

CONTRACT SUPPLEMENT
RFP-37 Rev. 11/22/16
Prev. Rev. 4/28/14

Joseph Giliberto
Contract Specialist

860-713-5098
Telephone Number

STATE OF CONNECTICUT

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROCUREMENT DIVISION

450 Columbus Boulevard, Hartford, CT 06103

CONTRACT AWARD NO.:

14PSX0239

Contract Award Date:

4 March 2015

Proposal Due Date:

25 November 2014

SUPPLEMENT DATE:

21 December 2018

CONTRACT AWARD SUPPLEMENT #3

IMPORTANT: THIS IS NOT A PURCHASE ORDER. Do NOT PRODUCE OR SHIP WITHOUT AN AGENCY PURCHASE ORDER.

DESCRIPTION: Severe Service Chassis with Allied Equipment for Maintaining State Roadways

FOR:
Department of Administrative Services, Department of
Transportation, All Using State Agencies, and Political
Subdivisions

TERM OF CONTRACT:
04 March 2015 through 24 January 2026

AGENCY REQUISITION NUMBER: 0000095696

CHANGE TO IN STATE (NON-SB) CONTRACT VALUE	CHANGE TO DAS-CERTIFIED SMALL BUSINESS CONTRACT VALUE	CHANGE TO OUT OF STATE CONTRACT VALUE	CHANGE TO TOTAL CONTRACT AWARD VALUE
			No Change

NOTICE TO CONTRACTORS: This notice is not an order to ship. Purchase Orders against contracts will be furnished by the using agency or agencies on whose behalf the contract is made. INVOICE SHALL BE RENDERED DIRECT TO THE ORDERING AGENCY.

NOTE: Dollar amounts listed next to each contractor are possible award amounts, however, they do not reflect any expected purchase amounts (actual or implied). They are for CHRO use only.

NOTICE TO AGENCIES: A complete explanatory report shall be furnished promptly to the Procurement Manager concerning items delivered and/or services rendered on orders placed against awards listed herein which are found not to comply with the specifications or which are otherwise unsatisfactory from the agency's viewpoint, as well as failure of the contractor to deliver within a reasonable period of time specified. Please issue orders and process invoices promptly.

CASH DISCOUNTS: Cash discounts, if any, shall be given SPECIAL ATTENTION, but such cash discount shall not be taken unless payment is made within the discount period.

PRICE BASIS: Unless otherwise noted, prices include delivery and transportation charges fully prepaid f.o.b. agency. No extra charge is to be made for packing or packages.

PLEASE NOTE:

Effective today, December 21, 2018 the title of this contract has been changed to "Severe Service Chassis with Allied Equipment for Maintaining State Roadways".

All terms and conditions not otherwise affected by this supplement remain unchanged and in full force and effect.

APPROVED _____

JOSEPH GILIBERTO

Contract Specialist

(Original Signature on Document in Procurement Files)

Date: 12/21/2018

Contract # **14PSX0239**

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

CONTRACT

14PSX0239

Between

THE STATE OF CONNECTICUT

Acting by its

DEPARTMENT OF ADMINISTRATIVE SERVICES

AND

Freightliner of Hartford, Inc.

Awarded Contractor

**Severe Service Chassis with Allied Equipment
for Maintaining State Roadways**

Patrick DeConti
Contract Specialist

860-713-5061
Telephone Number

STATE OF CONNECTICUT

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROCUREMENT DIVISION

165 Capitol Avenue, 5th Floor South

HARTFORD, CT 06106-1659

CONTRACT AWARD NO.:

14PSX0239

Contract Award Date:

4 March 2015

SUPPLEMENT DATE:

November 22, 2017

CONTRACT AWARD SUPPLEMENT #2

IMPORTANT: THIS IS NOT A PURCHASE ORDER. Do NOT PRODUCE OR SHIP WITHOUT AN AGENCY PURCHASE ORDER.

