NOTICE:

This standard contains numerous changes and deletions from the previous revision, as well as new requirements. Do not make any assumptions as to the context of the document. This standard should be carefully read prior to ordering a vehicle and its options, submitting an offer, building a vehicle, or conducting an inspection.

Further, to maintain the integrity of contracts, the past practice of underscoring changes has been discontinued because it is impractical to show all changes, deletions, etc. The contract must stand on the substance of the document as written.

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TRUCKS AND TRUCK TRACTORS: Heavy Commercial, 6X4, & 6X6, 19,500 to 30,000 KG (43,000 to 66,000 LBS) GVW

Federal Standard Number 807L, October 1, 2004
Superseding Federal Standard Number 807K, July 1, 2003

NON-MEASUREMENT SENSITIVE

THIS STANDARD IS APPROVED BY THE COMMISSIONER, FEDERAL SUPPLY SERVICE, GENERAL SERVICES ADMINISTRATION, FOR THE USE OF ALL FEDERAL AGENCIES.

1. PURPOSE, APPLICATION, AND COVERAGE.

1.1 PURPOSE.

This document covers new commercially produced, six wheeled, four and six wheel drive (6X4 & 6X6), heavy trucks. It is intended to simplify competitive procurement of commercial vehicles, and achieve a practical degree of standardization within the federal fleet.

1.2 APPLICATION.

This Federal Standard does not include all the varieties of the commodity indicated by the title but is intended to cover only those vehicles generally acquired by the Government. This standard highlights in concise form, types of trucks with standardized components and equipment. A selection of coded optional additional systems and equipment is included for agencies, divergent geographic and operational related needs. Vehicles must meet the integrated requirements of the tables, the schedule, and the detailed paragraphs (see section 3). The requirements of the standard may be tailored to meet unusual operating conditions, to incorporate special purpose equipment, and to provide for exceptions not otherwise covered.

These trucks are warranted by the contractor/supplier upon delivery as specified in 6.5 of the specification. Vehicle procurement must comply with the Federal Property Management Regulations (FPMR) and the Federal Procurement Regulations (FPR).

1.3 COVERAGE.

The vehicles covered by this standard are listed in Figure I. To order, select from the applicable table. A list for additional optional equipment appears after each table. Trucks generally similar to items in this standard are available through the STAN (Standardized Trucks Available Now) expedited procurement program.

Figure 1. Types and Classes

TYPES	NOMENCLATURE	CLASS
I	Chassis, truck, with cab (see 3.5.1)	B C D E
II	Truck, tractor, with cab (see 3.5.2)	B C D E
III	Truck, stake, with cab (see 3.5.3)	B C - -
IV	Truck, dump, with cab (see 3.5.4)	B C D E

1.4 CLASSIFICATION.

The vehicle(s) are divided into Types and Classes. The vehicle types are determined by the chassis/body configuration (see figure illustrations on tables). The Class of vehicle shall be determined by the minimum gross vehicle rating as follows:

CLASS	B	C	D	E	F	G
(KG)	19,500	20,900	23,600	28,100	30,000	as
(LBS)	43,000	46,000	52,000	62,000	66,000	specified

1.5 REPRESENTATIVE MODELS.

Representative chassis models are indicated in Chart A (following page). The figures under each table in section 3 illustrate the typical style of the trucks covered in that type.

1.6 STANDARD TRUCK AND ALTERNATE COMPONENTS.

The standard truck shown as a numbered item and components listed in the tables are minimum requirements and equipment acceptable. The components designated STD shall be furnished in accordance with the referenced specification. A selection of alternate options and equipment is at the end of each table with a code for various type trucks, and is generally only applicable to the specific type/style truck. These shall be furnished when the code(s) are specified. NOTE: Payload is reduced by the weight of options specified such as lift gates, winch, snowplow, increased body size, and other equipment not included in the Standard Item.

CHART A Representative Models

CLASS	B	C	D	E	F
GVWR KG	19,500	20,900	23,600	28,100	30,000
GVWR LB	43,000	46,000	52,000	62,000	66,000
Short Conventional 94" to 101" BBC					
Freightliner LLC	M2	M2			
Sterling	7500 Series 9500 Series	7500 Series 9500 Series	9500 Series	9500 Series	9500 Series
Medium Conventional 105" to 114" BBC					
Freightliner LLC	FL80/M2/FL112/M2	FL80/M2/FL112/M2	FL112/FLD	FL112/FLD	FL112/M2
GMC	C8500T	C8500T			
International	7000	7000	7000	7000	7000
Mack	CH/RD	CH/RD	RD	RD	RD
Peterbilt	330/385/357	330/385/357	330/385/357	385/357	385/357
Sterling	8500 Series/9500 Series	8500 Series/9500 Series	9500 Series	9500 Series	9500 Series
Volvo			VHD 64	VHD 64	VHD 64
Long Conventional 115" to 124" BBC					
Freightliner LLC			FLD/C/CL	FLD/C/CL	FLD/C/CL
International	5000/9000	5000/9000	5000/9000	5000/9000	5000/9000
Mack	RD	CL/RD	RD	RD	RD & CL
Peterbilt	385/357	385/357	385/357/378/379/387	385/357/378/ 379/387	385/357/378/ 379/387
Sterling	9500 Series	7500 Series/9500 Series	9500 Series	9500 Series	9500 Series
Volvo		VNL64T			
Tilt Cab					
Autocar	WX & WXL	WX & WXL	WX & WXL	WX & WXL	WX & WXL
Chevrolet	T8500				
Freightliner LLC		CONDOR/ARGOSY	ARGOSY/CONDOR	ARGOSY/CONDOR	ARGOSY/CONDOR
Mack	MR	MR	MR	MR	MR
Peterbilt	320	320/362	320/362	320/362	330/362
Sterling	-	CONDOR	CONDOR	CONDOR	CONDOR

2. REFERENCED DOCUMENTS.

2.1 ISSUES OF DOCUMENTS.

The following documents of the issue in effect on date of invitation for bids or request for proposal form a part of this standard to the extent specified herein.

Fed. Std. No. 595B - Colors.

Federal standards and specifications are available from the GSA Specification Section (3FBP-W), Suite 8100, 476 L'Enfant Plaza, SW, Washington, D.C. 20407, telephone number (202) 619-8925. Copies of this standard are available by writing to:

General Services Administration
Centralized Mailing List Service (7CAFL)
P.O. Box 6477
Fort Worth, TX 76115
Telephone: (817) 334-5215
FAX: (817) 334-5227

The mailing code for this standard is AUTO-0001.

2.1.1 SPECIFICATIONS, STANDARDS, AND HANDBOOKS.

The following specifications, standards, and handbooks

form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those listed in the issue of the Department of Defense Index of Specifications and Standards (DODISS) and supplement thereto, in effect on date of solicitation.

COMMERCIAL ITEM DESCRIPTIONS

A-A-55439 .....Battery, Storage: Vehicular, Ignition, Lighting, and Starting

HANDBOOKS

MIL-HDBK .....1223 Nontactical Wheeled Vehicles Treatment, Painting, Identification Marking, and Data Plate Standard.

MIL-HDBK .....1791 Designing for Internal Aerial Delivery in Fixed Wing Aircraft.

DH-1-11 .....AFSC Design Handbook.

SPECIFICATIONS

Military

MIL-T-5624 .....Turbine Fuel, Aviation, Grades JP-4 and JP-5.

MIL-T-83133 .....Turbine Fuel, Aviation, Kerosene Type, Grade JP-8

MIL-PRE-20696 ....Cloth, Waterproof, Weather Resistant

STANDARDS

Federal

FED-STD-297 .....Rustproofing of Commercial (Nontactical) Vehicles.

Military

MS 51118.....Pintle Assembly, Towing: 40,000 lbs. Capacity, Manual Release.

MS 75020.....Connector, Plug, Electrical - 12 Contact, Intervehicular, 28 Volt, Waterproof.

MS 75021.....Connector, Receptacle, Electrical - 12 Contact, Intervehicular, 28 Volt, Waterproof.

Unless otherwise indicated, copies of federal and military specifications, standards, and handbooks are available from the Naval Publications and Forms Center, Military Specifications and Standards, Bldg. 4D, 700 Robbins Avenue, Philadelphia, PA 19111-5094.

2.1.2 OTHER GOVERNMENT DOCUMENTS, DRAWINGS, AND PUBLICATIONS.

The following other Government documents, drawings, and publications form a part of this document to the extent specified herein. Unless otherwise specified, the issues shall be those in effect on date of solicitation.

Department of Defense (DOD)
Department of Defense Index of Specifications and Standards (DODISS).

Copies of the DODISS are available on a yearly subscription basis either from the Government Printing Office for hard copy, or microfiche copies are available from the Director, Navy Publication and Printing Service Office, 700 Robbins Avenue, Philadelphia, PA 19111-5093.

Department of Transportation (DOT)
Federal Motor Carrier Safety Regulations.
Federal Motor Vehicle Safety Standards.

Application for copies of DOT publications should reference the Code of Federal Regulations, 49 CFR, and the Federal Register, and should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Environmental Protection Agency (EPA)
Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines.
Noise Emission Standards for Transportation Equipment - Medium and Heavy Trucks.

Application for copies of EPA publications should reference the Code of Federal Regulations, 40 CFR, and the Federal Register and should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

Occupational Safety and Health Administration (OSHA)
Subpart N - Cranes, Derricks, Hoists, Elevators, and Conveyors.

Application for copies of OSHA publications should reference the Code of Federal Regulations, 29 CFR, and the Federal Register and should be addressed to the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

2.2 NON-GOVERNMENT PUBLICATIONS.

The following documents form a part of this document to the extent specified herein. Unless otherwise specified, the issues of the documents that are DOD adopted are those listed in the issue of the DODISS cited in the solicitation. Unless otherwise specified, the issues of documents not listed in the DODISS are the issues of the documents in effect on date of solicitation.

American Society for Testing and Materials (ASTM)

ASTM A53.....Pipe, Steel, Black, and Hot-Dipped Zinc-Coated Welded and Seamless, for Ordinary Uses (DOD adopted).

ASTM D 4985 .....Standard Specification for Low Silicate Ethylene Glycol Base Engine Coolant for Heavy Duty Engines Requiring an Initial Charge of Supplemental Coolant Additive.

Application for copies of ASTM publications should be addressed to the American Society for Testing and Materials, 1916 Race Street, Philadelphia, PA 19103.

The European Tyre and Rim Technical Organization (ETRTO) Standards Manual

Application for copies of ETRTO publications should be addressed to the European Tyre and Rim Technical Organization, 32, Avenue Brugmann, 1060 Brussels, Belgium.

National Truck Equipment Association (NTEA)
Conversion Hoist Chart.
Dump Body Hoist Chart.

Application for copies of NTEA publications should be addressed to the National Truck Equipment Association, 38705 Seven Mile Road, Suite 345, Livonia, MI 48152.

SAE, INC.

SAE Standards and Recommended Practices

J318 .....Air Brake Glad Hand Service (Control) and Emergency (Supply) Line Couplers - Trucks, Truck Tractors, and Trailers (DOD adopted).

J350 .....Spark Arrester Test Procedure for Medium Size Engines (DOD adopted).

J516 .....Hydraulic Hose Fittings.

J517 .....Hydraulic Hose.

J537 .....Storage Batteries

J551 .....Performance Levels and Methods of Measurement of Electromagnetic Radiation from Vehicles and Devices (30-1000 MHz).

J560 .....Seven-Conductor Electrical Connector for Truck-Trailer Jumper Cable.

J588 .....Turn Signals Lamps.

J589 .....Turn Signal Switch.

J682 .....Rear Wheel Splash and Stone Throw Protection (DOD adopted).

J683 .....Tire Chain Clearance - Trucks, Buses, and Combinations of Vehicles.

J700 .....Upper Coupler Kingpin - Commercial Trailers and Semi trailers.

J706 .....Rating of Winches.

J844 .....Nonmetallic Air Brake System Tubing (DOD adopted).

J994 .....Alarm, Backup - Electrical

J1067 .....Seven-Conductor Jacketed Cable for Truck-Trailer Connections.

J1176 .....External Leakage Classifications for Hydraulic Systems

J1273 .....Recommended Practices for Hydraulic Hose Assemblies

J1839 .....Fuel/Water Separation Test Procedure

J2188 .....Truck Ability Prediction Procedure (DOD adopted).

Application for copies of SAE publications should be addressed to SAE, Inc., 400 Commonwealth Drive, Warrendale, PA 15096.

The Tire and Rim Association, INC.
Year Book.

Application for copies of Tire and Rim Association publications should be addressed to the Tire and Rim Association, Inc., 175 Montrose West Ave., Copley, OH 44321.

The Maintenance Council (TMC)

Recommended Maintenance Practices Manual

RP 105B .....Battery Cable Assemblies.

RP 109A.....Battery Rating and Engine Cranking Requirements.

RP 110A.....Low Tension Cable for Heavy Duty Truck Tractor Wiring Systems.

RP 111B.....Circuit Protections.

RP 112 .....Terminals for Heavy Duty Truck Tractor Primary Wiring Systems.

RP 113A.....Electrical Systems Connectors.

RP 114A.....Harness Protection.

RP 118A.....Turn Signal Switches.

RP 137 .....Antilock electrical supply for tractors through SAE J560 seven pin connector.

RP 138 .....Auxiliary forward lighting.

RP 321 .....Fuel Crossover Line Protection and Configuration Guidelines.

RP 325 .....Radiator Integrity for On-Highway Trucks.

RP 329 .....Specifications for Nitrite-Containing Ethylene Glycol Base Coolant.

RP 330 .....Specifications for Nitrite-Containing Propylene Glycol Base Coolant.

RP 417 .....Supporting pneumatic electrical lines between cab and trailer.

RP 418 .....Heavy duty, in-cab R134A air conditioning systems.

RP 624 .....Synthetic Lubricants.

RP 637 .....Air Dryer Guidelines.

Applications for copies of TMC publications should be addressed to the Maintenance Council, American Trucking Associations, 2200 Mill Road, Alexandria, VA 22314 - 5388. Non-Government standards and other publications are normally available from the organizations that prepare or distribute the documents. These documents also may be available in or through libraries or other informational services.

2.3 ORDER OF PRECEDENCE.

In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.4 ABBREVIATIONS AND DEFINITIONS.

Following are the abbreviations or contractions and their meanings as they appear and are used in this standard:

ABBREVIATION	DEFINITIONS
AMP	AMPERE
AT	ALL TERRAIN TIRES
AUX	AUXILIARY
BAT	BATTERY
CAP	CAPACITY
CM	CENTIMETERS
CYL	CYLINDERS
DIA	DIAMETER (IN INCHES)
FC	FORWARD CONTROL
FT	FOOT OR FEET
FRT	FRONT
GAS	GASOLINE
GAWR	GROSS AXLE WEIGHT RATING
GCWR	GROSS COMBINATION WEIGHT RATING
GHP	GROSS HORSEPOWER
GVWR	GROSS VEHICLE WEIGHT RATING
H.D.	HEAVY DUTY
H.D.A.	HEAVIEST DUTY AVAILABLE
HWY	HIGHWAY
HYD	HYDRAULIC
IN	INCHES
KG	KILOGRAMS
L	LITERS
LBS	POUNDS
LG.	LONG
M	METERS
MAN	MANUAL
MAX	MAXIMUM
MED	MEDIUM
MFR	MANUFACTURERS
MIN	MINIMUM
MPG	MILES PER GALLON
MSPC	MFR. STD. PAINT COLOR
N/A	NOT APPLICABLE OR NOT AVAILABLE
NHP	NET HORSEPOWER
OEM	ORIGINAL EQUIPMENT MANUFACTURERS
OO	ON-OFF ROAD TIRES
OPT	OPTION, OPTIONAL
PASS	PASSENGERS
PTO	POWER TAKE-OFF OPENING
RAD	RADIAL
RBM	RESISTING BENDING MOMENT
SPD	SPEED
STD	STANDARD (SPECIFICATIONS)
V	V-TYPE (ENGINE)
W/, & W/O	WITH, AND WITHOUT
-	NOT REQUIRED, OPTION OFFERED
/	AND

ALTERNATIVE FUEL VEHICLES AVAILABLE IN FED. STD. 807L

MANUFACTURER	FUEL TYPE	STANDARD ITEM NO.	REMARKS
NONE	NONE	NONE	NONE

3. SELECTION AND REQUIREMENTS
Charts begin on page 9.

TABLE 1

6X4 CHASSIS, TRUCK WITH CAB, 2 OR 4 DOOR (See paragraph 3.5.1)

ITEM NO TYPE/CLASS	612A I/B	613A I/C	613B I/C	614 I/D	615 I/E
		MINIMUM REQUIREMENTS			
Payload (approx.) W/o Body lbs	30,000	32,500	30,500	35,500	43,000
Curb Weight lb	13,300	13,500	15,500	16,500	19,200
Style, cab/tilt hood	Med. Con/2dr	med. Con/2dr	med. Con/2dr	med. Con/2d	med. Con/2dr
GVWR/GCWR, LB	43000/70000	46000/80000	46000/80000	52000/90000	62000/100,000
Axle, min front rating lb/seals	9000/oil	12000/oil	12000/oil	14000/oil	18000/oil
Axle, min rear rating,lb/spd/seals	34000/1spd/oil	34000/1spd/oil	34000/1spd/oil	40000/1spd/oil	46000/1spd/oil
Suspension rating, front/rear, lb min.	9000/34000	12000/34000	12000/34000	14000/40000	18000/46000
Cab to trunnion (CA)	Optional	optional	optional	optional	optional
Frame, RBM, min, in-lb	1,600,000	1,600,000	1,600,000	1,700,000	2,370,000
Engine, type	Diesel, turbo	Diesel, turbo	Diesel, turbo	Diesel, turbo	Diesel, turbo
Engine cyl/ghp/gross torque, min	6/245/660	6/275/800	6/300/1050	6/320/1150	6/350/1350
Trans, type/speeds, min	Manual/10 spd	manual/10 spd	manual/13 spd	manual/13 spd	manual/13 spd
Wheels, type	Disc	disc	disc	disc	disc
Tires,tubeless,size	10R22.5F	11R22.5G	11R22.5G	12R22.5H/Front 11R22.5G/Rear	315/80R22.5J/Front 11R22.5H/ Rear
Alternator, rating cap, min	130 amp	130 amp	130 amp	130 amp	130 amp
Battery, CCA @ 0 deg F/ reserve	1875/540	1875/540	1875/540	1875/540	1875/540
Fuel tank capacity, L (gal) min.	170 (45)	170 (45)	170 (45)	170 (45)	170 (45)
Horn	Electric & air	Electric & air	Electric & air	Electric & air	Electric & air
Exhaust, type	horizontal	horizontal	horizontal	horizontal	horizontal

NOTES: Extended warranty coverage may be available on these vehicles.

Standard equipment includes: Coolant recovery; front towing devices; fan clutch, AM/FM radio; power takeoff opening at transmission; seatbelts, cab heater and defroster; tachometer; electric power point, tinted glass, air brakes, power steering, flat and convex mirrors, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown, daytime running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine, throttle control, and intermittent windshield wipers.

(CA) Cab to Trunnion Dimension Must Be Specified
See Option Codes CA1 – CA8

Special or Additional CA dimensions may be specified, if required.

See Option Codes listing on pages 10 & 11.

A = Option available, S = Standard on specified item		6X4				
OPTION CODES	**REF. PARA.**	**612A**	**613A**	**613B**	**614**	**615**
ENGINES						
YD31 DIESEL ENGINE MIN. 275 GHP, 800 LB/FT TORQUE	3.4.1.1	A	S	A	N/A	N/A
YD41 DIESEL ENGINE MIN. 310 GHP, 1050 LB/FT TORQUE	3.4.1.1	N/A	A	S	A	N/A
YD30 DIESEL ENGINE MIN 320 GHP, 1150 LB/FT TORQUE	3.4.1.1	N/A	N/A	A	S	A
YD33 DIESEL ENGINE MIN 350 GHP, 1350 LB/FT TORQUE	3.4.1.1	N/A	N/A	N/A	A	S
YD36 DIESEL ENGINE MIN 370 GHP, 1450 LB/FT TORQUE	3.4.1.1	N/A	N/A	N/A	A	A
CNG COMPRESSED NATURAL GAS ENGINE	3.4.1.1	A	A	A	N/A	N/A
ASI AIR FILTER SERVICE INDICATOR	3.4.3.1	A	A	A	A	A
ECB ENGINE COMPRESSION BRAKE	3.4.11.4(B)	A	A	A	A	A
EH BLOCK HEATER, OEM, 110V	3.4.1.7	A	A	A	A	A
EHM ENGINE HOUR METER	3.4.22	A	A	A	A	A
EXB ENGINE EXHAUST BRAKE	3.4.11.4(C)	A	A	A	A	A
FFP FUEL FIRED ENGINE PREHEATER	3.4.1.8	A	A	A	A	A
FJP AVIATION JET FUEL COMPATIBILITY WITH DIESEL ENGINE	3.4.1.1	A	A	A	A	A
H4 COOLANT PROTECTION TO -50˚ C (-60˚ F)	3.4.1.6	A	A	A	A	A
SEH COLD WEATHER PACKAGE (INCLUDE SEH A, B, AND D)	3.4.1.7	A	A	A	A	A
SEHA COOLANT HEATER, NON-OEM INCLUDES JUNCTION BLOCK & CORD	3.4.1.7	A	A	A	A	A
SEHB ENGINE OIL HEATER, NON-OEM	3.4.1.7	A	A	A	A	A
TRANSMISSION						
3000 AUTOMATIC TRANS. MIN 5 SPD, ALLISON MODEL 3000 RDS	3.4.5.3	A	A	A	A	N/A
4000 AUTOMATIC TRANS. MIN 5 SPD, ALLISON MODEL 4000 RDS	3.4.5.3	N/A	N/A	A	A	A
T1 INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)	A	A	A	A	A
TMA FULLY AUTOMATED MECHANICAL TRANSMISSION	3.4.5.3.2	A	A	A	A	A
TSTF SYNTHETIC LUBE - AUTOMATIC TRANSMISSION	3.4.31	A	A	A	A	A
LST SYNTHETIC LUBE - MANUAL TRANSMISSION	3.4.31	A	A	A	A	A
AXLE, FRONT						
AS16 FRONT GAWR 16000 LB	3.2.6.1	N/A	N/A	N/A	A	N/A
AS20 FRONT GAWR 20000 LB	3.2.6.1	N/A	N/A	N/A	A	A
WSB SETBACK FRONT AXLE	3.4.9	A	A	A	A	A
AXLE, REAR						
ATC AUTOMATIC TRACTION CONTROL (through ABS system)	3.4.9.2	A	A	A	A	A
D1 DRIVER CONTROLLED; FULL LOCKING DIFFERENTIAL FOR BOTH REAR AXLES	3.4.9.2	A	A	A	A	A
D3 AUTOMATIC REAR AXLE LOCK (BOTH REAR AXLES)	3.4.9.2	A	A	A	A	A
LSD SYNTHETIC LUBE-DIFFERENTIAL	3.4.31	A	A	A	A	A
SUSPENSION						
SAR REAR AIR SUSPENSION	3.4.8.1	A	A	A	A	A
ELECTRICAL						
DRLD DAYTIME RUNNING LIGHTS - DELETE	3.4.2.3	A	A	A	A	A
A14 ALTERNATOR, MIN 145 AMP	3.4.2.2	A	A	A	A	A
BODY AND CHASSIS						
CC CREW CAB (N/A W/FTC, FTD)	3.4.12.2	A	A	N/A	N/A	N/A
CE EXTENDED CAB (CHASSIS BRAND AVAILABLE MAY BE LIMITED BY ENGINE SIZE)	3.4.12	A	A	A	A	A
CLN LONG CONVENTIONAL CAB	3.4.12	A	A	A	A	A
COE TILT CAB	3.4.12	A	A	A	A	A
CSN SHORT CONVENTIONAL CAB	3.4.12	A	A	A	A	A
CA8 CA 83/84 IN	3.5.1	A	A	A	A	A
CA1 CA 101/108 IN	3.5.1	A	A	A	A	A
CA2 CA 119/124 IN	3.5.1	A	A	A	A	A
CA3 CA 136/138 IN	3.5.1	A	A	A	A	A
CA4 CA 150/156 IN	3.5.1	A	A	A	A	A
CA5 CA 167/171 IN	3.5.1	A	A	A	A	A
FHD HEAVY DUTY FRAME	3.4.7	A	A	A	A	A

A = Option available, S = Standard on specified item		6X4				
OPTION CODES	**REF. PARA.**	**612A**	**613A**	**613B**	**614**	**615**
EXTERIOR						
MPR SNOWPLOW PROVISIONS	3.5.4.8.1	A	A	A	A	A
RACS INTEGRAL CASSETTE PLAYER	3.4.24	A	A	A	A	A
RM3 MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	A	A	A	A	A
RM4 HEATED FLAT MIRRORS	3.4.20	A	A	A	A	A
SK METRIC ODOMETER	3.4.19	A	A	A	A	A
SRP RUSTPROOFING	3.1.1.3	A	A	A	A	A
LTD LIFTING & TIEDOWN PROVISIONS	3.1.1.18	A	A	A	A	A
INTERIOR						
DA DELETE AIR CONDITIONING	3.4.25	A	A	A	A	A
DSS DRIVER SUSPENSION SEAT (AIR) w/ FIXED PASSENGER SEAT	3.4.12.1	A	A	A	A	A
DSS2 PASSENGER SEAT AIR RIDE (includes DSS)	3.4.12.1	A	A	A	A	A
RACS RADIO, WITH INTEGRAL CASSETTE PLAYER	3.4.24	A	A	A	A	A
RAD RADIO, WITH INTEGRAL COMPACT DISC PLAYER	3.4.24	A	A	A	A	A
FUEL						
FTC FUEL TANKS, MIN 70 GAL TOTAL CAPACITY	3.4.3.2	A	A	A	A	A
FTD FUEL TANKS, MIN 100 GAL TOTAL CAPACITY	3.4.3.2	A	A	A	A	A
FFS HEATED FUEL/WATER SEPARATOR	3.4.1.7.1	A	A	A	A	A
SEHC IN-LINE FUEL WARMER, NON-OEM	3.4.1.7 (C)	A	A	A	A	A
SEHD IN-TANK FUEL WARMER, NON-OEM	3.4.1.7 (D)	A	A	A	A	A
SEHE IN-LINE FUEL WARMER (ELECTRICAL) NON-OEM	3.4.1.7 (E)	A	A	A	A	A
SAFETY						
BUA BACKUP ALARM	3.4.23	A	A	A	A	A
FEX EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.29	A	A	A	A	A
TIRES AND WHEELS						
AICE AUTOMATIC TIRE CHAINS	3.4.10.5	A	A	A	A	A
CTIS CENTRAL TIRE INFLATION SYSTEM	3.4.10.6	A	A	A	A	A
HF WIDE BASE SINGLE TIRES & WHEELS, FRONT AND REAR	3.4.10	A	A	A	A	A
MS MUD & SNOW TREAD TIRES (ON REAR AXLES)	3.4.10.1	A	A	A	A	A
SLP LOW PROFILE TIRES	3.4.10.1	A	A	A	A	A
STA SPARE TIRE ASSEMBLY (FRONT AXLE)	3.4.10.3	A	A	A	A	A
STB SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.3	A	A	A	A	A
STC CARRIER SPARE TIRE	3.4.10.2	A	A	A	A	A
TOWING						
ATT RIGID PINTLE HOOK W/ AIR OPERATED PLUNGER	3.1.1.8	A	A	A	A	A
MTL TRAILER LIGHTING CABLE	3.1.1.9	A	A	A	A	A
RTH REAR TOW HOOKS (n/a w/TTP or ATT)	3.1.1.6	A	A	A	A	A
TBT BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3	A	A	A	A	A
TTP TRAILER TOWING PKG	3.1.1.8	A	A	A	A	A
MISCELLANEOUS						
ATR AIR TRANSPORTABILITY (INCLUDES LTD)	3.1.1.16.1	A	A	A	A	A
HTR HIGHWAY TRANSPORTABILITY	3.1.1.16.2	A	A	A	A	A
MTR MARINE TRANSPORTABILITY	3.1.1.16.3	A	A	A	A	A
RTR RAIL TRANSPORTABILITY	3.1.1.16.4	A	A	A	A	A
LTD LIFTING & TIE DOWN PROVISIONS	3.1.1.16.5	A	A	A	A	A
TDN TIE DOWN PROVISIONS	3.1.1.16.6	A	A	A	A	A
BTC TOOL Box	3.4.32	A	A	A	A	A
EDR DRIVELINE RETARDER	3.4.11.4 (A)	A	A	A	A	A
FFE FRONT FRAME EXT.	3.4.7	A	A	A	A	A
MHW FRONT MNT WINCH	3.4.27	A	A	A	A	A
MIL MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	A	A	A	A	A
PSM PARTS AND SERVICE MANUALS, PRINTED	6.6	A	A	A	A	A
PSME PARTS AND SERVICE MANUALS, ELECTRONIC	6.6	A	A	A	A	A
PSM2 PARTS AND SERVICE MANUALS - AIR FORCE	6.6	A	A	A	A	A
PSM3 PARTS AND SERVICE MANUALS - AIR FORCE	6.6	A	A	A	A	A
TJ TOOLS, HYD JACK, WHEEL WRENCH & HANDLE	3.4.16.1	A	A	A	A	A
VES VERTICAL EXHAUST SYSTEM	3.4.4.	A	A	A	A	A
XP EXPORT PACKAGING	5.1	A	A	A	A	A
PAINT						
CPT CUSTOM PAINT EXTERIOR CAB	3.1.1.1	A	A	A	A	A
TP TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	A	A	A	A	A
WLP WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	A	A	A	A	A

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TABLE 2

TRUCK TRACTOR WITH CAB, 2 DOOR (See paragraph 3.5.2)

ITEM NO	622B	623B	6X4 624	624C	625	625c	6X6 824
TYPE/CLASS	II/B	II/C	II/D	II/D	II/E	II/E	II/D
			MINIMUM REQUIREMENTS				
Payload (approx.) Lbs	27,500	30,500	35,700	35,700	43,700	43,700	35,000
Curb Weight lb	15,500	15,500	16000	16,000	18,300	18,300	17,000
Style, cab/tilt hood	Med. Conv/2 door	Med. Conv/2 door	Med. Conv/2 door	Long Conv/2 door	Med. Conv/2 door	Long Conv/2 door	Med. Conv/2 door
GVWR/GCWR, LB	43,000/70,000	46,000/80,000	52,000/90,000	52,000/90,000	62,000/100,000	62,000/100,000	52,000/90,000
Axle, min front rating lb/seals	9,000 / oil	12,000 / oil	12,000 / oil	12,000 / oil	16,000 / oil	16,000 / oil	12,000/grease/oil
Axle, min rear rating lb. spd / seals	34,000 / 1 spd / oil	34,000 / 1 spd / oil	40,000 / 1 spd / oil	40,000 / 1 spd / oil	46,000 / 1 spd / oil	46,000 / 1 spd / oil	40,000 / 1 spd / oil
Suspension rating, front/rear, lb. Min.	9,000/34,000	12,000/34,000	12,000/40,000	12,000/40,000	16,000/46,000	16,000/46,000	12,000/40,000
Cab to trunnion (CA)	As required	As required	As required	As required	As required	As required	As required
Frame, RBM, min, in-lb	1,600,000	1,600,000	1,700,000	1,700,000	2,370,000	2,370,000	1,700,000
Engine, type	Diesel, turbo	Diesel, turbo	Diesel, turbo	Diesel, turbo	Diesel, turbo	Diesel, turbo	Diesel, turbo
Engine cyl/ghp/gross torque, min	6 / 370 / 1350	6 / 410 / 1450	6 / 450 / 1550	6 / 450 / 1550	6 / 550 / 1850	6 / 550 / 1850	6 / 450 / 1550
Trans, type/speeds, min	Manual / 13 spd	Manual / 13 spd	Manual / 13 spd	Manual / 13 spd	Manual / 13 spd	Manual / 13 spd	Manual / 10 spd
Wheels, type	Disc	Disc	Disc	Disc	Disc	Disc	Disc
Tires, tubeless,size	10R22.5F/ Hwy	11R22.5G/ Hwy	11R22.5G/ Hwy	11R22.5G/ Hwy	315/80R 22.5 J Front / 11R22.5 H Rear/ Hwy	315/80R 22.5 J Front / 11R22.5H Rear/ Hwy	11R22.5G / O-O
Alternator, rating cap, min	130 amp	130 amp	130 amp	130 amp	130 amp	130 amp	130 amp
Battery,CCA @ 0 deg F/ reserve	1875 / 540	1875 / 540	1875 / 540	1875 / 540	1875 / 540	1875 / 540	1875 / 540
Fuel tank capacity, L (gal) min.	378 (100)	378 (100)	378 (100)	378 (100)	378 (100)	378 (100)	378 (100)
Horn	Electric& air	Electric& air	Electric& air	Electric& air	Electric& air	Electric& air	Electric & air
Fifth wheel, clearance / height in.	64 / 48 +/- 1	64 / 48 +/- 1	64 /48 +/- 1	64 /48 +/- 1	64 /48 +/- 1	64 / 48 +/- 1	64 / 56 +/- 1
Exhaust, type	vertical	vertical	vertical	vertical	vertical	vertical	vertical

NOTES: Extended warranty coverage may be available on these vehicles. Refer to New Vehicle Guide warranty section.

Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards; fan clutch, AM/FM radio; tachometer); clearance lamps; power takeoff opening; seatbelts; cab heater & defroster; sliding fifth wheel, deck plate; semitrailer hoses and electrical cable 110"; electric power point, intermittent windshield wipers, tinted glass, dual cab entry assist handles, gauges, air brakes, power steering, flat and convex mirrors, predelivery serviced, engine shutdown, daytime running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine, hand throttle control and tapered frame rails.

NOTE: Option Code OSW is only available to Military Agencies.

See Option Codes listing on pages 14 & 15.

A = Option available, S = Standard on specified item		6X4						6X6
OPTION CODES	**REF. PARA.**	**622B**	**623B**	**624**	**624C**	**625**	**625C**	**824**
ENGINES								
YD43 DIESEL ENGINE MIN 330 GHP, 1150 LB/FT TORQUE	3.4.1.1	A	N/A	N/A	N/A	N/A	N/A	N/A
YD35 DIESEL ENGINE MIN 370 GHP, 1350 LB/FT TORQUE	3.4.1.1	S	A	N/A	N/A	N/A	N/A	N/A
YD44 DIESEL ENGINE MIN. 410 GHP, 1450 LB/FT TORQUE	3.4.1.1	A	S	A	A	A	A	A
YD26 DIESEL ENGINE MIN 450 GHP, 1550 LB/FT TORQUE	3.4.1.1	N/A	A	S	S	A	A	S
ASI AIR FILTER SERVICE INDICATOR	3.4.3.1	A	A	A	A	A	A	A
ECB ENGINE COMPRESSION BRAKE	3.4.11.4(B)	A	A	A	A	A	A	A
EXB ENGINE EXHAUST BRAKE	3.4.11.4(C)	A	A	A	A	A	A	A
EH BLOCK HEATER, OEM, 110V	3.4.1.7	A	A	A	A	A	A	A
EHM ENGINE HOUR METER	3.4.22	A	A	A	A	A	A	A
FFP FUEL FIRED ENGINE PREHEATER	3.4.1.8	A	A	A	A	A	A	A
H4 COOLANT PROTECTION TO -50˚ C (-60˚ F)	3.4.1.6	A	A	A	A	A	A	A
SEH COLD WEATHER PACKAGE (INCLUDES SEH A, B AND D)	3.4.1.7	A	A	A	A	A	A	A
SEHA COOLANT HEATER, NON-OEM INCLUDES JUNCTION BLOCK & CORD	3.4.1.7	A	A	A	A	A	A	A
SEHB ENGINE OIL HEATER, NON-OEM INCLUDES JUNCTION BLOCK & CORD	3.4.1.7	A	A	A	A	A	A	A
TRANSMISSION								
3000 AUTOMATIC TRANS. MIN 5 SPD. ALLISON MODEL 3000 RDS	3.4.5.3	A	N/A	N/A	N/A	N/A	N/A	N/A
4000 AUTOMATIC TRANS. MIN 5 SPD. ALLISON MODEL 4000 RDS	3.4.5.3	A	A	A	A	A	A	A
TMA FULLY AUTOMATED MECHANICAL TRANSMISSION	3.4.5.3.2	A	A	A	A	A	A	A
TSTF SYNTHETIC LUBE - AUTOMATIC TRANSMISSION	3.4.31	A	A	A	A	A	A	A
LST SYNTHETIC LUBE - MANUAL TRANSMISSION	3.4.31	A	A	A	A	A	A	A
T1 INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)	A	A	A	A	A	A	A
AXLE, FRONT								
AS14 FRONT GAWR 14000 LB	3.2.6.1	N/A	A	A	A	A	A	A
AS16 FRONT GAWR 16000 LB	3.2.6.1	N/A	N/A	A	A	S	S	A
AS18 FRONT GAWR 18000 LB	3.2.6.1	N/A	N/A	N/A	N/A	A	A	A
WSB SETBACK FRONT AXLE	3.4.9	A	A	A	A	A	A	A
AXLE, REAR								
ATC AUTOMATIC TRACTION CONTROL (through ABS system)	3.4.9.2	A	A	A	A	A	A	A
D1 DRIVER CONTROLLED; FULL LOCKING DIFFERENTIAL	3.4.9.2	A	A	A	A	A	A	A
D3 REAR AXLE TRACTION CONTROL DIFFERENTIAL, AUTOMATIC	3.4.9.2	A	A	A	A	A	A	A
LSD SYNTHETIC LUBE-DIFFERENTIAL	3.4.31	A	A	A	A	A	A	A
SUSPENSION								
SAR REAR AIR SUSPENSION	3.4.8.1	A	A	A	A	A	A	N/A
LS12 LIFTABLE AUXILIARY SUSPENSION 12K	3.4.9	N/A	N/A	A	A	A	A	N/A
LS20 LIFTABLE AUXILIARY SUSPENSION 20K	3.4.9	N/A	N/A	A	A	A	A	N/A
SHR ON/OFF ROAD REAR SUSPENSION	3.4.8	A	A	A	A	A	A	A
ELECTRICAL								
A14 ALTERNATOR, MIN 145 AMP	3.4.2.2	A	A	A	A	A	A	A
DRLD DAYTIME RUNNING LIGHTS - DELETE	3.4.2.3	A	A	A	A	A	A	A
VOL AUXILIARY 24 VOLT SYSTEM W/TRAILER RECEPTACLE	3.4.2.7	A	A	A	A	A	A	A
BODY AND CHASSIS								
CE EXTENDED CAB (CHASSIS BRAND AVAILABLE MAY BE LIMITED BY ENGINE SIZE)	3.4.12	A	A	A	A	A	A	A
CLN LONG CONVENTIONAL CAB	3.4.12	A	A	N/A	S	N/A	S	A
CMN MEDIUM CONVENTIONAL CAB	3.4.12	S	S	S	N/A	S	N/A	S
CSN SHORT CONVENTIONAL CAB	3.4.12	A	A	A	N/A	A	N/A	A
COE TILT CAB	3.4.12	A	A	A	A	A	A	N/A
SLP1 SLEEPER CAB 36 INCH	3.4.12.4	A	A	A	A	A	A	N/A
SLP2 SLEEPER CAB 54 INCH	3.4.12.4	A	A	A	A	A	A	N/A
FFE FRONT FRAME EXTENSION	3.4.7	A	A	A	A	A	A	A
STF STAGGERED FRAME (LOWERS 5TH WHEEL HEIGHT APPROX. 8" FROM 6X6 CONVERSION HEIGHT)	3.1.1.16	N/A	N/A	N/A	N/A	N/A	N/A	A
EXTERIOR								
AERO AERODYNAMIC PACKAGE	3.5.2.8	A	A	A	A	A	A	N/A
GNT FOLDING GOOSENECK SEMITRAILER EQUIPMENT	3.5.2.11	A	A	A	A	A	A	A
LTD LIFTING & TIEDOWN PROVISIONS	3.1.1.16	A	A	A	A	A	A	A
TWD TRACTOR WIND DEFLECTOR	3.5.2.8	A	A	A	A	A	A	A
SRP RUSTPROOFING	3.1.1.3	A	A	A	A	A	A	A

A = Option available, S = Standard on specified item		6X4						6X6
OPTION CODES	**REF. PARA.**	**622B**	**623B**	**624**	**624C**	**625**	**625C**	**824**
INTERIOR								
DA DELETE AIR CONDITIONING	3.4.25	A	A	A	A	A	A	A
DSS DRIVER SUSPENSION SEAT (AIR) INCLUDES FIXED PASSENGER SEAT	3.4.12.1	A	A	A	A	A	A	A
DSS2 PASSENGER SEAT, AIR RIDE (INCLUDES DSS)	3.4.12.1	A	A	A	A	A	A	A
RACS RADIO, WITH INTEGRAL CASSETTE PLAYER	3.4.24	A	A	A	A	A	A	A
RAD RADIO, WITH INTEGRAL COMPACT DISC PLAYER	3.4.24	A	A	A	A	A	A	A
RM3 MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	A	A	A	A	A	A	A
RM4 HEATED FLAT MIRRORS	3.4.20	A	A	A	A	A	A	A
SK METRIC ODOMETER	3.4.19	A	A	A	A	A	A	A
FUEL								
FTE DUAL 100 GAL FUEL TANKS MIN TOTAL CAP. 200 GAL	3.4.3.2	A	A	A	A	A	A	A
FJP AVIATION JET FUEL COMPATIBILITY WITH DIESEL ENGINE	3.4.1.1	A	A	A	A	A	A	A
FFS HEATED FUEL/WATER SEPARATOR	3.4.1.7.1	A	A	A	A	A	A	A
SEHC IN-LINE FUEL WARMER, NON-OEM	3.4.1.7 (C)	A	A	A	A	A	A	A
SEHD IN-TANK FUEL WARMER, NON-OEM	3.4.1.7 (D)	A	A	A	A	A	A	A
SEHE IN-LINE FUEL WARMER (ELECTRICAL) NON-OEM	3.4.1.7 (E)	A	A	A	A	A	A	A
SAFETY								
BUA BACKUP ALARM	3.4.23	A	A	A	A	A	A	A
FEX EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.29	A	A	A	A	A	A	A
TIRES AND WHEELS								
SLP LOW PROFILE TIRES	3.4.10.1	A	A	A	A	A	A	A
MS MUD & SNOW TREAD TIRES (ON REAR AXLES)	3.4.10.1	A	A	A	A	A	A	S
HF WIDE BASE SINGLE TIRES & WHEELS, FRONT AND REAR	3.4.10	A	A	A	A	A	A	A
AICE AUTOMATIC TIRE CHAINS	3.4.10.5	A	A	A	A	A	A	A
CTIS CENTRAL TIRE INFLATION SYSTEM	3.4.10.6	A	A	A	A	A	A	A
STA SPARE TIRE ASSEMBLY (FRONT AXLE)	3.4.10.3	A	A	A	A	A	A	A
STB SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.3	A	A	A	A	A	A	A
VMS VERTICAL MNT SPARE TIRE CARRIER	3.4.10.2	A	A	A	A	A	A	A
TOWING								
ATT RIGID PINTLE HOOK W/AIR OPERATED PLUNGER	3.1.1.8	A	A	A	A	A	A	A
MTL TRAILER LIGHTING CABLE (not required unless, TTP specified)	3.1.1.9	A	A	A	A	A	A	A
RTH REAR TOW HOOKS (n/a w/TTP or ATT)	3.1.1.6	A	A	A	A	A	A	A
TBT BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3	A	A	A	A	A	A	A
TTP TRAILER TOWING PKG. (NOT FOR SEMITRAILERS)	3.1.1.8	A	A	A	A	A	A	A
MISCELLANEOUS								
ARW AIR RELEASE 5TH WHEEL (N/A w/ OSW)	3.5.2.7	A	A	A	A	A	A	A
ARW1 HEAVY DUTY SLIDING FIFTH WHEEL (N/A w/ OSW)	3.5.2.7	A	A	A	A	A	A	A
ATR AIR TRANSPORTABILITY (INCLUDES LTD)	3.1.1.16.1	A	A	A	A	A	A	A
HTR HIGHWAY TRANSPORTABILITY	3.1.1.16.2	A	A	A	A	A	A	A
MTR MARINE TRANSPORTABILITY	3.1.1.16.3	A	A	A	A	A	A	A
RTR RAIL TRANSPORTABILITY	3.1.1.16.4	A	A	A	A	A	A	A
LTD LIFTING & TIEDOWN PROVISIONS	3.1.1.16.5	A	A	A	A	A	A	A
TDN TIEDOWN PROVISIONS	3.1.1.16.6	A	A	A	A	A	A	A
OSW OSCILLATING 5TH WHEEL (Military Only)	3.5.2	A	A	A	A	A	A	A
CPR CAB PROTECTION RACK	3.5.2.12.3	A	A	A	A	A	A	A
CPR1 CAB PROTECTION RACK W/CHAIN LOCKS AND TRAY	3.5.2.12.3	A	A	A	A	A	A	A
AUXL AUXILIARY LIGHTS FOR CPR AND CPR1	3.5.2.12.3	A	A	A	A	A	A	A
BTC TOOL COMPARTMENT	3.4.32	A	A	A	A	A	A	A
EDR DRIVELINE RETARDER	3.4.11.4(A)	A	A	A	A	A	A	A
MHW FRONT MOUNTED WINCH	3.4.27	A	A	A	A	A	A	A
MIL MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	A	A	A	A	A	A	A
PSM PARTS AND SERVICE MANUALS, PRINTED	6.6	A	A	A	A	A	A	A
PSME PARTS AND SERVICE MANUALS ELECTRONIC	6.6	A	A	A	A	A	A	A
PSM2 PARTS AND SERVICE MANUALS - AIR FORCE	6.6	A	A	A	A	A	A	A
PSM3 PARTS AND SERVICE MANUALS - AIR FORCE	6.6	A	A	A	A	A	A	A
TJ TOOLS, HYD JACK, WHEEL WRENCH & HANDLE	3.4.16.1	A	A	A	A	A	A	A
XP EXPORT PACKAGING	5.1	A	A	A	A	A	A	A
PAINT								
CPT CUSTOM PAINT EXTERIOR CAB	3.1.1.1	A	A	A	A	A	A	A
TP TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	A	A	A	A	A	A	A
WLP WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	A	A	A	A	A	A	A

TABLE 3

TRUCK, STAKE WITH CAB, 2 DOOR (See paragraph 3.5.3)

	6X4		6X6
ITEM NO	**632A**	**633B**	**833A**
TYPE/CLASS	**III/B**	**III/C**	**III/C**
	MINIMUM REQUIREMENTS		
Payload (approx.) lbs	27,200	28,000	29,000
Curb Weight lb	15,800	18,000	17,000
Style, cab/tilt hood	Med. Conv/2 door	Med. Conv/2 door	Med. Conv/2 door
GVWR/GCWR, LB	43000/70000	52000/80000	46000/80000
Axle, min front rating, lb/seals	9000/oil	12000/oil	12000/grease/oil
Axle, min rear rating, lb/spd/seals	34000/1 spd/oil	40000/1 spd/oil	34000/1 spd/oil
Suspension, front/rear, lb	9000/34000	12000/40000	12000/34000
Cab to trunnion (CA)	As required	As required	As required
Frame, RBM, min, in-lb	1,600,000	1,600,000	1,700,000
Engine, type	Diesel, turbo	Diesel, turbo	Diesel, turbo
Engine cyl/ghp/gross torque, min	6/245/660	6/300/860	6/275/800
Trans, type/speeds, min	Manual/10 spd	Manual/10 spd	Manual/10 spd
Wheels, type	Disc	Disc	Disc
Tires, tubeless, size	10R22.5F/Hwy	11R22.5G/Hwy	11R22.5G/OO
Alternator, rating cap, min	130 amp	130 amp	130 amp
Battery, CCA @ 0 deg F/ reserve	1875/540	1875/540	1875/540
Fuel tank capacity, L (gal) min.	170 (45)	170 (45)	170 (45)
Horn	Electric & air	Electric & air	Electric & air
Body, length x width, M (FT)	5.5(18) x 2.4(8)	6(20) x 2.4(8)	5.5(18)x2.4(8)
Body floor platform	Wood	Wood	Wood
Exhaust, type	Horizontal	Horizontal	Horizontal

NOTES: Extended warranty coverage may be available on these vehicles. Refer to New Vehicle Guide warranty section.
Standard equipment includes: Coolant recovery; front towing devices; fan clutch, AM/FM radio; power takeoff opening at transmission; seatbelts, cab heater and defroster; tachometer; electric power point, tinted glass, air brakes, power steering, flat and convex mirrors, dual cab entry assist handles, gauges, predelivery serviced, engine shutdown, daytime running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine, throttle control, backup alarm, and intermittent windshield wipers.

See Option Codes listing on pages 18 & 19.

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A = Option available, S = Standard on specified item		6X4		6X6
OPTION CODES	**REF. PARA.**	**632A**	**633B**	**833A**
ENGINES				
YD51 DIESEL ENGINE MIN 245 GHP, 660 LB/FT TORQUE	3.4.1.1	S	A	A
YD46 DIESEL ENGINE MIN 300 GHP, 860 LB/FT TORQUE	3.4.1.1	A	S	A
YD42 DIESEL ENGINE MIN 310 GHP, 1150 LB/FT TORQUE	3.4.1.1	N/A	A	A
ASI AIR FILTER SERVICE INDICATOR	3.4.3.1	A	A	A
CNG COMPRESSED NATURAL GAS ENGINE	3.4.1.1	A	A	A
ECB ENGINE COMPRESSION BRAKE	3.4.11.4(B)	A	A	A
EH BLOCK HEATER, OEM, 110V	3.4.1.7	A	A	A
EHM ENGINE HOUR METER	3.4.22	A	A	A
EXB ENGINE EXHAUST BRAKE (CLASS E, F, AND G ONLY)	3.4.11.4(C)	A	A	A
FFP FUEL FIRED ENGINE PREHEATER	3.4.1.8	A	A	A
H4 COOLANT PROTECTION TO -50° C (-60° F)	3.4.1.6	A	A	A
SEH COLD WEATHER PACKAGE (INCLUDES SEH A, B, AND D)	3.4.1.7	A	A	A
SEHA COOLANT HEATER, NON-OEM INCLUDES JUNCTION BLOCK & CORD	3.4.1.7 (A)	A	A	A
SEHB ENGINE OIL HEATER, NON-OEM INCLUDES JUNCTION BLOCK & CORD	3.4.1.7(B)	A	A	A
TRANSMISSION				
3000 AUTOMATIC TRANS. MIN 5 SPD, ALLISON MODEL 3000 RDS	3.4.5.3	A	A	A
3500 AUTOMATIC TRANS. MIN 5 SPD, ALLISON MODEL 3500 RDS	3.4.5.3	A	A	A
4500 AUTOMATIC TRANS. MIN 5 SPD, ALLISON MODEL 4500 RDS	3.4.5.3	A	A	A
TMA FULLY AUTOMATED MECHANICAL TRANSMISSION	3.4.5.3.1	A	A	A
TSTF SYNTHETIC LUBE - AUTOMATIC TRANSMISSION	3.4.31	A	A	A
LST SYNTHETIC LUBE - MANUAL TRANSMISSION	3.4.31	A	A	A
AXLE, FRONT				
AS14 FRONT GAWR 14000 LB	3.2.6.1	N/A	A	A
WSB SETBACK FRONT AXLE	3.4.9	A	A	A
AXLE, REAR				
ATC REAR AXLE AUTOMATIC TRACTION CONTROL (THROUGH ABS SYSTEM)	3.4.9.2	A	A	A
D1 DRIVER CONTROLLED; FULL LOCKING DIFFERENTIAL	3.4.9.2	A	A	A
D3 REAR AXLE TRACTION CONTROL DIFFERENTIAL, AUTOMATIC	3.4.9.2	A	A	A
LSD SYNTHETIC LUBE-DIFFERENTIAL	3.4.31	A	A	A
SUSPENSION				
SAR REAR AIR SUSPENSION	3.4.8.1	A	A	N/A
ELECTRICAL				
A14 ALTERNATOR, MIN 145 AMP	3.4.2.2	A	A	A
DRLD DAYTIME RUNNING LIGHTS - DELETE	3.4.2.3	A	A	A
BODY AND CHASSIS				
CSN SHORT CONVENTIONAL CAB	3.4.12	A	A	A
CC CREW CAB (N/A W/FTC, FTD)	3.4.12.2	A	A	A
CE EXTENDED CAB (CHASSIS BRAND AVAILABLE MAY BE LIMITED BY ENGINE SIZE)	3.4.12	A	A	A
COE TILT CAB	3.4.12	A	A	A
B16 BODY 16 FT	3.5.3	A	A	A
B18 BODY 18 FT	3.5.3	S	A	S
B20 BODY 20 FT	3.5.3	A	S	A
B22 BODY 22 FT	3.5.3	A	A	A
BBS BULKHEAD FRT, SOLID STEEL W/SCREEN ILO FRONT RACKS	3.5.3.3	A	A	A
BDF2 FLOOR, DIAMOND TREAD STEEL 3/16 IN	3.5.3.2	A	A	A
BDF4 FLOOR, RECYCLED MATERIAL (RUBBER AND PLASTIC)	3.5.3.2	A	A	A
BDS DUMP STAKE & PLATFORM (INCLUDES FHD)	3.5.3.5	A	A	A
BSF2 SMOOTH STEEL FLOOR 3/16 IN	3.5.3.2	A	A	A
BSR SWING R&L SIDE CTR RACKS	3.5.3	A	A	A
BDF3 FLOOR, APITONG WOOD	3.5.3.2	A	A	A
BTB TARPAULIN, BOWS & TIES 70 IN HEIGHT	3.5.3.6	A	A	A
BTB2 TARPAULIN, BOWS, SEAT RACKS, LADDER, & CONTAINER SECUREMENT DEV. & CAB GUARD	3.5.3.7	A	A	A
DBEM DELETE SIDE AND END RACKS (BBS REQUIRED)	3.5.3.3	A	A	A
FFE FRONT FRAME EXT.	3.4.7	A	A	A
FHD HEAVY DUTY FRAME	3.4.7	A	A	A
LED LIGHT EMITTING DIODE LIGHTS	3.4.2.3	A	A	A
STF STAGGERED FRAME (LOWER FRAME HEIGHT APPROX. 8" FROM 6X6 CONVERSION HEIGHT)	3.1.1.1.16	N/A	N/A	A
EXTERIOR				
HTG HYD TAILGATE, FOLD UP (n/a w/TTP)	3.1.1.10.1	A	A	A

A = Option available, S = Standard on specified item		6X4		6X6
OPTION CODES	**REF. PARA.**	**632A**	**633B**	**833A**
EXTERIOR (CONTINUED)				
HTGC HYDRAULIC TAILGATE CART-STOP	3.1.1.10	A	A	A
HTGU HYD TAILGATE, FOLD UNDER	3.1.1.10.2	A	A	A
LTD LIFTING & TIEDOWN PROVISIONS	3.1.1.17	A	A	A
MPP SNOWPLOW POWER ANGLING	3.5.4.8.2.4	A	A	A
MPR SNOWPLOW PROVISIONS	3.5.4.8.1	A	A	A
MPS SNOWPLOW, REVERSIBLE TYPE	3.5.4.8.2	A	A	A
RM3 MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	A	A	A
RM4 HEATED FLAT MIRRORS	3.4.20	A	A	A
SRP RUSTPROOFING	3.1.1.3	A	A	A
INTERIOR				
DA DELETE AIR CONDITIONING	3.4.25	A	A	A
DSS DRIVER SUSPENSION SEAT (AIR) INCLUDES FIXED PASSENGER SEAT	3.4.12.1	A	A	A
DSS2 PASSENGER SEAT, AIR RIDE (includes DSS)	3.4.12.1	A	A	A
RACS RADIO, WITH INTEGRAL CASSETTE PLAYER	3.4.24	A	A	A
RAD RADIO, WITH INTEGRAL COMPACT DISC PLAYER	3.4.24	A	A	A
RM3 MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	A	A	A
SK METRIC ODOMETER	3.4.19	A	A	A
FUEL				
FTC FUEL TANKS, MIN 70 GAL TOTAL CAPACITY	3.4.3.2	A	A	A
FTD FUEL TANKS, MIN 100 GAL TOTAL CAPACITY	3.4.3.2	A	A	A
FJP AVIATION JET FUEL COMPATIBILITY WITH DIESEL ENGINE	3.4.1.1	A	A	A
FFS HEATED FUEL/WATER SEPARATOR	3.4.1.7.1	A	A	A
SEHC IN-LINE FUEL WARMER, NON-OEM	3.4.1.7 (C)	A	A	A
SEHD IN-TANK FUEL WARMER, NON-OEM	3.4.1.7 (D)	A	A	A
SEHE IN-LINE FUEL WARMER (ELECTRICAL) NON-OEM	3.4.1.7 (E)	A	A	A
SAFETY				
FEX EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.29	A	A	A
TIRES AND WHEELS				
HF WIDE BASE SINGLE TIRES & WHEELS, FRONT AND REAR AXLES	3.4.10	A	A	A
MS MUD & SNOW TREAD TIRES (ON REAR AXLES)	3.4.10.1	A	A	S
AICE AUTOMATIC TIRE CHAINS	3.4.10.5	A	A	A
CTIS CENTRAL TIRE INFLATION SYSTEM	3.4.10.6	A	A	A
SLP LOW PROFILE TIRES	3.4.10.1	A	A	A
STB SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.3	A	A	A
STC CARRIER SPARE TIRE	3.4.10.2	A	A	A
VMS VERTICAL MNT SPARE TIRE CARRIER	3.4.10.2	A	A	A
STA SPARE TIRE ASSEMBLY (FRONT AXLE)	3.4.10.3	A	A	A
TOWING				
ATT RIGID PINTLE HOOK W/ AIR OPERATED PLUNGER	3.1.1.8	A	A	A
MTL TRAILER LIGHTING CABLE	3.1.1.9	A	A	A
RTH REAR TOW HOOKS (n/a w/TTP or ATT)	3.1.1.6	A	A	A
TBT BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3	A	A	A
TTP TRAILER TOWING PKG	3.1.1.8	A	A	A
MISCELLANEOUS				
ATR AIR TRANSPORTABILITY (INCLUDES LTD)	3.1.1.17.1	A	A	A
HTR HIGHWAY TRANSPORTABILITY	3.1.1.17.2	A	A	A
MTR MARINE TRANSPORTABILITY	3.1.1.17.3	A	A	A
RTR RAIL TRANSPORTABILITY	3.1.1.17.4	A	A	A
LTD LIFTING & TIEDOWN PROVISIONS	3.1.1.17.5	A	A	A
TDN TIEDOWN PROVISIONS	3.1.1.17.6	A	A	A
BTC TOOL COMPARTMENT	3.4.32	A	A	A
EDR DRIVELINE RETARDER	3.4.11.4(A)	A	A	A
FPH PLACARD HOLDERS	3.4.30	A	A	A
MHW FRONT MOUNTED WINCH	3.4.27	A	A	A
MIL MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	A	A	A
PSM PARTS AND SERVICE MANUALS, PRINTED	6.6	A	A	A
PSME PARTS AND SERVICE MANUALS, ELECTRONIC	6.6	A	A	A
PSM2 PARTS AND SERVICE MANUALS - AIR FORCE	6.6	A	A	A
PSM3 PARTS AND SERVICE MANUALS - AIR FORCE	6.6	A	A	A
SAC MATERIAL HANDLING CRANE	3.5.3.8 (of 794)	A	A	A
TJ TOOLS, HYD JACK, WHEEL WRENCH & HNDL	3.4.16.1	A	A	A
TSW LOAD SECURING STRAP AND STORABLE WINCH BINDERS	3.5.3.8	A	A	A
VES VERTICAL EXHAUST SYSTEM	3.4.4	A	A	A
XP EXPORT PACKAGING	5.1	A	A	A
PAINT				
CPT CUSTOM PAINT EXTERIOR CAB	3.1.1.1	A	A	A
TP TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	A	A	A
WLP WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	A	A	A

TABLE 4

6X4 TRUCK, DUMP WITH CAB, 2 DOOR (See paragraph 3.5.4)

ITEM NO TYPE/CLASS	643A IV/C	644 IV/D	645 IV/E
		MINIMUM REQUIREMENTS	
Payload (approx.) lbs	28,800	30,000	39,500
Curb Weight lb	17,200	21,500	22,500
Style, cab/tilt hood	Med. Conv/2 door	Med. Conv/2 door	Med. Conv/2 door
GVWR/GCWR, LB	46,000 / 80,000	54,000 / 90,000	64,000 / 100,000
Axle, min front rating lb/seals	12,000 / oil	14,000 / oil	18,000 / oil
Axle, min rear rating,lb /Spd / seals	34,000 / 1 spd / oil	40,000 /1 spd / oil	46,000 /1 spd / oil
Suspension, front/rear, lb	12,000 / 34,000	14,000 / 40,000	18,000 / 46,000
Cab to trunnion (CA)	As required	As required	As required
Frame, RBM, min, in-lb	2,700,000	2,700,000	2,700,000
Engine, type	Diesel, turbo	Diesel, turbo	Diesel, turbo
Engine cyl/ghp/gross torque, min	6/275/800	6/300/860	6/365/1340
Trans, type/speeds, min	Manual/10 spd	Manual/10 spd	Manual/10 spd
Wheels, type	Disc	Disc	Disc
Tires, tubeless,size/tread front and rear	11R22.5G / HWY Front & Rear (see below)	12R22.5H/HWY front 11R22.5G/HWY(see below)	315/85R22.5J/HWY Front 11R22.5H/HWY Rear (see below)
Alternator, rating cap, min	130 amp	130 amp	130 amp
Battery, CCA @ 0 deg F/ reserve	1875 / 540	1875 / 540	1875 / 540
Fuel Tank capacity, L (gal) min.	170 (45)	170 (45)	170 (45)
Horn	Electric& air	Electric & air	Electric & air
Body CAP (YDS)/L X W (IN), MIN	(8) / 144 x 84	(10) / 168 x 84	(12) / 180 x 84
Cab protector, cm (in)/Hoist rating	100 (40) / 70	100 (40) / 80	100 (40) / 100
Exhaust, type	Horizontal	Horizontal	Horizontal

NOTES: Extended warranty coverage may be available on these vehicles.

Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards, fan clutch, AM/FM radio; tachometer; clearance lamps; power takeoff opening; seatbelts; variable speed hoist control; dump body safety lock; cab heater & defroster; backup alarm; electric power point, tinted glass, dual cab entry assist handles, gauges, intermittent windshield wipers, air brakes, power steering, flat and convex mirrors, predelivery serviced, engine shutdown, rear axle traction control, daytime running lights, anti-lock brake system, hub piloted wheels, rear tires shall be Goodyear G244, Michelin XDE M/S or equal furnished by chassis OEM, air conditioning, remote jump start posts, electronic controlled engine, throttle control, and dump bed cover.

(CA) CAB to Trunnion Dimension Must Be Specified – See Option Codes CA1-CA8

Special or Additional CA dimensions may be specified, if required.

See Option Codes listing on pages 22 & 23.

TABLE 4

6X6 TRUCK, DUMP WITH CAB, 2 DOOR (See paragraph 3.5.4)

ITEM NO TYPE/CLASS	843B IV/C	844 IV/D	845 IV/E
	MINIMUM REQUIREMENTS		
Payload (approx.) lbs	24,000	27,000	36,000
Curb Weight lb	22,000	25,000	26,000
Style, cab/tilt hood	Med. Con / 2door	Med. Con / 2door	Med. Con / 2door
GVWR/GCWR, LB	46,000 / 80,000	56,000 / 90,000	64,000 / 100,000
Axle, min front rating lb/seals	12,000 / grease / oil	16,000 / grease / oil	18,000 / grease / oil
Axle, min rear rating, lb / spd / seals	34,000 / 1spd / oil	40,000 / 1spd / oil	46,000 / 1spd / oil
Suspension, front/rear, lb	12,000 / 34,000	16,000 / 40,000	18,000 / 46,000
Cab to trunnion (CA)	As required	As required	As required
Frame, RBM, min, in-lb	2,700,000	2,700,000	2,700,000
Engine, type	Diesel, turbo	Diesel, turbo	Diesel, turbo
Engine cyl/ghp/gross torque, min	6 / 275 / 800	6 / 300 / 860	6 / 365 / 1340
Trans, type/speeds, min	Manual/10 spd	Manual/10 spd	Manual/10 spd
Wheels, type	Disc	Disc	Disc
Tires, tubeless,size	11R22.5G/OO	315/80R22.5J Frt OO 11R22.5G/Rear	425/65R22.5J Frt 11R24.5H Rear OO
Alternator, rating cap, min	130 amp	130 amp	130 amp
Battery, CCA @ 0 deg F/ reserve	1875 / 540	1875 / 540	1875 / 540
Fuel tank capacity, L (gal) min.	170 (45)	170 (45)	170 (45)
Horn	Electric & air	Electric & air	Electric & air
Body, cap (YDS) / LxW (IN) min	8 / 144 x 84	10 / 168 x 84	12 / 180 x 84
Cab protector, cm (in) / Hoist rating	100 (40) / 70	100 (40) / 80	100 (40) / 100
Exhaust, type	Horizontal	Horizontal	Horizontal

NOTES: ExExtended warranty coverage may be available on these vehicles.
Standard equipment includes: Coolant recovery; front towing devices; splash & stone guards, fan clutch, AM/FM radio; tachometer; clearance lamps; power takeoff opening; seatbelts; variable speed hoist control; dump body safety lock; cab heater & defroster; backup alarm; electric power point, tinted glass, dual cab entry assist handles, gauges, intermittent windshield wipers, air brakes, power steering, flat and convex mirrors, predelivery serviced, engine shutdown, rear axle traction control, daytime running lights, anti-lock brake system, hub piloted wheels, air conditioning, remote jump start posts, electronic controlled engine, throttle control, and dump bed cover.

(CA) CAB to Trunnion Dimension Must Be Specified – See Option Codes CA1-CA8
Special or Additional CA dimensions may be specified, if required.

See Option Codes listing on pages 22 & 23.

A = Option available, S = Standard on specified item		6X4			6X6		
OPTION CODES	**REF. PARA.**	**643A**	**644**	**645**	**843B**	**844**	**845**
ENGINES							
YD5 DIESEL ENGINE MIN 250 GHP, 800 LB/FT TORQUE	3.4.1.1	A	N/A	N/A	A	N /A	N/A
YD47 DIESEL ENGINE MIN 275 GHP, 800 LB/FT TORQUE	3.4.1.1	S	A	N/A	S	A	N/A
YD46 DIESEL ENGINE MIN 300 GHP, 860 LB/FT TORQUE	3.4.1.1	A	S	N/A	A	S	N/A
YD30 DIESEL ENGINE MIN 320 GHP, 1150 LB/FT TORQUE	3.4.1.1	N/A	A	N/A	N/A	A	N/A
YD33 DIESEL ENGINE MIN 350 GHP, 1350 LB/FT TORQUE	3.4.1.1	N/A	N/A	A	N/A	N/A	A
YD44 DIESEL ENGINE MIN 410 GHP, 1450 LB/FT TORQUE	3.4.1.1	N/A	N/A	A	N/A	N/A	A
CNG COMPRESSED NATURAL GAS ENGINE	3.4.1.2	A	A	N/A	A	A	N/A
ASI AIR FILTER SERVICE INDICATOR	3.4.3.1	A	A	A	A	A	A
ECB ENGINE COMPRESSION BRAKE	3.4.11.4(B)	A	A	A	A	A	A
EH BLOCK HEATER, OEM, 110V	3.4.1.7	A	A	A	A	A	A
EHM ENGINE HOUR METER	3.4.22	A	A	A	A	A	A
EXB ENGINE EXHAUST BRAKE (CLASS E, F, AND G ONLY)	3.4.11.4(C)	A	A	A	A	A	A
FFP FUEL FIRED ENGINE PREHEATER	3.4.1.8	A	A	A	A	A	A
H4 COOLANT PROTECTION TO -50˚ C (-60˚ F)	3.4.1.6	A	A	A	A	A	A
SEH COLD WEATHER PACKAGE (INCLUDES SEH A, B, AND D)	3.4.1.7	A	A	A	A	A	A
SEHA COOLANT HEATER, NON-OEM INCLUDES JUNCTION BLOCK & CORD	3.4.1.7 (A)	A	A	A	A	A	A
SEHB ENGINE OIL HEATER, NON-OEM INCLUDES JUNCTION BLOCK & CORD	3.4.1.7 (B)	A	A	A	A	A	A
TRANSMISSION							
3500 AUTOMATIC TRANS. MIN 5 SPD. ALLISON MODEL 3500 RDS	3.4.5.3	A	A	N/A	A	A	N/A
4500 AUTOMATIC TRANS. MIN 5 SPD. ALLISON MODEL 4500 RDS	3.4.5.3	N/A	N/A	A	N/A	N/A	A
TMA FULLY AUTOMATED MECHANICAL TRANSMISSION	3.4.5.3.1	A	A	A	A	A	A
T1 INTEGRAL OUTPUT RETARDER (WITH AUTOMATIC TRANSMISSION)	3.4.11.4(D)	A	A	A	A	A	A
TSTF SYNTHETIC LUBE - AUTOMATIC TRANSMISSION	3.4.31	A	A	A	A	A	A
LST SYNTHETIC LUBE - MANUAL TRANSMISSION	3.4.31	A	A	A	A	A	A
AXLE, FRONT							
AS14 FRONT GAWR 14000 LB	3.2.6.1	A	S	N/A	A	A	N/A
AS16 FRONT GAWR 16000 LB	3.2.6.1	N/A	N/A	A	N/A	N/A	A
AS18 FRONT GAWR 18000 LB	3.2.6.1	N/A	N/A	S	N/A	A	N/A
AS20 FRONT GAWR 20000 LB (VEHICLE MAY BE SPEED LIMITED DUE TO TIRE SPEED)	3.2.6.1	N/A	N/A	A	N/A	N/A	A
WSB SETBACK FRONT AXLE	3.4.9	A	A	A	A	A	A
AXLE, REAR							
ATC REAR AXLE AUTOMATIC TRACTION CONTROL (THROUGH ABS SYSTEM)	3.4.9.2	A	A	A	A	A	A
D1 DRIVER CONTROLLED; FULL LOCKING DIFFERENTIAL	3.4.9.2	A	A	A	A	A	A
D3 REAR AXLE TRACTION CONTROL AUTOMATIC	3.4.9.2	A	A	A	A	A	A
LSD SYNTHETIC LUBE-DIFFERENTIAL	3.4.31	A	A	A	A	A	A
SUSPENSION							
LS12 LIFTABLE AUXILIARY SUSPENSION 12K	3.4.9	N/A	A	A	N/A	N/A	N/A
LS20 LIFTABLE AUXILIARY SUSPENSION 20K	3.4.9	N/A	A	A	N/A	N/A	N/A
ELECTRICAL							
A14 ALTERNATOR, MIN 145 AMP	3.4.2.2	A	A	A	A	A	A
DRLD DAYTIME RUNNING LIGHTS - DELETE	3.4.2.3	A	A	A	A	A	A
LED LIGHT EMITTING DIODE LIGHTS	3.4.2.3	A	A	A	A	A	A
BODY AND CHASSIS							
CE EXTENDED CAB (CHASSIS BRAND AVAILABLE MAY BE LIMITED BY ENGINE SIZE)	3.4.12	A	A	A	A	A	A
CLN LONG CONVENTIONAL CAB	3.4.12	A	A	A	A	A	A
CSN SHORT CONVENTIONAL CAB	3.4.12	A	A	A	A	A	A
B15 DUMP BODY, MIN 15 CU YD/180 IN LONG X 84 IN. INT WIDTH (SEE FIG VII)	3.5.4	N/A	N/A	A	N/A	N/A	A
DHD HEAVY DUTY BODY	3.5.4.1	A	A	A	A	A	A
FFE FRONT FRAME EXTENSION	3.4.7	A	A	A	A	A	A
FHD HEAVY DUTY FRAME	3.4.7	S	S	S	S	S	S
EXTERIOR							
AAS ASPHALT SPREADER FLOOR EXTENSION	3.5.4.11	A	A	A	A	A	A
ART AIR RELEASE TAILGATE	3.5.4.3	A	A	A	A	A	A
BSU SCISSORS OR UNDERBODY HOIST	3.5.4.5	A	A	A	A	A	A
DBC DELETE DUMP BED COVER	3.5.4.10	A	A	A	A	A	A
LTD LIFTING & TIEDOWN PROVISIONS	3.1.1.17	A	A	A	A	A	A
MPN SNOWPLOW ONE-WAY	3.5.4.8.2	A	A	A	A	A	A

A = Option available, S = Standard on specified item		6X4			6X6		
OPTION CODES	**REF. PARA.**	**643A**	**644**	**645**	**843B**	**844**	**845**
EXTERIOR (CONTINUED)							
MPP SNOWPLOW POWER ANGLING	3.5.4.8.2.4	A	A	A	A	A	A
MPR SNOWPLOW PROVISIONS	3.5.4.8.1	A	A	A	A	A	A
MPS SNOWPLOW, REVERSIBLE TYPE	3.5.4.8.2	A	A	A	A	A	A
NAS SAND & SALT SPREADER TAILGATE	3.5.4.9	A	A	A	A	A	A
RM3 MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	A	A	A	A	A	A
RM4 HEATED FLAT MIRRORS	3.4.20	A	A	A	A	A	A
SRP RUSTPROOFING	3.1.1.3	A	A	A	A	A	A
UN NESTED UNDERSTRUCTURE	3.5.4.4.2	A	A	A	A	A	A
INTERIOR							
DA DELETE AIR CONDITIONING	3.4.25	A	A	A	A	A	A
DSS DRIVER SUSPENSION SEAT (AIR) INCLUDES FIXED PASSENGER SEAT	3.4.12.1	A	A	A	A	A	A
DSS2 PASSENGER SEAT AIR RIDE (includes DSS)	3.4.12.1	A	A	A	A	A	A
RACS RADIO, WITH INTEGRAL CASSETTE PLAYER	3.4.24	A	A	A	A	A	A
RAD RADIO, WITH INTEGRAL COMPACT DISC PLAYER	3.4.24	A	A	A	A	A	A
RM3 MOTORIZED RIGHT SIDE MIRROR (INCLUDES RM4)	3.4.20	A	A	A	A	A	A
SK METRIC ODOMETER	3.4.19	A	A	A	A	A	A
FUEL							
FTC FUEL TANKS, MIN 70 GAL TOTAL CAPACITY	3.4.3.2	A	A	A	A	A	A
FTD FUEL TANKS, MIN 100 GAL TOTAL CAPACITY	3.4.3.2	A	A	A	A	A	A
FFS HEATED FUEL/WATER SEPARATOR	3.4.1.7.1	A	A	A	A	A	A
FJP AVIATION JET FUEL COMPATIBILITY WITH DIESEL ENGINE	3.4.1.1	A	A	A	A	A	A
SEHC IN-LINE FUEL WARMER, NON-OEM	3.4.1.7 (C)	A	A	A	A	A	A
SEHD IN-TANK FUEL WARMER, NON-OEM	3.4.1.7 (D)	A	A	A	A	A	A
SEHE IN-LINE FUEL WARMER (ELECTRICAL) NON-OEM	3.4.1.7 (E)	A	A	A	A	A	A
SAFETY							
FEX EMERGENCY EQUIPMENT, EXTINGUISHER, AND TRIANGLES	3.4.29	A	A	A	A	A	A
TIRES AND WHEELS							
SLP LOW PROFILE TIRES	3.4.10.1	A	A	A	A	A	A
HF WIDE BASE SINGLE TIRES & WHEELS, FRONT AND REAR	3.4.10	A	A	A	A	A	A
MS ON & OFF HIGHWAY REAR TIRES	3.4.10.1	A	A	A	S	S	S
AICE AUTOMATIC TIRE CHAINS	3.4.10.5	A	A	A	A	A	A
CTIS CENTRAL TIRE INFLATION SYSTEM	3.4.10.6	A	A	A	A	A	A
STA SPARE TIRE ASSEMBLY (FRONT AXLE)	3.4.10.3	A	A	A	A	A	A
STB SPARE TIRE ASSEMBLY (REAR AXLE)	3.4.10.3	A	A	A	A	A	A
VMS VERTICAL MNT SPARE TIRE CARRIER	3.4.10.2	A	A	A	A	A	A
TOWING							
ATT RIGID PINTLE HOOK, AIR OPERATED PLUNGER	3.1.1.8	A	A	A	A	A	A
MTL TRAILER LIGHTING CABLE	3.1.1.9	A	A	A	A	A	A
RTH REAR TOW HOOKS (N/A W/TTP OR ATT)	3.1.1.6	A	A	A	A	A	A
TBT BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE	3.4.11.3	A	A	A	A	A	A
TTP TRAILER TOWING PKG	3.1.1.8	A	A	A	A	A	A
MISCELLANEOUS							
ATR AIR TRANSPORTABILITY (INCLUDES LTD)	3.1.1.16.1	A	A	A	A	A	A
HTR HIGHWAY TRANSPORTABILITY	3.1.1.16.2	A	A	A	A	A	A
MTR MARINE TRANSPORTABILITY	3.1.1.16.3	A	A	A	A	A	A
RTR RAIL TRANSPORTABILITY	3.1.1.16.4	A	A	A	A	A	A
LTD LIFTING & TIEDOWN PROVISIONS	3.1.1.16.5	A	A	A	A	A	A
TDN TIEDOWN PROVISIONS	3.1.1.16.6	A	A	A	A	A	A
BTC TOOL COMPARTMENT	3.4.32	A	A	A	A	A	A
EDR DRIVELINE RETARDER	3.4.11.4(A)	A	A	A	A	A	A
FPH PLACARD HOLDERS	3.4.30	A	A	A	A	A	A
MHW FRONT MOUNTED WINCH	3.4.27	A	A	A	A	A	A
MIL MILITARY SERVICE MARKING, TAGS, DATA PLATES & FORMS	3.1.1.2	A	A	A	A	A	A
PSM PARTS AND SERVICE MANUAL(S) PRINTED	6.6	A	A	A	A	A	A
PSME PARTS AND SERVICE MANUALS, ELECTRONIC	6.6	A	A	A	A	A	A
PSM2 PARTS AND SERVICE MANUALS - AIR FORCE	6.6	A	A	A	A	A	A
PSM3 PARTS AND SERVICE MANUALS - AIR FORCE	6.6	A	A	A	A	A	A
TJ TOOLS, HYD JACK, WHEEL WRENCH & HANDLE	3.4.16.1	A	A	A	A	A	A
VES VERTICAL EXHAUST SYSTEM	3.4.4	A	A	A	A	A	A
XP EXPORT PACKAGING	5.1	A	A	A	A	A	A
PAINT							
CPT CUSTOM PAINT EXTERIOR CAB	3.1.1.1	A	A	A	A	A	A
TP TWO-TONE PAINT, EXT. CAB (OEM STD)	3.1.1.1	A	A	A	A	A	A
WLP WHEELS PAINTED SAME COLOR AS CAB	3.1.1.1	A	A	A	A	A	A

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Refer to number paragraph text for complete description of option and requirements.

OPTION CODE	DESCRIPTION	PARA No.
A		
A14	Alternator, 145 AMP. MIN	3.4.2.2
AAS	Asphalt spreader extension	3.5.4.11
AERO	Aerodynamic package	3.5.2.8
AICE	Chains, tire, automatic	3.4.10.5
ART	Tailgate, air released for dump body,	3.5.4.3
ARW	Air slide 5th wheel	3.5.2.7
ARW1	Heavy duty air slide fifth wheel	3.5.2.7
AS14	GAWR, 14,000 lb. front	3.2.6.1
AS16	GAWR, 16,000 lb. front	3.2.6.1
AS18	GAWR, 18,000 lb. front	3.2.6.1
AS20	GAWR, 20,000 lb. front	3.2.6.1
ASI	Air filter service indicator	3.4.3.1
ATC	Traction control, rear axle, automatic	3.4.9.2
ATR	Air transportability	3.1.1.16.1
ATT	Pintle hook, rigid w/ air operated plunger	3.1.1.8
AUXL	Lights, auxiliary for CPR & CPR1	3.5.2.12.3
B		
B15	Dump body, 15 cu. yd	3.5.4
B16	16 ft. body	3.5.3
B18	18 ft. body	3.5.3
B20	20 ft. body	3.5.3
B22	22 ft. body	3.5.3
BBS	Bulkhead, solid steel w/screen	3.5.3.3
BDF2	Floor, .1875 in diamond tread steel	3.5.3.2
BDF3	Floor, Apitong wood	3.5.3.2
BDF4	Floor, recycled material (rubber & plastic)	3.5.3.2
BDS	Dump, platform or stake	3.5.3.5
BSF2	Floor, .1875 in. smooth steel	3.5.3.2
BSR	Swing center racks, R & L side	3.5.3
BSU	Underbody hoist	3.5.4.5
BTB	Tarpaulin, bows & ties, 70 in. height	3.5.3.6
BTB2	Tarpaulin bows, seat racks, ladder, container securement & cab guard	3.5.3.7
BTC	Tool compartment	3.4.32
BUA	Alarm, backup	3.4.23
C		
CA1	CA 101/108 in.	3.5.1
CA2	CA 119/124 in.	3.5.1
CA3	CA 136/138 in.	3.5.1
CA4	CA 150/156 in.	3.5.1
CA5	CA 167/171 in.	3.5.1
CA8	CA 83/84 in.	3.5.1
CC	Cab, crew	3.4.12.2
CE	Extended cab	3.4.12
CLN	Cab, long nose conventional	3.4.12
CNG	Compressed natural gas engine	3.4.1.1 & 3.4.3.2
COE	Cab, tilt	3.4.12
CPR	Cab protection rack	3.5.2.12.3
CPR1	Cab protection rack	3.5.2.12.3
CPT	Paint, custom cab exterior	3.1.1.1
CSN	Cab, short nose conventional	3.4.12
CTIS	Central tire inflation system	3.4.10.6
D		
D1	Differential lockout, driver controlled	3.4.9.2
D3	Differential, special traction, automatic	3.4.9.2
DA	Delete air conditioning	3.4.25
DBC	Delete dump bed cover	3.5.4.10
DBEM	Delete side and end racks, add BBS	3.5.3.3
DHD	Heavy duty dump body	3.5.4.1
DRLD	Delete daytime running lights	3.4.2.3
DSS	Seats, suspension driver w/fixed passenger	3.4.12.1
DSS2	Seats, suspension driver and passenger	3.4.12.1
E		
ECB	Engine compression brake	3.4.11.4(B)
EDR	Retarder, driveline	3.4.11.4(A)
EH	Block heater, OEM, 110V	3.4.1.7
EHM	Engine hour meter	3.4.22
EXB	Engine exhaust brake	3.4.11.4I
F		
FEX	Equipment, emergency, extinguisher and triangles	3.4.29
FFE	Front frame extension	3.4.7
FFP	Fuel fired engine pre-heater	3.4.1.8
FFS	Separator, fuel/water, heated	3.4.1.7.1
FHD	Frame, heavy duty	3.4.7
FJP	Fuel, aviation jet compatible diesel engine	3.4.1.1
FPH	Holders, placard	3.4.30
FTC	Tanks, fuel, min. 70 Gal. total capacity	3.4.3.2
FTD	Tanks, fuel, min. 100 Gal. total capacity	3.4.3.2
FTE	Tanks, fuel, dual 100 Gal	3.4.3.2
G		
GNT	Gooseneck, folding, semitrailer equipment	3.5.2.11
H		
H4	Coolant protection to -50˚ C (-60˚ F)	3.4.1.6
HF	Tires, wide base singles	3.4.10
HTG	Liftgate, fold up hydraulic	3.1.1.10
HTGC	Cart-stop, for liftgate	3.1.1.10
HTGU	Liftgate, fold under, hydraulic	3.1.1.10.2
HTR	Highway transportable	3.1.1.16.2
L		
LED	Light emitting diode lights	3.4.2.3
LS12	Suspension, Auxiliary liftable 12K	3.4.9
LS20	Suspension, Auxiliary liftable 20K	3.4.9
LSD	Synthetic lub – Differential	3.4.31
LST	Synthetic lube – transmission	3.4.31
LTD	Lift and tie down provisions	3.1.1.16.5
M		
MHW	Front mounted winch	3.4.27
MIL	Markings, military data plates, forms & tags	3.1.1.2
MPN	Snowplow one-way	3.5.4.8.2
MPP	Snowplow power angling	3.5.4.8.2.4
MPR	Snowplow provisions	3.5.4.8.1
MPS	Snowplow, reversible	3.5.4.8.2
MS	Tires, rear axle, mud and snow tread,	3.4.10.1
MTL	Trailer lighting cable	3.1.1.9
MTR	Marine transportable	3.1.1.16.3

N

NAS	Sand and salt spreader tailgate	3.5.4.9

O

OSW	Oscillating 5th wheel (military only)	3.5.2

P

PSM	Manual(s), printed, parts and service	6.6
PSME	Manual(s), electronic parts and service	6.6
PSM2	Manual(s), Air Force parts and service	6.6
PSM3	Manual(s), Air Force Parts and service	6.6
PTS	PTO, power operated engagement, (for automatic transmissions only)	3.4.5.4

R

RACS	Radio, w/integral cassette player	3.4.24
RAD	Radio, w/integral compact disc player	3.4.24
RM3	Mirror, motorized right side	3.4.20
RM4	Mirror, heated flat	3.4.20
RTH	Rear tow hooks	3.1.1.6
RTR	Rail transportable	3.1.1.16.4

S

SAC	Crane, material handling	3.5.3.8 (OF 794)
SAR	Air suspension, rear	3.4.8.1
SEH	Cold weather package (includes A B & D)	3.4.1.7
SEHA	Coolant heater	3.4.1.7 (A)
SEHB	Engine oil heater	3.4.1.7 (B)
SEHC	Fuel warmer, in-line	3.4.1.7 (C)
SEHD	Fuel warmer, in-tank	3.4.1.7 (D)
SEHE	Fuel warmer, in-line electric	3.4.1.7 (E)
SHR	Suspension, rear on/off road	3.4.8
SK	Odometer, metric	3.4.19
SLP	Tires, low profile	3.4.10.1
SLP1	Cab, sleeper 36 in.	3.4.12.4
SLP2	Cab, sleeper 60 in.	3.4.12.4
SRP	Rust proofing	3.1.1.3
STA	Spare tire assembly	3.4.10.3
STB	Spare tire, assembly, rear axle	3.4.10.3
STC	Carrier, spare tire	3.4.10.2
STF	Frame, staggered	3.1.1.15

T

T1	Retarder, transmission integral (automatic transmission only)	3.4.11.4(D)
TBT	Brake controls, for use from a towing vehicle	3.4.11.3
TDN	Tie down provisions	3.1.1.16.6
TJ	Tools, hyd. jack, wheel wrench & handle	3.4.16.1
TMA	Fully automated mechanical transmission	3.4.5.3.1
TP	Paint, two tone cab exterior (OEM)	3.1.1.1
TSTF	Synthetic lube - automatic transmission	3.4.31
TSW	Load securing straps and storable winch binders	3.5.3.8
TTP	Trailer towing package	3.1.1.8
TWD	Tractor wind deflector	3.5.2.8

U

UN	Nested body understructure,	3.5.4.4.2

V

VES	Vertical exhaust system	3.4.4
VMS	Carrier, vertical mounted spare tire	3.4.10.2
VOL	Auxiliary 24 volt system w/ trailer receptacle	3.4.2.7

W

WLP	Paint, wheels same color as cab	3.1.1.1
WSB	Axle, front setback	3.4.9

X

XP	Export package	5.1

Y

YD5	Diesel engine, 250 HP, 800 Lb/Ft	3.4.1.1
YD26	Diesel engine, 450 HP, 1550 Lb/Ft	3.4.1.1
YD30	Diesel engine, 320 HP, 1150 Lb/Ft	3.4.1.1
YD33	Diesel engine, 350 HP, 1350 Lb/Ft	3.4.1.1
YD35	Diesel engine, 370 HP, 1350 Lb/Ft	3.4.1.1
YD36	Diesel engine, 370 HP, 1450 Lb/Ft	3.4.1.1
YD41	Diesel engine, 310 HP, 1050 Lb/Ft	3.4.1.1
YD43	Diesel engine, 330 HP, 1150 Lb/Ft	3.4.1.1
YD44	Diesel engine, 410 HP, 1450 Lb/Ft	3.4.1.1
YD46	Diesel engine, 300 HP, 860 Lb/Ft	3.4.1.1
YD47	Diesel engine, 275 HP, 860 Lb/Ft	3.4.1.1
YD51	Diesel engine, 245 HP, 660 Lb/Ft	3.4.1.1

Numbered

3000	Allison 3000 RDS automatic transmission	3.4.5.3
4000	Allison 4000 RDS automatic transmission	3.4.5.3
4500	Allison 4500 RDS automatic transmission	3.4.5.3

3. REQUIREMENTS

3.1 STANDARD VEHICLE AND ACCESSORIES.

Except as specified in 3.1.1 through 3.1.1.17, the vehicle, components, assemblies, and accessories to be delivered under the contract shall be standard or optional items, which meet or exceed the requirements of this specification. Except as specified in 3.1.1 through 3.1.1.17, no removal, substitution, or alteration of the chassis manufacturer's standard or optional chassis model component shall be made. All chassis items shall be as represented in the chassis manufacturer's technical data book. Special bodies or mounted equipment shall be as represented in the body and equipment manufacturer's technical data. Technical data shall be limited to specifications and technical material, identical to that furnished to the authorized company representatives for selection of vehicle models and components, and shall be available to the engineering offices of the procuring activity, prior to delivery of the items. The chassis model furnished shall be not older than the chassis manufacturer's current model on the date of invitation for bids.

3.1.1 SPECIAL REQUIREMENTS.

In addition to the standard vehicle and components specified in 3.1, the vehicle shall be furnished with special equipment as specified herein.

3.1.1.1 TREATMENT AND PAINTING.

The vehicle body, including compartments, doors, and tool boxes, except bright finish aluminum and stainless steel, shall be treated and painted in accordance with MIL-HDBK-1223. The manufacturer's standard treatment and painting for cab and chassis is acceptable. When code CPT is specified, a custom or Federal Standard 595 color shall be provided. Unless otherwise specified, the exterior color shall be selected by the manufacturer from one of the manufacturer's standard, nonmetallic light colors. When specified (see 6.2), color selection will be made after contract award from standard color charts to be supplied by the manufacturer. When code TP is specified, any of the manufacturer's production multicolor paint combinations may be specified. When code WLP is specified, the wheels shall be painted the same color as the cab.

3.1.1.2 MILITARY MARKINGS AND DATA PLATES.

When code MIL is specified, identification markings, data plates, and DD Form 250s shall be in accordance with the requirements of the procuring service. Unless otherwise specified, a decal, sticker, or label shall provide at least the following information: contract number: purchase order number; date of delivery month and year; and the warranty time, in months and miles (GSA Form 1398). When specified (see 6.2), concealed markings shall be furnished.

3.1.1.3 RUSTPROOFING.

When code SRP is specified, the vehicle shall be rustproofed in accordance with FED-STD-297.

3.1.1.4 DRAIN PLUGS.

Drain plugs installed in manual transmissions, transfer cases, and rear axles shall be of the permanent magnet type.

