

**Prepared For:**

**ROSENBAUER - # 14590-01 CV515 4X4 2**

**DOOR CAB 83" CA CHASSIS**

Paul Hentges  
100 3rd Street  
Lyons, SD 57041-  
(605)543 - 5591  
Reference ID: 14590-01

**Presented By:**

**NORTH CENTRAL INTERNATIONAL**

Robin Kunz  
4511 NORTH CLIFF  
SIOUX FALLS SD 57104 -  
(605)336-3820

Thank you for the opportunity to provide you with the following quotation on a new International truck. I am sure the following detailed specification will meet your operational requirements, and I look forward to serving your business needs.

**Model Profile**  
**2022 CV515 SFA (CV515)**

**AXLE CONFIG:** 4X4  
**APPLICATION:** Rescue  
**MISSION:** Requested GVWR: 22500. Calc. GVWR: 22500. Calc. GCWR: 37000  
 Calc. Start / Grade Ability: 36.31% / 2.44% @ 55 MPH  
 Calc. Geared Speed: 102.5 MPH

**DIMENSION:** Wheelbase: 165.00, CA: 83.80, Axle to Frame: 49.00

**ENGINE, DIESEL:** {International 6.6} EPA 2021, 350HP @ 2700 RPM, 700 lb-ft Torque @ 1600 RPM, 2900 RPM Governed Speed, 350 Peak HP (Max)

**TRANSMISSION, AUTOMATIC:** {Allison 2750 EVS} 5th Generation Controls, Close Ratio, 6-Speed with Double Overdrive, with PTO Provision, Less Retarder, Includes Park Pawl, with 23,500-lb GVW and 37,500-lb GCW Max, On/Off Highway

**AXLE, FRONT DRIVING:** {Dana Spicer 60-256} Single Reduction, 7,500-lb Capacity, with Hub Piloted Wheel Mounting

**AXLE, REAR, SINGLE:** {Dana Spicer S16-130} Single Reduction, 15,500-lb Capacity, 190 Wheel Ends Gear Ratio: 4.30

**CAB:** Conventional, Day Cab

**TIRE, FRONT:** (3) 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive

**TIRE, REAR:** (4) 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive

**SUSPENSION, REAR, SINGLE:** 15,500-lb Capacity, Vari-Rate Springs

**PAINT:** Cab schematic 100CX  
 Location 1: 2303, Red (Std)  
 Chassis schematic N/A

<b>Code</b>	<b>Description</b>
CV51500	Base Chassis, Model CV515 SFA with 165.00 Wheelbase, 83.80 CA, and 49.00 Axle to Frame.

## **AXLE CONFIGURATION**

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1ANB	AXLE CONFIGURATION {Navistar} 4x4
	<u>Notes</u> : Pricing may change if axle configuration is changed.

## **ENGINE**

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12GAG	ENGINE, DIESEL {International 6.6} EPA 2021, 350HP @ 2700 RPM, 700 lb-ft Torque @ 1600 RPM, 2900 RPM Governed Speed, 350 Peak HP (Max)
	<u>Includes</u> : GLOW PLUG Automatic with Indicator Light : OIL FILTER, ENGINE Spin-On Type
12XCU	CARB EMISSION WARR COMPLIANCE for International 6.6 Engines
12WZD	CARB IDLE COMPLIANCE Engine Shutdown System Exempt Vehicles, Complies with California Clean Air Regulations
12VJD	EMISSION, CALENDAR YEAR {International 6.6} EPA, OBD and GHG Certified for Calendar Year 2022
12XZD	RADIATOR Aluminum, 3-Row, Down Flow, Front to Back System, 730 SqIn Louvered, with 578 SqIn Charge Air Cooler, Includes In-Tank Oil Cooler
12TTM	FAN DRIVE Viscous Type, Screw On, Rear Tether, Electronically Controlled
12VGC	AIR CLEANER Single Element, with Water Separator
12XBL	BLOCK HEATER, ENGINE 120V/800W
12WUU	GOVERNOR Electronic Road Speed Type; with 75 MPH Default
12WGG	THROTTLE, HAND CONTROL Engine Speed Control for PTO; Electronic Controlled, On/Off Switch Mounted on Dash, with Steering Wheel Button Control

## **TRANSMISSION**

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13AXT	TRANSMISSION, AUTOMATIC {Allison 2750 EVS} 5th Generation Controls, Close Ratio, 6-Speed with Double Overdrive, with PTO Provision, Less Retarder, Includes Park Pawl, with 23,500-lb GVW and 37,500-lb GCW Max, On/Off Highway
13WVV	NEUTRAL AT STOP Allison Transmission Shifts to Neutral When Service Brake is Depressed and Vehicle is at Stop; Remains in Neutral Until Service Brake is Released
13XAK	PTO LOCATION Customer Intends to Install PTO at Right Side of Transmission
13WYY	SHIFT CONTROL PARAMETERS {Allison} 1000 or 2000 Series Transmissions, Performance Programming

<b>Code</b>	<b>Description</b>
13TLP	TRANSFER CASE {Meritor MTC-3203} 2-Speed, Gear Drive, 3,000 lb-ft Torque Rating, Less PTO Provision, Electric Shift Control
	<u>Notes</u> : Transfer Case Includes 40W Synthetic Lube

