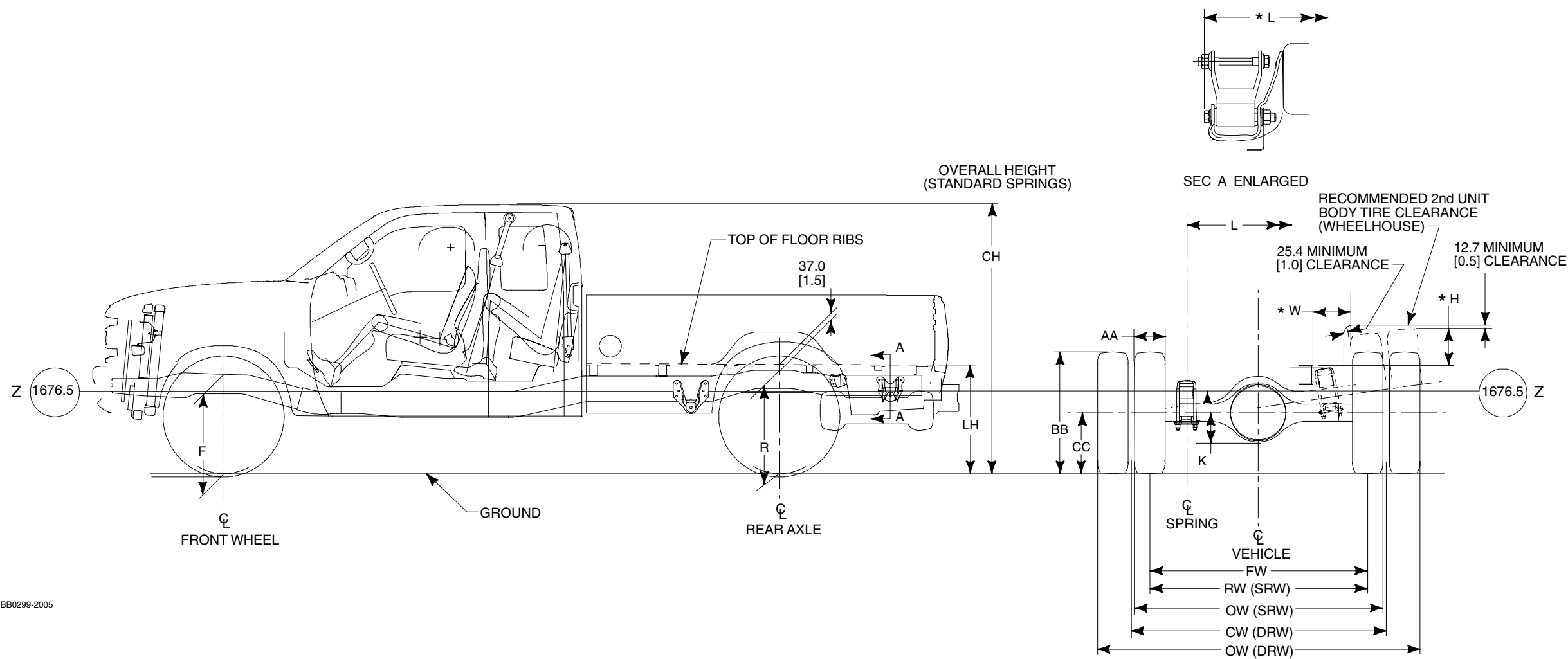
AXLE/TIRE/VEHICLE HEIGHT DATA

SUPER DUTY F-250/350 SUPERCAB

STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR

Page 114 SUPER DUTY F-SERIES



BB0299-2005

- NOTES** — [] DIMENSIONS ARE INCHES.
- **F** AND **R** VEHICLE HEIGHT DIMENSIONS ARE FROM GROUND TO INSIDE TOP OF FRAME; **LH** IS FROM GROUND TO TOP OF FLOOR RIBS.
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 - ***L** IS FROM OUTSIDE EDGE OF SHACKLE EYEBOLT
 - ***W** IS OUSIDE OF FRAME TO TOP OF TIRE IN JOUNCE.

AXLE/TIRE/VEHICLE HEIGHT DATA
SUPER DUTY F-250/350 SUPERCAB
STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR

MODEL	WB	STANDARD GVWR	BASE TIRE	F HEIGHT AT FRONT WHEEL ⁽³⁾		R HEIGHT AT REAR AXLE ⁽³⁾		LH ⁽³⁾⁽⁴⁾		CH ⁽³⁾		K	L	* L	AA ⁽⁵⁾	BB	CC	FW	RW	OW	CW	* H	* W
				CURB ⁽¹⁾	LOADED ⁽²⁾	CURB ⁽¹⁾	LOADED ⁽²⁾	CURB ⁽¹⁾	LOADED	CURB ⁽¹⁾	LOADED												
F-250 SuperCab 4x2	3602 [141.8]	9000	LT245/75R17E	691 [27.2]	645 [25.4]	795 [31.3]	671 [26.4]	848 [33.4]	701 [27.6]	1956 [77.0]	1862 [73.3]	165 [6.5]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1734 [68.3]	1706 [67.2]	1983 [78.1]	—	240 [9.4]	203 [8.0]
	4014 [158.0]	9200		691 [27.2]	645 [25.4]	795 [31.3]	671 [26.4]	846 [33.3]	701 [27.6]	1951 [76.8]	1862 [73.3]												
F-250 SuperCab 4x4	3602 [141.8]	9200	LT245/75R17E	777 [30.6]	732 [28.8]	843 [33.2]	719 [28.3]	884 [34.8]	737 [29.0]	2019 [79.5]	1925 [75.8]	165 [6.5]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1736 [68.3]	1706 [67.2]	1983 [78.1]	—	175 [6.9]	208 [8.2]
	4014 [158.0]	9400		777 [30.6]	732 [28.8]	843 [33.2]	719 [28.3]	884 [34.8]	738 [29.0]	2017 [79.4]	1928 [75.9]												
F-350 SuperCab 4x2	3602 [141.8]	10,200	LT275/65R18E	699 [27.5]	663 [26.1]	805 [31.7]	688 [27.1]	856 [33.7]	719 [28.3]	1963 [77.3]	1880 [74.0]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	794 [31.3]	376 [14.8]	1734 [68.3]	1706 [67.2]	2007 [79.0]	—	235 [9.3]	188 [7.4]
	4014 [158.0]	10,400	LT275/65R18E	699 [27.5]	663 [26.1]	805 [31.7]	688 [27.1]	853 [33.6]	719 [28.3]	1958 [77.1]	1880 [74.0]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	794 [31.3]	376 [14.8]	1734 [68.3]	1706 [67.2]	2007 [79.0]	—	235 [9.3]	188 [7.4]
		12,200 DRW	LT245/75R17E	691 [27.2]	645 [25.4]	803 [31.6]	673 [26.5]	853 [33.6]	701 [27.6]	1956 [77.0]	1872 [73.7]	177 [7.0]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1751 [68.9]	—	2380 [93.7]	1896 [74.6]	253 [10.0]	188 [7.4]
F-350 SuperCab 4x4	3602 [141.8]	10,600	LT275/70R18E	798 [31.4]	762 [30.0]	909 [35.8]	795 [31.3]	965 [38.0]	826 [32.5]	2068 [81.4]	1984 [78.1]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	827 [32.5]	394 [15.5]	1736 [68.3]	1706 [67.2]	2007 [79.0]	—	150 [5.9]	197 [7.8]
	4014 [158.0]	10,800	LT275/70R18E	798 [31.4]	762 [30.0]	909 [35.8]	795 [31.3]	963 [37.9]	826 [32.5]	2062 [81.2]	1984 [78.1]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	827 [32.5]	394 [15.5]	1736 [68.3]	1706 [67.2]	2007 [79.0]	—	150 [5.9]	197 [7.8]
		12,400 DRW	LT245/75R17E	777 [30.6]	732 [28.8]	851 [33.5]	721 [28.4]	892 [35.1]	739 [29.1]	2022 [76.7]	1948 [76.7]	177 [7.0]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1753 [69.0]	—	2405 [94.7]	1896 [74.6]	187 [7.4]	174 [6.9]

DRW — Dual Rear Wheels

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BB — Half of TRA* maximum grown tire diameter plus average SLR** available for that tire size.


SLR** is measured as maximum TRA* pressure and load.

CC — Static load rating maximum TRA* load and pressure.

*TRA — Tire and Rim Association.

*SLR — Static Loaded Radius.

@ — The top of the spring seat is below datum line.

*H — Top of frame at  of rear axle to top of tire in jounce

*L — From outside edge of shackle eyebolt

*W — Outside of frame to top of tire in jounce

NOTES — [] DIMENSIONS ARE INCHES.

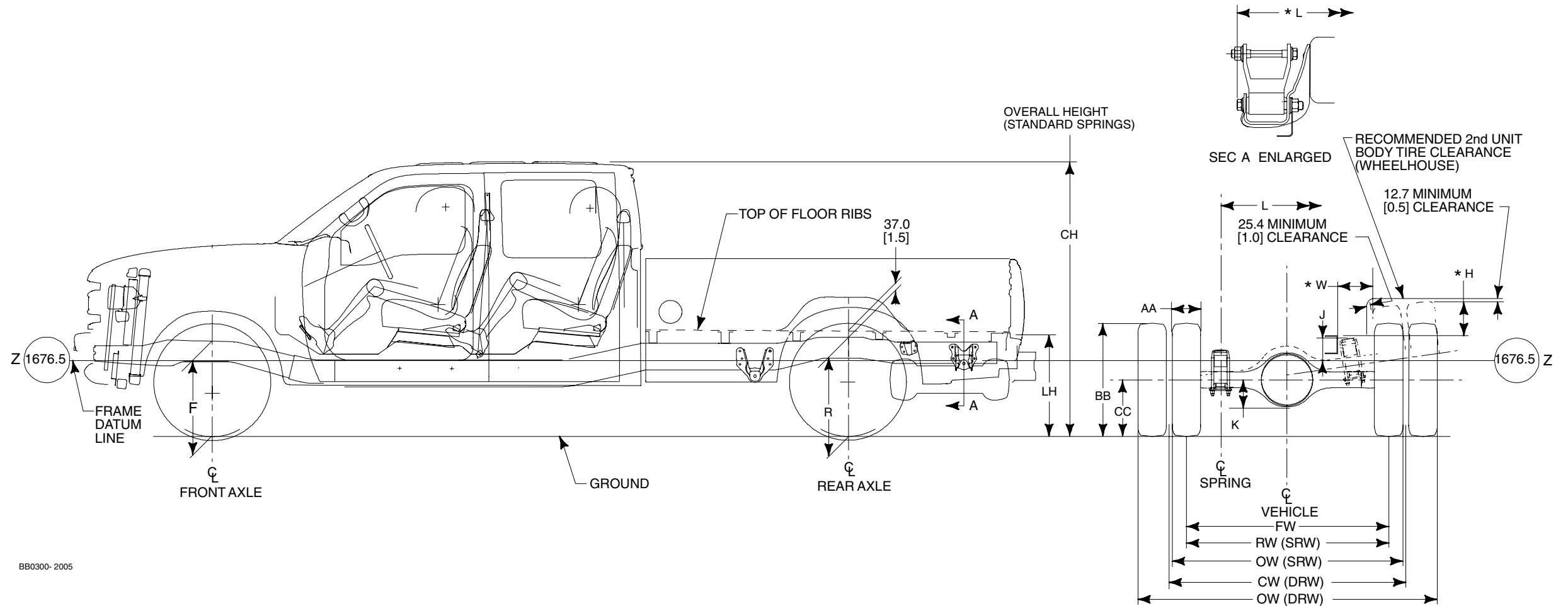
— **F** AND **R** VEHICLE HEIGHT DIMENSIONS ARE FROM GROUND TO TOP OF FRAME.

— **LH** IS FROM GROUND TO TOP OF FLOOR RIBS.

AXLE/TIRE/VEHICLE HEIGHT DATA SUPER DUTY F-250/350 CREW CAB STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR

Page 116 SUPER DUTY F-SERIES



BB0300- 2005

NOTES — [] DIMENSIONS ARE INCHES.

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- ***H** IS TOP OF FRAME AT ϕ OF REAR AXLE TO TOP OF TIRE IN JOUNCE.
- ***L** IS FROM OUTSIDE EDGE OF SHACKLE EYEBOLT
- ***W** IS OUTSIDE OF FRAME TO TOP OF TIRE IN JOUNCE.

AXLE/TIRE/VEHICLE HEIGHT DATA
SUPER DUTY F-250/350 CREW CAB
STYLESIDE PICKUP – 4X2/4X4

2006
MODEL YEAR

MODEL	WB	STANDARD GVWR	BASE TIRE	F HEIGHT AT FRONT WHEEL ⁽³⁾		R HEIGHT AT REAR AXLE ⁽³⁾		LH ⁽³⁾⁽⁴⁾		CH ⁽⁴⁾		K	L	* L	AA ⁽⁵⁾	BB	CC	FW	RW	OW	CW	* H	*W
				CURB ⁽¹⁾	LOADED ⁽²⁾	CURB ⁽¹⁾	LOADED ⁽²⁾	CURB ⁽¹⁾	LOADED	CURB ⁽¹⁾	LOADED												
F-250 Crew Cab 4x2	3967 [156.2]	9200	LT245/75R17E	691 [27.2]	645 [25.4]	795 [31.3]	671 [26.4]	847 [33.3]	701 [27.6]	1969 [77.5]	1875 [73.8]	165 [6.5]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1734 [68.3]	1706 [67.2]	1983 [78.1]	—	240 [9.4]	203 [8.0]
	4379 [172.4]	9400		691 [27.2]	645 [25.4]	795 [31.3]	671 [26.4]	842 [33.2]	701 [27.6]	1963 [77.3]	1875 [73.8]												
F-250 Crew Cab 4x4	3967 [156.2]	9400	LT245/75R17E	777 [30.6]	732 [28.8]	843 [33.2]	719 [28.3]	884 [34.8]	738 [29.0]	2032 [80.0]	1930 [76.3]	165 [6.5]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1736 [68.3]	1706 [67.2]	1983 [78.1]	—	175 [6.9]	208 [8.2]
	4379 [172.4]	9600		777 [30.6]	732 [28.8]	843 [33.2]	719 [28.3]	881 [34.7]	739 [29.1]	2029 [79.9]	1941 [76.4]												
F-350 Crew Cab 4x2	3967 [156.2]	10,400	LT275/65R18E	699 [27.5]	663 [26.1]	805 [31.7]	688 [27.1]	853 [33.6]	719 [28.3]	1976 [77.8]	1892 [74.5]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	794 [31.3]	376 [14.8]	1734 [68.3]	1706 [67.2]	2007 [79.0]	—	235 [9.3]	188 [7.4]
		12,400 DRW	LT245/75R17E	691 [27.2]	645 [25.4]	803 [31.6]	673 [26.5]	853 [33.6]	701 [27.6]	1971 [77.6]	1875 [73.8]	177 [7.0]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1751 [68.9]	—	2380 [93.7]	1896 [74.6]	253 [10.0]	188 [7.4]
	4379 [172.4]	10,600	LT275/65R18E	699 [27.5]	663 [26.1]	805 [31.7]	688 [27.1]	851 [33.5]	719 [28.3]	1971 [77.6]	1892 [74.5]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	794 [31.3]	376 [14.8]	1734 [68.3]	1706 [67.2]	2007 [79.0]	—	235 [9.3]	188 [7.4]
		12,600 DRW	LT245/75R17E	691 [27.2]	645 [25.4]	803 [31.6]	673 [26.5]	853 [33.6]	701 [27.6]	1966 [77.4]	1875 [73.8]	177 [7.0]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1751 [68.9]	—	2380 [93.7]	1896 [74.6]	253 [10.0]	188 [7.4]
F-350 Crew Cab 4x4	3967 [156.2]	10,800	LT275/70R18E	798 [31.4]	762 [30.0]	909 [35.8]	795 [31.3]	963 [37.9]	826 [32.5]	2078 [81.8]	1996 [78.6]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	827 [32.5]	394 [15.5]	1736 [68.3]	1706 [67.2]	2007 [79.0]	—	150 [5.9]	197 [7.8]
		12,600 DRW	LT245/75R17E	777 [30.6]	732 [28.8]	851 [33.5]	721 [28.4]	892 [35.1]	739 [29.1]	2035 [80.1]	1948 [76.7]	177 [7.0]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1753 [69.0]	—	2405 [94.7]	1896 [74.6]	187 [7.4]	174 [6.9]
	4379 [172.4]	11,000	LT275/70R18E	798 [31.4]	762 [30.0]	909 [35.8]	795 [31.3]	960 [37.8]	826 [32.5]	2075 [81.7]	1996 [78.6]	165 [6.5]	1143 [45.0]	1271 [50.0]	297 [11.7]	827 [32.5]	394 [15.5]	1736 [68.3]	1706 [67.2]	2007 [79.0]	—	150 [5.9]	197 [7.8]
		12,600 DRW	LT245/75R17E	777 [30.6]	732 [28.8]	851 [33.5]	721 [28.4]	889 [35.0]	739 [29.1]	2031 [80.0]	1948 [76.7]	177 [7.0]	1143 [45.0]	1271 [50.0]	264 [10.4]	781 [30.8]	371 [14.6]	1753 [69.0]	—	2405 [94.7]	1896 [74.6]	187 [7.4]	174 [6.9]

DRW — Dual Rear Wheels

(1) — Height at base curb weight with standard springs.

(2) — Loaded height at spring rating with standard springs.

(3) — The Height Data shown represents dimensions of a base/standard vehicle with no options.

Actual height may vary due to production tolerances [completed vehicles only].

(4) — Distance from Pickup Box Floor to Frame Datum Line is 211 [8.3] at front, 199 [7.8] at rear.

(5) — AA is max. grown width at max. tire pressure and load.

BB — Half of TRA* maximum grown tire diameter plus average SLR** available for that tire size.


SLR** is measured as maximum TRA* pressure and load.

CC — Static load rating maximum TRA* load and pressure.

*TRA — Tire and Rim Association.

*SLR — Static Loaded Radius.

@ — The top of the spring seat is below datum line.

*H — Top of frame at  of rear axle to top of tire in jounce

*L — From outside edge of shackle eyebolt

*W — From frame to top of tire in jounce

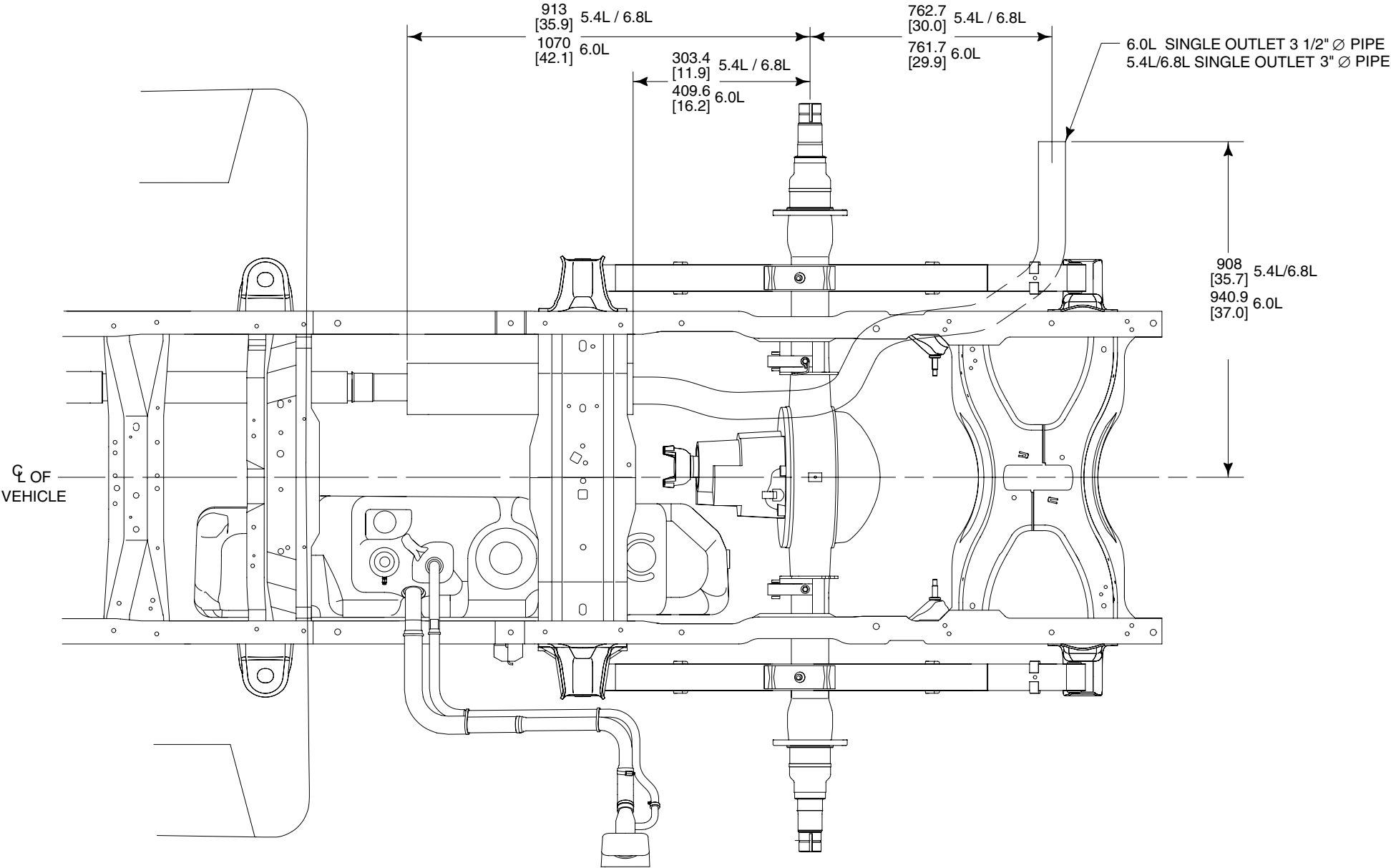
NOTES — [] DIMENSIONS ARE INCHES.

— F AND R VEHICLE HEIGHT DIMENSIONS ARE FROM GROUND TO TOP OF FRAME.

— LH IS FROM GROUND TO TOP OF FLOOR RIBS.

PICKUP BOX DELETE – WIDE FRAME
SUPER DUTY F-SERIES
EXHAUST/FUEL SYSTEMS

2006
MODEL YEAR

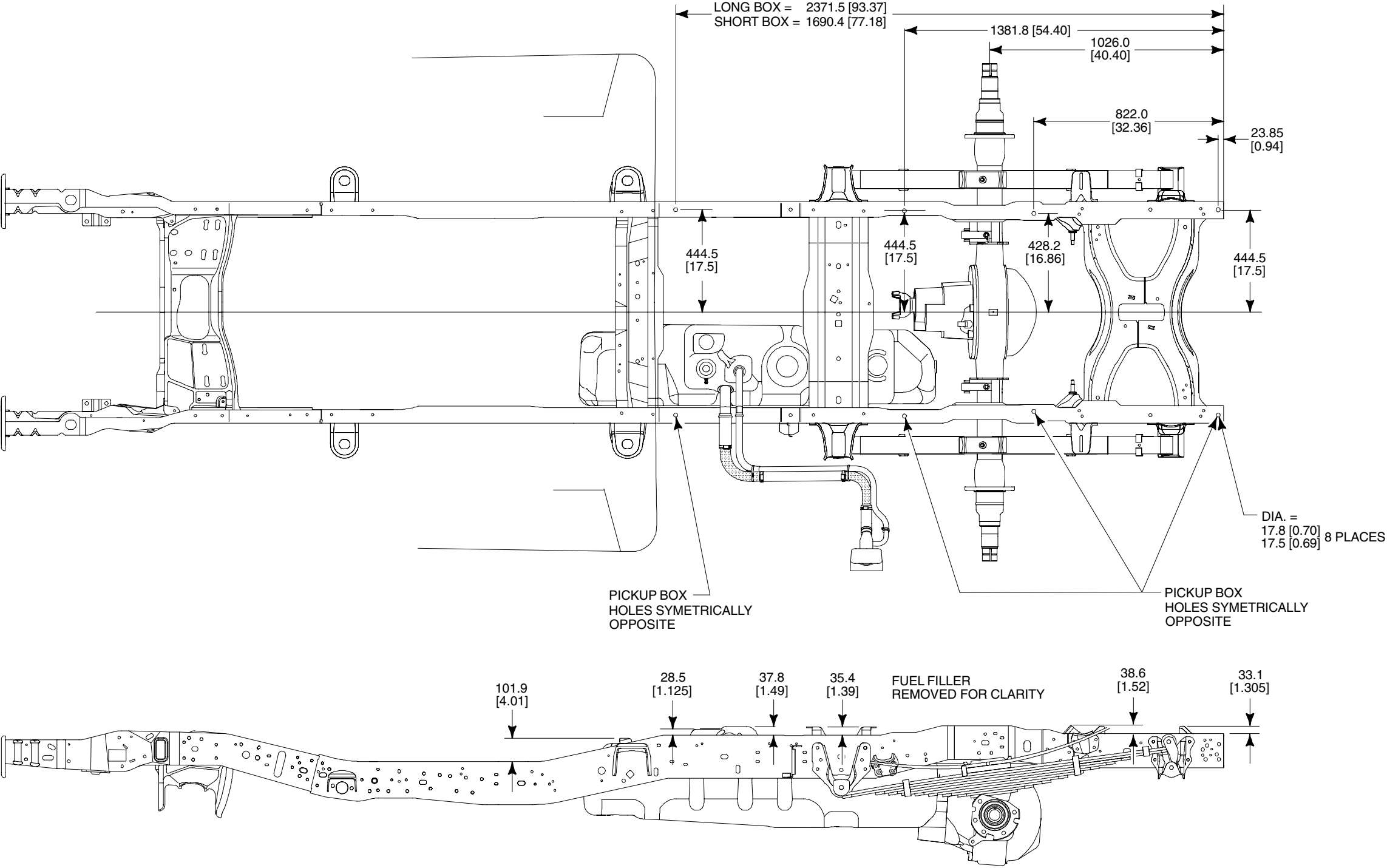


BB0440

NOTE — [] DIMENSIONS ARE INCHES.

PICKUP BOX DELETE – WIDE FRAME
SUPER DUTY F-SERIES
FRAME DATA

2006
MODEL YEAR

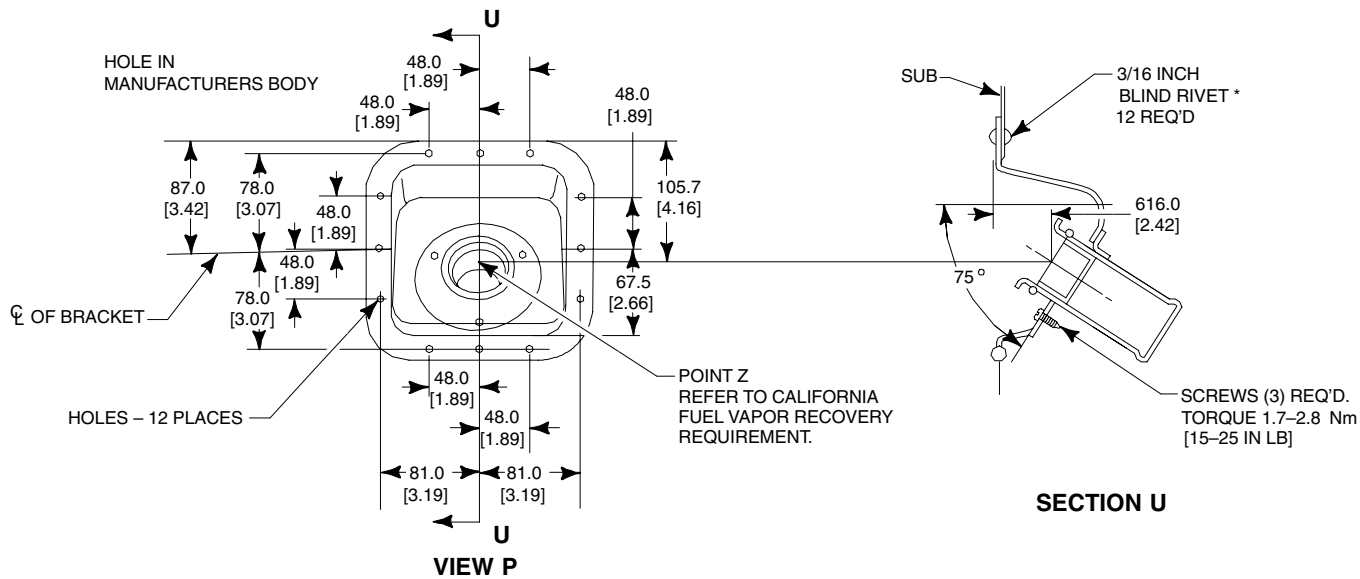


NOTES — [] DIMENSIONS ARE INCHES.
— REAR PICKUP BOX MOUNTING HOLES ARE COMMON TO ALL CAB TYPES — REGULAR, SUPERCAB AND CREW CAB.

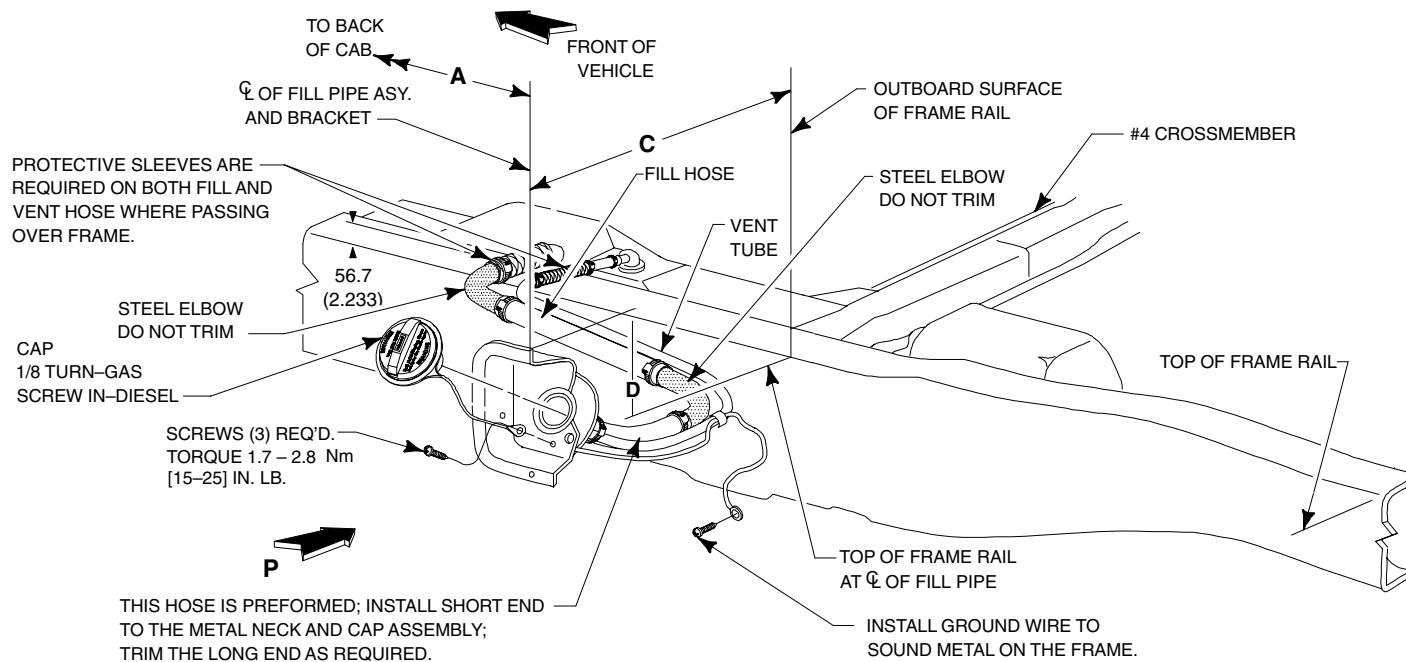
PICKUP BOX DELETE – WIDE FRAME SUPER DUTY F-SERIES

2006

Page 120 SUPER DUTY F-SERIES



(CA) BACK OF CAB TO CENTERLINE OF REAR AXLE			
		40 IN. CA	56 IN. CA
	Regular Cab SuperCab Crew Cab	WHEELBASE	WHEELBASE
		not available	3480mm [137.0]
		3602mm [141.8]	4013mm [158.0]
		3967mm [156.2]	4380mm [172.4]
▽ A	MIN.	404mm [15.9]	620mm [24.4]
	MAX.	716mm [28.2]	932mm [36.7]
▽ C	MIN.	540mm [21.25]	540mm [21.25]
	MAX.	743mm [29.25]	743mm [29.25]
▽ D	MIN.	267mm [10.5]	267mm [10.5]
	MAX.	343mm [13.5]	343mm [13.5]



NOTES [] DIMENSIONS ARE INCHES.

TORQUE ALL WORM GEAR DRIVEN HOSE CLAMPS TO
2.8 - 3.9 NM 25-35 IN-LB

* NOT SUPPLIED BY FORD MOTOR COMPANY

▽ CRITICAL CONTROL ITEM

REMOVE AND DISCARD THE FORD INSTALLED FUEL FILL SYSTEM COMPONENTS (PROVIDED FOR SHIPPING PURPOSES ONLY) EXCEPT SAVE AND REUSE THE METAL NECK AND CAP ASSEMBLY.

USE THE NEW HOSES, PIPES, SCUFF GUARDS, TIE WRAPS AND CLAMPS PROVIDED IN THE DUNNAGE KIT.

THE COMPLETED FUEL FILL SYSTEM MUST PROVIDE A 4 DEGREE MINIMUM, CONTINUOUS, DOWNWARD SLOPE TO THE FUEL TANK. ADDITIONAL SUPPORT MAY BE REQUIRED TO PREVENT HOSE SAGGING WHICH COULD CAUSE SPRAY OR SPITBACK DURING NORMAL FUELING OPERATIONS.

DO NOT EXTEND THE FUEL FILL SYSTEM OUTBOARD OF THE SECOND UNIT BODY.

SUPER DUTY F-350 CHASSIS CAB

MODEL LINEUP

2006
MODEL YEAR

SUPER DUTY F-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE liters	STANDARD TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾		
									FRONT pounds	REAR pounds	TOTAL pounds
REGULAR CHASSIS CAB											
F-350 4x2 SRW	F34	140.8	60	5.4L V-8	6-Spd. Manual OD	—	10,000	4700	3145	2125	5270
				6.8L V-10				4500	3263	2126	5389
				6.0L V-8				4000	3710	2202	5912
F-350 4x4 SRW	F35	140.8	60	5.4L V-8	6-Spd. Manual OD	NV271		4200	3565	2181	5746
				6.8L V-10				4100	3676	2170	5846
				6.0L V-8				3600	4113	2249	6362
SUPERCAB CHASSIS CAB											
F-350 4x2 SRW	X34	161.8	60	5.4L V-8	6-Spd. Manual OD	—	10,000	4300	3353	2279	5632
				6.8L V-10				4200	3472	2281	5753
				6.0L V-8				3700	3920	2353	6273
F-350 4x4 SRW	X35	161.8	60	5.4L V-8	6-Spd. Manual OD	NV271		3800	3790	2318	6108
				6.8L V-10				3700	3908	2320	6228
				6.0L V-8				3200	4347	2396	6743
CREW CAB CHASSIS CAB											
F-350 4x2 SRW	W34	176.2	60	5.4L V-8	6-Spd. Manual OD	—	10,000	4100	3487	2344	5831
				6.8L V-10				4000	3606	2346	5952
				6.0L V-8				3500	4056	2417	6473
F-350 4x4 SRW	W35	176.2	60	5.4L V-8	6-Spd. Manual OD	NV271		3600	3923	2398	6321
				6.8L V-10				3500	4041	2400	6441
				6.0L V-8				3000	4482	2475	6957

(1) Engine/transmission combinations may not be available on all models, or in all areas.

(2) Includes weight of driver, passengers and optional equipment.

(3) Base curb weight is for standard equipment only.

SUPER DUTY F-350 CHASSIS CAB

MODEL LINEUP

2006
MODEL YEAR

SUPER DUTY F-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE liters	STANDARD TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾		
									FRONT pounds	REAR pounds	TOTAL pounds
REGULAR CHASSIS CAB - OPTIONAL PAYLOAD UPGRADE PACKAGE											
F-350 4x2 SRW	F34	140.8	60	5.4L V-8	6-Spd. Manual OD	—	10,100	4800	3145	2125	5270
				6.8L V-10			10,300	4800	3263	2126	5389
				6.0L V-8			10,700	4700	3710	2202	5912
F-350 4x4 SRW	F35	140.8	60	5.4L V-8	6-Spd. Manual OD	NV271	10,400	4600	3565	2181	5746
				6.8L V-10			10,600	4700	3676	2170	5846
				6.0L V-8			11,000	4600	4113	2249	6362
SUPERCAB CHASSIS CAB - OPTIONAL PAYLOAD UPGRADE PACKAGE											
F-350 4x2 SRW	X34	161.8	60	5.4L V-8	6-Spd. Manual OD	—	10,400	4700	3353	2279	5632
				6.8L V-10			10,600	4800	3472	2281	5753
				6.0L V-8			11,000	4700	3920	2353	6273
F-350 4x4 SRW	X35	161.8	60	5.4L V-8	6-Spd. Manual OD	NV271	10,800	4600	3790	2318	6108
				6.8L V-10			11,000	4700	3908	2320	6228
				6.0L V-8			11,400	4600	4347	2396	6743
CREW CAB CHASSIS CAB - OPTIONAL PAYLOAD UPGRADE PACKAGE											
F-350 4x2 SRW	W34	176.2	60	5.4L V-8	6-Spd. Manual OD	—	10,600	4700	3487	2344	5831
				6.8L V-10			10,800	4800	3606	2346	5952
				6.0L V-8			11,200	4700	4056	2417	6473
F-350 4x4 SRW	W35	176.2	60	5.4L V-8	6-Spd. Manual OD	NV271	11,000	4600	3923	2398	6321
				6.8L V-10			11,200	4700	4041	2400	6441
				6.0L V-8			11,500	4500	4482	2475	6957

(1) Engine/transmission combinations may not be available on all models, or in all areas.

(2) Includes weight of driver, passengers and optional equipment.

(3) Base curb weight is for standard equipment only.

SUPER DUTY F-350 CHASSIS CAB

MODEL LINEUP

2006
MODEL YEAR

SUPER DUTY F-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE liters	STANDARD TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾		
									FRONT pounds	REAR pounds	TOTAL pounds
REGULAR CHASSIS CAB											
F-350 4x2 DRW	F36	140.8	60	5.4L V-8	6-Spd. Manual OD	—	13,000	7400	3168	2389	5557
				6.8L V-10				7200	3286	2390	5676
				6.0L V-8				6700	3734	2465	6199
		164.8	84	5.4L V-8	6-Spd. Manual OD	—	13,000	7300	3288	2369	5657
				6.8L V-10				7100	3407	2371	5778
				6.0L V-8				6600	3855	2444	6299
F-350 4x4 DRW	F37	140.8	60	5.4L V-8	6-Spd. Manual OD	NV271	13,000	6900	3588	2445	6033
				6.8L V-10				6800	3699	2434	6133
				6.0L V-8				6300	4136	2513	6649
		164.8	84	5.4L V-8	6-Spd. Manual OD	NV271	13,000	6800	3708	2425	6133
				6.8L V-10				6700	3826	2427	6253
				6.0L V-8				6200	4265	2504	6769
SUPERCAB CHASSIS CAB											
F-350 4x2 DRW	X36	161.8	60	6.8L V-10	6-Spd. Manual OD	—	13,000	6900	3495	2545	6040
				6.0L V-8				6400	3944	2616	6560
F-350 4x4 DRW	X37	161.8	60	6.8L V-10	6-Spd. Manual OD	NV271	13,000	6400	3931	2584	6515
				6.0L V-8				5900	4370	2660	7030
CREW CAB CHASSIS CAB											
F-350 4x2 DRW	W36	176.2	60	6.8L V-10	6-Spd. Manual OD	—	13,000	6700	3630	2609	6239
				6.0L V-8				6200	4080	2680	6760
F-350 4x4 DRW	W37	176.2	60	6.8L V-10	6-Spd. Manual OD	NV271	13,000	6200	4064	2664	6728
				6.0L V-8				5700	4505	2739	7244

(1) Engine/transmission combinations may not be available on all models, or in all areas.

(2) Includes weight of driver, passengers and optional equipment.

(3) Base curb weight is for standard equipment only.

SUPER DUTY F-450 CHASSIS CAB

MODEL LINEUP

2006
MODEL YEAR

Page 124 SUPER DUTY F-SERIES

SUPER DUTY F-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE liters	STANDARD TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾		
									FRONT pounds	REAR pounds	TOTAL pounds
REGULAR CHASSIS CAB											
F-450 4x2 DRW	F46	140.8	60	6.8L V-10	6-Spd. Manual OD	—	16,000	9500	3610	2806	6416
				6.0L V-8				9100	4090	2758	6848
		164.8	84	6.8L V-10	6-Spd. Manual OD	—	16,000	9400	3727	2791	6518
				6.0L V-8				9000	4213	2742	6955
		188.8	108	6.8L V-10	6-Spd. Manual OD	—	16,000	9100	3895	2901	6796
				6.0L V-8				8700	4355	2875	7230
		200.8	120	6.8L V-10	6-Spd. Manual OD	—	16,000	9100	3936	2884	6820
				6.0L V-8				8700	4425	2831	7256
F-450 4x4 DRW	F47	140.8	60	6.8L V-10	6-Spd. Manual OD	NV271	16,000	9200	3888	2863	6751
				6.0L V-8				8800	4334	2821	7155
		164.8	84	6.8L V-10	6-Spd. Manual OD	NV271	16,000	9100	4026	2833	6859
				6.0L V-8				8700	4476	2786	7262
		188.8	108	6.8L V-10	6-Spd. Manual OD	NV271	16,000	8800	4182	2943	7125
				6.0L V-8				8400	4633	2921	7554
		200.8	120	6.8L V-10	6-Spd. Manual OD	NV271	16,000	8800	4242	2915	7157
				6.0L V-8				8400	4696	2865	7561
SUPERCAB CHASSIS CAB											
F-450 4x2 DRW	X46	161.8	60	6.8L V-10	6-Spd. Manual OD	—	16,000	9100	3825	2959	6784
				6.0L V-8				8700	4311	2910	7221
F-450 4x4 DRW	X47	161.8	60	6.8L V-10	6-Spd. Manual OD	NV271	16,000	8800	4123	2998	7121
				6.0L V-8				8400	4574	2950	7524
CREW CAB CHASSIS CAB											
F-450 4x2 DRW	W46	176.2	60	6.8L V-10	6-Spd. Manual OD	—	16,000	8900	3967	3033	7000
				6.0L V-8				8500	4454	2980	7434
		200.2	84	6.8L V-10	6-Spd. Manual OD	—	16,000	8800	4093	3008	7101
				6.0L V-8				8400	4582	2955	7537
F-450 4x4 DRW	W47	176.2	60	6.8L V-10	6-Spd. Manual OD	NV271	16,000	8600	4259	3078	7337
				6.0L V-8				8200	4711	3030	7741
		200.2	84	6.8L V-10	6-Spd. Manual OD	NV271	16,000	8500	4395	3043	7438
				6.0L V-8				8100	4849	2993	7842

(1) Engine/transmission combinations may not be available on all models, or in all areas.

(2) Includes weight of driver, passengers and optional equipment.

(3) Base curb weight is for standard equipment only.

SUPER DUTY F-550 CHASSIS CAB

MODEL LINEUP

2006
MODEL YEAR

Page 125 SUPER DUTY F-SERIES

SUPER DUTY F-SERIES MODEL	BODY CODE	WHEELBASE inches	CA inches	STANDARD ENGINE liters	STANDARD TRANSMISSION ⁽¹⁾	TRANSFER CASE	MAXIMUM GVWR pounds	MAXIMUM PAYLOAD ⁽²⁾ pounds	BASE CURB WEIGHT ⁽³⁾		
									FRONT pounds	REAR pounds	TOTAL pounds
REGULAR CHASSIS CAB											
F-550 4x2 DRW	F56	140.8	60	6.8L V-10	5-Spd. Auto OD	—	17,950	11,400	3610	2855	6465
				6.0L V-8	6-Spd. Manual OD			11,000	4090	2807	6897
		164.8	84	6.8L V-10	5-Spd. Auto OD	—	17,950	11,300	3727	2840	6567
				6.0L V-8	6-Spd. Manual OD			10,900	4213	2791	7004
				6.8L V-10	5-Spd. Auto OD	—	19,000	12,300	3760	2867	6627
				6.0L V-8	6-Spd. Manual OD			11,900	4246	2800	7064
		188.8	108	6.8L V-10	5-Spd. Auto OD	—	17,950	11,000	3895	2950	6845
				6.0L V-8	6-Spd. Manual OD			10,600	4355	2924	7279
		200.8	120	6.8L V-10	5-Spd. Auto OD	—	17,950	11,000	3936	2933	6869
				6.0L V-8	6-Spd. Manual OD			10,600	4425	2880	7305
				6.8L V-10	5-Spd. Auto OD	—	19,000	12,000	2954	2950	6904
				6.0L V-8	6-Spd. Manual OD			11,600	4443	2897	7340
F-550 4x4 DRW	F57	140.8	60	6.8L V-10	5-Spd. Auto OD	NV271	17,950	11,100	3888	2912	6800
				6.0L V-8	6-Spd. Manual OD			10,700	4334	2870	7204
		164.8	84	6.8L V-10	5-Spd. Auto OD	NV271	17,950	11,000	4026	2882	6908
				6.0L V-8	6-Spd. Manual OD			10,600	4476	2835	7311
				6.8L V-10	5-Spd. Auto OD	NV271	19,000	12,000	4059	2909	6968
				6.0L V-8	6-Spd. Manual OD			11,600	4509	2862	7371
		188.8	108	6.8L V-10	5-Spd. Auto OD	NV271	17,950	10,700	4182	2992	7174
				6.0L V-8	6-Spd. Manual OD			10,300	4633	2970	7603
		200.8	120	6.8L V-10	5-Spd. Auto OD	NV271	17,950	10,700	4242	2964	7206
				6.0L V-8	6-Spd. Manual OD			10,300	4696	2914	7610
				6.8L V-10	5-Spd. Auto OD	NV271	19,000	11,700	4260	2981	7241
				6.0L V-8	6-Spd. Manual OD			11,300	4714	2931	7645
SUPERCAB CHASSIS CAB											
F-550 4x2 DRW	X56	161.8	60	6.8L V-10	5-Spd. Auto OD	—	17,950	11,000	3825	3008	6833
				6.0L V-8	6-Spd. Manual OD			10,600	4311	2959	7270
F-550 4x4 DRW	X57	161.8	60	6.8L V-10	5-Spd. Auto OD	NV271	17,950	10,700	4123	3047	7170
				6.0L V-8	6-Spd. Manual OD			10,300	4574	2999	7573
CREW CAB CHASSIS CAB											
F-550 4x2 DRW	W56	176.2	60	6.8L V-10	5-Spd. Auto OD	—	17,950	10,800	3967	3082	7049
				6.0L V-8	6-Spd. Manual OD			10,400	4454	3029	7483
		200.2	84	6.8L V-10	5-Spd. Auto OD	—	17,950	10,700	4093	3057	7150
				6.0L V-8	6-Spd. Manual OD			10,300	4582	3004	7586
F-550 4x4 DRW	W57	176.2	60	6.8L V-10	5-Spd. Auto OD	NV271	17,950	10,500	4259	3127	7386
				6.0L V-8	6-Spd. Manual OD			10,100	4711	3079	7790
		200.2	84	6.8L V-10	5-Spd. Auto OD	NV271	17,950	10,400	4395	3092	7487
				6.0L V-8	6-Spd. Manual OD			10,000	4849	3042	7891

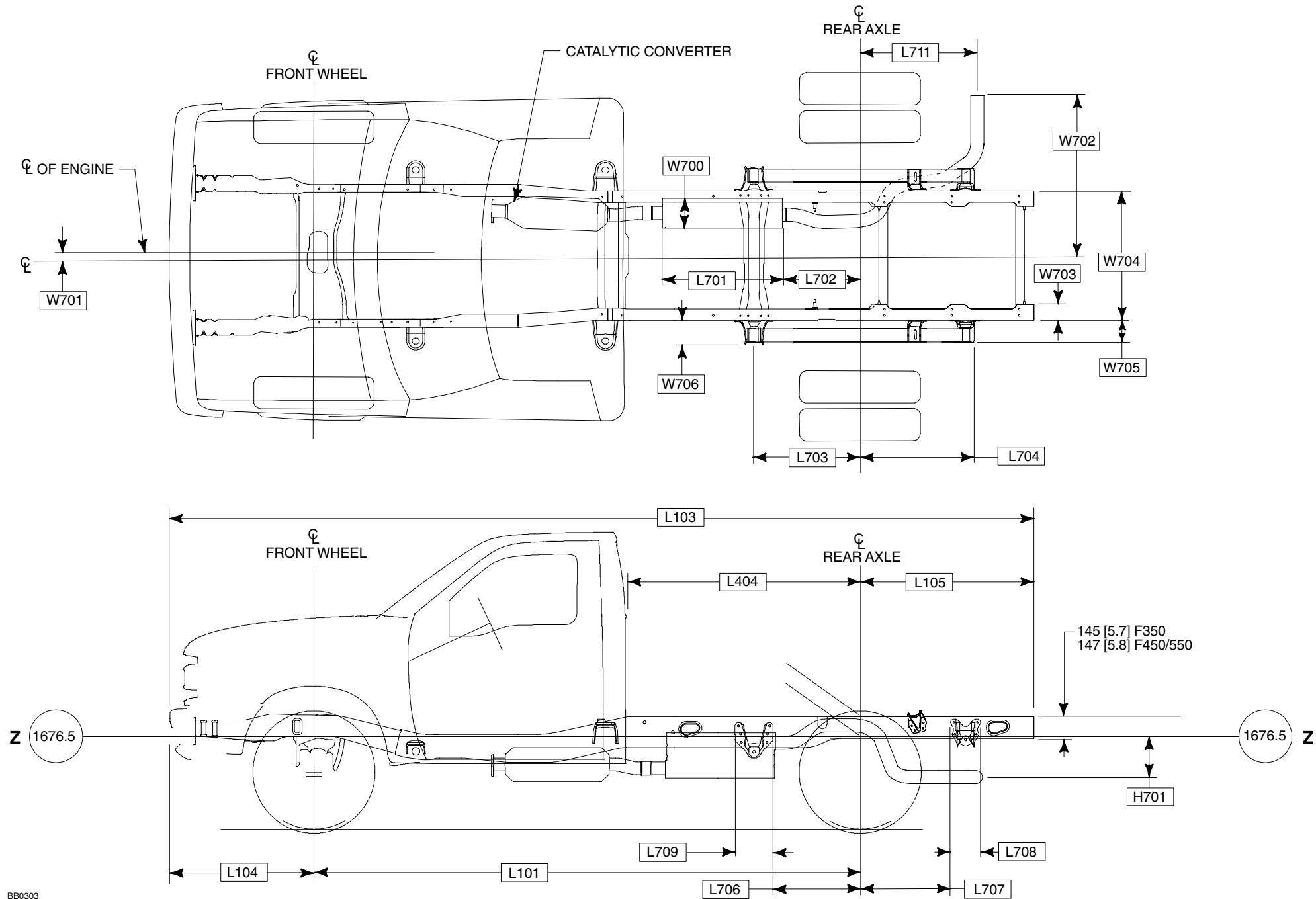
(1) Engine/transmission combinations may not be available on all models, or in all areas.

(2) Includes weight of driver, passengers and optional equipment.

(3) Base curb weight is for standard equipment only.

DIMENSIONAL DATA SUPER DUTY F-SERIES REGULAR CAB – CHASSIS CAB

2006
MODEL YEAR



BB0303

NOTES — [] DIMENSIONS ARE INCHES.
— AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 132-133.
— GROUND CLEARANCE DATA, PAGES 138-139.