3.1.1.5 WOOD TREATMENT.

Unless otherwise specified, the manufacturer's standard wood treatment is acceptable. Soft wood shall be treated with a wood preservative. Hardwood need not be treated. When specified, wood shall be treated in accordance with MIL-HDBK-1223.

3.1.1.6 TOWING DEVICES.

Towing devices consisting of two hooks, loops, eyes or pins or the chassis manufacturer's standard single center mounted eye or pin shall be mounted on the front of the vehicle. When code RTH is specified, additional towing devices shall be mounted on the rear of the vehicle. All towing devices shall be frame rail mounted or reinforced back to each frame rail.

3.1.1.7 WHEEL SPLASH AND STONE THROW PROTECTION.

Type III Stakes, Type IV dumps, and Type VII vans shall have rubber mud flaps to the rear of the rear wheels. Type II tractors shall have rigid quarter fenders to the front of the rear wheels and rubber mud flaps to the rear of the rear wheels. Tractor mud flaps and their extension supports shall be readily removable, to increase landing wheel clearance, without the use of hand tools. A metal strip, not less than 3.2 millimeters (mm) (0.125 inch) thick and not less than 25 mm (1 inch) wide, extending the entire width of the mud flap, shall be installed to prevent bolt heads or bolt nuts from damaging the mud flap. As an alternate method of attaching the mud flaps, tabs or clips with minimum surface contact dimensions of 25 mm (1 inch) high by 32 mm (1.25 inch) wide by 2.4 mm (0.094 inch) thick shall be furnished at each bolt. All tilt cabs shall have rubber mud flaps to the rear of the front wheels. All splash shield and mud flap installations, front and rear, shall conform to the rear wheel splash and stone throw protection provisions of SAE J682. The quarter fenders on tractors need extend down only to the height of the centerline of the rear axles. Splash shields shall have no advertising or logos, except name or logo of chassis or body manufacturer.

3.1.1.8 TRAILER TOWING PACKAGE.

When code TTP is specified, except for Type III stake dump truck, a trailer-towing package (see 3.4.11.2) shall be furnished. The trailer-towing package shall consist of a pintle, safety chain attachment devices, a lighting receptacle, a trailer brake control system, and associated reinforcements and wiring, and shall be installed on the rear of the vehicle. The pintle shall be of the rotating type conforming to MS 51118. The pintle shall be installed on the chassis frame with reinforcements to transfer a vertical tongue load of not less than 1815 kg (4,000 lb) and a horizontal drawbar load of not less than 178 kilonewtons (kN) (40,000 lb) directly to the chassis rails. Except for Type II tractors, the rearmost portion of the pintle shall be forward, but no more than 100 mm (four inches) forward, of the rearmost part of the vehicle. Two trailer

safety chain attachment devices, one adjacent to each side of the pintle, shall be provided. Each attachment device shall provide an ultimate strength of not less than 178 kN (40,000 lb). The attachment devices shall be capable of accommodating a standard grab hook (116 mm (4-9/16 inches) wide, 30 mm (1-3/16 inch) thick and 19.8 mm (25/32-inch) throat width) for a 16 mm (5/8-inch) chain. The lighting receptacle, conforming to SAE J580 with its conductors connected and color-coded as specified herein, or number coded, shall be mounted in a readily accessible location near the pintle. The lighting receptacle on Type IV dump trucks shall be located to prevent damage during dumping of the cargo. The trailer brake control system shall conform to 3.4.11.2. When code ATT is specified, a rigid type pintle hook with air operated plunger installed on the chassis frame with reinforcements to transfer a vertical tongue load of not less than 3175 kg (7000 lb) and a horizontal drawbar load of not less than 31750 kg (70000 lb) directly to the chassis rails, shall be provided. Code TTP or code ATT is not available when code HTG, HTGU, or HTGX is specified.

3.1.1.9 TRAILER LIGHTING CABLE.

When code MTL is specified, a trailer lighting cable conforming to SAE J1067 shall be furnished. The cable shall be coiled and shall be not less than 2800 mm (110 inches) long when fully extended. Both ends of the cable shall be equipped with a round plug conforming to SAE J560. The plugs shall be equipped with a grip for withdrawing from the connector sockets. The cable shall be packaged and stowed in the vehicle tool compartment. Code MTL is not required on Type II Truck Tractor unless a trailer-towing package is specified.

3.1.1.10 HYDRAULIC TAILGATE.

When specified (see 6.2), type III stake truck shall be equipped with an electric motor driven hydraulic tailgate. The hydraulic system shall comply with the requirements in paragraph 3.1.1.18. Unless otherwise specified (see 6.2), the hydraulic tailgate shall have a rated capacity of not less than 1361 kg (3,000 pounds). All hydraulic cylinders shall be provided with flow restrictors in the down port of the cylinders to prevent the tailgate from falling rapidly in the event of hydraulic system failure. The tailgate platform shall be the ramping type and shall have a depth of not less than 810 mm (32 inches) exclusive of the ramp. The ramp shall taper down to ground level to facilitate ease of loading with wheeled handcarts. The platform loading area shall be of nonskid sheet steel. The tailgate shall have devices for holding the platform in stowed position for vehicle travel. When the tailgate is in position for loading the vehicle, the clearance between the rear edge of the vehicle and the tailgate shall be not more than 19 mm (0.75 inch) and the tailgate shall be on the same level as the body floor. Controls shall be mounted outside the body on the curbside of the vehicle and shall include an electric control station with environmentally sealed connections, that the operator can easily reach while standing on the ground, or riding on the platform. The vehicle ignition switch or a separate switch in the driver's compartment shall allow the driver to disconnect the power source to the tailgate. A 150-amp minimum, automatic reset, circuit breaker shall be furnished with the electric system of the tailgate, to protect the electric system of the vehicle. A minimum 2-gage wire shall be furnished on the power cables, for maximum operating efficiency and increased electrical component life. A rustproof enclosure shall be furnished to protect the pump motor from dirt and weather. Self-lubricated bearings shall be furnished on all load bearing rollers and hinges. A decal or plate describing operation of the hydraulic tailgate shall be provided in close proximity to the hydraulic tailgate controls (see 3.1.1.12). When code HTGC is specified, a spring loaded cart-stop retention system shall be furnished on the end of the platform. The cart-stop shall spring up to a vertical position when the foot control is depressed. The cart-stop may be manually returned (with a maximum force of 25 pounds required) to the plane of the horizontal liftgate platform and automatically lock in place. The cart-stop shall remain locked in horizontal or vertical position until the foot control mechanism is depressed. All hydraulic lines shall be grommeted where they are routed through walls and supports and furnished with clamps for protection from damage. Hydraulic tailgates must conform to FMVSS 223 and 224.

3.1.1.10.1 REAR FOLD TAILGATE.

When code HTG is specified, the tailgate shall fold vertically against the rear of the vehicle for travel. All tailgate operations shall be hydraulically powered or metered, providing for raising, lowering, folding and unfolding without manual assistance. The tailgate platform width shall be not less than 2290 mm (90 inches). Rear bumper and additional rear end protection need not be furnished.

3.1.1.10.2 FOLD UNDER TAILGATE.

When code HTGU is specified, the tailgate shall manually fold under the vehicle for travel and manually unfold for use. Hydraulically powered raising and metered lowering shall be provided. The tailgate platform width shall be not less than 2130 mm (84 inches). Rear bumperettes extending to the rear beyond the stowed tailgate shall be provided on each side of the rear, beyond the 2130 mm (84-inch) platform width. Additional rear end protection need not be furnished. (A fold-under tailgate is available on vans only with a roll-up rear door.) If a fold under tailgate is furnished on a van body with swing type doors, the top of the tailgate in the elevated position will be up to 3 inches below the level of the van floor, due to door locking hardware. The hydraulic system shall comply with the requirements in paragraph 3.1.1.17.

3.1.1.11 HYDRAULIC FLUID IDENTIFICATION PLATE.

When a hydraulic operating system is furnished, a decal or plate shall be installed near the filler cap and shall identify the type of hydraulic fluid to be used. (See 3.1.1.12)

3.1.1.12 DECALS AND DATA PLATES.

The hydraulic tailgate operating instructions, the hydraulic fluid identification information and the power takeoff caution notice shall be on a standard decal or plate from the supplier of that item.

3.1.1.13 BRAKE LIGHTS.

At least one pair of brake lights shall override the four-way emergency flasher or the two systems shall be independent of each other. Modifications to the manufacturer's standard product to accommodate this requirement shall not compromise conformance to any Federal Motor Carrier Safety Regulation referenced herein or to any Federal Motor Vehicle Safety Standard. If additional lights are added to the vehicle, the lights shall be selected from the chassis manufacturer's standard matching hardware. On truck tractors, the brake lights need to override the four-way flasher only when coupled to a semitrailer, in accordance with TMC RP 118A.

3.1.1.14 ELECTRICAL COMPONENTS FOR TRUCK BODIES AND ACCESSORY EQUIPMENT.

When truck bodies and accessory equipment are furnished they shall conform to TMC RP105B, RP 110A, RP 111B, RP 112, RP 113A, RP 114A, and RP 120A when applicable.

3.1.1.15 6X6 CONVERSION.

The chassis manufacturer's standard 6X4 truck chassis may be modified to provide all wheel drive conforming to the requirements herein if:

(a) The conversion axle manufacturer's engineering department specifically approves and certifies that all such modifications meet the design requirements and standards of the conversion axle manufacturer. Certification shall be based on both design analysis and proving ground test reports, which shall be made available to the engineering and quality assurance offices of the procuring activity.

(b) The chassis manufacturer's front axle before conversion has the same load rating as the conversion axle to be installed.

(c) Components used in the all wheel drive conversion are of current production.

(d) Components used in the all wheel drive conversion are approved for the conversion application by the component manufacturers.

(e) The converted vehicle is certified to conform to Federal Motor Vehicle Safety Standard No. 121, by the intermediate or final stage manufacturer.

(f) Replacement headlights, if required to be added, shall meet the height requirement of not less than 560 mm (22 inches) and not more than 1370 mm (54 inches), measured above the road surface, in conformance with Federal Motor Vehicle Safety Standard No. 108. Replacement headlights shall be equivalent in mounting, protection, and range and precision of adjustment to the chassis manufacturer's original standard headlights.

(g) Unused headlight cavities are covered in a neat workmanlike manner, treated and painted to match the chassis cab color with treatment and painting equivalent to the chassis cab manufacturer's process for the remainder of the chassis cab. Cavities and their covers shall be rustproofed in accordance with 3.1.1.3.

(h) Complete installation drawings are available to the procuring activity.

(i) Warranty and parts service is available at a facility no more distant than the chassis manufacturer's nearest authorized dealer.

When code STF is specified, the frame shall be staggered behind the cab to lower the height of the rear frame by the amount that the frame was raised to accomplish the 6X6 conversion.

3.1.1.16 TRANSPORTABILITY.

When vehicles covered by this Standard are to be transported by Air (option ATR), Highway (option HTR), Sea (option MTR) or Rail (option RTR) by the using agency, the following sequence of events shall occur:

1. The agency is to send a written certification request containing a description of the physical characteristics of the vehicle to The Air Transportability Test Loading Agency (ATTLA) when Air Transportability (option ATR) is requested or to The Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA) for all other modes of transportability.

2. Upon receipt of the order the contractor is to contact the customer agency to ascertain if the Customer Agency has made application for Transportability Certification to the ATTLA / SDDCTEA.

3. The contractor is to make contact with the ATTLA / SDDCTEA and shall provide and submit all related drawings and engineering data, within 90 days after receipt of order, directly to ATTLA / SDDCTEA.

4. The contractor will continue to work with the ATTLA / SDDCTEA to obtain Transportability Certification for the vehicle(s) ordered. The contractor shall supply the ATTLA / SDDCTEA certification memo to the customer agency within 120 days after receipt of the vehicle(s) order. A copy of the ATTLA / SDDCTEA certification memo shall be available during the final inspection.

ATTLA (The Air Transportability Test Loading Agency) is located at Wright Patterson Air Force Base and can be contacted via e-mail at "ATTLA@wpafb.af.mil". SDDCTEA (The Military Surface Deployment and Distribution Command Transportation Engineering Agency) is located in Newport News, VA and can be contacted by e-mail at "dpe-mail@tea.army.mil" or by phone at (757) 599-1113. A transportability report form for SDDCTEA can be obtained at "http://www.tea.army.mil/pubs/nr/deploy/transinstruction/DI-PACK-80880B.pdf" \t "_new" References, publications,

assistance and engineering services are available from SDDCTEA. Testing information can be obtained from the Aberdeen Test Center (ATC). ATC can be contacted through their website at "http://www.atc.army.mil".

Upon receipt of the request, drawings and data; ATTLA / SDDCTEA conducts an analysis of the item's transportability at no cost to the requesting federal agency. If the item meets the requirements, ATTLA / SDDCTEA return a certification memo to the customer agency with a copy to the contractor stating the conditions of approval. Otherwise, ATTLA / SDDCTEA recommend changes that will allow the item to meet those requirements. Very rarely an item cannot be airlifted or transported at all. In these cases ATTLA's / SDDCTEA's reply will include an explanation of the rejection.

If analysis alone cannot positively determine the transportability of the item, then a test loading may be required. Test loadings are done when the transportability is uncertain. The test loads require a formal test report and usually are conducted as Special Airlift or Transport Missions. The customer agency shall be responsible for all costs associated with test loadings when it is determined to be required.

Removal or relocation of mechanically attached (non-welded, non-riveted, etc.) components with common tools, requiring not more than 1 man-hour total to remove, relocate and tiedown; and not more than 1 man-hour total to return the vehicle to its original, as opposed to reduced, configuration; shall be acceptable. The self-mobility of the vehicle shall not be affected by reducing its configuration. Tiedowns for removed or relocated equipment shall be furnished. In addition to the requirements 3.2.6 or 3.2.6.1, as applicable, the rated capacity of the axles and suspension system shall be not less than 1.25 times the load imposed on each by the curb weight of the vehicle. The vehicle shall be transportable as described above without any other special provisions and without any shoring. The vehicle shall not be delivered to the Government in its reduced configuration.

3.1.1.16.1 AIR TRANSPORTABILITY.

When code ATR is specified, air transportability requirements for class C, D, E and F vehicles shall include air transport certification in C-130, C-141, C-5, and C-17 aircraft in accordance with the guidelines in MIL-HDBK-1791. In addition, all vehicles must be equipped with military standard tiedown provisions as specified in MIL-STD-209 and option code TDN (section 3.1.1.16.6) also see 3.1.1.16.

3.1.1.16.2 HIGHWAY TRANSPORTABILITY.

When code HTR is specified, highway transportability requirements for class C, D, E and F vehicles shall include unrestricted highway transport in both the Continental United States (CONUS) and Outside the Continental United States (OCONUS) in accordance with the interface criteria published in "http://www.tea.army.mil/pubs/nr/deploy/transinstruction/MIL-STD-1366D.pdf" \t "_blank", for unrestricted highway transport.

In addition, all vehicles with a highway transportability requirement must be equipped with military standard tiedown provisions as specified in MIL-STD-209 and option code TDN (section 3.1.1.16.6) also see 3.1.1.16.

3.1.1.16.3 MARINE TRANSPORTABILITY.

When code MTR is specified, marine transportability requirements for class C, D, E and F vehicles shall include unrestricted water transport by all standard military and commercial watercraft in accordance with the interface criteria published in "MIL-STD-1366 Transportability Criteria".

In addition, all vehicles must be equipped with military standard lifting and tiedown provisions (option LTD) as specified in MIL-STD-209 and option code LTD (section 3.1.1.16.5) also see 3.1.1.16.

3.1.1.17.4 RAIL TRANSPORTABILITY.

When code RTR is specified, rail transportability requirements for class C, D, E and F vehicles shall include unrestricted rail transport in both the CONUS and OCONUS, unless otherwise specified, as described below and in accordance with the interface criteria published in "http://www.tea.army.mil/pubs/nr/deploy/transinstruction/MIL-STD-1366D.pdf" \t "_blank", for unrestricted rail transport.

TESTING REQUIREMENTS

- Vehicles must be capable of successfully completing the military standard rail impact test as prescribed in MIL-STD-810 using standard tiedown procedures as illustrated in "http://www.tea.army.mil/pubs/nr/deploy/fgpamplets/PAM_55-19.pdf" \t "_new".

- In addition, all vehicles must be equipped with military standard tiedown provisions as specified in MIL-STD-209 and option code TDN (section 3.1.1.16.6) also see 3.1.1.16.

3.1.1.16.5 LIFTING AND TIEDOWN PROVISIONS.

When option code MTR or LTD is specified, the vehicle shall be equipped with four (4) lifting provisions and four (4) tiedown provisions to ensure interoperability between transported equipment and lifting and tiedown devices commonly used in the transportation environment. Lifting and tiedown provisions shall conform to MIL-STD-209 for both Type I and Type II equipment. The contractor shall perform a structural analysis of the tiedown and lifting provisions and the surrounding structural elements in accordance with MIL-STD 209 requirements. In cases when the structural analysis indicates the provisions will clearly pass the requirements, actual physical testing may not be necessary. In cases when where the structural analysis indicates the provisions will marginally pass the requirements, redesign or testing shall be recommended to the contractor. In cases where the structural analysis indicates the provisions will clearly fail the requirements, a redesign of the provisions shall be required.

A shipping data plate shall be furnished and shall conform to composition A (class 1 or 2) or composition C of A-A-50271. The shipping data plate shall be inscribed with a diagram

showing the lifting attachments and lifting slings, the capacity of each attachment, and the required length and size of each sling cable. A silhouette of the vehicle showing the center of gravity shall be provided on the transportation plate. Stenciling or other suitable marking shall identify all lifting and tiedown attachments. Tiedown markings shall clearly indicate that the attachments are intended for the tiedown of the equipment on the carrier (also see 3.1.1.16).

3.1.1.16.6 TIEDOWN PROVISIONS.

When option code ATR, HTR, RTR, or TDN is specified, the vehicle shall be equipped with four (4) tiedown provisions to ensure interoperability between transported equipment and tiedown devices commonly used in the transportation environment. Tiedown provisions shall conform to MIL-STD-209 for both Type I and Type II equipment. The contractor shall perform a structural analysis of the tiedown provisions and the surrounding structural elements in accordance with MIL-STD 209 requirements. In cases when the structural analysis indicates the provisions will clearly pass the requirements, actual physical testing may not be necessary. In cases where the structural analysis indicates the provisions will marginally pass the requirements, redesign or testing shall be recommended to the contractor. In cases where the structural analysis indicates the provisions will clearly fail the requirements, a redesign of the provisions shall be required.

A shipping data plate shall be furnished and shall conform to composition A (class 1 or 2) or composition C of A-A-50271. The shipping data plate shall be inscribed with a diagram showing the tiedown attachments, the capacity of each attachment, and the recommended tiedown pattern for securing the equipment during transport. A silhouette of the vehicle showing the center of gravity shall be provided on the transportation plate. Stenciling or other suitable marking shall identify tiedown attachments. Tiedown markings shall clearly indicate that the attachments are intended for the tiedown of the equipment on the carrier (also see 3.1.1.16).

3.1.1.17 HYDRAULIC SYSTEM GENERAL REQUIREMENTS.

The following requirements shall apply to vocational hydraulic systems installed on vehicles with GVWR exceeding 17,000 lbs. Hydraulic tailgates are exempt from these requirements.

A. Drive systems.

Hydraulic pumps shall be driven by one of the following:

1. Engine or transmission mounted PTO. Pumps shall be flange mounted to the PTO. Belt drives of any type are not acceptable and shall not be used. Drive shafts from the PTO to the pump are not acceptable.

2. Electric motor driven. (Authorized for hydraulic tailgates only.) Pumps shall be flange mounted to the electric motor.

3. Engine crankshaft front PTO driven. Only OEM integral frame extensions and OEM approved and furnished chassis for front PTO shall be used.

4. Pump support brackets shall be installed from the transmission to support the pump(s) if the combined weight of the pump(s), hoses, and fittings exceed 40 lbs., of if the combined length of the PTO and pump(s) exceeds 18 inches measured form the center-line of the PTO to the end of the pump(s).

5. PTO's shall be rated at a minimum of 150% of the maximum horsepower requirement of the hydraulic system. The minimum PTO horsepower rating shall be calculated by the following formula:

$$\frac{PV \times 1.50}{1714 \times .85} = \text{Minimum PTO HP Rating}$$

Where P = max working pressure in PSI
and V = max flow in GPM

6. PTO's shall be of the power shift design. PTO shift controls shall be electric-over-hydraulic for automatic transmissions and manual transmissions shall have air shift controls. There shall be a PTO engagement indicator located in the truck cab, in close proximity to the control switch. Over speed engagement protection shall be furnished. PTO shall disengage when pre-set engine RPM is reached.

7. The torque or horsepower required of the hydraulic drive PTO shall not exceed the maximum torque or horsepower rating of the PTO opening on the transmission or PTO drive pad on the engine or engine crankshaft.

8. All PTO's shall be installed within the backlash recommendations of the PTO manufacturer.

B. Hydraulic system hoses, fittings, pressures, and flow rates.

1. Hydraulic hoses shall be rubber covered double wire braid reinforced and comply with SAE 100R2, type A or AT, or 100R9, type A or AT, of SAE J517. The working pressure of the hose shall exceed the pressure setting of the relief valve. Hoses shall be sized such that the maximum velocity of hydraulic fluid in the hose does not exceed the following:

   A. Fluid velocity in suction lines shall not exceed 4 ft./sec.

   B. Fluid velocity in discharge lines shall not exceed 25 ft./sec.

2. All hoses shall be installed in accordance with the requirements and recommendations of SAE J1273.

3. System working pressures shall not exceed 3500 PSI.

A system pressure test port shall be provided. The test port shall be located so that the maximum pressure produced by the system can be monitored without disconnecting any component of the system.

4. Hydraulically actuated implements, such as snowplows, which are deployed while the vehicle is moving, shall be furnished with mechanical stops that prevent hydraulic shock if the implement strikes an obstruction while the vehicle is in operation.

5. Hydraulic hose fittings shall comply with the requirements of SAE J516 for permanently attached (crimped) fittings with JIC 37° flare. Field replaceable type fittings are not acceptable. Forged steel hydraulic adapters shall be used. Cast steel fittings are not acceptable.

C. Pressure protection:

All hydraulic systems shall be furnished with either a spring or pilot actuated pressure relief valve. The relief valve shall be used for overpressure protection only and shall not be used for any flow control purpose. In no case shall a relief valve be set at a pressure higher than the lowest working pressure of the lowest rated component (hose, coupler, adapter, cylinder, etc.) in the system.

D. Flow control valves.

Flow control valves shall be of a type (such as open-center valves) that assures that hydraulic fluid is never deadheaded and forced to flow over the relief valve. Flow control valves may be stacked to control multiple devices, either in parallel or in series. Series designed systems shall not exceed the maximum working pressure of any component in the series. Flow control valve body shall not be mounted inside the cab. Flow control valves shall be operated through leavers mounted inside the cab within easy reach of the seated driver. Control leavers shall operate flow control valves through flexible cables or air pressure and permit smooth, infinitely variable operation of equipment within its designed operational limits.

E. Fluid filtration.

A return line hydraulic filter shall be furnished having a minimum efficiency rating of 99% down to 10-micron size particles and meet or exceed the filtration requirements of the pump, motor, or driven device manufacturer. The filter shall be furnished with a pressure differential type service gage or service indicator.

F. Hydraulic system cooling.

Hydraulic systems shall be designed to operate in ambient temperatures ranging from –20 deg F to +120 deg F.

The hydraulic system shall be designed such that the maximum hydraulic oil temperature does not exceed 200 deg. F. For continuously driven devices, such as spreaders and other motor driven applications, auxiliary cooling, such as air-to-oil coolers or water-to-oil coolers, shall be furnished if required to meet the maximum oil temperature requirement. The government reserves the right to request and be furnished test documents showing maximum stabilized temperatures of hydraulic systems.

G. Hydraulic reservoirs.

A stainless steel, aluminum (6061-T6 or 5086-H32 construction only), or other noncorrosive type hydraulic reservoir shall be furnished and sized such that the reservoir working volume is a minimum of 150% of the maximum hydraulic flow rate. The reservoir shall be furnished with the following:

1. The reservoir shall be furnished with a baffle separating the suction from the return flow.

2. The reservoir shall be furnished with minimum 3/4 in. air filtration type breather or combination breather cap with not greater than 10-micron air born particle rating.

3. The reservoir shall be furnished with a sump and valve for draining water from the bottom of the tank and for draining oil.

4. The reservoir shall be furnished with a metal enclosed and protected sight glass for observing oil level.

5. The reservoir shall be furnished with a maximum 300 mesh (50 micron) fill strainer.

6. The reservoir shall incorporate a return tube that discharges return oil below the surface of the reservoir oil.

H. Hydraulic oil.

Hydraulic oils shall meet the minimum requirements of the hydraulic pump or other critical component manufacturer(s). Water based hydraulic fluids shall not be used. A nameplate shall be affixed near the fill cap on the reservoir indicating the type of oil to be used.

I. Installation and workmanship.

The hydraulic system shall comply with the following requirements:

1. All tapered threaded fittings shall be installed using an anti-seize thread sealing compound. Teflon tape is not acceptable.

2. Hoses shall be routed for easy tracing of hoses and shall be protected with grommets when pass-

ing through bulkheads. Hoses shall be protected from abrasion when routed over or through bare metal edges.

3. Hydraulic hoses shall be supported with metal hose clamps that provide protection for the hose from the metal portion of the clamp. Hoses shall not be allowed to droop or to be entangled with other hoses or lines. The clamps shall be spaced not more than 18 in. apart.

4. Overhanging weight of fittings, hoses, valves, or piping shall be supported from the reservoir to eliminate flexing of sidewalls.

5. All hoses shall be routed and installed in accordance with the requirements and recommendations of SAE J1273. Special attention to routing and installation shall be given to avoid to the following:

   A. Tensile loads on the hose

   B. Side loads

   C. Flattening

   D. Kinking

   E. Thread damage

   F. Damage to sealing surfaces

   G. Abrasion

   H. Twisting

   I. Exceeding minimum hose bend radius

J. Operational Test

The hydraulic system and hydraulically driven components shall be operated and checked for leaks and proper operation. The operational test shall include the maximum requirements (height, extension, speed, etc.) of the driven devices under no-load conditions. No leakage is permitted beyond a class "1" leak in accordance with SAE J1176-External Leakage Classifications for Hydraulic Systems.

3.2 GENERAL DESIGN.

3.2.1 FEDERAL MOTOR VEHICLE SAFETY STANDARDS.

The vehicle and furnished accessories shall comply with all Federal Motor Vehicle Safety Standards in effect on the date of manufacture.

3.2.2 AIR POLLUTION CONTROL.

The vehicle shall comply with EPA Regulations governing Control of Air Pollution from New Motor Vehicles and New Motor Vehicle Engines in effect on the date of manufacture. Vehicles with a final destination of California (or opt-in states) shall comply with State of California regulations governing air pollution control in effect on the date of manufacture.

3.2.3 SOUND LEVEL.

The cab interior sound level shall not exceed 84 db (A) when measured in accordance with Federal Motor Carrier Safety Regulation 393.94. The vehicle exterior sound level shall conform to EPA Noise Emission Standards for Transportation Equipment, Medium and Heavy Trucks.

3.2.4 CURB WEIGHT.

The curb weight is defined as the weight of the chassis and cab, with all attachments, accessories and equipment; the body or fifth wheel (except for chassis-cabs); and a full complement of fuel, lubricants, and coolant.

3.2.5 GROSS VEHICLE WEIGHT.

The gross vehicle weight (GVW) shall consist of the curb weight, the operator weight (computed at 80 kg (175 pounds)) and a payload to provide not less than the specified GVW.

3.2.6 WEIGHT DISTRIBUTION.

Except as specified in 3.2.6.1 and 3.5.4.8.1, the distribution of GVW for the purpose of establishing suspension, axle and tire capacities shall be determined with the payload uniformly distributed over the load area. A vehicle with a crew (four-door) cab shall have the weight distribution determined with 240 kg (525 lb) of payload in the rear seat. For Type II tractor furnished with a sliding fifth wheel, the weight distribution shall be determined with the sliding fifth wheel in its most forward position of adjustment.

3.2.6.1 SPECIFIED GAWR.

When specified, front and rear GAWR shall be as designated and 3.2.6 does not apply. When code AS14 is specified for Class D, a 6350 kg (14,000 lb) GAWR front axle shall be provided. When code AS16 is specified for Class D, a 7257 kg (16,000 lb) GAWR front axle shall be provided. When code AS18 is specified for Class E, an 8165 kg (18,000 lb) GAWR front axle shall be provided. When code AS20 is specified for Class E, a 9072 kg (20,000 lb) GAWR front axle shall be provided.

3.2.7 GROSS COMBINATION WEIGHT.

Gross combination weight (GCW) shall consist of the truck, or truck tractor curb weight, the operator weight (computed at 80 kg (175 pounds)), and the weight of a semitrailer loaded to provide not less than the specified GCW. The fifth wheel shall be located so that with the truck tractor loaded to GVW, the load ratings of the chassis components are not exceeded.

3.2.8 RATINGS.

Vehicle ratings shall be the manufacturer's published ratings. Component and vehicular ratings shall not be raised to meet the requirements of this specification. When published ratings are not available, verification of ratings shall be avail-

able to the engineering office of the procuring activity. Minimum GVW and GCW ratings shall conform to Figure II for the specified class of vehicle.

Figure II. GVW and GCW Minimum Ratings

VEHICLE CLASS	GVWR kg	GVWR lbs	GCWR kg	GCWR lbs
B	19500	43000	31800	70000
C	20900	46000	36300	80000
D	23600	52000	40900	90000
E	28100	62000	45359	100000
F	30000	66000	as specified	as specified

3.2.9 OVERALL WIDTH.

The overall width of the vehicle exclusive of tires, wheels, wheel studs and nuts, and safety related items such as mirrors, lights and reflectors shall be not more than 2440 mm (96 inches). The width over the tires shall be:

(a) Not more than 2540 mm (100 inches) for axles rated up to and including 20900 kg (46,000 lb)

(b) Not more than 2590 mm (102 inches) for axles rated at over 20 900 kg (46,000 lb) and up to and including 26300 kg (58,000 lb)

(c) Not more than 2640 mm (104 inches) for axles rated at over 26300 kg (58,000 lb).

3.2.10 ACCESSIBILITY.

The design of the vehicle and optional equipment shall permit access for routine servicing and shall permit access for replacement and adjustment of component parts and accessories with minimal disturbance of other components and systems.