### REAR AXLES, SUSPENSIONS

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14AJE	AXLE, REAR, SINGLE {Dana Spicer S16-130} Single Reduction, 15,500-lb Capacity, 190 Wheel Ends . Gear Ratio: 4.30
14SAE	SUSPENSION, REAR, SINGLE 15,500-lb Capacity, Vari-Rate Springs
14WMM	AXLE, REAR, LUBE {EmGard FE-75W-90} Synthetic Oil; 1 thru 29.99 Pints
14897	DIFFERENTIAL, LOCKING {Dana Spicer Trac-Lok} Torque Proportioning Limited Slip
14WAP	SHOCK ABSORBERS, REAR (2)

### FRONT AXLES

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2EWA	AXLE, FRONT DRIVING {Dana Spicer 60-256} Single Reduction, 7,500-lb Capacity, with Hub Piloted Wheel Mounting
2WLC	AXLE, FRONT DRIVING, LUBE {EmGard FE-75W-90} Synthetic Oil; 1 thru 29.99 Pints

### FRONT SUSPENSIONS

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3AJN	SUSPENSION, FRONT, SPRING Parabolic Taper Leaf, Shackle Type, 7,500-lb Capacity, with Shock Absorbers
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### CABS, COWLS, BODIES

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16030	CAB Conventional, Day Cab  <u>Includes</u> : CAB DOOR LOCKS Power Door Locks All Doors : DOME LIGHT, CAB with OFF/DOOR/ON Settings; Located in Overhead Console : READING LIGHT, CAB Located in Overhead Console : STEP (2) One Per Door : STORAGE POCKET, DOOR (2) Full Length, Driver and Passenger Door
16XCP	AIR BAG, FRONT, DRIVER SIDE
16XCR	AIR BAG, FRONT, PASSENGER SIDE
16XDE	AIR BAG, SIDE, DRIVER Seat Mounted, Outboard Side-Impact Airbag
16XDG	AIR BAG, SIDE, PASSENGER Seat Mounted, Outboard Side-Impact Airbag
16XDH	AIR BAG, SIDE CURTAIN Roof Mounted, for Front and Rear Outboard Seating Positions for Driver and Passenger Sides
16XZA	AIR CONDITIONER with Heater, Single Zone

<b>Code</b>	<b>Description</b>
16VKB	CAB INTERIOR TRIM Classic, for Day Cab  <u>Includes</u> : SUN VISOR (2) Vinyl
16CEM	COLOR, INTERIOR Dark Ash
16BAN	DOOR HANDLE, EXTERIOR Bright Finish
16HCT	GAUGE CLUSTER English Speedometer, Includes English Odometer; Includes 3.5" Monochromatic Display with Personalization, Warning Messages and Vehicle Information
16BBA	GLASS, ALL WINDOWS Solar Absorbing, Tint
16975	HEATER HOSES Silicone
16WHJ	HOSE CLAMPS, HEATER HOSE {Breeze} Belleville Washer Type
16ACB	MIRROR, INSIDE REAR VIEW with Manual Tilt
16SPT	MIRRORS (2) Manual Folding and Extending, Power Adjust, Heated, Turn Signal Indicator Located in Mirror, Bright Heads and Arms, for 96" Load Width
16VBZ	SEAT BELT All Red; 1 to 3
16KVS	SEAT, DRIVER High Back with Integral Headrest, with Recline, Vinyl, Fixed Lumbar
16LVU	SEAT, PASSENGER High Back with Integral Headrest, Vinyl, with Recline, without Center Section. Center Area of Floor Between Seats will be Untrimmed
16WAK	WINDOW, POWER (2) in Left and Right Doors

## FRAMES

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1CGH	FRAME RAILS High Strength Low Alloy Steel (50,000 PSI Yield), Straight Top Flange with Contoured Bottom, Height Transitions from 7.375" (187.325mm) to 9.125" (231.775mm) to 7.625" (193.675mm); Width: 3.079" (78.21mm); Thickness: 0.3125" (7.94mm); 383.3" (9735.8mm) Max OAL
1WAC	BUMPER EXTENSION, FRONT 4.0"
1LNZ	BUMPER, FRONT Contoured, Steel, Chrome Plated, for CV and RE Bus
1AMM	SKID PLATE Steel, Frame Mounted, Protects the Transfer Case from the Ground
1570	TOW HOOK, FRONT (2) Frame Mounted
1LEG	LICENSE PLATE HOLDER Includes Upper & Lower Mounting Plate Hardware, Mounted in Existing Holes in Front Bumper
1WEB	WHEELBASE RANGE 128" (325cm) Through and Including 183" (465cm)