DIMENSIONAL DATA
SUPER DUTY F-SERIES
REGULAR CAB – CHASSIS CAB

2006
MODEL YEAR

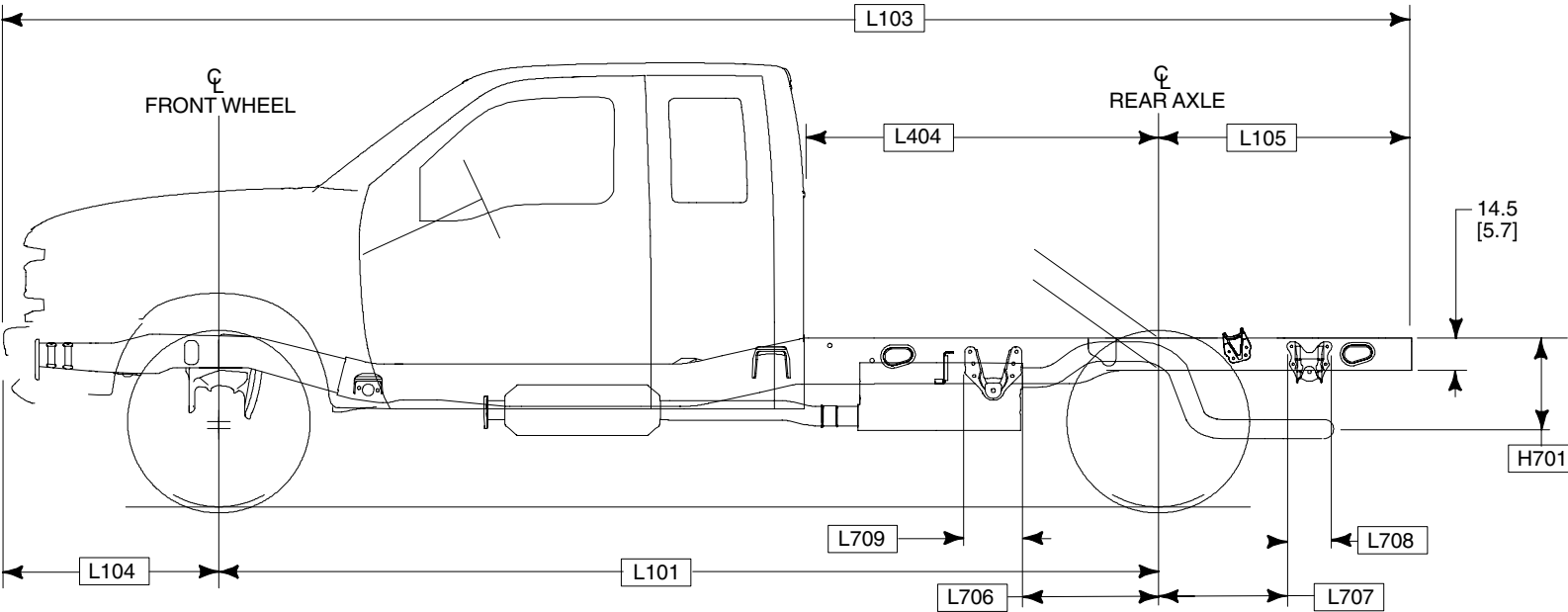
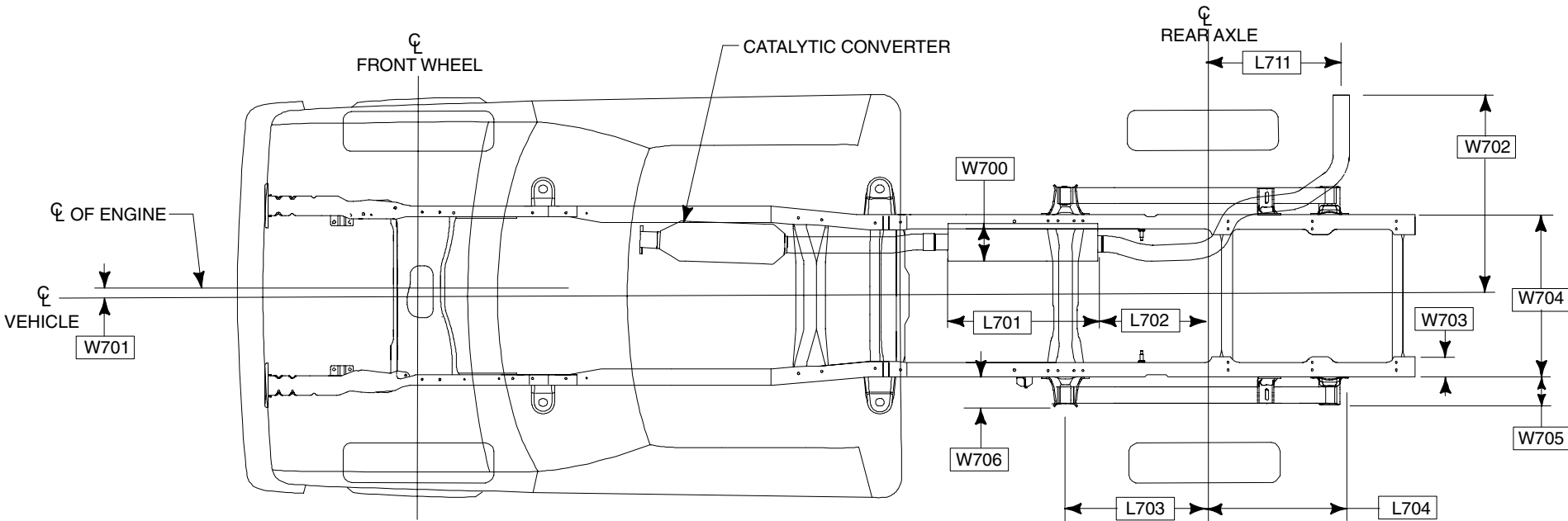
CODE	DESCRIPTION	F-350						F-450				F-550			
		SRW		DRW		DRW		DRW				DRW			
		4x2	4x4	4x2	4x4	4x2	4x4	4x2/4x4				4x2/4x4			
H701	℄ OF OUTLET PIPE TO BOTTOM OF FRAME — 5.4L/6.8L/6.0L	239 [9.4]		239 [9.4]		239 [9.4]		239 [9.4]				239 [9.4]			
L101	WHEELBASE	3576 [140.8]		3576 [140.8]		4186 [164.8]		3576 [140.8]	4186 [164.8]	4795 [188.8]	5100 [200.8]	3576 [140.8]	4186 [164.8]	4795 [188.8]	5100 [200.8]
L103	OVERALL LENGTH	5730 [225.6]		5730 [225.6]		6340 [249.6]		5730 [225.6]	6340 [249.6]	6949 [273.6]	7254 [285.6]	5730 [225.6]	6340 [249.6]	6949 [273.6]	7254 [285.6]
L104	FRONT OVERHANG	945 [37.2]		945 [37.2]		945 [37.2]		945 [37.2]				945 [37.2]			
L105	REAR OVERHANG	1209 [47.6]		1209 [47.6]		1209 [47.6]		1209 [47.6]				1209 [47.6]			
L404	BACK OF CAB TO ℄ OF REAR AXLE	1524 [60.0]		1524 [60.0]		2134 [84.0]		1524 [60.0]	2134 [84.0]	2743 [108.0]	3048 [120.0]	1524 [60.0]	2134 [84.0]	2743 [108.0]	3048 [120.0]
L701	MUFFLER LENGTH — 5.4L/6.8L — 6.0L	609.5 [24.0]		609.5 [24.0]		609.5 [24.0]		609.5 [24.0]				609.5 [24.0]			
		661 [26.0]		661 [26.0]		661 [26.0]		661 [26.0]				661 [26.0]			
L702	MUFFLER REAR TO ℄ REAR AXLE — 5.4L/6.8L — 6.0L	546.5 [21.5]		546.5 [21.5]		546.5 [21.5]		546.5 [21.5]				546.5 [21.5]			
		596 [23.5]	602 [23.7]	596 [23.5]	604 [23.8]	596 [23.5]	606 [23.9]	582 [22.9]		582 [22.9]		586 [23.0]		593 [23.3]	
L703	REAR SPRING FRONT EYE TO REAR AXLE	663 [26.1]	671 [26.4]	663 [26.1]	671 [26.4]	663 [26.1]	671 [26.4]	653 [25.7]				654 [25.8]			
L704	℄ REAR AXLE TO ℄ REAR SPRING SHACKLE BRACKET	748 [29.4]	739 [29.1]	748 [29.4]	739 [29.1]	748 [29.4]	739 [29.1]	757 [29.8]				755 [29.7]			
L706	REAR OF FRONT SPRING BRACKET TO ℄ REAR AXLE	536 [21.1]	544 [21.4]	536 [21.1]	544 [21.4]	536 [21.1]	544 [21.4]	525 [20.7]				526 [20.7]			
L707	℄ REAR AXLE TO FRONT OF REAR SPRING SHACKLE BRACKET	648 [25.5]	639 [25.2]	648 [25.5]	639 [25.2]	648 [25.5]	639 [25.2]	645 [25.4]				643 [25.3]			
L708	REAR SPRING SHACKLE BRACKET WIDTH	200 [7.9]		200 [7.9]		200 [7.9]		225 [8.9]				225 [8.9]			
L709	FRONT SPRING HANGER BRACKET WIDTH	253 [10.0]		253 [10.0]		253 [10.0]		256 [10.1]				256 [10.1]			
L711	℄ OF REAR AXLE TO ℄ OF EXHAUST PIPE — 5.4L/6.8L — 6.0L	664.6 [26.2]		664.6 [26.2]		664.6 [26.2]		664.6 [26.2]				664.6 [26.2]			
		698 [27.4]	690 [27.1]	696 [27.4]	687 [27.0]	696 [27.4]	687 [27.0]	709 [27.9]		709 [27.9]		705 [27.8]		698 [27.4]	
W700	MUFFLER CROSS SECTION — 5.4L — 6.0L	7 x 9		7 x 9		7 x 9		7 x 9				7 X 9			
		195 x 291		195 x 291		195 x 291		195 x 291				195 x 291			
W701	DISTANCE BETWEEN ℄ ENGINE/VEHICLE	45 [1.8]		45 [1.8]		45 [1.8]		45 [1.8]				45 [1.8]			
W702	END OF TAILPIPE TO ℄ VEHICLE — 5.4L/6.8L — 6.0L	948 [37.3]		948 [37.3]		948 [37.3]		948 [37.3]				948 [37.3]			
		1027 [40.4]		1027 [40.4]		1027 [40.4]		1027 [40.4]				1027 [40.4]			
W703	FRAME RAIL WIDTH	107 [4.2]		107 [4.2]		107 [4.2]		108 [4.2]				108 [4.2]			
W704	REAR FRAME WIDTH	866 [34.1]		866 [34.1]		866 [34.1]		868 [34.2]				868 [34.2]			
W705	DISTANCE FROM FRAME TO OUTSIDE OF REAR SPRING SHACKLE BRACKET	149 [5.9]		149 [5.9]		149 [5.9]		151 [5.9]				151 [5.9]			
W706	DISTANCE FROM FRAME TO OUTSIDE OF REAR SPRING HANGER BRACKET	160 [6.3]		160 [6.3]		160 [6.3]		151 [5.9]				151 [5.9]			

NOTES — [] DIMENSIONS ARE INCHES.
— AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 132-133.
— GROUND CLEARANCE DATA, PAGES 138-139.

DIMENSIONAL DATA **SUPER DUTY F-SERIES** **CHASSIS CAB – SUPERCAB**

2006
MODEL YEAR

Page 128 SUPER DUTY F-SERIES



BB0304-2005

NOTES — [] DIMENSIONS ARE INCHES.
 — AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 134-135.
 — GROUND CLEARANCE DATA, PAGES 138-139.

DIMENSIONAL DATA
SUPER DUTY F-SERIES
CHASSIS CAB – SUPERCAB

2006
MODEL YEAR

Page 129 **SUPER DUTY F-SERIES**

CODE	DESCRIPTION	F-350				F-450		F-550	
		SRW		DRW		DRW		DRW	
		4x2	4x4	4x2	4X4	4x2/4X4		4x2/4X4	
H701	℄ OF OUTLET PIPE TO FRAME DATUM LINE — WITH 5.4L/6.8L/6.0L	239 [9.4]		239 [9.4]		239 [9.4]		239 [9.4]	
L101	WHEELBASE	4110 [161.8]		4110 [161.8]		4110 [161.8]		4110 [161.8]	
L103	OVERALL LENGTH	6264 [246.6]		6264 [246.6]		6264 [246.6]		6264 [246.6]	
L104	FRONT OVERHANG	945 [37.2]		945 [37.2]		945 [37.2]		945 [37.2]	
L105	REAR OVERHANG	1209 [47.6]		1209 [47.6]		1209 [47.6]		1209 [47.6]	
L404	BACK OF CAB TO ℄ OF REAR AXLE	1524 [60.0]		1524 [60.0]		1524 [60.0]		1524 [60.0]	
L701	MUFFLER LENGTH — WITH 5.4L/6.8L	609.5 [24.0]		609.5 [24.0]		609.5 [24.0]		609.5 [24.0]	
	— WITH 6.0L	661 [26.0]		661 [26.0]		661 [26.0]		661 [26.0]	
L702	MUFFLER REAR ℄ TO REAR AXLE — WITH 5.4L/6.8L	546.5 [21.5]		546.5 [21.5]		546.5 [21.5]		546.5 [21.5]	
	— WITH 6.0L	595.9 [23.5]	602.1 [23.7]	595.9 [23.5]	604.1 [23.7]	582.8 [23.0]	589.4 [23.2]	586.8 [23.1]	593.4 [23.3]
L703	REAR SPRING FRONT EYE TO ℄ REAR AXLE	663 [26.1]	671 [26.4]	663 [26.1]	671 [26.4]	653 [25.7]		654 [25.8]	
L704	℄ REAR AXLE TO ℄ REAR SPRING SHACKLE BRACKET	748 [29.4]	739 [29.1]	748 [29.4]	739 [29.1]	757 [29.8]		755 [29.7]	
L706	REAR OF FRONT SPRING BRACKET TO ℄ REAR AXLE	536 [21.1]	544 [21.1]	536 [21.1]	544 [21.1]	525 [20.7]		526 [20.7]	
L707	℄ REAR AXLE TO FRONT OF REAR SPRING SHACKLE BRACKET	648 [25.5]	639 [25.2]	648 [25.5]	639 [25.2]	645 [25.4]		643 [25.3]	
L708	REAR SPRING SHACKLE BRACKET WIDTH	200 [7.9]		200 [7.9]		225 [8.9]		225 [8.9]	
L709	FRONT SPRING HANGER BRACKET WIDTH	253 [10.0]		253 [10.0]		256 [10.1]		256 [10.1]	
L711	℄ OF REAR AXLE TO ℄ OF EXHAUST PIPE — WITH 5.4L/6.8L	664.6 [26.2]		664.6 [26.2]		664.6 [26.2]		664.6 [26.2]	
	— WITH 6.0L	695.9 [27.4]	689.7 [27.1]	695.9 [27.4]	689.7 [27.1]	709 [30.0]	707 [27.8]	705 [27.8]	698.4 [27.5]
W700	MUFFLER CROSS SECTION — WITH 5.4L/6.8L	7 X 9		7 X 9		7 X 9		7 X 9	
	— WITH 6.0L	195 X 291		195 X 291		195 X 291		195 X 291	
W701	DISTANCE BETWEEN ℄ ENGINE/VEHICLE	45 [1.8]		45 [1.8]		45 [1.8]		45 [1.8]	
W702	END OF TAILPIPE TO ℄ VEHICLE — WITH 5.4L/6.8L	948 [37.3]		948 [37.3]		948 [37.3]		948 [37.3]	
	— 6.0L	1027 [40.4]		1027 [40.4]		1027 [40.4]		1027 [40.4]	
W703	FRAME RAIL WIDTH	107 [4.2]		107 [4.2]		108 [4.2]		108 [4.2]	
W704	REAR FRAME WIDTH	866 [34.1]		866 [34.1]		868 [34.2]		868 [34.2]	
W705	DISTANCE FROM FRAME TO OUTSIDE OF REAR SPRING SHACKLE BRACKET	149 [5.9]		149 [5.9]		151 [5.9]		151 [5.9]	
W706	DISTANCE FROM FRAME TO OUTSIDE OF REAR SPRING HANGER BRACKET	160 [6.3]		160 [6.3]		151 [5.9]		151 [5.9]	

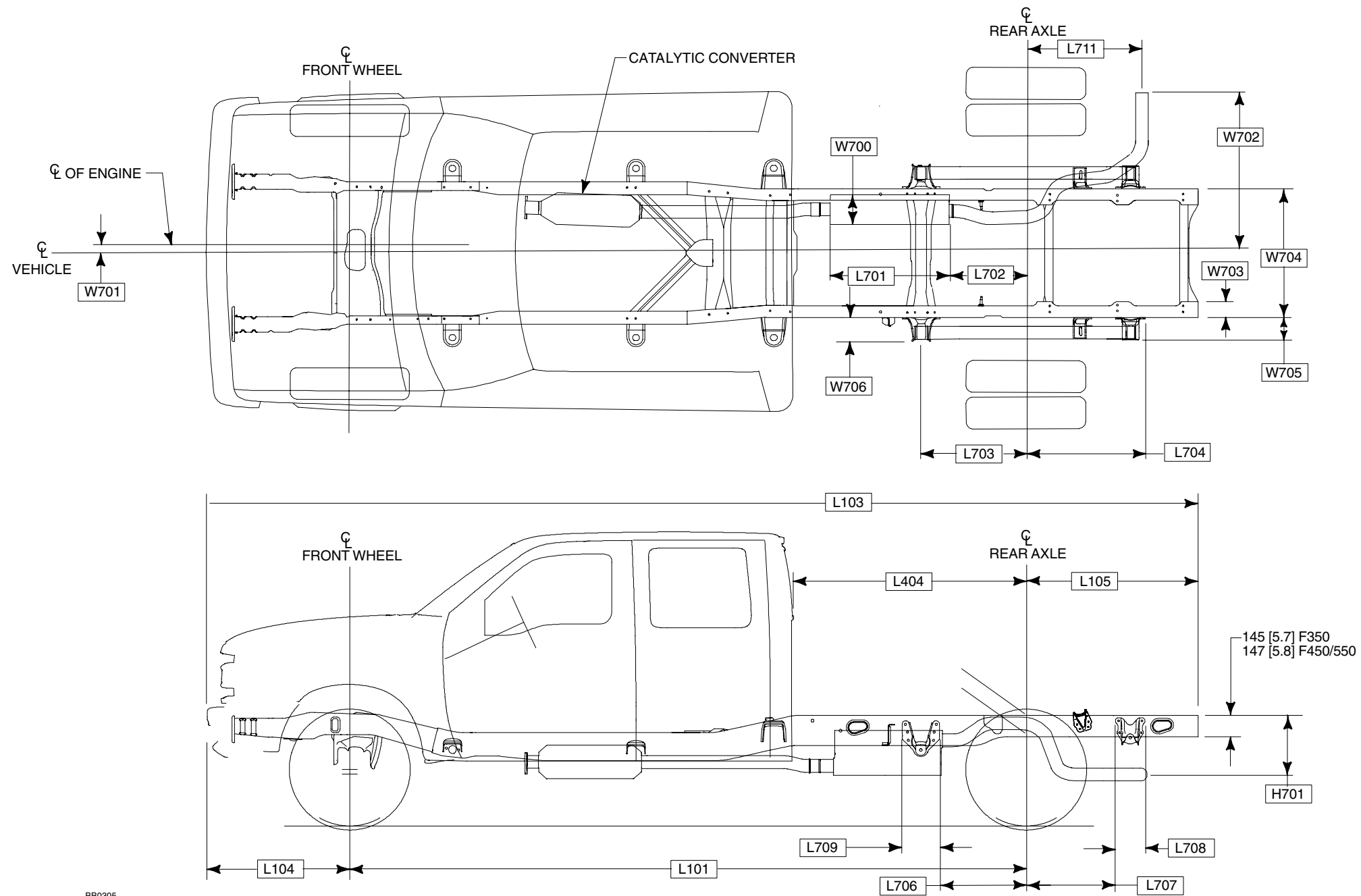
NOTES — [] DIMENSIONS ARE INCHES.
— AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 134-135.
— GROUND CLEARANCE DATA, PAGES 138-139.

DIMENSIONAL DATA

SUPER DUTY F-SERIES

CHASSIS CAB – CREW CAB

2006
MODEL YEAR



BB0305

NOTES — [] DIMENSIONS ARE INCHES.
— AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 136-137.
— GROUND CLEARANCE DATA, PAGES 138-139.

DIMENSIONAL DATA
SUPER DUTY F-SERIES
CHASSIS CAB – CREW CAB

2006
MODEL YEAR

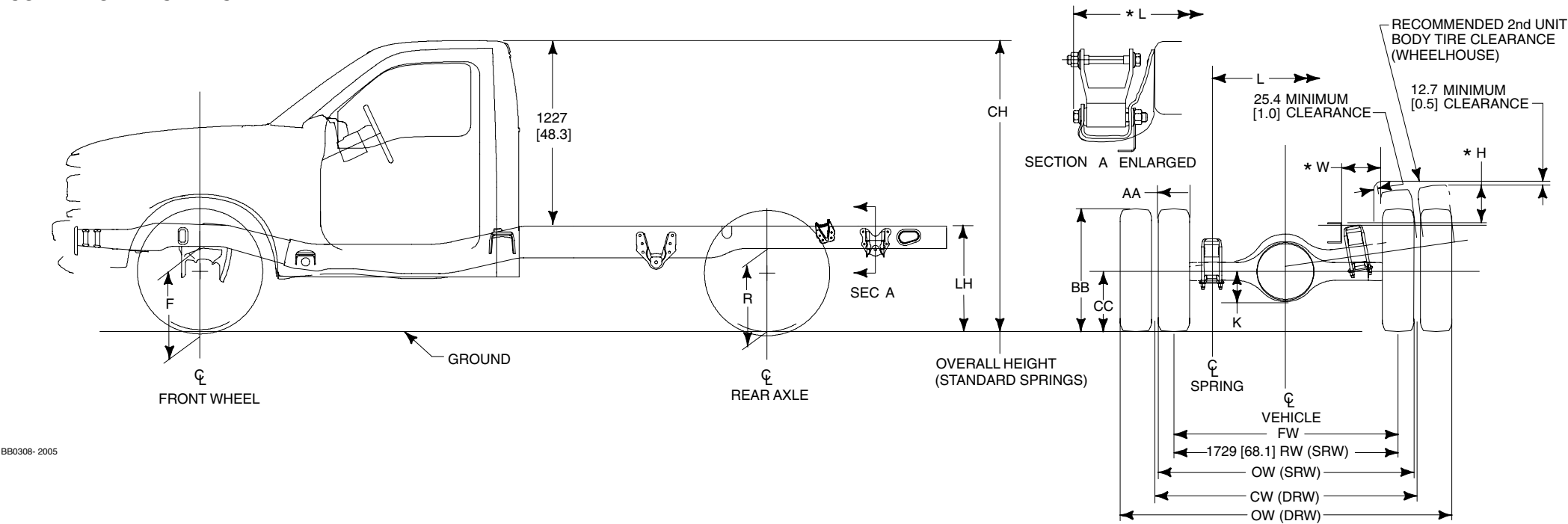
Page 131 SUPER DUTY F-SERIES

CODE	DESCRIPTION	F-350				F-450		F-550	
		SRW		DRW		DRW		DRW	
		4x2	4x4	4x2	4X4	4x2/4X4		4x2/4X4	
H701	℄ OF OUTLET PIPE TO TOP OF FRAME — WITH 5.4L/6.8L/6.0L	239 [9.4]		239 [9.4]		239 [9.4]		239 [9.4]	
L101	WHEELBASE	4475 [176.2]		4475 [176.2]		4475 [176.2]	5085 [200.2]	4475 [176.2]	5085 [200.2]
L103	OVERALL LENGTH	6629 [261.0]		6629 [261.0]		6629 [261.0]	7239 [285.0]	6629 [261.0]	7239 [285.0]
L104	FRONT OVERHANG	945 [37.2]		945 [37.2]		945 [37.2]		945 [37.2]	
L105	REAR OVERHANG	1209 [47.6]		1209 [47.6]		1209 [47.6]		1209 [47.6]	
L404	BACK OF CAB TO ℄ OF REAR AXLE	1524 [60.0]		1524 [60.0]		1524 [60.0]	2134 [84.0]	1524 [60.0]	2134 [84.0]
L701	MUFFLER LENGTH — WITH 5.4L/6.8L	609.5 [24.0]		609.5 [24.0]		609.5 [24.0]		609.5 [24.0]	
	— WITH 6.0L	661 [26.0]		661 [26.0]		661 [26.0]		661 [26.0]	
L702	MUFFLER REAR ℄ TO REAR AXLE — WITH 5.4L/6.8L	546.5 [21.5]		546.5 [21.5]		546.5 [21.5]		546.5 [21.5]	
	— WITH 6.0L	593.2 [23.3]	601.5 [23.6]	595.3 [23.4]	603.6 [23.7]	582.4 [22.9]	582.4 [22.9]	586.2 [23.0]	592.8 [23.3]
L703	REAR SPRING FRONT EYE TO ℄ REAR AXLE	663 [26.1]	671 [26.4]	663 [26.1]	671 [26.4]	653 [25.7]		654 [25.8]	
L704	℄ REAR AXLE TO ℄ REAR SPRING SHACKLE BRACKET	748 [29.4]	739 [29.1]	748 [29.4]	739 [29.1]	757 [29.8]		755 [29.7]	
L706	REAR OF FRONT SPRING BRACKET TO ℄ REAR AXLE	536 [21.1]	544 [21.1]	536 [21.1]	544 [21.1]	525 [20.7]		526 [20.7]	
L707	℄ REAR AXLE TO FRONT OF REAR SPRING SHACKLE BRACKET	648 [25.5]	639 [25.2]	648 [25.5]	639 [25.2]	645 [25.4]		643 [25.3]	
L708	REAR SPRING SHACKLE BRACKET WIDTH	200 [7.9]		200 [7.9]		225 [8.9]		225 [8.9]	
L709	FRONT SPRING HANGER BRACKET WIDTH	253 [10.0]		253 [10.0]		256 [10.1]		256 [10.1]	
L711	℄ OF REAR AXLE TO ℄ OF EXHAUST PIPE — WITH 5.4L/6.8L	664.6 [26.2]		664.6 [26.2]		664.6 [26.2]		664.6 [26.2]	
	— WITH 6.0L	697.9 [27.4]	689.7 [27.1]	695.8 [27.3]	687.5 [27.0]	709 [27.9]	709 [27.9]	705 [27.7]	698.4 [27.4]
W700	MUFFLER CROSS SECTION — WITH 5.4L/6.8L	7 X 9		7 X 9		7 X 9		7 X 9	
	— WITH 6.0L	195 X 291		195 X 291		195 X 291		195 X 291	
W701	DISTANCE BETWEEN ℄ ENGINE/VEHICLE	45 [1.8]		45 [1.8]		45 [1.8]		45 [1.8]	
W702	END OF TAILPIPE TO ℄ VEHICLE — WITH 5.4L/6.8L — WITH 6.0L	948 [37.3] 1027 [40.4]		948 [37.3] 1027 [40.4]		948 [37.3] 1027 [40.4]		948 [37.3] 1027 [40.4]	
W703	FRAME RAIL WIDTH	107 [4.2]		107 [4.2]		108 [4.2]		108 [4.2]	
W704	REAR FRAME WIDTH	866 [34.1]		866 [34.1]		868 [34.2]		868 [34.2]	
W705	DISTANCE FROM FRAME TO OUTSIDE OF REAR SPRING SHACKLE BRACKET	149 [5.9]		149 [5.9]		151[5.9]		151[5.9]	
W706	DISTANCE FROM FRAME TO OUTSIDE OF REAR SPRING HANGER BRACKET	160 [6.3]		160 [6.3]		151[5.9]		151[5.9]	

NOTES — [] DIMENSIONS ARE INCHES.
— AXLE/TIRE/VEHICLE HEIGHT DATA, PAGES 136-137.
— GROUND CLEARANCE DATA, PAGES 138-139.

AXLE/TIRE/VEHICLE HEIGHT DATA
SUPER DUTY F-SERIES
CHASSIS CAB – REGULAR CAB

2006
MODEL YEAR



MODEL	WB	STANDARD GVWR	BASE TIRE	F HEIGHT AT FRONT WHEEL ⁽¹⁾		R HEIGHT AT REAR AXLE ⁽¹⁾		LH ⁽¹⁾		CH ⁽¹⁾		K	L	*L	AA	BB	CC	FW	RW	OW	CW	*H	*W
				CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED	CURB ⁽²⁾	LOADED												
F-350 Regular Cab 4x2	3576 [140.8]	10,000	LT275/65R18E	533 [21.0]	513 [20.2]	645 [25.4]	538 [21.2]	831 [32.7]	696 [27.4]	1953 [76.9]	1902 [74.9]	161 [6.3]	1056 [41.55]	1184.0 [46.6]	297 [11.7]	794 [31.3]	376 [14.8]	1734 [68.3]	1729 [68.1]	2019 [79.5]	—	259 [10.2]	233 [9.2]
		13,000 DRW	LT245/75R17E	536 [21.1]	500 [19.7]	653 [25.7]	531 [20.9]	841 [33.1]	691 [27.2]	1958 [77.1]	1895 [74.6]	177 [7.0]	1056 [41.55]	1184.0 [46.6]	264 [10.4]	781 [30.8]	371 [14.6]	1750 [68.9]	—	2342 @ [92.2]	1803 @ [71.0]	271 [10.7]	157 [6.2]
	4186 [164.8]	13,000 DRW	LT245/75R17E	538 [21.2]	500 [19.7]	653 [25.7]	531 [20.9]	833 [32.8]	691 [27.2]	1953 [76.9]	1892 [74.5]	177 [7.0]	1056 [41.55]	1184.0 [46.6]	264 [10.4]	781 [30.8]	371 [14.6]	1750 [68.9]	—	2342 @ [92.2]	1803 @ [71.0]	271 [10.7]	157 [6.2]
F-350 Regular Cab 4x4	3576 [140.8]	10,000	LT275/70R18E	676 [26.6]	648 [25.5]	714 [28.1]	607 [23.9]	876 [34.5]	744 [29.3]	2073 [73.7]	2017 [79.4]	165 [6.5]	1056 [41.55]	1184.0 [46.6]	297 [11.7]	827 [32.5]	394 [15.5]	1736 [68.3]	1729 [68.1]	2019 [79.5]	—	219 [8.6]	242 [9.5]
		13,000 DRW	LT245/75R17E	620 [24.4]	592 [23.3]	709 [27.9]	587 [23.1]	886 [34.9]	737 [29.0]	2031 [80.0]	1973 [77.7]	177 [7.0]	1056 [41.55]	1184.0 [46.6]	264 [10.4]	781 [30.8]	371 [14.6]	1753 [69.0]	—	2329 @ [91.7]	1803 @ [71.0]	215 [8.5]	164 [6.5]
	4186 [164.8]	13,000 DRW	LT245/75R17E	632 [24.9]	587 [23.1]	709 [27.9]	587 [23.1]	879 [34.6]	737 [29.0]	2037 [80.2]	1971 [77.6]	177 [7.0]	1056 [41.55]	1184.0 [46.6]	264 [10.4]	781 [30.8]	371 [14.6]	1753 [69.0]	—	2329 @ [91.7]	1803 @ [71.0]	215 [8.5]	164 [6.5]

(1) — The Height Data shown represents dimensions of a base/standard vehicle with no options. Actual height may vary due to production tolerances (completed vehicles only).

(2) — Height at base curb weight with standard spring

(3) — Loaded height at spring rating with standard spring

(4) — Reinforced frame available on 200.8" wheelbase, Regular Cab, 450/550

*H — Top of frame at ϕ of rear axle to top of tire in jounce

*L — From outside edge of shackle eyebolt

*W — Outside of frame to top of tire in jounce

@ — with Ambulance Prep Package (Wide Track Axle).

CW = 1880 [74] and OW = 2380 [93.7] for 4x2,

CW = 1880 [74] and OW = 2405 [94.7] for 4x4

NOTES — [] DIMENSIONS ARE INCHES.
— F AND R VEHICLE HEIGHT DIMENSIONS ARE
— FROM GROUND TO BOTTOM OF FRAME.
— LH IS FROM GROUND TO TOP OF FRAME.

AXLE/TIRE/VEHICLE HEIGHT DATA
SUPER DUTY F-SERIES
CHASSIS CAB – REGULAR CAB

2006
MODEL YEAR


MODEL	WB	STANDARD GVWR	BASE TIRE	F HEIGHT AT FRONT WHEEL ⁽¹⁾		R HEIGHT AT REAR AXLE ⁽¹⁾		LH ⁽¹⁾		CH ⁽¹⁾		K	L	*L	AA	BB	CC	FW	RW	OW	CW	*H	*W
				CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED	CURB ⁽²⁾	LOADED												
F-450 Regular Cab 4x2	3576 [140.8]	16,000 DRW	225/70R19.5F	622 [24.4]	597 [23.5]	681 [26.8]	590 [23.2]	821 [32.3]	700 [27.5]	2048 [80.6]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Regular Cab 4x2	4186 [164.8]	16,000 DRW	225/70R19.5F	657 [25.8]	597 [23.5]	681 [26.8]	590 [23.2]	821 [32.3]	704 [27.7]	2044 [80.5]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Regular Cab 4x2	4795 [188.8]	16,000 DRW	225/70R19.5F	659 [25.9]	597 [23.5]	681 [26.8]	590 [23.2]	820 [32.2]	706 [27.7]	2044 [80.5]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Regular Cab 4x2	5100 ⁽⁴⁾ [200.8]	16,000 DRW	225/70R19.5F	652 [25.6]	597 [23.5]	690 [27.1]	590 [23.2]	820 [32.2]	708 [27.8]	2038 [80.2]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Regular Cab 4x4	3576 [140.8]	16,000 DRW	225/70R19.5F	655 [25.7]	597 [23.5]	681 [26.8]	590 [23.2]	823 [32.4]	702 [27.6]	2051 [80.7]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Regular Cab 4x4	4186 [164.8]	16,000 DRW	225/70R19.5F	651 [25.6]	597 [23.5]	681 [26.8]	590 [23.2]	823 [32.4]	706 [27.7]	2044 [80.5]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Regular Cab 4x4	4795 [188.8]	16,000 DRW	225/70R19.5F	651 [25.6]	597 [23.5]	681 [26.8]	590 [23.2]	822 [32.3]	708 [27.8]	2033 [80.0]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Regular Cab 4x4	5100 ⁽⁴⁾ [200.8]	16,000 DRW	225/70R19.5F	644 [25.3]	597 [23.5]	680 [26.7]	590 [23.2]	821 [32.3]	710 [27.9]	2033 [80.0]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Regular Cab 4x2	3576 [140.8]	17,950 DRW	225/70R19.5F	661 [26.0]	597 [23.5]	680 [26.7]	590 [23.2]	820 [32.2]	700 [27.5]	2076 [81.7]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Regular Cab 4x2	4186 [164.8]	17,950 DRW	225/70R19.5F	658 [25.9]	597 [23.5]	680 [26.7]	590 [23.2]	820 [32.2]	704 [27.7]	2068 [81.4]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Regular Cab 4x2	4795 [188.8]	17,950 DRW	225/70R19.5F	658 [25.9]	597 [23.5]	680 [26.7]	590 [23.2]	819 [32.2]	706 [27.7]	2068 [81.4]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Regular Cab 4x2	5100 ⁽⁴⁾ [200.8]	17,950 DRW	225/70R19.5F	652 [25.6]	597 [23.5]	679 [26.7]	590 [23.2]	819 [32.2]	708 [27.8]	2059 [81.1]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Regular Cab 4x4	3576 [140.8]	17,950 DRW	225/70R19.5F	651 [25.6]	597 [23.5]	679 [26.7]	590 [23.2]	822 [32.3]	706 [27.7]	2075 [81.7]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Regular Cab 4x4	4186 [164.8]	17,950 DRW	225/70R19.5F	649 [25.5]	597 [23.5]	679 [26.7]	590 [23.2]	822 [32.3]	706 [27.7]	2063 [81.2]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Regular Cab 4x4	4795 [188.8]	17,950 DRW	225/70R19.5F	649 [25.5]	597 [23.5]	679 [26.7]	590 [23.2]	820 [32.2]	708 [27.8]	2059 [81.1]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Regular Cab 4x4	5100 ⁽⁴⁾ [200.8]	17,950 DRW	225/70R19.5F	643 [25.3]	597 [23.5]	679 [26.7]	590 [23.2]	820 [32.2]	711 [27.9]	2049 [80.7]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]

(1) — The Height Data shown represents dimensions of a base/standard vehicle with no options.
Actual height may vary due to production tolerances (completed vehicles only).

(2) — Height at base curb weight with standard spring

(3) — Loaded height at spring rating with standard spring

(4) — Reinforced frame available on 200.8" wheelbase, Regular Cab, 450/550

*H — Top of frame at  of rear axle to top of tire in jounce

*L — From outside edge of shackle eyebolt

*W — Outside of frame to top of tire in jounce

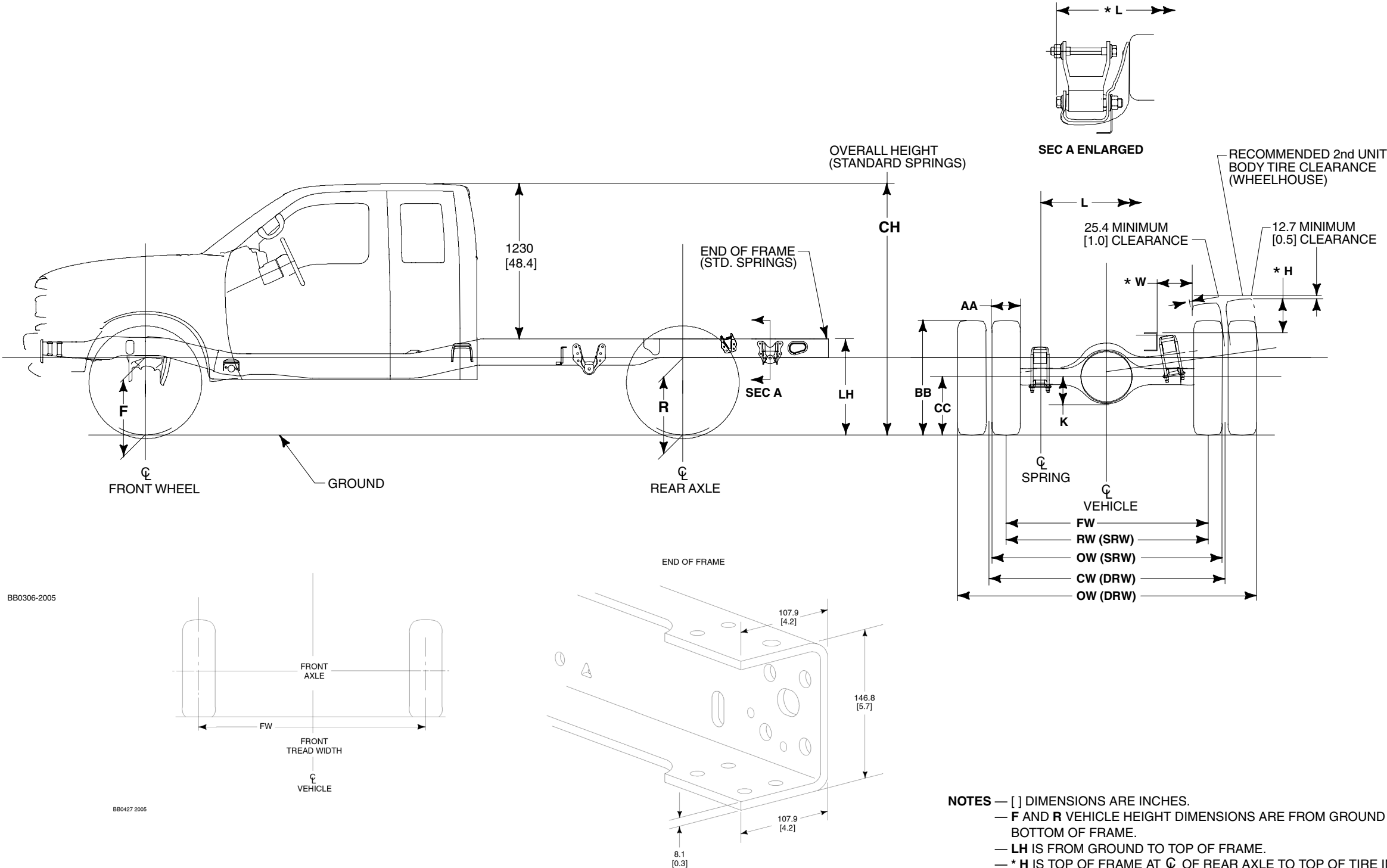
NOTES — [] DIMENSIONS ARE INCHES.
— F AND R VEHICLE HEIGHT DIMENSIONS ARE
— FROM GROUND TO BOTTOM OF FRAME.
— LH IS FROM GROUND TO TOP OF FRAME.

AXLE/TIRE/VEHICLE HEIGHT DATA

SUPER DUTY F-SERIES

CHASSIS CAB – SUPERCAB

2006
MODEL YEAR



BB0306-2005

BB0427-2005

- NOTES** — [] DIMENSIONS ARE INCHES.
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 - LH IS FROM GROUND TO TOP OF FRAME.
 - * H IS TOP OF FRAME AT ϕ OF REAR AXLE TO TOP OF TIRE IN JOUNCE
 - * L IS FROM OUTSIDE EDGE OF SHACKLE EYEBOLT
 - * W IS OUTSIDE OF FRAME TO TOP OF TIRE IN JOUNCE

AXLE/TIRE/VEHICLE HEIGHT DATA
SUPER DUTY F-SERIES
CHASSIS CAB – SUPERCAB


2006
MODEL YEAR

MODEL	WB	STANDARD GVWR	BASE TIRE	F HEIGHT AT FRONT WHEEL ⁽¹⁾		R HEIGHT AT REAR AXLE ⁽¹⁾		LH ⁽¹⁾		CH ⁽¹⁾		K	L	*L	AA	BB	CC	FW	RW	OW	CW	*H	*W
				CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED	CURB ⁽²⁾	LOADED												
F-350 SuperCab 4x2	4110 [161.8]	10,000	LT275/65R18E	538 [21.2]	511 [20.1]	640 [25.2]	538 [21.2]	820 [32.3]	699 [27.4]	1966 [77.4]	1900 [74.8]	165 [6.5]	1056 [41.55]	1184.0 [46.6]	297 [11.7]	794 [31.3]	376 [14.8]	1734 [68.3]	1729 [68.1]	2019 [79.5]	—	259 [10.2]	233 [9.2]
		13,000 DRW	LT245/75R17E	533 [21.0]	500 [19.7]	650 [25.6]	531 [20.9]	833 [32.8]	691 [27.2]	1966 [77.4]	1892 [74.5]	177 [7.0]	1056 [41.55]	1184.0 [46.6]	264 [10.4]	788 [30.8]	371 [14.6]	1751 [68.9]	—	2412 @ [92.2]	1803 @ [71.0]	271 [10.7]	157 [6.2]
F-350 SuperCab 4x4	4110 [161.8]	10,000	LT275/70R18E	678 [26.70]	645 [25.4]	711 [28.0]	607 [23.9]	869 [34.2]	747 [29.4]	2070 [81.5]	2017 [79.4]	165 [6.5]	1056 [41.55]	1184.0 [46.6]	297 [11.7]	827 [32.5]	394 [15.5]	1736 [68.3]	1729 [68.1]	2019 [79.5]	—	219 [8.6]	242 [9.5]
		13,000 DRW	LT245/75R17E	620 [24.4]	589 [23.2]	706 [27.8]	587 [23.1]	879 [34.6]	737 [29.0]	2037 [80.2]	1971 [77.6]	177 [7.0]	1056 [41.55]	1184.0 [46.6]	264 [10.4]	781 [30.8]	371 [14.6]	1753 [69.0]	—	2412 @ [92.2]	1803 @ [71.0]	215 [8.5]	164 [6.5]
F-450 SuperCab 4x2	4110 [161.8]	16,000 DRW	225/70R19.5	662 [26.0]	598 [23.5]	681 [26.8]	590 [23.2]	821 [32.3]	702 [27.6]	2045 [80.5]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.3]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 SuperCab 4x4	4110 [161.8]	16,000 DRW	225/70R19.5	662 [26.0]	598 [23.5]	681 [26.8]	590 [23.2]	821 [32.3]	702 [27.6]	2045 [80.5]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.3]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 SuperCab 4x2	4110 [161.8]	17,950 DRW	225/70R19.5	662 [26.0]	598 [23.5]	681 [26.8]	590 [23.2]	821 [32.3]	702 [27.6]	2070 [81.5]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.3]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 SuperCab 4x4	4110 [161.8]	17,950 DRW	225/70R19.5	655 [25.7]	598 [23.5]	681 [26.8]	590 [23.2]	821 [32.3]	705 [27.7]	2066 [81.3]	1977 [77.8]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.3]	378 [14.9]	1900 [74.8]		2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]

(1) — The Height Data shown represents dimensions of a base/standard vehicle with no options.
Actual height may vary due to production tolerances (completed vehicles only).

(2) — Height at base curb weight with standard spring

(3) — Loaded height at spring rating with standard spring

*H — Top of frame at  of rear axle to top of tire in jounce

*L — From outside edge of shackle eyebolt

*W — Outside of frame to top of tire in jounce

@ — with Ambulance Prep Package (Wide Track Axle).

CW = 1880 [74] and OW = 2380 [93.7] for 4x2,

CW = 1880 [74] and OW = 2405 [94.7] for 4x4

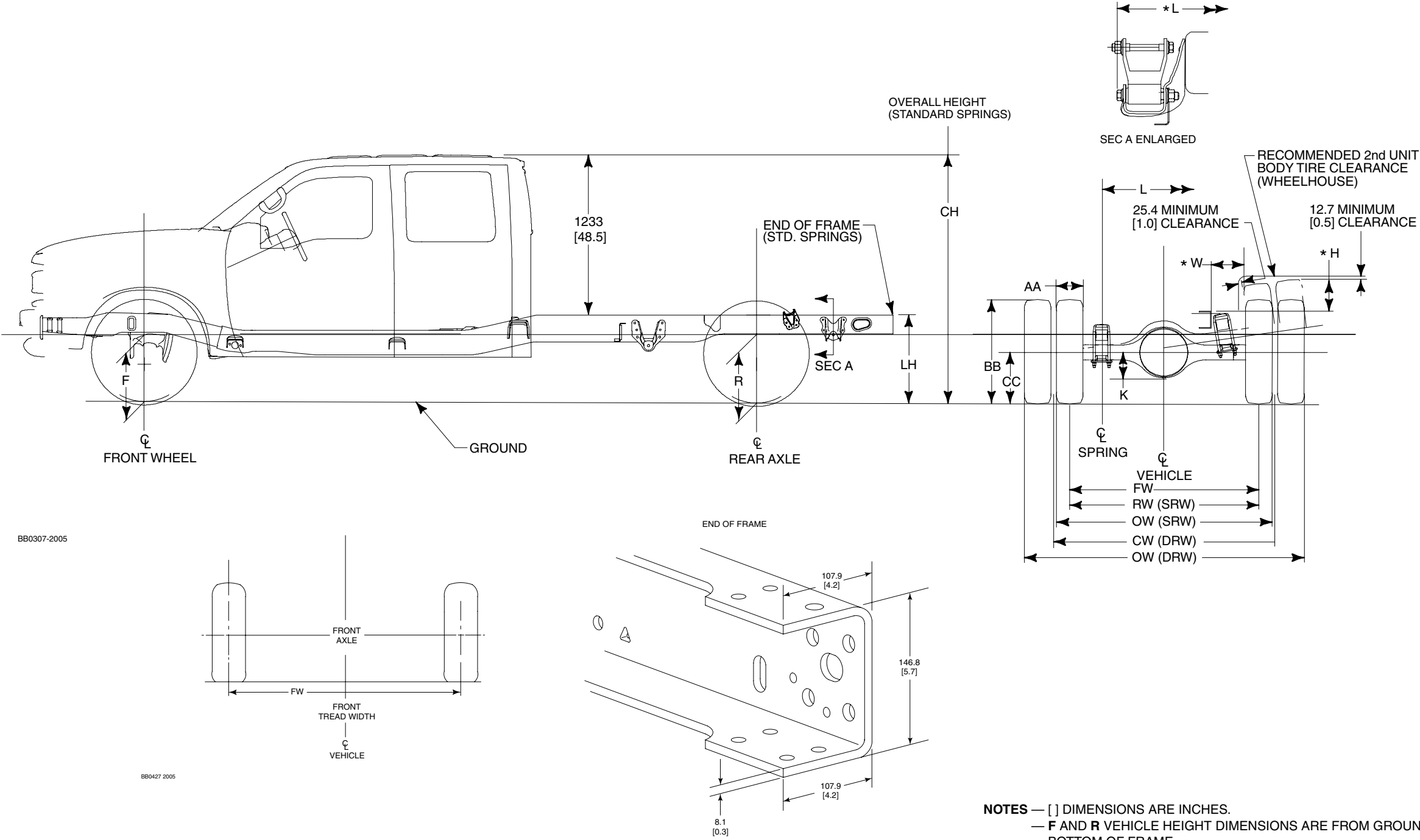
NOTES — [] DIMENSIONS ARE INCHES.
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— LH IS FROM GROUND TO TOP OF FRAME.

AXLE/TIRE/VEHICLE HEIGHT DATA

SUPER DUTY F-SERIES

CHASSIS CAB – CREW CAB

2006
MODEL YEAR



- NOTES** — [] DIMENSIONS ARE INCHES.
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 - LH IS FROM GROUND TO TOP OF FRAME.
 - *H IS TOP OF FRAME AT ϕ OF REAR AXLE TO TOP OF TIRE IN JOUNCE
 - *L IS FROM OUTSIDE EDGE OF SHACKLE EYEBOLT
 - *W IS OUTSIDE OF FRAME TO TOP OF TIRE IN JOUNCE

AXLE/TIRE/VEHICLE HEIGHT DATA
SUPER DUTY F-SERIES
CHASSIS CAB – CREW CAB


2006
MODEL YEAR

MODEL	WB	STANDARD GVWR	BASE TIRE	F HEIGHT AT FRONT WHEEL ⁽¹⁾		R HEIGHT AT REAR AXLE ⁽¹⁾		LH ⁽¹⁾		CH ⁽¹⁾		K	L	*L	AA	BB	CC	FW	RW	OW	CW	*H	*W
				CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED ⁽³⁾	CURB ⁽²⁾	LOADED	CURB ⁽²⁾	LOADED												
F-350 Crew Cab 4x2	4475 [176.2]	10,000	LT275/65R18E	541 [21.3]	508 [20.0]	640 [25.2]	538 [21.2]	815 [32.1]	693 [27.3]	1979 [77.9]	1910 [75.2]	165 [6.5]	1056 [41.55]	1184.0 [46.6]	297 [11.7]	794 [31.3]	376 [14.8]	1734 [68.3]	1729 [68.1]	2019 [79.5]	—	259 [10.2]	233 [9.2]
		13,000 DRW	LT245/75R17E	531 [20.9]	500 [19.7]	648 [25.5]	531 [20.9]	828 [32.6]	688 [27.1]	1979 [77.9]	1902 [74.9]	177 [7.0]	1056 [41.55]	1184.0 [46.6]	264 [10.4]	781 [30.8]	371 [14.6]	1751 [68.9]	—	2342 [92.2]	1803@ [71.0]	271 [10.7]	157 [6.2]
F-350 Crew Cab 4x4	4475 [176.2]	10,000	LT275/70R18E	673 [26.5]	645 [25.4]	709 [27.9]	607 [23.9]	866 [34.1]	747 [29.4]	2078 [81.8]	2017 [79.4]	165 [6.5]	1056 [41.55]	1184.0 [46.6]	297 [11.7]	827 [32.5]	394 [15.5]	1736 [68.3]	1729 [68.1]	2019 [79.5]	—	219 [8.6]	242 [9.5]
		13,000 DRW	LT245/75R17E	625 [24.6]	587 [23.1]	704 [27.7]	587 [23.1]	874 [34.4]	737 [29.0]	2052 [80.8]	1976 [77.8]	177 [7.0]	1056 [41.55]	1184.0 [46.6]	264 [10.4]	781 [30.8]	371 [14.6]	1753 [69.0]	—	2342 [92.2]	1803@ [71.0]	215 [8.5]	164 [6.5]
F-450 Crew Cab 4x2	4475 [176.2]	16,000 DRW	225/70R19.5F	653 [25.7]	597 [23.5]	677 [26.6]	590 [23.2]	817 [32.1]	706 [27.7]	2053 [80.8]	1980 [78.0]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Crew Cab 4x2	5085 [200.2]	16,000 DRW	225/70R19.5F	653 [25.7]	597 [23.5]	677 [26.6]	590 [23.2]	816 [32.1]	708 [27.8]	2053 [80.8]	1980 [78.0]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Crew Cab 4x4	4475 [176.2]	16,000 DRW	225/70R19.5F	654 [25.7]	597 [23.5]	677 [26.6]	590 [23.2]	820 [32.2]	709 [27.9]	2056 [80.9]	1980 [78.0]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Crew Cab 4x4	5085 [200.2]	16,000 DRW	225/70R19.5F	654 [25.7]	597 [23.5]	677 [26.6]	590 [23.2]	818 [32.2]	710 [27.9]	2056 [80.9]	1980 [78.0]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Crew Cab 4x2	4475 [176.2]	17,950 DRW	225/70R19.5F	651 [25.6]	597 [23.5]	678 [26.6]	590 [23.2]	818 [32.2]	707 [27.8]	2067 [81.4]	1980 [78.0]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-450 Crew Cab 4x2	5085 [200.2]	17,950 DRW	225/70R19.5F	651 [25.6]	597 [23.5]	678 [26.6]	590 [23.2]	817 [32.1]	709 [27.9]	2067 [81.4]	1980 [78.0]	177 [7.0]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Crew Cab 4x2	4475 [176.2]	17,950 DRW	225/70R19.5F	653 [25.7]	597 [23.5]	677 [26.6]	590 [23.2]	820 [32.2]	709 [27.9]	2066 [81.3]	1980 [78.0]	44 [1.7]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]
F-550 Crew Cab 4x4	5085 [200.2]	17,950 DRW	225/70R19.5F	653 [25.7]	597 [23.5]	677 [26.6]	590 [23.2]	818 [32.2]	711 [27.9]	2066 [81.3]	1980 [78.0]	44 [1.7]	1056 [41.55]	1197.6 [47.1]	236 [9.3]	794 [31.2]	378 [14.9]	1900 [74.8]	—	2377 [93.6]	1880 [74.0]	234 [9.2]	242 [9.5]

(1) — The Height Data shown represents dimensions of a base/standard vehicle with no options.
Actual height may vary due to production tolerances (completed vehicles only).

(2) — Height at base curb weight with standard spring

(3) — Loaded height at spring rating with standard spring

*H — Top of frame at  of rear axle to top of tire in jounce

*L — From outside edge of shackle eyebolt

*W — Outside of frame to top of tire in jounce

@ — with Ambulance Prep Package (Wide Track Axle).