DESCRIPTION: **Sever Service Snow and Ice Plow Trucks in 41,000, 62,000 and 72,000 GVWR for Maintaining the State Roadways**

FOR: **Department of Administrative Services, Department of Transportation, All Using State Agencies, and Political Subdivisions**

TERM OF CONTRACT:

March 4, 2015 through January 24, 2026

AGENCY REQUISITION NUMBER: 0000095696

CHANGE TO IN STATE (NON-SB) CONTRACT VALUE	CHANGE TO DAS-CERTIFIED SMALL BUSINESS CONTRACT VALUE	CHANGE TO OUT OF STATE CONTRACT VALUE	CHANGE TO TOTAL CONTRACT AWARD VALUE
n/a	n/a	n/a	n/a

NOTICE TO CONTRACTORS: This notice is not an order to ship. Purchase Orders against contracts will be furnished by the using agency or agencies on whose behalf the contract is made. INVOICE SHALL BE RENDERED DIRECT TO THE ORDERING AGENCY.

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CASH DISCOUNTS: Cash discounts, if any, shall be given SPECIAL ATTENTION, but such cash discount shall not be taken unless payment is made within the discount period.

PRICE BASIS: Unless otherwise noted, prices include delivery and transportation charges fully prepaid f.o.b. agency. No extra charge is to be made for packing or packages.

CONTRACTOR INFORMATION:

REFER TO THE CONTRACT ON THE DAS PROCUREMENT WEB PAGE FOR THE MOST CURRENT CONTRACTOR INFORMATION. (<http://das.ct.gov/mp1.aspx?page=8>)

Company Name: **Freightliner of Hartford, Inc.**

Company Address: **222 Roberts Street East Hartford, CT 06108**

Tel. No.: **(860) 289-0201 ext. 1208**

Fax No.: **(860) 610-6242**

Contract Value: **est. \$110,000,000.00**

Contact Person: **Kevin Bigliuzzi**

Delivery: **180 days ARO**

Contact Person email: kevinbigliuzzi@freightlinerofhartford.com

Company Web Site: www.freightlinerofhartford.com

Certification Type (None): **Agrees to Supply Political SubDivisions: Yes Prompt Payment Terms: 0% 00 Net 45**

PLEASE NOTE:

The State of Connecticut has agreed to an extension of the contract through January 24, 2026 in exchange for a current price reduction and a 0 (zero) price increase for the next 3 (three) model years (2018, 2019, 2020). We also revised and update our specifications for the 3 (three) configurations of trucks. (see overleaf)

Freightliner of Hartford as well as Viking have also committed to nominal increases beyond 2020.

Please refer to the attached Exhibit B Price Schedule for updated pricing.

All terms and conditions not otherwise affected by this supplement remain unchanged and in full force and effect.

DEPARTMENT OF ADMINISTRATIVE SERVICES

By: _____
(Original Signature on Document in Procurement Files)

Name: **PATRICK DECONTI**

Title: **Contract Specialist**

Date:

State Contract # 14PSX0239
Revised specification (10/31/2017)
41,000 GVW Auto Transmission with Chalmers rear suspension
Changes have been incorporated