## BRAKES

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4240	BRAKE SYSTEM, HYDRAULIC {Bosch} Split System, with Four Channel ABS, Traction Control, Electronic Stability Control, Hydromax Brake Booster with High Speed Master Cylinder and Trailer Sway Control
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<b>Code</b>	<b>Description</b>
4GBJ	BRAKE, PARKING {Bosch} DSSA Type, 12" x 3"; for Hydraulic Brake Chassis; Foot Operated in Cab; Differential Mounted
4XCU	BRAKES, FRONT {Meritor Quadraulic} Hydraulic Disc Type, with Four 64mm Diameter Pistons, 8,000-lb Capacity
4EVD	DUST SHIELDS, FRONT BRAKE for Hydraulic Brakes
4XCV	BRAKES, REAR {Meritor Quadraulic} Hydraulic Disc Type, with Four 64mm Diameter Pistons, 15,500-lb Capacity per Axle
4EVE	DUST SHIELDS, REAR BRAKE for Hydraulic Brakes

### **STEERING**

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5PSS	STEERING GEAR {Bosch S2 8014 Plus} Power
5708	STEERING COLUMN Tilting
5CBG	STEERING WHEEL 4-Spoke; 15" Dia., Black

### **DRIVELINES**

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6DHD	DRIVELINE SYSTEM {Dana Spicer} SPL100 Main Driveline, Direct Mount Transfer Case to Transmission, SPL70 Driveline to Front Axle, for 4x4
6901	PROPSHAFT GUARD

### **EXHAUST SYSTEMS**

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7BLL	EXHAUST SYSTEM Horizontal, Frame Mounted Right Side, Under Rail, for Single Exhaust
7SDS	ENGINE EXHAUST BRAKE for International 6.6 Engine
7XAA	MANUAL REGEN Capability

### **ELECTRICAL SYSTEMS**

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8002	<p>ELECTRICAL SYSTEM 12-Volt for CV Model</p> <p><u>Includes</u></p> <ul style="list-style-type: none"> <li>: HAZARD SWITCH Push On/Push Off, Located on Top of Steering Column Cover</li> <li>: HEADLIGHT DIMMER SWITCH Integral with Turn Signal Lever</li> <li>: PARKING LIGHT PARKING LIGHT Integral with Front Turn Signal and Rear Tail Light</li> <li>: TURN SIGNALS, FRONT Includes Reflectors and Solid State Flashers; Flush Mounted</li> <li>: WINDSHIELD WIPER SWITCH 2-Speed with Wash and Intermittent Feature, Integral with Turn Signal Lever</li> </ul>
8GJB	ALTERNATOR {Denso SC6} Brush Type, 12 Volt, 220 Amp Capacity
8VVB	BATTERY BOX Steel, with Plastic Cover, 2 Battery Capacity, Parallel to Rail, 28" Wide, Mounted Left Side Under Cab

<b>Code</b>	<b>Description</b>
8MWA	BATTERY SYSTEM {VARTA} Maintenance-Free, (2) 12-Volt 1300CCA Total, Top Threaded Stud
8HXU	BODY BUILDER WIRING Rear of Frame; Includes One Sealed Connector for Separate Ground/Backup/ Left and Right Hand Turn, Left and Right Hand Tail/Stop/ Accessory Power and Combined for Left and Right Hand Stop/Turn
8RNY	CAMERA SYSTEM, REAR VIEW Includes Camera, Mounting, Wiring and Interface to the Monitor, for the Back-up Camera System
8XJV	CLEARANCE/MARKER LIGHTS (5) Amber LED Lights, Flush Mounted on Cab
8AAB	DEFROSTER, REAR WINDOW Electric
8XJM	HEADLIGHTS Halogen, Composite Aero Design, Chrome Trim Bezel, with Daytime Running Lights
8VAY	HORN, ELECTRIC Disc Style
8RNN	RADIO AM/FM/USB Input/Auxiliary Input/SD Card Slot, with 4.2" Color Touch Panel Display
8RNU	SPEAKERS (6)
8XJW	STARTING MOTOR 12 Volt
8TUL	STOP, TURN, TAIL & B/U LIGHTS Multi-Function, Sealed, Incandescent Stop, Turn and Tail Lights, Backup Lights with Rear Reflex Reflector, Includes License Plate Light
8XJP	SWITCH, AUXILIARY 1 to 4 Latching Switches with 30-Amp Fuses
8NAA	TAIL LIGHT WIRING MODIFIED Includes: Wiring for Standard Lt & Rt Tail Lights; Separate 8.0' of Extra Cable Wiring for Lt & Rt Body Mounted Tail Lights
8HBW	TRAILER BRAKE CONTROL Integrated
8TRA	TRAILER CONNECTION SOCKET Mounted at Rear of Frame, Wired for Turn Signals Combined with Stop, Compatible with Trailers with Combined Stop, Tail, Turn Lamps

## **FRONT END**

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9WAY	FRONT END Tilting, Fiberglass, with Three Piece Construction
9WAC	BUG SCREEN Mounted Behind Grille
9WBN	FENDER EXTENSIONS Painted
9HCG	GRILLE Chrome, with Chrome Headlight Bezels
9AAB	LOGOS EXTERIOR Model Badges

## **SPEEDOMETER, TOOLS, MISC**

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10060	PAINT SCHEMATIC, PT-1 Single Color, Design 100
10761	PAINT TYPE Base Coat/Clear Coat, 1-2 Tone

<b>Code</b>	<b>Description</b>
10XAX	GVWR WEIGHT CLASSIFICATION Class 6 (19,501-26,000 lbs)
10506	TOOL KIT Rim Wrench and Handle Only