CW = 1880 [74] and OW = 2380 [93.7] for 4x2,

CW = 1880 [74] and OW = 2405 [94.7] for 4x4

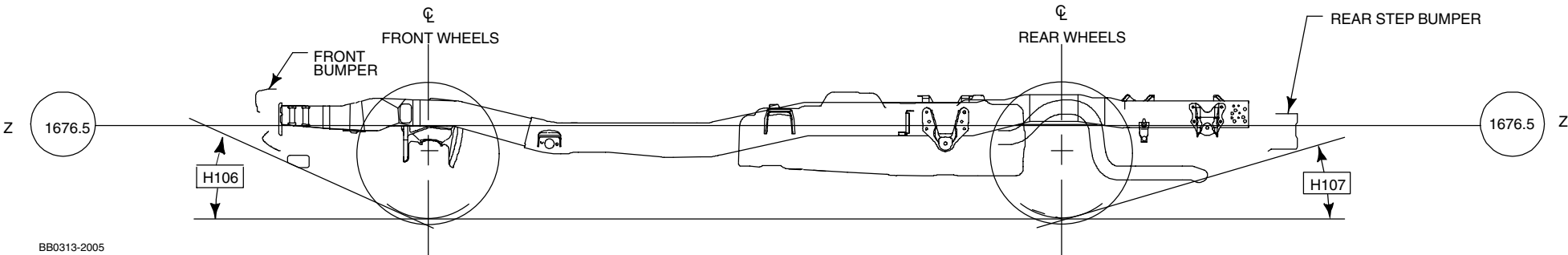
NOTES — [] DIMENSIONS ARE INCHES.
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GROUND CLEARANCE DATA

SUPER DUTY F-SERIES – CHASSIS CAB

2006
MODEL YEAR

Page 138 SUPER DUTY F-SERIES



TIRE	MODEL	WHEELBASE	GVWR [lb]	H106 APPROACH ANGLE	H107 DEPARTURE ANGLE FRAME RAIL
LT245/75R17E	SD F-350 REGULAR CAB CHASSIS CAB 4X4 DRW	3576 [140.8]	13,000	25.6°	27.5°
		4186 [164.8]	13,000	25.6°	27.6°
	SD F-350 SUPERCAB CHASSIS CAB 4X4 DRW	4110 [161.8]	13,000	25.6°	27.5°
	SD F-350 CREW CAB CHASSIS CAB 4X4 DRW	4475 [176.2]	13,000	25.6°	27.5°
LT245/75R17E	SD F-350 REGULAR CAB CHASSIS CAB 4x2 DRW	3596 [140.8]	13,000	19.2°	24.7°
		4186 [164.8]	13,000	19.2°	24.8°
	SD F-350 SUPER CAB CHASSIS CAB 4x2 DRW	4110 [161.8]	13,000	19.2°	24.8°
	SD F-350 CREW CAB CHASSIS CAB 4x2 DRW	4475 [176.2]	13,000	19.2°	24.8°
LT265/70R17E	SD F-350 REGULAR CAB CHASSIS CAB 4x2 SRW	3576 [140.8]	10,000	19.3°	24.8°
	SD F-350 REGULAR CAB CHASSIS CAB 4x4 SRW	3576 [140.8]	10,000	25.7°	27.5°
	SD F-350 SUPERCAB CHASSIS CAB 4x2 SRW	4110 [161.8]	10,000	19.3°	24.8°
	SD F-350 SUPERCAB CHASSIS CAB 4x4 SRW	4110 [161.8]	10,000	25.7°	27.6°
	SD F-350 CREW CHASSIS CAB 4x2 SRW	4475 [176.2]	10,000	19.3°	24.8°
	SD F-350 CREW CHASSIS CAB 4x4 SRW	4475 [176.2]	10,000	25.7°	27.5°

NOTE — [] DIMENSIONS ARE INCHES

GROUND CLEARANCE DATA SUPER DUTY F-SERIES – CHASSIS CAB

2006
MODEL YEAR

TIRE	MODEL	WHEELBASE	GVWR [lb]	H106 APPROACH ANGLE	H107 DEPARTURE ANGLE FRAME RAIL
225/70R19.5F	SD F-450 REGULAR CAB CHASSIS CAB 4x2 DRW	3576 [140.8]	16,000	27.2°	27.7°
		4186 [164.8]	16,000	27.2°	27.7°
		4795 [188.8]	16,000	27.2°	27.7°
		5100 [200.8]	16,000	27.2°	27.7°
		3575 [140.8]	16,000	27.2°	27.7°
	SD F-450REGULAR CAB CHASSIS CAB 4x4 DRW	4186 [164.8]	16,000	27.2°	27.7°
		4795 [188.8]	16,000	27.2°	27.7°
		5100 [200.8]	16,000	27.2°	27.7°
	SD F-450 SUPERCAB CHASSIS CAB 4x2 DRW	4110 [161.8]	16,000	27.2°	27.7°
	SD F-450 SUPERCAB CHASSIS CAB 4x4 DRW	4110 [161.8]	16,000	27.2°	27.7°
	SD F-450 CREW CAB CHASSIS CAB 4x2	4475 [176.2]	16,000	27.2°	27.7°
		5085 [200.2]	16,000	27.2°	27.7°
	SD F-450 CREW CAB CHASSIS CAB 4x4	4475 [176.2]	16,000	27.2°	27.7°
		5085 [200.2]	16,000	27.2°	27.7°
	SD F-550 REGULAR CAB CHASSIS CAB 4x2 DRW	3576 [140.8]	17,950	27.2°	27.8°
		4186 [164.8]	17,950	27.2°	27.8°
		4795 [188.8]	17,950	27.2°	27.8°
		5100 [200.8]	17,950	27.2°	27.8°
		5100 [200.8]	17,950	27.2°	27.8°
	SD F-550 REGULAR CAB CHASSIS CAB 4x4 DRW	3576 [140.8]	17,950	27.2°	27.8°
		4186 [164.8]	17,950	27.2°	27.8°
		4795 [188.8]	17,950	27.2°	27.8°
		5100 [200.8]	17,950	27.2°	27.8°
	SD F-550 SUPERCAB CHASSIS CAB 4x2 DRW	4110 [161.8]	17,950	27.2°	27.8°
	SD F-550 SUPERCAB CHASSIS CAB 4x4 DRW	4110 [161.8]	17,950	27.2°	27.8°
	SD F-550 CREW CAB CHASSIS CAB 4x2	4475 [176.2]	17,950	27.2°	27.8°
		5085 [200.2]	17,950	27.2°	27.7°
	SD F-550 CREW CAB CHASSIS CAB 4x4	4475 [176.2]	17,950	27.2°	27.8°
		5085 [200.2]	17,950	27.2°	27.7°

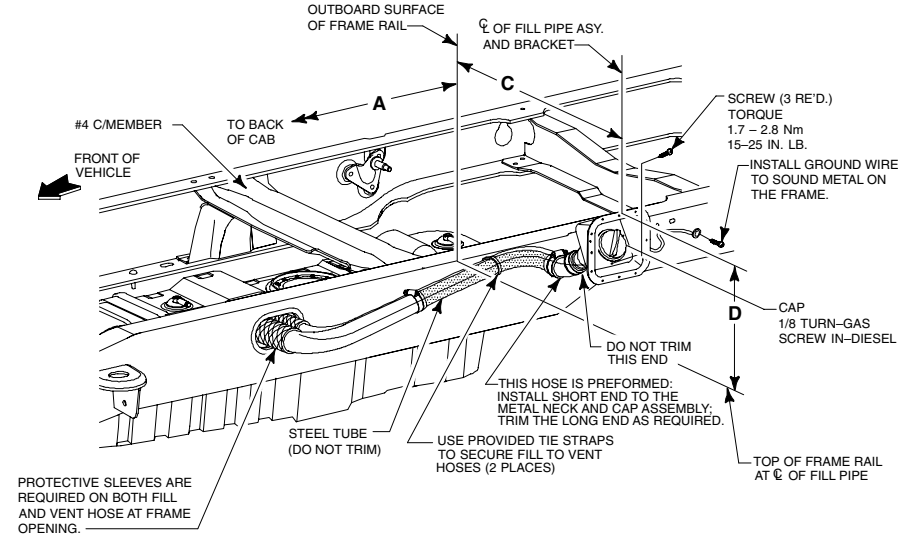
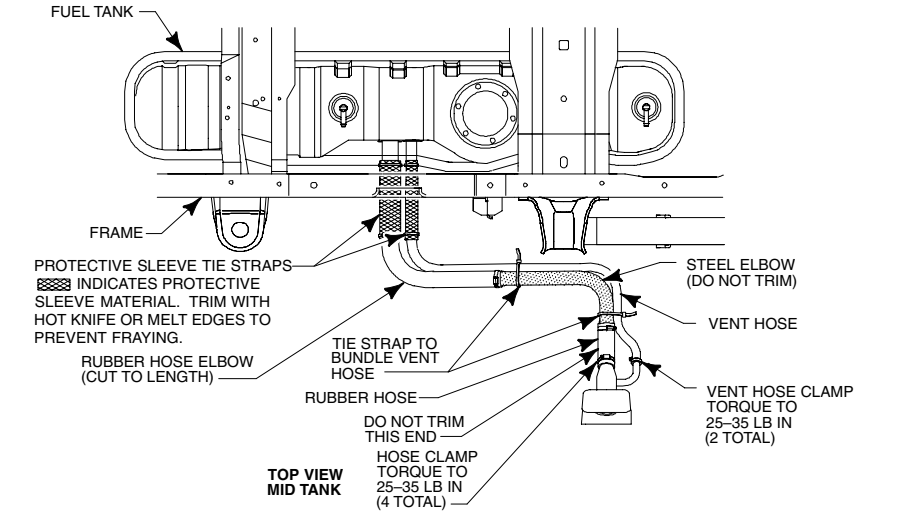
NOTE — [] DIMENSIONS ARE INCHES

FUEL FILLER PIPE LOCATION AND DIMENSIONS

SUPER DUTY F-SERIES CHASSIS CAB

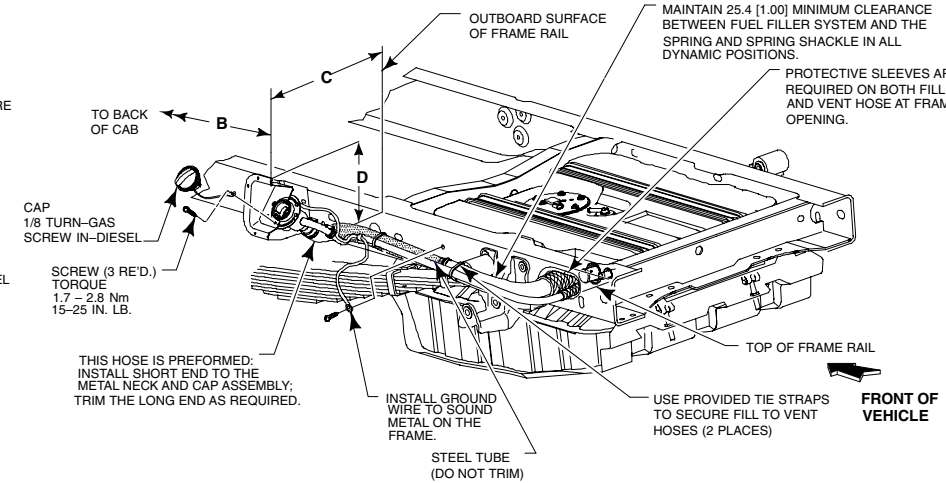
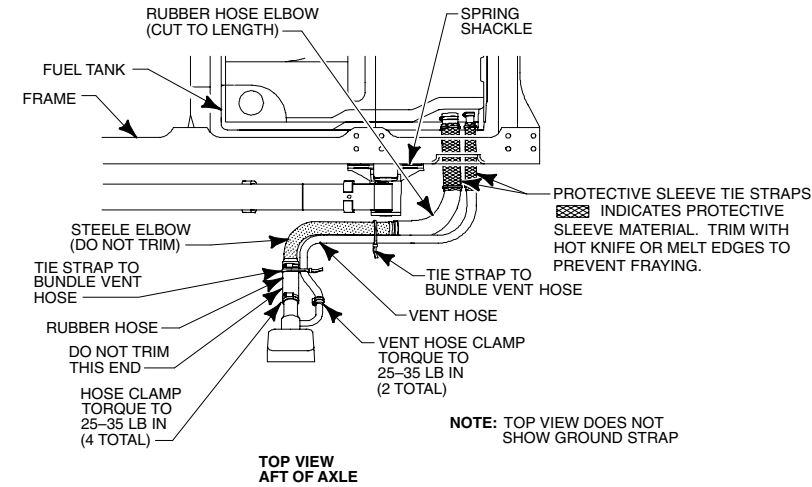
2006
MODEL YEAR

Page 140 SUPER DUTY F-SERIES



MIDSHIP FUEL FILL SYSTEM
(OPTIONAL ON CHASSIS CAB)

BB0468



AFT OF AXLE FUEL FILL SYSTEM
(STANDARD ON CHASSIS CAB)

(CA) BACK OF CAB TO CENTERLINE OF REAR AXLE		60 IN. CA	84 IN. CA	108 IN. CA	120 IN. CA
	Regular Cab	WHEELBASE			
	SuperCab	3576mm [140.8]	4186mm [164.8]		5100mm [200.8]
	Crew Cab	4110mm [161.8]	5085mm [200.2]	4795mm [188.8]	
A	MIN.	864mm [34.0]	1473mm [58.0]	2083mm [82.0]	2388mm [94.0]
	MAX.	1029mm [40.5]	1638mm [64.5]	2248mm [88.5]	2553mm [100.5]
B	MIN.	1981mm [78.0]	2591mm [102.0]	3200mm [126.0]	3505mm [138.0]
	MAX.	2159mm [85.0]	2769mm [109.0]	3378mm [133.0]	3683mm [145.0]
C	MIN.	584mm [23.0]	584mm [23.0]	584mm [23.0]	584mm [23.0]
	MAX.	787mm [31.0]	787mm [31.0]	787mm [31.0]	787mm [31.0]
D	MIN.	267mm [10.5]	267mm [10.5]	267mm [10.5]	267mm [10.5]
	MAX.	343mm [13.5]	343mm [13.5]	343mm [13.5]	343mm [13.5]

NOTES — [] DIMENSIONS ARE INCHES.
TORQUE ALL WORM GEAR DRIVEN HOSE CLAMPS TO 2.8 - 3.9 Nm IN LB
* NOT SUPPLIED BY FORD MOTOR COMPANY
▽ CRITICAL CONTROL ITEM
REMOVE AND DISCARD THE FORD INSTALLED FUEL FILL SYSTEM COMPONENTS (PROVIDED FOR SHIPPING PURPOSES ONLY) EXCEPT SAVE AND REUSE THE METAL NECK AND CAP ASSEMBLY.

USE THE NEW HOSES, PIPES, SCUFF GUARDS, TIE WRAPS AND CLAMPS PROVIDED IN THE DUNNAGE KIT.

THE COMPLETED FUEL FILL SYSTEM MUST PROVIDE A 4 DEGREE MINIMUM, CONTINUOUS, DOWNWARD SLOPE TO THE FUEL TANK. ADDITIONAL SUPPORT MAY BE REQUIRED TO PREVENT HOSE SAGGING WHICH COULD CAUSE SPRAY OR SPITBACK DURING NORMAL FUELING OPERATIIONS.

DO NOT EXTEND THE FUEL FILL SYSTEM OUTBOARD OF THE SECOND UNIT BODY.

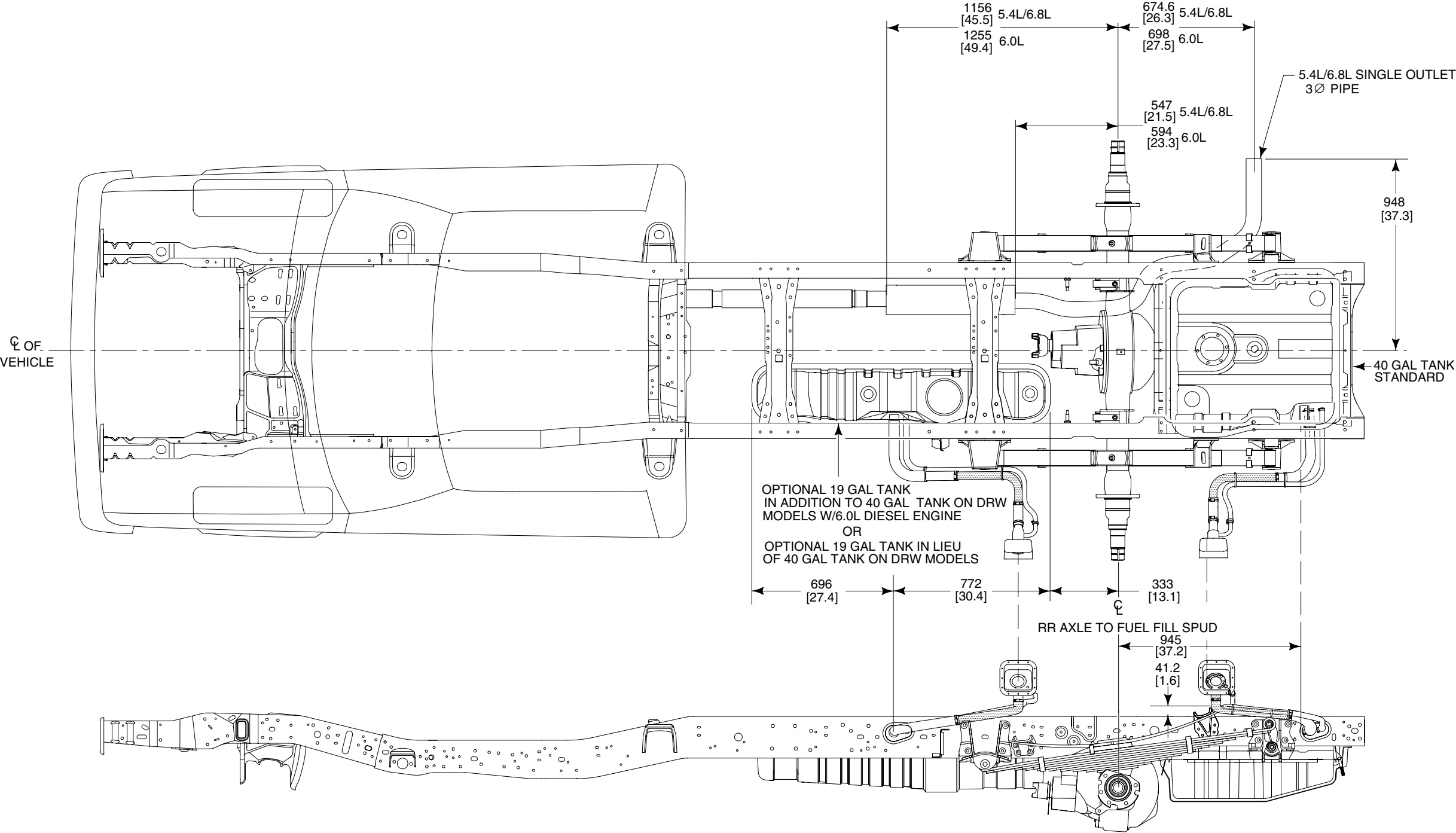
THE INSTALLATION OF TUBE EXTENSION 9B149 WILL PERMIT THE LOCATION AFT-OF-AXLE FUEL FILL HOUSING TO BE NO FURTHER REARWARD THAN THE CL OF THE FILL HOSE AS IT PASSES THROUGH THE FRAME
TRIM BOTH ENDS AS DIRECTED.

EXHAUST/FUEL SYSTEMS

CHASSIS CAB — NARROW FRAME

2006
MODEL YEAR

Page 141 SUPER DUTY F-SERIES



BB0426

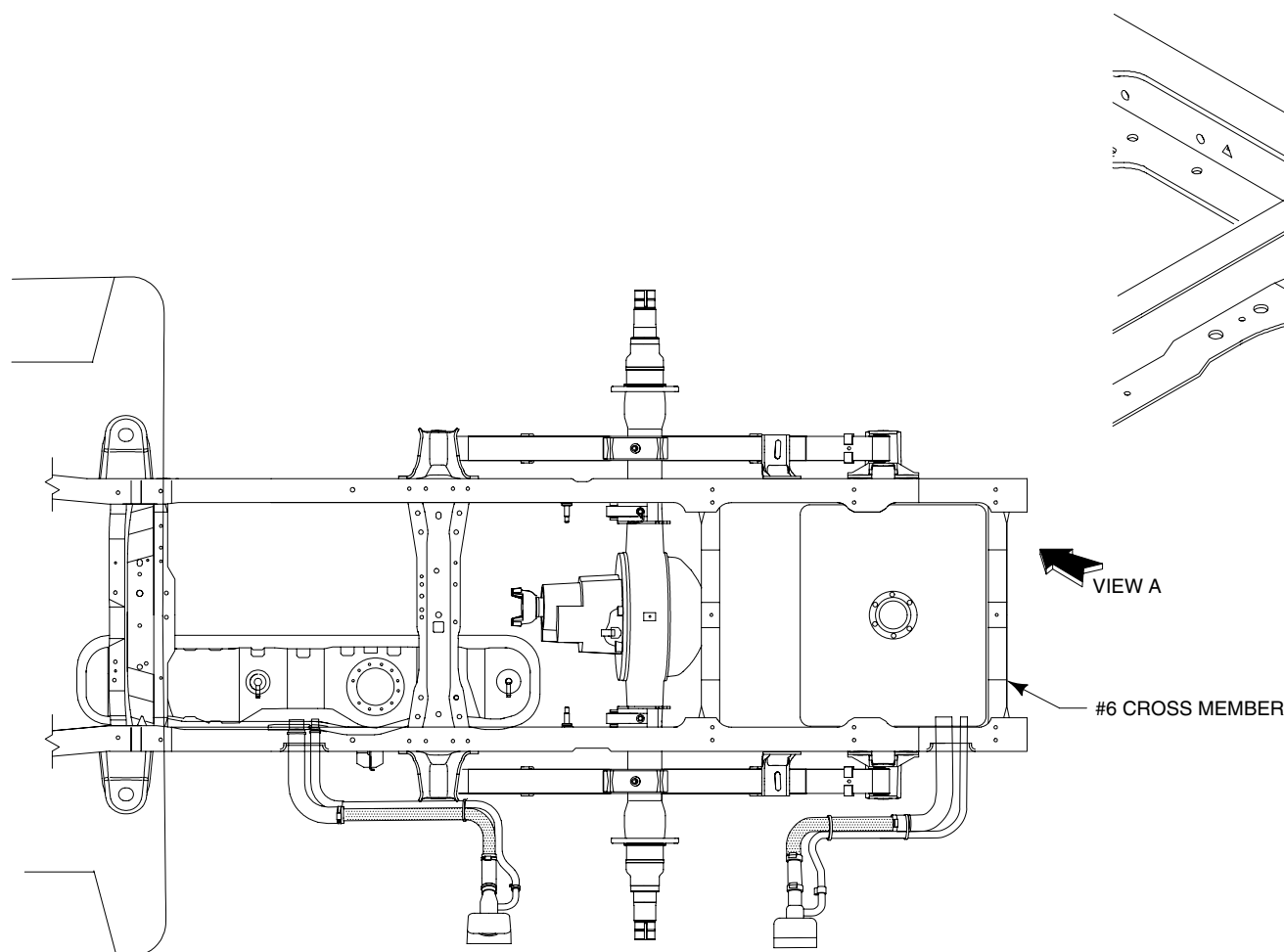
NOTE — [] DIMENSIONS ARE INCHES.

FRAME DATA — CHASSIS CAB — NARROW FRAME

SUPER DUTY F-350/450/550 — ALL WHEELBASE

Page 142 SUPER DUTY F-SERIES

2006
MODEL YEAR

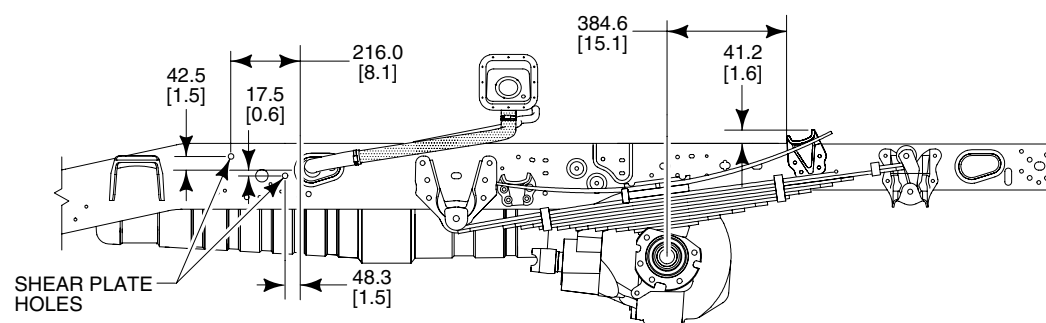


122.5
[4.82]

VIEW A

VIEW A

#6 CROSS MEMBER



BB0437

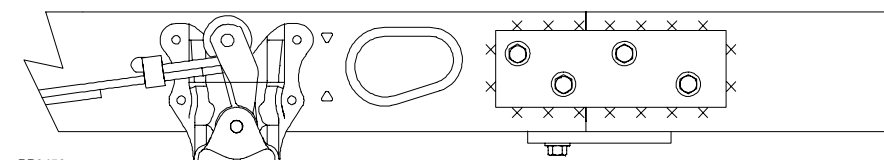
FRAME EXTENSION RECOMMENDATIONS

(applicable to all WB models)

When it is necessary to add a frame extension to the Super Duty F-Series Chassis Cab, follow these suggestions:

- Clean the back portion of the frame of wax using steam, high pressure water or solvent.
- Protect the fuel system from weld sparks and splatter, being particularly careful with the rubber fuel fill hoses.
- Select a suitable mild steel channel (not iron) with a section modulus the same as the frame to be extended.
- Chamfer both the back of the frame and the end of the extensions to be welded. Remove the 2 rearmost lower rivets attaching the rear crossmember to the frame. Weld an overlay plate on to the lower flange of the frame extension that extends approximately 2 1/2" under the frame end.
- Transfer the rivet hole locations to the lower flange overlay plate and drill through the plate.
- Disconnect the battery(ies), the ABS Module, and then the Powertrain Control Module (PCM). Connect the welding ground cable to the frame at the back of the vehicle.
- Clamp the extension into place and weld all around the top and sides, but not the lower flange, following normal weld practices.
- Grind the outer side of the vertical frame web down smooth, clamp on a re-enforcement section of mild steel approximately 4" x 12" x 1/4" and skip weld to the frame and extension. Do not weld at the corners of the re-enforcement to minimize stress concentrations. Note that this re-enforcement may be combined with a rear shear plate and/or underrun bumper if desired, in which case it would be an "ELL" shape to pick up the added attachment points.
- Bolt through the lower overlay plate and frame section using 5/8" grade 5 flange head, bolts and nuts (1).
- Drill through the frame and re-enforcement and bolt using four 1/2" grade 5 flange head bolts & nuts (1).
- Coat the frame extension with a suitable protective paint. Reconnect the PCM Module, ABS Module and battery(ies).

(1) If flange head fasteners are not available, regular hex heads may be substituted with one flat washer under the head of the nut and bolt.



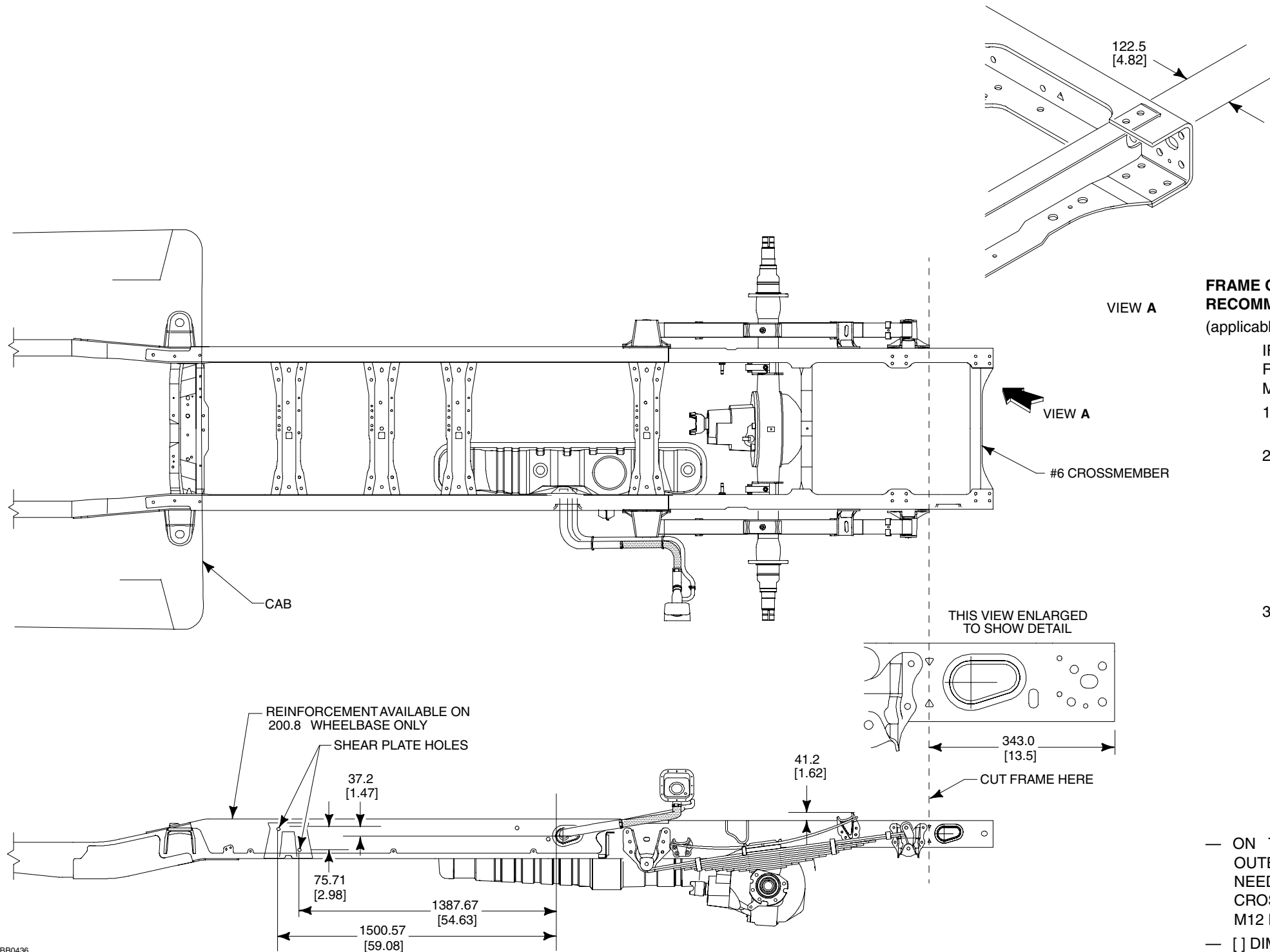
BB0456

NOTE — [] DIMENSIONS ARE INCHES.

FRAME DATA – CHASSIS CAB – NARROW FRAME SUPER DUTY F-450/550 – ALL WHEELBASES

Page 143 SUPER DUTY F-SERIES

2006
MODEL YEAR



FRAME OVERHANG SHORTENING RECOMMENDATIONS

(applicable to all WB models)

IF A SHORTER REAR FRAME OVERHANG IS REQUIRED FOR THE VOCATIONAL BODY MOUNTING, THE BODY BUILDER MUST:

1. ORDER THE CHASSIS WITH THE OPTIONAL MID-SHIP FUEL TANK.
2. DRILL OUT ATTACHING RIVETS AND REMOVE THE REAR CROSSMEMBER. REINSTALL IN THE NEXT FORWARD CROSSMEMBER MOUNTING LOCATION PROVIDED USING GRADE 8 BOLTS, AS DESCRIBED IN THE RIVET REPLACEMENT PROCEDURE IN THE FORD SERVICE MANUAL.
3. CUT THE FRAME ALONG THE LINE THROUGH THE TWO TRIANGLE-SHAPED HOLES DEPICTED BELOW, USING A CUTOFF WHEEL OR SAW. A TORCH IS NOT RECOMMENDED. IF A TORCH IS USED WITHIN 4 INCHES OF THE REAR SUSPENSION MOUNTING ATTACHMENTS, THESE ATTACHMENTS MUST BE EITHER RETORQUED (WHERE BOLTS ARE USED) OR HAVE THE RIVETS REMOVED AND REPLACED WITH GRADE 8 BOLTS PER THE PROCEDURE NOTED ABOVE.

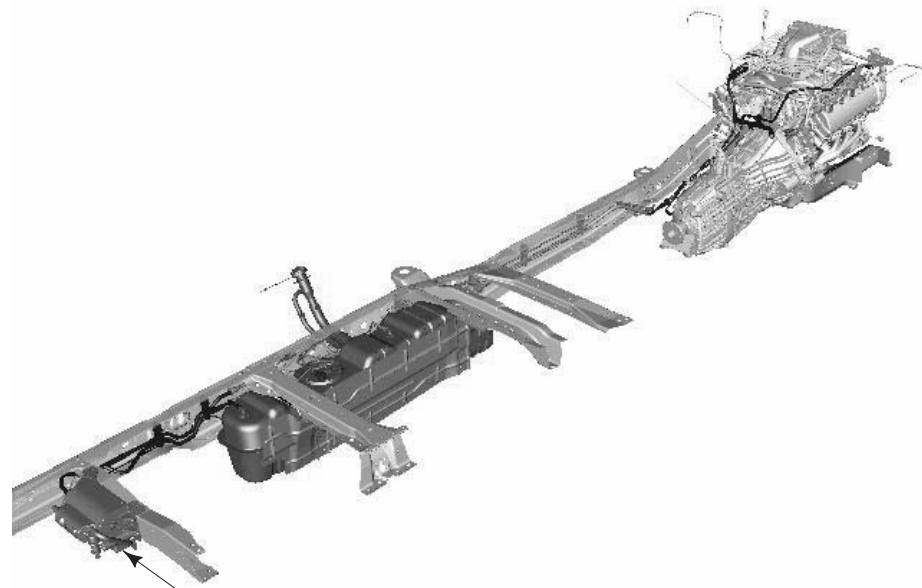
— ON THE F-450/550 CHASSES, THE FORWARD OUTBOARD REAR SUSPENSION BRACKET BOLT NEEDS TO BE SHARED WITH THE REAR CROSSMEMBER. RETORQUE WITH NEW GRADE 8 M12 BOLT AND NUT.

— [] DIMENSIONS ARE INCHES.

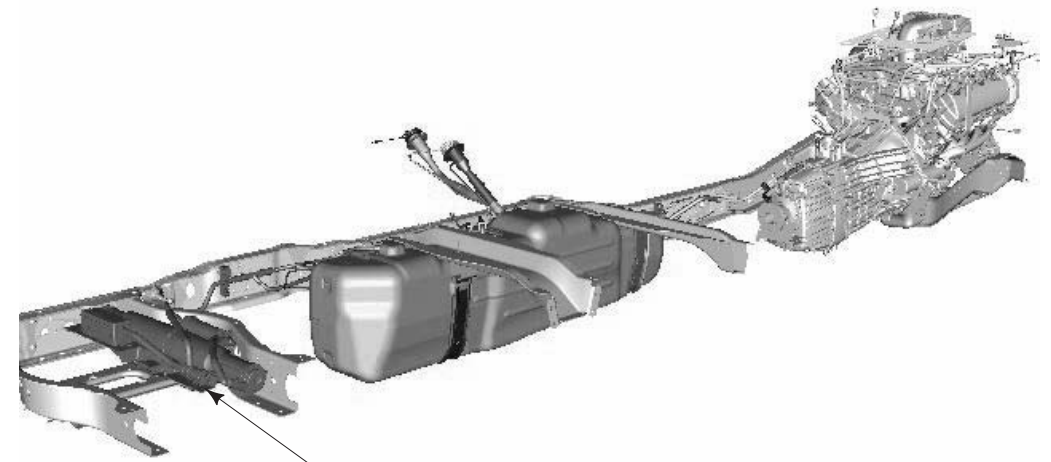
SUPER DUTY F-SERIES FUEL SYSTEM EVAPORATIVE EMISSIONS GASOLINE ONLY

2006
MODEL YEAR

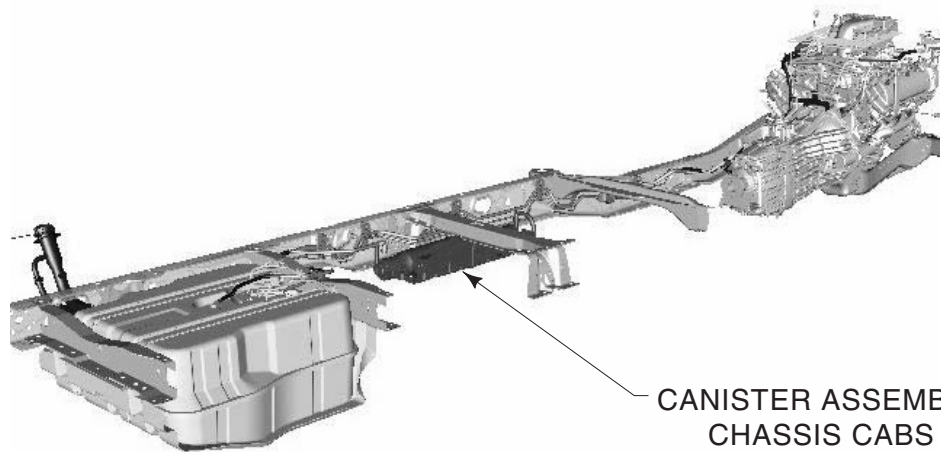
Page 144 SUPER DUTY F-SERIES



CANISTER ASSEMBLY
CHASSIS CABS



CANISTER ASSEMBLY
PICKUPS

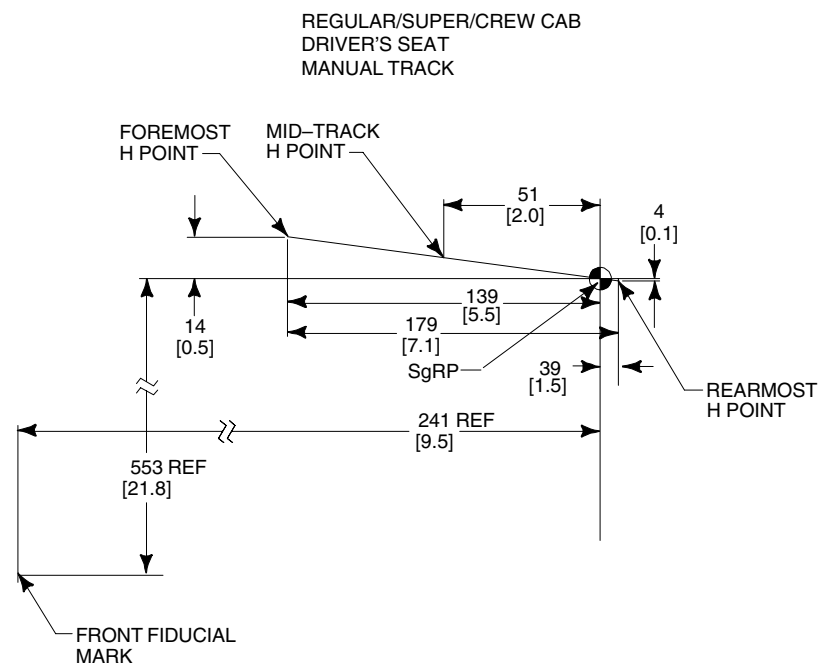


CANISTER ASSEMBLY
CHASSIS CABS

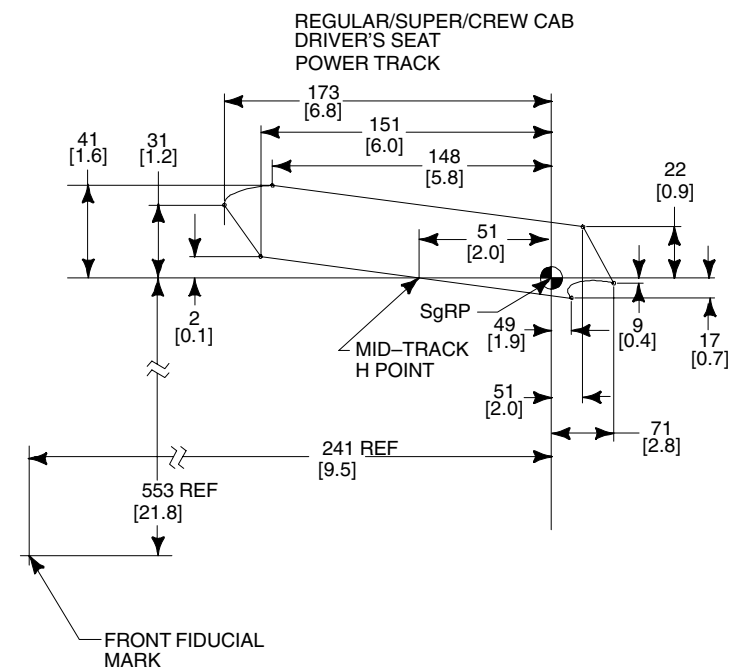
SEAT TRACK TRAVEL / H-POINT LOCATION SUPER DUTY F-SERIES

2006
MODEL YEAR

Page145 SUPER DUTY F-SERIES



BB0298-2005



NOTES — [] DIMENSIONS ARE INCHES.
THIS INFORMATION IS PROVIDED TO ASSIST IN THE
INSTALLATION OF SEATS OTHER THAN FORD
INSTALLED SEATS AND TO HELP PRESERVE THE
INTENDED PERFORMANCE OF THE SAFETY AND
ERGONOMIC FEATURES OF THE **2006** SUPER DUTY
F-SERIES OVER 8500 LB.

F-150 4X4 SNOWPLOW INSTALLATION

2006

MODEL YEAR

Page 146

SNOWPLOW

Minimum Required Equipment

- Regular Cab 4x4 144.5" WB, 8.0' pickup box, or SuperCab 4x4 163.0" WB, 8.0' pickup box.
- Snowplow Prep Package (Option Code 63A), includes:
 - FGAWR upgrade to 4300 lbs. (4300 lb. spring rating)
- Heavy Duty Payload Package (Option Code 627), includes:
 - 8200 lb. GVWR
 - 4050 lb. FGAWR (4050 lb. spring rating)
 - 4800 lb. RGAWR (4900 lb. spring rating)
 - Rear axle: capacity upgrade to 5300 lb. and 10.25" dia. ring gear, 4.10 ratio, limited-slip not included but available.
 - Frame upgrade (0.150" rail thickness)
 - 17" x 7.5" J 7-lug steel wheels
 - LT245/70R X 17D BSW all-season tires (5)
 - Super Engine Cooling
 - Auxiliary transmission oil cooler, oil-to-water, increased to 9-channel / 18-plate
 - Battery upgrade to 72 amp-hr. / 650 CCA
- 5.4L 3-valve V8 engine, 4R75E automatic transmission
- Fuel tank, 35.7 gallon (135L) capacity

Warranty

The Ford New Vehicle Limited Warranty applies to vehicles with snowplows installed in accordance with these guidelines. Consult your Ford dealer or the *Owner Guide* for any further questions.

Completed Vehicle Weight

Recommended weight limits:

- Regular Cab 695 lbs. (645 lbs. removable plow assembly + 50 lbs. permanently attached hardware)
- SuperCab 535 lbs. (485 lbs. removable plow assembly + 50 lbs. permanently attached hardware)

These snowplow weight limits are based upon a vehicle built with maximum buildable Ford option content, driver plus one front seat passenger, 150 lbs. each, 800 lbs. of ballast weight rearward of the rear axle, and additional assumptions for commercially available snowplow assembly weights and mounting location

The vehicle must not be operated when over-loaded. A vehicle is over-loaded when the weight of the completed vehicle with aftermarket equipment installed, plus driver, passengers, and cargo, exceeds either the FGAWR, RGAWR, or GVWR established by Ford Motor Company and displayed on the Safety Compliance Certification Label

The addition of ballast weight placed rearward of the rear axle may be required to prevent exceeding FGAWR, and provide good vehicle braking and handling. The ballast should be attached securely to the vehicle with consideration for the normal driving dynamics of snowplowing, and occupant safety in accidents.

For Ford completed vehicles of 10,000 GVWR or less, the weight of permanently attached aftermarket equipment must not exceed the Total Accessory Reserve Capacity (T.A.R.C.) displayed on the Safety Compliance Certification Label to maintain the compliance representation that came with the Ford-built vehicle. Exceeding T.A.R.C. will require recertification. This applies only to the permanently attached equipment, such as the snowplow frame mounting hardware, and not to the removable portion of the snowplow blade assembly.

Front End Wheel Alignment and Headlight Aim

Front end wheel alignment (toe) and headlight aim may require readjustment after installation of snowplow equipment. Failure to reset front wheel alignment may cause premature uneven tire wear. If required, reset to chassis manufacturer's specifications found in the *Ford Shop Manual*.

Electrical Connections

Installation of any inductive load devices such as electric motors, or electric clutches for clutch pumps, must not be connected to Ford vehicle wiring or fuse panels. Power for such devices should be taken directly from the battery or starter motor relay power terminal. Control of these devices should be achieved via relays. No direct current path should exist between Ford vehicle wiring and the installed load that is not filtered by the battery. These recommendations are intended to eliminate or minimize any induced reverse voltage into the Ford circuitry.

SUPER DUTY F-250/350/450/550

SNOWPLOW INSTALLATION MINIMUM

REQUIRED AND RECOMMENDED EQUIPMENT

2006
MODEL YEAR

The Super Duty F-Series vehicles tabled below are available for snowplow usage.

Minimum Required Equipment

- Snowplow Package includes:
 - Front spring/GAWR upgrade (refer to the Weight Ratings charts for specific spring/GAWR selection for each model)
 - Unique fan clutch with higher disengagement speed (6.0L V-8 Diesel)
 - 140 amp., 2100 watt alternator (6.0L V-8 Diesel)
- Plow and attaching hardware weight limits as tabled below.

Recommended Equipment (not required)

- All-terrain tires and roof clearance lights (optional with SRW pickup models)

Standard Equipment

- Front and rear stabilizer bar (rear standard on Chassis Cab and DRW pickup models)
- Roof clearance lights (standard on Chassis Cab and DRW pickup models).
- Steering damper
- Engine oil cooler, auxiliary automatic transmission oil cooler and maximum capacity engine coolant radiator are standard
- All available axle ratios are acceptable
- Available with manual and automatic transmission. When snowplowing, operate automatic transmission with gearshift lever in normal D (Overdrive) position and Tow/Haul OFF.

Completed Vehicle Weight

Snowplow weights (maximum recommended): Refer to the tables below.

The vehicle must not be operated when over-loaded. A vehicle is over-loaded when the weight of the completed vehicle with aftermarket equipment installed, plus driver, passengers, and cargo, exceeds either the FGAWR, RGAWR, or GVWR displayed on the Safety Compliance Certification Label.

The addition of ballast weight placed rearward of the rear axle may be required to prevent exceeding the FGAWR, and provide good vehicle braking and handling. The ballast should be attached securely to the vehicle with consideration for the normal driving dynamics of snowplowing, and occupant safety in accidents.

For Ford completed vehicles of 10,000 lb. GVWR or less, the weight of permanently attached aftermarket equipment must not exceed the Total Accessory Reserve Capacity (TARC) displayed on the Safety Compliance Certification Label to maintain the compliance representation that came with the Ford built vehicle. Exceeding TARC may require re-certification. This applies only to the permanently attached equipment, such as the snowplow frame mounting hardware, and not to the removable portion of the snowplow blade assembly.

Front End Wheel Alignment and Headlight Aim

Front end wheel alignment (toe) and headlight aim may require readjustment after installation of snowplow equipment. Failure to reset front wheel alignment may cause premature uneven tire wear. If required, reset to chassis manufacturer's specifications found in the *Ford Shop Manual*.

Electrical Connections

Installation of any inductive load devices, such as electric motors or electric clutches for clutch pumps, must not be connected to Ford vehicle wiring or fuse panels. Power for such devices should be taken directly from the battery or starter motor relay power terminal. Control of these devices should be achieved via relays. No direct current path should exist between Ford vehicle wiring and the installed load that is not filtered by the battery. These recommendations are intended to eliminate or minimize any induced reverse voltage into the Ford circuitry.

Warranty

The Ford New Vehicle Limited Warranty applies to vehicles with snowplows installed in accordance with these guidelines. Consult your Ford dealer or the *Owner's Guide* for any further questions.

BlockerBeam

A metal crossmember is included below the front bumper on 2005 Super Duty F250/350/450/550 vehicles called a "BlockerBeam".

Warning: Removing the BlockerBeam without installing snowplow attachment hardware may effect air bag deployment in a crash. Do not operate the truck unless either the BlockerBeam or snowplow attachment hardware is installed on the vehicle.


Pickup ⁽¹⁾ Driver and One Passenger			Models			
			F250 ⁽²⁾	F350 ⁽²⁾ 17" SRW	F350 ⁽²⁾ 18" SRW	F350 ⁽²⁾ DRW
Regular Cab	137.0"	5.4L V8	125/1100	125/900	125/900	100/750
		6.8L V10	100/750	100/750	100/750	125/900
		6.0L V8 Diesel	125/900	125/900	125/900	125/900
Super Cab	141.8"	5.4L V8	100/750	100/750	100/750	
		6.8L V10	100/750	100/750	100/750	
		6.0L V8 Diesel	125/900	125/900	125/900	
	158.0"	5.4L V8	125/900	125/900	125/900	125/900
		6.8L V10	125/900	125/900	125/900	125/900
		6.0L V8 Diesel	100/750	100/750	100/750	100/750
Crew Cab	156.2"	5.4L V8	125/1100	125/900	125/900	125/900
		6.8L V10	125/1100	125/900	100/750	100/750
		6.0L V8 Diesel	125/1100	100/750	100/750	100/750
	172.4"	5.4L V8	125/900	125/900	125/900	125/900
		6.8L V10	100/750	100/750	100/750	100/750
		6.0L V8 Diesel	100/750	100/750	100/750	100/750

(1) = Includes Pickups ordered with Pickup Box Delete option.

(2) = 100 / 750 = Maximum 100 lb. of permanently-attached hardware / Maximum 750 lb. of removable plow blade and hardware. The plow and hardware weight limits shown are based upon a vehicle with maximum buildable Ford option content and 150 lb. for the driver and one front seat passenger.

(3) = Snowplow Prep Package, Option Code 86M, available for both 4x2 and 4x4 modles.

Chassis Cab Driver and One Passenger			Models				
			F350 ⁽²⁾ 0-10,000 lb GVWR SRW	F350 ⁽²⁾ Over 10,000 lb GVWR SRW	F350 ⁽²⁾ DRW	F450 ⁽²⁾ (3)	F550 ⁽²⁾ (3)
Regular Cab	140.8" WB 60" CA	5.4L V8	125/900	125/900	125/1100		
		6.8L V10	125/900	125/900	125/1100	125/1100	125/1100
		6.0L V8 Diesel	125/900	125/1100	125/1100	125/1100	125/1100
	164.8" WB 84" CA	5.4L V8			125/1100		
		6.8L V10			125/1100	125/1100	125/1100
		6.0L V8 Diesel			125/1100	125/1100	125/1100
	188.8" WB 108" CA	6.8L V10				125/1100	125/1100
		6.0L V8 Diesel				125/1100	125/1100
	200.8" WB 120" CA	6.8L V10				125/1100	125/1100
		6.0L V8 Diesel				125/1100	125/1100
Super Cab	161.8" WB 60" CA	5.4L V8	125/900	125/1100	125/1100		
		6.8L V10	125/900	125/1100	125/1100	125/1100	125/1100
		6.0L V8 Diesel	100/750	125/900	100/900	125/1100	125/1100
Crew Cab	176.2" WB 60" CA	5.4L V8	125/1100	125/1100	100/1100		
		6.8L V10	125/900	125/1100	100/1100	125/1100	125/1100
		6.0L V8 Diesel	100/680	100/750	100/900	125/1100	125/1100
	200.2" WB 84" CA	6.8L V10				125/1100	125/1100
		6.0L V8 Diesel				125/1100	125/1100

 Model Not Available

POWER TAKE-OFF (PTO) APPLICATIONS

2006
MODEL YEAR

Page 148

SEIC / PTO

OVERVIEW

- **SEIC strategy**
 - Provides elevated engine speed to drive auxiliary commercial equipment such as hydraulic pumps, generators, air compressors; or maintain vehicle battery charge under extreme electrical demands.
 - Standard in all PCM's for Super Duty F-Series light truck, and E-Series, over-8500 lb. GVWR, all powertrains.
 - Replaces the Auxiliary Powertrain Control Module (APCM) used with 2004 model year and prior diesel engines.
- **Blunt-cut wires to access SEIC, and customer access for VSO, CTO, PARK, PARK-NEUTRAL signals**
 - F-Series: Located in the cabin, tagged and bundled above the parking brake assembly. Pass-thru wires are in the same bundle.
 - E-Series: In the engine compartment, tagged and bundled with the large harness running below the windshield/cowl. Remove some of the plastic harness tape where the harness exits its plastic support gutter above the engine air induction tube to reveal the blunt-cut wires.
 - The final stage manufacturer or up-fitter is required to supply the customer interface or controller.
 - Further detailed in the "Circuit Descriptions" section.
- **Blunt-cut wires to access the four optional up-fitter switches**
 - Available as an option on Super Duty F-Series only, Option Code 66S.
 - May be used as a PTO activation switch.
 - Located in the cabin, above the parking brake pedal assembly. Remove the PDJB for easy access.
 - Further detailed in the "Circuit Descriptions" section.
- **Transmission PTO gear and port**
 - Available for Super Duty F-Series only.
 - Standard with M6OD 6-speed manual transmission.
 - Available for TorqShift 5-speed automatic transmission by ordering "Transmission Power Take Off Provision", Option Code 62R.

VOCABULARY / DEFINITIONS

PTO Applications: Includes all forms of mechanical power, using the vehicle powertrain as the source, including transmission side-mounted PTO, split-shaft PTO, crankshaft PTO, and FEAD-mounted clutch-pumps, air compressors, and generators.

SEIC: Stationary Elevated Idle Control (PCM Strategy). Blunt-cut wires provided for customer access.

PCM: Powertrain Control Module

FEAD: Front End Accessory Drive (belt and pulley drive system)

Clutch-Pump: A type of PTO that is driven by the vehicle engine crankshaft through the FEAD pulley system.

VSO: Vehicle Speed Out. Blunt-cut wire provided for access (see "Circuit Descriptions"). 8000 pulses per mile, 2.2 Hz per mile-per-hour.

TPO: Throttle Position Out. Customer access not available.

ECT: Engine Coolant Temperature

CTO: Clean Tach Out. An engine speed signal. Blunt-cut wire provided for access (see "Circuit Descriptions").

VPWR: Battery voltage signal only, not intended to carry high current load.

BCPIL / BCPSW: Battery Charge Protection – Illumination (Lamp) / Switch

Intermittent Duty Usage: Ten (10) minutes or less of continuous operation.

Continuous Duty Usage: Greater than 10 minutes or less of continuous operation.

Change-of-State: Part of the Gas engine SEIC strategy only. If any condition is met that disables SEIC, the operator is required to turn off the PTO switch and back on again before SEIC will allow elevated idle to return.

TRO_PN, TRO_P: Transmission Range Output, indicating either combination PARK or NEUTRAL, or PARK-ONLY

GENERAL RECOMMENDATIONS AND WARNINGS

Vehicle used as a stationary power source

Ford trucks are designed principally to provide vehicle motivation and short-term auxiliary power needs. Power activation of hydraulic or mechanically driven devices such as wrecker lift, snowplow blade lift and movement, power tailgate lift, or dump body lift, are a few examples. The variety of factors such as air circulation available, temperature environment, vehicle maintenance level, and other existing conditions, combined with the range of auxiliary horsepower and torque demands that may be placed upon a vehicle in power take-off usage, make it difficult to assess the ultimate performance of a vehicle subjected to extended duration usage as an auxiliary power source. The guidelines in this book are intended to assist the PTO equipment installer with avoiding inadvertent vehicle performance and safety concerns. These guidelines should not be considered all inclusive, and it is the responsibility of the PTO equipment installer to choose and install a PTO system that the vehicle operators will be able to use in a safe manner, and with the necessary precautions to ensure safe operation and customer satisfaction. Additional transmission fluid may be required with the addition of the transmission-mounted PTO.

1. The final stage manufacturer is responsible for alerting the user to proper maintenance. PTO usage may require using the Ford "severe-duty" vehicle maintenance schedules, including transmission fluid changes. May require even more frequent schedule if PTO is in "continuous duty".
2. Route PTO hydraulic lines and hoses away from the vehicle exhaust system.
3. Diesel engines are recommended over gas engines for stationary PTO operation of extended duration.

4. Do not block air flow circulation to the engine coolant radiator, engine, and transmission oil cooler.
5. The following are some maximum temperatures monitored by the PCM. The aftermarket PTO system designer or installer should consider adding a sensor to monitor these for the purpose of aborting the PTO operation to protect against vehicle powertrain damage. Some PTO suppliers may offer temperature monitors for this purpose.
 - a. Maximum Engine Coolant Temperature (ECT): 230° F
 - b. Maximum Engine Oil Sump Temperature: 284° F
 - c. Maximum Transmission Oil Temperature (TOT): 250° F
 - d. Maximum Catalyst Temperature: varies (not intended for aftermarket monitoring).