- Remove ISL 345/1150 engine in original proposal. Insert Cummins ISL 330 HP @ 2000 RPM, 2200 GOV RPM, 1000 LB/FT @ 1400 RPM.
- Remove Jacob's Compression Brake from original proposal.
- Remove Horton DriveMaster in original proposal. Insert Horton 2-Speed DriveMaster Polar extreme fan drive.
- Insert Fleetguard plain coolant filter.
- Remove regular coolant in original proposal. Insert extended life coolant.
- Insert 1350 Adapter flange for front PTO provision.
- Remove 18,000 # front axle in original proposal. Insert 20,000 # front axle.
- Change originally proposed location of oil/air power steering cooler to mount above front closing cross-member.
- Remove 18,000 # flat leaf front suspension in original proposal. Insert 20,000 # Taper leaf front suspension.
- Remove graphite bronze bushings with seals in original proposal. Insert maintenance free rubber bushings – front suspension.
- Remove 23,000 # rear axle in original proposal. Insert 30,000 # rear axle.
- Insert driver controlled traction differential.
- Insert (1) driver controlled differential lock rear valve for single drive axle.
- Insert blinking lamp with each mode switch, differential unlock with ignition off, active < 5 mph, deactivate > 25 mph.
- Remove 16.5x7 Q+ rear brakes in original proposal. Insert Meritor 16.5 x 7 P cam rear brakes, double anchor, cast shoes.
- Remove ConMet rear brake drums. Insert Webb cast iron rear brake drums.
- Remove Haldex Goldseal spring parking chambers in original proposal. Insert MGM TR-T long stroke 1-drive axle spring parking chambers.
- Remove 26,000 # flat leaf rear suspension in original proposal. Insert Chalmers 30,000 # rear suspension.
- Insert rear axle shock absorber.
- Remove steel air tanks in original proposal. Insert Aluminum air brake reservoirs mounted perpendicular RH under cab.
- Remove basic combination primary receptacle. Insert pre-wire package into cab for body builder installed electric brake controller.
- Remove 7/16" frame in original proposal. Insert ½" x 3.64 x 11-7/8" steel frame.
- Remove Huck bolts on suspension only in original proposal. Insert Huck spin round collar chassis fasteners.

State Contract # 14PSX0239
Revised specification (10/31/2017)
41,000 GVW Auto Transmission with Chalmers rear suspension
Changes have been incorporated

- Remove 18,000 # rated steer tires. Insert 20,000 # rated Michelin XZU-S2 steer tires.
- Remove ConMet rear hubs in original proposal. Insert Webb iron rear hubs.
- Insert hood liner insulation with single firewall insulation.
- Insert dual electric horns.
- Insert all units keyed alike with customer specified key number.
- Insert LED aerodynamic marker lights.
- Insert RH down view mirror.
- Remove convex hood mounted mirrors in original proposal. Insert RH and LH 8" heated stainless steel fender mounted convex mirrors with tripod brackets.
- Remove Bustin steps with steel shield in original proposal. Insert Bustin serrated aluminum cab access steps, both sides, with RH after-treatment system cab access with plain diamond plate shielding.
- Electric horn warning system for park brake not set with door open and all ignition key positions.
- Remove non-operating wing windows in original proposal. Insert tinted operating wing windows.
- Insert Lower RH door window with Fresnel lens.
- Insert 1-Piece tinted curved bonded windshield with heated wiper blade park areas.
- Insert aluminum kick-plate on interior lower door driver.
- Insert aluminum kick-plate on interior lower passenger driver.
- Insert center storage console mounted on back wall.
- Remove basic heater/defroster system in original proposal. Insert heater, defroster and air conditioning.
- Insert standard HVAC ducting with snow shield for fresh air intake.
- Insert main HVAC controls with recirculation switch.
- Insert Denso heavy duty air conditioner compressor.
- Insert Binary Control R-134A.
- Remove basic air driver seat in original proposal. Insert premium high back air suspension driver seat with 3 chamber air lumbar, integrated cushion extension, forward and rear cushion tilt, adjustable shock absorber.
- Remove driver seat only armrest as originally proposed. Insert dual driver and passenger seat armrests.
- Insert adjustable tilt and telescoping steering column.
- Remove dash mounted PTO switch.

State Contract # 14PSX0239
Revised specification (10/31/2017)
41,000 GVW Auto Transmission with Chalmers rear suspension
Changes have been incorporated