### FUEL TANKS

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15SZN	FUEL TANK Top Draw, Plastic, Rectangular, 17" Tank Depth, 40 US Gal (151L), Includes Auxiliary Draw Port and Fuel Filler Assembly, Mounted Between Frame Rails and Behind Rear Axle
15WDZ	DEF TANK 6.75 US Gal (26L) Capacity, Frame Mounted Outside Right Rail, Under Cab

### WHEELS, TIRES - FRONT

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27DVT	WHEELS, FRONT {Alcoa 76543} DISC; 19.5x6.75 Rims, Mirror Polish Aluminum, 8-Stud, 275mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs
7779445428	(3) TIRE, FRONT 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive

### WHEELS, TIRES - REAR

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28DVT	WHEELS, REAR {Alcoa 76543} DUAL DISC; 19.5" Mirror Polish Aluminum Outer Wheel and Steel Inner Wheel, 8-Stud (275MM BC) Hub Piloted, Flanged Nut, Metric Mount, 6.75 Rims; with Steel Hubs
7779445428	(4) TIRE, REAR 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive

### WHEELS, SPARE

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26DTX	WHEEL, SPARE, DISC {Accuride 50180} 19.5x6.75 Rims, Powder Coat Steel, 4-Hand Hole, 8-Stud, 275mm BC, Hub-Piloted
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### WHEELS MISC OPTIONS

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29PBZ	COATING IDENTITY, FRONT WHEELS {Alcoa Dura-Bright XBR/EVO} Disc Front Wheels, Aluminum, with Vendor Applied Treatment, Not for Wide Base
29PBY	COATING IDENTITY, REAR WHEELS {Alcoa Dura-Bright XBR/EVO} Disc Rear Wheels, Aluminum, with Vendor Applied Treatment, Not for Super Single/Wide Base
29SAE	WHEEL SEALS, FRONT {Chicago Rawhide Nitrile} for Oil Lubricated Wheel Bearings
29007	TIRE, SPARE Equal to Model Standard
	Cab schematic 100CX
	Location 1: 2303, Red (Std)
	Chassis schematic N/A

#### Services Section:

**Code**                      **Description**  
**WARRANTY**

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40131                      WARRANTY Standard for CV515, Effective with Vehicles Built December 3, 2018 or Later,  
CTS-3000A

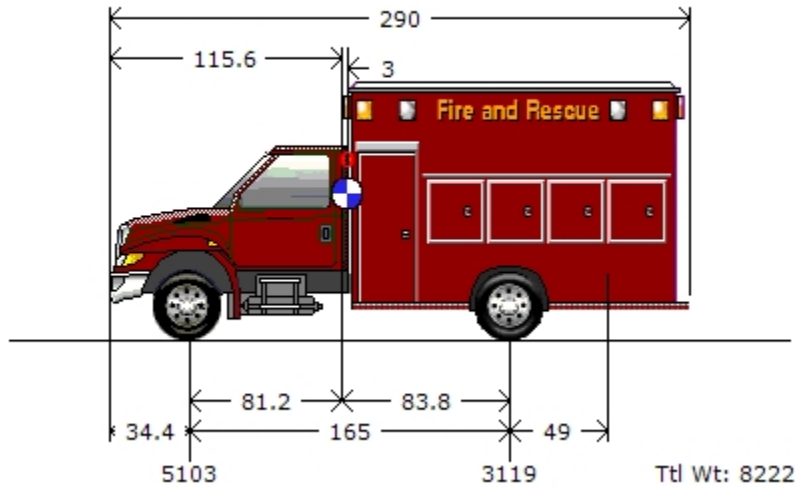
**Body/Allied Equipment**

**Code**                      **Description**

**Goods Purchased**

**Code**                      **Description**





Graphics are provided as visual aids only and are not intended to represent the actual scale, shape, or color of the truck or its components. All weights are represented in lbs.

Truck			Body/Trailer			Chassis/Empty Weights	
Bumper to Axle	(BA)	34.4	Body Length	(BL)	171	Tractor Front Axle:	5,103
Wheelbase	(WB)	165.00				Tractor Rear Axle:	3,118
Axle to Frame	(AF)	49.00					
Axle to Back Cab	(ABC)	81.2					
Cab to Axle	(CA)	83.8					
Usable CA		83.8					
CA Reduction Adjustment		0.00					
Fuel-Diesel(Gals)		0					
DEF(Gals)		0					

Before the Cab			Cab			Payloads Chassis			Body			After the Body		
#	Weight	CG	#	Weight	CG	#	Weight	CG	#	Weight	CG	#	Weight	CG
									1	0	0			

Loads		Weight Distribution	
Payload Weight:	0	Total Front Axle:	5,103
Driver:	0	Total Rear Axle:	3,119
Fuel-Diesel(Lbs):	0	Total Weight:	8,222
DEF(Lbs):	0		

Weights and clearances in this proposal are estimates only. Navistar, Inc. is not liable for any consequences resulting from any differences between the estimated weights and clearances and the actual manufactured weights and clearances.

**Weight Distribution**

All weights are represented in lbs.