3.2.11 RECOVERED MATERIALS/REGULATORY REQUIREMENTS.

In accordance with Section 23.403 of the Federal Acquisition Regulations, the Government's policy is to acquire items composed of the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition without adversely affecting performance requirements or exposing suppliers' employees to undue hazards from the recovered materials. The term "recovered materials" means materials that have been collected or recovered from solid waste and reprocessed to become a source of raw materials, as opposed to virgin raw materials. None of the above shall be interpreted to mean that the use of used or rebuilt products is allowed under this document. The use of re-refined oil shall not be prohibited. This does not prohibit vehicle manufactures from using performance criteria for acceptable oil. Any re-refined oil products shall meet the performance criteria of the vehicle and component manufacturers.

3.2.12 CRANES.

Trucks with mounted cranes shall conform to all applicable OSHA regulations, including OSHA 1926.550.

3.3 PERFORMANCE.

3.3.1 MAXIMUM GEARED SPEED.

The maximum vehicle governed speed shall be not less than 113 km/h (70 mph) or more than 121 km/h (75 mph) for 6X4 and not less than 97 km/h (60 mph) or more than 104 km/h (65 mph) for 6X6 vehicles. Under no circumstances shall the vehicle maximum governed speed exceed the speed rating of the furnished tires.

3.3.2 SERVICE BRAKES.

The service brake shall control and hold the vehicle, when loaded to its specified GVW, on a 30 percent grade. On all vehicles except Type II truck tractors, the service brakes shall stop the vehicle, loaded to specified GVW, within the stopping distance requirements of Federal Motor Carrier Safety Regulation 393.52. The service brakes on Type II truck tractor shall stop the tractor semitrailer combination, loaded to specified GCW, within the stopping distance requirements of Federal Motor Carrier Safety Regulation 393.52.

3.4 CHASSIS COMPONENTS.

3.4.1 ENGINE.

The engine furnished for the specified vehicle class shall be the chassis manufacturer's standard or optional engine for the commercial model truck that meets or exceeds the requirements of this specification.

3.4.1.1 DIESEL ENGINE.

The vehicle shall be equipped with a liquid cooled, compression ignited, electronically controlled diesel engine, with not less than four cylinders. When code FJP is specified, the engine shall operate satisfactorily using grade JP-5 fuel conforming to MIL-T-5624 under emergency, short duration conditions and on grade JP-8 fuel conforming to MIL-T-83133 under normal conditions. A power loss when operating JP-5 or JP-8 is acceptable. When code YD6 through code YD45 is specified, the optional diesel engine specified shall be provided. When code CNG is specified, an OEM dedicated compressed natural gas engine shall be provided.

3.4.1.2 OIL FILTER.

A full flow or combination full flow and bypass oil filter with replaceable element shall be furnished.

3.4.1.3 GOVERNOR.

An engine governor shall be furnished and set and sealed to limit the engine to the engine manufacturer's maximum recommended operating speed.

3.4.1.4 COOLING SYSTEM.

The chassis manufacturer shall furnish the heaviest duty cooling system that has been recommended by the engine manufacturer for the model supplied. The cooling system

shall include a surge tank or a coolant recovery reservoir of not less than 1.89 L (two-quart) capacity. On tilt cab models, a radiator servicing access door shall be provided, if needed, to allow verification of the coolant level. Radiator furnished shall comply with TMC RP 325.

3.4.1.5 COOLANT TEMPERATURE CONTROL.

Thermostatic control of engine coolant temperature shall be provided. Control shall include complete thermostatic control of all coolant flow through the radiator.

3.4.1.6 ENGINE COOLANT.

The engine coolant shall be a solution of ethylene glycol antifreeze and water or propylene glycol antifreeze and water, in equal parts of antifreeze and water by volume (-36˚C (-34˚F protection)). The coolant supplied shall comply with TMC-RP329 or TMC-RP330 as applicable. When code H4 is specified, the percentage of antifreeze in the cooling system shall be increased to provide protection against freezing down to -50˚ C (-60˚ F).

3.4.1.7 FAN CLUTCH

A fan clutch shall be provided. The fan clutch shall reduce the fan speed automatically when the fan is not required for engine cooling. The fan clutch shall be asbestos free.

3.4.1.8 POWER PLANT HEATERS AND FUEL WARMER.

When code EH is specified, an OEM engine block heater(s) shall be provided.

When code SEH is specified, a coolant heater (A), an engine oil heater (B), a fuel warmer (C), (D), or (E) shall be provided as individually specified. Heaters shall operate on 115/120-volt alternating current (ac), and shall be wired through a junction block, including a fuse or a circuit breaker, to a single, three-pronged (male), weatherproof slave receptacle for receiving external power and grounding the vehicle. The receptacle shall be located on the front or street side of the vehicle as near the cab door as possible. A three-wire connecting cable, 7600 mm (25 feet) long and of adequate line capacity to supply power for all heater units simultaneously, shall be furnished. Connecting cable shall include a matching female connector at the vehicle end and a standard weatherproof, three-pronged (two power plus one ground) male connector at the other end. Electrical apparatus shall conform to Federal Motor Carrier Safety Regulation 393.77(c)(7). The electrical insulation of the connecting cable shall withstand normal operating stresses in low ambient air temperature (down to -51°C (-60°F)) without cracking or loss of dielectric capacity. All heater lead wires shall be installed without interfering with vehicle component operations, and without loose excess wire. Provisions for stowage of the cable shall be provided in the vehicle cab. Heaters and fuel warmers shall be furnished as follows:

(A) A coolant heater, 1000-watt (W) minimum rating for Class B and C vehicles or 1500-watt (W) minimum rating for all other vehicles, shall be installed in the engine block or in the lower coolant inlet hose.

(B) An oil pan heater of the permanent external surface mount or immersion type that meets the following requirements shall be installed:

(1) Immersion type, not more than 11 W/L (10 watts per quart) or less than 5 W/L (5 watts per quart) heating capacity.

(2) Surface type not more than 2.8 watts per square centimeter (W/cm2) (18 watts per square inch) or less than 1.4 watts per square centimeter (9 watts per square inch) heating capacity

(3) Thermal balance design or thermostat control providing for uninterrupted operation.

(4) Provision for mounting below minimum service oil level.

One of the following type fuel warmers or pre-heaters shall be furnished, if specified.

(C) An in-line fuel warmer unit shall be provided to prevent clogging of fuel filters due to waxing of the fuel. The unit shall use engine coolant to transfer sufficient heat to the diesel fuel to heat it from an inlet temperature of -40°C (-40° F) to an outlet temperature of -13°C (+9°F), with a fuel flow rate not less than the maximum fuel demand of the engine fuel system. A coolant shutoff valve shall be provided for the coolant inlet side of the fuel warmer unit. The unit shall not cause heating of the fuel above 27°C (80°F) under any possible conditions.

(D) An in-tank fuel warmer unit shall be provided. The unit shall use engine coolant to transfer heat to the fuel in one fuel tank. The warmer shall not cause heating of any fuel above 27°C (80°F) under any possible condition, shall not disable or cause elimination of the fuel gauge sending unit and shall not violate 3.2.1 or any Federal Motor Carrier Safety Regulation. A coolant shut off valve shall be included. The units required by 3.4.1.7(c) and (d) may be combined.

(E) An in-line fuel warmer of the electrically heated type shall be provided which meets the performance requirements of 3.4.1.7(c).

3.4.1.8.1 HEATED FUEL AND WATER SEPARATOR.

When code FFS is specified, the fuel and water separator required in 3.4.3.3 shall be of the heated type.

3.4.1.9 FUEL FIRED ENGINE PREHEATER.

When code FFP is specified, a diesel fuel fired engine water heater shall be provided to preheat the engine. The heater shall include a timer, a thermostat and a circulating pump and shall be connected directly to the engine coolant system. The heater shall be capable of starting and operating at minus -51°C (-60°F) and shall heat the engine to plus +4°C (40°F) from minus-51°C (-60°F) in not more than 1 hour. The system shall be equipped with

a light, visible to the driver, to indicate that the pre-heater is operating.

3.4.1.10 ELECTRONIC THROTTLE CONTROL.

An electronic controlled throttle with quick release shall be furnished.

3.4.2 ELECTRICAL SYSTEMS.

The electrical system shall be in accordance with Federal Motor Carrier Safety Regulations 393.27 through 393.31 and 393.33.

3.4.2.1 STARTING SYSTEM.

A 12-volt direct current (dc) starting system with a 12-volt lighting system shall be furnished. Engine starting equipment shall include an ether starting system or electric grid heater. If an ether system is furnished in lieu of a grid heater, it shall be of the measured shot type. The measured shot type ether system shall be key operated or manually operated from the driver's compartment and shall be inoperative with the engine warm. Complete provisions for a replaceable ether reservoir of not less than 355 mL (12 fluid ounces) shall be furnished. A reservoir need not be furnished. The electric starting motor on 6.6L and larger engines shall be equipped with a thermostat controlled, automatic resetting circuit breaker that will protect the motor from over-crank heat damage. Easily accessible, remote jump-start posts (both positive and negative) shall be furnished, within close proximity to the battery box. Posts shall be furnished with protective rubber or plastic type covers that are tethered to prevent loss.

3.4.2.2 ALTERNATOR.

Unless otherwise specified, a minimum 130-ampere alternator shall be furnished. The alternator output with the engine at idle speed shall be not less than 70 amperes. When code A14 is specified, a minimum 145-ampere alternator shall be furnished. The alternator output with the engine at idle speed shall be not less than 70 amperes.

3.4.2.3 LIGHTING.

All vehicle lights, reflectors, and wiring shall conform to Federal Motor Carrier Safety Regulations 393.19, 393.20, and 393.22 through 393.26(d). Type I chassis need not be furnished with rear identification lamps or clearance lamps and reflectors. Type IV dump truck rear lighting shall be positioned or guarded to prevent damage during dumping of the cargo. Positioning and guarding shall permit normal replacement of the bulbs and lenses. Lights and reflectors shall not be mounted on vertical surface of rub rails (unless recessed and fully protected) or mounted on vehicle bumpers. When right hand drive is specified by acquisition documents, left-dip headlights shall be provided. Left-dip headlights may be provided as a replacement set, stowed in the cab for shipment. Truck bodies shall be furnished with conspicuity markings in accordance with FMVSS 49 CFR, Part 571, Section 571.108. Not available on Type I. Daytime running lights shall be furnished in accordance with FMVSS 108. Daytime running lights shall conform to TMC RP 138. When code DRLD is specified, daytime running lights shall not be furnished. When code LED is specified, all added stop/tail, directional, and marker lights shall be light emitting diodes. LED lights shall be installed with tamper resistant hardware.

3.4.2.4 TURN SIGNALS.

Turn signal lamps shall conform to SAE J588. Operating units shall conform to SAE J589, Class A, and shall be mounted on the steering column. Turn signal units shall be installed in accordance with SAE J588 and TMC RP 118A. Turn signals shall have a visible flash indicator. Temporary mounting for rear signal units shall be provided on chassis models.

3.4.2.5 LIGHTING CABLE FOR TYPE II TRUCK TRACTOR.

The semitrailer lighting cable for Type II truck tractor shall conform to SAE J1067. The cable shall incorporate a connector conforming to SAE J560 on the semitrailer end. The cable shall be coiled and shall have an extended length of not less than 2800 mm (110 inches). The SAE J560 connector shall include a grip for withdrawing from the semitrailer receptacle. Storage for the cable shall be provided by the means of a hook and hanging loop or a protective holding bracket. When the hook and loop method is used, the cable shall be so attached as to ensure that the plug is pointed down when the cable is stowed. Unless otherwise specified, stowage shall be by:

(a) A hook provided on the rear of the truck tractor cab;

(b) A hook on a pogo-stick type hose tender; or

(c) A protective bracket mounted at the rear of the cab below the roof line.

Each shall hold the cable plug so as to prevent water from entering the terminals. The lighting cable; when on the hook, loop or protective bracket; shall be accessible to an operator standing on the ground to the rear of the cab, on the street side of the vehicle.

Figure III Batteries

Engine type	Reserve capacity (minutes)	Cold cranking (amperes)
Diesel, 343 kilowatts (kW) gross (460 gross horsepower) or less	540	1,875
Diesel, over 343 kW gross (460 gross horsepower)	as required	as required

3.4.2.6 BATTERIES.

Each battery shall be of 12-volt potential. The total reserve capacity ratings and the total cold cranking ratings at -18°C (0°F), both measured in accordance with SAE J537, shall be not less than specified in Figure III. The batteries shall be of the maintenance free type having the maintenance-free characteristics listed in A-A-55439. Batteries shall conform to TMC RP 109A.

3.4.2.7 AUXILIARY 24-VOLT SYSTEM WITH TRAILER RECEPTACLE.

When code VOL is specified, an auxiliary 24-volt system, with a trailer receptacle assembly, shall be furnished. Either a converter type (see 3.4.2.7.1) or an alternator type (see 3.4.2.7.2) system, meeting specified requirements, shall be furnished. A trailer receptacle conforming to MS 75021-2, with cover assembly shall be provided in an accessible location on the rear of the cab for Type II tractor and on the rear end of the vehicle for all other vehicle types. A twelve conductor truck tractor cable, not less than 3048 mm (10 feet) long, with both end of the cable equipped with connectors conforming to MS 75020-1 and MS 75020-2, shall be furnished. The cable assembly shall be stowed in the vehicle. The 24-volt, 12-ampere output service lighting circuit shall be connected through the appropriate lighting controls to terminals B, D, E, J, and L of MS 75021-2. On Type II truck tractor, a pogo stick hose tender shall be provided behind the cab to accommodate and secure the 24-volt cable.

3.4.2.7.1 CONVERTER TYPE 24-VOLT SYSTEM.

The 12- to 24-volt converter(s) shall operate from the 12-volt battery (see 3.4.2.6). The output capacity shall be not less than 24 amperes. More than one converter may be provided to furnish a total of 24 amperes.

3.4.2.7.2 ALTERNATOR TYPE 24-VOLT SYSTEM.

The alternator type 24-volt system shall be separate from the 12-volt vehicle lighting and ignition system and shall include:

(a) Nominal 24-volt alternator with not less than 25 amperes rated capacity and capable of providing not less than seven amperes dc output at normal engine idle speed.

(b) Two 12-volt batteries with a combined capacity of at least 40 ampere-hours at a 20-hour rate or one 24-volt battery with at least 20 ampere-hours capacity at a 20-hour rate.

(c) Voltage regulating device.

(d) An ammeter, mounted on the instrument panel.

3.4.2.8 RADIO INTERFERENCE SUPPRESSION.

The vehicle shall be suppressed to limit electromagnetic radiation in accordance with SAE J551. Any body equipment emitting electromagnetic radiation shall be suppressed to the same level as the vehicle chassis.

3.4.3 FUEL SYSTEM.

The fuel system shall conform to Federal Motor Carrier Safety Regulations 393.65 and 393.67.

3.4.3.1 AIR CLEANER.

An air cleaner shall be furnished. When specified Code ASI (see 6.2), a dry type, single or two-stage, air cleaner with dash mounted service indicator or warning light shall be furnished.

3.4.3.2 FUEL TANK(S).

Except as specified for Type II truck tractor or unless otherwise specified for other vehicle types (see 6.2), fuel tank(s) shall be not less than 170 L (45 gallons) total capacity. Type II truck tractor shall be equipped with fuel tank(s) of not less than 378 L (100 gallons) total capacity or when code FTE is specified, dual 378 L (100 gallons) minimum capacity tanks shall be furnished. When more than one tank is furnished, means shall be provided to assure an equalized fuel level in both tanks. When code FTC is specified, a minimum capacity of 265 L (70 gallons) shall be provided. When code FTD is specified, a minimum capacity of 378 L (100 gallons) shall be provided. When fuel crossover lines are furnished, they shall be in accordance with TMC RP 321. When code CNG alternative fuel engines are furnished, fuel capacity shall provide for a minimum of 200 miles range without refueling.

3.4.3.3 FUEL AND WATER SEPARATOR.

The manufacturer's standard or optional fuel filter shall be provided. A fuel and water separator shall also be furnished. The separator shall include a water coalesce and a drain valve and shall meet the requirements of SAE J1839. A combination filter/separator unit may be furnished. See 3.4.1.7.1 for heated fuel and water separator.

3.4.4 EXHAUST SYSTEM.

The exhaust system shall conform to Federal Motor Carrier Safety Regulation 393.83. On Type II truck tractors the tailpipe shall be vertically mounted at the rear of the cab and shall be provided with a heat shield. On all other types of trucks, if vertical exhaust mufflers are furnished and if they are capable of being reached easily by personnel entering or leaving either side of the cab, a heat shield shall be furnished. Vertical exhaust systems shall be provided with a turn out tailpipe or a hinged rain cap. When code VES is specified, a vertical exhaust system shall be furnished.

3.4.5 TRANSMISSION.

Unless otherwise specified (see 3.4.5.3 and 6.2), a manually shifted transmission shall be provided on the vehicle. The input torque capacity of the transmission shall be at least equal to the maximum torque delivered by the engine. Gear ratios in the transmission and the axles shall be matched to provide a progressive shifting pattern throughout the complete range. The transmission shall be provided with two power takeoff openings. The transmission shall provide for maximum ease of shifting in all speeds. The transmission shall be the manufacturer's standard design providing not less than the number of transmission forward speeds specified. The transmission for Type IV Dumps shall be Eaton Roadranger 8LL, or equal.

3.4.5.1 TRANSFER CASE.

On 6X6 vehicles a two-speed transfer case shall be furnished. Unless the transfer case is equipped with devices which compensate for differential torque and speeds between front and rear axles, the transfer case shall provide for driver selection of either four-wheel or six-wheel drive. When furnished, inter-axle compensating devices shall provide for positive

transfer of power to all driving axles. The speedometer shall read accurate vehicle speed with the transfer case speed selector in high and in low range. An overlay on the speedometer face may be utilized to indicate accurate speed in low range.

3.4.5.2 CLUTCH.

The clutch shall have a torque capacity exceeding the maximum delivered engine torque. The clutch lining shall be asbestos free. The clutch shall be equipped with spring dampening and a greaseable bearing.

3.4.5.3 AUTOMATIC TRANSMISSION.

When specified, Code 3000, 4000, or 4500 (see 6.2), the vehicle shall be provided with an automatic transmission. The transmission shall include a hydraulic torque converter and not less than five forward gear ratios. Normal driving range selector position shall provide not less than five gear ratios without movement of the selector. The transmission shall be provided with a power takeoff opening. The net torque capacity and the net power rating of the transmission shall exceed the output ratings of the engine.

3.4.5.3.1 FULLY AUTOMATED MECHANICAL TRANSMISSION.

When code TMA is specified, the vehicle shall be furnished with a shift by wire, fully automated mechanical transmission (two pedal vehicle operations). The transmission shall utilize a mechanical clutch and provide a power takeoff opening. The input torque capacity of the transmission shall be at least equal to the maximum torque delivered by the engine. Transmission shall utilize SAE J-1939 protocol and be compatible for interface with electronic engine.

3.4.6 DRIVELINE COMPONENTS.

Driveline components shall be rated to transmit the maximum delivered torque of the engine, as developed through the maximum gear train reduction. Drivelines shall be balanced and free of vibration.

3.4.7 FRAME.

The chassis frame shall be the manufacturer's standard for the type and class vehicle furnished. Type III stake dump truck, Type IV dump truck, and when code FHD is specified for other vehicle types, a heavy duty main frame or frame with reinforcement extending at least from the rear of the front suspension, rear hanger bracket to the bogie trunnion mounting bracket shall be furnished. The heavy duty frame shall have frame rails of greater section modulus than the standard for the class vehicle furnished and shall provide structural strength at least equivalent to the reinforced frames specified herein for the type vehicle furnished. Reinforcement for Type III stake dump and Type IV dump shall provide sufficient structural strength in the chassis frame through increased resisting bending moment (RBM) to at least equal the loads imposed, with the vehicle loaded to specified GVW. When a RBM is specified in procurement documents, any frame combination of yield strength and section modulus that provides the required RBM is acceptable. Chassis frame rails shall not project beyond the rear end of the body. Unless otherwise specified, on Type II truck tractors, the chassis frame rails shall be cut off immediately to the rear of the rear spring rear hanger brackets or the frame crossmember closest to the rear of these brackets. When code FTR is specified, the frame rails shall extend and shall taper from maximum cutoff position so as to assist in coupling to a semitrailer. When code FFE is specified, an integral front frame extension, minimum 457 mm (18 inches) ahead of grille, shall be provided to accommodate installation of pumps, winches, or other equipment. The radiator and hood shall be compatible for the installation of a front crankshaft PTO, and a stationary grill shall be furnished. The FFE bumper shall be the chassis manufacturer's swept-back full width channel front bumper.

Figure IV Minimum RBM when FHD is required.

Class	RBM Minimum – IN./LB.
B and C	1,800,000
D	2,370,000
E	2,700,000
F and G	as required

3.4.8 SUSPENSION.

The vehicle shall be equipped with the manufacturer's standard or optional suspension system on the front axle. The rear suspension on all vehicles, except Type II, shall be the manufacture's standard or optional on/off road suspension. Type II vehicles shall be furnished with the manufacturer's standard suspension, unless otherwise specified. When code SHR is specified, Type II vehicles shall be furnished with manufacturer's standard or optional on/off road suspension. Except as specified in 3.2.6.1 and 3.5.4.8.1, components shall have a rated capacity at least equal to the load imposed on each member, measured at the ground, with the vehicle loaded to specified GVW. Hydraulic double-acting shock absorbers shall be provided on the front axle when the front axle rating is 5450 kg (14.000 pounds) or less.

3.4.8.1 REAR AIR SUSPENSION.

When code SAR is specified, an air suspension system shall be furnished on the rear axles. An air suspension system shall not be furnished on Type IV dump trucks. The air suspension system shall incorporate at least two track bars to control lateral movement. Each end of the track bars and of the torque rods, if so equipped, shall be equipped with rubber bushings that do not require periodic lubrication. The suspension system shall incorporate leveling valve(s) with time delay or other devices to minimize constant air consumption. On Type II truck tractors, the system shall be equipped with an air pressure dump valve. Controls shall be located in the cab accessible to the seated driver, hydraulic double acting shock absorber(s)) shall be provided near each of the air springs. The air suspension system shall include mechanisms to prevent damage from excessive extension when jacking and towing the vehicle. The suspension shall be provided with a mechanism at each wheel to ensure lift-

ing of the wheel and axle when jacking the vehicle from the applicable jacking location.

3.4.9 AXLES.

Except as specified in 3.2.6.1 and 3.5.4.8.1, axle ratings shall be at least equal to the load imposed on each axle, measured at the ground, with the vehicle loaded to specified GVW. The wheel bearings and axle spindles shall be oil lubricated. The hubcaps, except for driving axles, shall have a window for visual determination of oil level. Provisions for venting or withstanding internal pressure buildup and for replenishing the oil supply shall be provided. When code WSB is specified, front axles shall be setback configuration and distance between front bumper and centerline of front axle shall be not less than 99 cm (39 inches). Gear ratios shall provide the performance specified in 3.3.1. When code LS12 is specified, the vehicle shall be equipped with a liftable auxiliary suspension and steerable axle located forward of the leading tandem axle. The auxiliary suspension and axle shall have a rated capacity of not less than 12,000 lb. The suspension shall be equipped with dual air spring lifting devices with controls located inside the cab. The in cab controls shall consist of a switch to raise and lower the suspension, and adjustable air regulator for controlling the downward air pressure and a air pressure gauge to monitor the downward air pressure. Additionally, the suspension shall be equipped with a reverse lock out feature that automatically raises the suspension when the vehicle is moving in reverse. The axle shall be equipped with dual self-centering stabilizers, 15" x 4" s-cam brakes with automatic slack adjusters. The axle shall be fitted with single tire and wheels to match those on the vehicle. When code LS12 is specified, GVW will increase proportionately. When code LS20 is specified, the vehicle shall be equipped with a liftable auxiliary suspension and axle located forward of the leading tandem axle. The auxiliary suspension and axle shall have rated capacity of not less than 20,000 lb. The suspension shall be equipped with dual air spring lifting devices with controls located inside the cab. The in cab controls shall consist of a switch to raise and lower the suspension, an adjustable air regulator for controlling the downward air pressure and an air pressure gauge to monitor the downward air pressure. The axle shall be equipped with 16.5" x 7" brakes, automatic slack adjusters, and type 24 brake chambers. The axle shall be fitted with dual tires and wheels to match that on the vehicle. When code LS20 is specified, GVW will increase proportionately.

3.4.9.1 REAR BOGIE.

A rear bogie of the four-wheel type, complete with axles, springs torque rods and all other necessary parts shall be provided. The bogie shall be provided with means permitting differential action between the two axles, and a manually or automatically controlled lockout assuring equal power to each rear axle. The manual lockout control used shall be located in the truck cab. Axle gear ratios shall provide performance specified in 3.3.1 through 3.3.1.3.

3.4.9.2 TRACTION CONTROL.

Traction control shall be furnished for all Type IV dump trucks and shall be either ATC or D3 for both rear axles. For other vehicle types, ATC, D1 or D3 shall be furnished, when specified. When code ATC is specified, automatic traction control through the ABS system shall be supplied. When code D1 is specified, a driver controlled full locking main differential shall be furnished on the rear axles. When code D3 is specified, the traction control may be on either rear axle and shall actuate automatically to ensure that power is transmitted to the wheels having traction when the opposite wheel loses traction. Maximum traction capabilities, regardless of system used, shall be maintained at all times under each drive wheel of the controlled axle for the life of the vehicle.

3.4.10 WHEELS, RIMS, TIRES, AND TUBES.

Unless wide base tires are specified, the vehicle shall be equipped with single front and dual rear wheels. Rims and tire ratings shall conform to Tire and Rim Association or European tire and Rim Technical Organization recommendations, for the type and size of tires furnished. Tire and rim sizes shall be the same for all wheels on each vehicle, except for tire and rim sizes on Classes D, E, F, and G. When code HF is specified, wide base type tires and wheels for the front and rear axles shall be provided in lieu of conventional front and dual rear wheels and tires. For Class C, wide base wheels shall be interchangeable without the use of an adapter. The front track of wide base tires shall be within plus or minus 25 cm (10 inches) of the rear track. Unless otherwise specified, disc type wheels shall be furnished. Hub-piloted wheels shall be provided. Tires and wheels supplied shall be speed rated the same as or higher than the maximum geared road speed of the vehicle at engine manufacturer's recommended maximum governed speed (RPM) for engine furnished.

3.4.10.1 TIRES.

Tires shall be steel belted radial ply. Tires shall have highway tread on 6X4 vehicles, the rear axles of dump trucks shall have Goodyear G244MSD, Michelin XDE M/S or equal tires supplied by chassis OEM. All axles of 6X6 vehicles and when code MS is specified, rear axles on other 6X4 vehicles shall have, tire manufacturer classified, on / off highway tread tires. Unless otherwise specified, standard profile tires shall be furnished. When code SLP is specified, low profile tires shall be furnished. Tires shall be of the tubeless type. Except as specified in 3.2.6.1 and 3.5.4.8.1, tires shall be of rated capacity at least equal to the load imposed on each tire, measured at each wheel at the ground, with the vehicle loaded to the specified GVW. Tires and wheels supplied shall conform to Tire and Rim Association or to the European Tyre and Rim Technical Organization recommendations. Tires and wheels supplied shall be speed rated the same as or higher than the maximum geared road speed of the vehicle at engine manufacturer's recommended maximum governed speed (RPM) for engine furnished.

3.4.10.2 CARRIER FOR SPARE TIRE ASSEMBLY.

When code STC is specified, a carrier for a spare wheel and tire assembly shall be installed in a readily accessible location on the vehicle. Threaded fasteners, when used to secure the spare tire in the carrier, shall be constructed of or plated with corrosion-resistant material. Carrier design shall enable

safe removal or mounting of a spare wheel assembly using only the tools specified in 3.4.16.1. The carrier shall enable the safe removal and installation of the spare tire assembly from and to the vehicle and carrier without personnel positioning themselves or any part of their body under the spare tire assembly. When code VMS is specified for Type II truck tractor or Type IV dump, it shall be mounted vertically behind the cab above the chassis frame. When code VMS is specified for Type III stake, the carrier shall be mounted on the front rack or bulkhead.

3.4.10.3 SPARE TIRE ASSEMBLY.

When code STA is specified, a spare tire assembly shall be furnished for the front axle. When code STB is specified, a spare tire assembly shall be furnished for the rear axle. The spare tire assembly shall be identical to those on the axle for which it is intended. The spare tire assembly shall include an inflated spare tire mounted on the spare wheel or rim.

3.4.10.4 TIRE CHAIN CLEARANCE.

Tire chain clearance in accordance with SAE J683 shall be provided. Allowance for spring deflection shall be included.

3.4.10.5 AUTOMATIC TIRE CHAINS.

When code AICE is specified, the vehicle shall be equipped with automatic tire chains on the rear axle (option available only on vehicles with air brakes). The automatic tires shall be permanently mounted to the rear suspension. Controls to engage and disengage the chains shall be located in the cab, and be easily accessible to the seated driver. Activation of the chains shall be accomplished without stopping the vehicle, to enhance braking and traction in forward and reverse speeds. When activated the chains shall provide improved traction under tires on the rear axle. Installation of the automatic chains shall be in accordance with the application requirements of the manufacturer of the automatic tire chains.

3.4.10.6 CENTRAL TIRE INFLATION SYSTEM.

When code CTIS is specified, a central tire inflation system shall be furnished. The system shall include but not be limited to the following components:

A) 850 L/min (30 CFM) air compressor with 14 liter engines and above; 453 L/min (16 CFM) with engines between 10 liters and 14 liters; and 373 L/min (13.2 CFM) with engines less than 10 liters.

B) Compressor with automatic moisture ejector.

C) Axles compatible with installation of CTIS.

D) 10 hole disc type wheels, all axles

E) Front axle - standard profile tires with highway type tread (low profile acceptable on 18000/20000 lb axles).

F) Rear axle - standard profile tires with traction type tread.

G) Electronic Control Unit (ECU)

H) Operator Control Panel (OCP)

I) Pneumatic Control Unit (PCU)

J) Distribution Manifold (DM)

K) Wheel Valves

L) Pressure Switch

M) Speed Sensor

N) Air Lines

O) Wiring Harness

The system shall allow the driver to adjust vehicle tires to any of four pre-set tire pressures (highway and off-highway for both loaded and unloaded conditions) on up to three separate channels (steer/drive/trailer) and shall include an Emergency key and a Run Flat key. System shall provide for manual tire inflation/deflation capability, an air priority system, and speed/pressure control and warning at OCP.