- Remove 6 pack of optional switches as originally proposed. Insert SmartPlex hub module with overhead switch mounting, driver side and center console accommodating 12 slots.
- Remove basic radio as originally proposed. Insert AM/FM/WB radio with Bluetooth and microphone, front USB port, front and rear auxiliary inputs and J1939.
- Insert power and ground wiring provision overhead.
- Insert roof/overhead console CB radio provision.
- Insert radio wiring with power cutoff when vehicle in reverse gear.
- Insert standard vehicle speed sensor with additional signal for customer use located between seats.
- Remove 4 latching switches as originally proposed. Insert 6 On/off latching SmartPlex switches.
- Insert 1 On/off momentary SmartPlex switch.
- Insert 1 On/off/on latching SmartPlex switch.
- Insert 1 On/off/on momentary SmartPlex switch.
- Insert 1 Amber SmartPlex indicator lamp.
- Remove wipers as originally proposed. Insert single electric windshield wiper motor with delay programmed to slowest speed with park brake set.
- Insert one valve parking brake system with dash valve control auto neutral and warning indicator.
- Wiring extended warranty 5 year / 200,000-mile extended warranty.
- Diagnostic software support, annual renewals and updates in lieu of one Panasonic Toughbook laptop configured with diagnostic software, annual renewals and updates for every three trucks purchased.
- Precise Road Conditions System in lieu of RoadWatch.

Prepared for:
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State Contract # 14PSX0239
Revised specification
(10/31/2017)
41,000 GVW Auto
Transmission with
Chalmers rear suspension
Changes have been
incorporated.

Prepared by:
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Description

Vehicle Configuration

114SD CONVENTIONAL CHASSIS
SET FORWARD AXLE - TRUCK
STRAIGHT TRUCK PROVISION
LH PRIMARY STEERING LOCATION

General Service

TRUCK CONFIGURATION
DOMICILED, USA 50 STATES (INCLUDING CALIFORNIA AND CARB OPT-IN STATES)
UTILITY/REPAIR/MAINTENANCE SERVICE
GOVERNMENT BUSINESS SEGMENT
DIRT/SAND/ROCK COMMODITY
TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN TRANSIT, IS SPENT ON PAVED ROADS
MAXIMUM 8% EXPECTED GRADE
SMOOTH CONCRETE OR ASPHALT PAVEMENT - MOST SEVERE IN-TRANSIT (BETWEEN SITES) ROAD SURFACE
FREIGHTLINER LEVEL II WARRANTY
EXPECTED FRONT AXLE(S) LOAD: 18180.0 lbs.
EXPECTED REAR DRIVE AXLE(S) LOAD: 27120.0 lbs.
EXPECTED GROSS VEHICLE WEIGHT CAPACITY: 45300.0 lbs.
EXPECTED GROSS COMBINATION WEIGHT: 70000.0 lbs.

Truck Service

FRONT PLOW/END DUMP BODY
EXPECTED TRUCK BODY LENGTH: 10.0 ft.
EXPECTED TRUCK BODY WIDTH: 96.0 in
VIKING CIVES, LTD.

Engine

CUM L9 330 HP @ 2000 RPM, 2200 GOV RPM,
1000 LB/FT @ 1400 RPM

Electronic Parameters

65 MPH ROAD SPEED LIMIT
CRUISE CONTROL SPEED LIMIT SAME AS ROAD SPEED LIMIT
10 MINUTE IDLE SHUTDOWN - CONTINUOUS OVERRIDE WITH CLUTCH AND SERVICE BRAKE

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Description

PTO MODE ENGINE RPM LIMIT - 2200 RPM
PTO RPM WITH CRUISE SET SWITCH - 900 RPM
PTO RPM WITH CRUISE RESUME SWITCH - 900 RPM
PTO MODE CANCEL VEHICLE SPEED - 30 MPH
PTO GOVERNOR RAMP RATE - 100 RPM PER SECOND
ENABLE REGENERATION IN PTO MODE
PTO MINIMUM RPM - 700
REGEN INHIBIT SPEED THRESHOLD - 5 MPH