If any of the above temperatures are exceeded then "de-clutch" the auxiliary load of the PTO operation and return the vehicle engine speed to base engine idle. Allow the temperature to stabilize at a lower level before re-engaging PTO operation. Gas engine strategy uses these to abort SEIC (return engine to base idle speed and unlock automatic transmission torque converter).

6. The blunt-cut wires related to SEIC go directly back to pins on the PCM. Care should be taken with any aftermarket circuitry connecting with these, or neighboring, to prevent feeding those modules with any unwanted, threatening signals or voltages. Unwanted vehicle behavior and/or PCM damage may result.
7. Both gas and diesel powertrains are calibrated to accept up-fitter commands through the SEIC wiring only, which are battery-voltage commands only, no CAN messaging. Any alternate method to obtain stationary elevated idle control may result in unpredictable or inconsistent engine speed or stalling.

POWER TAKE-OFF (PTO) APPLICATIONS

2006

MODEL YEAR

Page 149

SEIC / PTO

PRODUCT DESCRIPTIONS

"Transmission Power Take-Off Provision" (Option Code 62R): This Option, available for F-Series only, provides a unique TorqShift 5-speed automatic transmission with an internal PTO drive gear and access port in the transmission case. A unique PCM is not included nor required.

Automatic Transmission Fluid Temperature Gauge: Beginning with 2002 model year a Transmission Fluid Temperature Gauge is included with the instrument cluster of Super Duty F-Series, automatic transmission only, signaled by the Transmission Oil Temperature (TOT) sensor. A complete description can be found in the vehicle's Owner Guide. In brief below describes the meanings of the needle readings to help the operator monitor PTO operation.

Cold Range: 50° F or less.

White Area: Normal operating range of 51° F to 248° F.

Yellow Area: Warning: Stop driving the vehicle or remove auxiliary loads at the earliest convenience. Typically, leave the engine running at base idle speed and allow to cool into the normal range before starting to drive or operate the PTO. The transmission fluid is not over-heated, but operating in the Yellow Range for extended periods of time may cause internal transmission damage.

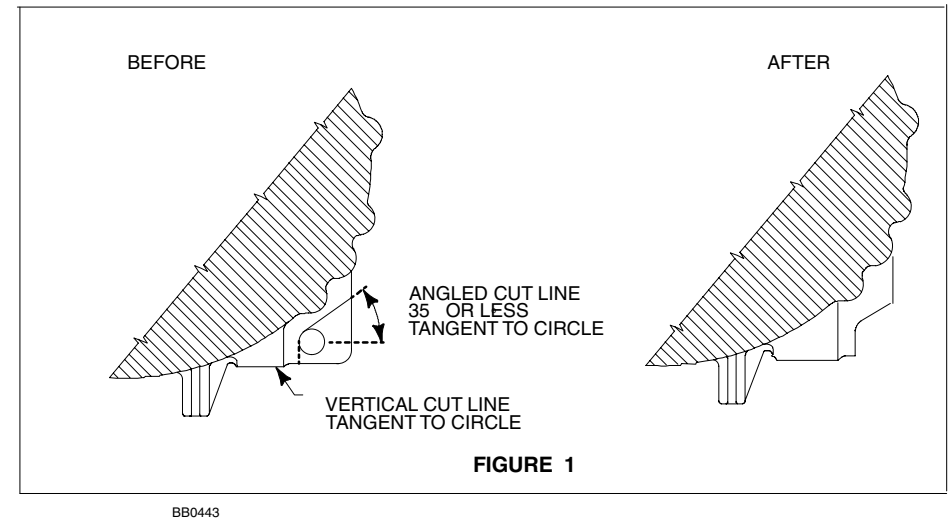
Red Area: The transmission fluid is over-heating. Stop the vehicle, do not drive, and allow to cool into the normal operating temperature range. If the gauge continues to show high temperatures then see your Ford dealer.

For readings in the Red and Yellow areas make sure that snow or debris is not blocking airflow to the radiator and transmission fluid cooler, that cooler lines are not kinked or restricted, and that vehicle load capacities or PTO duty cycles are not excessive.

SEIC (Stationary Elevated Idle Control): New for 2005 model year, this feature is included in the powertrain control strategy of all F250/350/450/550 and E250/350/450, over-8500 lb GVWR, all powertrains. It replaces the APCM (Auxiliary Powertrain Control Module) previously included with Ford "Auxiliary Idle Control Kit" Option Codes 96P (F-Series) and 961 (E-Series). For a stationary vehicle it allows the operator to elevate engine idle speed to operate a transmission-mounted PTO, or engine FEAD-mounted clutch-pump, air compressor, or generator; or be used to help keep the vehicle battery charged. SEIC uses CAN messaging internally. It is activated by the up-fitter by applying discrete voltage signals to a wire bundle located in the F-Series cabin above the parking brake release handle, and in the E-Series engine compartment. The up-fitter will need to complete the circuits as described herein, and provide the customer interface (i.e. buttons, LCD read-out for engine speed, PTO switch, etc.). Note: The F-Super Duty light truck offers four relayed rocker switches on the instrument panel for the up-fitter to use. Ramp-up rate is fixed and approximately 200 rpm/sec for diesel engine and 400 rpm/sec for gas engine.

PTO Control (For automatic transmission-mounted PTO only): This is PCM strategy within the SEIC feature that automatically looks for and recognizes whether the vehicle has a TorqShift automatic transmission with a side-mount PTO ("Transmission PTO Provision", Option Code 62R), and makes the internal PTO gear function by commanding the torque converter to lock at 1200 rpm minimum speed. The PTO gear is splined directly to the transmission torque converter turbine shaft. When all of the vehicle safety enablers are met, and the engine speed is commanded by the operator to at least 1200 rpm, then the strategy automatically commands the torque converter to lock at 1200 rpm to deliver engine torque to the PTO gear (actual lock-up begins at approximately 1050 rpm), and elevates the transmission hydraulic line pressure to 150 psi nominal for the aftermarket PTO to use to hold its engagement clutch. NOTE: Applying battery voltage to the Diesel "PTO" or Gas "PTO-Mode" wires is what the transmission looks for to initiate these commands. Failing to do so may show up as low or oscillating hydraulic line pressure and low or no aftermarket PTO torque or pump flow output. Any attempt to operate the aftermarket PTO at elevated idle without these commands may result in under-capacity PTO clutch wear, resulting in rapid contamination of transmission fluid and internal transmission damage. This applies to both stationary and mobile automatic transmission PTO operations.

The M60D manual transmission case will require a slight modification to package PTO pumps that are mounted directly to the PTO and facing rearward. Refer to Figure 1 for instructions on removing a small tab on the case to obtain clearance for the pump.



Instructions for removing M60D case tab (for PTO clearance)

A section of the aluminum tab may be removed as indicated above. Use a mechanical tool only, such as a die grinder. DO NOT use a flame torch of any kind to remove aluminum transmission case material.

NOTES — M60D USES ALL METRIC FASTENERS EXCEPT FOR COOLER LINES.
— DO NOT SCALE DRAWINGS.
— PTO OPENING IS A STANDARD 6 BOLT SAE #J704B.

POWER TAKE-OFF (PTO) APPLICATIONS

CIRCUIT DESCRIPTIONS — SEIC — F250/350/450/550

Circuit Intent	Wire Tag	Diesel Engine PCM	Gas Engine PCM	
		Description	Wire Tag	Description
INPUT (VPWR)	PTO	PCM Pin C1-12 Circuit No. 2242 Wire Color: Orange <ul style="list-style-type: none"> Applying vehicle battery voltage to this wire begins SEIC process. Signals TorqShift transmission to enter SEIC strategy. Verifies safety enablers. Turns off OBD and other emission-related monitoring. Elevates engine speed to target found at PTO-RPM circuit. Invokes the PTOC circuit when safety enablers are met. Looks for the target engine speed requested at the PTO_RPM circuit using a resistor or Potentiometer. 	PTO_Mode	PCM Pin C2-26 Circuit No. 2242 Wire Color: Orange <ul style="list-style-type: none"> Applying vehicle battery voltage to this wire begins SEIC process. Signals TorqShift transmission to enter SEIC strategy. Verifies safety enablers. Turns off OBD and other emission-related monitoring. Elevates engine speed to 900 rpm "standby" speed if it finds an "open-circuit" at PTO-RPM_Select. Invokes the PTO_ Indicator circuit when safety enablers are met. Looks for the target engine speed requested at the PTO_RPM_Select circuit using a resistor or Potentiometer.
OUTPUT	PTOC	PCM Pin C2-15 Circuit No. 2244 Wire Color: Orange / Lt. Blue <ul style="list-style-type: none"> A low-side driver, changing from "open-circuit" to "ground" indicating all safety enablers satisfied. Intended for powering an indicator lamp, or turn on a relay coil. LED lights require adding a resistor in series (1k ohm, 1/4 watt). Do not feed PCM pin with more than 1 amp. 	PTO_Indicator	PCM Pin C2-42 Circuit No. 2244 Wire Color: Orange / Lt. Blue <ul style="list-style-type: none"> A low-side driver, changing from "open-circuit" to "ground" indicating all safety enablers satisfied. Intended for powering an indicator lamp, or turn on a relay coil. LED lights require adding a resistor in series (1K ohm, 1/4 watt). Do not feed PCM pin with more than 1 amp.
INPUT (resistor)	PTO_RPM	PCM Pin C1-06 Circuit No. 2246 Wire Color: Orange / Yellow <ul style="list-style-type: none"> Add a resistor or potentiometer to obtain fixed or variable engine target speed. Combine in circuit with PTO-VREF and PTO_GND. Speed range available: 1200 rpm to 2400 rpm. 	PTO_RPM_Select	PCM Pin C2-07 Circuit No. 2246 Wire Color: Orange / Yellow <ul style="list-style-type: none"> Add a resistor or potentiometer to obtain fixed or variable engine target speed. Combine in circuit with PTO-ENGAGE. Speed range available: 910 rpm to 2400 rpm
Reference Voltage	PTO_VREF	PCM Pin C1-44 Circuit No. 2245 Wire Color: Orange / Red <ul style="list-style-type: none"> A 5-volt reference, buffered against shorts to ground or power, used to complete the resistor circuit for engine speed selection. 	(Feature not available)	
PCM Ground	PTO_GND	PCM Pin C1-32 Circuit No. 2247 Wire Color: Orange / Black <ul style="list-style-type: none"> A ground reference, buffered, used to complete the resistor circuit for engine speed selection. 	(Feature not available)	
INPUT (VPWR)	(Not Applicable)		PTO_Engage	PCM Pin C2-09 Circuit No. 2243 Wire Color: Orange / White <ul style="list-style-type: none"> Applying vehicle battery voltage to this wire signals PCM that the PTO load is being applied. Must be applied after PTO_Mode, and after PTO_Indicator changes to "ground". Also used to complete the resistor circuit for engine speed selection.
INPUT (VPWR)	BCPSW	PCM Pin C1-09 Circuit No. 2248 Wire Color: Purple / Lt. Green <ul style="list-style-type: none"> Applying vehicle battery voltage to this wire begins BCP. Engine speed is sent to 1200 rpm when all safety enablers are met, regardless of the degree of battery charge. After 1200 rpm, BCP regulates engine speed based upon the degree of battery charge, up to 2400 rpm maximum. 	(Feature not available)	
OUTPUT	BCPIL	PCM Pin C2-16 Circuit No. 2249 Wire Color: Lt. Green / Purple <ul style="list-style-type: none"> A low-side driver, changing from "open-circuit" to "ground" indicating that BCP is in effect. Intended for powering an indicator lamp. Do not feed PCM pin with more than 300 ma. 	(Feature not available)	

POWER TAKE-OFF (PTO) APPLICATIONS
CIRCUIT DESCRIPTIONS — CUSTOMER ACCESS SIGNALS &
BATTERY VOLTAGE SOURCES (VPWR) — F250/350/450/550

2006
MODEL YEAR

CUSTOMER ACCESS SIGNAL CIRCUITS

	Diesel Engine PCM		Gas Engine PCM	
OUTPUT PARK-Only	PARK	PCM Pin C1-07 Circuit No. 1857 Wire Color: Yellow / White • A low-side driver, changing from "open-circuit" to "ground".	PARK	PCM Pin C2-46 Circuit No. 1146 Wire Color: Lt. Green/Red • A low-side driver, changing from "open-circuit" to "ground".
OUTPUT NEUTRAL-Only	(Feature not available)		NEUTRAL	PCM Pin C3-22 Circuit No. 0463 Wire Color: Red / White • A low-side driver, changing from "open-circuit" to "ground".
OUTPUT PARK or NEUTRAL	PARK/NEUTRAL	PCM Pin C3-05 Circuit No. 1146 Wire Color: Lt. Green / Red • A low-side driver, changing from "open-circuit" to "ground".	(Feature not available)	
OUTPUT Vehicle Speed	VSO	PCM Pin C1-22 Circuit No. 0239 Wire Color: White / Orange	VSOUT	PCM Pin C2-01 Circuit No. 0239 Wire Color: White / Orange
OUTPUT Engine Speed	CTO	PCM Pin C1-01 Circuit No. 0076 Wire Color: Lt. Green / White	CTO	PCM Pin C2-25 Circuit No. 0076 Wire Color: Lt. Green / White

VPWR: below are methods to obtain vehicle battery voltage to complete the SEIC circuits.

Ignition Hot-in-RUN		Circuit no. 294 Wire Color: White / Lt. Blue • A fused 10 amp circuit. • Found: Blunt-cut & tapped, on harness behind Diagnostic Link Connector.		Circuit no. 294 Wire Color: White / Lt. Blue • A fused 10 amp circuit. • Found: Blunt-cut & tapped, on the harness behind Diagnostic Link Connector.
Ford upfitter switches: Ign-Hot-ACC	Aux-1 Aux-2 Aux-3 Aux-4	[30-amp] Circuit No. 1936 Wire Color: Orange / Lt. Green [30-amp] Circuit No. 1933 Wire Color: Orange [10-amp] Circuit No. 1934 Wire Color: Orange / Yellow [10-amp] Circuit No. 1935 Wire Color: Orange / Lt. Blue • Found: above parking brake release handle, behind PDJB.	Aux-1 Aux-2 Aux-3 Aux-4	[30-amp] Circuit No. 1936 Wire Color: Orange / Lt. Green [30-amp] Circuit No. 1933 Wire Color: Orange [10-amp] Circuit No. 1934 Wire Color: Orange / Yellow [10-amp] Circuit No. 1935 Wire Color: Orange / Lt. Blue • Found: above parking brake release handle, behind PDJB.
Hot-at-all-times	Fuse #3 Fuse #109 Fuse #5 Fuse #108	[30-amp] Circuit No. 1445 Wire Color: Red / Lt. Green [30-amp] Circuit No. 1448 Wire Color: Orange / Red [10-amp] Circuit No. 1446 Wire Color: Red / Lt. Blue [10-amp] Circuit No. 1447 Wire Color: Red • Found: at Power Distribution Junction Box. • DO NOT use in combination with upfitter switches.	Fuse #3 Fuse #109 Fuse #5 Fuse #108	[30-amp] Circuit No. 1445 Wire Color: Red / Lt. Green [30-amp] Circuit No. 1448 Wire Color: Orange / Red [10-amp] Circuit No. 1446 Wire Color: Red / Lt. Blue [10-amp] Circuit No. 1447 Wire Color: Red • Found: at Power Distribution Junction Box.

NOTE — FOR PASS THRU CIRCUITS - REFER TO THE ELECTRICAL SECTION OF THIS BOOK.

POWER TAKE-OFF (PTO) APPLICATIONS

CIRCUIT DESCRIPTIONS — SEIC — E250/350/450

2006
MODEL YEAR

Page 152

SEIC /PTO

Circuit Intent	Diesel Engine PCM		Gas Engine PCM	
	Wire Tag	Description	Wire Tag	Description
INPUT (VPWR)	PTO	PCM Pin C1-12 Circuit No. 0828 Wire Color: Purple / Lt. Blue <ul style="list-style-type: none"> Applying vehicle battery voltage to this wire begins SEIC process. Signals TorqShift transmission to enter SEIC strategy. Verifies safety enablers. Turns off OBD and other emission-related monitoring. Elevates engine speed to target value found at PTO-RPM circuit. Invokes the PTOC circuit when safety enablers are met. Looks for the target engine speed requested at the PTO_RPM circuit using a resistor or Potentiometer. 	PTO_Mode	PCM Pin C3-26 Circuit No. 2242 Wire Color: Orange <ul style="list-style-type: none"> Applying vehicle battery voltage to this wire begins SEIC process. Signals TorqShift transmission to enter SEIC strategy. Verifies safety enablers. Turns off OBD and other emission-related monitoring. Elevates engine speed to 900 rpm "standby" speed if it finds an "open-circuit" at PTO-RPM_Select. Invokes the PTO _Indicator circuit when safety enablers are met. Looks for the target engine speed requested at the PTO_RPM_Select circuit using a resistor or Potentiometer.
OUTPUT	PTOC	PCM Pin C2-15 Circuit No. 0239 Wire Color: White / Orange <ul style="list-style-type: none"> A low-side driver, changing from "open-circuit" to "ground" indicating all safety enablers satisfied. Intended for powering an indicator lamp, or turn on a relay coil. LED lights require adding a resistor in series (1K ohm, 1/4 watt). Do not feed PCM with more than 1 amp. 	PTO_Indicator	PCM Pin C3-42 Circuit No. 2244 Wire Color: Orange / Lt. Blue <ul style="list-style-type: none"> A low-side driver, changing from "open-circuit" to "ground" indicating all safety enablers satisfied. Intended for powering an indicator lamp, or turn on a relay coil. LED lights require adding a resistor in series (1K ohm, 1/4 watt). Do not feed PCM pin with more than 1 amp.
INPUT (resistor)	PTO_RPM	PCM Pin C1-06 Circuit No. 2246 Wire Color: Orange / Yellow <ul style="list-style-type: none"> Add a resistor or potentiometer to obtain fixed or variable engine target speed. Combine in circuit with PTO-VREF and PTO_GND. Speed range available: 1200 rpm to 2400 rpm 	PTO_RPM	PCM Pin C3-07 Circuit No. 2246 Wire Color: Orange / Yellow <ul style="list-style-type: none"> Add a resistor or potentiometer to obtain fixed or variable engine target speed. Combine in circuit with PTO-ENGAGE. Speed range available: 910 rpm to 2400 rpm
Reference Voltage	PTO_VREF	PCM Pin C1-44 Circuit No. 2245 Wire Color: Orange / Red <ul style="list-style-type: none"> A 5-volt reference, buffered against shorts to ground or power, used to complete the resistor circuit for engine speed selection. 	(Feature not available)	
PCM Ground	PTO_GND	PCM Pin C1-32 Circuit No. 2247 Wire Color: Orange / Black <ul style="list-style-type: none"> A ground reference, buffered, used to complete the resistor circuit for engine speed selection. 	(Feature not available)	
INPUT (VPWR)	(Not Applicable)		PTO_Engage	PCM Pin C3-09 Circuit No. 2243 Wire Color: Orange / White <ul style="list-style-type: none"> Applying vehicle battery voltage to this wire signals PCM that the PTO load is being applied. Must be applied after PTO_Mode, and after PTO_Indicator changes to ground. Also used to complete the resistor circuit for engine speed selection.
INPUT (VPWR)	BCPSW	PCM Pin C1-09 Circuit No. 2248 Wire Color: Purple / Lt. Green <ul style="list-style-type: none"> Applying vehicle battery voltage to this wire begins BCP. Engine speed is sent to 1200 rpm when all safety enablers are met, regardless of the degree of battery charge. After 1200 rpm, BCP regulates engine speed based upon the degree of battery charge, up to 2400 rpm maximum. 	(Feature not available)	
OUTPUT	BCPIL	PCM Pin C2-16 Circuit No. 0076 Wire Color: Lt. Green / White <ul style="list-style-type: none"> A low-side driver, changing from "open-circuit" to "ground" indicating that BCP is in effect. Intended for powering an indicator lamp. Do not feed PCM with more than 300 ma. 	(Feature not available)	

NOTE — FOR PASS THRU CIRCUITS - REFER TO THE ELECTRICAL SECTION OF THIS BOOK.

POWER TAKE-OFF (PTO) APPLICATIONS
CIRCUIT DESCRIPTIONS — CUSTOMER ACCESS SIGNALS &
BATTERY VOLTAGE SOURCES (VPWR) — E250/350/450

2006
MODEL YEAR

CUSTOMER ACCESS SIGNAL CIRCUITS

	Diesel Engine PCM		Gas Engine PCM	
OUTPUT PARK-Only	TRO_P	PCM Pin C1-07 Circuit No. 1857 Wire Color: Yellow / White • A low-side driver, changing from "open-circuit" to "ground".	PARK_OUT	PCM Pin C3-46 Circuit No. 1857 Wire Color: White / Orange • A low-side driver, changing from "open-circuit" to "ground".
OUTPUT NEUTRAL-Only	TRO-N2	PCM Pin C1-03 Circuit No. 0463 Wire Color: Red / White • A low-side driver, changing from "open-circuit" to "ground".	(Feature not available)	
OUTPUT PARK/NEUTRAL	(Feature not available)		PRK_NEU	PCM Pin C3-22 Circuit No. 0463 Wire Color: Red / White • A low-side driver, changing from "open-circuit" to "ground"
OUTPUT Vehicle Speed	VSO	PCM Pin C1-22 Circuit No. 0679 Wire Color: Gray / Black	AFT STD	PCM Pin C3-01 Circuit No. 0679 Wire Color: Gray / Black
OUTPUT Engine Speed	CTO	PCM Pin C1-01 Circuit No. 0648 Wire Color: White / Pink	CTO	PCM Pin C3-25 Circuit No. 0648 Wire Color: White / Pink

VPWR: below are methods to obtain vehicle battery voltage to complete the SEIC circuits.

Hot-at-all-times		Circuit no. 1507 Wire Color: White / Red • A fused 30 amp circuit. • Found: at 4-pin connector above the brake master cylinder, part of Modified Vehicle Wiring.		Circuit no. 1507 Wire Color: White / Red • A fused 30 amp circuit. • Found: at 4-pin connector above the brake master cylinder, part of Modified Vehicle Wiring.
Ignition Hot-in-RUN		Circuit no. 0049 Wire Color: Orange • A fused 30 amp circuit. • Found: at 4-pin connector above the brake master cylinder, part of Modified Vehicle Wiring.		Circuit no. 0049 Wire Color: Orange • A fused 30 amp circuit. • Found: at 4-pin connector above the brake master cylinder, part of Modified Vehicle Wiring.

NOTE — FOR PASS THRU CIRCUITS - REFER TO THE ELECTRICAL SECTION OF THIS BOOK.

POWER TAKE-OFF (PTO) APPLICATIONS

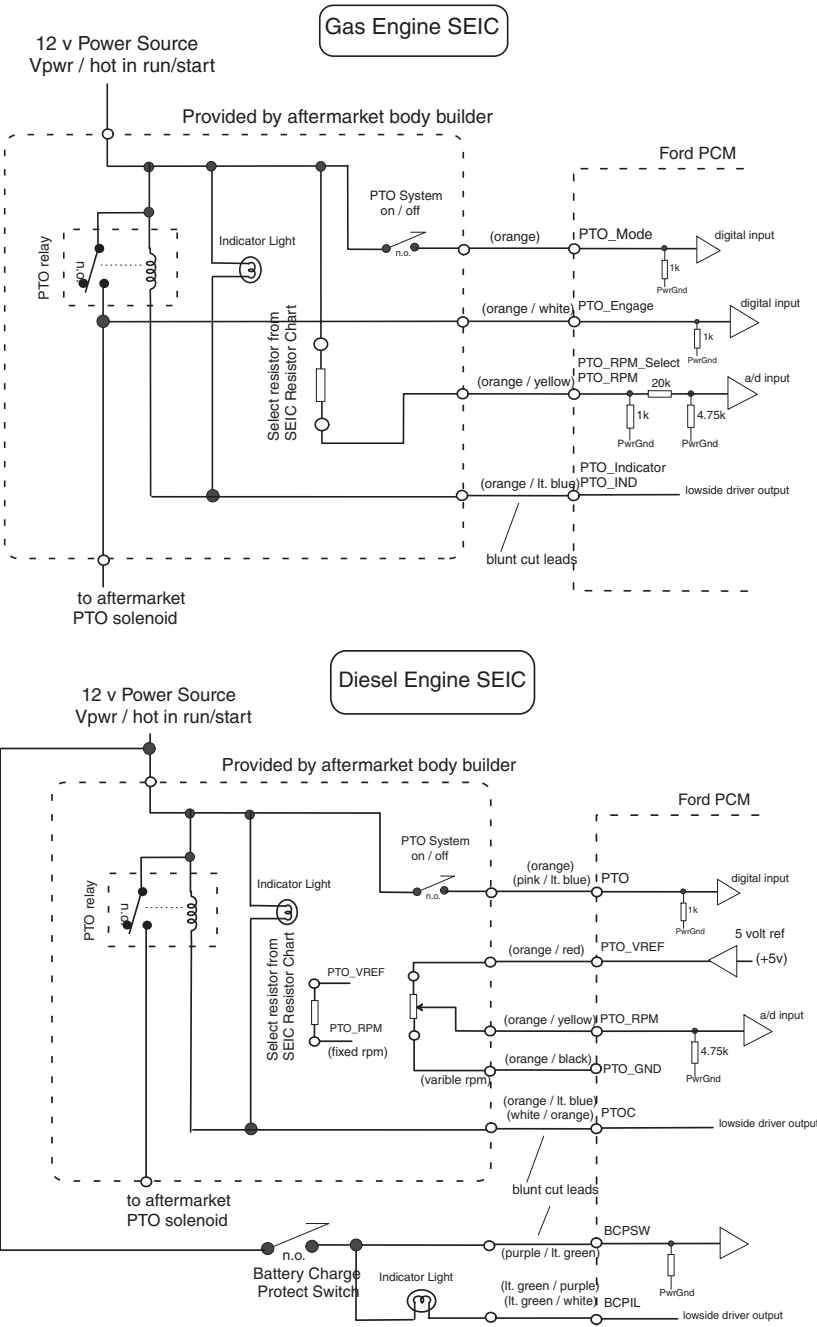
2006
MODEL YEAR

RESISTOR CHARTS

Gas Engine		
Engine Target Speed (RPM)	Resistor (Ohms) (5%, 1/4 Watt)	Voltage (volts)
650 (Base)		
900	Open Circuit*	0.00
912	3.9K	
1024	2.7K	3.61
1056	2.2K	4.18
1184	1.8K	4.80
1264	1.5K	5.39
1440	1.0K	6.76
1536	820	7.43
1648	680	8.06
1712	560	8.70
1792	470	9.25
1904	380	9.89
1936	330	10.27
2000	279	10.75
2064	220	11.20
2128	180	11.60
2160	150	11.90
2208	120	12.23
2256	100	12.46
2320	0 (closed circuit)	13.77

* TorqShift automatic transmission only; manual transmission requires a resistor.

Diesel Engine		
Engine Target Speed (RPM)	Resistor (Ohms) (5%, 1/4 Watt)	Voltage (volts) (± 0.0875 v)
680 (Base)		
1200	Open Circuit	
1200	43K	
1260	27K	0.6875
1320	22K	0.8875
1380	16K	1.0875
1440	13K	1.2875
1500	11K	1.4875
1560	9K	1.6875
1620	7.5K	1.8875
1680	6.2K	2.0875
1740	5.6K	2.2875
1800	4.7K	2.4875
1860	3.9K	2.6875
1920	3.3K	2.8875
1980	2.7K	3.0875
2040	2.4K	3.2875
2100	2.0K	3.4875
2160	1.6K	3.6875
2220	1.3K	3.8875
2280	1.0K	4.0875
2340	750	4.2875
2400	510	4.4875



POWER TAKE-OFF (PTO) APPLICATIONS

WIRING LOCATIONS

2006
MODEL YEAR

Page 155

SEIC / PTO

F250/350/450/550 Cabin / Instrument Panel

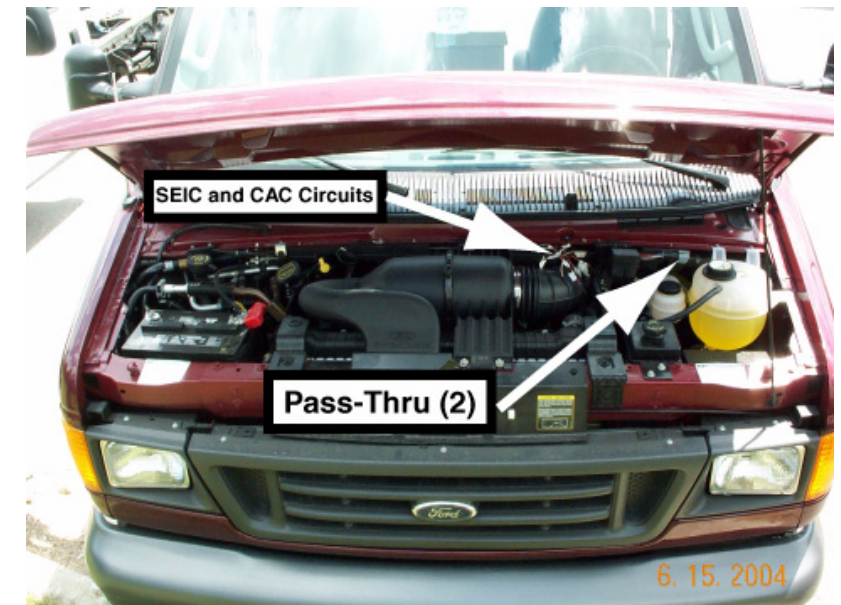
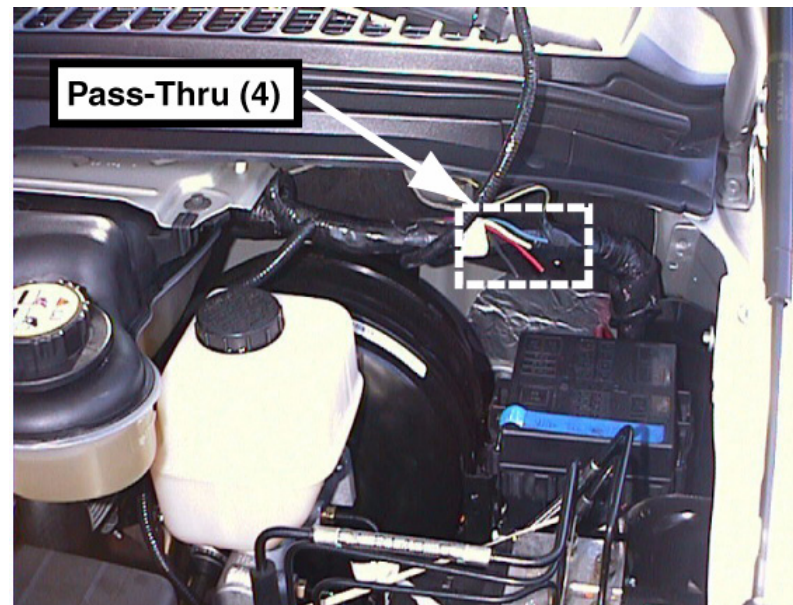
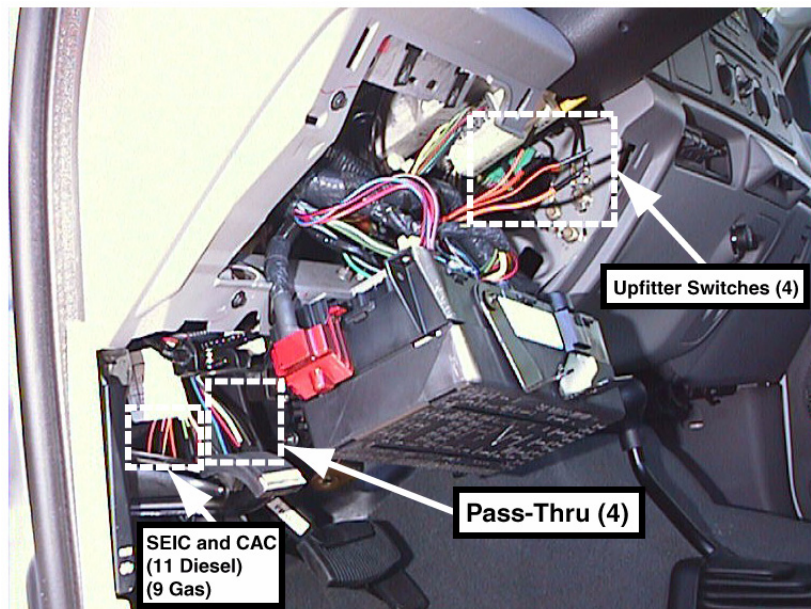
- Blunt-cut access wires for SEIC, "Customer Access" signal circuits for CTO, VSO, PARK, PARK-NEUTRAL, and 4 pass-thru wires, are bundled together at the harness above the parking brake pedal assembly.
- Blunt-cut access wires for the 4 optional "Upfitter Switches" are at the harness behind the Power Distribution Junction Box. Pull the PDJB away from the instrument panel for better access as shown.

F250/350/450/550 Engine Compartment

- The 4 blunt-cut pass-thru wires are found in the harness below the cowl, just outboard of the brake master cylinder, as shown.

E250/350/450 Engine Compartment

- Blunt-cut access wires for SEIC, and the "Customer Access" signal circuits for CTO, VSO, PARK, PARK-NEUTRAL, are with the large harness running below the windshield/cowl. Remove some of the plastic support gutter above the engine air induction tube to reveal the blunt-cut wires.
- The two pass-thru wires are part of the same modified vehicle wiring kit as prior years. Located at the 4-pin connector in the harness below the cowl, outboard of the brake master cylinder, as shown. Mating pigtail connector, 4C24-14A411, found in dunnage. Opposite ends located above driver-side kick-panel.



POWER TAKE-OFF (PTO) APPLICATIONS

General System Behavior

- To guarantee full advertised torque capability at the automatic transmission PTO gear, and through the aftermarket PTO clutch, the transmission torque converter must be locked, and the hydraulic line pressure serving the aftermarket PTO clutch must be elevated. Applying battery voltage to the PTO circuit is the signal to the transmission to enter SEIC strategy and command these two important functions. This applies to both stationary and mobile PTO operations.
- If an SEIC disabler occurs:
 - GAS engines will require a "change-of-state", meaning the operator is required to turn off voltage to the "PTO-Request" circuit, and back on again to re-invoke SEIC and PTO operation.
 - DIESEL engines do not require a "change-of-state" at the "PTO" circuit. Once the disabling condition is removed, the strategy re-invokes SEIC after approximately 3 seconds, automatically returning the engine speed back to what was commanded by the operator prior to the disabling condition.
- Battery Charge Protection (BCP): A diesel-only function. When it is switched on the engine speed goes immediately to 1200 rpm, and stays there even if the battery is fully charged. From this state it uses system voltage as well as ambient air temp., engine oil temperature information to raise engine speed higher to maintain a certain battery charge. Maximum engine speed in BCP mode is 2400 rpm. The BCPSW circuit may be wired to circuit to Ignition-Hot-in-Run to make it "automatic" for ambulance. Park-Brake-Set is one of the enablers of BCP.
- If the Transmission Oil Temperature (TOT) sensor reaches 240°F, then TorqShift torque converter may disengage, preventing torque to be delivered to the transmission PTO gear.
- SEIC/PTO strategy function in the PCM is not affected by the loss of vehicle battery electrical power.
- SEIC Ramp Rate (fixed, not programmable):
 - Gas engines: 400 rpm/second
 - Diesel engines: When first applying battery voltage to the PTO circuit the PCM directs the engine to go to the initial target that it sees at the RPM circuit at 200 rpm/second (1200 rpm if there is no resistor in the RPM circuit - open circuit). If resistance is subsequently changed at the RPM circuit then the ramp rate to this second speed target is virtually instantaneous (as fast as the diesel engine can get there).
- Correlation between engine speed and resistor values:
 - The external voltage source that the aftermarket PTO system designer uses to command SEIC through the "PTO" or "PTO-Request" circuits must be the same as that used by the PCM internally for predictable SEIC function. Reasoning is that a fully-charged vehicle battery fluxuates with ambient temperature.
 - The correlation will be better for diesel engines since the diesel engine SEIC system offers buffered PCM voltage and ground circuits to complete the resistor circuits for engine speed, while the gas engine system forces the SEIC circuit installer to use chassis voltage and ground.
- If there is a high electrical demand on the chassis battery, such as from aftermarket inverters or generators, etc., the actual elevated idle engine speed may vary with that demand for any given resistance in the SEIC circuit. More so for gas engine systems than diesel since gas uses chassis battery voltage as a reference.
- GAS Engine Only:
 - Normal base engine calibration allows approximately +/-50 rpm fluxuation. If any factory vehicle accessories are used during SEIC, e.g. a/c, defroster, etc., then that fluxuation may increase to approximately +/-100 rpm or more.
 - The sudden loss of aftermarket PTO hydraulic pressure during SEIC/PTO operation, like a ruptured hose, may send SEIC engine speed to near 3000 rpm. It is recommended that a hydraulic pressure switch linked to SEIC/PTO be added to disable SEIC/PTO when a hose ruptures.
 - Because of a service brake circuit characteristic at engine-start, invoking SEIC may cause the diagnostic error code FFG_BOO to get flagged (recorded in the PCM). To avoid this, simply tap the service brake pedal sometime after engine-start and prior to invoking SEIC. Once the code is set, SEIC may not be available until it is erased.
 - Gas engines require a "change-of-state" at the PTO-Mode and PTO-Engage circuits whenever a disabler turns off SEIC (remove battery voltage signal and re-apply).
 - For aftermarket remote engine start-stop: a change-of-state is required to get SEIC to function again.

SEIC ENABLE-DISABLE CONDITIONS

Vehicle Conditions to Enable SEIC (all are required)	Vehicle Conditions that Disable SEIC (any one required)	Gas Engine	Diesel Engine
Parking brake applied.	Parking brake disengaged.	Yes	Yes
Foot off of service brake	Depressing service brake	Yes ¹	Yes ²
Vehicle in PARK (automatic trans.)	Vehicle taken out of PARK	Yes	Yes
Foot off of clutch (manual trans.)	Clutch depressed	Yes	Yes ²
Foot off of accelerator pedal		Yes	Yes
Vehicle speed is 0 mph (stationary)		Yes	Yes
Brake lights functional	Brake light circuit disconnected	Yes	Yes
Engine at a stable base idle speed		Yes	Yes
	Transmission Oil Temperature (TOT) Limit exceeds 240 degrees F.	Yes ¹	No
	Engine Coolant Temperature Limit (ECT)	Yes ¹	No
	Catalyst Temperature Limit	Yes ¹	No

- 1: A "change-of-state" at the "PTO-Request" circuit is required to re-invoke SEIC. When a disabler is seen by the PCM the "PTO-Indicator" circuit changes from "ground-source" to "open-circuit". After approximately 3 seconds SEIC drops out, returning the engine speed to base idle. For vehicle-stationary operation, the automatic transmission torque converter unlocks as engine speed proceeds below 1200 rpm. To re-initiate SEIC the operator must turn off the aftermarket PTO switch (removing command voltage to the "PTO-Mode" circuit) and turn it back on again.
- 2: SEIC is automatically re-activated after approximately 3 seconds after the disabling condition is removed.

POWER TAKE-OFF (PTO) APPLICATIONS

2006
MODEL YEAR

Page 157

SEIC /PTO

TRANSMISSION SPECIFICATIONS

		TorqShift 5-speed automatic	M6OD 6-Speed Manual HD
Transmission Fluid Type ⁽¹⁾		Type D	Type H
Hydraulic Fluid Line Pressure ⁽¹⁾	At base engine speed:	50-60 psi	-----
	At 1200 rpm engine speed:	150 psi nominal ⁽²⁾	-----
Transmission Gear Ratios	Low	-----	5.79
	1 st	3.114	3.30
	2 nd	2.218	2.10
	3 rd	1.545	1.30
	4 th	1.000	1.00
	5 th	0.712	0.72
	Reverse	2.88	5.23
	Torque Converter	1.86	-----
PTO Drive Gear Function	All Forward Drive Gears ⁽³⁾ :	Yes	Yes
	Reverse ⁽³⁾ :	Yes	Yes
	Overdrive ⁽³⁾ :	Yes	Yes
	PARK (Stationary)	Yes	-----
	NEUTRAL (Stationary)	No	Yes
PTO Drive Gear Data	PTO Port	<ul style="list-style-type: none"> • LH (Driver Side) Only • Non-standard 6-bolt pattern • Requires Option Code 62R 	<ul style="list-style-type: none"> • LH (Driver Side) Only • Standard 6-bolt pattern • Available Standard
	Gear Torque Rating	250 lb-ft	250 lb-ft
	Gear Ratio	3.09	5.79 (Low)
	Number of gear teeth	121	39
	Diametral Pitch		9.2364
	Pitch Diameter	215.985 mm	132.568 mm
	Normal Pressure Angle	17.989°	20°
	Angle and Hand of Helix	Spur	36° RH
	Gear RPM at 1000 Engine RPM	1000	590
	Pitch Line Diameter Velocity @ 1000 Engine RPM	2226 ft/min	806 ft/min
Aftermarket PTO Model Series ⁽⁴⁾	Chelsea Technical Service: (662) 895-1052, chelseatech@parker.com	246	442
	Muncie Customer Service: 1-800-FOR-PTOS, info@munciepower.com	4x2: FR62 or FR64 4x4: FR64 only	TG
Torque Converter – Minimum lock-up speed (vehicle stationary – in PARK or NEUTRAL)		1200 rpm ⁽⁵⁾	-----
Internal Transmission Fluid Temperature Monitor		Yes	No

Footnotes:

- (1) Affects the "holding power" of the aftermarket PTO clutch.
- (2) Requires battery voltage applied to "PTO" (diesel engine) or "PTO-Mode" (gas engine) circuit, engine at 1200 rpm, and torque converter locked.
- (3) Vehicle road speed must be greater than zero.
- (4) Consult the PTO manufacturer for more complete detail.
- (5) Although actual lock-up occurs above 1050 rpm, and unlocks below 950 rpm, drawing full torque from the PTO gear is not intended below 1200 rpm engine speed.

POWER TAKE-OFF (PTO) APPLICATIONS

2006
MODEL YEAR

Page 158

SEIC / PTO

GUIDELINES FOR SPECIFIC APPLICATIONS

FEAD-Mounted Auxiliary Equipment:

1. An auxiliary crankshaft bearing support is required on all modular gas engine applications where the clutch-pump is drawing greater than 5-hp from the engine crankshaft pulley. This further applies to all tangentially-mounted auxiliary aftermarket equipment in general.
 - a. A "spider" bracket kit can be obtained for this purpose by contacting DewEze Manufacturing, 151 E. Hwy. 160, Harper, Kansas, 67058. Toll-free phone: (800) 835-1042, or fax: (316) 896-7129. It provides up to 70 lb-ft of torque at the clutch-pump. Part Numbers: (6.8L) XC2E-7275-BB, (5.4L) XC2E-7275-AB. QVM Bulletin No. Q-62 has a complete description of the kit and its usage.
 - b. QVM Bulletin No. Q-74 amends Bulletin Q-62, describing how the "spider" bracket is not required for auxiliary equipment requiring less than 5-hp. Both bulletins are available at www.fleet.ford.com/truckbbas, and select "Bulletins".
2. Always maintain the clearance relationship between the Ford OEM fan, radiator, and shroud to help maintain optimum engine cooling performance.
3. Always consider engine roll and body/frame torsion when packaging clearances.
4. Restrict FEAD-PTO application to 5.4L and 6.8L gas, and 7.3L and 6.0L diesel engines.
5. Temperature monitoring of powertrain fluids as discussed earlier in this section is recommended.
6. Avoid the use of aftermarket "power chips" in the engine powertrain control system. These boost engine power by dumping fuel, which heats the engine, turning on the cooling fan 100%, resulting in accelerated FEAD belt and tensioner wear-out.
7. Belt spans greater than 250 mm require a pulley or tensioner support within the span.

Split-Shaft PTO: Light truck automatic transmissions from Ford are not prepared for split-shaft PTO operation. The electronic control strategy is affected, and the powertrain has not been fully qualified for the higher horsepower and extended duration usage typical of this application. However, a PTO on the side of a transmission, sharing hydraulic fluid with the transmission, poses a higher temperature threat to the transmission than split-shaft PTO for any given horsepower demand. In any event, temperature monitoring and control of the transmission fluid is highly recommended.

Combination PTO/Snowplow/Salt-Spreader/Dump Vehicles:

The powertrain is designed to perform satisfactorily in a mobile operation at full GVWR, assuming no additional torque and horsepower demands are placed upon it other than the normal OEM accessories. Adding transmission-mounted PTO operation to this condition may exceed the capabilities of the powertrain, and premature transmission damage may occur, typically from transmission fluid over-heating. Combination vehicles operating transmission-mounted PTO in a mobile condition may require the total vehicle weight be restricted below GVWR to compensate for the additional PTO horsepower demand.

Automatic transmission PTO operation below torque converter lockup speed:

A typical application is aerial man-lifting using vehicle engine speeds below torque converter lockup speed of 1200 rmp to move the bucket slowly. The aftermarket PTO clutch is engaged electrically, but there may be insufficient hydraulic line pressure serving that clutch. The following threats may be present as a result:

- a. Additional slippage of the aftermarket PTO clutch causing clutch debris to contaminate the transmission fluid.
- b. Transmission and aftermarket PTO clutch slippage accelerating transmission fluid heat build-up.
- c. Bucket movement may vary or stall due to a wide variation or fluctuation in torque output to the aftermarket PTO.
- d. Diesel engine damage due to coking caused by extended time running at low idle speed with light loads.

The likelihood of these treats actually occurring, and the protection against them, is the responsibility of the final stage manufacturer, who has the best knowledge of the customer's usage and aftermarket PTO system design. However, since the duty cycle is typically short, and using only 2 to 3 gallons per minute pump output, the likelihood of any concern is rare. It is recommended in this application to change the automatic transmission fluid and filter more often, and drive the diesel engine at highway speeds for 10 minutes or more to remove any coke deposits forming.

ELECTRICAL WIRING

CUSTOMER ACCESS CIRCUITS

2006

MODEL YEAR

Page 159

ELECTRICAL

1. Super Duty F-Series and selected E-Series Super Duty vehicles are equipped with a number of conveniently located electrical wiring taps. Most taps are fused, having locations under the instrument panel, in the engine compartment, and at the rear of the frame. Illustrations, schematics and a wiring harness for Trailer Tow is provided in a cardboard box shipped with each vehicle. The circuits at the rear of the frame are provided to support trailer wiring requirements or the Second Unit Body (SUB) additions. The Super Duty F-Series Circuit chart on the page 165 is a brief description of each circuit function, wire gauge, color code and electrical schematic. For E-Series chart see pages 160-161.
1. The Ford starting and the charging system should not be altered.
2. The completed vehicle total electrical load must not exceed the maximum output of the alternator.
3. Do not route or attach electrical wires to fuel lines.
4. Engine compartment wiring must not be rerouted in any manner.
5. The 6.0L diesel engine requires two batteries wired in parallel for proper starting operation and must not be isolated. Do not modify the Glow Plugs Power Circuits.
6. Ford recommends that all additional underhood and underbody wiring:
 - be cross-linked polyethylene, or equivalent, high temperature insulation wire 125° C [257° F] minimum rating.
 - meet SAE specifications J1128 type SXL, GXL or TXL.
 - meet SAE J1127 type SGX or STX for battery cables.
 - be protected with nylon convoluted tubing.
 - be located so as to avoid or minimize restriction of airflow through the engine compartment, underbody and fuel system.
 - be of sufficient length to be properly routed, so as not to interfere with operating zones of such components as throttle or transmission linkage.
 - not be routed near the exhaust system or no other source of high heat; melted insulation can result in electrical shorts and system failure.
 - be routed away from hostile surfaces and sharp edges and be secured in its intended location.
 - be protected by rubber grommets when it passes through body or frame openings. Use customer access pass-thru circuits provided on Super Duty F-Series as shown in Figure B on page 164, to avoid additional openings between passenger and engine compartments.
 - be protected from electrical shorts by fuses or circuit breakers.
 - be routed at least 38 mm [1.5 in] away from engine.
7. Interior wiring not exposed to high temperatures may be SAE approved, general purpose wire.
8. Ground the second unit body to the frame in at least two locations, and if required, add an additional frame to engine ground cable to improve the ground path to the battery.
9. Splicing into circuitry relating to the powertrain control systems is not acceptable because of the adverse effect on the electrical system operation.
10. Batteries must be disconnected before welding to body and chassis components. Note that disconnecting the batteries will result in a memory loss on electronic engine/ transmission controlled vehicles. The vehicle will require several miles of driving in various driving modes to restore its memory and regain optimum operating conditions.
11. Electrical connections exposed to the elements should be appropriately protected.
12. Do not ground the body to the transmission or transmission crossmember.
13. Ignition circuit of any engine should not be altered.
14. Alternator circuit wiring must not be altered by cutting, soldering or splicing.
15. Aero type head lamps are plastic and have protective coatings which can be damaged by solvents or tape. Refer to the *Owner's Guide* for proper cleaning procedures.
16. For convenience Super Duty F-Series has (4) 14 ga. blunt-cut pass thru circuits located under dash near the parking brake pedal and the LH fender apron. E-Series also has (2) 12 ga. pass thru circuits located under dash at 6 pin connector with pigtail (F7UB-14A411-B) and the LH rear of the engine compartment 4 pin connector with pigtail (F4UB-14A411-A). These circuits provide an unfused means to interface with the engine compartment and frame wiring without drilling through the dash panel and installing a wire harness grommet to prevent water leaks. Refer to Figure B, page 164 and 160 for Super Duty F-Series pass thru circuits. Refer to pages 162 and 163 for E-Series pass thru circuits.
17. Center High Mounted Stop Lamp (CHMSL) wiring taps are provided on E-Series Super Duty Cutaway/Stripped Chassis and Super Duty F-Series Chassis Cab vehicles. See pages 160 and 165.
18. Electrical bulbs are listed in the *Owner's Manual* Bulb Chart. Check for the "DOT" marking on the bulb base which means the bulb meets U.S. "DOT" standards. Bulbs without the "DOT" marking or that produce different colors other than the original bulbs as listed in the bulb chart, may affect the lamps light output, aim, glare and your safety; in addition, such bulbs may burn out early or damage the lamp.
19. Super Duty F-Series vehicles are equipped with a clean tachometer output (CTO) wiring tap. The tap is designated circuit 76 (LG/WH) and is located under dash near the parking brake pedal. See Figure A, page 164. This tap should be used if a tachometer signal is required. The signal is digital and requires a digital tachometer. The signal pulse rate is half the number of engine cylinders per revolution (i.e., 4 for 5.4L gas, 6.0L Diesel, and 5 for 6.8L gas). E-Series vehicles are also equipped with CTO wiring tap. The tap is designated circuit 648 (WH/PK) and is located under hood near the PCM connector.
20. Super Duty F-Series vehicles equipped with the 6.0L Diesel engine have two additional output wiring taps. The taps are the vehicle speed out (VSO) and throttle position out (TPO). The VSO tap is designated circuit 239 (WH/OG) and the TPO tap is designated circuit 1857 (YE/WH). Both taps are located under dash near the parking brake pedal. The VSO tap signal frequency is 2.22 times the vehicle speed in miles per hour. The TPO tap is a pulse width modulated output from 0 - 100% of 5.1kHz signal.