3.4.11 BRAKES.

Brakes shall conform to Federal Motor Carrier Safety Regulations 393.40 through 393.42(b)), 393.43, and 393.43 through 393.52. Brake linings shall be of nonasbestos material.

3.4.11.1 SERVICE BRAKES.

The vehicle shall be equipped with full air brakes on all wheels. The braking system complete with all necessary components shall include:

(a) Air compressor, unloader-head type, engine driven and engine lubricated, air or water cooled, and having a capacity of not less than 340 L/min (12 cubic feet per minute) (cfm).

(b) Air storage reservoir(s), each tank equipped with drain, and with safety and check valves between the compressor and the reservoir tank.

(c) Foot control, suspended or treadle type.

(d) Air control valves.

(e) Air pressure gauge visible to the driver.

(f) Low air pressure warning, visible and audible.

(g) Service brake stop lamp switch.

(h) Automatic moisture ejector on air storage reservoir.

(i) For vehicles with rear axles rated at 20,900 kg (46,000 pounds) or less, automatic slack adjusters on cam type brakes or internal self-adjusting brakes on wedge and disc type brakes on all axles.

(j) Brake dust shields on rear axles.

(k) Spring set parking brakes shall be furnished on both rear axles.

All components of the braking system shall be installed in such a manner as to provide adequate road clearance when traveling over uneven or rough terrain, including objects liable to strike and cause damage to the brake system components. No part of the braking system shall extend below the bottom of wheel rims, to insure, in case of a flat tire, that the weight of the vehicle will be supported by the rim and the flat tire and not be imposed on any component of the braking system. Slack adjusters and air chambers shall be located above the bottom edge of the axle carrier.

3.4.11.1.1 AIR DRYER.

An air dryer with replaceable spin on/off desiccant cartridge shall be installed in the air brake system. The dryer shall have the capability of removing not less than 95 percent of the moisture in the air being dried. The dryer shall have a precooler and a filter to screen out oil and solid contaminants. The dryer shall have an automatic self-cleaning cycle and a thermostatically controlled heater to prevent icing of the purge valve. Air dryer shall conform to TMC RP 637.

3.4.11.2 TRAILER BRAKE CONTROL SYSTEM.

In addition to the components specified in 3.4.11.1 and 3.4.11.1.1, a trailer brake control system shall be furnished for Type II truck tractor and, when a trailer towing package is required (see 3.1.1.8). The trailer brake control system shall include:

(a) Identification of emergency and service lines.

(b) Coincident control of trailer brakes with prime mover foot control.

(c) Independent hand control for trailer brakes.

(d) Prime mover protection valve with dash control and automatic breakaway feature.

(e) Trailer stoplight control operable with foot brake and with hand control for trailer brakes.

(f) Two SAE J844 coiled (or when specified (see 6.2), straight) air hoses, not less than 2800 mm (110 inches) long when fully extended with SAE J318 glad hand couplers on both ends of hoses (not required for Type II truck tractor unless a trailer towing package is specified). The hoses shall be packaged and stowed in the vehicle tool compartment for shipment.

(g) Air connectors for trailers with SAE J318 glad hand couplers mounted at the rear of the vehicle located to prevent interference with the trailer (not required for Type II truck tractor unless a trailer towing package is specified). Air connectors and glad hands on Type IV dump trucks shall be located to prevent damage during dumping of the cargo.

(h) Two, SAE J844 coiled connecting air hoses, not less than 2800 mm (110 inches) in length when fully extended, equipped with coiled spring hose guards. SAE J318 glad hand quick connector on trailer end of hoses (Type II truck tractor only).

(i) Unless otherwise specified, supports on the cab or on a pogo stick type hose tender with dummy glad hand connectors to retain hoses when not in use (Type II truck tractor only). Supports shall not be mounted on the cab roof. The dummy glad hand connectors shall be located on the street side rear of the cab and shall be accessible to an operator standing on the ground. Supports shall conform to TMC RP 417.

(j) Dummy glad hand couplers with security chains or cables (not required for Type II truck tractor unless a trailer towing package is specified).

(k) Prime mover only parking brake valve to permit prime mover parking brakes to be applied while charging the trailer air brake system.

3.4.11.3 BRAKE CONTROLS FOR USE FROM A TOWING VEHICLE.

When code TBT is specified, the vehicle shall be furnished with a system for controlling the brakes from a towing vehicle (wrecker). The installation shall be complete with air brake couplers, relay emergency valve with no-bleed-back feature (except when spring applied emergency brakes are furnished), additional air lines and fittings. The service and emergency couplers shall be mounted on the front in a protected position providing for ready attachment of air hoses from a towing vehicle. The service and emergency couplers shall be identified and provided with dummy glad hand couplers with chains. The system shall not compromise conformance to any Federal Motor Carrier Safety Regulation referenced herein or to any Federal Motor Vehicle Safety Standard.

3.4.11.4 INCREASED BRAKING CAPABILITY.

When specified (see 6.2), the service brakes shall be augmented by one of the following braking systems:

(a) An electromagnetic or hydrodynamic driveshaft retarder (code EDR);

(b) A system which opens all or some of the engine exhaust valves near the end of the compression stroke, thereby converting vehicle motion to a pumping loss (code ECB);

(c) A controlled gate valve in the exhaust manifold, which produces back pressure on the engine pistons during the exhaust stroke (code EXB); or

(d) When an automatic transmission is specified, a hydrodynamic retarder integral with the transmission (code T1).

A dash mounted switch shall be provided to activate, modulate, or cut out the brake augmentation. The switch shall be marked to indicate its position. When active, the system shall

be fully controlled by means of the conventional driving controls to apply retardation during vehicle deceleration, and to cut it out in the other operating modes. For (b) and (c) above, the retarder shall be approved by the engine manufacturer.

3.4.11.5 ANTILOCK BRAKE SYSTEM.

Antilock brake system shall be furnished. The antilock brake system shall directly control the wheels of the front axle and the wheels of at least one rear axle of the vehicle with no more than two wheels being controlled by one controlling output device. The wheels of at least one axle shall be independently controlled. Type II truck tractors shall have the SAE J560 seven pin connector wired to conform to TMC RP 137. Antilock brake system shall comply with FMVSS 571.121.

3.4.12 CAB.

Unless otherwise specified, the chassis manufacturer shall furnish a medium length, full width (see 3.2.9), conventional cab with a BBC of 105 to 114 inches. Unless otherwise specified, a cab with a forward tilting hood and fender assembly, including tilting and locking mechanism, shall be furnished. Tilting shall not interfere with installations of additional equipment, such as a snowplow or a front mounted winch. When a snowplow or snowplow provisions are specified, service hatches or access hoods shall be furnished as necessary to provide access for routine engine maintenance with a snowplow attached. When code CSN is specified, a conventional short length nose cab with BBC of 94 to 101 inches shall be provided. When code CLN is specified, a conventional long length nose cab with BBC of 116 to 124 inches shall be provided. When code CE is specified a conventional, chassis OEM, extended cab having an inside length (from firewall to back of cab) of not less than 78 in or more than 81 in. and meeting all other requirements of this paragraph and 3.4.12.1 shall be provided. When code COE is specified, a tilt cab with tilting and locking mechanism shall be furnished. Tilt cab features shall be in accordance with the Employee Safety and Health Standards of the Federal Motor Carrier Safety Regulation 399, including the first step height, which shall be not more than 610 mm (24 inches). Both cab doors shall be equipped with locks, operable from inside the cab through mechanical linkages, and equipped with external key-operated locks. Drip protection shall be provided above the cab doors. Safety grips or grab handles shall be provided on each side of cab to assist personnel in entering and leaving the cab and in addition, for Type II truck tractor, to assist personnel in climbing onto the truck tractor deck plate, in accordance with TMC RP 404B. When the front tires extend beyond the cab fenders, rubber fender extensions extending at least to the outside of the tire tread shall be furnished. For tilt type cabs, provisions to facilitate cleaning the windshield shall be provided by means of a bumper step, or bumper step cutouts, and a grab handle located under the windshield. Cab equipment shall include: a 12-volt electrical power outlet, easily accessible to the seated driver; and tinted glass in all windows, where optionally available from the chassis manufacturer. A rear cab window shall be furnished, unless a sleeper compartment is specified.

3.4.12.1 CAB INTERIOR.

Unless otherwise specified, the cab shall have an upholstered, full width, adjustable seat and back or individual, adjustable, driver's seat and individual passenger seat. When code DSS is specified, the driver's seat shall be the manufacturer's standard, high back, air ride suspension type, and an individual high back passenger seat shall be provided. When code DSS2 is specified, the driver seat and the passenger seat shall conform to the requirements of code DSS. The color of the upholstery and the interior finish shall be compatible with the exterior color (see 3.1.1.1). White upholstery shall not be furnished. Interior lighting shall be provided. Two pairs of seat belts shall be installed. Outboard seats shall have combination pelvic and upper torso restraint seat belts.

3.4.12.2 CREW CAB.

When code CC is specified, except for Classes E, F, and G, a four-door, full width crew cab shall be furnished in lieu of the standard full width cab. The cab shall be equipped with two upholstered, full width seats and backs. The front seat shall be adjustable. Three pairs of seat belts shall be installed for both the front and rear seats. Outboard front seats shall have a combination pelvic and upper torso restraint seat belt. The cab doors shall be equipped with locks operable from inside the cab through mechanical linkage, with both front doors equipped with an external key operated lock. Cab doors shall have windows with crank operated window regulators. A rear window shall be provided. Interior lighting shall be provided. Safety grips or grab handles shall be provided at each door of the cab to assist personnel climbing into the cab and in addition, for Type II truck tractors, to assist personnel in climbing onto the truck tractor deck plate. The cab roof shall be of one-piece construction; or, if welded, the roof shall give the appearance of one piece, with weld seams being continuous, waterproof, and free of visible bumps or protrusions. Full length drip moldings shall be mounted above the doors.

3.4.12.3 CREW CAB SEAT SPACING.

With the front seat adjusted to the extreme forward position, there shall be not less than 760 mm (30 inches) measured in a horizontal plane, between the front of the rear seat back and the rear of the front seat back. A kick-space height of not less than 70 mm (2-3/4 inches) shall be maintained between the floor and the rear of the front seat in all positions of adjustment. Leg room and space forward of the front seat shall be equivalent to that provided ahead of the seat in a two-door standard cab.

3.4.12.4 SLEEPER CAB.

When code SLP1 is specified, in addition to the requirements of 3.4.12 and 3.4.12.1 a sleeper cab shall be furnished. The sleeper compartment shall be not less than 914 mm (36 inches) in depth and fitted with a foam or inner spring mattress not less than 863 mm (34 inches) in depth, and a sleeper occupant restraint system. A luggage compartment with locking access doors on each side of the cab shall be provided. Curtains and a dome light shall be provided. The sleeper compartment shall have heating and air conditioning. Auxiliary air temperature controls or louvers shall be furnished in the sleeper compartment. The controls

or louvers shall provide for remote regulation of both heating and air conditioning from within the sleeper compartment. When code SLP2 is specified, a 1524 mm (60 inches) deep sleeper compartment or a 1371 mm (54 inches) deep sleeper compartment that is an integral part of the cab shall be furnished.

3.4.13 STEERING.
Power steering shall be furnished.

3.4.14 WINDSHIELD WIPERS AND WASHERS.
The vehicle shall be equipped with dual windshield wipers and windshield washers. Windshield wipers shall be of the multispeed, intermittent type operated by electric motor(s).

3.4.15 BUMPER.
Unless the bumper is an integral part of the vehicle cab, a channel type front bumper shall be provided on every vehicle, except when a front mounted winch is furnished.

3.4.15.1 REAR END PROTECTION.
The rear end of Type III stake trucks shall be protected in accordance with Federal Motor Carrier Safety Regulation 393.86. A rear bumper shall be provided as specified herein for the various vehicle types.

3.4.16 TOOL STOWAGE.
Stowage space of sufficient size to accommodate a vehicle jack, hand tools, anti-skid chains (for outside tires on duals only) and emergency reflective triangles shall be furnished. The stowage space shall provide for positive retention of this equipment during vehicle operation. Stowage space for these tools may be furnished in the cab. When stowage space for these tools is located outside the cab, it shall be weatherproof, and shall provide for locking with a padlock or an integral lock.

3.4.16.1 TOOLS.
When code TJ is specified, tools for changing a mounted tire assembly with the spare assembly shall be provided. Tools shall include at least a hydraulic jack, jack handle, and wheel nut wrench. The jack shall be of such closed height as to permit its location under an axle, or other satisfactory lift point, at any wheel with the tire flat. The jack, without blocking, shall be capable of raising any wheel of the loaded vehicle to a height adequate to permit removal and replacement of a wheel and tire assembly.

3.4.17 HEATER AND DEFROSTER.
A hot water heater shall be provided. The heater shall have fresh air intakes. Discharge outlets shall be provided to direct heated air to the floor and to defroster louvers. The heater shall be complete with blower and mounted controls convenient to the driver. Heaters for civil agency contracts shall have a minimum of 5880 W (20,000 British thermal units per hour) (Btu/hr) capacity.

3.4.18 CONTROLS AND OPERATING MECHANISMS.
All controls and operating mechanisms shall be located for left hand drive. Controls shall be complete and conveniently operable by the driver. Lever controls shall be designed and located to permit easy entrance and exit of the operator to and from driver's compartment. Instruments and controls shall be identified as to their function and installed in a manner to facilitate removal and servicing. Instruments shall be visible to the driver when seated in the driving position.

3.4.19 ACCESSORIES AND EQUIPMENT.
Chassis equipment shall be complete with all accessories furnished as standard equipment by the manufacturer. The following minimum equipment shall be furnished:

(a) Key operated ignition switch.

(b) Ammeter or voltmeter.

(c) Fuel gauge.

(d) Oil pressure gauge.

(e) Engine coolant temperature gage.

(g) Speedometer with recording odometer.

(h) Dual sun visors.

(i) Driver's compartment ventilator other than window.

(j) Tachometer.

(k) Front door or seat mounted armrest on driver and on passenger side.

(l) An engine shutdown system shall be provided. The engine shutdown system shall include an engine coolant temperature, engine coolant level and engine oil pressure red indicator warning light and alarm buzzer. This warning light and alarm buzzer actuation shall precede engine shutdown. The system shall permit engine restart and run for approximately 30 seconds following automatic shutdown.

(m) When code SK is specified, odometer shall show cumulative distance in kilometers.

3.4.20 REARVIEW MIRRORS.
Outside rearview mirrors shall be mounted on both sides of the cab. The mirrors shall have flat and convex areas. The flat portion shall have not less than 320 square centimeters (50 square inches) of reflective area. The convex portion shall have not less than 155 square centimeters (24 square inches) of reflective area. The convex portion shall be attached to the lower mirror supporting arm and shall not interfere with use of the flat mirror. When code RM3 is specified, the curbside flat mirror shall be of the motorized type, with remote control. The mirror motor shall provide not less than 60 degrees horizontal rotational viewing range. Code RM3 shall include the requirements for RM4. When code RM4 is specified, the flat mirrors shall be electrically heated. Mirror remote and heating controls shall be within reach of the seated driver.

3.4.21 HORN.
The manufacturer's standard electric horn shall be furnished, and in addition an air operated horn shall be furnished.

3.4.22 ENGINE HOUR METER.
When code EHM is specified, an engine hour meter having a totalizing mechanism of not less than 9,999 hours shall be furnished for the chassis engine to register accurately the number of hours of operating time. The meter shall be of rugged construction to insure continuous trouble-free performance under severe operating conditions. The engine hour meter shall be mounted on the cab instrument panel or in the engine compartment in a readable location.

3.4.23 BACKUP ALARM.
When code BUA is specified, an alarm shall be provided which provides an audible warning whenever the ignition switch is "on" and the vehicle transmission control is in reverse. The alarm shall automatically adjust to ambient noise levels. Alarm shall conform to SAE J994. Note: Code BUA is required for all Type IV dump trucks.

3.4.24 AM/FM RADIO.
The original equipment manufacturer's standard AM/FM radio with clock shall be provided. When code RACS is specified, an integral stereo cassette player shall be furnished in the AM/FM radio. When code RAD is specified, an integral stereo compact disc player shall be furnished in the AM/FM radio.

3.4.25 AIR CONDITIONING.
The vehicle shall be equipped with the manufacturer's standard air conditioning system. The air conditioning system shall include tinted windshield and tinted glass. CFC and HCFC refrigerants shall not be acceptable. Air conditioning system shall conform to TMC RP 418. When code DA is specified, air conditioning system shall not be required.

3.4.26 EXHIBIT OR DISPLAY TRUCK TRACTOR PACKAGE.
When authorized by agency or departmental procurement documents and when specified (see 6.2), Type II truck tractor shall be furnished with an exhibit or display package. The package shall include a chrome plated or stainless steel exhaust shield and tail pipe; polished aluminum wheels; polished aluminum or polished stainless steel fuel tanks and fuel tank straps; polished aluminum, polished stainless steel or chrome front bumper; and polished aluminum or polished stainless steel quarter fenders.

3.4.27 FRONT MOUNTED WINCH.
When code MHW is specified, a winch assembly mounted on the front of the vehicle and powered by the manufacturer's standard power takeoff or powered hydraulically shall be provided. If hydraulically powered, the hydraulic system shall comply with the requirements in paragraph 3.1.1.17. The winch shall conform to SAE J706. The winch shall be of the single drum type and shall have one forward and one reverse speed. All winch controls shall be mounted inside the cab. Winch controls shall be located to provide no interference with the entrance or exit of the driver. The winch shall have a rated single line pull capacity of not less than 89 kN (20,000 pounds) pull on the bare drum. The winch line speed on the bare drum shall be between 4.6 and 9.1 m/min (15 and 30 feet per minute) at an engine speed equal to 35 percent of engine governed speed. The winch shall be wound with not less than 56 m (185 feet) of 16 mm (5/8-inch) diameter, preformed, 6x37, improved plow steel, independent wire rope core (IWRC) and shall be equipped with end chain and hook. An integral, adjustable, automatic safety brake shall be provided. The winch shall be equipped with a roller guides.

3.4.27.1 WINCH DRUM GUARD.
A winch drum guard shall be furnished. The guard shall confine the cable to the area between the drum flanges. The guard shall consist of not less than 6.4 mm (1/4-inch) vertical side plates, conforming to the outside radius of the drum flanges. Six bars, 9.5 mm (3/8 inch) by 32 mm (1-1/4 inches) shall be welded to the vertical side plates. Three bars shall be located on the top and spaced equally on the top radius, and three bars shall be located on the bottom and spaced equally on the bottom radius. The vertical distance between the vertical side plates and the drum flanges shall be not more than half the specified cable diameter. Angles of the winch driveline U-joints shall be not more than 16-1/2 degrees.

3.4.27.2 FRONT BUMPER.
When a front mounted winch is specified, the bumper shall be mounted forward of the winch. The open area on either side of the winch shall be covered with a combination step plate and gravel guard. The bumper shall be either a channel (see 3.4.15), or a pipe type. When a pipe type front bumper is furnished, the nominal diameter shall be not less than three inches, and the wall thickness shall be not less than that specified in Schedule 40 of ASTM A53. The pipe type front bumper shall have half-round ball ends.

3.4.27.3 COMBINATION STEP PLATE AND GRAVEL GUARD.
When a front mounted winch is specified, a combination step plate and gravel guard shall be furnished. The step plate shall be fabricated of not less than 14 gauge (1.897 mm) (0.0747 inch) steel tread plate exclusive of projections. The step plate shall be secured to the front bumper and shall be not less than 6.4 mm (1/4 inch) or not more than 9.5 mm (3/8 inch) from the chassis sheet metal. The step plate shall be capable of supporting 1460 kg/m^2 (300 pounds per square foot). The step plate shall not deflect more than 3.2 mm (1/8 inch) under the loads imposed.

3.4.28 SERVICING AND ADJUSTING.
Prior to acceptance of the vehicle by the Government inspector, the contractor shall service and adjust each vehicle and its mounted equipment for operational use including at least the following: alignment of lights, adjustment of the engine and brake systems; filling and charging of batteries; alignment of front wheels; inflation of all tires; complete lubrication of chassis, engine and running gear with grades of lubricants recommended for the ambient air temperature at the

delivery point; servicing of the cooling system in accordance with 3.4.1.6; and servicing of the windshield washer reservoir with water and appropriate additives.

3.4.29 EMERGENCY EQUIPMENT.

When code FEX is specified, emergency equipment in accordance with Federal Motor Carrier Safety Regulation 393.95 shall be provided. Equipment shall consist of: (a)(2)(i) fire extinguisher, min. 10 B C; (c) spare fuses if electrical overload protection devices is not of the reset type; and (f)(2)(i) reflective triangles, in accordance with TMC RP 403.

3.4.30 PLACARD HOLDERS.

When code FPH is specified, hazardous material placard holders in accordance with 40 CFR Part 172 shall be installed on each side and each end of the vehicle.

3.4.31 SYNTHETIC LUBRICANTS.

When code LSD is specified, differentials shall be furnished with synthetic lubricant. When code LST is specified, the manual transmission shall be furnished with synthetic lubricant. When code TSTF is specified, the automatic transmission shall be furnished with synthetic lubricant. Synthetic lubricants shall be approved by the component manufacturer and furnished by the chassis OEM.

3.4.32 TOOL BOX.

When code BTC is specified, a tool box shall be furnished. The tool box shall provide for storage in addition to that required by 3.4.16. Minimum dimensions shall be 457 mm (18 inches) by 457 mm (18 inches) by 609 mm (24 inches). A door opening size of not less than 482 mm (19 inches) by 330 mm (13 inches) shall be furnished. The tool box shall be fabricated of not less than 14 gage (2.657 mm) (0.1046 inch) steel or of equivalent strength aluminum. The box shall be weatherproof and shall provide for locking. The tool box shall be mounted as close as possible to the rear of the cab, on the curbside of the vehicle.

3.5 VEHICLE TYPES.

The cab-to-trunnion dimensions specified for the various vehicle types may be reduced not more than 50 mm (two inches) when vehicle is furnished with a tilt cab (see 3.4.12).

3.5.1 TYPE I (CHASSIS, WITH CAB).

Type I chassis shall have the usable cab-to-trunnion minimum dimensions specified in Figure V (see 6.2). Usable cab-to-trunnion is determined as the distance from the most rearward vehicle obstruction that would interface with body mounting to the centerline of the trunnion between the two rear axles. Load area for the purpose of determining weight distribution (see 3.2.6) shall be as specified (see 6.2). The chassis shall be suitable for the subsequent mounting of the make, model and type of body and equipment specified (see 6.2). Required (CA) dimension must be specified when the vehicle order is submitted.

Figure V Cab-Trunnion (CA)

CODE	LENGTHS (for fixed body)(select one)	MAXIMUM BODY SIZE
CA1	260/270 cm (101/108 in.)	4.3 m/14 ft.
CA2	300/320 cm (119/124 in.)	4.9 m/16 ft.
CA3	340/360 cm (136/138 in.)	5.5 m/18 ft.
CA4	380/400 cm (150/156 in.)	6 m/20 ft.
CA5	420/440 cm (167/171 in.)	6.6 m/22 ft.
CA8	210/220 cm (83/84 in.)	3.6 m/12 ft.

Specify as needed when other than types covered by Figure V.

3.5.2 TYPE II (TRUCK TRACTOR).

When a hydraulic lift fifth wheel is specified, Type II truck tractor shall conform to 3.5.2.9 through 3.5.2.9.3. When an air operated lift fifth wheel is specified, Type II truck tractor shall conform to 3.5.2.10 through 3.5.2.10.4. Otherwise, Type II truck tractor shall conform to 3.5.2.1 through 3.5.2.6, when specified, 3.5.2.7, 3.5.2.8, and the following. Unless otherwise specified, Type II truck tractors shall be equipped with a fore and aft rocking, 910 mm (36 inch) diameter fifth wheel with forks and semi-automatic lock for SAE J700 kingpin. When code OSW is specified by a Military agency, a Type II truck tractor shall be equipped with a full oscillating 910 mm (36-inch) diameter fifth wheel with forks and semi-automatic lock for SAE J700 kingpin and lockout for locking out side oscillation. The fifth wheel shall be capable of being uncoupled by the operator standing on the driver's side of the vehicle. Uncoupling action shall be protected by a secondary manual lock, which prevents movement of the uncoupling lever until the secondary lock is manually released. The vertical load capacity and the drawbar pull capacity of the fifth wheel shall be not less than the loads imposed with the vehicle loaded to the required GVW and GCW. Unless code OSW is specified, the fifth wheel shall be mounted on an adjustable sliding base with manual release except when an air release (see 3.5.2.7) is specified.

3.5.2.1 FIFTH WHEEL LOCATION.

The clearance from the centerline of the kingpin to the cab, or to the vertical spare tire assembly, when furnished, or to the pogo stick type hose tender, when furnished, shall be not less than 1620 mm (64 inches). When additional equipment to be mounted behind the cab is specified by the procuring activity, the 1620 mm (64 inches) shall be measured to the rearmost point of a pogo stick to be mounted behind the additional equipment. The CT dimension may be increased. Sliding fifth wheels shall be mounted with rear most position dead center of the tandem axle trunnion or tandem load equalization point.

3.5.2.2 FIFTH WHEEL MOUNTING.

Fifth wheel mounting shall conform to Federal Motor Carrier Safety Regulation 393.70(b).

3.5.2.3 FIFTH WHEEL HEIGHT (6X4 TRUCK TRACTORS).

The unladen level height of the fifth wheel shall be 1219 mm (48 inches), plus 25 mm (1 inches), minus 25 mm (1 inch), above ground level for a fore and aft rocking fifth wheel. Height for a full oscillating fifth wheel shall be 1400 mm (55 inches), plus 38 mm (1-1/2 inches), minus 25 mm (1 inch), for Classes B, C, and D: and 1470 mm (58 inches), plus 38 mm (1-1/2 inches), minus 25 mm (1 inch), for Classes E, F, and G.

3.5.2.3.1 FIFTH WHEEL HEIGHT (6X6 TRUCK TRACTORS).

Unless otherwise specified, the unladen level height of the fifth wheel shall be not more than 1520 mm (60 inches).

3.5.2.4 APPROACH RAMPS.

When a full oscillating fifth wheel is provided, approach ramps or plates shall be furnished to give support for the fifth wheel forks and a continuous incline for semitrailer approach. The ramps or plates shall extend from the rear of the chassis frame to the fifth wheel forks. The forward (highest) edges of the approach ramps shall be rounded and smooth.

3.5.2.5 DECK PLATE.

A self-cleaning grating of sufficient structural strength for use by the operator in connecting air and electric lines between the truck tractor and the semitrailer shall be installed. The grating shall extend across and be bolted or clamped to the frame rails. Cab grab handles and steps to allow safe access for personnel climbing onto the deck plate shall be furnished. The grating shall be located as close to the cab as possible and shall extend toward the rear of the vehicle as far as possible. When a hydraulic or pneumatic fifth wheel is specified, the deck plate shall extend rearward to its maximum extent. Access through grating for maintenance of fittings and other equipment shall be furnished. The deck plate shall be free of ragged or sharp exposed edges.

3.5.2.6 HOSE TENDER.

When a tilt type cab is furnished, a pogo stick type hose tender shall be provided behind the cab to accommodate and secure the semitrailer lighting cable and air hoses. A pogo stick shall be provided on all types of cabs and mounted rearward when a rear mounted spare carrier or a rear mounted winch is furnished. When a conventional cab is furnished without a rear mounted spare carrier and without a rear mounted winch, a cab mounted tender specified in 3.4.2.5 may be furnished in lieu of a pogo stick. Hose tender shall conform to TMC RP 417.

3.5.2.7 SLIDING FIFTH WHEEL (AIR RELEASE).

When code ARW is specified, the fifth wheel shall be mounted on an adjustable sliding base. The slide locks shall be of the air release type with controls mounted on the instrument panel. The fifth wheel shall have an adjustment range of not less than 580 mm (23 inches), with adjustment increments of not more than 100 mm (4 inches). The fifth wheel shall conform to 3.5.2 through 3.5.2.6 and all options therein specified in procurement documents. All clearance requirements specified in 3.5.2.1 shall be met with the sliding fifth wheel in the forward most position of adjustment. With the sliding fifth wheel in its forward most position of adjustment, the centerline of the kingpin shall be not less than 380 mm (15 inches) forward of the centerline of the bogie. Sliding positions to the rear of the trunnion between rear axles may be blocked off. For safety, the actuating button in the cab shall be interlocked with the trailer parking brake. When code ARW1 is specified, the truck tractor shall be equipped with an extra HD sliding fifth wheel. The fifth wheel shall have a rated capacity of not less than 75,000 lb. vertical load and 200,000 lb. draw bar. The fifth wheel shall be mounted on an adjustable sliding base. The adjustable sliding base shall have two sets of air operated slide locks, one set forward and one set rearward on the fifth wheel base. The fifth wheel shall conform to 3.5.2.1 through 3.5.12.7. Code ARW is not available with code OSW.

3.5.2.8 TRUCK TRACTOR WIND DEFLECTOR.

When code TWD is specified, a wind deflector shall be installed or shall be furnished with the vehicle for subsequent installation on the cab roof by the receiving activity. The deflector shall be of molded fiberglass reinforced plastic; shall be not less than 1600 mm (63 inches) wide; and unless otherwise specified (see 6.2), shall be of a height suitable for use with the vehicle cab furnished in combination with semitrailer vans having a level height of 3810 mm (12 feet 6) inches at an upper fifth wheel height of 1220 mm (48 inches). Mounting and support ribs and any other components that require installation from the inside of the cab shall be installed by the cab manufacturer. Installation openings shall be sealed to prevent air and water from entering the cab. The deflector, including exterior mounting and supporting hardware, support ribs and installation instructions, shall be securely stowed on the vehicle for shipment. When code AERO is specified, manufacturer's standard aerodynamic package, including as a minimum an aerodynamically faired cab or hood, fender, bumper combination, and side cab extenders.

3.5.2.9 HYDRAULIC LIFT FIFTH WHEEL.

When specified (see 6.2), Type II truck tractor shall be equipped with a hydraulic lift fifth wheel. The vehicle shall conform to the following requirements in lieu of all requirements specified in 3.5.2 through 3.5.2.4. The hydraulic system shall comply with the requirements in paragraph 3.1.1.17. The cab-to-trunnion dimension shall be not greater than 2640 mm (104 inches) for vehicles with a standard cab and not greater than 3380 mm (133 inches) for vehicles with a tilt cab. The hydraulic fifth wheel shall be designed, warranted and marketed for highway use. The hydraulic fifth wheel shall be self-contained, of all steel, with a capacity to lift and support a load of not less than 22,700 kg (50,000 pounds) over a lifting range of at least 300 mm (12 inches) from the lowest to the highest position. Actuation through the full lifting range shall not cause the centerline of the fifth wheel to shift more than seven inches measured along the longitudinal centerline of the vehicle. The fifth wheel shall be of the bolt-on type. The fifth wheel unit shall include a hydraulic system to actuate an elevating platform equipped

with the fifth wheel; shall incorporate a pneumatic system to open a semi-automatic lock for an SAE J700 kingpin; shall include remote controls to permit all operations from within the vehicle cab; and shall include all necessary components, such as pump, hoses and fittings. A manual locking device shall be furnished to lock out lifting capability. A decal or plate conforming to 3.1.1.12 reading "LOCK DOWN FIFTH WHEEL FOR HIGHWAY USE" shall be provided.