Engine Equipment

2016 ONBOARD DIAGNOSTICS/2010
EPA/CARB/FINAL GHG17 CONFIGURATION
2008 CARB EMISSION CERTIFICATION - CLEAN
IDLE (INCLUDES 6X4 INCH LABEL ON LOWER
FORWARD CORNER OF DRIVER DOOR)
STANDARD OIL PAN
ENGINE MOUNTED OIL CHECK AND FILL
SIDE OF HOOD AIR INTAKE WITH FIREWALL
MOUNTED DONALDSON AIR CLEANER WITH
SAFETY ELEMENT AND INSIDE/OUTSIDE AIR
WITH SNOW DOOR
DR 12V 160 AMP 36-SI BRUSHLESS
QUADRAMOUNT PAD ALTERNATOR WITH
REMOTE BATTERY VOLT SENSE
(3) ALLIANCE MODEL 1131, GROUP 31, 12 VOLT
MAINTENANCE FREE 2850 CCA THREADED
STUD BATTERIES
BATTERY BOX FRAME MOUNTED
STANDARD BATTERY JUMPERS
SINGLE BATTERY BOX FRAME MOUNTED LH
SIDE UNDER CAB
WIRE GROUND RETURN FOR BATTERY CABLES
WITH ADDITIONAL FRAME GROUND RETURN
NON-POLISHED BATTERY BOX COVER
POSITIVE LOAD DISCONNECT WITH CAB
MOUNTED CONTROL SWITCH MOUNTED
OUTBOARD DRIVER SEAT
CUMMINS TURBOCHARGED 18.7 CFM AIR
COMPRESSOR WITH INTERNAL SAFETY VALVE
ELECTRONIC ENGINE INTEGRAL SHUTDOWN
PROTECTION SYSTEM
NO RETARDER

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Description

RH OUTBOARD UNDER STEP MOUNTED
HORIZONTAL AFTERTREATMENT SYSTEM
ASSEMBLY WITH RH B-PILLAR MOUNTED
VERTICAL TAILPIPE

ENGINE AFTERTREATMENT DEVICE,
AUTOMATIC OVER THE ROAD REGENERATION
AND DASH MOUNTED REGENERATION
REQUEST SWITCH

10 FOOT 06 INCH (126 INCH+0/-5.9 INCH)
EXHAUST SYSTEM HEIGHT

RH CURVED VERTICAL TAILPIPE B-PILLAR
MOUNTED ROUTED FROM STEP

6 GALLON DIESEL EXHAUST FLUID TANK
100 PERCENT DIESEL EXHAUST FLUID FILL
STANDARD DIESEL EXHAUST FLUID PUMP
MOUNTING

LH MEDIUM DUTY STANDARD DIESEL EXHAUST
FLUID TANK LOCATION

STANDARD DIESEL EXHAUST FLUID TANK CAP

ALUMINUM AFTERTREATMENT
DEVICE/MUFFLER/TAILPIPE SHIELD(S)