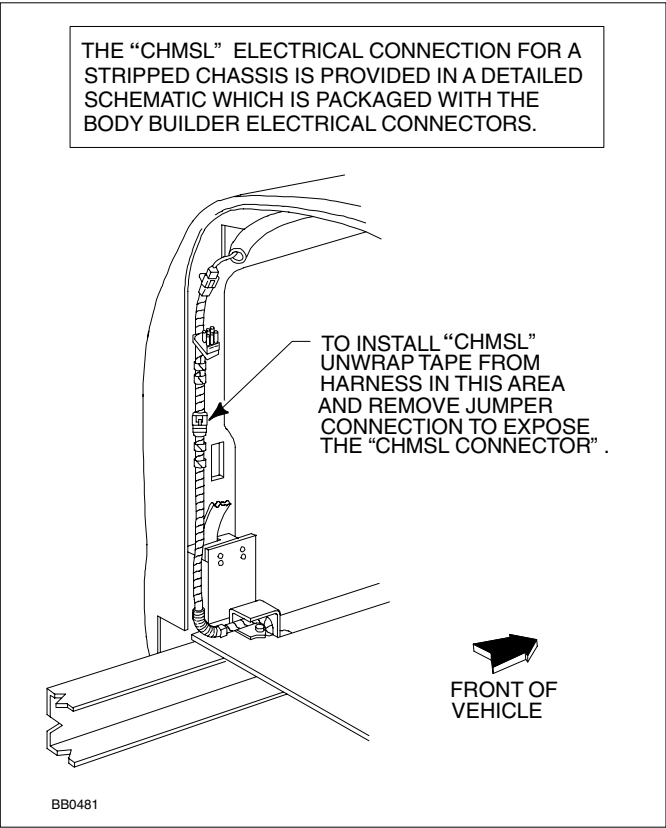
E-SERIES ELECTRICAL WIRING CUSTOMER ACCESS CIRCUITS

2006
MODEL YEAR

Circuit Number	Color Code	Wire Gauge	Functional Description
14	BR	14	Marker lamp feed to electric brake controller
43	DB	12	Electric tailer brake controller to trailer
49	O	10	Relay feed ignition run
22	LB/BK	12	Trailer brake controller or B+ feed
52	Y	18**	Fused left hand stop/turn
64	DG	18**	Fused right hand stop/turn
206	W	14*	Ground
511	LG	18	Center high mount or lamp feed stop
962	BR-W	14	Relay feed marker lamps
963	BK-LG	12	Relay feed backup lamps
867	DB	12	Customer pass thru circuits
868	GY-R	12	Customer pass thru circuits
53	BK-LB	18	Courtesy lamps
54	LG-Y	18	Courtesy switch feed
3	LG/W	18	Left turn signal
2	W/LB	18	Right turn signal

* 10 for 7-pin Trailer Tow Connector

** 14 for 7-pin Trailer Tow Connector



**E-SERIES SUPER DUTY
CUTAWAY/STRIPPED CHASSIS**

E-SERIES TRAILER TOW WIRING

2006
MODEL YEAR

ELECTRICAL

ELECTRONIC BRAKE CIRCUITS

			RECOMMENDED MAX ALLOWABLE		
			WIRE LENGTH (feet)		
CRKT. COLOR	CODE	DESCRIPTION	14 AWG	12 AWG	10 AWG
Dark Blue	DB	Trailer Electric Brake	50	50	50
Orange	O	Trailer Battery Feed	N/A	20	20
Yellow	Y	Trailer LH Turn/Stop Lamp	50	50	50
Dark Green	DG	Trailer RH Turn/Stop Lamp	50	50	50
White	W	Trailer Ground	N/A	N/A	10 GA only
Brown-White	BR-W	Trailer Run Lamps	50	50	50
Black-Light Green	BK-LG	Trailer Back-Up Lamps	50	50	50

ELECTRONIC BRAKE CIRCUITS

Dark Blue	DB	Trailer Electric Brake
Brown	BR	Vehicle Tail Lamp and Marker Lamp
Red	R	Vehicle Control Feed
Light Green	LG	Vehicle Brake Signal
White	W	Trailer Ground

VEHICLE CIRCUIT

Orange-Light Blue	O-LB	Vehicle RH Rear Turn Signal
Light Green-Orange	LG-O	Vehicle LH Rear Turn Signal
Black-Pink	BK-PK	Vehicle Back-Up Lamp Feed
Yellow	Y	Vehicle Battery Feed
White-Purple	W-P	Vehicle Fuse Accessory Feed
White-Light Green	W-LG	Vehicle Tail and Marker Lamp

CLASS II to CLASS I
PART # F4TB 12964 A


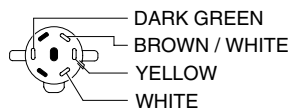
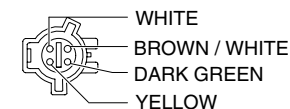


Diagram of the rear of the unit showing the terminal block and wiring connections:

- (WHITE) GROUND
- (BROWN / WHITE) RUNNING LAMPS
- (YELLOW) L.H. STOP/TURN
- (DARK GREEN) R.H. STOP/TURN

CLASS I
PART # 4C24 13A576 C & D



(WHITE) GROUND
(BROWN / WHITE) RUNNING LAMPS
(YELLOW) L.H. STOP/TURN
(DARK GREEN) R.H. STOP/TURN

CLASS II WITH PIN TERMINALS
PART # 4C24 14A678 A & B

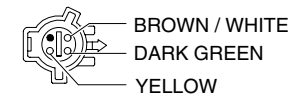
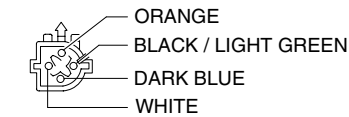
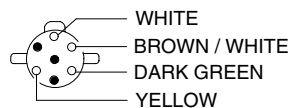


Diagram illustrating the wiring connections for a 7-pin trailer connector. The connector is shown with its internal terminals and the corresponding color-coded wires:

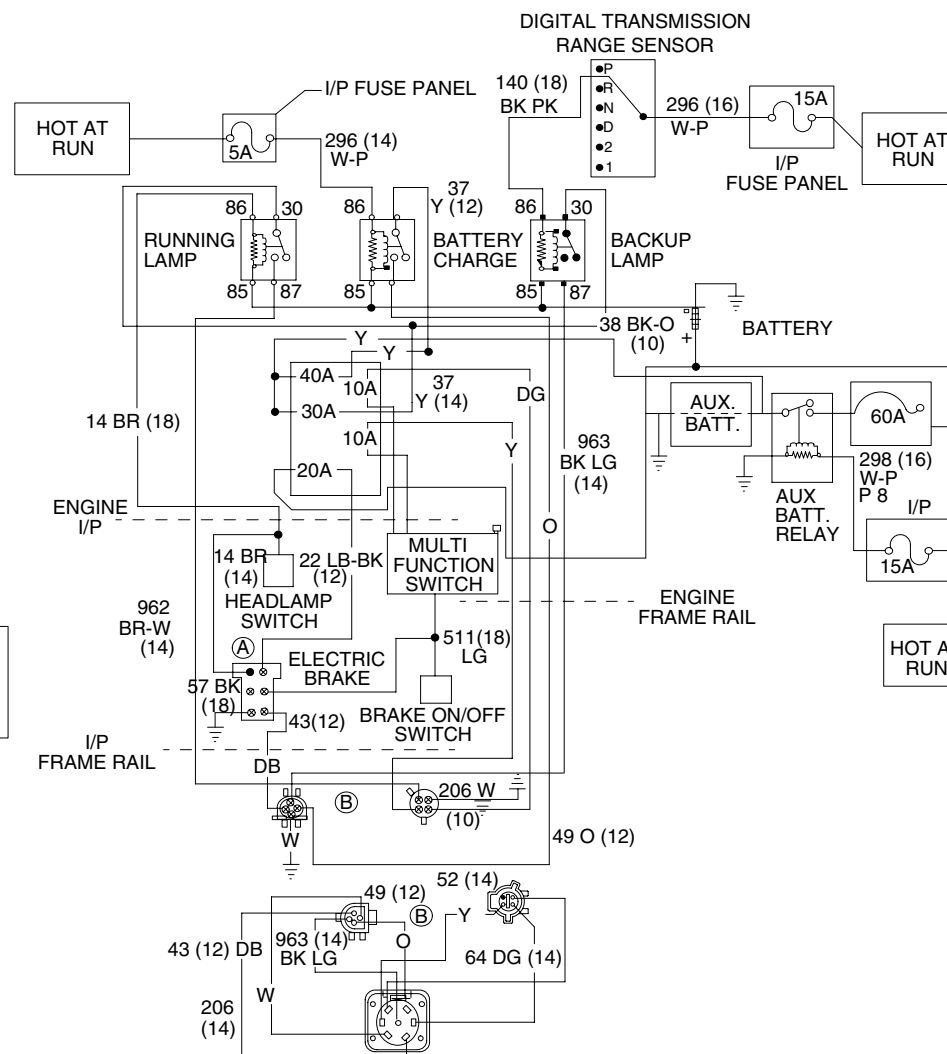
- (BROWN / WHITE) TRAILER RUNNING LAMPS
- (WHITE) TRAILER GROUND
- (BLACK / LIGHT GREEN) TRAILER BACK UP LAMPS
- (DARK BLUE) TRAILER ELECTRIC BRAKE
- (YELLOW) L.H. STOP/TURN
- (ORANGE) TRAILER BATTERY FEED
- (DARK GREEN) R.H. STOP/TURN

CLASS II WITH PIN TERMINALS TO CLASS I
PART # F2TB 13A576 AA



(WHITE) GROUND
 (BROWN / WHITE) RUNNING LAMPS
 (YELLOW) L.H. STOP/TURN
 (DARK GREEN) R.H. STOP /TURN

FORD SERVICE ALTERNATIVES AVAILABLE AT YOUR FORD DEALER
(NOT SUPPLIED WITH TRAILER KIT)

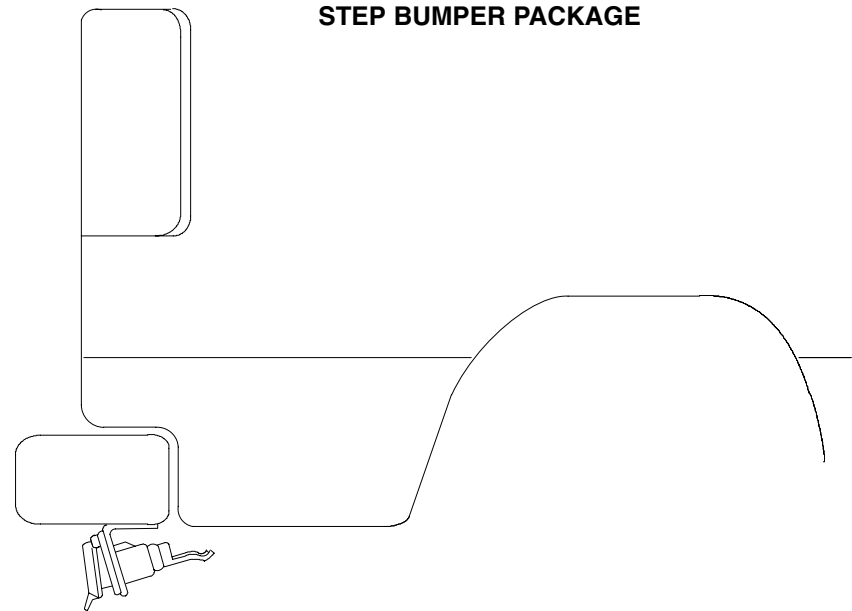


E-SERIES TRAILER TOW WIRING

2006
MODEL YEAR

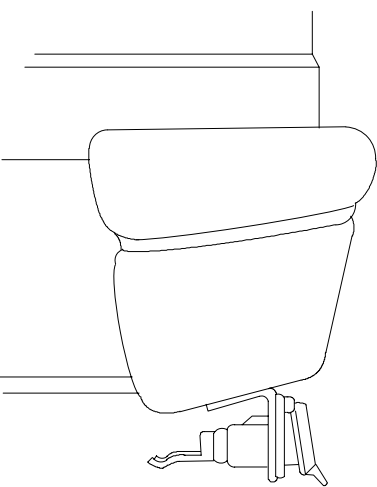
ELECTRICAL

STEP BUMPER PACKAGE

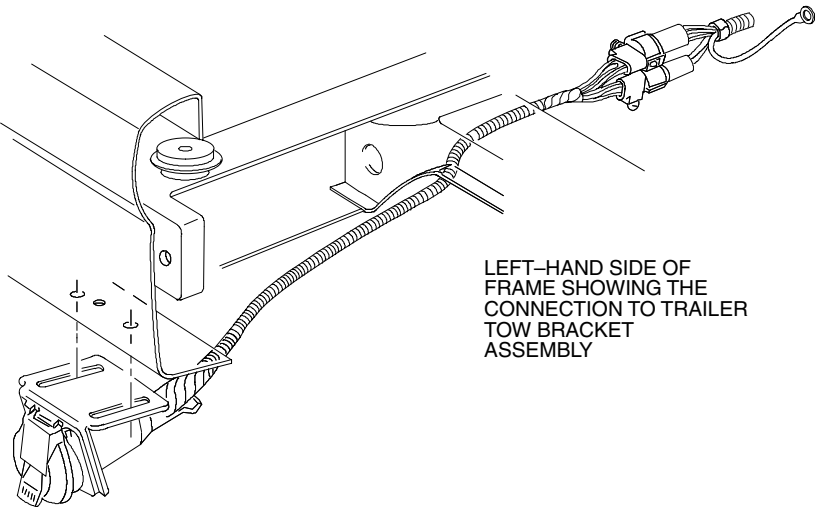


SLIDE TRAILER TOW BRACKET ASSEMBLY TO THE MOST FORWARD POSITION IN VEHICLE. FAILURE TO DO SO MAY RESULT IN BRACKET DAMAGE. THIS APPLIES TO VEHICLES WITH OR WITHOUT A HITCH. THIS NOTE APPLIES TO BOTH THE CONTOUR AND STEP BUMPER PACKAGES.

CONTOUR BUMPER PACKAGE

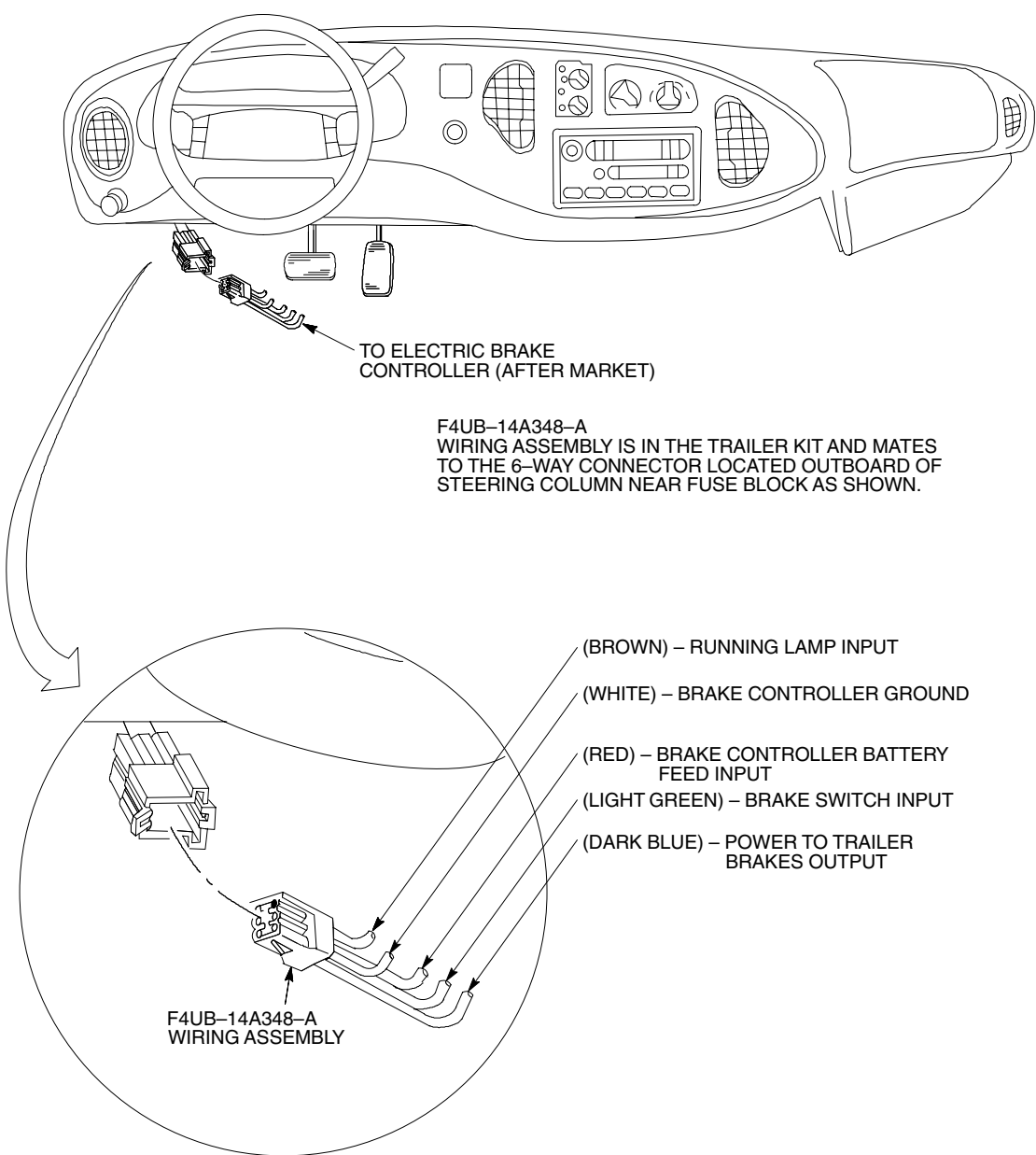


FRAME CONNECTIONS



LEFT-HAND SIDE OF FRAME SHOWING THE CONNECTION TO TRAILER TOW BRACKET ASSEMBLY

ELECTRIC BRAKE CONTROL



TO ELECTRIC BRAKE CONTROLLER (AFTER MARKET)

F4UB-14A348-A WIRING ASSEMBLY IS IN THE TRAILER KIT AND MATES TO THE 6-WAY CONNECTOR LOCATED OUTBOARD OF STEERING COLUMN NEAR FUSE BLOCK AS SHOWN.

- (BROWN) – RUNNING LAMP INPUT
- (WHITE) – BRAKE CONTROLLER GROUND
- (RED) – BRAKE CONTROLLER BATTERY FEED INPUT
- (LIGHT GREEN) – BRAKE SWITCH INPUT
- (DARK BLUE) – POWER TO TRAILER BRAKES OUTPUT

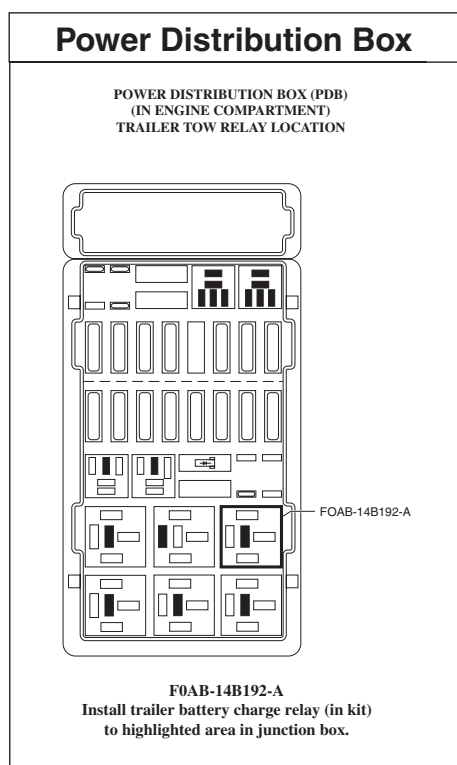
F4UB-14A348-A WIRING ASSEMBLY

THE BRAKE CONTROLLER BATTERY FEED INPUT IS FUSED TO 30A IN THE ENGINE COMPARTMENT'S DISTRIBUTION BOX.

CHECK TRAILER LIGHTS AFTER INSTALLATION TO DETERMINE IF THEY FUNCTION CORRECTLY. DO NOT OPERATE THE VEHICLE WITH A TRAILER IF A PROBLEM EXISTS.

2006
MODEL YEAR

Power Distribution Box



Modified Vehicle Schematic

Modified Vehicle Schematic

Hot At All Times

PDB Fuse Panel (50A)

1507 W-R (12)

1507 W-R (12)

4C24-14A411-A Engine Compartment

4C24-14A411-B Under Dash

4C24-14A411-C B-Pillar

Hot At All Times

PDB Fuse Panel (80A)

1524 DB (10)

1507 W-R (12)

4C24-14A411-C B-Pillar

Hot At Run / Accy

PDB Fuse Panel (5A)

295 LB-PK (18)

57 BK (18)

49 O (12)

4C24-14A411-A Engine Compartment

4C24-14A411-B Under Dash

Hot At All Times

PDB Fuse Panel (40A)

3258 R-Y (10)

175 BK-Y (12)

Trailer Battery Charge Relay (PDB)

49 O (12)

49 O (12)

4C24-14A411-A Engine Compartment

4C24-14A411-B Under Dash

4C24-14A411-C B-Pillar

F4UB-14A411-B Rear Frame

Pass-Thru Circuits

Note: Circuits 867 and 868 are not fused.

868 GY-R (12)

867 DB (12)

4C24-14A411-A Engine Compartment

4C24-14A411-B Under Dash

*** Note:** Total Shared Current For 1507 Circuit Not To Exceed 25 AMPS.

@ Note: Total Shared Current For 49 Circuit Not To Exceed 25 AMPS.

	Load Name	Circuit Number	Wire Gauge	Circuit Color	Max. Cont. Current	Recommended Wire Length (In Feet) W/O Additional Fusing							
						Cont. Load 20 GA.	Cont. Load 18 GA.	Cont. Load 16 GA.	Cont. Load 14 GA.	Cont. Load 12 GA.	Cont. Load 10 GA.	Cont. Load 8 GA.	
4C24-14A411-B	LH Turn Signal/Hazard	3	18	LG - W	2.2 A		80	121	196				
	Battery Feed	*1507	10	W-R	25A					26	42	66	
	Ign. Control Feed	@49	12	O	25A					93	148	234	
	Pass Thru (Eng)	#867	12	DB	25A					NOT FUSED			
	Pass Thru (Eng)	#868	12	G-Y-R	25A					NOT FUSED			
	RH Turn Signal/Hazard	2	18	W - LB	2.2 A		81	122	197.5				
4C24-14A411-C	Battery Feed	*1507	12	W-R	25A					20	32	51	
	Ign. Control Feed	@49	12	O	25A					91	146	230	
	Fused Feed	1462	12	R-W	25A					93	150	237	
	Ground	57	10	BK	N/A								
F4UB-14A411-F	IP Lamp Feed	19	20	LB-R	8A	50	50	50					
	Fused Feed	884	10	Y-BK	10A						30	45	
	Aux. Sw. HI	757	18	R-W	8A					(CIRCUIT TO BE USED FOR RELAY GROUND RETURN ONLY)			
	Aux. Sw. Med Lo	752	14	Y-R									
	Aux. Sw. Med. Hi	751	12	DB-W									
F6UB-14A411-A	Battery Feed	54	16	LG - Y	3.25 A			82	133.5				
	Dome Lamp (Switched from 54)	53	16	BK - LB	3.25 A			82	133.5				
	Ground	57	18	BK	N/A								

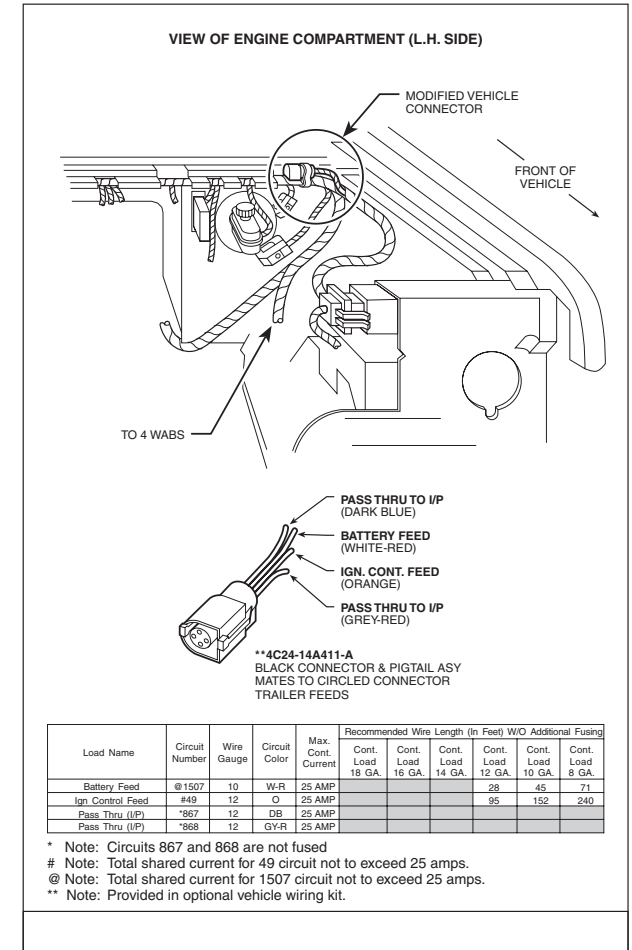
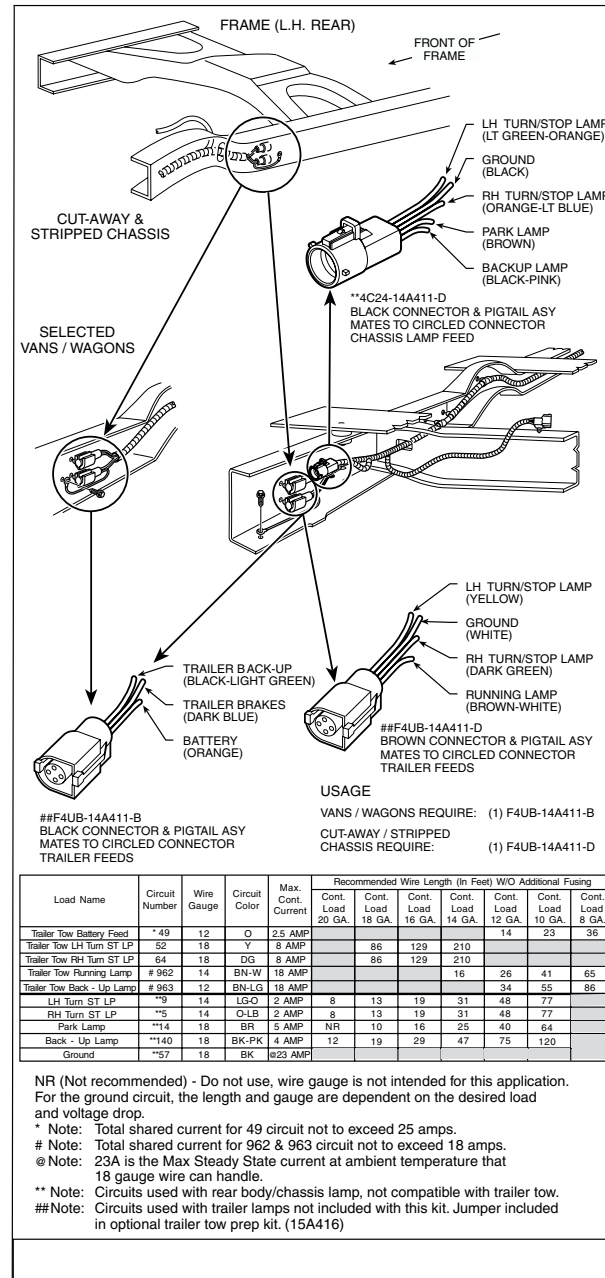
Drivers Side Kick Panel

Jumper Available
At Ford Dealer
Reference
4C24-14A348-A

Note: Jumper included in optional trailer tow prep kit. (15A416)

* Note: Total shared current for 1507 circuit not to exceed 25 amps.
 @ Note: Total shared current for 49 circuit not to exceed 25 amps.
 # Note: Circuits 867 & 868 are not fused.
 ** Note: Provided in optional vehicle wiring kit.

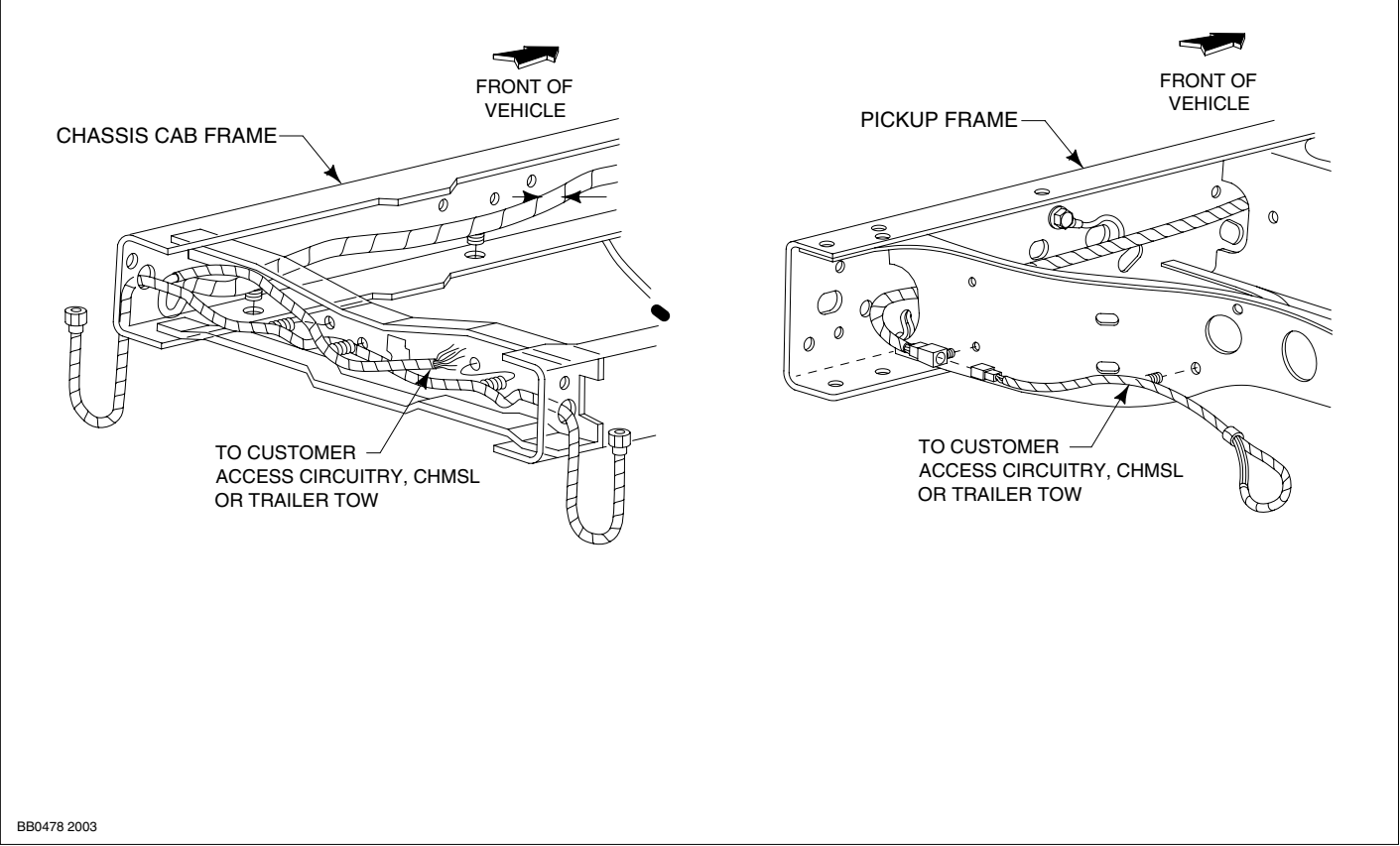
2006
MODEL YEAR



SUPER DUTY F-SERIES ELECTRICAL WIRING CUSTOMER ACCESS CIRCUITS

2006
MODEL YEAR

Circuit Number	Color Code	Wire Gauge	Functional Description
14	BR	18	Marker lamp feed to electric brake controller
43	DB	12	Electric tailer brake controller to trailer
49	O	12	Relay feed ignition run
50	R	12	Trailer brake controller or B+ feed
52	Y	16	Left hand stop/turn
64	DG	16	Right hand stop/turn
206	W	16	Ground
294	W-LB	18	Fused hot in run
322	LB-Y	20	Power takeoff relay or switch to powertrain control module (PCM)
511	LG	18	Center high mount or lamp feed stop
962	BR-W	16	Relay feed marker lamps
963	BK-LG	16	Relay feed backup lamps
1353	R	14	Customer pass thru circuits
1487	DB	14	Customer pass thru circuits
1495	W	14	Customer pass thru circuits
1501	BK	14	Customer pass thru circuits



SUPER DUTY F-SERIES

2006
MODEL YEAR

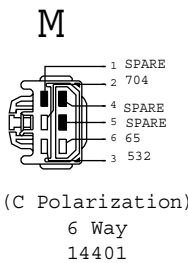
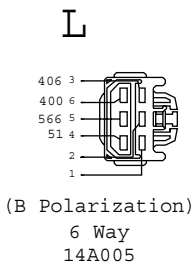
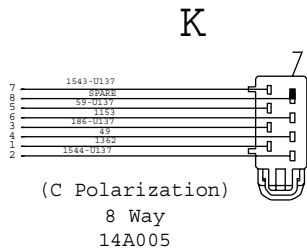
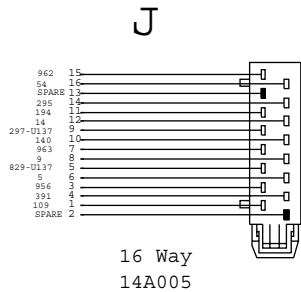
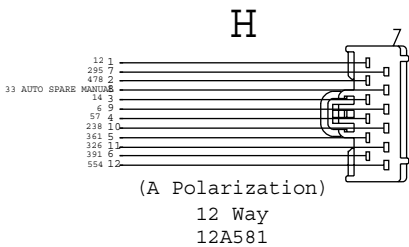
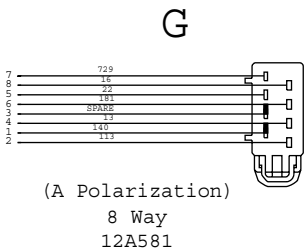
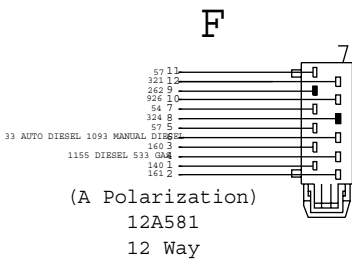
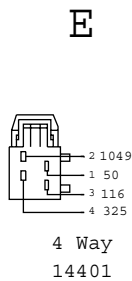
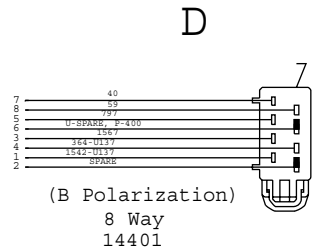
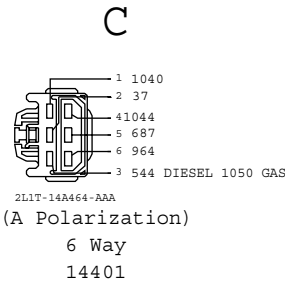
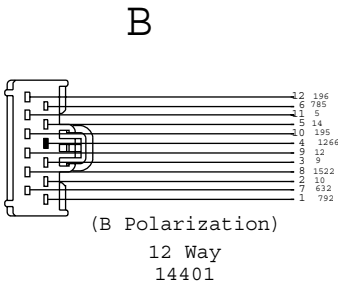
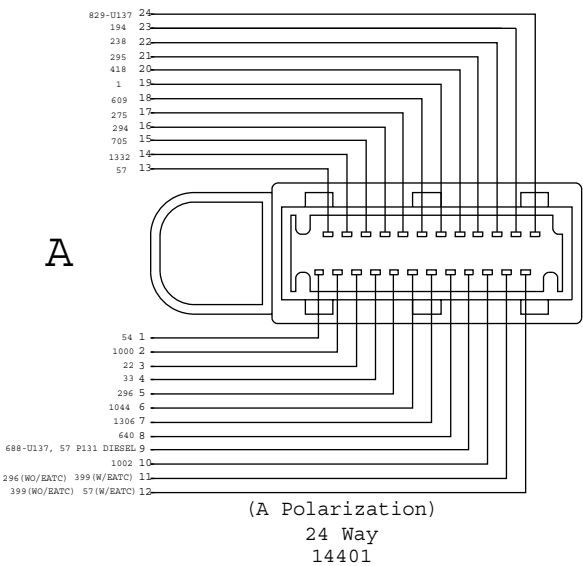


NOTE — SEE FIGURE B, PAGE 164 AND 165.

ELECTRICAL WIRING
SUPER DUTY F-SERIES — TRAILER TOW
PDJB CONNECTORS (A THRU M)

2006
MODEL YEAR

ELECTRICAL



ELECTRICAL WIRING

GENERAL PRACTICES

2006
MODEL YEAR

Page 168

ELECTRICAL

This section provides instructions for the addition of electrical devices to the vehicle electrical system by body builders.

(Vehicles stored on site should have the negative battery cable disconnected to minimize “Dead Battery” situation. This applies to both “incomplete” and “complete” vehicles in storage.)

After all electrical or vehicle modifications, perform the on-board diagnostics as described in the powertrain control/emissions diagnosis manual to clear all diagnostic trouble codes (DTCs). Road test vehicle and rerun the on-board diagnostics to verify that no DTCs are present. If DTCs are generated perform the appropriate diagnostic procedures and repairs. Vehicle operation (engine/transmission) may be affected if DTCs are not serviced.

F/CMVSS, U.S. and Canadian RF Requirements:

1. All Ford vehicles built and fully completed by Ford, comply with F/CMVSS No. 108, “Lamps, Reflective Devices and Associated Equipment” and other applicable F/CMVSS that affect electrical components. Care must be taken that modifications do not conceal, alter or change components installed or provided by Ford Motor Company to achieve this conformance.
2. Incomplete vehicles (i.e., Chassis Cab, Stripped Chassis, etc.) will conform to the F/CMVSS according to the provisions and conditions stated in the *Incomplete Vehicle Manual* (IVM) attached to each incomplete vehicle.
3. Devices that emit radio frequency (RF) energy, such as AM/FM radios and radio-controlled security systems, marketed for sale or use in the United States are subject to the rules and regulations of the Federal Communications Commission (FCC) 47 CFR Parts 2 and 15.

These rules specify the following conditions of operation:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

In addition, the FCC’s Rules may require the device to be tested and found to comply with various RF interference emission limits before it may be marketed. The FCC establishes different limits according to the particular use and installation of RF devices. In some cases, a grant of equipment authorization from the FCC also must be obtained before any RF device may be marketed. Labeling with certain FCC information may also be required.

To ensure continued compliance with the FCC’s requirements, the owner, user, custom manufacturer, or service technician must not modify or change the RF device in a manner not expressly approved by Ford Motor Company. Such modifications could void the authority to operate the device.

4. All vehicles powered by spark ignition internal combustion engines (e.g., gasoline or liquid petroleum gas engines) and manufactured in Canada or for sale or use in Canada are subject to the Canadian “Regulations for the Control of Interference to Radio Reception,” SOR/75-629, Canada Gazette Part II, Vol. 109, No. 21, November 12, 1975, as amended by SOR/77-860, Canada Gazette Part II, Vol. 111, No. 21, November 9, 1977, by SOR/78-727, Canada Gazette Part II, Vol. 112, No. 18, September 27, 1978, and by SOR/80-915, Canada Gazette Part II, Vol. 114, No. 23, December 10, 1980. Violation of these regulations is punishable by fine or imprisonment. Ford-built incomplete vehicles other than stripped chassis are designed and manufactured to be capable of meeting the regulatory requirements or such modifications thereof as may be authorized by the Canadian Department of Communications.

However, because Ford has no control over how an incomplete vehicle is completed by subsequent stage manufacturers, Ford does not represent that the completed vehicle incorporating the Ford-built components will comply with applicable requirements.

Routing & Clipping:

1. It is strongly recommended that wiring in areas of heavy rework, or in areas where welding operations are to be performed, be removed prior to the rework operations and reinstalled after the rework is completed. If vehicle is equipped with a Powertrain Control Module (PCM), the PCM Module must be disconnected before any electrical welding is performed, otherwise module damage may result. If wire removal is not practical, the wires must be shielded from damage due to the rework and welding heat. All components and wiring should be reinstalled as closely as possible to the way it was installed before removal.
2. Wire routings of newly installed components or wire routing revisions of the Ford harnesses necessitated by reworks must conform to the following:
 - Wires routed through holes in sheet metal or castings must have the hole edges protected by a grommet.
 - Wires should be routed to avoid metal edges, screws, trim fasteners and abrasive surfaces. When such routings are not possible, protective devices (shields, caps, etc.) must be used to protect the wires and when wires must cross a metal edge the edge should be covered with a protective shield and the wiring fastened within 3 inches of the edge.
 - Wires must be routed to provide at least 3 inches clearance to moving parts, unless positively fastened or protected by a conduit.
 - Existing heat shields, insulation, and wire shielding/twisting must be maintained.

- Wire routings should avoid areas where temperatures exceed 180° F and a minimum clearance of 6 inches should be maintained from exhaust system components. Where compliance with this requirement is not possible, high temperature insulation and heat shields are required.
- When wiring is routed between two members where relative motion can occur the wiring should be secured to each member, with enough wire slack to allow flexing without damage to the wire.
- Wiring to all circuit components (switches, relays, etc.) in exposed locations must provide a drip loop to prevent moisture from being conducted into the device via the wire connection.
- Routing wires into areas exposed to wheel wash should be avoided. When such routings cannot be avoided, adequate clipping or protective shields are required to protect the wires from stone and ice damage.
- The wire retainers and grommets installed by the assembly plant are usually designed to accommodate only the Ford-installed wires. Additional wiring or tubing should be retained by additional clips. When added wires or tubes are routed through sheet metal panels, new holes, with proper wire protection and sealing, must be used.
- All wiring connections to components of the factory-installed system must be accomplished by using the proper mating wire termination. (Connections on studs and ground connections must use eyelet terminations, connections to female bullets must terminate in male bullets, etc.)

Splice/Repair:

When necessary to splice wire for repair or circuit length revisions, the following guide should be followed:

- Wire ends should be stripped making sure that individual conductor strands are not damaged.
- When soldering, make sure an adequate mechanical joint exists **before** applying solder. Use only rosin core solder — **never** acid core.
- For crimp joints, use butt-type metal barrel fasteners and a proper tool (such as Motorcraft crimp tool S-9796) specifically designated for this type of work.
- Splice joints must be adequately sealed and insulated. Adhesive lined heat shrink tubing is highly recommended to cover soldered and bare, metal barrel, crimp joints. Quality electrical tape can be used inside the vehicle but is not recommended for an outside environment.
- Seal the ends of insulated barrel crimp devices with a silicone grease when in an outside environment.
- The most durable splice joint will be bare metal barrel crimped, flow-soldered and covered with adhesive lined heat shrink tubing. Use this type of joint as often as possible.

Circuit Protection:

1. Modification to existing vehicle wiring should be done only with extreme caution and consideration of effects on the completed vehicle electrical system. Anticipated circuitry should be studied to ensure that adequate circuit protection will exist and that feedback loops are not created.
 2. Any added circuitry must be protected either by a base vehicle fuse or breaker, or by a similar device installed by the body builder.
 3. When adding loads to a base vehicle protected circuit, make sure that the total electrical load thru the base vehicle fuse or breaker is less than 80% for fuses in the passenger compartment and 60% for fuses under hood or under body of the device rating to prevent nuisance fuse blows.
- Total **current** draw is the sum of the base vehicle circuit current requirement (measured with an ammeter) and the anticipated add-on components current requirements.
 - **Never** increase the rating of a factory installed fuse or circuit breaker.
 - For added lamp loads, the “Bulb Chart” on page 169 will aid in determination of common lamp current draws.
 - It is the body builder’s responsibility to use sound engineering judgment when making any modifications to a vehicle, and the body builder is responsible for ensuring that all modifications made are appropriate for the intended vehicle application.

ELECTRICAL:

Guidelines for Powertrain Control System Application

SYSTEM:

All Powertrain Control Module wiring, in particular the 12A581 and 14401, must be a minimum of 2 inches from secondary ignition coil wires and at least 4 inches from the distributor, ignition coil tower, and starter motor (and its wiring) as well as 4 inches from the alternator output wiring.

These clearances apply in particular to all PCM sensor and actuator pigtail wiring.

PCM wires shall not be in the same bundle as other high-current non-PCM circuits (e.g., tachometer wire from coil to Thick Film Ignition Module (TFI), power seat/door lock/window, horn, alternator reg.) for a distance of more than 20 inches.

ELECTRICAL WIRING

BULB CHART

2006
MODEL YEAR

If the **total** electrical load on a factory circuit, after the addition of electrical equipment, is less than 80% of the fuse or circuit breaker protection rating in that circuit or less than the capacity of some limiting component (switch, relay, etc.), the items to be added can be connected directly to that circuit. For fuses located in the engine compartment, the electrical load should not exceed 60% of the fuse or circuit breaker protection rating.

If the total electrical load to be added on a factory circuit exceeds the value of the circuit protection, or the value of some limiting component, the items to be added **cannot** be added directly to the circuit.

- Added electrical devices exceeding the current capabilities of the factory wiring system must be controlled through the use of a relay. The coil of the relay can be fed from the factory wiring (now acting as a signal circuit) with the added wiring providing the power feed to the added electrical device through the relay power contacts. (The relay selection is important and depends on current requirements, number of cycles expected in the relay lifetime, whether the relay is to be operated intermittently or for long periods of time, and whether the relay is exposed to weather conditions or is installed in a protected area. When the current requirements of a circuit exceed the capacity of an available relay, more than one relay can be used if the circuit is wired to split the load).
- The factory wiring should not be used as a power feed to the relay power contacts or switches. Battery power is to be supplied from the starter motor solenoid positive terminal for added circuits requiring a maximum of 30 amps or directly from the battery positive terminal for added circuits requiring greater than 30 amps of current.

Caution — Never use the stud on the underhood fuse panel as a junction point.

Circuit protection (fuses or circuit breakers) must be provided for all added wiring. The protection device rating should not exceed the current requirements for the add-on components and should be installed as close to the point of tapped power as possible.

Wire Gage:

- When adding wiring, the wire gage size should be determined as follows:
 - Where wire is spliced to extend a circuit, the added wire should have a gauge at least that of the circuit being lengthened.
- When wire is being added to feed add-on devices, the **Wire Gage Table** on this page should be used. (Note: Current capacity of a given wire varies with temperature and type of insulation. The table, however, represents generally accepted values as a guide).

- All added underhood or underbody wiring should have a thermostat insulation (such as Hypalon or Cross-linked polyethylene).
SAE specifications J1128 type SXL, GXL or TXL.
SAE specifications J1127 type SGX or STX for battery cables.

WIRE GAGE TABLE

Wire Gage	Maximum Current Capacity (Plastic Insulated Copper Wire)
20	10 Amps
18	15 Amps
16	20 Amps
14	25 Amps
12	30 Amps
10	40 Amps

BULB CHART

BULB TRADE NUMBER	CANDLE POWER	CURRENT @ RATED VOLTAGE
67/97	4	0.69 A @ 13.5V
168	3	0.35 A @ 14.0V
192	3	0.33 A @ 13.0V
194	2	0.27 A @ 14.0V
211-2	12	0.97 A @ 12.8V
212-2	6	0.74 A @ 13.5V
578	9	0.78 A @ 12.8V
579	9	0.8 A @ 12.8V
904	4	0.69 A @ 13.5V
904NA	5.3	0.69 A @ 13.5V
906	6	0.69 A @ 13.5V
912	12	1.0 A @ 12.8V
916	2	0.54 A @ 13.5V
916NA	1.5	0.54 A @ 13.5V
921	21	1.4 A @ 12.8V
922	15	0.98 A @ 12.8V
1157A (major)	24	2.1 A @ 12.8V
1157A (minor)	2.2	0.59 A @ 14.0V
3057 (major)	32	2.1 A @ 12.8V
3057 (minor)	32	2.1 A @ 12.8V
3057K (major)	32	2.1 A @ 12.8V

BULB TRADE NUMBER	CANDLE POWER	CURRENT @ RATED VOLTAGE
3057K (minor)	2	0.48 A @ 14.0V
3155K	21	1.6 A @ 12.8V
3156 (P27W)	32	2.1 A @ 12.8V
3157 (P27/2W) (major)	32	2.1 A @ 12.8V
3157 (P27/2W) (minor)	3	0.59 A @ 14.0V
3157A (major)	24	2.1 A @ 12.8V
3157A (minor)	2.2	0.59 A @ 14.0V
3157K (major)	32	2.1 A @ 12.8V
3157K (minor)	3	0.59 A @ 14.0V
3456K	40	2.23 A @ 12.8V
3457AK (major)	30	2.23 A @ 12.8V
3457AK (minor)	2.2	0.59 A @ 14.0V
3457K (major)	40	2.23 A @ 12.8V
3457K (minor)	3	0.59 A @ 14.0V
3757AK (major)	24	2.1 A @ 12.8V
3757AK (minor)	2.2	0.59 A @ 14.0V
4057K (major)	32	2.23 A @ 12.8V
4057K (minor)	2	0.48 A @ 14.0V
4157K (major)	32	2.23 A @ 12.8V
4157K (minor)	3	0.59 A @ 14.0V
W5W	4	0.4 A @ 12.0V

HALOGEN BULB TRADE NUMBER	CANDLE POWER	WATTS @ RATED VOLTAGE
H1	117	55W @ 12.0V
H3	121	55W @ 12.0V
HB2 (9003) (low)	76	55W @ 12.0V
HB2 (9003) (high)	125	60W @ 12.0V
9005 (HB3)	135	65W @ 12.8V
9006 (HB4)	80	55W @ 12.8V
9007 (HB5) (low)	80	55W @ 12.8V
9007 (HB5) (high)	107	65W @ 12.8V
H13/9008 (low)	—	55W @ 12.8V
H13/9008 (high)	—	65W @ 12.8V
H7	125	55W @ 12.0V
H9	167	65W @ 12.0V
H11	107	55W @ 12.8V
H6054 (low)	—	55W @ 12.8V
H6054 (high)	—	65W @ 12.8V
9140	48	40W @ 12.8V
9145 (H10)	65	45W @ 12.8V

Although there are many points in the truck electrical system to connect additional circuits certain connection points are recommended for reliability and convenience. This section defines the recommended connection points for each Ford Truck model and the maximum electrical loads allowable. **CAUTION:** Improper electrical tie-ins may affect vehicle operation (e.g., engine transmission).

After all electrical or vehicle modifications, perform the on-board diagnostics procedures as described in the powertrain control/emissions diagnosis manual to clear all diagnostic trouble codes (DTCs). Road test vehicle and rerun the on-board diagnostics to verify that no DTCs are present. If DTCs are generated, perform the appropriate diagnostic procedures and repairs. Vehicle operation (engine/transmission) may be affected if DTCs are not serviced.

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 reinstallation of the battery negative cable.

Do not splice into the Powertrain System (PCM-V). Connecting to any component or wires to this system may adversely affect Engine/Transmission operation.

LIGHTS CONTROLLED BY HEADLAMP SWITCH

The head lamp switch used on the F-150, Super Duty F-Series and E-Series vehicles employs one main 30A maxi fuse for the head lamp system. The left- and right-hand low beam lamps are then fused individually using a 10A fuse located in the instrument panel fuse box (see schematic on page 171) the exterior lamps are fused using a 15A fuse while the interior lamps are fused using a 10A fuse located in the instrument panel fuse box (see schematic on page 171). A connection to any circuit in the system controlled by the head lamp switch must be done using an auxiliary relay. A marker lamp relay circuit 962 for SUB additions is provided for convenience as standard equipment on chassis cabs, optional on pickups. Do not connect to other OEM wires.

E-SERIES

- Rear Lights — Splice into circuit #14 (Brown) in crossover harness at rear of vehicle.
- Front Lights — Splice into circuit #14 (Brown) in engine compartment 12A581 wire assembly along right or left fender apron.

LIGHTS CONTROLLED BY STOP LAMP SWITCH AND TURN INDICATOR SWITCH

NOTE: Splicing into the stop lamp switch on vehicles with Electronically Controlled Transmissions can interfere with the proper functioning of PCM, speed control, and anti-lock brake electronic modules. This can:

- Affect EFI engine idle speed quality.
- Do not delete or deactivate the Center High Mount Stop Lamp unless it will be blocked by second unit body.
- Prevent the Powertrain Control Module torque converter clutch from applying at throttle openings less than half throttle.
- Deactivate anti-lock brake system operation
- Prevent the speed control from disengaging upon braking.

If your application involves splicing into the stop lamp switch of a Powertrain Control Module equipped vehicle, please consult the Truck Body Builders Advisory Service website at www.fleet.ford.com/truckbbas/ to obtain a copy of QVM Bulletin #10.

The stop lamp switch that is in use on Ford trucks is a mechanical switch operated by brake pedal. It is designed for maximum loads usually less than the fuse or circuit breaker in the circuit but ample for normal stop lamp loads. The maximum load is 15 amps. Under no circumstances are total loads in excess of this value permissible. (See schematic on page 166).

F-150, SUPER DUTY F-SERIES AND E-SERIES MODELS

Ford trucks are released with a mechanical stop lamp switch mounted on the brake pedal arm for E-Series (mounted on the pedal pin and master cylinder push rod for F-150 and Super Duty F-Series). This switch has a maximum allowable electrical load of 15 amps. If only stop lamp function is desired for the added lights, splice into the circuit #511 light green wire for E-Series. F-150 and Super Duty F-Series between the stop lamp switch and the turn indicator switch. This circuit is provided as standard equipment and is located at the rear of the vehicle.

If both turn signal and stop lamp function are desired for the added lights, splice into the tail lamp loom (circuit #64 dark green for F-150, Super Duty F-Series and E-Series right-hand lights and circuit #52 yellow for F-150, Super (See note below). These circuits are provided as standard equipment and are located at the rear of the vehicle. (See Figure B, Page 164 and page 165 and schematic on page 166).

NOTE:

1. The turn signal switch used on some light trucks has a maximum rated current of 6.5 amps for right and left turning functions and 10.4 amps for stop lamp function. Do not exceed these values on the turn signals.
2. The Super Duty F-Series utilizes an electronic flasher (13550) for the turn signal and emergency flasher system.

ADDED LIGHTS OR ACCESSORIES CONTROLLED BY ADDED SWITCHES

This section describes the connection points for added electrical accessories when these accessories are to be controlled by added switches not a part of the Ford-released vehicle. The added 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.

RADIO FREQUENCY INTERFERENCE (RFI)

During modifications to the vehicle, manufacturers, service technicians, owners and users should take the necessary precautions to maintain the RFI integrity of components. (Both the United States and Canada have RFI regulation in effect). Precautionary procedures and components listed below are examples and do not necessarily represent a complete list.

1. All components required to suppress RFI emissions, which are removed during service, repair, or completion of the vehicle, must be reinstalled in the manner in which they were installed by Ford.
2. Do not modify or change any RF device in a manner not expressly approved by Ford Motor Company.
3. Shields on distributor and ignition coil must remain installed.

4. Replacement spark plugs, ignition wires, ignition coils, distributor caps and distributor rotor must be equivalent in their RFI suppression properties to original equipment.
5. Electrical grounds on all components must be retained.
6. Metallic components installed on the body or chassis must be grounded to the chassis.
7. Electrical circuits added to the vehicle should not be installed near the high tension ignition components.
8. Only “static conductive” accessory drive belts should be used.
9. Fan, water pump, power steering and other belts should be of the OEM type or equivalent that will not build up a static electrical charge.
10. For any completed vehicle, additional measures may be needed to adequately suppress RFI emissions.

CHECK ENGINE WARNING LIGHT

The check engine warning light is a device required on certain vehicles to indicate malfunctions of the Powertrain Control Module. For all vehicles except E-Series Super Duty Stripped Chassis (which is not equipped with a dashboard), if a warning light is required, it is Ford installed and operational. The light is also required for all gasoline powered E-Series Super Duty Stripped Chassis vehicles. The warning lamp is included in the supplied instrument cluster, located in the dunnage box. It should be recognized that this light is a requirement of Emission Certification.

If an alternate instrument cluster is utilized, the final stage manufacturer must install an operational light in the dashboard. This light must glow amber and display the acronym message, “SERVICE ENGINE SOON.”

Once the light has been completed by the final stage manufacturer, proper function can be determined by turning the key to the on position. The light should come on prior to engine cranking and go out when the engine starts. If the light does not come on as above, refer to Section 14 (Quick test step 7 — Diagnostics by Symptom) of Volume H (*Engine and Emission Diagnostic Manual*) of the *Car and Truck Service Manual* for diagnostic procedure.

NOTE: The final stage manufacturer is responsible for ensuring that final vehicle configuration meets all applicable regulatory requirements.

2006
MODEL YEAR



PICKUP BOX REMOVAL/ALTERATIONS

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

Page 172
PART I
PICKUP BOX

Introduction

The following information is presented in three parts for vehicle alterers who intend to remove pickup boxes from certain Rangers and Super Duty F-Series pickup trucks, and install aftermarket second unit bodies on these vehicles. For vehicle alterers in California, see important information on page 176 concerning alteration of vehicles with a GVWR of 8500 lb or less for sale, registration, or use in California.

Part I details those Ranger and Super Duty F-Series pickup models that may be altered by removal of the pickup box and installation of aftermarket second unit bodies and indicates where specific questions should be directed. Part II provides information concerning the obligations and responsibilities of vehicle alterers with respect to United States and Canada Motor Vehicle Safety Standards (F/CMVSS). Part III provides information for vehicle alterers with respect to United States, California, and Canada exhaust emissions, evaporative emissions and RFI requirements, and California requirements with regard to fuel vapor recovery.

RANGER REGULAR CAB PICKUP BOX REMOVAL WILL AFFECT COMPLIANCE WITH THE DYNAMIC PERFORMANCE REQUIREMENTS OF F/CMVSS NO. 214 SIDE IMPACT PROTECTION FOR VEHICLES WITH A GVWR OF 2722 KG (6000 LB) OR LESS.