3.5.2.9.1 HYDRAULIC LIFT FIFTH WHEEL TYPE.

The hydraulic lift fifth wheel shall be of the fore and aft rocking type with a 910 mm (36-inch) diameter steel coupler plate supplied with beveled approach forks. The fifth wheel mounting shall conform to Federal Motor Carrier Safety Regulation 393.70(b).

3.5.2.9.2 HYDRAULIC LIFT FIFTH WHEEL CLEARANCES, HEIGHT AND LOCATION.

The clearance from the centerline of the kingpin to the cab, or to the vertical spare tire assembly when furnished, or pogo stick type hose tender, with the fifth wheel at all elevated positions, shall be not less than 1520 mm (60 inches). The landing wheel clearance from the centerline of the kingpin to the rear tires and chassis frame rails with the fifth wheel in its lowest position shall be not more than 2030 mm (80 inches). The unladen level height from the ground to top of coupler plate of the installed fifth wheel unit shall be 1270 mm (50 inches), plus or minus 25 mm (1 inch). With the fifth wheel in its lowest position, the vertical centerline of the fifth wheel jaws shall be not less than 200 mm (eight inches) forward of the centerline of the rear bogie.

3.5.2.9.3 DECK PLATE AND HOSE TENDER FOR HYDRAULIC LIFT FIFTH WHEEL.

A deck plate shall be furnished as specified in 3.5.2.5, except the grating shall extend from as close to the cab to as far to the rear as possible. A cab mounted hose tender or a pogo stick type hose tender shall be furnished under the conditions specified in 3.5.2.6.

3.5.2.10 AIR LIFT FIFTH WHEEL.

When specified, (see 6.2), Type II truck tractor shall be equipped with an air lift fifth wheel. The vehicle shall conform to the following requirements in lieu of all requirements specified in 3.5.2 through 3.5.2.4. The cab-to-trunnion dimension shall not be greater than 2640 mm (104 inches) for vehicles with a standard cab and not greater than 3380 mm (133 inches) for vehicles with a tilt cab. The air lift fifth wheel shall be designed, warranted and marketed for highway use. The fifth wheel shall be of all steel construction with a capacity to lift and support a load of not less than 18,150 kg (40,000 pounds) over a lifting range of not less than 280 mm (11 inches), from the lowest to the highest position. Actuation through the full lifting range shall not cause the center of the kingpin lock to shift more than 75 mm (3 inches) measured along the longitudinal centerline of the vehicle. The fifth wheel shall be of the bolt on type. A manual locking device shall be furnished to lock out lifting capability. A decal or plate conforming to 3.1.1.12 reading "LOCK DOWN FIFTH WHEEL FOR HIGHWAY USE" shall be provided.

3.5.2.10.1 AIR LIFT FIFTH WHEEL COMPONENTS.

The air lift fifth wheel shall include at least the following:

(a) Additional air reservoir tank(s), not less than 210 L (7.4 cubic feet) total capacity, equipped with drain, safety and check valves between compressor and tank.

(b) Automatic moisture ejection valve.

(c) Two air starter valves to emit and expel air from the reservoir tank to the air bellows.

(d) Three-way valve, for raising, lowering, or holding the fifth wheel in all desired positions. Valve shall be mounted on the truck tractor instrument panel in a location accessible to the seated driver.

(e) Snubbers to eliminate spring deflection.

(f) Pneumatic system to open and lock the SAE J700-kingpin, operable from the truck tractor instrument panel.

3.5.2.10.2 AIR LIFT FIFTH WHEEL TYPE.

The air lift fifth wheel shall be of the fore and aft rocking type, with a 910 mm (36-inch) diameter cast steel coupler plate with beveled approach forks. The fifth wheel mounting shall conform to Federal Motor Carrier Safety Regulation 393.70(b).

3.5.2.10.3 AIR LIFT FIFTH WHEEL CLEARANCES, HEIGHT, AND LOCATION.

The air operated fifth wheel clearance, measured from the centerline of the kingpin location to the cab or pogo stick, shall be not less than 1620 mm (64 inches). The landing wheel clearance to the vertical plane of the outside edge of the rearmost tire and the chassis frame rails, with the fifth wheel in the lowest position shall be not more than 2030 mm (80 inches). The unladen level height from ground level to the top of the fifth wheel plate shall be 1370 mm (54 inches) plus or minus 25 mm (one inch). With the fifth wheel in its lowest position, the vertical centerline of the fifth wheel shall be not less than 200 mm (8 inches) forward of the centerline of the rear axle.

3.5.2.10.4 DECK PLATE AND HOSE TENDER FOR AIR LIFT FIFTH WHEEL.

A deck plate shall be furnished as specified in 3.5.2.5, except the grating shall extend from as close to the cab to as far to the rear as possible. A cab mounted hose tender or a pogo stick type hose tender shall be furnished under the conditions specified in 3.5.2.6.

3.5.2.11 TRUCK TRACTOR FOR USE WITH FOLDING GOOSENECK SEMI-TRAILERS.

When code GNT is specified for Class G vehicles, the truck tractor shall be fully equipped for use with folding gooseneck semi trailers and shall include a rear winch and all related accessories. The cab-to-trunnion dimension shall be not greater than 3050 mm (120 inches). Otherwise, the truck tractor and accessories shall conform to 3.5.2 through 3.5.2.6.

3.5.2.11.1 REAR WINCH ASSEMBLY.

The winch assembly shall be mounted on the chassis frame behind the cab. The winch shall be operated by a power take-off of the main or auxiliary transmission. The winch controls shall be located in the driver's compartment, accessible to the seated driver. Winch controls shall be located so as to provide no interference with the entrance or exit of the driver. An integral, adjustable, automatic safety brake shall be provided. The winch shall have two forward speeds, a neutral position, and a reverse speed or, if hydraulic, infinitely variable forward and reverse speeds and a neutral position. The winch shall have a single line pull capacity of not less than 133 kN (30,000 pounds) on the bare drum. The winch shall conform to SAE J706. The winch shall be wound with not less than 46 m (150 feet) of 19 mm (3/4-inch) diameter improved plow steel, independent wire rope core (IWRC), regular lay wire rope, equipped with a full capacity clevis hitch and hook eye.

3.5.2.11.2 REAR-MOUNTED FOLDING GOOSENECK SEMI-TRAILER ACCESSORIES.

The following equipment, complete with associated accessories, shall be mounted on the truck tractor:

(a) Rear-mounted tail roller, 200 mm (8-inch) minimum diameter. The installation of the winch drum and tail roller shall provide a clearance of not less than 50 mm (2 inches) between the winch cable and the top of the fifth wheel with the cable extended down over the tail roller as in lifting operations;

(b) A cab protector of sufficient structural strength to protect the back and roof of the cab from a winch cable whip-backlash accident;

(c) Approach ramps designed for lifting folding gooseneck semi trailers onto the fifth wheel with the winch; also for coupling and uncoupling fixed gooseneck semi trailers to and from the tractor;

(d) Fifth wheel tilt limit devices to ensure the fifth wheel will be slightly higher than the top of the approach ramps during loading, unloading, coupling and uncoupling operations.

3.5.2.12 TRUCK TRACTOR FOR USE WITH BOTTOM DUMP SEMI-TRAILERS.

When specified (see 6.2), the truck tractor shall be fully equipped for use with solenoid operated bottom dump semitrailers and shall include an electrical control system and a skid plate. Otherwise, the truck tractor and accessories shall conform to 3.5.2 through 3.5.2.6.

3.5.2.12.1 ELECTRICAL CONTROL SYSTEM FOR BOTTOM DUMP SEMI-TRAILER SOLENOIDS.

The semi-trailer bottom dump gates shall be solenoid operated. Solenoids shall be capable of being activated by switches in the truck tractor cab. The electrical system shall include the following:

(a) Two toggle switches with guards, mounted on the truck tractor instrument panel accessible to the driver in the seated position. Switches and guards shall be Cole-Hersee Part Number (No.) 5582 and Cutler-Hammer Part No. 8497-Kl, respectively. The first switch shall be marked for "Front gate control" and the second switch shall be marked for "Rear gate control." Each switch shall have not less than a 15-ampere rating.

(b) A circuit breaker, located in an accessible location. The circuit breaker shall provide a protective circuit between the switches (see (a)) and to the current supply terminal. The circuit breaker rating shall be not less than 30 amperes.

(c) A No. 12 single wire attached from the circuit breaker to a terminal on the first switch and from the first switch to a terminal on the second switch.

(d) A three-wire conductor cable, Carol Part No. 14-3SJ. The conductor cable shall consist of a green, black and white wire. One end of the conductor wires shall be attached as follows:

(1) Green wire to the second terminal of the first switch;

(2) Black wire to the second terminal on the second switch;

(3) White wire to the ground on the truck tractor.

The other end of the three-wire conductor shall be attached to a four-way socket mounted on the back of the cab. The four-way socket shall be Pollack Part No. 11-410, furnished with a spring loaded cover. The socket, viewed from the exterior rear of the cab with keyed slot at top, shall be connected to the three-wire truck cable as follows: 2 o'clock pin - green (front gate); 5 o'clock pin - black (rear gate); 8 o'clock pin - white (ground); 11 o'clock pin (dead).

(e) The four-way socket shall be mounted at the rear of the truck tractor cab in an accessible location for connecting a plug on the end of a four-wire jumper cable.

(f) A four-conductor jumper cable not less than 3050 mm (10 feet) in length. Each end of the jumper cable shall be provided with a four-connector plug, Pollack Part No. 11-409, for connecting a four-way female socket, Pollack Part No. 11-410, on a semitrailer and the four-way socket on the truck tractor. Each end of the cable shall be furnished with a grip for withdrawing the plug from the socket.

(g) Means shall be provided on the truck tractor pogo stick for suspending the four-conductor, 3050 mm (10 foot) cable, between the four-way socket at the back of the cab and the four-way socket at the front of a bottom dump semitrailer.

3.5.2.12.2 HEAVY DUTY SKID PLATE.

On truck tractors for use with bottom dump semi-trailers, a heavy-duty skid plate protecting the radiator and crankcase from ground contact shall be installed. The skid plate shall be demountable for servicing the engine. Openings shall be provided to enable servicing the underside of the engine.

3.5.2.12.3 CAB PROTECTION RACK.

When code CPR is specified, a cab protection rack shall be furnished behind the cab, and shall not be less than the full width of the cab, or sleeper compartment, if applicable. Cab protector height shall be no greater than a cab or sleeper compartment (plus 0/ minus 2 in.). Cab protector shall permit driver visibility of the vehicle rear frame area through the rear window when a rear window is furnished. Cab protector shall conform to Federal Motor Carrier Safety Regulation 393.106. When code CPR1 is specified, a cab protection rack, with locking chain rack and full-width tool tray (minimum 10 inches high and 8 inches deep) shall be furnished and shall conform to option code CPR. When code AUXL is specified, two auxiliary lights shall be furnished on the cab protection rack. Auxiliary lights shall be mounted at the top corners of the protection rack, but shall not protrude above the rack, and wiring shall be protected. The switch to operate these lights shall be located in the cab and be easily accessible to the seated driver. The lights shall be PAR 36 sealed beams, number 4411-1, 35 watts and shall be mounted in weatherproof, adjustable, rubber automotive housings. Auxiliary lights shall be capable of illuminating the entire frame to the rear of the cab protection rack.

3.5.2.13 INCREASED SWING RADIUS.

When needed for additional equipment to be mounted behind the cab and when specified (see 6.2), the clearance from the centerline of the kingpin as detailed in 3.5.2.1 shall be increased from 1620 mm (64 inches) by the amount specified. Maximum wheelbase and cab-to-trunnion (CT) dimensions may be increased by the manufacturer by a similar amount. The lengths of the semitrailer lighting cable and the air hoses shall be the free length to the rear of the equipment to be mounted. When specified, (see 6.2), the weight distribution of the GVW for the purpose of establishing suspension, axle and tire capacities shall be determined with the additional load specified distributed evenly in the added space behind the cab.

3.5.3 TYPE III (STAKE).

Unless otherwise specified, Type III stake trucks shall have the minimum dimensions specified in Table 3. Other platform lengths with corresponding changes in the cab-to-trunnion dimension and the number of crossmembers shall be furnished, when specified. A rear bumper shall be furnished. The body shall be provided with a steel subframe, a wood platform, and with side and end racks. When code BSR is specified, the center racks on both sides shall be the manufacturer's standard swing type, for easy side loading. Stake racks and platform body shall be painted black. When specified, stake body sizes other than specified in Table 3 shall be required. When specified, the following optional stake body lengths shall be required:

Code B16 4.9 m (16 ft.) length
Code B18 5.5 m (18 ft.) length
Code B20 6 m (20 ft.) length
Code B22 6.6 m (22 ft.) length

3.5.3.1 STAKE BODY FRAME.

Body framing shall be a completely welded structure with members of minimum gauge thickness specified in Figure VI for carbon steel: high tensile steel may be furnished in two gauges lighter weight in accordance with US Standard gage sizes. There shall be not less than 13 full width crossmembers on Class B vehicle, including ends and stub crossmembers as required for proper spacing over axles on a maximum of 406 mm (16 inches). Not less than five additional full width crossmembers on Class B vehicle shall be provided in the area of the rear bogie. The additional crossmembers may be joined by welding to the normally located crossmembers in the rear bogie area. Crossmembers shall be of full channel construction, reinforced by gusset plates or brackets at points of attachment to longitudinal sills. Contact edges of crossmembers with longitudinal sills and contact edges of welded reinforcements shall be welded for not less than 50 percent of the edge length. Longitudinal sills shall be constructed of structural steel channels or formed channels. Formed channel sills shall be reinforced within the sill, at each crossmember or body mounting point, with formed channel reinforcements. Wiring harness across the rear apron shall be enclosed in conduit or polyethylene loom except at terminal ends and shall be secured by rubber insulated metal cable clamps to the under body structure, on not more than 12 inch centers.

Figure VI-Framing gages for stake bodies

Designation	US Standard gauge number	Equivalent millimeters	Equivalent inches
Crossmember	10	3.416	0.1345
Side and end rails	10	3.416	0.1345
Longitudinal sills	8	4.176	0.1644
Reinforcements	8	4.176	0.1644
Rack posts	11	3.038	0.1196
Rack posts with reinforced lower section	12	2.657	0.1046

3.5.3.2 STAKE BODY FLOORING.

Plywood type flooring shall not be acceptable. The platform shall be floored with wood or when specified steel. Wood parts shall be treated in accordance with 3.1.1.5. Wood platforms shall be floored longitudinally with either ship-lap or tongue-and-groove joints. Wood flooring shall be of hardwood or pressure treated dense southern yellow pine, apitong or a similar type hardwood or pine not less than 33 mm (1-5/16 inches) thick (finished dimension). When code BDF3 is specified, Apitong wood flooring shall be furnished. When code BDF2 is specified, a steel diamond tread floor shall be furnished. When code BSF2 is specified, a smooth steel plate floor shall be furnished. Steel floors shall be 4.8 mm (3/16 inch) thick, one or

two-piece diamond tread with additional lateral supports provided at the wheel wells. Two-piece steel floors shall be spliced longitudinally and completely welded the full length of the splice. One completely welded lateral steel floor splice is acceptable. When option code BDF4 is specified, plank material of recycled tire and plastic, Rumber Materials Inc. or equal, shall be furnished. Recycled planks shall be a minimum of 1-1/2 in. tongue-and-grove secured to bed frame with minimum 1/4 in. stainless steel self tapping countersunk screws. The installation procedures and plank width shall be in accordance with the manufacturer's recommendation.

3.5.3.3 SIDE AND END RACKS.

A full width front rack section, not less than three removable rack sections on each side, and two removable rack sections across the rear, shall be provided. Except for swing-out racks, shall be rounded or enclosed to protect cargo and personnel from sharp edges. Slats shall be riveted, bolted or welded to the inside (load side) of the upright posts, with rivets or bolt heads against slat. When welded construction is used, not less than four welds shall be applied at each upright post and slat intersection. The front rack section shall be capable of withstanding a horizontal static load equal to one-half the payload capacity of the vehicle without permanent distortion of the rack section or its mountings. When a hydraulic tailgate of the type that folds against the rear side racks is furnished (see 3.1.1.10.1), the two removable rack sections across the rear of the body are not required and each side rack section at the rear of the body shall be provided with draw-down type of fastening equipped with a locking nut, to secure the side racks in place. When code BBS is specified, a permanently attached front, all steel solid bulkhead, 12-gauge minimum except for screen opening behind the cab window, shall be provided in lieu of the front end racks. When code DBEM is specified, side and end racks shall not be furnished, code BBS shall be furnished.

3.5.3.4 BODY MOUNTING.

The body shall be secured with U-bolts, twin studs, or brackets. Body shall be mounted in full accordance with chassis and body OEM recommended practices.

3.5.3.4.1 U-BOLTS OR TWIN STUDS.

When U-bolts or twin studs are used, there shall be not less than four per side, each having 14 mm (0.563 inch) minimum body diameter with 16 mm (0.625 inch) minimum thread diameter. Tie plates shall be at least 13 mm (0.50 inch) thick and a slight deformation upon assembly is permissible. The vehicle chassis from shall be protected from crushing by using spacer blocks at each mounting point unless mounting point is located at a full depth frame crossmember. Blocks shall incorporate a keeper strap or groove for mounting bolt, and shall be of a width and thickness to assure retention. Two tie back straps shall be provided, on bolted to each side of rear portion of the body subframe, to maintain body alignment on vehicle chassis. Forward body mounting bolts shall be located to the rear of the tapered portion of breaker strips (see 3.5.3.4.3).

3.5.3.4.2 BRACKETS.

When brackets are used, they shall be bolted to the web of the chassis frame rails. The body mounting brackets shall provide means of drawing down the body on the chassis rails and provisions shall be made to prevent lateral shifting of the breaker strips. When additional holes are required to secure mounting brackets to chassis frame rails, they must be located within the area of the rail, which is designated as being safe for drilling in accordance with the chassis manufacturer's body builder's layouts. Attachments shall not interfere with nor obstruct existing chassis components.

3.5.3.5 DUMP STAKE AND PLATFORM.

When code BDS is specified, a dump stake/platform body shall be provided. The stake/platform body shall be as specified in 3.5.3 through 3.5.3.3 for the vehicle class furnished except the rear end racks shall be the manufacturer's standard swing type, hinged to each aide rack. The stake/platform body shall be adequately reinforced to provide support for an evenly distributed payload (GVW minus curb weight and operator weight). The body shall be mounted to a hydraulic hoist unit. Locking devices shall be provided near the center of the rear racks to lock the racks closed and to lock the racks to the body. All locking devices shall be operable from the ground. A rear bumper is not required. When a steel floor is furnished on dump stakes it shall have a smooth finish.

3.5.3.5.1 DUMP STAKE AND PLATFORM BODY MOUNTING ON HOIST.

The body shall be mounted to the hoist unit in accordance with the hoist manufacturer's recommendations and shall be reinforced, when necessary, for added strength on hoist operations. Rear body mounting shall include hinges securely welded to the body longitudinal sills, a connecting cross shaft, and a plate securely bolted to the chassis main frame rails.

3.5.3.5.2 HYDRAULIC HOIST FOR DUMP STAKE AND PLATFORM.

A hydraulic conversion type hoist shall be furnished. Unless otherwise specified (see 6.2), the conversion hoist shall have a minimum lifting capacity rating of Class G for Class B and class H for Class C vehicles. Conversion hoist ratings shall be in accordance with the National Truck Equipment Association Conversion Hoist Chart. The hoist shall be a double acting scissors or double acting, twin telescopic with stabilizer. Hoist cylinder piston rods shall be chrome plated. The hoist shall lift the body to a minimum dumping angle of 45 degrees from the top of the truck chassis frame. The hoist shall be capable of lowering the raised body by gravity when the pump is disabled. The pump shall be the direct mount type eliminating the driveline and U-joints. The power takeoff and valve shall be the manufacturer's standard for the hoist model furnished. The valve and power takeoff controls shall be located in the truck cab and shall be accessible from the driver's seat. The location of the controls shall not interfere with the entry and exit of the driver. The hydraulic system shall comply with the requirements in paragraph 3.1.1.17.

3.5.3.5.3 SAFETY LOCK.

A mechanical safety lock, permanently affixed to the body,

shall be furnished. The safety lock shall provide positive retention of the body in the up position for servicing or repair. The safety lock mechanism shall not interfere with the operation of the body under any operating conditions.

3.5.3.6 STAKE BODY TARPAULIN, BOWS, AND TIEDOWN DEVICES.

When code BTB is specified, the vehicle shall be furnished with a fitted tarpaulin, knockdown type bows, and tiedown devices. The tarpaulin shall be fabricated of number 8 cotton duck conforming to Type I of CCC-C-419, or of vinyl-coated nylon conforming to Type II, Class 2 of MIL-PRF-20696. The tarpaulin material shall be reinforced at the corners and other wear points with patches fabricated of the same base material as the tarpaulin. The tarpaulin material shall be water repellant and fire-resistant. The tarpaulin color shall be olive drab. The rear curtain shall he of the roll-up type. The front curtain shall have a window size of not less than 300 mm by 610 mm (12 by 24 inches) and shall be aligned with the rear window of the vehicle cab. The tarpaulin shall completely cover the entire body and shall extend down the sides, front and rear, with the bows in place, to within 75 mm (3 inches) of the platform. Bows shall be on the outside of the racks and shall be constructed of metal or metal and hardwood components. At least five bows shall he furnished and shall provide an inside height of not less than 1780 mm (70 inches) between the floor of the platform body and the tarpaulin cover at the top. Not less than five evenly spaced tie down devices shall be provided on each side of the vehicle body.

3.5.3.7 STAKE BODY, TYPE III. OPTIONAL, RACKS, TARPAULINS, BOWS, LADDER, SECUREMENT DEVICES, AND CAB GUARD.

When code BTB2 is specified, in lieu of conforming to 3.5.3.3, the Type III, Class B stake truck shall be furnished with a 6100 mm (20 ft) stake body, and with removable racks convertible to seats, a fitted tarpaulin, knockdown type bows, tarpaulin tie down devices, a ladder at the rear of the body, International Standardization Organization (ISO) securing devices, and a cab guard, per 3.5.3.7.8.

3.5.3.7.1 RACKS.

Removable racks shall run the full length of the body on each side. The height of the racks shall be not less than 1220 mm (48 inches) measured from the floor or shall be the height of the top of the cab, whichever is less. Steel upright posts shall be formed into box-section pockets to take top bows. Posts shall have provisions for drainage. Rack slats shall be oak of not less than 19 mm (3/4 inch) finished thickness. Width of individual slats shall be a nominal 75 mm (3 inches). All slat edges shall be beveled or rounded. The top section of the racks shall have the appropriate number of slats with approximately 25 mm (1 inch) spacing between slats, from 430 mm (17 inches) above the floor to the top of the racks. Slats shall be located and evenly spaced on the racks below the 430 mm (17 inch) level above the floor. Each rack shall be equipped with devices to lock the rack to the body and at each top corner to lock the racks together.

3.5.3.7.2 SEATS.

A seat frame system in two nominal 3050 mm (10 foot) sections on each side, hinging at the 430 mm (17 inch), plus or minus 25 mm (1 inch) level above the floor, which forms fold-down seats utilizing three or four of the slats above the hinge shall be incorporated into the side racks. When in folded dawn position, the height of the seats shall be 430 mm (17 inches), plus or minus 25 mm (1 inch), measured from the floor at the front edge of the seat. The seats shall be level, or shall slope down toward the seat back, and shall be supported by folding braces. The seats shall have provisions for locking in the "up" position.

3.5.3.7.3 FRONT AND REAR RACKS.

The front rack section shall be of the same basic construction as the side racks, except without the fold-down seats. The front rack section shall be capable of withstanding a horizontal static load equal to half the payload capacity of the vehicle without permanent distortion of the rack section or its mountings. Two removable rack sections, of the same type of construction as the front section, shall be furnished at the rear of the body.

3.5.3.7.4 UPRIGHT POSTS.

The upright posts and the stake pockets shall be of adequate size and strength to ensure rigid and secure support for the seats and seat backs with twelve 115 kg (250 pound) personnel sitting on each side of the vehicle.

3.5.3.7.5 TARPAULIN, BOWS, AND TIEDOWN DEVICES.

Eight removable bows shall be installed, evenly spaced the length of the body, and shall provide not less than 1780 mm (70 inches) inside height between the floor and the tarpaulin cover at the longitudinal center of the body. The tarpaulin shall be fabricated of number l0 cotton duck conforming to Type I of CCC-C-419. The tarpaulin color shall be dark forest green. The front curtain shall have a window that shall be not less than 300 mm by 610 mm (12 by 24 inches) in size and shall align with the rear window of the vehicle cab. Grommets with rope ties shall be located at the lower edges of the sides and end flaps of the tarpaulin for securing to a tie down device. Rope ties shall a free length of not less than 610 mm (24 inches). Tarpaulin tie down devices on each side of body shall consist of a round steel bar attached to the body crossmembers approximately 100 mm (4 inches) inward from the outer edge of the body. The steel bar shall be the full length of the body. The front and rear tie down devices shall consist of hooks located under the body that do not project beyond the front and rear of the body.

3.5.3.7.6 LADDER.

An aluminum ladder shall be furnished at the rear of the truck. The ladder shall be of sufficient height for personnel to ascend into and descend from the stake body. The ladder shall stow away in a pocket section at the rear of the stake body between the sub frame rails. A lock or latch mechanism shall be furnished to secure the ladder in the stowed position. A stop device shall be furnished which secures the ladder top to the rear of the stowage pocket in operating position and which prevents complete removal of the ladder from the vehicle.

3.5.3.7.7 CONTAINER SECUREMENT DEVICES.

The stake body platform shall have shipment container secur-

ing devices incorporated into each corner. The securing devices shall be of the retractable type that will provide for a flat platform when retracted and not in use. Four securing devices (one at each corner) shall be provided. Securing devices shall be located for the alignment and securing of one ISO freighter container, "1 C" Designator, 6100 mm x 2440 mm (20 feet x 8 feet x 8 feet), as specified in ISO 668, with freight container corner fittings conforming to ISO 1161. The securing devices shall be mounted with reinforcements so as to meet or exceed all the requirements of Federal Motor Carrier Safety Regulation 393.100(e).

3.5.3.7.8 CAB GUARD.

A cab guard shall be mounted at the forward end of the body to protect the cab from damage during a crane lift of a 6100 mm (20 ft) ISO container weighing 11,350 kg (25,000 lb). The protection is required if inadvertent swinging of the container occurs during loading and unloading of the truck. The cab guard mounting shall be to the front of the body or to the chassis frame with brackets and mounting hardware and shall be removable to facilitate repair or replacement. The cab guard shall be fitted with hand holds and lifting eyes to facilitate installation and removal. The cab guard shall extend to a height no greater than cab height and no less than cab height minus 50 mm (2 in) and shall be not less than the width of the cab. The cab guard shall not interfere with any cab or chassis component, ISO container transport of lift and tie down system. The cab guard shall be capable of sustaining a static 1350 N (300 lb) minimum horizontal force applied at any point along its top edge, in the direction of the front of the truck. The force shall not cause permanent deformation. The driver's view shall not be obscured out of the back window due to design of the cab protector.

3.5.3.8 LOAD SECURING STRAPS AND STORABLE WINCH BINDERS.

When code TSW is specified, load securing straps and winch binders shall be provided.

Code TSW shall include the following:

(a) 4 inch wide by 27 feet long (minimum) nylon straps webbing, breaking strength 20000 lb (9074 kg), assembled breaking strength 15000 lb (6805 kg.) Working load limit 5000 lb (2270 kg). Flat hook working load limit 5000 lb (2270 kg) on one end with aluminum abrasion clip to prevent chaffing.

(b) Sliding steel track on curbside, welded to bottom of crossmembers from first crossmember to last crossmember, with removable stop at each end to prevent winches from being lost. Flat steel bar of adequate strength welded to bottom of crossmembers on street side, allowing strap hook to not protrude past side rail of body.

(c) Storable winch binders, capable of storing a 4 inch x 27 feet strap placed in the slide track. A standard winch bar shall be provided, for use in winching down load straps.

Quantities of straps and winch binders shall be 6 each for 16 to 18 foot bodies and 7 each for 20 foot bodies and longer.

3.5.4 TYPE IV (DUMP).

Type IV vehicle shall have a hydraulic hoist operated dump body conforming to requirements and minimum dimensions in Figure VII. Capacities listed in Figure VII shall be water level capacity, without side boards. Inside width shall be 2130 mm (84 inches) minimum with overall width not exceeding 2440 (96 inches). A rear bumper is not required.

3.5.4.1 DUMP BODY CONSTRUCTION.

Body sides and front head shall be constructed from not less than 8 gauge (4.176 mm) (0.1644 in) A570 (50,000 psi yield strength) steel. Body floor shall be no less than 1/4 inch AR235, (100,000 psi yield strength) steel. The front head shall be capable of withstanding a horizontal static loan equal to one-half the payload capacity of the vehicle without permanent distortion. When body floor is constructed in two or more pieces, a continuous seam weld having full penetration shall be provided. Full length, formed rub rails of minimum width to cover rear dual tire treads shall be provided. Triangular or box-section side braces, of the minimum width quantities specified in Figure VII for the respective body length and vehicle classes, shall be constructed of not less than 8 gauge (4.176 mm) (0.1644 in) steel. One horizontal brace (per side) running the entire length of the body, tied into the front and rear corner pillars is acceptable in lieu of vertical braces. They shall be sloped and continuously welded or formed into each side of the body. Side braces shall be equally spaced on each side of the body, between the head sheet and full box type rear corner posts, and welded to body side plates. Front head sheet shall be formed or reinforced for rigidity. Head sheet and tailgate shall be not less than 200 mm (8 in) higher than the sides. Sides shall have pockets provided at each end for insertion of side boards. The interior of the body shell and the side reinforcements shall be welded with continuous welds. The top rail, sides and tailgate shall be completely boxed and continuously welded. The body shall have sloping running boards and sloping horizontal tailgate braces to minimize the buildup of dirt. Wiring harness across the rear apron shall be enclosed in conduit or polyethylene loom except at terminal ends and shall be secured by hangers to the under body floor, on not more than 12 inch centers. When code DHD is specified, a heavy duty body with sides and front of not less than 7 gauge (4.5 mm) (0.1792 in) A570 (65,000 psi tensile strength/50,000 psi yield strength) steel, and a floor of not less than 1/4 inch AR400F, (180,000 psi tensile strength/145,000 psi yield strength) one piece steel, and a minimum 6 section tailgate shall be provided.