	<u>Truck</u>		<b>Total</b>
	Front	Rear	
<b><u>Chassis Weight</u></b>			
Chassis Weight:	5,103	3,118	<b>8,221</b>
Fuel:	0	0	<b>0</b>
DEF:	0	0	<b>0</b>
Empty Body:	0	1	<b>1</b>
<b>(Curb Weight):</b>	<b>5,103</b>	<b>3,119</b>	<b>8,222</b>

**Loads**

Payloads:	0	0	<b>0</b>
Driver:	0	0	<b>0</b>
<b>Axle Totals (Gross Weight):</b>	<b>5,103</b>	<b>3,119</b>	<b>8,222</b>

**Weight Ratings**

	<u>Truck</u>	
	Front	Rear
Axle(axle capacity)	7,500	15,500
Tire(tire capacity)	7,940	15,880
Suspension(suspension capacity)	7,500	15,500
Spring:	0	
Fed Bridge Law (axle spread):	20,000	20,000

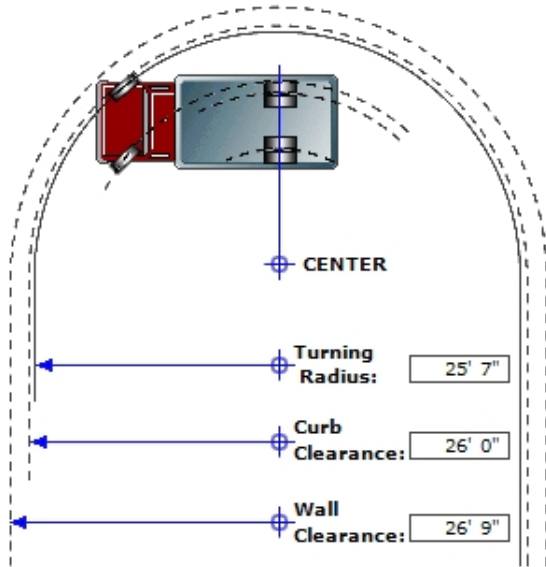
<b>Wheel Combination</b>	<b>Load</b>	<b>Limit</b>
1 - 2	8,222	43,000

Federal Total Vehicle Weight Limit: 80,000

Maximum Gross Vehicle Weight Rating (GVWR) 22,500 - Gross Vehicle Weight(GVW) 8,222 = 14,278 Reserves

**Weight Summary**

\* Distributed weights are within capacity limits



Series: CV  
 Model: CV515  
 Description: CV515 SFA  
 Model Year: 2022

**Calculation Factors**

Wheelbase: 165  
 Front Axle: 0002EWA  
 Description: AXLE, FRONT DRIVING, {Dana Spicer 60-256} Single Reduction, 7,500-lb Capacity, with Hub Piloted Wheel Mounting  
 Front Wheel: 0027DVT  
 Description: WHEELS, FRONT, {Alcoa 76543} DISC; 19.5x6.75 Rims, Mirror Polish Aluminum, 8-Stud, 275mm BC, Hub-Piloted, Flanged Nut, with Steel Hubs  
 Front Tire: 07779445428  
 Description: TIRES, 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive  
 Steering Gear: 0005PSS  
 Description: STEERING GEAR, {Bosch S2 8014 Plus} Power

**Turning Radius Statistics**

General Information

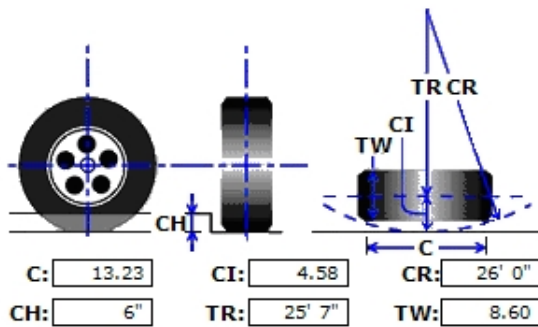
Inside Turn Angle: 42 Degrees  
 Radial Overhang: 14.3