HORTON 2-SPEED DRIVEMASTER ADVANTAGE
POLAREXTREME FAN DRIVE

AUTOMATIC FAN CONTROL WITHOUT DASH
SWITCH, NON-ENGINE MOUNTED

CUMMINS SPIN ON FUEL FILTER

COMBINATION FULL FLOW/BYPASS OIL FILTER

FLEETGUARD PLAIN COOLANT FILTER

1300 SQUARE INCH ALUMINUM RADIATOR

ANTIFREEZE TO -34F, OAT (NITRITE AND
SILICATE FREE) EXTENDED LIFE COOLANT

GATES BLUE STRIPE COOLANT HOSES OR
EQUIVALENT

CONSTANT TENSION HOSE CLAMPS FOR
COOLANT HOSES

RADIATOR DRAIN VALVE

1350 ADAPTER FLANGE FOR FRONT PTO
PROVISION

PHILLIPS-TEMRO 1000 WATT/115 VOLT BLOCK
HEATER

BLACK PLASTIC ENGINE HEATER RECEPTACLE
MOUNTED UNDER LH DOOR

ELECTRIC GRID AIR INTAKE WARMER

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Description

DELCO 12V 39MT HD/OCP STARTER WITH
THERMAL PROTECTION AND INTEGRATED
MAGNETIC SWITCH

Transmission

ALLISON 3000 RDS AUTOMATIC TRANSMISSION
WITH PTO PROVISION

Transmission Equipment

ALLISON VOCATIONAL PACKAGE 146 -
AVAILABLE ON 3000/4000 PRODUCT FAMILIES
WITH VOCATIONAL MODEL RDS

ALLISON VOCATIONAL RATING FOR ON/OFF
HIGHWAY APPLICATIONS AVAILABLE WITH ALL
PRODUCT FAMILIES

PRIMARY MODE GEARS, LOWEST GEAR 1,
START GEAR 1, HIGHEST GEAR 6, AVAILABLE
FOR 3000/4000 PRODUCT FAMILIES ONLY

SECONDARY MODE GEARS, LOWEST GEAR 1,
START GEAR 1, HIGHEST GEAR 3, AVAILABLE
FOR 3000/4000 PRODUCT FAMILIES ONLY

S1 PERFORMANCE PRIMARY SHIFT SCHEDULE,
AVAILABLE FOR 3000/4000 PRODUCT FAMILIES
ONLY

S1 PERFORMANCE SECONDARY SHIFT
SCHEDULE, AVAILABLE FOR 3000/4000
PRODUCT FAMILIES ONLY

2200 RPM PRIMARY MODE SHIFT SPEED

2200 RPM SECONDARY MODE SHIFT SPEED

ENGINE BRAKE RANGE PRESELECT
RECOMMENDED BY DTNA AND ALLISON, THIS
DEFINED BY ENGINE AND VOCATIONAL USAGE

ENGINE BRAKE RANGE ALTERNATE
PRESELECT RECOMMENDED BY DTNA AND
ALLISON, THIS DEFINED BY ENGINE AND
VOCATIONAL USAGE

DISABLE - LOAD BASED SHIFT SCHEDULE,
DISABLE - VEHICLE ACCELERATION CONTROL

NEUTRAL AT STOP - DISABLED, FUELSENSE -
DISABLED

DRIVER SWITCH INPUT - DEFAULT - NO
SWITCHES

MAXIMUM ENGINE SPEED FOR PTO
ENGAGEMENT 1200 RPM

MAXIMUM ENGINE SPEED FOR PTO
OPERATION 3000 RPM

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Description

MAXIMUM OUTPUT SPEED FOR PTO
ENGAGEMENT 3000 RPM - ALLISON 5TH GEN
TRANSMISSIONS

MAXIMUM OUTPUT SPEED FOR PTO
OPERATION 4000 RPM - ALLISON 5TH GEN
TRANSMISSIONS

VEHICLE INTERFACE WIRING CONNECTOR
WITHOUT BLUNT CUTS, AT BACK OF CAB

ELECTRONIC TRANSMISSION CUSTOMER
ACCESS CONNECTOR FIREWALL MOUNTED

MAGNETIC PLUGS, ENGINE DRAIN,
TRANSMISSION DRAIN, AXLE(S) FILL AND
DRAIN

PUSH BUTTON ELECTRONIC SHIFT CONTROL,
DASH MOUNTED

TRANSMISSION PROGNOSTICS - ENABLED 2013

WATER TO OIL TRANSMISSION COOLER, IN
RADIATOR END TANK

TRANSMISSION OIL CHECK AND FILL WITH
ELECTRONIC OIL LEVEL CHECK

SYNTHETIC TRANSMISSION FLUID (TES-295
COMPLIANT)