Figure VII-Type IV Dump Truck Requirements

Vehicle Class	C	D	E
Capacity (m^3/cu. yd)	6.1/8	7.6/10	9.2/12*
Body Length (mm/in.)	3960/144	4270/168	4570/180
Number of crossmembers	11	13	14
Vertical brace per side, if provided	4	5	5
Horizontal braces	2	2	2

*Code B15 = 11.5/15

3.5.4.2 CAB PROTECTOR.

A cab protector shall be attached to the front end of the body. The cab protector shall extend the full width of the cab. The cab protector shall extend not less than 1020 mm (40 inches) forward from the front of the dump body. The cab protector shall be not less than 8 gauge (4.176 mm) (0.1844 inch) steel, or 10 gauge (3.416 mm) (0.1345 inch) high tensile, 345 kPa (50,000 psi) yield strength steel. The cab protector shall be capable of supporting an evenly distributed load of not less than 910 kg (2,000 lb). The cab protector is not intended to be used for additional payload capacity. When specified (see 6.2), and for overseas destinations even if not specified, the cab protector shall be removable and shall be secured in the dump body for shipment. Fasteners and components shall be packaged, boxed, marked and secured in the vehicle.

3.5.4.3 DUMP BODY TAILGATE.

The tailgate panel shall be not less than 8 gauge (4.176 mm) (0.1644 inch), A570 (50,000 pounds psi yield strength) steel. The tailgate shall be double acting, opening from top or bottom. The tailgate shall have heavy duty hardware, heavy duty support chains, and heavy duty tailgate latch operable by a control at the left front corner of the vehicle body. All pivot points on the tailgate release shall be furnished with grease fittings, including top pivot pin. The tailgate shall be reinforced to prevent deformation under load. When code ART is specified, the tailgate shall be air operated with controls accessible to the seated driver.

3.5.4.4 DUMP BODY UNDERSTRUCTURE.

The dump body understructure shall conform to 3.5.4.4.1 or 3.5.4.4.2, at the manufacturer's option.

3.5.4.4.1 CHANNEL OR I-BEAM UNDERSTRUCTURE.

Body longitudinal sills each having a minimum section modulus equivalent to that provided by a 150 mm (6 inches), 12.2 kg/m (8.2 pounds-per-foot) structural channel for Class B; 175 mm (7 in.), 14.6 kg/m (9.8 lb/ft.) for Class C, D, and E, shall be provided to support hoist load. The minimum number of crossmembers specified in Figure VII for respective body sizes shall be provided. Each crossmember shall have a minimum section modulus equivalent to that provided by a 100 mm (4 inch) 11.5 kg/m (7.7 pounds-per-foot) I-beam. Construction shall provide a body structure capable of supporting a uniformly distributed load of not less than 1800 kg/m^2 (370 pounds per square foot) of floor area throughout the full lift range. Crossmembers shall be welded to the body shell with not less than 100 mm (4-inch) lengths of weld, front and rear of both ends of each crossmember and with staggered, intermittent welds of not less than 100 mm (4-inch) lengths, on not more than 300 mm (12-inch) centers. Contact edges of crossmembers with longitudinal sills, and contact edges of welded reinforcements shall be welded for not less than 50 percent of the edge length. Crossmembers shall be welded to the sloped outer rub rail to limit twisting. Gussets, 3/16 inches thick, shall be welded to every other crossmember and each longitudinal to provide reinforcement.

3.5.4.4.2 NESTED UNDERSTRUCTURE.

When code UN is specified, a nested understructure shall be furnished, as specified. Body longitudinal sills shall extend to the floor of the dump body and shall support the floor between crossmembers. Longitudinal sills shall be capable of supporting the hoist load. Longitudinals shall have a RBM of not less than 27,761 N-m (245,725 in - lbs) for Class B vehicles and 52000 N-m (460,000 in-lbs) for Class C, D, and E vehicles. Crossmembers shall provide support under the floor every 380 mm (15 inches) or less. Each crossmember shall pass through the longitudinal and shall be securely welded to longitudinal.

Crossmembers shall have RBM of not less than 12 300 N-m (109,000 inch pounds). Body structure shall be capable of supporting a uniformly distributed load of not less than 1800 kg/m^2 (370 pounds per square foot) of floor area throughout the full lift range. Longitudinals and crossmembers shall be welded for not less than 50 percent of the contact edges to the floor. Longitudinals shall be welded for not less than 50 percent of the contact edges with the body ends. Crossmembers shall be welded for not less than 50 percent at the contact edges with the body side rub rails.

3.5.4.5 HYDRAULIC HOIST.

Unless otherwise specified (see 6.2), the hoist shall have a minimum lifting capacity rating of: Class 60 for Classes B and C vehicles; Class 70 for Class D vehicle; and Class 100 for Class E vehicle. The hoist class shall be in accordance with the National Truck Equipment Association Dump Body Hoist Chart. The hoist shall be a telescopic type. Hoist hydraulic cylinders shall be chrome plated. The hoist shall lift the body to a minimum dumping angle of 50 degrees from the top of the truck chassis frame. The hoist shall be capable of lowering the raised body by gravity when the pump is disabled. The pump shall be the direct mount type. The power takeoff, and valve shall be the manufacturer's standard for the hoist model furnished. The valve and power takeoff controls shall be located in the cab. A two-position lever or a two-speed hoist lowering valve to provide "feather down" capability shall be provided. When code BSU is specified, a double acting scissors or underbody type hoist, with an internal bypass system, shall be provided. Hydraulic system and pumping unit shall comply with 3.5.4.8.2.6 and 3.5.4.8.2.7.

3.5.4.6 SAFETY LOCK.

A mechanical safety lock permanently affixed to the dump body or hoist shall be furnished. The safety lock shall provide positive retention of the dump body with the body in the up position for servicing or repair. Safety lock mechanism shall not interfere with the operation of the body under any operating conditions.

3.5.4.7 DUMP BODY MOUNTING.

The body shall be located on the vehicle chassis in accordance with manufacturer's standard commercial practice except that pivot point shall be 300 mm to 480 mm (12 to 18 inches) from the rear of the body. Full length rivet pads or a full length subframe shall be attached to the top of the chas-

sis frame rails. The pads or frame rails shall prevent the body longitudinal sills from contacting and chafing against the chassis frame rails.

3.5.4.8 SNOWPLOW.

3.5.4.8.1 SNOWPLOW PROVISIONS.

When a snowplow is specified or when specified Code MPR (see 6.2) to accommodate future installation of a snowplow, a stationary grille and the following GAWR increase shall be furnished. The front GAWR shall be not less than the load imposed by the snowplow in raised position (or a 950 kg (2,100 pound) load located 1520 mm (60 inches) forward of the centerline of the front axle when snowplow provisions but not a snowplow are specified) plus a uniformly distributed payload over the load area, both totaling a payload to provide not less than the specified GVW. The rear GAWR shall be not less than the load imposed without the snowplow by a uniformly distributed payload over the load area to provide not less than the specified GVW.

3.5.4.8.2 SNOWPLOW EQUIPMENT.

When code MPS is specified, a hydraulically or electro-hydraulically operated snowplow shall be furnished. The snowplow shall be complete with a moldboard, a tripping device, a hitch, a hydraulically operated lifting mechanism, a set of auxiliary lights, a snow deflector and all other necessary mounting and operating apparatus. Increased front GAWR is required (see 3.5.4.8.1). Unless otherwise specified the snowplow shall be of the reversible type. When code MPN is specified, the plow shall be of the one-way type with a cut of not less than 2440 mm (96 inches) with a blade angle of 35 degrees plus 2 degrees, minus 0 degrees. The actual length of the moldboard shall be not less than 3050 mm (10 feet). The moldboard of the one-way snowplow, exclusive of the snow deflector, shall have a vertical height of not less than 780 mm (30 inches) on the left side (street-side), 1370 mm (54 inches) on the right side (curbside). The one-way snowplow shall have a minimum of two angle adjustments. The plow shall be shipped in the load space and lights shall be shipped within the cab when possible. Brackets and connections shall be installed on all vehicles to enable ready installation for the lights and snowplow at the destination. Snowplow and lights shall be installed on the first vehicle to assure proper operation, and they may be removed for shipment after Government inspection.

3.5.4.8.2.1 MOLDBOARD.

The moldboard assembly of the reversible type snowplow, exclusive of the snow deflector, shall have a vertical height of not less than 810 mm (32 inches) and shall be capable of clearing a path of not less than 2620 mm (8 feet 7 inches) at a blade angle of 30 degrees, plus 2 degrees, minus 0 degrees. The actual length of the moldboard shall be not less than 3060 mm (10 feet). The moldboard shall be not less than 7 gauge (4.554 mm) high tensile steel or a one-piece un-spliced sheet of 9.5 mm (O.375 inch) thick polyethylene material. The polyethylene material shall not become brittle in temperature as low as -54°C (-86°F), shall not corrode and shall have an abrasion resistance factor at least equivalent to steel.

3.5.4.8.2.2 SNOW DEFLECTOR.

A snow deflector shall be provided the full length of the top of the moldboard. The snow deflector shall be of the manufacturer's standard design to prevent snow from topping the snowplow.

3.5.4.8.2.3 MOLDBOARD SUPPORTS.

The snowplow shall be equipped with two heavy duty 410 mm (16-inch) full swivel caster wheels with pneumatic tires. Both caster wheels shall be adjustable. The caster wheels shall be roller or ball bearing mounted, shall be of the shielded type to preclude entrance of water and foreign matter, and shall have lubrication fittings.

3.5.4.8.2.4 MOLDBOARD PUSH-FRAME ASSEMBLY.

The push-frame assembly shall attach to the moldboard and hitch in a manner to provide ample road clearance of the assembly and permit sufficient oscillation for the snowplow to follow road contour and clear snow evenly. Unless otherwise specified, the positioning of the snowplow moldboard to the right and to the left shall be of the manual angling type and shall be capable of being accomplished by one man without the use of tools. The snowplow shall have a minimum of two angle adjustments both to right hand cast and left hand cast. A shear pin shall be used to lock the snowplow in any of its five plowing positions. Under normal plowing conditions, the shear pin shall be designed to minimize damage to the snowplow and vehicle should the snowplow's leading edge come into contact with an immovable object. When code MPP is specified, the moldboard shall have a power angle capability, with controls located in the cab.

3.5.4.8.2.5 HITCH.

The plow hitch shall be of the push-frame type designed to be attached to and transmit the entire plowing thrust to the truck frame in such a manner that no plowing thrust shall be absorbed by the truck's front axle. Front angle hitch supports, when used, shall be attached in a manner to prevent chafing or other damage. Hitch main frame members and lift frame vertical and horizontal members shall be of adequate size, properly braced, and reinforced to sustain the loads imposed under severe operating conditions. The hitch shall be removable.

3.5.4.8.2 6 HYDRAULIC SYSTEM.

The hydraulic system shall consist of a power operated pumping unit, an under the hood hydraulic fluid reservoir or a reservoir integral with the hoist, controls, cylinder, hoses, piping, and all other parts essential for normal operation. The hydraulic system shall comply with the requirements in paragraph 3.1.1.17.

3.5.4.8.2.7 PUMPING UNIT.

Controls to the pumping unit shall be operable by the truck driver in his normal operating position and shall not interfere with the operation of any truck controls. The hydraulic pump shall be powered by the engine crankshaft, or transmission mounted PTO.

3.5.4.8.2.8 HOIST CYLINDER.
The plow hoist cylinder shall have sufficient travel to hoist the plow to not less than 200 mm (8 in) ground clearance. The hoisting mechanism, hoist cylinder, and hydraulic system shall be capable of holding the plow in the fully raised position while the truck is driven over secondary travel roads at speeds up to 48 km/h (30 mph).

3.5.4.8.2.9 SNOWPLOW MARKERS.
Snowplow markers shall be provided for the street side and the curbside of the snowplow. The markers shall be removable when not in use. The markers shall eliminate guesswork as to the position of the snowplow caused by blind spots.

3.5.4.8.2.10 HYDRAULIC HOSE COUPLERS AND CAPS.
Hydraulic lines to the hydraulic cylinder and the pump shall be provided with quick disconnect hose couplers. Hose caps, pump caps, and hydraulic cylinder caps shall be provided if no other protection system is provided. Caps shall be secured with a corrosion resistant security device to prevent loss. Caps shall prevent entrance of contaminants into the hydraulic system.

3.5.4.8.2.11 SNOWPLOW AUXILIARY LIGHTS.
A set of raised auxiliary dual beam headlights, parking, and turn signal lights shall be provided for use with the snowplow. Parking and turn signal lights shall use a single light bulb. Mounts, adapters and an appropriate wiring harness shall be provided. Quick disconnect plugs and receptacles shall be provided and shall be weatherproof, or shall be located in a weatherproof location. A high beam indicator light shall be provided and shall be readily visible to the driver when in the driving position.

3.5.4.9 SAND AND SALT SPREADER.
When code NAS is specified, an under-tailgate type sand and salt spreader shall be furnished; and shall be easily removable. When code NSP is specified, a skid mounted sand and salt spreader with a material hopper of not less than 3.8 m^3 (five cubic yards) capacity shall be furnished in lieu of a tailgate type. The sand and salt material feed auger and spreader shall be hydraulically driven by the snowplow hydraulic system when a snowplow is furnished; by the chassis engine fan belt; by a crankshaft driven hydraulic pump; or by its own auxiliary diesel engine driven pump. Controls shall be located in the cab. The hose connections shall be as specified in 3.5.4.8.2.10.

3.5.4.10 DUMP BED COVER.
A dump bed cover with front wind protector and operated from ground level shall be provided. When code DBC is specified, a dump bed cover shall not be furnished. Dump bed cover shall be polypropylene, knit-mesh material with 70% (nominal) mesh content.

3.5.4.11 ASPHALT SPREADER FLOOR EXTENSION.
When code AAS is specified, a minimum floor extension of 30 cm (12 in) shall be provided. The floor extension shall be constructed of 6.35 mm (.25 in) thick, 50,000 psi yield strength material. Extension shall be full width of floor with vertical end caps at each end that are angled from rear edge of extension to body rear corner post. Extension shall be supported underneath by a minimum of six (6) braces angled from extension to body rear cross member/floor support. End caps shall be placed so as not to interfere with operation of tailgate in any manner. Support and end cap shall be a minimum of 6.35 mm (.25 in) thick, 50,000 psi yield strength material and be welded to the extension as well as the body. Truck rear axle brake chambers shall be positioned so that interference with spreading machine is not encountered when truck is dumping into the hopper of a spreading machine.

3.6 WORKMANSHIP.
A. Vehicles shall be free from defects which may impair their serviceability or detract from appearance.

B. All bodies, systems, equipment, and interfaces with the chassis shall be done in accordance with the OEM's Body Builders Book. Whenever dissimilar metals are used, they shall be insulated against corrosive action.

C. All components will be new. Defective components shall not be furnished. Parts, equipment, and assemblies that have been repaired or modified to overcome deficiencies shall not be furnished without the approval of the purchaser. Component parts and units shall be manufactured to definite standard dimensions with proper fits, clearances and uniformity. Welded, bolted, and rivet construction utilized shall be in accordance with the highest standards of industry. General appearance of the vehicle shall not show any evidence of poor workmanship.

D. The following shall be reason for rejection:

1. Rough, sharp or unfinished edges, burrs, seams, corners, and joints.

2. Non conforming panels. Edges that are not rounded, beveled, etc.

3. Paint runs, sags, orange peel, "fish eyes," etc., and any other imperfection, or lack of complete coverage of paints or coatings.

4. Body panels or components that are uneven, unsealed, or contain cracks, dents, or have voids.

5. Misalignment of body fasteners, glass, viewing panels, light housings, other items with large or uneven gaps, spacing, etc., such as door, body panels, and hinged panels.

6. Improperly fabricated and routed wiring or harnesses, and electrical connections.

7. Improperly supported or secured hoses, wiring harnesses, mechanical controls, etc., including interference with other components.

8. Interference of chassis components, body parts, doors, etc.

9. Leaks of any gas, vacuum, or fluid lines (air conditioning, coolant, oil, oxygen, etc.).

10. Noise, panel vibrations, etc.

11. Inappropriate or incorrect use of hardware, fasteners, components, or methods of construction.

12. Incomplete or improper welding, riveting, or bolting.

13. Lack of uniformity and symmetry where applicable.

14. Loose, vibrating abrading body parts, components, subassemblies, hoses, wiring harnesses, or trim.

15. Improper body design or interface with the chassis that could cause injury during normal use or maintenance, and which fail to provide access to perform routine or mandatory repairs or maintenance on vehicle electrical and mechanical systems. In addition, the improper combination of options which by their combination and installation are inherently incompatible with regard to function or safety.

16. Sagging non formfitting upholstery or padding, holes, tears, discoloration, etc.

17. Incomplete or incorrect application of rustproofing.

18. Visual deformities and equipment malfunctions.

19. Unsealed appurtenances or other body components, gaskets, etc.

20. In addition, any deviation from specification requirements or any other item, whether or not stipulated herein, that affects form, fit, function, finish, durability, reliability, safety, performance, or appearance shall be cause for rejection.

4. QUALITY ASSURANCE PROVISIONS

4.1 RESPONSIBILITY FOR INSPECTION.

Unless otherwise specified in the contract, the contractor is responsible for the performance of all inspection requirements (examination and tests) as specified herein. Except as otherwise specified in the contract, the contractor may use his own or any other facilities suitable for the performance of the inspection requirements specified herein, unless disapproved by the Government. The Government reserves the right to perform any of the inspections set forth in the specification where such inspections are deemed necessary to assure supplies and services conform to prescribed requirements.

4.1.1 RESPONSIBILITY FOR COMPLIANCE.

All items must meet all requirements of sections 3 and 5. The inspection set forth in this specification shall become a part of the contractor's overall inspection system or quality program. The absence of any inspection requirements in the specification shall not relieve the contractor of the responsibility for ensuring that all products or supplies submitted to the Government for acceptance comply with all requirements of the contract. Sampling inspection, as part of manufacturing operations, is an acceptable practice to ascertain conformance to requirements, however, this does not authorize submission of known defective material, either indicated or actual, nor does it commit the Government to acceptance of defective material.

4.2 GOVERNMENT VERIFICATION.

Quality assurance operations performed by the contractor will be subject to Government verification at unscheduled intervals. Verification will consist of observation of the operations to determine that practices, methods, and procedures of the contractor's inspection are being properly applied. Failure of the contractor to promptly correct product deficiencies discovered shall be cause for suspension of acceptance until correction has been made or until conformance of product to specification criteria has been demonstrated.

4.3 FIRST PRODUCTION VEHICLE INSPECTION.

The first vehicle produced under the contract shall be inspected by the contractor at his plant under the direction and in the presence of Government representatives. The purpose of the inspection shall be to determine vehicle conformance to the contract. Acceptance of the first production vehicle shall not constitute a waiver by the Government of its rights under the provisions of the contract.

4.3.1 VEHICLE WEIGHT.

The first production vehicle shall be weighed to determine the curb weight and distribution of the curb weight on the front and rear axles. The total imposed loads on the front and rear axles shall be computed by the contractor and verified by the Government, using the curb weight, the operator weight at 80 kg (175 pounds), and the payload required to provide the specified GVW. Except as specified in 3.2.6.1, the calculated imposed loads on the front and rear axles shall be compared to the suspension, axle, and tire load capacity ratings to determine if these components are of adequate capacity to meet contractual requirements.

4.3.2 ROAD TEST.

The first production vehicle shall be road tested by the contractor without payload. The road test shall be for not less than 16 km (10 miles) at speeds up to 88 km/h (55 mph).

4.3.3 BODY TREATMENT AND PAINTING.

A certification regarding the body cleaning, treating, prime painting, and salt spray resistance testing, as required by MIL-HDBK-1223, shall be made to Government representatives at the first production vehicle inspection.

4.3.4 HEATER CERTIFICATION.
The contractor shall certify that the in cab heater conforms to the capacity requirements of 3.4.17.

4.3.5 WOOD TREATMENT CERTIFICATION.
Manufacturer's records shall be available to verify that all wood requiring treatment in accordance with MIL-STD-1223 has been treated.

4.3.6 PRODUCTION SAMPLE.
Upon acceptance of the first production vehicle, it shall remain at the manufacturing facility as a production sample, and shall be the last vehicle shipped on the contract. The contractor shall maintain the vehicle in an as new condition for the duration of the contract.

4.3.7 ISO CONTAINER.
When ISO container securing devices are required, the contractor shall make available, during the inspection, an ISO container. The contractor shall demonstrate the alignment and securing of the container on the truck.

4.3.8 TRANSPORTABILITY VERIFICATION.
When transportability (ATR, HTR, MTR or RTR) (SEE 3.1.1.16) is specified, the vehicle shall be inspected to determine that it conforms to the approved certification memo the contractor received from the Air Transportability Test Loading Agency (ATTLA) or Military Surface Deployment and Distribution Command Transportation Engineering Agency (SDDCTEA). As a minimum, the following angles, dimensions, and descriptions shall be checked against approved data and drawings:

a) Angle of approach.

b) Ramp break over angle.

c) Angle of departure.

d) Height, longitudinal location and identification of highest component on truck.

e) Dimensions and locations of any significant projections on truck.

f) Curb weight of each axle.

g) Wheelbase.

h) Front overhang.

i) Rear overhang.

j) Articulation of rear suspension, unloaded, each axle (curb weight).

k) Rear axle spacing.

1) Axle rating, front, and comparison to 1 1/4 times (curb weight) load.

m) Axle rating, rear, and comparison to 1 1/4 times (curb weight) load.

n) Suspension rating, front, and comparison to 1 1/4 times (curb weight) load.

o) Suspension rating, rear, and comparison to 1 1/4 times (curb weight) load.

p) If axle stops are to be removed for ramp loading on aircraft, verification that the driveline remains intact when cresting maximum ramp slope.

4.4 FAILURE.
Failure of the first production vehicle to meet requirements of the contract shall be cause for the Government to refuse acceptance of all vehicles under contract until corrective action has been taken.

4.5 INSPECTION OF PRODUCTION VEHICLES.
The contractor's inspection system shall, as a minimum, assure that each vehicle conforms to the physical and dimensional requirements and is capable of meeting performance requirements specified herein. For each vehicle under contract, the contractor shall make available to the Government, at the point of final acceptance, records acceptable to the Government indicating that the servicing and adjusting required in 3.4.28 have been accomplished. GSA Form 1455, or an approved equivalent form, shall be used.

4.6 PRODUCT CONFORMANCE.
The products provided shall meet the salient characteristics of this standard, conform to the producer's own drawings, specifications, standards, and quality assurance practices, and be the same product offered for sale in the commercial market. The Government reserves the right to require proof of such conformance.

5. PACKAGING

5.1 VEHICLE PROCESSING.
The vehicle shall be processed for shipment, from the manufacturer's plant to the initial receiving activity, in accordance with the manufacturer's standard commercial practice. When Code XP is specified, the vehicle is intended for export and all separable and pilferable items including, but not limited to jacks, spare tires and wheels, mirrors, tarpaulins, etc., shall be boxed, banded, and secured to the vehicle in a manner to reduce as far as practicable the opportunity for theft. When direct consignee delivery is required, each fuel tank shall be filled with a minimum of 10 gallons of fuel.

6. NOTES

6.1 INTENDED USE.
The vehicles covered by this specification are intended for general non tactical use by the Government in transporting personnel or cargo, for use in the performance of the maintenance and construction tasks indicated, or for the mounting of special bodies or equipment. Contracts shall specify (see 6.2) unusual operating conditions, items and exceptions not specified herein.

6.2 ORDERING DATA.
Acquisition documents should specify the Federal Standard number and revision and the vehicle item number and option codes from a table in Section 3, and the schedule.

6.3 PERFORMANCE PREDICTIONS.
SAE Truck Ability Prediction Procedure computations and computations for low speed and maximum geared speed will be required by the contract. The SAE J2188 Work Sheet, Appendix A, should include vehicle model number, engine model number, and vehicle type and class. Unless other conditions are cited in the contract, computations shall be made for normal atmospheric pressure, normal ambient air temperature, and still, dry air. The factors to be used in predicting truck ability (see 3.3.1.) are established in the procedures and tables contained in SAE J2188.

6.4 SUBJECT TERM (KEY WORD) LISTING.
Chassis, truck 6X4
Nontactical truck 6X6
Nontactical vehicle (NTV)
Truck, commercial
Truck, dump
Truck, stake
Truck tractor

6.5 WARRANTY.

6.5.1 WARRANTY COVERAGE.
The contractor shall provide the chassis manufacturer's commercial warranty and the commercial furnished equipment warranties against parts failure or malfunction due to design, construction or installation errors, defective workmanship, and missing or incorrect parts (6.5.4 exceptions) for a minimum period of 12 months, and 15 months for vehicles outside the 50 states of the United States and District of Columbia from date of acceptance 1/, or 161,000 km (100,000 miles) of operation, exclusive of any authorized accumulated driveway mileage, whichever occurs first. If the contractor receives from any supplier or subcontractor additional warranty on the whole or any component of the vehicle, in the form of time or mileage, including any pro rata arrangements, or the contractor generally extends to his commercial customers greater or extended warranty coverage, the Government shall receive corresponding warranty benefits.

The warranty begins when the Government accepts the vehicle from the contractor FOB point of origin/destination.

6.5.2 DOMESTIC USE.
When vehicles are used within the fifty states of the United States, the District of Columbia, Puerto Rico, and the Virgin Islands, the warranty shall include the furnishing without cost to the Government (FOB contractor's nearest dealer or branch to vehicle's location or station) of new parts and assemblies to replace any that failed or malfunctioned within the warranty period. In addition, when the Government elects to have the work performed at the contractor's plant, branch, dealership, or with the contractor's approval (i) to correct the supplies itself; or (ii) to have them corrected by a commercial garage facility; the cost of the labor involved in the replacement of the failed or malfunctioned parts or assemblies shall be borne by the contractor.

6.5.3 FOREIGN USE.
When vehicles are used outside the fifty States of the United States, the District of Columbia, Puerto Rico, and the Virgin Islands, the warranty shall include the furnishing of new parts or assemblies to replace any returned to the contractor by the Government which failed or malfunctioned within the warranty period. The replacement parts or assemblies shall be delivered by the contractor to the port of embarkation in the United States designated by the Government. The contractor will not be required to bear the cost of the labor involved in correcting defects in vehicles operated in foreign countries.

6.5.4 WARRANTY EXCEPTIONS.
Unless within the additional coverage under 6.5.1, the following items are considered normal maintenance and repair for which the contractor need not assume liability for reimbursing the Government regardless of the vehicle age or mileage.

(a) Abuse, negligence, or unapproved alteration of original parts.

(b) Damage from accidents.

(c) Brake and standard clutch adjustments.

(d) General tightening, headlamp adjustments.

(e) Wheel alignment or tire balancing.

(f) Tires and batteries (if warranted by their manufacturers).

(g) Miscellaneous expenses such as fuel, towing, telephone, travel, lodging, or loss of personal property.

6.6 OPERATORS, SERVICING, AND PARTS MANUALS.
The successful bidder shall furnish at least one operator's and maintenance handbook, including a handbook(s) for any furnished special equipment. An identification sticker, label, or plate shall be furnished on the vehicle; that will list the contractor name, point of contact, and phone number of con-

tact. This point of contact will be the source of information for parts, part numbers, service, warranty, and answers to operating questions for the vehicle; including any furnished bodies and/or special equipment. The sticker, label, or plate shall be positioned so that the operator may locate and read it easily. When specified, Code PSM (see 6.2), printed parts and service manual(s) for the vehicle and equipment furnished shall be provided.

When Code PSME is specified, the parts and service manual shall be furnished in an electronic version (CD or web-based).

When Code PSM2 is specified, one operator's manual shall be packed with each vehicle. Two sets of maintenance and parts data along with any operation, maintenance and parts data for mounted or specialized equipment shall be furnished, regardless of the number of vehicles the consignee is receiving. Example: if 15 vehicles are shipped to a consignee, only two sets of the tech manuals mentioned above are shipped to the consignee; however, an operator's manual shall be provided for each vehicle.

When Code PSM3 is specified, one set of technical manuals consisting of operating, maintenance, and parts, along with manuals covering any mounted equipment, shall be mailed within 15 days after contract award, prepaid, to the address specified below, prior to approval a Technical Order (T.O.) assignment. The package must include a DD Form 250. Mail to:

Warner Robbins ALC/LEET
Attn: Teena Horne
295 Byron St.
Robins AFB, GA 31098-1611

The approved manuals shall be identified by a T.O. number, which will be furnished by Warner Robbins ALC/LEET within 45 days after issuance of the contract. The assigned Air Force T.O. number shall be printed, stamped, or otherwise marked on the cover sheet by the contractor prior to issue. When multiple manuals are furnished by the contractor, the Air Force may assign more than one T.O. number.

Within 60 calendar days prior to delivery of the first vehicle, two sets of technical manuals shall be mailed prepaid to:

Warner Robbins ALC/LEET
Attn: Teena Horne
295 Byron St.
Robins AFB, GA 31098-1611

Manuals will be delivered with DD Form 250 showing contract and MIPR number, T.O. number, and number of sets delivered. A copy of the DD Form 250 shall be mailed to:

Warner Robbins ALC/LEET
Attn: Teena Horne
295 Byron St.
Robins AFB, GA 31098-1611

6.7 STATEMENT OF ORIGIN OR BILL OF SALE.

A manufacturer's statement of origin or bill of sale showing the applicable purchase order number is required for each vehicle procured under this specification. Unless otherwise specified, such documents shall be forwarded to the consignee mailing address.

MILITARY INTEREST:

ARMY - AT
NAVY - YD, MC
AIR FORCE - 84, 99
ENGINEERS
DIA
DLA

CIVIL AGENCY COORDINATING ACTIVITIES:

AGRICULTURE
AAFES
COMMERCE
D.C. GOVT
EPA
ENERGY
GSA
INTERIOR
JUSTICE
PCC
POSTAL SERVICE
STATE
TRANSPORTATION
TREASURY
TVA
VETERANS

PREPARING ACTIVITY:

GSA-FSS-FFAE

NOTES