Axle Information

KingPin Inclination: 11.76 Degrees  
 KingPin Center: 60.96

**Turning Radius - Curb View**

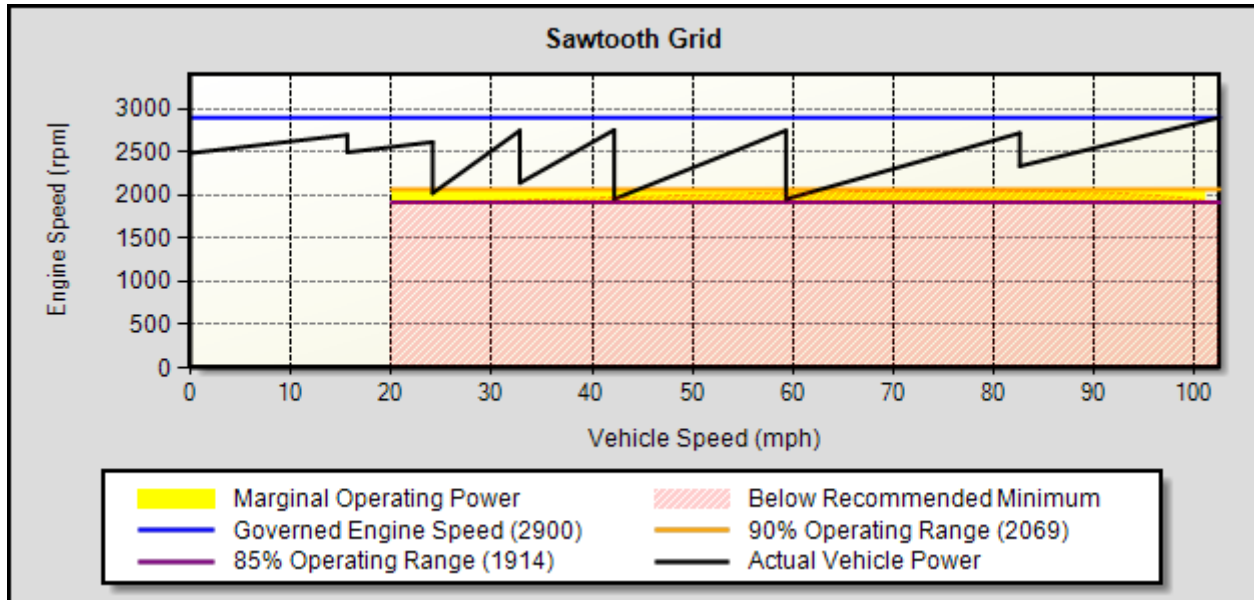
C - Curb Contact Length: 13.23  
 CI - Curb Clearance Increment: 4.58  
 CR - Curb Clearance Radius: 26'0"  
 CH - Curb Height: 6"  
 TR - Turning Radius: 25'7"  
 TW - Tire Width: 8.60



\* All Measurements are in inches, unless otherwise specified.

This information is based on engineering information available at this time. Actual figures may vary. Navistar, Inc. cannot accept liability for consequences due to this variance.

ENGINE/TRANSMISSION MATCHING



Sawtooth Details

Gear	Trans Ratio	Multi Speed	Upshift Power Avail		Govern Power Avail		Peak Power Comparison			Warn Msg
			Veh Spd (MPH)	Eng Spd (RPM)	Veh Spd (MPH)	Eng Spd (RPM)	Gear Step (%)	85% Range (%)	90% Range (%)	
1C-1	3.10	1.00	0.0	2488	15.6	2699	N/A	52	40	
2C-1	1.81	1.00	15.6	2497	24.1	2616	N/A	52	40	
2L-1	1.81	1.00	24.1	2024	32.8	2749	N/A	52	40	
3L-1	1.41	1.00	32.8	2142	42.2	2757	N/A	52	40	
4L-1	1.00	1.00	42.2	1955	59.3	2750	N/A	52	40	
5L-1	0.71	1.00	59.3	1953	82.6	2719	N/A	52	40	
6L-1	0.61	1.00	82.6	2336	102.5	2900	N/A	52	40	

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

## STEADY STATE PERFORMANCE

Performance Results	Gear	Veh Spd (mph)	Eng Spd (rpm)	Fuel Econ (mpg)	Grade (%)	Notes
LEVEL ROAD MAXIMUM SPEED	5L-1	85.2	2804	4.60	0.00	
HI GEAR SPEED @ RATED RPM	----	----	----	----	----	
55.0 MPH STEADY-STATE TYPICAL OPERATING SPEED	6L-1	55.0	1556	9.23	2.44	
	6L-1	75.0	2121	6.26	0.80	- Calculated Grade Ability/Fuel Economy

VEHICLE ORDER CODING ERRORS MAY RESULT IF THE "LEVEL ROAD MAX SPEED" VALUE EXCEEDS THE "HI GEAR SPEED @ RATED RPM" AND IS USED AS THE ENGINE PROGRAMMABLE VEHICLE SPEED LIMIT.

IF THE RESULTS CONTAIN " ----", VEHICLE CANNOT ATTAIN THAT SPEED.

IF THE RESULTS CONTAIN "\*\*\*\*\*", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

## Recommendations / General Information

IDLE FUEL RATE : 0.00 GALS/HR @ 600.0 RPM

TORQUE CONVERTER : TC-221 STALL RATIO: 1.73

## Fuel Economy Route: Normal Route - City, Suburban, and Highway

Key Fuel Economy Information	City	Suburban	Highway	Notes
MILES PER GALLON	9.01	10.10	8.81	
AVERAGE MPH	19.3	40.2	54.6	
MISSION MINUTES	29.36	51.55	173.24	

IF THE RESULTS CONTAIN "\*\*\*\*\*", THE ENGINE USED DOES NOT HAVE A FUEL MAP. FUEL ECONOMY CANNOT BE PREDICTED.