Front Axle and Equipment

DETROIT DA-F-20.0-5 20,000# FL1 71.0 KPI/3.74
DROP SINGLE FRONT AXLE

MERITOR 16.5X6 Q+ CAST SPIDER CAM FRONT
BRAKES, DOUBLE ANCHOR, FABRICATED
SHOES

NON-ASBESTOS FRONT BRAKE LINING

CONMET CAST IRON FRONT BRAKE DRUMS

FRONT BRAKE DUST SHIELDS

FRONT OIL SEALS

SKF SCOTSEAL TF VENTED FRONT HUB CAPS
WITH WINDOW, CENTER AND SIDE PLUGS - OIL

STANDARD SPINDLE NUTS FOR ALL AXLES

HALDEX AUTOMATIC FRONT SLACK
ADJUSTERS WITH STAINLESS STEEL CLEVIS
PINS

STANDARD KING PIN BUSHINGS

TRW THP-60 POWER STEERING WITH RCH45
AUXILIARY GEAR

POWER STEERING PUMP

4 QUART POWER STEERING RESERVOIR

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Description

OIL/AIR POWER STEERING COOLER MOUNTED
ABOVE FRONT CLOSING CROSSMEMBER
SYNTHETIC 75W-90 FRONT AXLE LUBE

Front Suspension

20,000# TAPERLEAF FRONT SUSPENSION
MAINTENANCE FREE RUBBER BUSHINGS -
FRONT SUSPENSION
FRONT SHOCK ABSORBERS

Rear Axle and Equipment

RS-30-185 30,000# U-SERIES SINGLE REAR
AXLE
6.14 REAR AXLE RATIO
IRON REAR AXLE CARRIER WITH STANDARD
AXLE HOUSING
MXL 176T MERITOR EXTENDED LUBE MAIN
DRIVELINE WITH HALF ROUND YOKES
DRIVER CONTROLLED TRACTION
DIFFERENTIAL - SINGLE REAR AXLE
(1) DRIVER CONTROLLED DIFFERENTIAL LOCK
REAR VALVE FOR SINGLE DRIVE AXLE
BLINKING LAMP WITH EACH MODE SWITCH,
DIFFERENTIAL UNLOCK WITH IGNITION OFF,
ACTIVE <25 MPH
MERITOR 16.5X7 P CAM REAR BRAKES,
DOUBLE ANCHOR, CAST SHOES
NON-ASBESTOS REAR BRAKE LINING
STANDARD BRAKE CHAMBER LOCATION
WEBB CAST IRON REAR BRAKE DRUMS
REAR BRAKE DUST SHIELDS
REAR OIL SEALS
MGM TR-T LONGSTROKE 1-DRIVE AXLE SPRING
PARKING CHAMBERS
HALDEX AUTOMATIC REAR SLACK ADJUSTERS
WITH STAINLESS STEEL CLEVIS PINS
SYNTHETIC 75W-90 REAR AXLE LUBE
STANDARD REAR AXLE BREATHER(S)

Rear Suspension

CHALMERS 1030 30,000# REAR SUSPENSION
CHALMERS 1030 SERIES - 9.37-inch RIDE
HEIGHT
FORE/AFT CONTROL RODS

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Description

REAR SHOCK ABSORBERS - ONE AXLE

Brake System

WABCO 4S/4M ABS WITHOUT TRACTION CONTROL
REINFORCED NYLON, FABRIC BRAID AND WIRE BRAID CHASSIS AIR LINES
FIBER BRAID PARKING BRAKE HOSE
STANDARD BRAKE SYSTEM VALVES
STANDARD AIR SYSTEM PRESSURE PROTECTION SYSTEM
STD U.S. FRONT BRAKE VALVE
RELAY VALVE WITH 5-8 PSI CRACK PRESSURE, NO REAR PROPORTIONING VALVE
WABCO SS-1200 PLUS AIR DRYER WITH INTEGRAL AIR GOVERNOR AND HEATER
WABCO OIL COALESCING FILTER FOR AIR DRYER
AIR DRYER MOUNTED INBOARD ON LH RAIL
ALUMINUM AIR BRAKE RESERVOIRS; CUSTOMER ACCEPTS TANKS MOUNTED PERPENDICULAR TO RAIL
PERP TANKS 47" BOC
USF BRACKET FOR BELOW RAIL TANK
CLEAR FRAME RAIL FROM BACK OF CAB TO FRONT REAR SUSPENSION BRACKET, RH RAIL INSIDE/OUTBOARD AND BELOW
BW DV-2 AUTO DRAIN VALVE WITH HEATER TO WET TANK; DRAIN VALVE CABLES ON ALL OTHER TANKS

Trailer Connections

PRIMARY CONNECTOR/RECEPTACLE WIRED FOR COMBINATION STOP/TURN, CENTER PIN POWERED THROUGH IGNITION WITH STOP SIGNAL PREWIRE PACKAGE
SAE J560 7-WAY PRIMARY TRAILER CABLE RECEPTACLE MOUNTED END OF FRAME
UPGRADED CHASSIS MULTIPLEXING UNIT