Vehicle alterers who intend to modify vehicles, as described above, may use the information and conditions provided herein to assist them in determining whether modified vehicles comply with applicable regulatory requirements. Alternatively, the vehicle alterer may desire to employ other limits or conditions than those provided herein. In any case, it is the responsibility of the vehicle alterer to assure compliance and certification of the altered vehicle to the applicable safety and/or emissions (including noise and RFI) requirements. Specific questions concerning compliance and/or certification to safety standards and emissions and fuel economy regulations should be directed to the vehicle alterer's legal counsel or the United States National Highway Traffic Safety Administration (FMVSS and Federal Fuel Economy Standards and requirements), the Canada Ministry of Transport (CMVSS, emissions, and noise regulations), the Canada Department of Communications (Canadian RFI regulations), the United States Environmental Protection Agency (EPA) (United States emission requirements) or the California Air Resources Board (California emissions and fuel vapor recovery requirements), and the vehicle noise emission control authorities, if any, in the state and locality in which the vehicle is sold.

If you have technical, product-related questions concerning some aspect of the vehicle alteration, a representative of Ford Motor Company will be happy to talk with you. Please contact your regional sales office or phone the Ford Truck Body Builders Advisory Service directly at 1-877-840-4338.

Models Available for Pickup Box Removal

The models listed in Table A, page 177 (Super Duty F-Series) and Table A, page 178 (Ranger SuperCab), may be altered by removing the pickup boxes and installing aftermarket second unit bodies. For Ranger SuperCab vehicles available for pickup box removal, Ford Motor Company specifies that they shall be equipped with front and rear stabilizer bars. Limitations on the second unit bodies that may be installed, as well as other vehicle conditions, are also specified in Table A, pages 177-178 and in the Safety/Emissions section beginning on page 9.

PART II

Information Concerning United States and Canada Safety Standards

The vehicle alterer is responsible for certifying the altered vehicle pursuant to Title 49 of the Code of Federal Regulations Sections 567.7 and 568.8 in the United States, or pursuant to Section 9 of the Canadian Motor Vehicles Safety Regulations in Canada. As outlined in these requirements, the vehicle alterer must ascertain which F/CMVSS are affected by the alteration, and subsequently provide certification that the altered vehicle conforms to all affected safety standards. In the information that follows, Ford has endeavored to provide sufficient instructions and guidelines to the vehicle alterer for certifying that the vehicle conforms to all F/CMVSS affected by the vehicle alteration. Information pertaining to Certification Labeling Requirements for the altered vehicle is outlined in page 174.

Federal and Canadian Motor Vehicle Safety Standards Compliance

Conformity to the following FMVSS (FMVSS) and Canadian Motor Vehicle Safety Standards (CMVSS) are affected by the removal of the pickup box and rear bumper and installation of an aftermarket second unit body:

F/CMVSS No. 105 ⁽⁵⁾	— Hydraulic Brakes
F/CMVSS No. 108	— Lighting Equipment
F/CMVSS No. 111	— Rear view Mirrors
F/CMVSS No. 135 ⁽⁵⁾	— Light Vehicle Brakes
F/CMVSS No. 204 ⁽¹⁾	— Steering Control Rearward Displacement
F/CMVSS No. 208 ⁽²⁾	— Occupant Crash Protection
F/CMVSS No. 212 ⁽³⁾	— Windshield Mounting
F/CMVSS No. 214 ⁽³⁾⁽⁴⁾	— Side Impact Protection
F/CMVSS No. 219 ⁽³⁾	— Windshield Zone Intrusion
F/CMVSS No. 301 ⁽³⁾	— Fuel System Integrity

For Motor Company represents that, in the case of a Ranger SuperCab or Super Duty F-Series pickup truck listed in Table A, page 177 (Super Duty F-Series) and Table A, page 178 (Ranger SuperCab), this vehicle, as altered, will conform to the requirements of the previously listed safety standards, provided the vehicle is altered only by the removal of the pickup box (including optional equipment attached to the pickup box) and rear bumper (if so equipped), and the installation of an aftermarket Second Unit Body (SUB) in accordance with the following conditions:

1. The following lighting components must be designed and installed on the altered vehicle in accordance with the requirements of F/CMVSS No. 108, Lamps, Reflective Devices, and Associated Equipment.

Tail Lamps*	Rear Side Marker Lamps
Stop Lamps*	Front and Rear
License Plate Lamps*	Identification
Back-Up Lamps*	Lamps (for vehicles over
Rear Turn Signal Lamps*	80 inches in width)
Rear Side Marker Lamps*	Front and Rear Clearance
Rear Side Reflex Reflectors*	Lamps (for vehicles over
Reflectors*	80 inches in width)
	Center High Mounted Stop
	Lamp (if second unit body
	blocks view of the CHMSL
	on the back of the cab
	another CHMSL must be
	added)

The items of lighting equipment (including wiring and power supply) on the cab of the pickup truck must not be removed, modified, replaced, or altered. Further, the second unit body installed by the vehicle alterer must not impair the visibility and conformity to the photometric requirements of the lamps and reflective devices installed on the cab of the pickup truck.

2. The weight (in pounds) of the Second Unit Body (SUB) installed must be within the range specified in Tables A, pages 177-178 corresponding to the particular pickup truck model and not greater than the weight (in pounds) calculated using the following formula:

SUB WEIGHT LIMIT = Unloaded Vehicle Weight (UVW) – Original Equipment Manufacturer (OEM) Curb Weight + Pickup Box + Options Removed.

Super Duty F-Series

- Step Bumper – 74 lb.
- Pickup Box – see Table A, page 177
- Spare Wheel and Tire – see Table B, page 177

Ranger SuperCab

- Step Bumper – 37 lb.
- Pickup Box – see Table A, page 178
- Spare Wheel and Tire – see Table B, page 178

NOTES —

- (1) For vehicles with a GVWR of 10,000 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (2) Injury criteria is applicable to vehicles with a GVWR of 8500 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (3) Applicable to vehicles with a GVWR of 10,000 lb or less.
- (4) Dynamic Performance Requirements apply to MPV, Truck, or a Bus with a GVWR of 2722 Kg (6000lb) or less for FMVSS only.
- (5) Standard 135 applied to vehicles with a GVWR of 3500 Kg (7716 lb) or less. Standard 105 applies to vehicles with a GVWR over 3500 Kg (7716 lb).

* These lamps and reflectors are available from Ford in the form of rear lamp assemblies and are the same as those installed on Ford chassis cab models.

PICKUP BOX REMOVAL/ALTERATIONS

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

Page 173

PICKUP BOX

PART II (Cont'd)

Example

A vehicle alterer wants to remove the pickup box and rear step bumper from a Super Duty F-250 Regular Cab (4x4), 137-inch WB model with a 5.4L engine, 4R100 transmission, and air conditioning having a curb weight of 6200 lb and install a 600-pound Second Unit Body (SUB). First, Table A (on page 177) specifies that the maximum SUB weight is 1800 lb. Since the SUB weight is 600 lb, this condition is satisfied.

Second, the SUB weight must not exceed the SUB WEIGHT LIMIT calculated below:

$$\begin{aligned}\text{SUB WEIGHT LIMIT} &= \text{Maximum Complete Unloaded Vehicle Weight (UVW) minus the unloaded vehicle weight as delivered (OEM) curb weight plus pickup box weight removed plus weight of removed options.} \\ &= 6900 - 6200 + 380 + 74 \\ &= 1154 \text{ lb}\end{aligned}$$

The 600 lb SUB is less than 1154 lb and, accordingly, may appropriately be installed as planned.

The vehicle alterer must either select a lighter weight SUB, reduce the OEM accessory weights for the vehicle, or both if the SUB is heavier than the maximum limit.

1. OEM Curb Weight includes Base Vehicle Weight (with full fuel), engine and transmission weight, and all OEM accessory weights ordered or installed (Refer to the appropriate *Truck Source Book* or the CD version of this publication for weight data).
 2. Options removed include step bumpers or similar OEM options **permanently** removed from the vehicle.
 3. The center of gravity height and overall height of the second unit body installed by the alterer must not exceed the values specified in Table A, pages 177-178 corresponding to the particular pickup model. Center of gravity height and overall height of the second unit body are measured from the top surface of the frame at the rear of the cab.
 4. The altered vehicle's unloaded vehicle weight (see Definitions in Safety/Emission section) must not exceed the values designated in Table A pages 177-178 corresponding to the pickup truck's model and non-California engine-transmission combination.
5. These instructions must be followed in the vehicle alteration:
 - The following components, as installed by Ford Motor Company, are not to be removed, relocated, altered, or modified in any way:
 - Steering column, steering shaft, steering wheel, and related structural components and attachment hardware
 - Windshield and windshield mounting system
 - Cab and front end structural components, including the roof, pillars, cowl, cowl reinforcements, hood, doors, fenders, hood restrictors and apron reinforcements, and frame and frame reinforcements
 - Radio antenna
 - Doors and hood mounting, hinging, and latching systems
 - Hood and fender ornamentation
 - Fuel tank and attachment hardware, including sending unit and vapor valve, fuel tank shield, and in-tank electric fuel pump (for gasoline engine only)
 - Fuel lines, routing, and attachments, excluding fuel filler cap, filler pipe, filler hose(s), and filler system attachment hardware, which must be removed and replaced
 - Vapor line(s) and carbon canister(s)
 - Fuel pump
 - Fuel filter and attachment
 - Air cleaner assembly
 - Safety belts
 - Front seat head restraints
 - Electrical grounds on all components (must be retained)
 - The Powertrain Control Module (PCM), and
 - Catalyst and Exhaust System.
 - Any alteration or modification made to the vehicle, as manufactured by Ford Motor Company, and any components or structure installed by the vehicle alterer must not result in steering column rearward displacement of more than 5 inches (as defined in F/CMVSS No. 204)⁽¹⁾; no modification to the Hydraulic Brake System that would affect compliance to F/CMVSS No 105 or 135⁽⁵⁾; an increase in injury potential for front outboard seating positions (as defined in F/CMVSS No. 208)⁽²⁾; any additional loss of windshield retention (as defined in F/CMVSS No 212)⁽³⁾; any change in the performance requirements of F/CMVSS 214⁽³⁾⁽⁴⁾; any penetration of the inner surface of the windshield or intrusion into the protected zone (as defined in F/CMVSS No. 219)⁽³⁾; or loss of fuel system integrity (as defined in F/CMVSS No. 301)⁽³⁾; when the vehicle is tested in any manner specified by applicable provisions of F/CMVSS Nos. 105⁽⁵⁾, 135⁽⁵⁾, 204⁽¹⁾, 208⁽²⁾, 212⁽³⁾, 214⁽³⁾⁽⁴⁾, 219⁽³⁾, and 301⁽³⁾, respectively.

NOTE: Federal Motor Vehicle Safety Standard (FMVSS) and Canadian Motor Vehicle Safety Standard (CMVSS) No 204 are not applicable to a vehicle with an unloaded vehicle weight greater than 5500 lb. F/CMVSS No. 208 injury criteria are applicable only to vehicles with a GVWR of 8500 lb or less and an unloaded vehicle weight of 5500 lb or less. Conformity to Federal Motor Vehicle Safety Standard (FMVSS) and Canadian Motor Vehicle Safety Standard (CMVSS) No. 212 and 219 for vehicles having a gross vehicle weight rating (as defined in 49 CFR, Part 571.3) no greater than 10,000 lb, is established for representative vehicles at a vehicle weight provided by Sections S6.1(b) and S7.7(b) of FMVSS No. 212 and 219, respectively, and provided by Sections 5.1 and 8 of CMVSS No. 212 and 219, respectively.

- The second unit body installed shall be mounted securely and so designed that when the altered vehicle is impacted in any manner specified by applicable provisions of F/CMVSS No. 212⁽³⁾ and 219⁽³⁾, second unit body deformation or movement relative to the frame does not result in any separation or loss of body attachment to the frame.
- The second unit body installed and the required fuel system components (identified below) shall be located and mounted as follows:

- The second unit body shall be mounted securely and is so designed that when the altered vehicle is tested in any manner specified by applicable provisions of F/CMVSS No. 301⁽³⁾:
 - (a) Second unit body components shall not contact any fuel system component (other than at the points where the fuel system is permanently attached to the second unit body) and
 - (b) Second unit body deformation or movement relative to the frame shall not cause any fuel system component to be penetrated, disconnected, or otherwise damaged.
- The rear end of the second unit body (excluding the rear bumper) installed shall not extend beyond (overhang) the rear edge of the vehicle frame or frame extension. Any extension of the vehicle frame must be constructed and attached so as to perform as a continuation of the vehicle frame when the altered vehicle is tested in any manner specified by applicable provisions of F/CMVSS No. 301⁽³⁾.
- See the Design Recommendations, Second Unit Body (SUB) attachment section of this book beginning on page 181 for additional information.
- The fuel filler cap, filler pipe, filler hose(s), and filler system attachment hardware for vehicles with diesel engines and for vehicles with gas engines shall be installed, as shown on Super Duty F-Series, page 114 and shall be securely retained to remain intact when the vehicle is tested in any manner specified by applicable provisions of F/CMVSS NO. 301⁽³⁾.

NOTES —

- (1) For vehicles with a GVWR of 10,000 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (2) Injury criteria is applicable to vehicles with a GVWR of 8500 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (3) Applicable to vehicles with a GVWR of 10,000 lb or less.
- (4) Dynamic Performance Requirements apply to MPV, Truck, or a Bus with a GVWR of 2722 Kg (6000lb) or less for FMVSS only.
- (5) Standard 135 applied to vehicles with a GVWR of 3500 Kg (7716 lb) or less. Standard 105 applies to vehicles with a GVWR over 3500 Kg (7716 lb).

PICKUP BOX REMOVAL/ALTERATIONS

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

PART II (Cont'd)

- The front end of the second unit body installed shall be located at least three inches rearward of the rearmost point of the cab on Super Duty F-Series, and at least 1.4 inches rearward of the rearmost point of the cab on Ranger SuperCab models.
- The vehicle, as produced by Ford, meets the Center High Mounted Stop Lamp (CHMSL) requirements of Standard 108, Lighting. Compliance to these criteria may be affected by the installation of a Second Unit Body (SUB), if the SUB blocks the view of the CHMSL mounted on the back of the cab. When this happens, the subsequent manufacturer must install a CHMSL on the SUB that meets FMVSS 108. An electrical feed for installation of a CHMSL on the SUB is provided and is located inside the rearmost crossmember near the end of the left frame rail on the Super Duty F-Series models. For the Ranger, directions are given in Ford Bulletin Q-28, CHMSL – Precautions and Guidelines for Adding or Locating.
- The vehicle, as produced by Ford, meets F/CMVSS No. 111. Compliance to F/CMVSS No.111 may be affected, however, by removal of the pickup box and installation of a Second Unit Body (SUB), even though the mirror system has not been altered. A discussion of compliance, with respect to each mirror type, follows:
 - Sail-Mounted Type Outside Mirror on Super Duty F-Series or Ranger Pickup. Provided the mirrors, driver's seat, and cab are not altered, the mirror system will continue to meet Standard No. 111. If the overall width of the Second Unit Body (SUB) is no wider than the pickup box, and if the view of the roadway behind the vehicle through the inside mirror is not totally blocked off. If the SUB blocks the view through the inside mirror, a flat glass mirror is required on the passenger's side in place of the convex mirror on vehicles to be sold in the United States. Vehicles for sale in Canada may be equipped with the convex mirror on the passenger's side when the SUB blocks the view through the inside mirror. If the SUB is wider than the pickup box, both the driver's side and passenger's side mirrors may have to be replaced with mirrors providing a wider view to the rear.
 - Trailer Tow Mirrors on Super Duty F-Series. These mirrors will continue to meet Standard No. 111, provided the mirrors, the driver's seat, and the cab are not altered.

- If the front bumper and bumper mounting system are removed temporarily, the front bumper and bumper mounting system must be reinstalled in accordance with the instructions provided in the *Ford Truck Service Manual*. If the front bumper and bumper mounting system are replaced, the replacement front bumper and bumper mounting system must not result in: steering column rearward displacement of more than 5 inches (as defined in F/CMVSS No. 204)⁽¹⁾; any increases in injury criteria (as defined in F/CMVSS No. 208)⁽²⁾; any additional loss of windshield retention (as defined in F/CMVSS No. 212)⁽³⁾; any penetration of the inner surface of the windshield or intrusion into the protected zone (as defined in F/CMVSS No. 219)⁽³⁾; or, loss of fuel system integrity (as defined in F/CMVSS No. 301⁽³⁾), when the vehicle is impacted in any manner specified by applicable provisions of those standards.

NOTE: The second unit body added by the vehicle alterer may have to conform to other safety standards as well. For example, any glazing used in the second unit body must conform to F/CMVSS No. 205, Glazing Materials. Additionally, if the second unit body is equipped with any passenger seating positions, the following safety standards may be applicable as well:

F/CMVSS No. 206	— Door Locks and Retention
F/CMVSS No. 207	— Seating Systems
F/CMVSS No. 208 ⁽²⁾	— Occupant Crash Protection
F/CMVSS No. 209	— Seat Belt Assemblies
F/CMVSS No. 210	— Seat Belt Anchorages
F/CMVSS No. 214 ⁽³⁾⁽⁴⁾	— Side Impact Protection
F/CMVSS No. 302	— Flammability of Interior Materials

With respect to the second unit body installed and the above-mentioned safety standards, it is the responsibility of the vehicle alterer to assure conformity with all applicable requirements.

It is the responsibility of the vehicle alterer to determine which other safety standards, if any, their vehicles must comply with.

NOTE: See statements for F/CMVSS No. 105 and 135, Hydraulic Brake implications of modifications/alterations to completed vehicles, including pickup box removal vehicles on pages 21-28 of the Safety/Emission section.

Certification Labeling Requirements

For altered vehicles in the United States, the vehicle alterer is required to affix an additional label containing the information shown on page 28 of the Safety/Emission section.

NOTE: The safety standard certification label, which is affixed to the driver's door latch pillar of the pickup truck, by Ford Motor Company must not be removed.

For altered vehicles in Canada, the vehicle alterer is required to affix a label containing the information shown on page 46 of the Safety/Emission section.

NOTE: A vehicle alterer may be a manufacturer according to the definition of manufacturer contained in the Canadian Motor Vehicle Safety Act.

PART III

Information concerning United States and Canada Exhaust Emissions, Evaporative Emissions, RFI and Noise, and California Fuel Vapor Recovery Requirements. Refer also to pages 11-19 of the Safety/Emission section.

A. Exhaust and Evaporative Emission Requirements

Ranger SuperCab completed trucks have been certified to the applicable U.S. Federal, California, or Canadian exhaust and evaporative emissions requirements. See page 14 for important information concerning alteration of vehicles with a GVWR of 8500 lb or less that is for sale, registration, or use in California. Federal law specifies that a light-duty truck is any vehicle with a GVWR of 8500 lb or less that has a vehicle curb weight of 6000 lb or less, and a basic vehicle frontal area of 45 square feet or less, which is designed primarily for transporting property (or is a derivative of such a vehicle), or is designed primarily for transporting persons and has a capacity of more than 12 persons, or is available with special features enabling off-street or off-highway operation and use.

All heavy-duty engines (in vehicles having a GVWR of more than 8500 lb for the United States and Canada) have been certified to the applicable U.S. Federal or Canadian exhaust or California exhaust and evaporative emissions requirements for heavy-duty engines. *It is the responsibility of the vehicle alterer to assure compliance of the altered vehicle with the applicable emission requirements.*

Ranger SuperCab and Super Duty F-Series pickup truck models listed in Tables A on pages 182-183, if altered by removal of the pickup box (including items attached to the pickup box), rear bumper (if so equipped), and installation of a second unit body, *may* not require recertification to applicable Federal, California, or Canadian emissions requirements if the following conditions are satisfied:

1. None of the engine emission control hardware furnished with the pickup truck is deleted, modified, or rendered inoperable. A listing of such hardware is provided in the Emission Control Modifications section on page 13 of the Safety/Emission section of this book.

NOTES —

- (1) For vehicles with a GVWR of 10,000 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (2) Injury criteria is applicable to vehicles with a GVWR of 8500 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (3) Applicable to vehicles with a GVWR of 10,000 lb or less.
- (4) Dynamic Performance Requirements apply to MPV, Truck, or a Bus with a GVWR of 2722 Kg (6000lb) or less for FMVSS only.

PICKUP BOX REMOVAL/ALTERATIONS

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

Page 175

PICKUP BOX

PART III (Cont'd)

Further, vehicles sold for principal use in high altitude areas must comply with the High Altitude Regulations.

1. A copy of the appropriate *Ford Truck Owner's Guide* and *Warranty Facts Booklet* is installed in the altered pickup truck prior to sale to the ultimate purchaser in order to provide emission systems warranty information and maintenance schedules. **Note:** Whether Ford Motor Company or the alterer is responsible for emission warranty claims depends on, among other things, whether the vehicle failed to comply with applicable warranty provisions because of modifications made by the alterer or because of the original design and manufacture of the vehicle.
2. The Super Duty F-Series fuel filler kit that is supplied with the vehicles ordered with pickup box delete option number 66D or available through Ford dealers, P/N F81Z-9B149-FA (gasoline) or -GA (diesel), must be installed as shown on pages 118 and 141. Filler system attachment hardware for Ranger SuperCab in kit 9B149 is installed as shown on page 179.
3. The alterer does not exceed the limitations listed on Safety/Emission page 13 under "Curb Weight and Frontal Area Restrictions".

Questions concerning requirements and policies, with respect to alterers of completed vehicles, should be directed to body builder's legal counsel, the Environmental Protection Agency, or the California Air Resources Board.

Note: If the weight of the altered vehicle exceeds the maximum unloaded vehicle weight specified in Table A pages 177-178, corresponding to the particular pickup truck model and engine combination, the vehicle alterer is required to certify the vehicle to: F/CMVSS 105 or 135⁽⁵⁾, Brakes; F/CMVSS No. 204⁽¹⁾, Steering Control Rearward Displacement; F/CMVSS No.212⁽³⁾, Windshield Mounting; F/CMVSS No. 214⁽³⁾⁽⁴⁾, Side Impact Protection; and F/CMVSS 219⁽³⁾, Windshield Zone Intrusion; and F/CMVSS No. 301⁽³⁾, Fuel System Integrity, in addition to compliance with any other F/CMVSS affected by the vehicle's alteration.

4. For a pickup truck have a GVWR of 10,000 lb or less and catalyst equipped. For vehicles other than those for sale, registration or use in California, the alterer does not add more than 500 lb to the maximum unloaded vehicle weight specified in Table A pages 177-178 corresponding to the particular pickup model.

- (a) **IMPORTANT:** Some of the preceding conditions are based, in part, on statements made by C. N. Freed of the Environmental Protection Agency (EPA) in a letter of July 13, 1979 to M. H. McBride, legal counsel of the Recreation Vehicle Industry Association. That letter explained EPA's policy concerning alterers of complete 1980 and later model year light-duty trucks in the context of EPA's Advisory Circular No. 64 – a March 7, 1977 publication that provides guidance on the need for separate certification of vehicles modified after original manufacture, but prior to sale and delivery to the ultimate purchaser. The maximum second unit body weights provided in tables on pages 177-178 are calculated in accordance with the definition of "maximum vehicle weight" provided in the July 13, 1979 letter.

The referenced letter provides that alterers of complete light-duty trucks need not recertify such vehicles for emission control purposes if:

- 1) the altered vehicles conform, in all material respects, to the design specifications in the original manufacturer's application for certification, and
- 2) the weight of the altered vehicle, including the weight of fuel at nominal tank capacity, is no more than 500 lb above the "maximum vehicle weight."

The letter further states that no frontal area restrictions will apply to alterers who comply with conditions (a) and (b) above. Alterers who do not comply with these conditions will be considered manufacturers under the Clean Air Act and will be required to assure that the altered vehicles are certified.

Questions concerning EPA's policies, with respect to alterers of completed vehicles, should be directed to legal counsel or the Environmental Protection Agency.

- (b) **NOTE:** If the weight of the altered vehicle exceeds the maximum unloaded vehicle weight specified in Table A, corresponding to the particular pickup truck model and non-California engine-transmission combination, the vehicle alterer is required to certify the vehicle to: F/CMVSS No. 105 or 135, Brakes; F/CMVSS No. 204, Steering Control Rearward Displacement (if the unloaded vehicle weight is 5500 lb or less); F/CMVSS No. 208, Occupant Crash Protection (if the GVWR is 8500 lb or less and the unloaded vehicle weight is 5500 lb or less); F/CMVSS No.212, Windshield Mounting; F/CMVSS No. 214⁽³⁾⁽⁴⁾, Side Impact Protection; F/CMVSS No. 219, Windshield Zone Intrusion; and F/CMVSS No. 301, Fuel System Integrity, in addition to compliance with any other F/CMVSS affected by the vehicle's alteration.

See page 176 for important information concerning alteration of vehicles rated at 8500 lb GVWR or less, for sale, registration, or use in California.

B. High Altitude Emissions

United States Environmental Protection Agency regulations contain unique emission certification requirements for trucks that will be sold or delivered to customers for principal use above 4,000 feet (1219 meters). Certain new vehicles cannot be sold to customers who intend to use them principally at high altitudes. TO AVOID ANY QUESTION OF CERTIFICATION COVERAGE, ORDERS SHOULD SPECIFY WHETHER A HIGH ALTITUDE EMISSION SYSTEM OR A NON-HIGH ALTITUDE EMISSION SYSTEM IS REQUIRED.

C. California Fuel Vapor Recovery

California regulations require that vehicle fuel systems be designed to accommodate a new vapor-recovery fueling nozzle, including unobstructed access to the fill pipe. Fuel filler pipes, installed per Super Duty F-Series, pages 118 and 141, will comply with the "Specifications for Fill Pipes and Openings of Motor Vehicle Fuel Tanks," referenced in Title 13 California Administrative Code, providing no part of the second unit body, as installed, intrudes within a 10-inch radius cylinder which has its axis parallel to the ground, passing through point "Z" and extends outward from the Ford fuel pipe housing component shown in the figure on Super Duty F-Series, pages 118 and 141. Fuel filler pipes, installed using the alternate bracket shown on the figures on Super Duty F-Series, pages 118 and 141, will comply with the above California vapor recovery regulations, provided the second unit body installed does not interfere with the access zone.

D. Radio Frequency Interference (RFI)

1. UNITED STATES RADIO FREQUENCY INTERFERENCE (RFI) INFORMATION

Devices that emit radio frequency (RF) energy, such as AM/FM radios and radio-controlled theft alarms, marketed for sale or use in the United States, are subject to the rules and regulations of the Federal Communications Commission (FCC) 47 C.F.R. Parts 2 and 15 (1992).

These rules specify the following conditions of operation:

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) The device must accept any interference received, including interference that may cause undesired operation.

In addition, the FCC's rules may require the device to be tested and found to comply with various RF interference emissions limits before it may be marketed. The FCC established different limits, according to the particular use and installation of RF devices. In some cases, a grant of equipment authorization from the FCC also must be obtained before and RD device may be marketed.

To ensure continued compliance with the FCC's requirements, the owner, user, custom manufacturer, or service technician must not modify or change the RF device in a manner not expressly approved by Ford Motor Company. Such modifications could void the authority to operate the device.

NOTES —

- (1) For vehicles with a GVWR of 10,000 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (2) Injury criteria is applicable to vehicles with a GVWR of 8500 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (3) Applicable to vehicles with a GVWR of 10,000 lb or less.
- (4) Dynamic Performance Requirements apply to MPV, Truck, or a Bus with a GVWR of 2722 Kg (6000lb) or less for FMVSS only.
- (5) F/CMVSS 135 is applicable to vehicles with a GVWR of 3500 Kg (7716 lb) or less. F/CMVSS 105 is applicable to vehicles with GVWR over 3500 Kg (7716 lb).

PICKUP BOX REMOVAL/ALTERATIONS

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

Page 176

PICKUP BOX

2. CANADIAN RADIO FREQUENCY INTERFERENCE (RFI) INFORMATION

All vehicles powered by spark ignition engines (e.g., gasoline, natural gas, or propane engines) and manufactured in Canada or for sale or use in Canada, are subject to the Canadian “Regulations for the Control of Interference to Radio Reception” per Interference-Causing Equipment Standard (ICES-002) and applicable test method according to “CAN/CSE-C108, 4-M92”. Violation of these regulations is punishable by fine or imprisonment. Ford-built vehicles were designed and manufactured to be capable of meeting the regulatory requirements or such modifications, thereof, as may have been authorized by the Department of Communications. However, because Ford has no control over how an altered vehicle is completed by subsequent stage manufacturers, Ford does not represent that the completed vehicle, incorporating the Ford-built components, will comply with applicable requirements.

The following information is supplied to subsequent stage manufacturers to help them avoid increasing the RFI emissions of this vehicle in the course of completing it.

For any altered vehicle, additional measures may be needed to adequately suppress RFI emissions. Affected components could include spark plugs, electronic engine control module, ground straps, ignition component shields, accessory drive belts, and instrument voltage regulator suppressor assembly.

More specifically:

- All components required to suppress RFI emissions, which are removed during service, repair, or completion of the vehicle, must be reinstalled in the manner in which they were installed by Ford.
- Shields on ignition coil must remain installed.
- Replacement of spark plugs, ignition wires, and ignition coil must be equivalent in their RFI suppression properties to original equipment.
- Electrical grounds on all components must be retained.
- Metallic components installed on the body or chassis must be grounded to the chassis.
- Electrical circuits added to the vehicle must not be installed near the high voltage ignition components.

- Only “static conductive” accessory drive belts should be used. Fan, water pump, power steering, and other belts should be on the OEM type or equivalent that will not build up a static electrical charge.
- Engine component wiring must not be rerouted in any manner.
- The Powertrain Control Module (PCM) must not be relocated from the position as installed by Ford Motor Company.

E. Noise

Canadian Motor Vehicle Safety Standard (CMVSS) NO. 1106 prescribes maximum permissible noise levels of 83 dB(A) for “heavy-duty vehicles,” with a GVWR between 6001 and 10,000 lb, where such levels are measured in accordance with SAE Standard J986a, “Sound Level for Passenger Cars and Light Trucks” (July, 1972). Under the Canada Motor Vehicle Safety Standards, a “heavy-duty vehicle” is a bus, a Chassis Cab, a multipurpose passenger vehicle, or a truck having a gross vehicle weight rating of more than 6000 lb, but not a passenger car. However, Transport Canada’s tabulation of CMVSS indicates that CMVSS No. 1106 does not apply to incomplete vehicles as such.

A pickup truck listed in tables on pages 177-178, if altered only by the removal of the pickup box (including optional equipment attached to the pickup box) and rear bumper (if so equipped), is designed and built to conform to the applicable exterior noise emission limits of CMVSS NO. 1106 (1)(b). The alterer is, of course, responsible for determining that the vehicle, as altered, complies with CMVSS No. 1106.

WARNING — VEHICLE OPERATING TEMPERATURES

Some trucks of Ford Motor Company may exhibit high engine compartment and exhaust system temperatures in some operating modes. Components, including exhaust heat shielding systems, have been installed on some vehicles in our assembly plants in an effort to provide protection against such temperatures. Subsequent aftermarket installers/manufacturers are responsible for providing thermal protection (e.g., underbody heat shields) for any structure/equipment added to the vehicle, and should not remove any components/exhaust heat shielding installed on the vehicles by Ford. Also, the added structure/equipment should not restrict air circulation in the engine compartment or underbody. See applicable sections under “Ambulance Builders Guidelines” on page 197.

Any interior floor underlayment or insulation in the near vicinity of the exhaust system, without benefit of the Ford-provided heat shields, must be capable of withstanding 371° C and 482° C [900° F] in close proximity to the catalyst during normal operating conditions. Additionally, any under chassis-mounted component, within 4 inches of the exhaust system, must be compatible with these temperatures.

IMPORTANT INFORMATION CONCERNING ALTERATION OF VEHICLES WITH A GVWR OF 8500 LB OR LESS FOR SALE, REGISTRATION, OR USE IN CALIFORNIA

Ranger SuperCab pickup trucks, listed in Table A on page 178 and manufactured by Ford Motor Company for sale, registration, or use in California, can be altered by removal of the pickup box (including items attached to the pickup box) and rear bumper (if so equipped) and installation of a second unit body, if all of the following conditions are satisfied.

For additional information concerning noise control laws and regulations issued by the Federal (U.S.) Government, as well as some states and municipalities, see Vehicle Noise Regulations on pages 11-12 of the Safety/Emission section.

1. Conditions numbered 1, 2, 3, and 4 under Section A entitled “Exhaust and Evaporative Emission Requirements” (pages 175-176), and those under Section C, entitled “California Fuel Vapor Recovery” (page 175), as they apply to vehicles with a GVWR of 8500 lb or less.
2. The vehicle alterer does not increase the vehicle’s unloaded vehicle weight by more than 10% over the maximum curb weight (unloaded vehicle weight specified in tables on pages 177-178 corresponding to the particular pickup model), does not increase the frontal area by more than 10%, or does not provide a combination increase of weight plus frontal area of more than 14%.

NOTE: The maximum unloaded vehicle weight, specified in tables on pages 177-178 for California, is the curb weight – the basic curb weight plus the weight of options of greater than 33% installation rate.

NOTE: If the weight (in pounds) of the altered vehicle exceed the maximum unloaded vehicle weight specified in tables on pages 177-178, corresponding to the particular pickup truck model, the vehicle alterer is required to certify the vehicle to: F/CMVSS No. 105 or 135, Brakes; F/CMVSS No. 204, Steering Control Rearward Displacement (if the unloaded vehicle weight is 5500 lb or less); F/CMVSS No. 208 (if the unloaded vehicle weight is 55 lb or less); F/CMVSS No. 212, Windshield Mounting; F/CMVSS No. 219, Windshield Zone Intrusion; and F/ CMVSS No. 301, Fuel System Integrity, in addition to any other F/CMVSS to which conformity is affected by the vehicle’s alteration.

3. No axle ratio, tire size or tire type changes are made that would increase the drivetrain ratio by more than five percent.

Altered vehicles which do not satisfy these conditions may not be sold, offered, or delivered for sale, or registered in California, unless the altered vehicle is certified by the California Air Resources Board, pursuant to all applicable emissions requirements. The vehicle alterer is responsible for obtaining such certification. Questions regarding these requirements should be directed to your legal counsel or the California Air Resources Board.

SUPER DUTY F-SERIES PICKUP BOX REMOVAL/ALTERATIONS DESIGN RECOMMENDATIONS

2006
 MODEL YEAR

Page 177

PICKUP BOX

TABLE A – SUPER DUTY F-SERIES MODELS AVAILABLE FOR PICKUP BOX REMOVAL

Body Style	Model	Drive	WB [in]	GVWR [lb]			Second Unit Body Limits			Maximum Complete Vehicle UVW [lb] ^{d/}	
							Weight		Max. Height ^{a/}		
				5.4L	6.8L	6.0L	Min [lb]	Max ^{b/c/} [lb]	Cg ^{c/} [in]	5.4L/6.8L Gasoline	6.0L Diesel
Regular Cab	F-250	4x2	137.0	8800	9000	9400	380	1800	17.6	6880	7350
	F-250	4x4	137.0	9000	9200	9600	380	1800	17.6	7280	7700
	F-350	4x2	137.0	10,100	10,300	10,700	380	1800	17.6	—	—
	F-350	4x4	137.0	10,500	10,700	11,100	380	1800	17.6	—	—
	F-350 DRW	4x2	137.0	11,800	12,000	12,400	420	3450	24.0	—	—
	F-350 DRW	4x4	137.0	12,000	12,200	12,600	420	3450	24.0	—	—
SuperCab	F-250	4x2	141.8	9000	9200	9600	340	1800	24.0	7200	7250
	F-250	4x4	141.8	9200	9400	9800	340	1800	24.0	7400	7550
	F-250	4x2	158.0	9200	9400	9800	380	1800	24.0	7300	7300
	F-250	4x4	158.0	9400	9600	10,000	380	1800	24.0	7500	7700
	F-350	4x2	141.8	10,200	10,400	10,800	340	1800	24.0	—	—
	F-350	4x4	141.8	10,600	10,800	11,200	340	1800	24.0	—	—
	F-350	4x2	158.0	10,400	10,600	11,000	380	1800	24.0	—	—
	F-350	4x4	158.0	10,800	11,000	11,400	380	1800	24.0	—	—
	F-350 DRW	4x2	158.0	12,200	12,400	12,800	420	3450	24.0	—	—
	F-350 DRW	4x4	158.0	12,400	12,600	13,000	420	3450	24.0	—	—
	F-250	4x2	156.2	9200	9400	9800	340	1800	24.0	7550	7550
	F-250	4x4	156.2	9400	9600	10,000	340	1800	24.0	7550	7550
Crew Cab	F-250	4x2	172.4	9400	9600	10,000	380	1800	24.0	7900	7950
	F-250	4x4	172.4	9600	9800	10,000	380	1800	24.0	7900	7900
	F-350	4x2	156.2	10,400	10,600	11,000	340	1800	24.0	—	—
	F-350	4x4	156.2	10,800	11,000	11,400	340	1800	24.0	—	—
	F-350	4x2	172.4	10,600	10,800	11,200	380	1800	24.0	—	—
	F-350	4x4	172.4	11,000	11,200	11,500	380	1800	24.0	—	—
	F-350 DRW	4x2	156.2	—	12,400	12,800	420	3450	24.0	—	—
	F-350 DRW	4x2	172.4	—	12,600	13,000	420	3450	24.0	—	—
	F-350 DRW	4x4	156.2	—	12,600	13,000	420	3450	24.0	—	—
	F-350 DRW	4x4	172.4	—	12,600	13,000	420	3450	24.0	—	—

TABLE B – SUPER DUTY F-SERIES TIRE AND WHEEL WEIGHTS

Wheel Size	Wheel (only) Weight [lb]
17x7.5 (Steel Wheel – F250/350 – SRW)	38.5
17x7.5 (Chrome Clad – F250/350 – SRW)	40.0
17x7.5 (Aluminum Wheel – F250/350 – SRW)	24.3*
17x6.5 (Steel Wheel – F350 – DRW)	40.0
17x6.5 (Aluminum Wheel – F350 – DRW)	25.1
18x8.0 (Steel Wheel – F250/350 – SRW)	45.0
18x8.0 (Aluminum Wheel – F250/350 – SRW)	27.6*
18x8.0 (Chrome Clad – F250/350 – SRW)	46.8
19.5 x 6.0 (Steel Wheel – F450/550 – DRW)	51.0
19.5 x 6.0 (Aluminum Wheel – F450/550 – DRW)	33.6
19.5 x 6.0 RW (Steel Wheel – DRW)	52.0
19.5 x 6.75 K (Steel Wheel – DRW) #	42.5
Tire Size	Tire Weight [lb]
LT245/75R17	53.8
LT265/70R17	55.4
LT275/65R18	55.0
LT275/70R18	59.2
225/70Rx19.5	58.0

* Average weight of all tire brands/type offered in that size

Motorhome

- ^{a/} Vertical height measured from the top surface of the frame at the rear of the cab.
- ^{b/} Maximum Second Unit Body (SUB) weight for any model is the lesser of two values shown below:
- The value listed here or;
 - The value determined by: SUB WEIGHT = MAX UVW – (OEM Wet Curb Weight) + Pickup Box + Options Removed.
- Rear step bumper 74 lb
- Spare tire and wheel assembly Table B
- ^{c/} Maximum SUB weights and center of gravity (CG) shown in this table are only allowable if F/CMVSS 105 criteria are satisfied per calculation Safety/Emission section of this book.
- ^{d/} Weight shown is maximum allowable for safety certification for vehicles with a GVWR less than or equal to 10,000 lbs.

RANGER PICKUP BOX REMOVAL / ALTERATIONS

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

TABLE A – RANGER SUPERCAB MODELS AVAILABLE FOR PICKUP BOX REMOVAL

Description	Model	Drive	WB [in]	GVWR [lb]	Second Unit Body Limits				Maximum Complete Vehicle UVWR [lb]
					Weight		Max. Height ^{a/}		
					Min [lb]	Max ^{b/c/} [lb]	Cg ^{c/} [in]	Overall [in]	
SuperCab	XL ^{d/}	4x2	126	4600	230	1000	11.5	39.75	3950
	XL ^{d/}	4x2	126	4920	230	1040	11.5	39.75	4150
	XLT ^{e/}	4x2	126	4760	230	960	11.5	39.75	3910
	XLT ^{e/}	4x2	126	5020	230	960	11.5	39.75	4070
	Edge ^{e/}	4x2	126	4840	230	680	11.5	39.75	3990
	XLT ^{e/}	4x4	126	5080	230	834	11.5	39.75	4208
	XLT ^{e/}	4x4	126	5260	230	833	11.5	39.75	4208

- ^{a/} Vertical height measured from the top surface of the frame at the rear of the cab.
- ^{b/} Maximum Second Unit Body (SUB) weight for any model is the lesser of two values shown below:
- The value listed here or;
 - The value determined by: SUB WEIGHT = MAX UVW – (OEM Wet Curb Weight) + Pickup Box + Options Removed.
- ^{c/} Maximum SUB weights and center of gravity (CG) shown in this table are only allowable if F/CMVSS 135 criteria are satisfied per calculation Safety/Emission section of this book.
- Rear step bumper 37 lb
- Spare tire and wheel assembly..... Table B
- ^{d/} Models without rear jumpseats
- ^{e/} Models with rear jumpseats.

TABLE B – RANGER TIRE AND WHEEL DATA

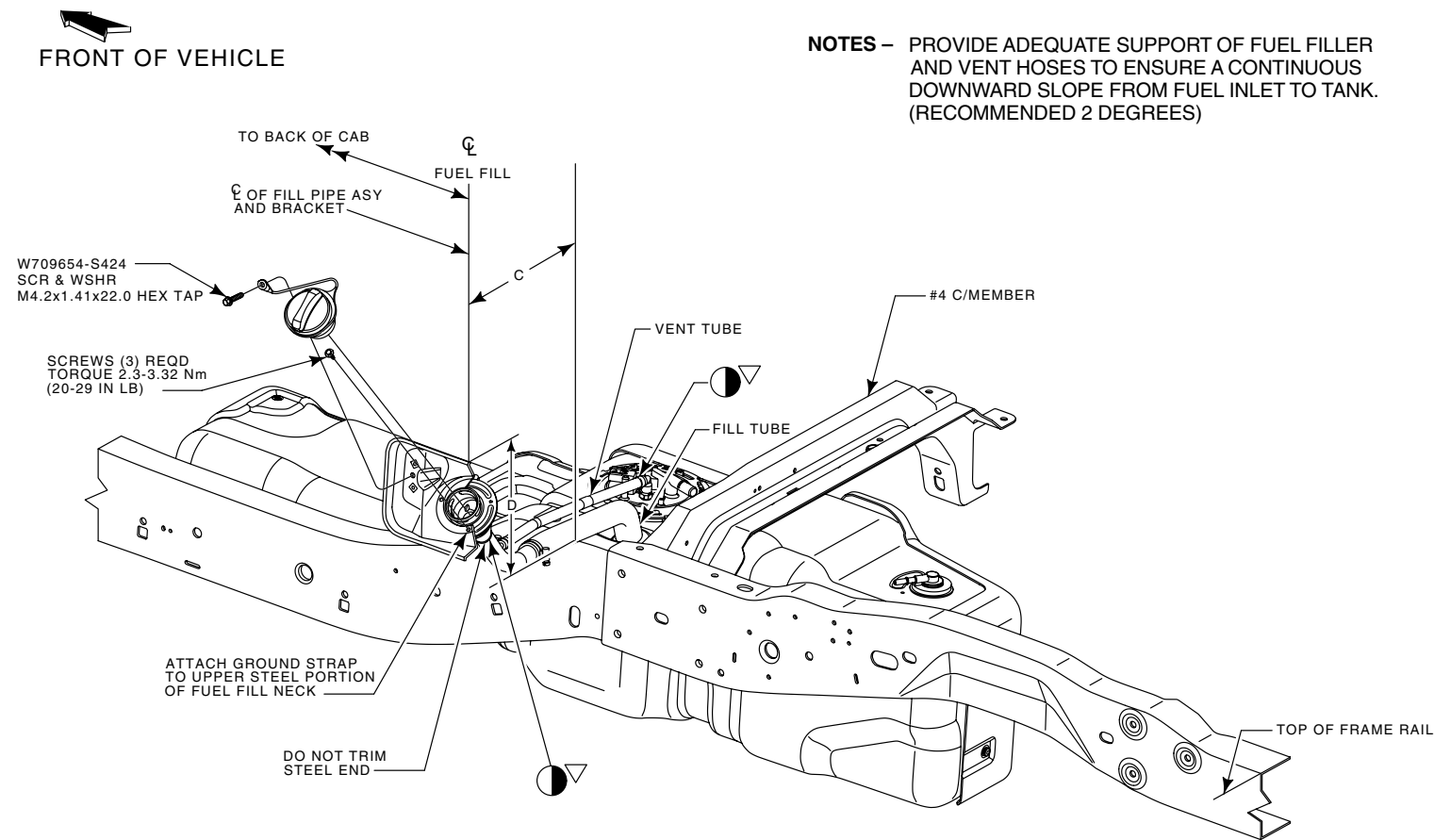
Wheel Size		Wheel (only) Weight [lb]
15 x 6.0 JJ	(base argent steel)	20.4
15 x 7.0 JJ	(silver styled steel)	22.6
15 x 7.0 JJ	(silver aluminum)	14.5
15 x 7.0 JJ	(chrome steel)	23.9
16 x 7.0 JJ	(5-spokle cast aluminum)	16.2
15 x 7.0 JJ	(8-hole forged aluminum)	16.9
16 x 7.0 JJ	(5-spoke cast aluminum)	20.5
Tire Size		Tire Weight [lb]
P235/75R-15SL		28.2
P225/70R-15SL		24.1
P245/75R-16SL		30.8
31X10.5R15		43.2

PICKUP BOX REMOVAL/ALTERATIONS

RANGER FILLER PIPE LOCATION AND DIMENSIONS

2006
MODEL YEAR

Page 179 PICKUP BOX



DIM.		
A	SUPERCAB	198 [7.8]
C	SUPERCAB	443 [17.4]
D	SUPERCAB	224 [8.8]

USE COMPONENTS FROM FUEL FILL SYSTEM INSTALLED BY FORD. REMOVE FROM VEHICLE HOSES, CLAMPS AND CAP FOR USE WITH FILL PIPE KIT. USE NEW HOSES, PIPE, STEEL PORTION, TIE-WRAPS AND CLAMPS PROVIDED IN KIT TO CONNECT FUEL FILL SYSTEM FROM TANK TO UNIT BODY AS SHOWN. FUEL FILL AND VENT HOSES PROVIDED IN KIT MAY REQUIRE TRIMMING AS SHOWN IN FIGURE. THE RESULTING TRIMMED FILLER SYSTEM SHOULD PROVIDE A DIRECT DOWNWARD SLOPE TO THE FUEL TANK FROM THE METAL PIPE WHILE AVOIDING KINKS WHICH RESTRICT FUEL FLOW. ADDITIONAL SUPPORT MAY BE REQUIRED TO PREVENT SAGGING OR MIS-ORIENTATION. FAILURE TO DO SO WILL RESULT IN SPRAY OR SPIT-BACK DURING THE FUELING OPERATIONS.

BB0445 2004

CRITICAL CONTROL ITEM

TORQUE ALL WORM GEAR DRIVEN HOSE CLAMPS TO 2.7-3.7 Nm 24-38 IN-LB

NOTE - [] DIMENSIONS ARE INCHES.

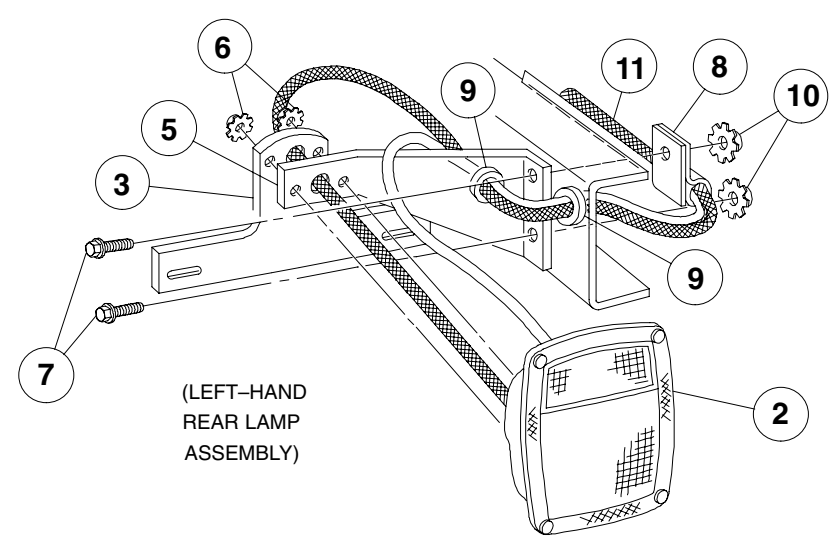
PICKUP BOX REMOVAL/ALTERATIONS

RANGER

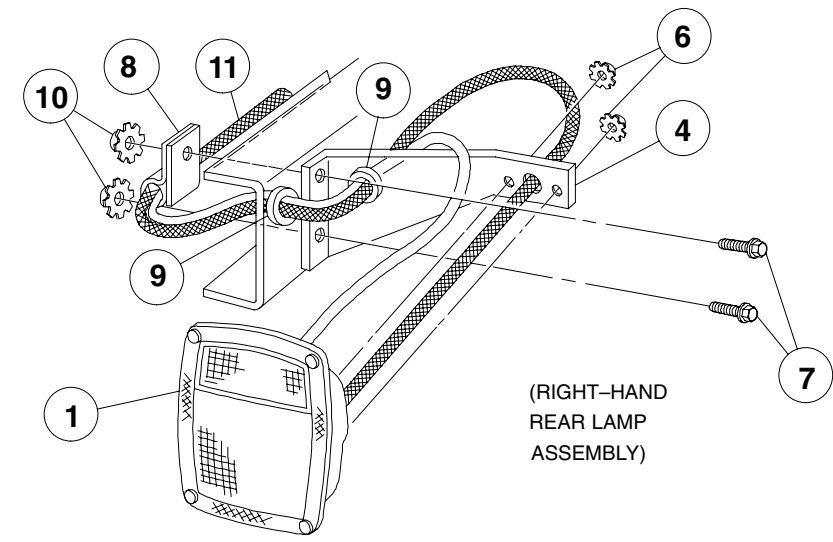
2006
MODEL YEAR

Page 180

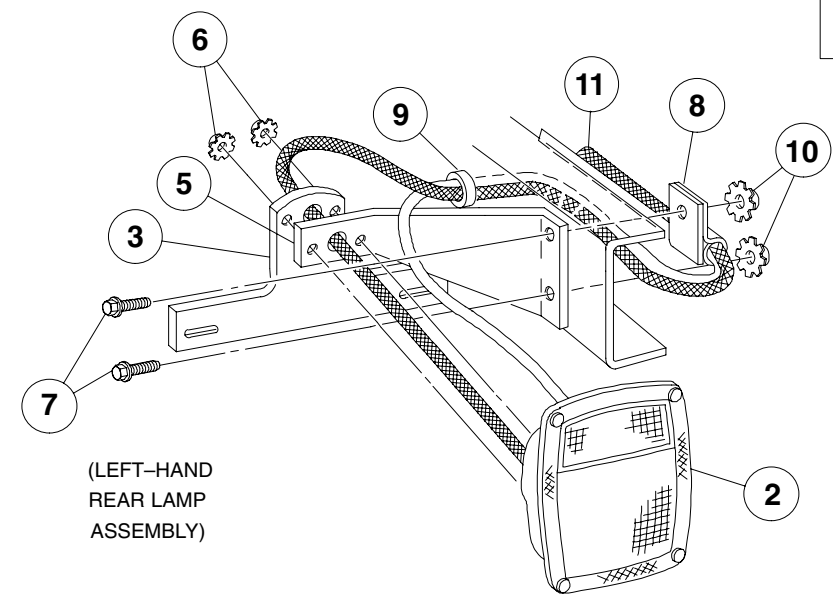
PICKUP BOX



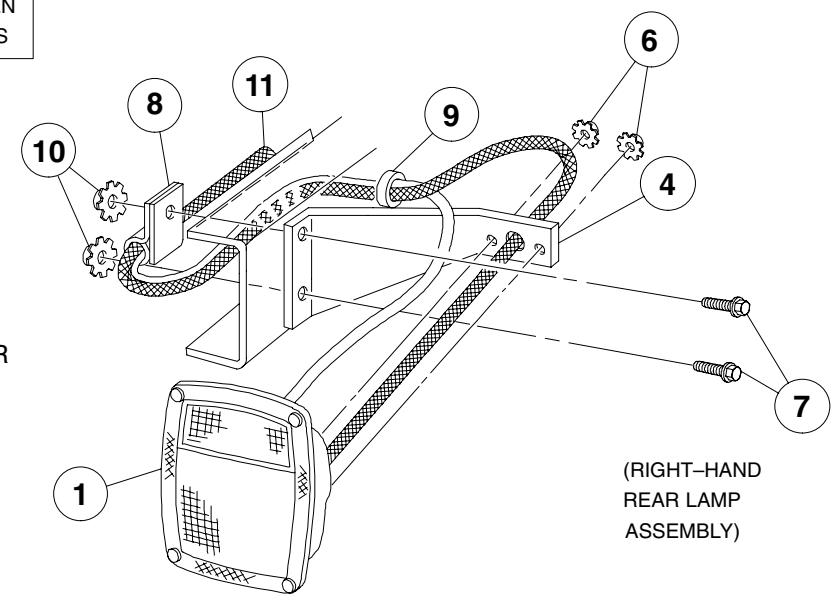
INSTALLATION FOR
RANGER
4 x 2 MODELS



NOTE:
WIRE HARNESS ROUTING
DIFFERENCES BETWEEN
4 x 2 AND 4 x 4 MODELS



INSTALLATION FOR
RANGER
4 x 4 MODELS



SERVICE PART NUMBERS	PART DESCRIPTION
1. E4TZ-13404-C	RIGHT-HAND REAR LAMP ASSEMBLY
2. E4TZ-13405-C	LEFT-HAND REAR LAMP ASSEMBLY
3. C7TZ-13406-A	LICENSE PLATE BRACKET
4. E0TZ-13470-C	RIGHT-HAND MOUNTING BRACKET
5. E0TZ-13471-A	LEFT-HAND MOUNTING BRACKET
6. 34659-S36M	NUT AND WASHER ASSEMBLY (4 REQUIRED) (TORQUE TO 3-7 POUND-FEET)
7. 55653-S36	BOLT (4 REQUIRED)

SERVICE PART NUMBERS	PART DESCRIPTION
8. 353473-S36	CLIP (2 REQUIRED)
9. 384646-S	GROMMET (4 REQUIRED FOR 4 x 2 MODELS; 2 REQUIRED 4 x 4 MODELS) (SPLIT LINE IN GROMMET MUST BE AT TOP, IN VERTICAL POSITION)
10. 34661-S36	NUT AND WASHER ASSEMBLY (4 REQUIRED) (TORQUE TO 12-20 POUND-FEET)
11. E3TZ-13A409-A	WIRING HARNESS (CONNECT TO MAIN WIRING ASSEMBLY) - RANGER ONLY

BB0220

REAR LAMP ASSEMBLY INSTALLATION AND PARTS LIST

SECOND UNIT BODY MOUNTING DESIGN RECOMMENDATIONS

2006
MODEL YEAR

INFORMATION

The following recommendations are intended to assist in the design of second unit bodies and body mounting systems that will control second unit body movement with respect to the Ford supplied chassis when tested to the procedures specified in F/CMVSS 204⁽¹⁾, 208⁽²⁾, 212⁽³⁾, 214⁽³⁾⁽⁴⁾, 219⁽³⁾, and 301⁽³⁾. These recommendations are based on testing and analyses performed by Ford Motor Company.