## GRADEABILITY PERFORMANCE

## Enroute - Full Throttle Upshift Performance

Gear	Trans Ratio	Multi Speed	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	WarnMsg	Notes
1C-1	3.10	1.00	0.0	2488	0.00	48.22	@	STALL
			8.9	2493	203.06	39.92		70% EFF
			11.2	2525	234.39	36.31		80% EFF
			15.6	2699	270.56	29.14		
2C-1	1.81	1.00	15.6	2497	205.77	21.56		
			24.1	2616	263.44	17.41		
2L-1	1.81	1.00	24.1	2024	237.42	15.53		
			32.8	2749	295.07	13.79		
3L-1	1.41	1.00	32.8	2142	247.92	11.33		
			42.2	2757	291.00	9.78		
4L-1	1.00	1.00	42.2	1955	224.06	7.10		
			59.3	2750	284.47	5.20		
5L-1	0.71	1.00	59.3	1953	211.24	3.14		
			80.8	2660	270.86	1.00		
			82.6	2719	268.06	0.65		
			83.2	2740	265.41	0.50		
			85.2	2806	256.28	0.00		LEVEL ROAD
6L-1	0.61	1.00	73.0	2065	213.67	1.00		
			78.0	2206	225.60	0.50		
			82.6	2336	236.92	0.02		
			82.8	2343	237.56	0.00		LEVEL ROAD
			102.5	2900	219.85	-3.38		RATED RPM

## STARTING / TOP GEAR PERFORMANCE

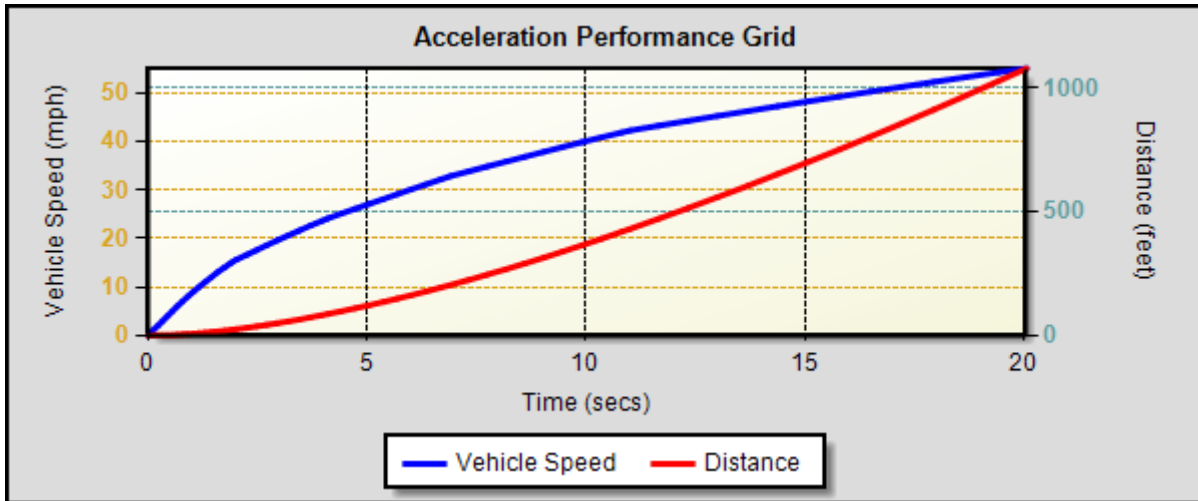
Gear	Trans Ratio	Multi Speed	Veh Spd (mph)	Eng Spd (rpm)	Whl Pwr (hp)	Grade (%)	WarnMsg	Notes
1C-1	3.10	1.00	0.0		0.00	48.22	@	STALL
			11.2		234.39	36.31		80% EFF - Calculated Start Ability
1C-2	3.10	3.00	0.0		0.00	48.22	@	STALL
			3.7		98.80	48.22	@	80% EFF - Calculated Start Ability
6L-1	0.61	1.00	82.8		237.56	0.00		LEVEL ROAD
			102.5		219.85	-3.38		RATED RPM
6L-2	0.61	3.00	37.9		35.57	0.00		LEVEL ROAD
			34.2		244.92	10.59		RATED RPM

@ - WHEELSLIP CAN OCCUR AT THE GRADE SHOWN. THE VEHICLE IS CAPABLE OF INCREASED GRADEABILITY IF MORE WEIGHT IS PLACED ON THE DRIVE AXLES.

THE TRANSMISSION WAS SIMULATED IN PERFORMANCE OPERATING MODE.

ACCELERATION PERFORMANCE RESULTS

Acceleration Performance Grid



Acceleration Performance: TIME TO ACCELERATE ON A GRADE TO 55.0 (MPH) IS 20.07 (SECS)

Acceleration Performance Details

Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes	
1C	0.11	0.1	1.0		
	0.23	0.3	2.0		
	0.34	0.7	3.0		
	0.45	1.3	4.0		
	0.56	2.0	5.0		
	0.67	3.0	6.0		
	0.79	4.1	7.0		
	0.91	5.4	8.0		
	1.04	7.0	9.0		
	1.17	8.8	10.0		
	1.31	10.9	11.0		
	1.45	13.3	12.0		
	1.59	16.0	13.0		
	1.75	19.0	14.0		
	1.91	22.5	15.0		
	2C	2.02	25.0	15.6	
		2.26	30.5	16.6	
2.49		36.4	17.6		
2.72		42.6	18.6		
2.96		49.3	19.6		
3.21		56.5	20.6		
3.46		64.3	21.6		
3.71		72.6	22.6		
2L	3.98	81.6	23.6		
	4.11	86.2	24.1		



Gear	Time (secs)	Distance (feet)	Speed (mph)	Notes
	4.42	97.6	25.1	
	4.74	109.5	26.1	
	5.06	121.9	27.1	
	5.38	134.9	28.1	
	5.70	148.4	29.1	
	6.02	162.4	30.1	
	6.35	177.0	31.1	
	6.68	192.4	32.1	
3L	6.91	203.1	32.8	
	7.33	223.6	33.8	
	7.75	245.0	34.8	
	8.18	267.0	35.8	
	8.61	289.8	36.8	
	9.04	313.4	37.8	
	9.47	337.8	38.8	
	9.91	363.0	39.8	
	10.36	389.4	40.8	
	10.82	417.4	41.8	
4L	11.01	429.3	42.2	
	11.67	470.6	43.2	
	12.34	513.3	44.2	
	13.01	557.4	45.2	
	13.70	603.0	46.2	
	14.38	650.2	47.2	
	15.08	698.9	48.2	
	15.79	749.1	49.2	
	16.50	801.0	50.2	
	17.22	854.5	51.2	
	17.95	909.8	52.2	
	18.68	966.7	53.2	
	19.43	1025.6	54.2	
	20.07	1076.3	55.0	

## REQUIRED TCAPE INFORMATION

**TCAPE Factors For Vehicle**

Selected Rear Axle Gear Ratio(s):	4.3
Engine Fan Type:	Viscous Screw On
Parked PTO:	NO
Enroute PTO:	NO
ID Wheel Slip Conditions:	Yes
Road Governor/Cruise Ctrl:	No
Road Surface Type:	TYPICAL
Fuel Economy Route:	Normal Route - City, Suburban, and Highway
Vehicle Vocation:	GENERAL ON HIGHWAY
Acceleration Grade (%):	0.0
Frontal Area (FT <sup>2</sup> ):	96
Speed Limit on Route (MPH):	61.0
Relative Drag Coefficient:	80
Transfer Case - Gear Ratio (Grade Ability):	1.000
Alternator (A):	40
Transfer Case - Gear Ratio (Accel Perf):	1.000
Steering Gear (HP):	2.60
Air Conditioner (HP):	3.20
Transfer Case - Gear Ratio(Start Ability):	1.000
Vehicle Width (IN):	96
Vehicle Height (IN):	89
Weight on Drive Axle (LBF):	15500
Acceleration Vehicle Spd (MPH):	55.0
Transfer Case - Gear Ratio (Fuel Economy):	1.000
TIRE, FRONT	2 - RADIAL LOWPROFILE
TIRE, REAR	4 - RADIAL LOWPROFILE

**Components**

0001ANB	AXLE CONFIGURATION {Navistar} 4x4
0002EWA	AXLE, FRONT DRIVING {Dana Spicer 60-256} Single Reduction, 7,500-lb Capacity, with Hub Piloted Wheel Mounting
0005PSS	STEERING GEAR {Bosch S2 8014 Plus} Power
0008GJB	ALTERNATOR {Denso SC6} Brush Type, 12 Volt, 220 Amp Capacity
0012GAG	ENGINE, DIESEL {International 6.6} EPA 2021, 350HP @ 2700 RPM, 700 lb-ft Torque @ 1600 RPM, 2900 RPM Governed Speed, 350 Peak HP (Max)
0012TTM	FAN DRIVE Viscous Type, Screw On, Rear Tether, Electronically Controlled
0013AXT	TRANSMISSION, AUTOMATIC {Allison 2750 EVS} 5th Generation Controls, Close Ratio, 6-Speed with Double Overdrive, with PTO Provision, Less Retarder, Includes Park Pawl, with 23,500-lb GVW and 37,500-lb GCW Max, On/Off Highway
0013TLP	TRANSFER CASE {Meritor MTC-3203} 2-Speed, Gear Drive, 3,000 lb-ft Torque Rating, Less PTO Provision, Electric Shift Control
0014AJE	AXLE, REAR, SINGLE {Dana Spicer S16-130} Single Reduction, 15,500-lb Capacity, 190 Wheel Ends
0016030	CAB Conventional, Day Cab
0016XZA	AIR CONDITIONER with Heater, Single Zone

07779445428 TIRE, FRONT 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive

07779445428 TIRE, REAR 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive 225/70R19.5 Load Range G HYBRID HD3 (CONTINENTAL), 647 rev/mile, 87 MPH, Drive

**TCAPE HAS BEEN DESIGNED TO GIVE ECONOMY AND PERFORMANCE PREDICTIONS WHICH HAVE BEEN SHOWN TO BE TYPICAL FOR MOST OPERATIONS. HOWEVER, DUE TO OPERATING CONDITIONS, DRIVER INFLUENCES, AND OTHER FACTORS, YOUR RESULTS MAY VARY FROM THOSE PREDICTED. ALSO, BECAUSE OF FUEL MAPPING PROCEDURES USED BY VARIOUS ENGINE MANUFACTURERS, COMPARISONS OF FUEL ECONOMY RESULTS FOR DIFFERENT BRANDS OF ENGINES MAY VARY FROM THOSE SHOWN.**

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