Second Unit Bodies (SUB) and their body mounting systems may take many forms, and the following recommendations cannot cover all the possibilities. Strict adherence to these recommendations will not ensure that the completed vehicle will comply with F/CMVSS 204⁽¹⁾, 208⁽²⁾, 212⁽³⁾, 214⁽³⁾⁽⁴⁾, 219⁽³⁾, or 301⁽³⁾. The final stage manufacturer who installs a second unit body on the chassis is responsible for compliance to the above mentioned regulations. Accordingly, Ford Motor Company cannot represent that these recommendations are appropriate for every specific application of a second unit body, the body mounting system, or act of a subsequent stage manufacturer.

To verify compliance of a particular second unit body and selected body mounting system with F/CMVSS 204⁽¹⁾, 208⁽²⁾, 212⁽³⁾, 214⁽³⁾⁽⁴⁾, 219⁽³⁾, and 301⁽³⁾, the testing of a representative vehicle to the applicable procedures of the above regulations is recommended. Questions regarding compliance with F/CMVSS regulations should be directed to your legal counsel, the National Highway Traffic Safety Administration, or Transport Canada.

SECOND UNIT BODY STRUCTURES

The structural design and materials used in the construction of second unit bodies must be sufficient to help control collapse of the body and prevent disengagement from the chassis when tested in accordance with the specifications of F/CMVSS 204⁽¹⁾, 208⁽²⁾, 212⁽³⁾, 214⁽³⁾⁽⁴⁾, 219⁽³⁾, and 301⁽³⁾. Steel or aluminum structures are recommended, however, wood or composite materials may require additional reinforcements to provide the structural integrity required for actual crash testing. SUB structures should not exceed beyond (overhang) the end of the chassis (frame side members).

SECOND UNIT BODY FUEL SYSTEM COMPONENTS

SUB floor and bulkhead structures must accommodate the Ford fuel fill system and suggested design clearances. Fill neck locations and all F/CMVSS 301⁽³⁾ compliance representations for Super Duty F-Series and E-Series vehicles are in the Statements of Conformity section of the *Incomplete Vehicle Manual*. See additional Fuel System Design Recommendations.

SECOND UNIT BODY ELECTRICAL

Some electrical power sources are identified in the Design Recommendations and the F/CMVSS 108 compliance representations in the *Incomplete Vehicle Manual*. For wiring diagrams and additional information see Electrical Wiring pages in the Electrical Section.

HEADLIGHT ALIGNMENT

Headlight initial aim is set at the assembly plant, but may not be correct for your final vehicle configuration. Therefore, headlight aim verification after installation of the SUB is the responsibility of the final stage manufacturer, and should be part of the completed vehicle sign-off.

UNDERBODY HEAT MANAGEMENT

1. Underbody longitudinal or lateral air movement should not be restricted. Frame spacers designed by the intermediate and final stage manufacturer should provide for adequate airflow over the frame.
2. No portion of the floor pan should drop below the body sills, nor should the underbody structure drop below the top surfaces of the number 3 and 4 crossmembers. These conditions can result in reduced airflow, pinched fuel lines or vapor hoses which can raise the temperature of underbody components and increase fuel system pressure.
3. Any interior floor underlayment or insulation in the near vicinity of the exhaust system, without benefit of the Ford provided heat shields, must be capable of withstanding 371° C [700° F] (and 482° C [700° F] in close proximity to the catalyst) during normal operating conditions. Additionally, any under chassis mounted components within 101.6 mm [4 in] of the exhaust system must be compatible with these temperatures.

The subsequent stage manufacturer should also consider the following situations, which may have an adverse effect on heat management.

- Poor vehicle service or lack of maintenance
- Deviation from a 50/50 ethylene glycol based antifreeze (coolant) to water ratio
- Exceeding Ford GVW and GCW ratings
- Malfunctioning systems such as exhaust or engine
- Altering, changing, removing Ford engine fan and shroud
- Blocked radiator grille area (spare tire, bicycles, etc.)
- Use of throttle kickers.

4. Second unit body exterior panels, tool boxes, running boards, structures, or skirting that extend below the bottom of the frame, may affect underbody temperatures. The final stage manufacturer should verify that underbody temperatures of the completed vehicle are compatible with all vehicle's components when under conditions that consider the projected vehicle duty cycle and vehicle loading.
5. Full-width mudflaps should not be installed, as they restrict airflow under the vehicle and can also increase underbody temperatures.
6. Added structure or equipment should not restrict air circulation in the engine compartment/underbody.
7. Added body vents, especially powered vents, should be located away from the fuel filler and venting areas and exhaust to avoid fuel fumes and vapors entering the interior of the vehicle.
8. Use of wood in construction should be eliminated where at all possible. If used, wood should be adequately protected from moisture and heat. Shields should be added if wood is installed near exhaust components.

NOTES —

- (1) For vehicles with a GVWR of 10,000 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (2) Injury criteria is applicable to vehicles with a GVWR of 8500 lb or less and an unloaded vehicle weight of 5500 lb or less.
- (3) Applicable to vehicles with a GVWR of 10,000 lb or less.
- (4) Dynamic Performance Requirements apply to MPV, Truck, or a Bus with a GVWR of 2722 Kg (6000lb) or less.

SECOND UNIT BODY MOUNTING DESIGN RECOMMENDATIONS RANGER

2006
MODEL YEAR

Page 182 SECOND UNIT BODY

RANGER SUB MOUNTING SYSTEM (BRACKET ATTACHMENT METHOD)

Shear plates are a method of SUB attachment that should minimize SUB movement under impact conditions. The following items are critical to the performance of this type of mounting system:

1. The SUB must be minimum 36.0 mm [1.40 in] from the back of the cab.
2. The frame to SUB spacers have a web dimension of 101.6 mm [4 in] minimum and the upper and lower flanges to be 57.0 mm [2.25 in], using 6.35 mm [0.25 in] HRLC steel. The spacer minimum length is 76.2 mm [3 in] for the front spacer and 152.4 mm [6 in] for the rear. These spacers will accommodate the recommended fuel filler pipe clearance provided they are installed 25.4 mm [1 in] or more from any fuel filler pipe. See Figure 1 on the next two pages for additional information.
3. Shear plate recommendations for a second unit body are:
 - 3/8 inch thick HRLC steel material, with a minimum of four fasteners for each shear plate, or two fasteners installed in the frame if the shear plate is welded to the SUB structure. Detailed shear plate design recommendations are shown in the sketches in Figure 1 on this page.
 - Hole size, location, and spacing are shown in the above mentioned sketches.
 - Three shear plates per side – one forward and two rearward of the rear axle.
 - Use 5/8 inch diameter, grade 8 bolts, nuts and washers, four per side to attach shear plates to the frame, see Figure 1. **DO NOT WELD THE SHEAR PLATES TO THE FRAME.**
 - Use 5/8 inch diameter, grade 8 bolts, nuts, and washers, four per side to attach shear plates to the SUB, or equivalent weld.
 - 105-220 ft-lb torque for 5/8 inch nuts
 - Direct the threaded end of bolt away from any fuel, brake, or electrical system component.

RANGER SUB MOUNTING SYSTEM (BRACKET ATTACHMENT METHOD)

This typical system design utilizes the existing eight (four per frame rail) pickup box mounting holes. The typical service body under-structure referenced uses 3 inch front and rear body cross sills. The height of the mounting system is governed by the clearance requirements of the midship fuel tank fuel filler to the front intermediate body cross sill. The mounting system depicted herein represents the minimum floor height achievable for a service body of conventional design.

Various service body designs (larger body cross sills or lower wheel house height) will dictate a higher mounting system in order to provide standard body to chassis (fuel filler and tire) clearances.

This suggested typical system is made up of eight (8) components and associated attaching hardware. A chart on this page and drawings of each component and their installation on the next 2 pages are typical of a service body installation.

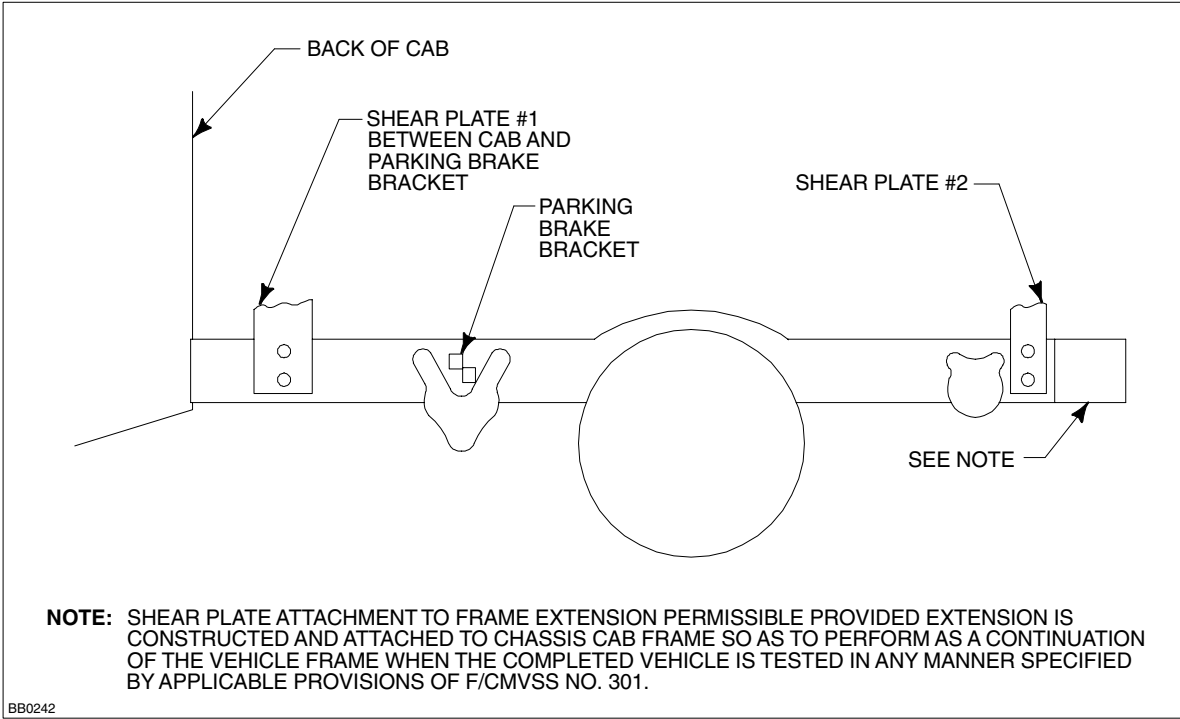
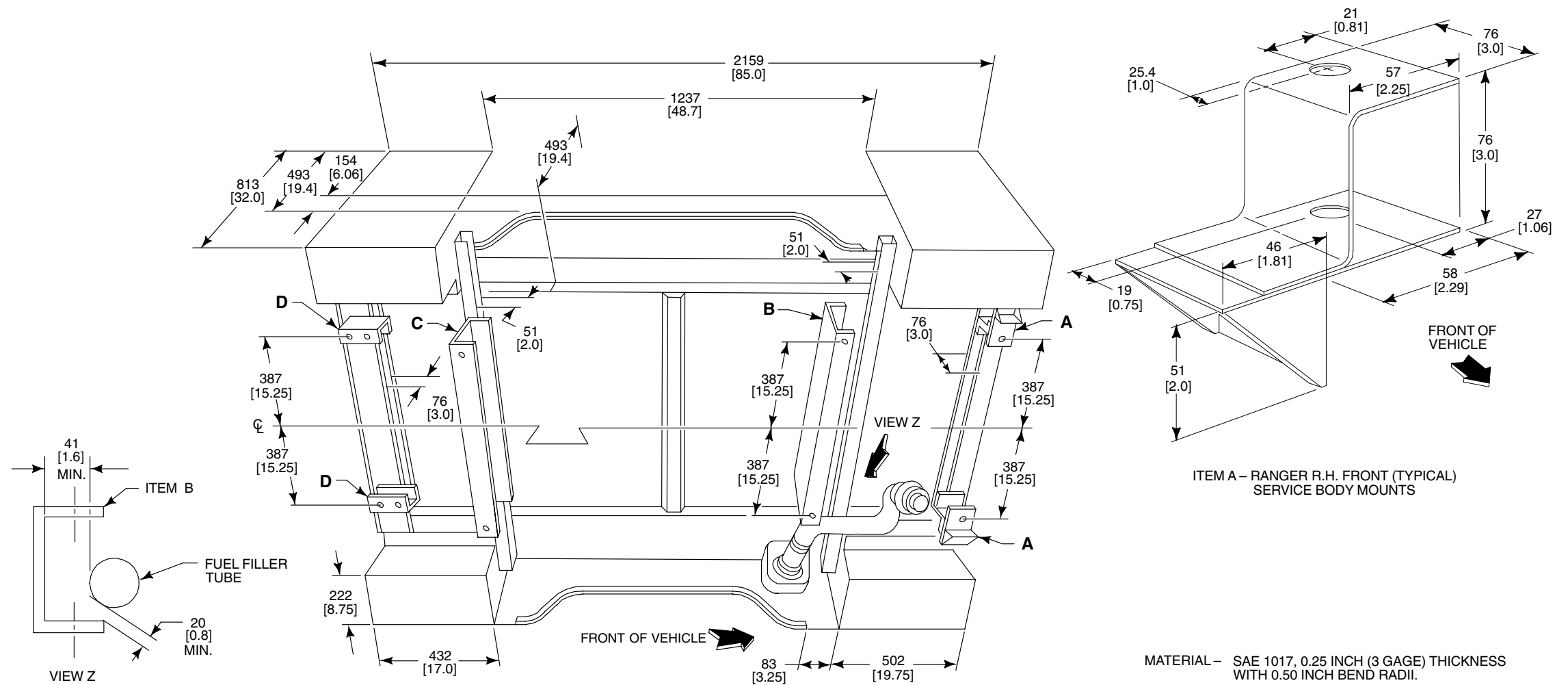


FIGURE 1 - TYPICAL RANGER SHEAR PLATE ATTACHMENT

COMPONENT DESIGNATION	COMPONENT DESCRIPTION	NOTES
Front Service Body Mount (Item A)	A 3" C section with outboard brace (restrainer). LH mount is a mirror image of the RH mount	Weld and bolt to underbody as specified, See Figure 1, Item A on page 188.
Mid-Front Cross Sill Service Body Mount (Item B)	A 4.66" C section 30.5" long	Locate on lower surface body floor by means of hole alignment to P/U box mounting holes in frame siderail upper flange. Weld to floor as specified, see Item B, on page 184.
Mid-Rear Service Body Mount (Item C)	A 3.06" C section 31.90" long	Locate with respect to P/U box mounting holes in frame siderail upper flange. Weld and bolt to rear cross sill of service body as specified, see Item C, on page 184.
Rear Service Body Mount (Item D)	A 1.81" C section. The LH mount is a mirror image of the RH mount.	Locate forward (4.125" C/L) hole with respect to P/U box mounting hole in frame siderail upper flange. Weld and bolt to rear cross sill of service body as specified, see Item D, on page 184.
Attaching Parts, <i>et.al.</i>	Use 0.62" diameter grade 8 bolts, nuts, and washers. Minimum length of 1.25" for bolts. Torque to 105-220 ft-lb.	Largest possible flat washers must be utilized on lower side of frame rail flange. Caution: Ensure that the flat washer does not interfere with frame bend radii.

2006
MODEL YEAR

NOTE — [] DIMENSIONS ARE INCHES.



MATERIAL – SAE 1017, 0.25 INCH (3 GAGE) THICKNESS
WITH 0.50 INCH BEND RADII.

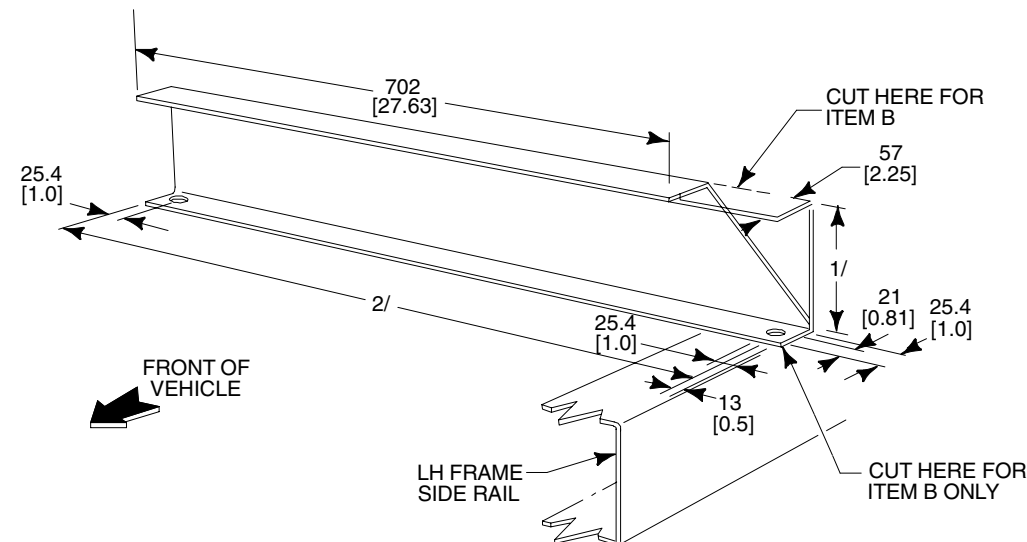
NOTES – ALL HOLE DIAMETERS 17.5 [0.687]

WELD LEADING EDGE OF UPPER FLANGE
(2 INCH LONG 0.125 * INCH FILLET) TO BODY
FRONT CROSS SILL AND GRADE 8 BOLTS,
NUTS AND WASHERS.
(L.H. SYMMETRICALLY OPPOSITE)

* REFERENCE ONLY, LEG OF FILLET SHOULD NOT EXCEED 0.7 OF THE THICKNESS OF THINNEST MATERIAL TO BE WELDED.

SECOND UNIT BODY MOUNTING DESIGN RECOMMENDATIONS RANGER

2006
MODEL YEAR



ITEMS B & C – RANGER MID-FRONT/REAR CROSS SILL (TYPICAL) SERVICE BODY MOUNT

MATERIAL – SAE 1017, 0.25 INCH (3 GAGE) THICKNESS WITH 0.50 INCH BENT RADII.

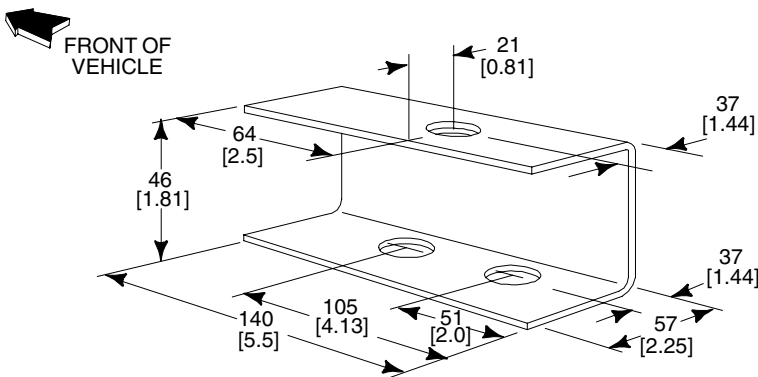
NOTES – ALL HOLE DIAMETERS 17.5 [0.687]

1/HEIGHT
ITEM B 118 [4.66]
ITEM C 78 [3.06]

2/LENGTH
ITEM B 822 [32.375]
ITEM C 810 [31.90]

WELD LEADING EDGE AND RADIUS OF UPPER FLANGE (SIX 2 INCH LONG WITH 3 INCH SPACING 0.125 * INCH FILLET) TO UNDERSIDE OF BODY FLOOR

* REFERENCE ONLY LEG OF FILLET SHOULD NOT EXCEED 0.7 OF THE THICKNESS OF THINNEST MATERIAL TO BE WELDED.



ITEM D – RANGER R.H. REAR (TYPICAL) SERVICE BODY MOUNT

MATERIAL – SAE 1017, 0.25 INCH (3 GAGE) THICKNESS WITH 0.50 INCH BEND RADII.

NOTES – ALL HOLE DIAMETERS 17.5 [0.687]

WELD REAR EDGE OF UPPER FLANGE (2 INCH LONG 0.125 * INCH FILLET) TO BODY #4 CROSS SILL AND USE 5/8 INCH DIA. GRADE 8 BOLTS, NUTS, AND WASHERS. (LH SYMMETRICALLY OPPOSITE)

* REFERENCE ONLY, LEG OF FILLET SHOULD NOT EXCEED 0.7 OF THE THICKNESS OF THE THINNEST MATERIAL TO BE WELDED.

SECOND UNIT BODY MOUNTING DESIGN RECOMMENDATIONS E-SERIES CUTAWAY

2006
MODEL YEAR

Page 185 SECOND UNIT BODY

E-SERIES SUPER DUTY CUTAWAY SUB MOUNTING SYSTEM

FORD OPTIONAL SPACERS

Ford provides optional SUB mounting spacers which will isolate the SUB from the frame. The SUB should be attached to these spacers using all the provided holes in the spacer with a suggested minimum 7/16-14 UNC grade 8 fastener. These fasteners should be directed away from any fuel system component or should not extend more than 25.4 mm [1.00 in] below the spacer flange. The location of these spacers is shown on page 51-56. The rubber isolators on the spacers are capable of 19.0 mm [0.75 in] movement in spherical zone from a static (design) position, which is the same for the isolators that mount the Cutaway body to frame. This will minimize squeaks, rattles and water or air leaks at the mounting surface of the SUB, to Cutaway body. The Ford optional spacers will accommodate the recommended fuel fill neck installation as shown on page 65, and a recommended 101.6 mm [4.00 in] minimum clearance between the frame and the bottom of the SUB (except at the rear axle kick-up area).

NON-FORD SPACERS

Vehicles not equipped with the Ford optional spacers have 34.8 mm [1.37 in] diameter holes on the upper flange of the frame sidemembers for body to frame isolators. The density/durometer, size and quantity of these isolators should be based on the SUB weight plus the projected payload of the completed vehicle, within the limits of the GAWRs and GVWR, as determined by the final stage manufacturer.

NO SPACERS

If the final stage manufacturer chooses to attach the SUB (or other components) to the frame by bolting or welding, the following restrictions are to be followed:

1. The frame rail flanges, including the flange bend radius, must not be drilled or welded upon. Also, flanges may not be cut/trimmed to provide clearance to added hardware or structure.
2. When bolting the SUB (or other components) to the frame, follow the guidelines of pages 187-189 (F-Series).

Note that hard mounting of the SUB to the frame and to the cutaway body may result in NVH and cutaway body durability issues.

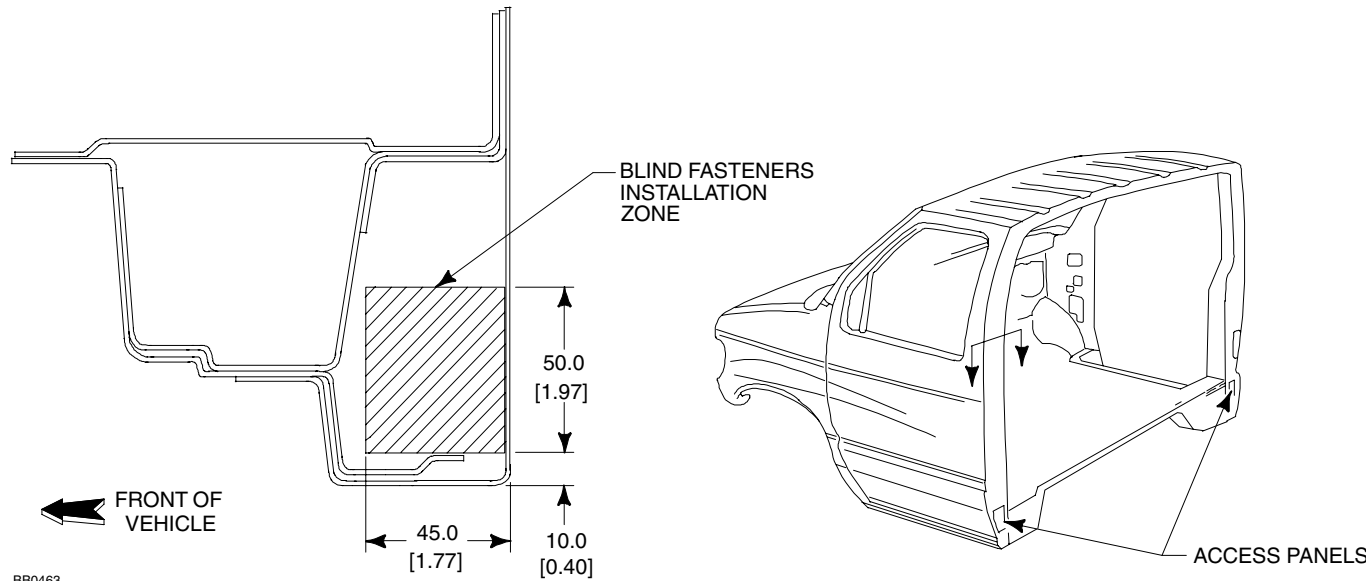
NOTES

E-450 Super Duty Cutaway and Stripped Chassis vehicles have a transmission mounted parking brake. SUB structures should clear this component by 25.4 mm [1.00 in] minimum.

[176.00 in] WB vehicles equipped with a 55-gallon fuel tank will require a 457 mm [18.00 in] minimum frame extension to provide for an adequate departure angle.

The attachment of the SUB to the Cutaway body should consider the following:

1. Blind installation of self-expanding nut type fasteners can be located in the zone as defined in the figure on this page, and should allow for functional expansion, and be equally spaced. The body edge flange may also be used for fasteners provided the center of the required hole is 1.5 times the hole diameter from the edge of the panel. These recommendations apply to both B-pillar attachment.
2. Removal of the access panel and fasteners at the lower area of the B-pillar will allow for flush mounting of the SUB. This opening should be completely covered and sealed from obvious climatic conditions.
3. Roof attachments should be equally spaced and are permitted on the flange provided. The center of the required holes should be 1.5 times the hole diameter from the edge of the flange.
4. Floor attachments should be equally spaced and are permitted on the flange provided. The center of the required holes should be 1.5 times the hole diameter from the edge of the panel.
5. Washers or doublers should be considered to increase the bearing surface under fasteners to increase joint integrity and to decrease sheet metal fatigue, squeaks, and rattles.
6. Gaskets or sealers installed between the Cutaway body and the SUB should consider the displacement and stabilization of such materials when clamped, and the effect on joint integrity.



E-SERIES SUPER DUTY CUTAWAY BODY TO SECOND UNIT BODY ATTACHMENT

NOTE — [] DIMENSIONS ARE INCHES.

**E-250/350/450 SUPER DUTY STRIPPED CHASSIS
SECOND UNIT BODY**

A full length structural body should be attached to the chassis utilizing a system of body bolsters bolted and welded to the chassis frame sidemember as shown on this page.

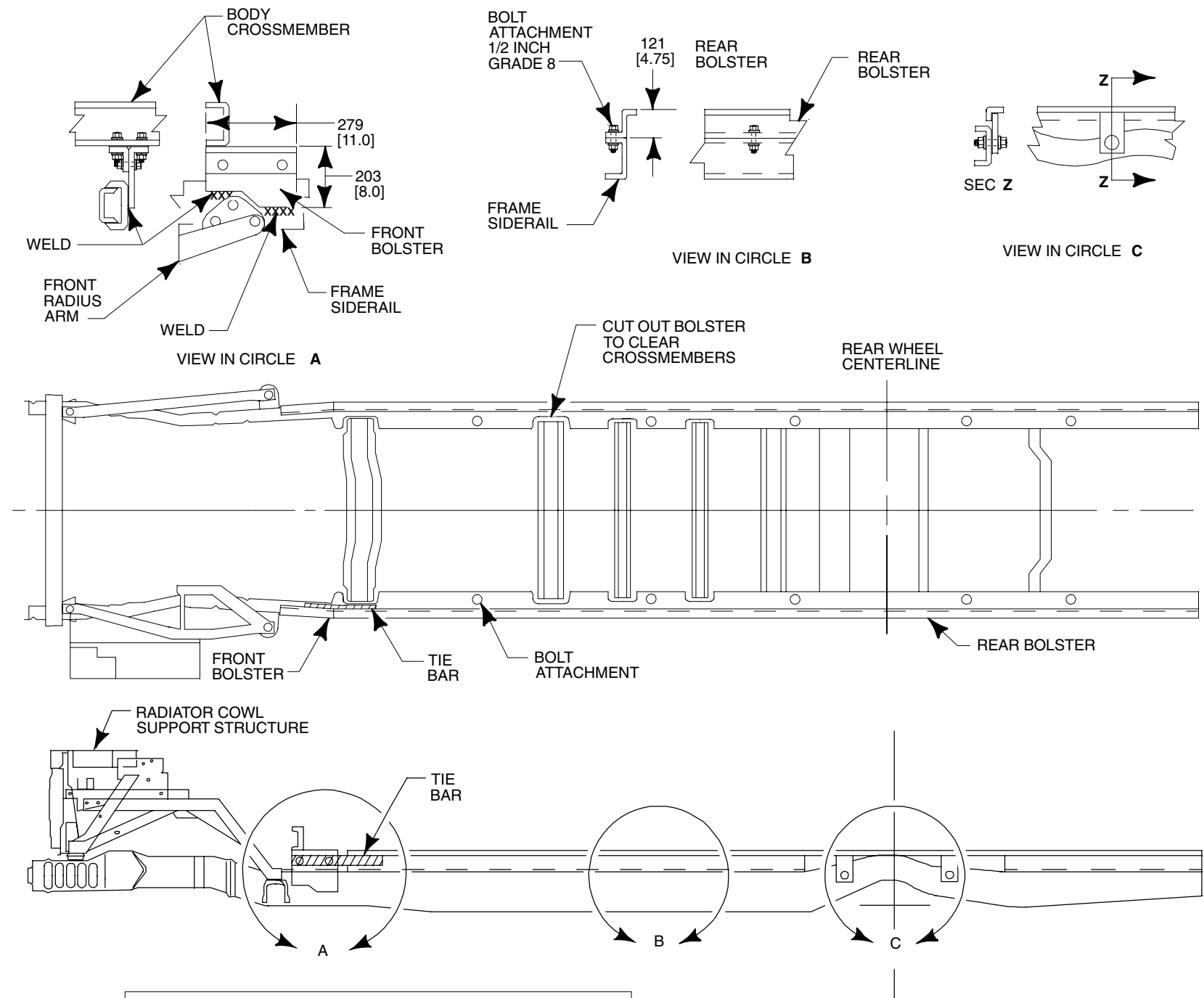
Rear body bolsters extend along the parallel sections of the frame sidemember using the existing 34.8 mm [1.4 in] diameter holes as shown in View B, on this page.

Bolster attachment in the rear axle kick-up area can be accomplished by bolting shear plates to the web of the frame sidemember as shown in View C, on this page. The maximum size hole that may be drilled in the frame web is 19 mm [0.75 in] diameter. Refer to the drilling precautions in the Frame section on page 196.

Front body bolsters should be attached to the frame sidemember as far forward as possible. They should be welded to the web of the frame sidemember immediately to the rear of the front radiator and cowl support structure as shown in View A. Front bolsters should not be bolted to the frame sidemember in this area since there is no access to the inside surface sidemember.

Each front bolster should be rigidly connected to the corresponding rear bolster through the body floor or a tie bar.

Do not weld to the flanges of the side rail. Refer to the welding precautions in the Frame section on page 196.



NOTE: DIMENSIONS ARE SUGGESTED AND MAY BE REVISED AT THE BODY BUILDERS DISCRETION.

SECOND UNIT BODY MOUNTING DESIGN RECOMMENDATIONS F-SERIES

2006

MODEL YEAR

Revised 03-10-06

Page 187 SECOND UNIT BODY

SUPER DUTY F-SERIES SECOND UNIT BODY (SUB) MOUNTING TECHNIQUES FOR CHASSIS CAB (WIDE FRAME)

The intent of the illustrations shown on the following two pages is to offer an expanded range of Second Unit Body (SUB) mounting design recommendations for Super Duty F-Series trucks with a 1422 mm [56 in] Cab to Axle (CA) design.

SUB Mounting Techniques #1 and #2 for 56" CA with SUB weight 1800 lb or less

These SUB mountings were tested by Ford Motor Company and found to be capable of complying with F/CMVSS requirements. The sketches in Figures A and B on the following page depict the recommended SUB mounting techniques.

SUB Mounting Technique #3 for 56" CA with SUB weight 1800 lb or less

The third mount scheme is a top bolted mounting technique. This top bolted SUB mounting is recommended for the Super Duty F-Series pickup trucks with a 1422 mm [56 in] CA. This technique uses the existing pickup box mounting holes to mount a SUB weighing 1800 lb or less provided the SUB is mounted in a similar fashion to the Ford's pickup box. These mountings should use the same number of OEM fasteners and OEM locations. The sketch which is shown in Figure C on page 189 depicts this technique. Refer to page 119 of Super Duty F-Series section for mounting hole layout.

SUB Mounting Technique #4 for 56" CA with SUB weight 1800 lb or less

This technique embodies the Front and Rear Shear plate attachment as depicted in SUB Mounting Techniques #1 and #2, but requires addition of U-bolts for further attachment. Figures D and F on page 189 depicts this technique.

CHASSIS CAB (NARROW FRAME)

Figures E and F on page 189 show the SUB mounting design recommendations for Super Duty F-Series Trucks with a 60", 84", 108", or 120" Cab to Axle (CA). Pre-punched holes are provided to accommodate front shear plates as shown on pages 142-143 of the Super Duty F-Series section.

DETAILS OF THE SECOND UNIT BODY MOUNTING TECHNIQUES

The following SUB mounting design recommendations are methods of attachment intended to minimize SUB movement under crash situations. The following items are important factors in the performance of the system:

1. The forward most surface of the SUB is located at least 76.2 mm [3.0 in] behind the rearmost surface of the cab. Refer to the Statements of Conformity for F/CMVSS 212⁽¹⁾, 219⁽¹⁾, and F/CMVSS 301⁽¹⁾, in the *Incomplete Vehicle Manual*.
2. Spacers between the frame and SUB must provide adequate clearance to the fuel fill system on wide frame or pickup box delete models. Refer to the Statement of Conformity for F/CMVSS 301⁽¹⁾ of the *Incomplete Vehicle Manual* and the Design Recommendations for fuel fill systems on page 191-192 of this book.

3. The following are SUB mounting instructions for a SUB weight of 3960 kg [1800 lb] or less and a 56" CA:

The frame to SUB spacers must provide adequate space to allow a proper fuel filler pipe installation on pickup box delete models.

Technique #1; **front shear plate** attachment; use two, 5/8" diameter, grade 8 bolts, nuts, and washers in the OEM frame. One, 5/8" diameter, grade 8 bolt, nut, and washers with a 1/4" equivalent weld bead around three sides of the shear plate and the SUB mounting frame, skip welded at the shear plate corners. See Figure A, View A on page 188. **DO NOT WELD THE SHEAR PLATES TO THE OEM FRAME.**

Technique #1; **rear shear plate** attachment; use three, 5/8" diameter, grade 8 bolts, nuts, and washers in the OEM frame. One, 5/8" diameter, grade 8 bolt, nut, and washers with a 1/4" equivalent weld bead around three sides of the shear plate and the SUB mounting frame, skip welded at the shear plate corners. See Figure A, View B on page 188.

Technique #2; **front shear plate** attachment; use two, 5/8" diameter, grade 8 bolts, nuts, and washers in the OEM frame. Two, 5/8" diameter, grade 8 bolt, nut, and washers in the SUB mounting frame. See Figure B, View C on page 188.

Technique #2; **rear shear plate** attachment; use three, 5/8" diameter, grade 8 bolts, nuts, and washers in the OEM frame. Two, 5/8" diameter, grade 8 bolt, nut, and washers in the SUB mounting frame. See Figure B, View D on page 188.

Technique #3; **pickup box** attachment; use eight, 5/8" diameter, grade 8 flange nuts and bolts that utilize the existing pickup box holes in the top frame flanges. See Figure C on page 189.

Technique #4 (56" CA with SUB weight over 1800 lb) use same as Technique #1 except with addition of U-bolts as shown in Figure D on page 189.

For Super Duty F-Series Chassis Cab vehicles with a 60", 84", 108", or 120" CA, it is recommended that the front shear plate mounting holes, as provided on each chassis, be used. Use the same front and rear shear plate attachment as Technique #1 or #2 with a 5/8" diameter U-bolt spaced every 24 to 36 inches. See Figure E on page 189. When U-bolts are used, vertical spacers must be between the upper and lower frame flanges at each U-bolt to prevent collapse of the flanges. See Figure F on page 189. U-bolt torque must be checked every six months.

The following items are important factors in the performance of the system:

- The spacer should be secured in such a manner as to maintain retention during installation or during operational use and should have a slight taper which starts at the front of the SUB frame. See figures on page 188.
- Front shear plates should be angled forward approximately 45 to 60 degrees from the horizontal. Front shear plates should be a sufficient distance from the front of the SUB to allow for frame flexing, i.e., front shear plates should be placed behind the tapered section of the spacer.
- Use 5/8" diameter, grade 8 bolts, nuts, and washers that attach the shear plates to the OEM vehicle and SUB frame.
- 60-65 ft-lb torque for the 5/8" diameter, grade 8 bolts, nuts, and washers.
- Direct the threaded end of the bolts away from any fuel, brake or electrical system components.
- **U-bolts or attaching hardware should not contact fuel, brake or electrical system components. A shear plate should be utilized if there is insufficient space for a u-bolt to be installed between the frame and fuel tank.**

SECOND UNIT BODY MOUNTING DESIGN RECOMMENDATIONS F-SERIES

2006
MODEL YEAR

Page 188 SECOND UNIT BODY

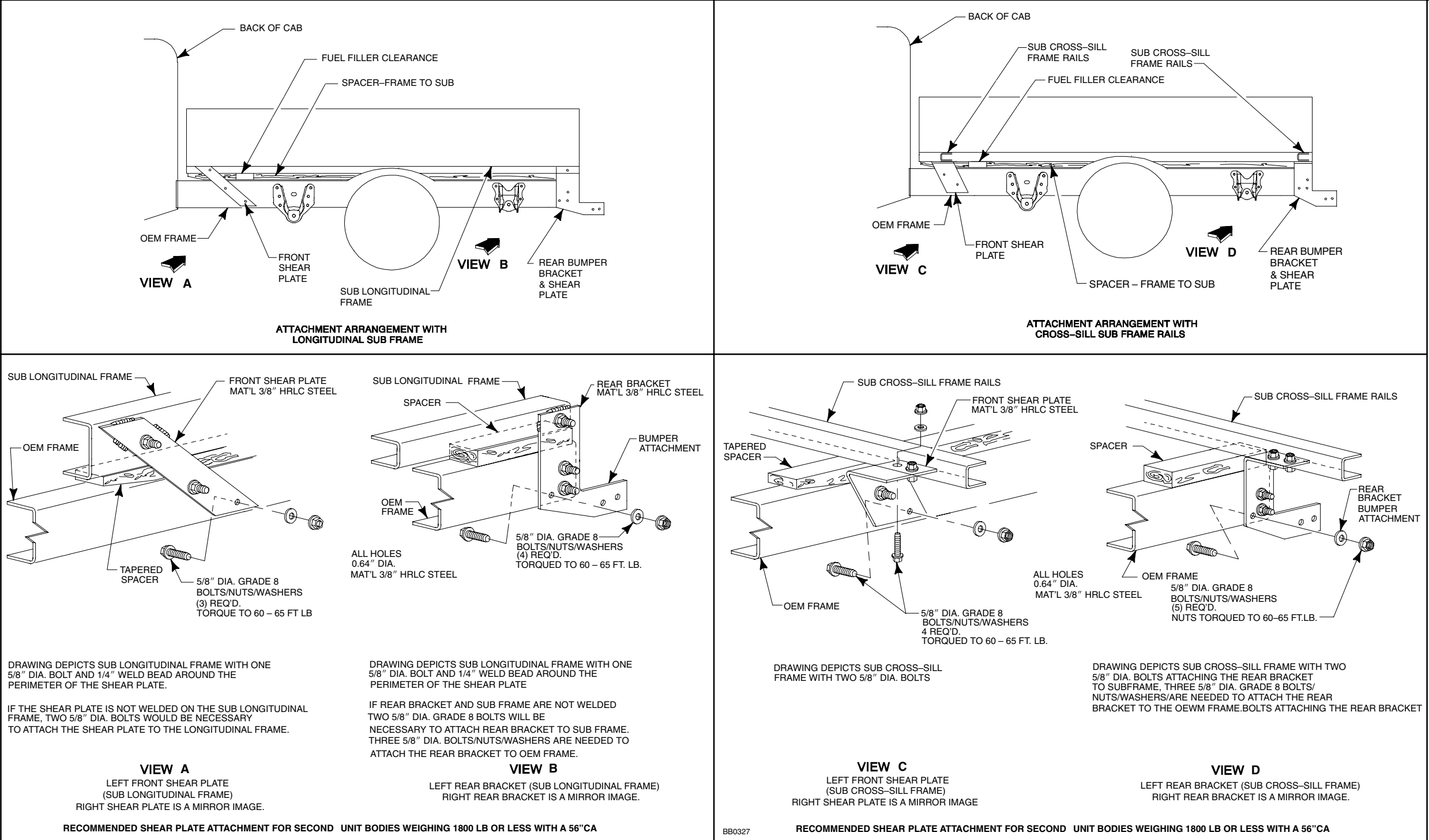


FIGURE A - SUPER DUTY F-SERIES SUB MOUNTING TECHNIQUE #1

FIGURE B - SUPER DUTY F-SERIES SUB MOUNTING TECHNIQUE #2

SECOND UNIT BODY MOUNTING DESIGN RECOMMENDATIONS F-SERIES

2006
MODEL YEAR

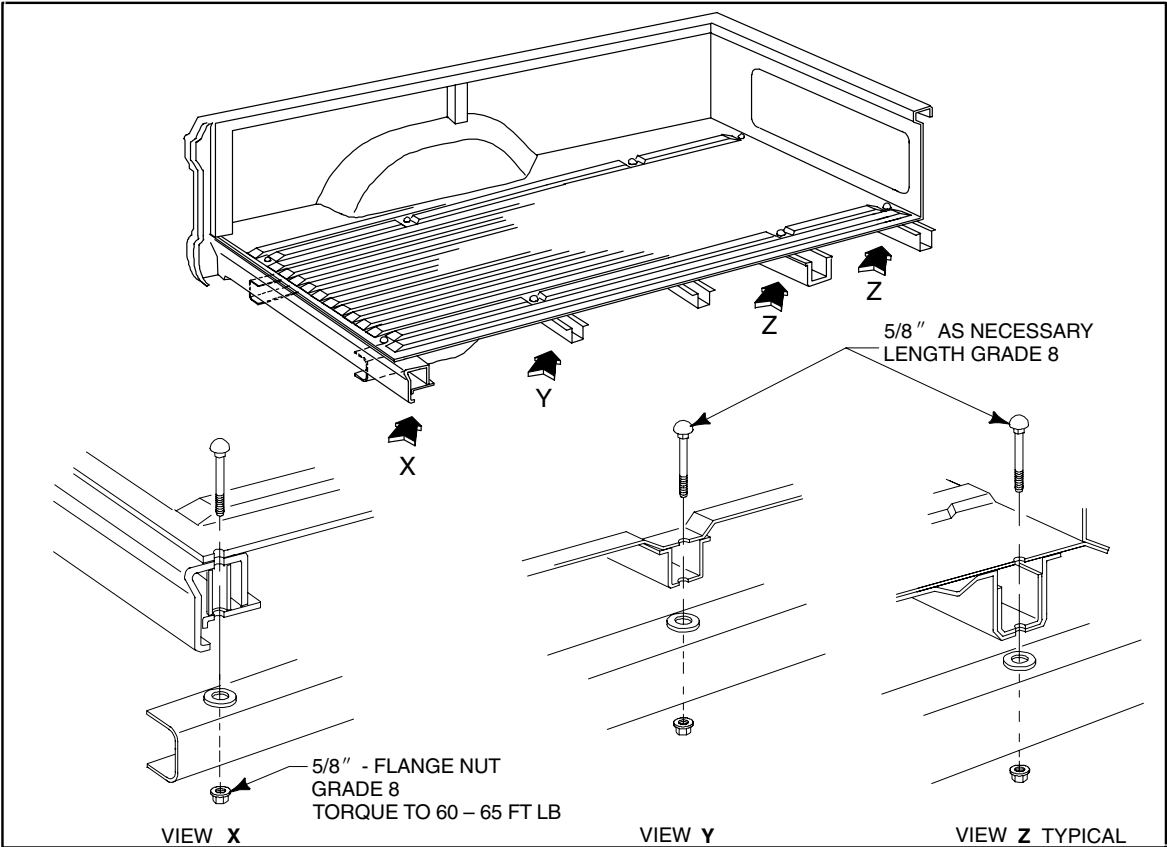


FIGURE C - SUPER DUTY F-SERIES SUB MOUNTING TECHNIQUE #3

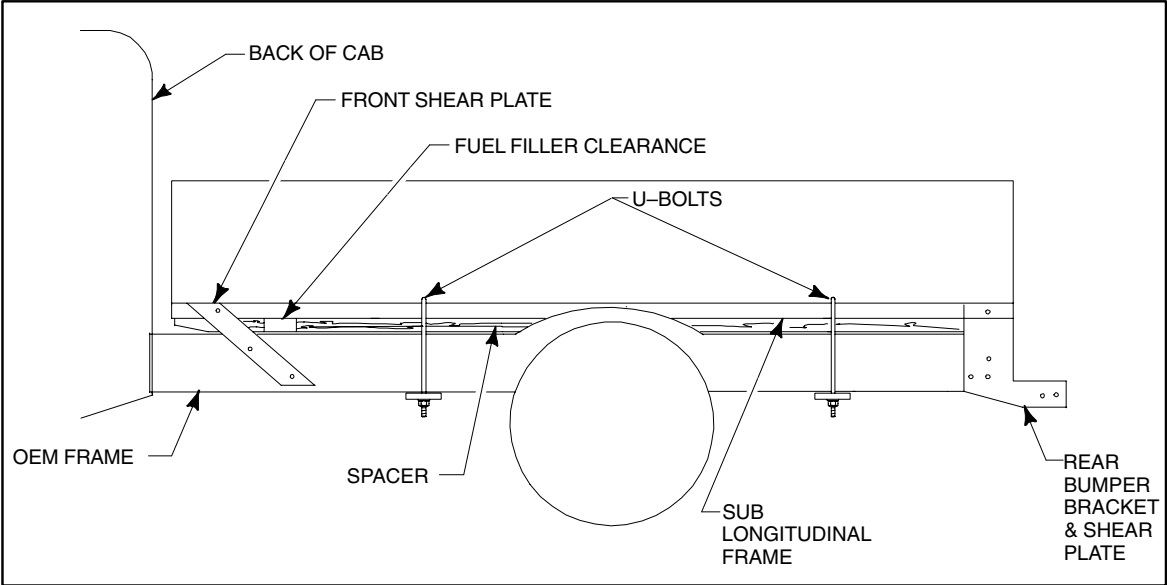


FIGURE D - SUPER DUTY F-SERIES SUB MOUNTING TECHNIQUE #4

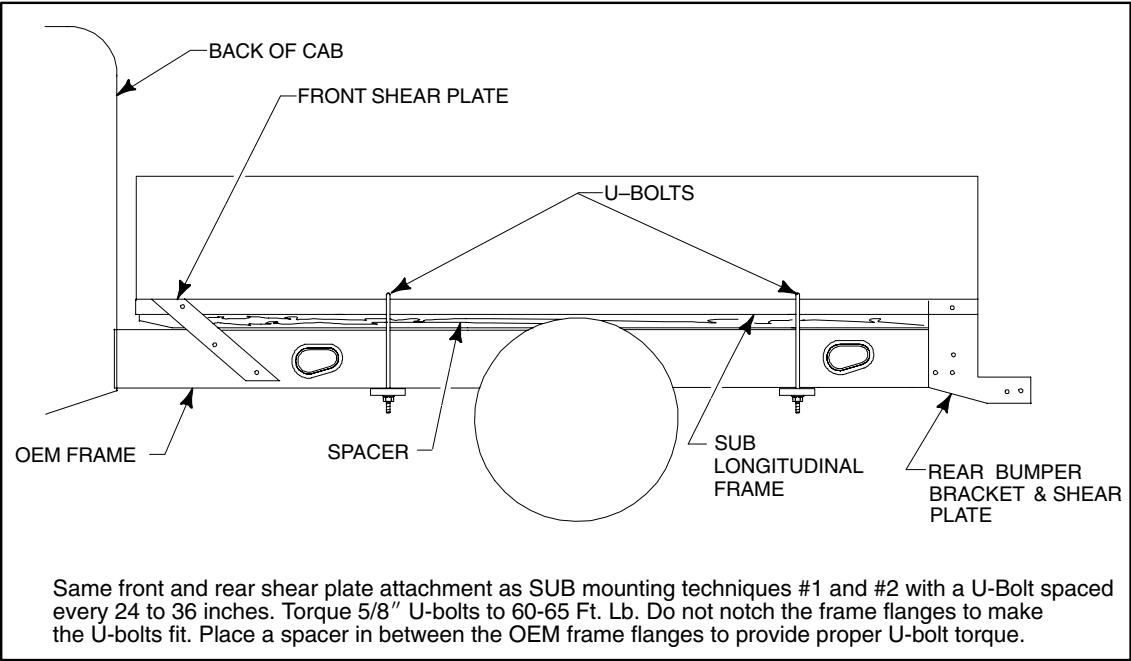


FIGURE E - SUPER DUTY F-SERIES SUB MOUNTING TECHNIQUE #4 FOR 60", 84", AND 120" CA CHASSIS CABS.

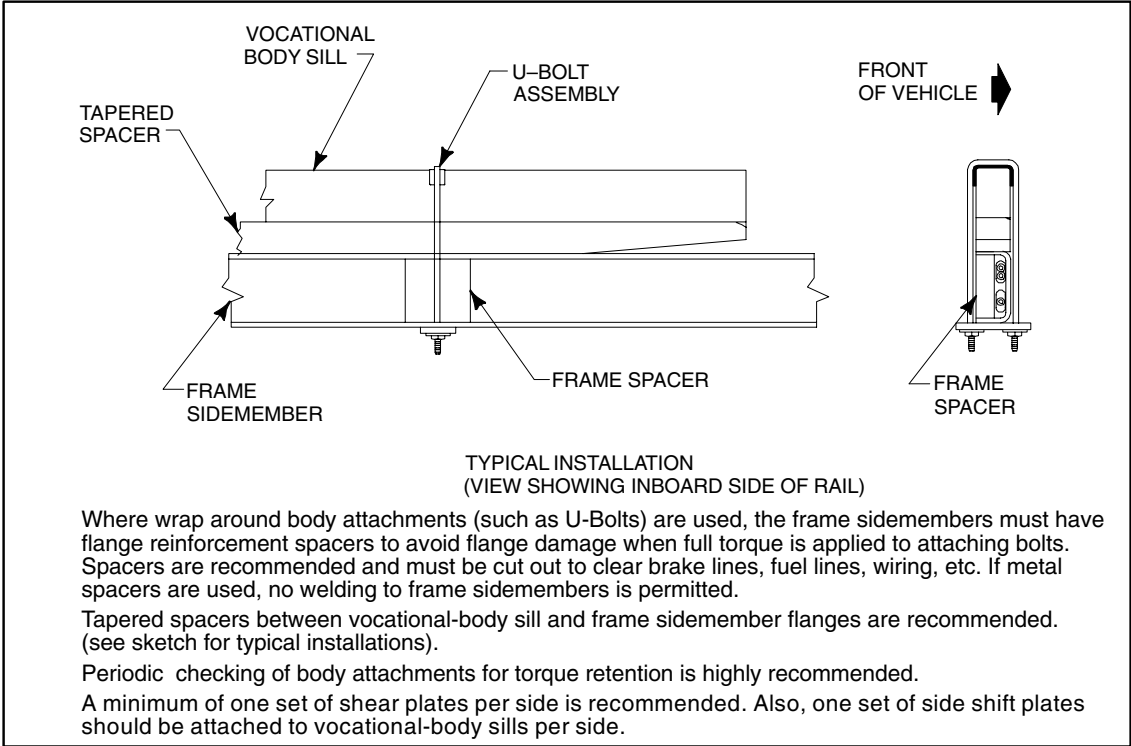


FIGURE F - SUPER DUTY F-SERIES SUB FRAME SPACER FOR U-BOLT.

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

Revised 02-15-06

Page 190 FUEL SYSTEM

DESIGN

WARNING:
BEFORE OPENING THE FUEL SYSTEM ON VEHICLES WITH EFI ENGINES, RELIEVE FUEL PRESSURE BY FOLLOWING THE INSTRUCTIONS IN THE *FORD TRUCK SHOP MANUAL* FOR THE APPROPRIATE MODEL AND MODEL YEAR.

THE EVAPORATIVE EMISSION SYSTEM CONTAINS FUEL VAPOR AND CONDENSED FUEL VAPOR. ALTHOUGH NOT PRESENT IN LARGE QUANTITIES, IT STILL PRESENTS THE DANGER OF EXPLOSION OR FIRE.

WHEN WELDING NEAR FUEL SYSTEM COMPONENTS, ALL METALIC COMPONENTS SHOULD BE ADEQUATELY SHIELDED AND PROTECTED FROM HEAT OR WELD SPLATTER. ALL NON-METALLIC COMPONENTS SHOULD BE REMOVED.

REMOVAL OR REINSTALLATION OF ANY FORD FUEL SYSTEM COMPONENT SHOULD BE PERFORMED TO THE SPECIFICATIONS AND INSTRUCTIONS FOUND IN THE *FORD TRUCK SHOP MANUAL* FOR THE APPROPRIATE MODEL AND MODEL YEAR. (EXCEPT FOR E-SERIES VAN AFT-OF-AXLE TANK INSTALLATIONS, SEE THE FOLLOWING NOTE).

E-SERIES VAN AFT-OF-AXLE FUEL TANK

A Fuel System Modification Kit is available for some E-Series products for removing the midship fuel tank and adding an aft-of-axle fuel tank. This kit is distributed by:

Transfer Flow Inc.
1444 Fortress Street
Chino, California 95973
Phone: (800) 442-0056
Fax: (530) 892-0382

NOTE: The modifier is responsible for determining if the vehicle as modified with this kit meets applicable safety & emission regulations and is properly certified.

INFORMATION

The following recommendations are intended to assist in the design and completion of the fuel system capable of meeting the requirements of F/CMVSS 301. These recommendations are based on testing and analysis performed by Ford Motor Company.

Since completed vehicles may take many forms, this list of recommendations cannot cover all possibilities. Strict adherence to these suggestions will not ensure that the completed vehicle will comply with F/CMVSS 301. The responsibility for determining compliance to F/CMVSS 301 regulations is that of the final stage manufacturer.

- Accordingly, Ford Motor Company makes no representations as to the appropriateness of any particular recommendation in its specific application to a particular design or act of intermediate or final stage manufacture.
- To verify compliance with F/CMVSS 301, testing of representative vehicles to applicable F/CMVSS 301 procedures may be necessary. Questions regarding compliance with F/CMVSS regulations should be directed to your legal counsel, the National Highway Traffic Safety Administration, or Transport Canada.
- Any alteration or modification of a vehicle's fuel or evaporative system may affect the vehicle's compliance with applicable federal and state emission laws, including on-board diagnostics (OBDII) and evaporative emissions requirements, and may also effect vehicle performance (driveability, idle quality, etc.). Vehicle modifiers are responsible for ensuring that a vehicle, as modified, complies with all applicable emissions regulations and for obtaining any necessary federal or state approval or certification relating to vehicle modification or sale of add-on or auxiliary parts.
- A. NEW FUEL TANKS**

 - The fuel tank should be designed with as few openings and connections as possible. Openings and connections generally should be located on the upper surface of the fuel tank.
 - Fuel tanks should be fitted with an evaporation control valve having the means to close if the vehicle is rotated about a longitudinal axis pursuant to F/CMVSS 301.
 - The tank should be of simple configuration minimizing sharp surface transitions and protrusions which may be required for attachment or function.
 - The tank should be strong enough to withstand instantaneous internal pressure imposed in the event of crash situations.
 - Hoses connected to the tank should be sufficiently flexible to permit small movements of the tank relative to fixed mounting surfaces, without rupture or disconnection of such hoses in the event of crash situations.
 - Emission regulations may require an OBDII fuel tank pressure sensor for the evaporative system. Any new fuel tank must be tested and comply with all emission regulations, including evaporative emissions.
 - Package new tank away from heat sources such as exhaust.

- B. NEW FUEL TANK RETENTION SYSTEMS**

 - The retention system should attach the fuel tank to the frame, between the frame rails, and below the body of the vehicle with sufficient clearance for normal body to frame movement under loaded conditions.
 - A retention system should restrict fuel tank movement in all possible directions to prevent contact or rupture with rigid or sharp objects, and the disconnection of fuel system tubes and hoses under crash conditions. Retention straps should avoid sharp edges and tank supports should be designed with fuel tank compatible surfaces and edges to the fuel tank.
 - System fasteners and attachments should be designed to retain the tank during deflections incurred in crash situations.
- C. FUEL FILL SYSTEM**

 - Fill system should be sufficiently flexible to prevent possible rupture or disconnection resulting from movement of the fuel tank relative to frame during crash situations. Use the original pickup truck filler if the fill location is similar to the original pickup truck location. For Ranger, user Ranger Fuel Fill Kit 9B149.
 - Any appliance or hardware attachments to the body in the area of a fuel system component should be designed, positioned, and secured so as not to impact any fuel system component during crash situations.
 - The fuel filler opening area of the body should provide adequate sealing from the vehicle interior because holes or cracks in this area may allow fuel vapors to enter the vehicle interior. Openings should be sealed with a product which is fuel resistant. See Figure A on this page.
 - The metal outer end of the fuel fill neck tube provided by Ford must be properly grounded to the chassis to dissipate any electrostatic charge that may be produced and so reduce the possibility of a spark during fueling. A fill neck support made of metal would provide a ground path if directly mounted on the chassis. If the filler neck support is made of plastic or other non-metallic material, a ground strap or wire must connect the metal end of the fuel filler neck and a metal chassis component.

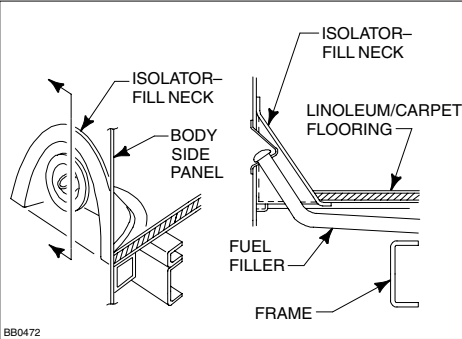


FIGURE A – BODY MOUNTED FUEL FILLER OPENINGS

- Fill openings should be recessed, and caps, when installed, should be inside the normal body plane.
- Whenever possible, the fill system should pass under the body rather than through it. Where passing through floors and sides, the fill system should be shielded and have adequate clearance to surrounding structure. Fuel Filler and Vent Hoses should maintain a minimum of one inch clearance to body and surrounding chassis components, except where the hoses and protective sleeve material pass through the designed frame opening.
- Be sure that the fuel tank filler cap is the correct Ford designated part. Provide adequate hand clearance for cap installation and correct sealing of the cap to filler pipe.
- The recommended horizontal and vertical locations for the fuel tank filler pipe is shown on page 64 (E-Series), pages 118 and 141 (Super Duty F-Series) and page 179 (Ranger).

SUPER DUTY F-SERIES FUEL FILLER KITS SERVICE PART NUMBERS	
Gas	5C34-9B149-GC
Diesel	6C34-9B149-HA

Other parts that can be ordered/purchased separately:

SERVICE PART NUMBERS	PART DESCRIPTION
E0TZ-9040-A	Support (unskirted body)
D702-9A095-A	Label – Unleaded Fuel
E432-9A095-A	Label – Diesel Fuel

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

Page 191

DESIGN

C. FUEL FILL SYSTEM (CONT'D)

9. When installing accessories or equipment, avoid exposure of fuel and vapor hoses to surfaces with sharp edges (see Figure A on this page) or high temperature surfaces (near hot exhaust or coolant). Also avoid installations which result in the exposure of these lines to road debris or undercoating, except as specified on page 194.
10. Install or route fuel tank filler hoses and filler vent hoses as follows:
 - a. Avoid sags below the horizontal which allow fuel puddling (i.e., avoid sink traps). See Sink Traps in Figure A. Fuel trapped in low spots can be expelled when the cap is removed, even if the tank is nearly empty.
 - b. Avoid pinches or kinks, as they restrict fuel filling or venting. Hose length may require adjusting depending on second unit body width. See Kinked Fuel Fill System, Figure A.
 - c. Do not place adjacent hardware such that it may cut or otherwise damage the filler neck and vent hoses and cause fuel or vapor leakage (i.e., avoid unfriendly surfaces) see Hostile Surfaces, Figure A.
 - d. Keep the flow of fuel continuously downward from the inlet of the fuel filler pipe all the way to the tank.
 - e. The filler hose and vent hose must be clear of moving suspension components so as to prevent abrasion which can result in fuel leakage. They should maintain a minimum of 1 inch clearance to body and surrounding chassis components, except where the hoses and protective sleeve material pass through the designed frame opening.
 - f. Be certain that all clamps are secure and properly located.
 - g. The fuel filler and filler vent hoses should not contain fittings or connections other than those incorporated in the original design, nor should they be interconnected with each other in any way.
 - h. Ford released parts should be used.

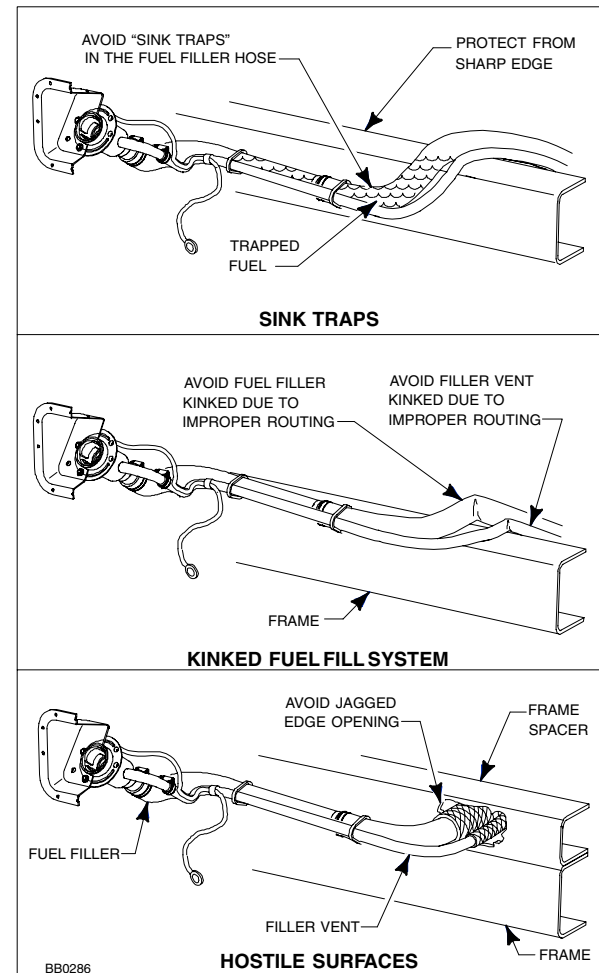


FIGURE A – FUEL FILL SYSTEM INSTALLATION CONDITIONS TO BE AVOIDED

D. FUEL TUBES, HOSES AND PUMPS

1. Do not reroute or change the attachment of fuel lines or fuel vapor hoses. Doing so may alter the vehicle's ability to comply with F/CMVSS 301, Fuel System Integrity, and may adversely affect vehicle performance by increasing the amount of heat absorbed by the fuel system or by restricting its venting.
2. Tubes and hoses should be routed away from and not attached to members that will move or deform during crash situations.
3. Tubes and hoses must be sufficiently flexible to avoid rupture or disconnection resulting from movement of the engine relative to the frame during crash situations.
4. Tubes and hoses should be routed away from hot regions and sharp objects and should be retained adequately to prevent movement into such regions or against such objects.
5. Do not add fuel or vapor line flow restrictors as they can cause engine fuel starvation or abnormally high fuel tank pressures.
6. Do not install auxiliary fuel pumps. This could cause the engine to run rich, producing additional exhaust heat.
7. The special removal tool shown in Figure C on the next page must be used to open push connectors installed on flexible fuel lines if the lines need to be disconnected. The appropriate tool is available from Ford Customer Service Division.
8. The push connectors on flexible fuel lines, if disconnected, must be reconnected by snapping them back into position and installing the appropriate retainer as shown in Figure C on the next page.

9. Avoid pinching or kinking of any fuel vapor hose. (See Figure B below).

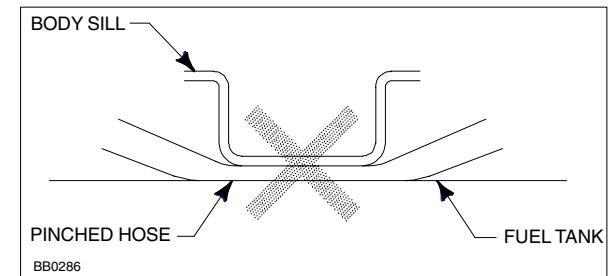


FIGURE B – FUEL VAPOR VENT LINES

10. Each of the fuel lines and fuel vapor hose retention clips provided by Ford must be used in original factory locations to prevent misplacement or movement of the lines.
11. Be certain that the vent valves on top of the fuel tanks are seated and secure; do not dislodge or damage them when mounting the second unit body. If they are unseated, fuel leakage may occur. If damaged, the vapor vent system may not function, resulting in increased fuel tank pressure.
12. If a fuel sender is removed for any reason, use a new gasket when it is reinstalled so as to prevent fuel leaks. Be certain the fuel sender is seated and secure on the top of each fuel tank. Do not step upon or place weight upon the sender during vehicle manufacture. See page 64.
13. Fuel filters installed in the fuel supply line must be of sufficient size to be nonrestrictive to fuel flow and placed so as to be protected from exposure to exhaust heat and physical damage. Ford replacement fuel filters are recommended. Filters are not to be installed in the fuel return line.
14. **Temporary shipping fuel lines are not to be reused.** They should be disposed of in an appropriate manner.
15. Fuel system components which are disconnected during manufacturing should be capped or plugged promptly to prevent possible contamination.
16. When welding near fuel system components, all metallic components must be adequately shielded and protected from heat or weld splatter. All nonmetallic components must be removed.

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

E. FUEL SYSTEM ACCESS FOR AUXILIARY FUEL POWERED EQUIPMENT

Precautions similar to those described in this Fuel System section should be taken in the design and positioning of a fuel system for auxiliary fuel-powered equipment. The auxiliary fuel-powered equipment should be securely mounted so as to withstand forces during crash situations.

E-Series Super Duty Cutaway, Super Duty F-Series, and E-Series Super Duty Stripped Chassis aft-of-axle fuel tanks are equipped with an auxiliary fuel port in the fuel sender unit. The purpose is to provide a fuel supply for fuel powered accessories such as generator sets.

E-Series van vehicles may have an optional auxiliary fuel port which is located on the midship fuel tank sender unit.

Final Stage Manufacturers that utilize the auxiliary fuel port must install a check valve because of Onboard Fuel System Diagnostics (OBDII). The system may affect the vehicle's compliance with applicable Federal/State emissions laws. Additional information is available in Bulletin Q-42. To obtain a copy, log on to www.fleet.ford.com/truckbbas/ and select from the list of Bulletins required.

All auxiliary fuel ports have a safety cap which must remain in place until a fuel consuming accessory is installed.

E-Series van vehicles equipped with the auxiliary fuel port have a braided jumper hose which provides access without removing the fuel tank. A cap removal tool is provided on the jumper line immediately behind the cap and must be removed and reversed before it can be used to remove the cap.

A push connector F7UA-9J274-AA, available from your local Ford dealer, will attach to the auxiliary fuel port and accept a 1/4 inch hose and clamp. See page 64.

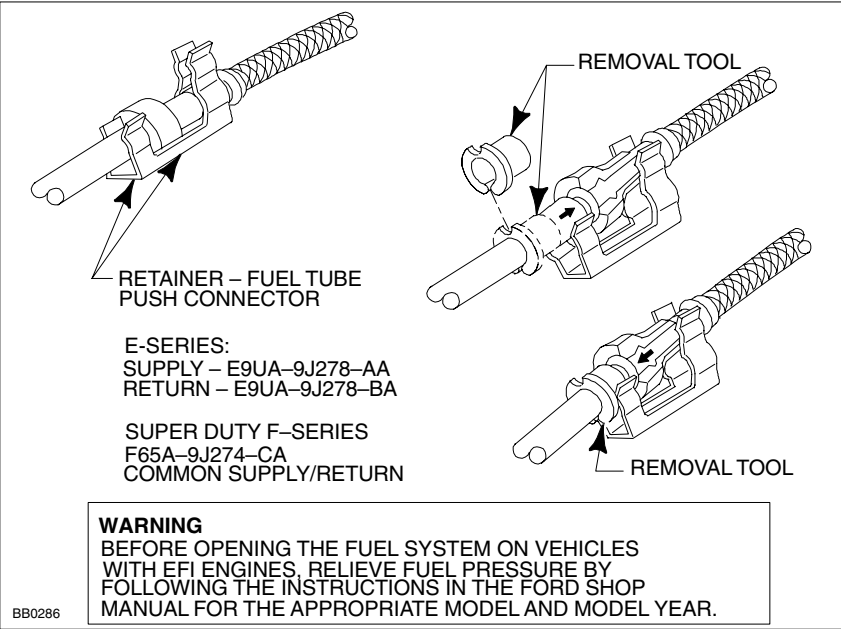


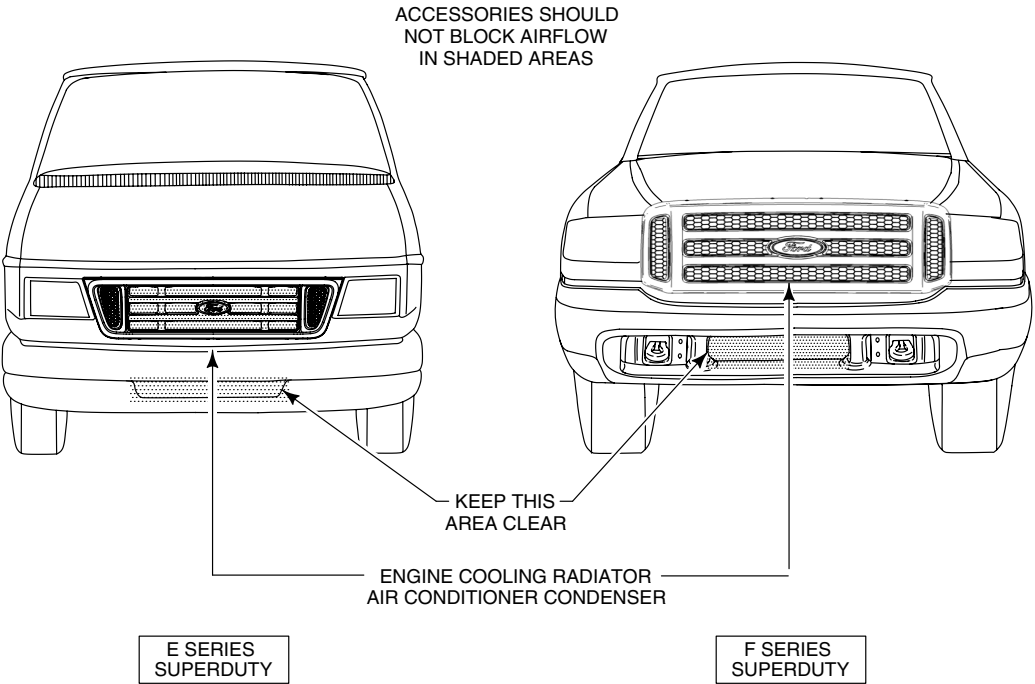
FIGURE C - FLEXIBLE FUEL LINE PUSH-CONNECT

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

COOLING SYSTEM

- Equipment such as flashing lights and sirens, spare tires or any other accessories should not be installed in the grille area forward of the radiator or air cleaner air inlet. Doing so restricts proper air flow through the radiator and engine compartments. E-Series and Super Duty F-Series are illustrated in the figure below.
- For proper engine cooling, do not alter, change the locations of, or remove the original equipment fan, fan clutch, or shroud.
- Maintain a 50/50 mixture of ethylene glycol-based antifreeze-to-water ratio when adding or modifying the heater system or auxiliary heater system. A 60/40 antifreeze-to-water ratio may be necessary during winter months in very cold climates. For the remainder of the year, however, a 50/50 ratio should be maintained.
- Use worm gear drive clamps only.
- Upper radiator hoses and heater hoses, which are added or replaces, should be EPDM-Kevlar composition. Lower radiator hoses should be EPDM-Rayon composition.
- The radiator and fan shroud should not be used as structural members and additional components should not be attached.
- Revisions to the Front End Accessory Drive System may affect the cooling system/component performance and are not recommended.
- Do not alter or modify the automatic transmission water bypass system.
- The minimum radiator grille opening (excluding all grille parts) for the E-Series Stripped Chassis, to provide optimum cooling for the engine, is 300 sq. in.
- Equipment, hazardous materials markers, or placards must not obstruct the airflow to the radiator or the air cleaner inlet on the E-Series Super Duty Stripped Chassis.
- The E-Series Super Duty Stripped Chassis engine compartment must be designed to eliminate any air circulation restriction that would affect the air induction or cooling systems. An engine compartment must provide adequate flow-through ventilation to prevent local air temperature from exceeding recommended maximums.



CLIMATE CONTROL SYSTEM

- An Auxiliary Heater A/C Connector Package can be either standard or optional on E-Series vehicles for connecting auxiliary climate control systems to the Ford system. The following items are important for the maximum efficiency of the combined systems:
 - The connector tubes are under the floor directly below the driver's seat.
 - The heater supply tube is identified with a white paint dot and should be connected to the lowest connection port on the auxiliary heater core.
 - The A/C connector tubes have a 20 x 1.5-6g metric thread for high pressure and 24 x 2.0-6g metric thread for low pressure.
 - If the vehicle is equipped with the auxiliary heater-air conditioner, do not operate the front A/C system prior to the addition of an auxiliary system. The system oil could settle in the connector tubes and not provide lubrication to the compressor. See Bulletin Q-47. To obtain a copy, log on to www.fleet.ford.com/truckbbas/ and select from the list of Bulletins required.
 - The Ford provided auxiliary blower switch requires an electric relay for high-speed blower operation. Additional detailed information is available in Bulletin Q-19. To obtain a copy, log on to www.fleet.ford.com/truckbbas/ and select from the list of Bulletins required.
- R134-A charge A/C systems must use PAG-type lubricating oil YN-12-B, Ford part number F2AZ-19577-C. Always use the same refrigerant and lubricating oil as originally equipped by Ford.
- Maintain a 4% suspended oil ratio in the A/C system for proper compressor lubrication.
- E-Series A/C and Refrigerant Oil System are classified into the following (3) types:

A/C System	R-134A lb	PAG Oil oz
Front Only ⁽¹⁾	2.75	9 ^(a)
Front w/Prep Unit	2.75	13
Front & Aux. Unit	4.0	13
⁽¹⁾ Must add 1-oz Oil for each 4-oz of R-134A above Ford's charge.		

A label stating the total refrigerant charge, type of refrigerant (R-134A), and type of compressor lubricant oil (PAG) used, should be affixed in a conspicuous place in the engine compartment.

- The A/C compressor will cycle during the defrost mode. A refrigerant shut-off valve for the auxiliary system may impair compressor lubrication.
- R-134A charged A/C systems should use barrier type A/C hose. Barbed fittings and external clamping may not be compatible with this type of hose. Swaged, permanent fittings on this type of hose are recommended.
- Use only worm gear drive clamps on heater hose.
- NEVER ATTACH ANY COMPONENT TO THE TRANSMISSION FILLER AND DIPSTICK TUBE.**
- Auxiliary heater and air conditioning systems hose routings must consider the following:
 - Dynamic engine roll or any system component which has an operating zone. Make sure there is adequate clearance (e.g., transmission downshift linkage, steering column shift linkage).
 - Do not route heater or A/C hoses directly over or near the exhaust system.
 - Do not route hoses by attaching to the engine.
 - Use only metallic "Y" and "T" type fittings or OEM approved materials.
 - Do not route hose in wheelhouse area.
 - Do not route by sharp edges or moving component parts. There must be shield protection from any potential abrasive source.
 - When routing in stone pickup area, lines should be protected by shields. Minimize use of concentric protective heater hose shields. Limit length of concentric hose shields to 305 mm [12 in] maximum.

E-SERIES STRIP CHASSIS A/C PREP PACKAGE

- The E-350/450 Chassis, 5.4L and 6.8L engine with A/c prep package comes with a R-134a (non-CFC) air conditioning prep package for use with a Clutch Cycling Orifice Tube (CCOT) controlled A/C system. The package consists of a compressor, condenser and front-end accessory drive.
- Information on determining air conditioning refrigerant and lubricant quantities are outlined on the Ford Truck Quality Program Guidelines web site <http://www.fleet.ford.com/truckbbas/topics/guidebook.html>

DESIGN RECOMMENDATIONS

2006

MODEL YEAR

Revised 03-10-06

EXHAUST SYSTEM

WARNING:

VEHICLE OPERATING TEMPERATURES

SOME TRUCKS OF FORD MOTOR COMPANY MAY EXHIBIT HIGH ENGINE COMPARTMENT AND EXHAUST SYSTEM TEMPERATURES IN CERTAIN OPERATING MODES. COMPONENTS, INCLUDING EXHAUST HEAT SHIELDING SYSTEMS, HAVE BEEN INSTALLED AS STANDARD EQUIPMENT ON SOME VEHICLES IN OUR ASSEMBLY PLANTS IN AN EFFORT TO PROVIDE THERMAL PROTECTION AGAINST SUCH TEMPERATURES. AFTERMARKET EQUIPMENT INSTALLERS OR INTERMEDIATE AND FINAL STAGE MANUFACTURERS ARE RESPONSIBLE FOR PROVIDING THERMAL PROTECTION (e.g., UNDERBODY HEAT SHIELDS) FOR ANY STRUCTURE OR EQUIPMENT ADDED TO THE VEHICLE AND SHOULD NOT REMOVE ANY COMPONENTS OR EXHAUST HEAT SHIELDING INSTALLED ON THE VEHICLE BY FORD.

1. Do not substitute exhaust system components or add to those furnished by Ford, except as noted in this section. Such a substitution or addition may adversely affect engine performance or emissions system effectiveness.
2. Do not change the position or routing of the exhaust system components. Such a change may affect the amount of heat transferred to body, chassis, or powertrain components, particularly fuel system components. Specifically, do not add dual exhausts or reroute exhaust components to the left side of the vehicle.
3. Do not remove or modify the existing shields. Ford underbody heat shields are installed on vehicles to provide heat protection for the vehicle floor and body mounting system, and must remain in place on the completed vehicle. (See Figure A.)

4. Exhaust heat shields should be added by a body builder, and should extend far enough beyond the exhaust system components to protect underbody surfaces from heat radiated at any angle. Add shields over the muffler and exhaust pipe kick-up areas.
5. Do not remove Ford furnished exhaust clamps and hangers.
6. An additional exhaust hanger should be installed, if appropriate, to support extended tailpipe length necessitated by body dimensions.
7. Do not make a rigid connection between the exhaust system and the body.
8. Do not apply body undercoating on the fuel tank, fuel fill hose, or fuel fill vent hoses. The extra insulation on these components may cause excessive heat build-up or possible material incompatibility concerns. (See Figure B.)
9. Do not apply body undercoating within twelve inches of the are directly above the exhaust, on any components within twelve inches of the exhaust, or to any part of any exhaust system. Undercoating will smoke or burn if subjected to high heat. (See Figure B.)

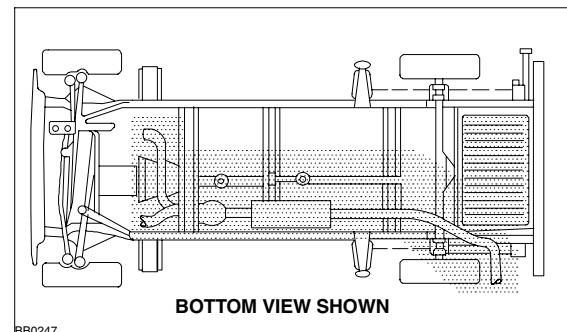


FIGURE B - DO NOT APPLY UNDERCOATING IN SHADED AREA

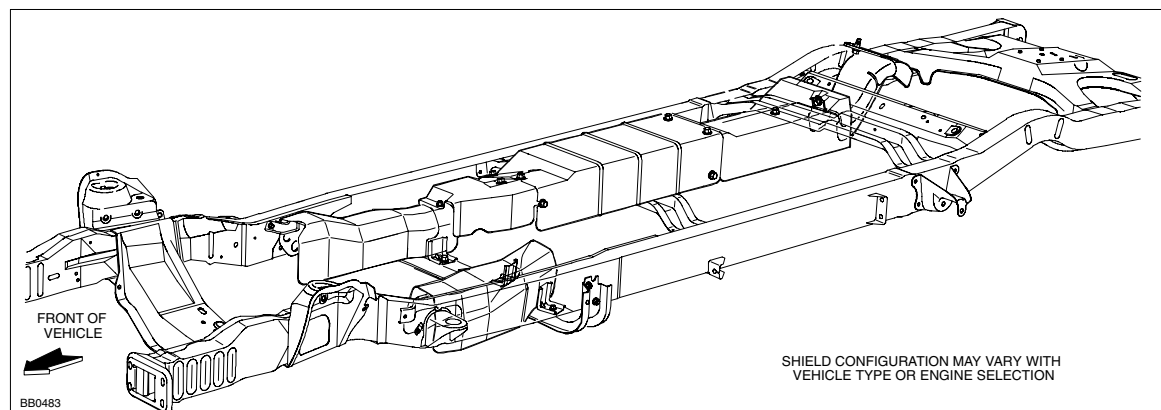


FIGURE A - UNDERBODY MOUNTED HEAT SHIELDS FOR VANS

10. Extensions to the exhaust outlet pipe should direct exhaust away from the body to minimize the possibility of fumes entering the vehicle. Extensions should also protrude beyond the vertical body surface.
11. Install all underbody plumbing for heaters, air conditioners, and other accessories so that they are not installed against sharp surfaces or jagged edges. Protect from exhaust heat when routing.
12. Use only stainless steel for any exhaust system modifications or additions.
13. Exhaust system revisions should consider thermal expansion of materials and the affect on design clearances.

FORD BODY COMPONENTS

1. Modifications to doors, roof, or body side panels may have an affect on F/CMVSS 208, 210, 212, 214, 219, and 301 compliance. Refer to the Statements of Conformity section in the *Incomplete Vehicle Manual* for compliance representations.
2. Running boards or entry steps should use a mounting system that will attach only to the body. The Ford body to frame isolators allow body movement which may loosen fasteners. A combined frame and body mounting system may cause frame Noise, Vibration, and Harshness (NVH) transfer through such a mounting system into the body.
3. Use a butyl type sealer on trimmed body sheet metal panels to prevent corrosion.
4. Temporary mounting pads may eliminate chipping and scratches when accessories are installed.
5. Select materials which will not have a corrosive action with each other.
6. Additional fresh air vents should be located so that engine exhaust cannot be drawn into the vehicle.

7. When adding holes to the floor of the vehicle, consideration must be given to all components below the floor. The use of drill stops is recommended.
8. Fasteners added to the floor should not point at the fuel tank or should have an appropriate shield. Components with sharp edges should have an appropriate shield to eliminate the possibility of fuel tank penetration in crash situations.
9. Components added to the E-Series engine cover should allow for easy removal. Refer to the Statements of Conformity in the *Incomplete Vehicle Manual* or Figure A on page 10 of this book for Occupant Protection Zone requirements for the engine cover and other affected areas.
10. The E-Series engine cover seal requires that carpeting and insulation should be installed as shown in Figure C.
11. Power operated windows, a partition, or roof panel systems when added to a vehicle with a GVWR of 4536 [10,000 lb] or less must comply with the requirements of F/CMVSS 118, refer to the Statements of Conformity in the *Incomplete Vehicle Manual*.
12. When a Second Unit Body (SUB) or rear closure panel is attached directly to the cutaway body, difficulty may be experienced when closing doors due to air pressure build up. It is recommended that vent(s) be installed which will allow "ONE WAY" pressure release from the inside of the cab to the outside. Recommended minimum size of the venting is 36 square inches.

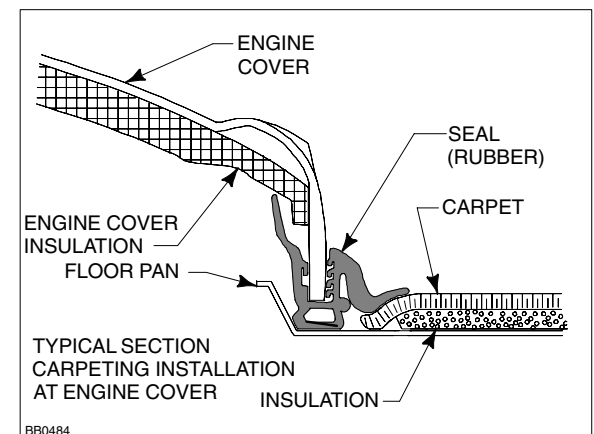


FIGURE C - E-SERIES ENGINE COVER SEAL

DESIGN RECOMMENDATIONS

2006
MODEL YEAR

WHEELS AND TIRES

WARNING:
SOME AFTERMARKET WHEEL ASSEMBLIES MAY NOT BE COMPATIBLE WITH SOME VEHICLES AND SHOULD NOT BE USED. USE OF INCOMPATIBLE WHEEL ASSEMBLIES MAY RESULT IN WHEEL FRACTURES, SEPARATION, WITH THE POTENTIAL FOR AN ACCIDENT, AND INJURY TO OCCUPANTS. FORD RECOMMENDS THAT ONLY WHEEL ASSEMBLIES APPROVED AND RELEASED BY FORD MOTOR COMPANY FOR THE VEHICLE MODEL SHOULD BE USED.

WARNING:
RE-TORQUE ALL LUG NUTS TO SPECIFICATION. IT IS IMPERATIVE THAT THE DEALER RETORQUE ALL WHEEL LUG NUTS ON ALL VEHICLES PRIOR TO DELIVERY TO THE FINAL VEHICLE PURCHASER. DUAL REAR WHEEL VEHICLES MAY BE SHIPPED WITH THE OUTER REAR WHEELS REMOVED AND, THEREFORE, THE DEALER MUST ENSURE THAT THE LUG NUTS ARE RETORQUED TO THE PROPER SPECIFICATION BEFORE THE VEHICLE IS DELIVERED TO THE FINAL VEHICLE PURCHASER. IMPROPERLY TIGHTENED LUG NUTS COULD LOOSEN AND ALLOW THE WHEEL TO COME OFF WHILE THE VEHICLE IS IN MOTION, CAUSING LOSS OF CONTROL.

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 any wheel or tire, other than those originally installed on the vehicle as manufactured by Ford, 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.

3. If you loosen or remove wheel lug nuts for any reason or have in your possession a vehicle at any of the mileage intervals listed in the Wheel Lug Nut Table below; check the lug nut torque and re-torque to the specifications as listed in the table. Follow the recommended Maintenance Procedure.

WHEEL LUG NUT TABLE				
	MILEAGE		WHEEL LUG NUT TORQUE	
VEHICLE TYPE	KM	MILES	Nm	Ft/Lb
E-Series				
E-150	800	500	135	100
E-250/350 SRW	800	500	190	140
E-350/450 DRW	160	100	190	140
	800	500		
F-Series				
Super Duty F-250/350 SRW	800	500	203	150
Super Duty F-350/450/550 DRW	160	100	203	150
	800	500		

SUSPENSION AND STEERING SYSTEM

NOTICE – VEHICLE HANDLING INFORMATION

The weight of the body structure and its center of gravity location (both longitudinally and vertically), as well as the weight and positioning of the cargo load, are important to the handling of the completed vehicle. Subsequent stage manufactures should note that matching a body to a chassis in a manner appropriate for the intended use of the vehicle is the responsibility of the final-stage manufacturer. Following the representations in this book or the IVM Manual, with respect to center of gravity locations and body weights for compliance with Federal or Canada Motor Vehicle Safety Standards, is only part of the task of producing a completed vehicle that handles appropriately in service.

IMPORTANT:

The final-stage manufacturer is responsible for verifying that the front wheel toe is within Ford specifications on completed vehicles. The steering wheel clear vision (horizontal or level orientation of the steering wheel) should also be maintained when resetting wheel toe. These specifications are found in the General Suspension section of the *Ford Shop Manual*.

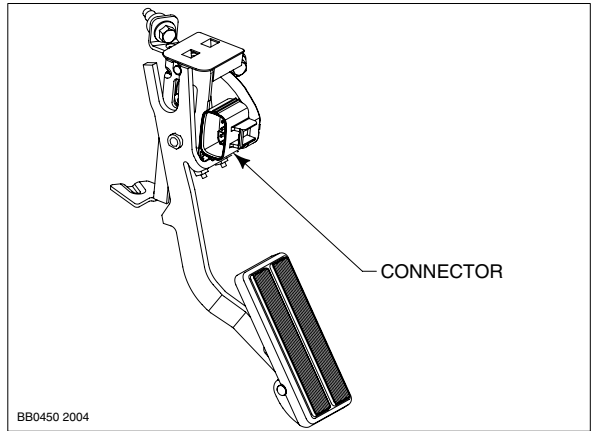
1. Front end alignment warranty policy for incomplete vehicles is based upon the completed vehicle remaining within OEM weight ratings, vehicle attitude, suspension and wheel/tire guidelines, and other characteristics affecting wheel alignment. Exceeding or modifying these restrictions may jeopardize related warranty.

2. Modifications made by subsequent stage manufacturers, particularly those that significantly affect vehicle ride heights, may cause vehicle control problems during excessively sharp turns or other abrupt steering maneuvers, possibly leading to rollover or other accidents that could result in death or serious injury.
3. The steering gear, intermediate shaft, coupling shaft, linkage, column, and steering wheel should not be altered or relocated. Steering linkage travel should not be restricted.
4. Ford front and rear GAWRs and GVWR must not be exceeded.
5. Front or rear suspension components should not be drilled, cut, welded, or relocated for any reason.
6. Welding to the frame in the steering gear area is not recommended.
7. If rear suspension spacers are used between the spring and axle seats to accommodate side-to-side variations, they should not exceed 3/8 inch. The spacers should not exceed the profile of the axle spring seat. Additional spacing may adversely affect driveline angles and axle system package clearance. Also affected are spring stress limits from excessive jounce travel.
8. Do not use any suspension component as a welding ground.
9. When welding or cutting near suspension components, shield and protect all springs and rubber components from heat penetration and welding splatter.
10. Any add-on device mounted on the steering column, shroud, multifunction switch, or gear selector lever, must not affect steering column angles, tilt mechanism (if so equipped), range of operation, or steering column mounting hardware. Any such device must not interfere with steering column collapse stroke travel during crash situations or air bag deployment.

ENGINE

1. Refer to the Emission Control Modifications on Safety/Emission pages 12-15 prior to making modifications to any engine component that could affect the emission certification.
2. The engine should not be operated with the hood up or removed. This may allow excessive unforced air to circulate that could adversely affect the cooling system.
3. Do not use manual throttle kickers

4. When using electric throttle kickers on gasoline engines, set the high idle RPM at as low as possible to obtain the required performance. The idle speed must be set when the engine is at normal operating temperature and under normal load. This RPM setting should be affixed to the vehicle and should be checked after the 2,000 mile brake-in engine tune up. This information should be provided to the purchasers. The addition of throttle kickers may affect electronic transmission operation.
5. An auxiliary crankshaft bearing support is required on all modular gas engines before a FEAD-mounted PTO can be installed. Refer to Power Take-Off Installations page for information.
6. Do not tap into the electrical circuits attached to the Accelerator Pedal Position Sensor (APP) on the accelerator control. Do not bypass the electrical circuits attached to the APP. See figure below for component identification.



7. Installation of a gasoline engine speed governor is permissible, provided the governor design is compatible with each respective throttle body for the individual engine application and it does not exceed specified engine maximum RPM. It must also meet all noise and engine emission requirements. Governor installations may affect electronically controlled transmissions. Contact Ford Truck Body Builders Advisory Service before installing.

DESIGN RECOMMENDATION

2006
MODEL YEAR

DRIVELINE

1. Bulletin Q-14, "Guidelines for Modifying Truck Drivelines," is available on www.fleet.ford.com/truckbbas/. Any deviation from Ford specifications may adversely affect powertrain system operation including engine and transmission, or component reliability. Subsequent stage manufacturers or installers are responsible to maintain Ford specifications in the completion of such modifications.
2. Rear axle vent and hose, if installed, must not be bent, pinched, or obstructed so that normal "breathing" of the rear axle is provided.
3. On all rear axle assemblies, additional bracket bars or supports must not be welded to the axle assembly. Attachment of any equalizing-type trailer hitch or auxiliary suspension systems (springs) must not be attached to the rear axle assembly.

TRANSMISSION

1. The transmission oil filler tube and dipstick must not be altered by bending, lengthening, or shortening, and must be readily accessible in the engine compartment for checking lubricant level. **NEVER ATTACH ANY COMPONENT TO THE TRANSMISSION FILLER AND DIPSTICK TUBE.**
2. The installed engine angle must not be altered. The relative position of engine and transmission to shift linkage must not be altered.
3. Transmission vent must not be altered, pinched, or collapsed, and the vent opening must not be restricted or relocated.
4. Adequate tool clearance and suitable access openings for transmission adjustments must be provided. Transmission removal provisions must also be considered.
5. Transmission oil cooler lines should not be kinked, bent, or restricted. All oil cooler lines must be properly retained with adequate clips. The truck type external oil cooler must not be "boxed in", which would restrict adequate air circulation. Use only Ford factory coolers.

Some automatic transmissions are equipped with "Stand Alone" transmissions fluid coolers. Vehicles equipped with this new oil to air cooler (OTA) may not have a transmission fluid cooler in the radiator. The OTA is located in front of the radiator and will require replacement every time the transmission is reworked or replaced. The cooler lines and Cooler Bypass Valve (CBV) must also be cleaned and backflushed.

CAUTION:

FAILURE TO REPLACE THE OTA, BACKFLUSH THE COOLER LINES AND CBV MAY RESULT IN TRANSMISSION ASSEMBLY INTERNAL DAMAGE.

6. Transmission shift cable, transmission outer shift lever, and shift cable bracket must not be altered and must have provisions for adjusting tool clearance. A severe duty shift cable (booted) is available as a service part from a Ford Dealer, for Super Duty F-Series vehicles which experience extensive off-road use.
7. Some automatic transmissions may be equipped with a transmission cooler bypass system. The purpose of the cooler bypass valve is to allow some transmission fluid to bypass the transmission fluid coolers and return to the transmission sump during cold weather operation. This provides a faster transmission fluid warm up and increased lube flow during cold weather operation. Do not remove or modify this system or transmission damage may occur. Do not use the cooler bypass line as a fitting point. Vehicles equipped with transmission cooler bypass will NOT have a hot water feed circuit from the water pump to the radiator tank containing the transmission cooler.

CAUTION:

DO NOT USE THE COOLER BYPASS VALVE (CBV) AS A HANDLE. DAMAGE TO THE CBV AND TRANSMISSION MAY RESULT. THIS ALSO CAUSES LEAKS.

8. Transmission service identification tags must not be removed or destroyed. If the transmission is reworked or replaced, the tag should be attached to new transmission.
9. Electronically controlled automatic transmission wire harness routing location, wire harness locating clips, all heat shielding, and clearance to the exhaust must be maintained as installed from the assembly plant.
10. The manual transmission filler plug should not be obstructed, preventing easy checking of lube level or filling.

11. Body structures should not be less than 1.00 inch from the rectangular vent holes on the top surface of the manual transmission housing.
12. Bulletin Q-14 and Q-18 contain additional detailed information on modifications which may affect transmissions. To obtain a copy, log on to www.fleet.ford.com/truckbbas/ and select from the list of bulletins.

FRAME

1. Holes that would weaken the frame sidemember should not be drilled in the frame. Holes are **not** to be drilled in the sidemember's top or bottom flange.
2. Holes to mount brackets, out-riggers, and supports, may be drilled in the vertical frame side rail web with the following restrictions:
 - Material between edge of hole and inside of upper or lower flange must not be less than 1.50 inch for low carbon steel (36,000 PSI yield).
 - The minimum edge distance between any two holes up to 0.625 inch diameter must be 1.00 inch. For larger than 0.625 inch diameter holes, the minimum edge distance must be 1.5 times the diameter of the largest hole.
 - 0.75 inch is maximum hole diameter.
 - Avoid close vertical succession of fasteners.
 - All attaching fasteners, including flat washers, must be of high strength steel (Grade 8).
3. When welding is performed anywhere on the vehicle, precautionary measures should be taken to prevent damage to electrical system wiring or components. Prior to welding, any parts which could be damaged by excessive temperatures should be removed or adequately shielded. Also, prior to welding, disconnect both batteries, and the PCM. The welding ground clamp should be positioned as close to the affected welding area as possible. Computer processors should be removed if welding is to be done within their close proximity. Welding cables should never be allowed to lay on, near, or across any electrical wiring or electronic component during welding. After welding, when parts are cool, carefully inspect wiring and electrical components for shorts or other damage which could draw excessive currents and possibly cause an electrical system short when the battery is reconnected.

4. Do not weld on frame flanges, including the bend radii.
5. When welding low carbon steel side rails (36,000 PSI yield strength), emphasis should be placed upon weld application techniques to avoid stress risers that may adversely affect frame operating stresses. When welding within 4 inches of any crossmember or suspension rivets, remove the rivets and replace with Grade 8 bolts and nuts.
6. Do not modify or alter the convoluted frame sections in the area behind the front bumper. Modifications or alterations could have an adverse effect on vehicle performance in a crash situation.
7. Wheelbase alteration and frame extension guidelines for and E-Series Super Duty Cutaway are available in Bulletin Q-18, log on to www.fleet.ford.com/truckbbas/ and select from the list of bulletins. Any deviation from the original vehicle specification will become the responsibility of the subsequent stage manufacturer or installer. This may affect transmission operation and durability.
8. Recommend the use of OEM front tow hooks only. See *Ford Towing Manual* FCS-12141-00 for towing instructions.
9. To prevent collapse of the frame side rail flanges, when U-bolts are used for the attachment of bodies to the truck chassis, vertical spacer bars must be used between the upper and lower flanges at each U-bolt.
10. All E-Series Super Duty Cutaways or Stripped Chassis with a 176-inch WB and equipped with a 55-gallon fuel tank will require an 18-inch minimum frame extension to provide for an adequate departure angle fuel tank clearance.
11. School bus rear bumpers should meet the following recommended minimum specifications; height, 203.2 [8.00] under 10,000 lbs and 241.3 [9.50] over 10,000 lbs; 50.8 [2.00] upper and lower flange; 304.8 [12.00] wrap-around; 4.8 [.187] thick. See the *Incomplete Vehicle Manual* for additional information.

JACK

1. Jacks, if installed, must be stowed in an adequate location for customer access.

AMBULANCE BUILDER GUIDELINES

2006
MODEL YEAR

A FORD VEHICLE IS SUITABLE FOR MANUFACTURE INTO AN AMBULANCE ONLY IF EQUIPPED WITH A FORD AMBULANCE PREPARATION PACKAGE. FORD URGES AMBULANCE MANUFACTURERS TO FOLLOW THE RECOMMENDATIONS FURNISHED IN THE *INCOMPLETE VEHICLE MANUAL*, (AND ANY PERTINENT SUPPLEMENTS), AND THE QUALIFIED VEHICLE MODIFIER (QVM) GUIDELINES.

USING A FORD VEHICLE WITHOUT THE FORD AMBULANCE PREPARATION PACKAGE TO PRODUCE AN AMBULANCE VOIDS THE FORD WARRANTY AND COULD RESULT IN ELEVATED UNDERBODY TEMPERATURES, FUEL OVER-PRESSURIZATION AND THE RISK OF FUEL EXPULSION AND FIRES.

VEHICLES EQUIPPED WITH FORD AMBULANCE PREPARATION PACKAGES HAVE LABELS LOCATED ON (THE INSIDE) DRIVER DOOR LOCK PILLAR THAT STATE THAT THE VEHICLE IS SO EQUIPPED.

INFORMATION

Ford urges careful consideration of the recommendations that follow. They are based on analyses of component and vehicle tests, actual service situations, and engineering judgments. Disregard of these recommendations may affect the durability, reliability, handling and performance characteristics of a completed vehicle and may elevate underbody temperatures and increase the potential for fire, or may affect the safety of the occupants in the event of an accident.

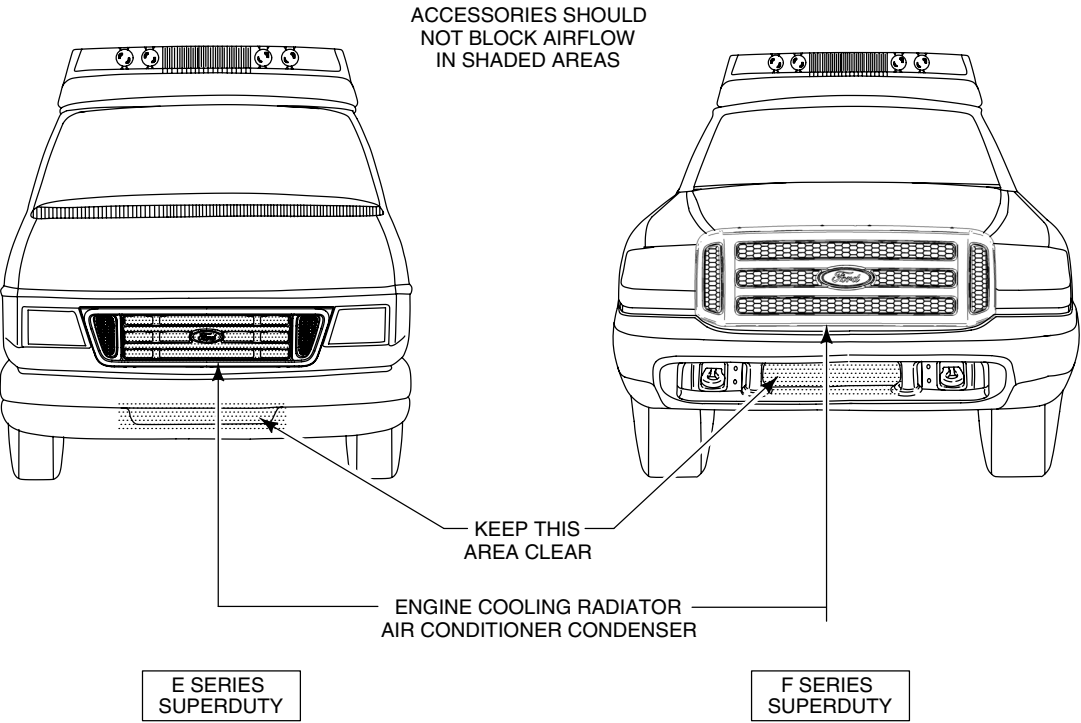
These recommendations are supplemental to U.S. and Canadian Motor Vehicle Safety compliance representations provided in the *Incomplete Vehicle Manual*. Additional information is also provided in this book and *Ford Truck Shop Manual* which may be helpful to subsequent stage manufacturers.

Subsequent stage manufacturers are encouraged to contact the Ford Truck Body Builder Advisory Service if they have any questions concerning these recommendations.

GUIDELINES

1. All Exhaust System and Underbody Heat Management statements on pages 186 and 199 respectively, apply to completed ambulance type vehicles.
 2. Data concerning the effect of hood louvers is inconclusive. If a body builder chooses to add them, the opening should be directed rearward to avoid recirculating discharged hot air through the radiator.
- NOTE:** The vehicle interior vent air enters the passenger compartment at the base of the windshield. Louvers may direct heated air or fumes toward this opening. Removal of the underhood insulation may affect Exterior Noise compliance. See the Exterior Noise information on Safety/Emissions.
3. To deal with higher electrical loads, Ford vehicles with the Ambulance Prep Package are equipped with dual alternators, dual batteries and heavy duty wiring to handle higher electrical loads. Added wiring should be of sufficient capacity to handle the higher current. The alternator should not be modified, altered or replaced.

4. Added Second Unit Body vents, especially powered vents, should be located away from the fuel filler, fuel venting areas and exhaust to avoid fuel fumes and vapors entering the interior of the vehicle.
5. Equipment such as flashing lights and sirens, spare tire, or any other accessories should not be installed in the grille area forward of the radiator or air cleaner air inlet. Doing so restricts proper airflow through the radiator and engine compartment. Lights, speakers, or sirens should not be mounted in the center area of the grille. Equipment should be mounted as far outboard as possible, not to exceed 90 square inches each or 180 square inches combined in area.
6. An ambulance is not to be used as a tow vehicle.



NEW VEHICLE STORAGE GUIDELINES

2006

MODEL YEAR

Page 198

DESIGN

GENERAL

- Store vehicles in a dry, ventilated place; protect from sunlight if possible.
- If vehicles are stored outside, provide regular maintenance against rust and damage.
- Ensure chassis interior and dunnage box is not exposed to the weather and the potential damage that can occur.
- On cutaways and right-door delete models, ensure back panel plastic sheet is intact and temporary door (right-hand delete option) is in place when vehicles are stored outside or moved.
- Any chassis with an incomplete roof modification should not be stored outside unless appropriately protected.

BODY

- Wash vehicle thoroughly to remove dirt, grease, oil, tar, or mud from exterior surfaces, rear wheel housing, and underside of front fender.
- Periodically wash vehicles stored in exposed locations.
- Touch up exposed raw or primed metal to provide rust protection.
- Cover chrome and stainless steel parts with a thick coat of auto wax to prevent discoloration. Rewax as necessary when the vehicle is washed.
- Lubricate all hoods, door hinges and latches with a light grade oil.

CAUTION: Keep all rubber parts free from oil and solvents.

- Cover the interior soft trim to prevent fading, if stored in exposed location.
- Body Builders should review their vehicle receiving, storage and production handling procedures to assure the chassis interior and dunnage box are not exposed to the weather and the potential damage that can occur. On cutaway chassis, builders should verify that the back panel plastic sheet is intact and the temporary door (right-hand door delete option) are in place when vehicles are stored outside or moved. Any chassis with an incomplete roof modification should not be stored outside unless appropriately protected.

ENGINE

- Start the engine every 15 days and move the vehicle at least 25 feet. Run it at fast idle until it reaches normal operating temperature.
- Shift the transmission into all gears while engine is running at idle speed.

FUEL SYSTEM

- Regularly move vehicles short distances to mix fuel anti-oxidation agents.

NOTE: During extended periods, if vehicle is stored for 60 days or more, gasoline may deteriorate due to oxidation. This can damage rubbers and other polymers in the fuel systems such as fuel pressure regulator diaphragms and fuel line connector seals. It may also clog small orifices. Diesel fuel deterioration in the form of fuel separation, sludge formation, and bacterial growth can cause restrictions in fuel supply lines, filters and sticking of fuel injection systems components.

A commercially available gasoline fuel stabilizer ("Sta-Bil" or equivalent) should be added to gasoline-powered vehicles or a diesel fuel stabilizer ("Fire Prep 100" or equivalent) to diesel-powered vehicles whenever actual or expected storage periods exceed 60 days. The manufacturer's instructions packaged with product should be followed. The vehicles should then be operated at an idle speed to circulate the additive throughout the fuel system.

A volatile, corrosion inhibitor (NOx Rust VCI 105" or equivalent) added to the fuel will protect the fuel tank inner surface from corrosion. Follow instructions packaged with product.

COOLING SYSTEM

- Maintain appropriate antifreeze protection against freezing temperatures.
- Only use coolant as recommended in your vehicle owners manual.

BATTERY

- Check and recharge as necessary.
- Keep connections clean and covered with light coat of grease.

BRAKES

- Make sure brakes and the parking brake are fully released.

TIRES

- Maintain recommended air pressures.

MISCELLANEOUS

- Verify that all linkages, cables, clevis pins, and levers under the vehicle are covered with grease to prevent rust.
- Move trucks at least 25 feet every 15 days to lubricate working parts and prevent corrosion.

TRANSMISSION

- Run engine to normal operating temperature.
- Shift the transmission into all gears with engine running at idle speed.
- Check fluid level and condition (no water contamination, etc.).
- Stripped Chassis vehicles – cover transmission to prevent water from entering through the vent.