Wheelbase & Frame

4575MM (180 INCH) WHEELBASE
1/2X3.64X11-7/8 INCH STEEL FRAME
(12.7MMX301.6MM/0.5X11.88 INCH) 120KSI
PARTIAL INNER FRAME REINFORCEMENT AT FRONT SUSPENSION

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State Contract # 14PSX0239
Revised specification
(10/31/2017)
41,000 GVW Auto
Transmission with
Chalmers rear suspension
Changes have been
incorporated.

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Description

BODY COMPANY INSTALLED ADDITIONAL FRONT FRAME REINFORCEMENT FOR SNOW PLOW
1600MM (63 INCH) REAR FRAME OVERHANG
FRAME OVERHANG RANGE: 61 INCH TO 70 INCH
24 INCH INTEGRAL FRONT FRAME EXTENSION
CALC'D BACK OF CAB TO REAR SUSP C/L (CA): 96.54 in
CALCULATED EFFECTIVE BACK OF CAB TO REAR SUSPENSION C/L (CA): 93.54 in
CALC'D FRAME LENGTH - OVERALL: 294.69
CALC'D SPACE AVAILABLE FOR DECKPLATE: 96.54 in
CALCULATED FRAME SPACE LH SIDE: 62.18 in
CALCULATED FRAME SPACE RH SIDE: 103.23 in
SQUARE END OF FRAME
FRONT CLOSING CROSSMEMBER
STANDARD WEIGHT ENGINE CROSSMEMBER
STANDARD MIDSHIP #1 CROSSMEMBER(S)
REARMOST CROSSMEMBER MOUNTED WITH LAST CROSSMEMBER 13 INCHES FROM END OF FRAME
STANDARD SUSPENSION CROSSMEMBER

Chassis Equipment

16.5 INCH PAINTED STEEL STRAIGHT BUMPER
FRONT TOW HOOKS - FRAME MOUNTED
BUMPER MOUNTING FOR SINGLE LICENSE PLATE
HUCK-SPIN ROUND COLLAR CHASSIS FASTENERS

Fuel Tanks

70 GALLON/264 LITER RECTANGULAR ALUMINUM FUEL TANK - LH
RECTANGULAR FUEL TANK
PLAIN ALUMINUM/PAINTED STEEL FUEL/HYDRAULIC TANK(S) WITH PAINTED BANDS
FUEL TANK FORWARD
PLAIN STEP FINISH
FUEL TANK CAP

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Description

DAVCO 245 FUEL/WATER SEPARATOR WITH 12
VOLT HEAT AND WATER IN FUEL SENSOR
EQUIFLO INBOARD FUEL SYSTEM
HIGH TEMPERATURE REINFORCED NYLON
FUEL LINE

Tires

MICHELIN X WORKS Z 315/80R22.5 20 PLY
RADIAL FRONT TIRES
MICHELIN XDN2 12R22.5 16 PLY RADIAL REAR
TIRES

Hubs

CONMET PRESET PLUS PREMIUM IRON FRONT
HUBS
WEBB IRON REAR HUBS

Wheels

ACCURIDE 29039 22.5X9.00 10-HUB PILOT 5.25
INSET 5-HAND STEEL DISC FRONT WHEELS
ACCURIDE 28828 22.5X8.25 10-HUB PILOT 2-
HAND HD STEEL DISC REAR WHEELS
FRONT TIRE/DISC WHEEL STATIC BALANCING
WITH LEAD-FREE WEIGHTS

Cab Exterior

114 INCH BBC FLAT ROOF ALUMINUM
CONVENTIONAL CAB
AIR CAB MOUNTING
NONREMOVABLE BUGSCREEN MOUNTED
BEHIND GRILLE
FRONT FENDERS
3-1/2 INCH FENDER EXTENSIONS
LH AND RH GRAB HANDLES
STATIONARY BLACK GRILLE
BLACK HOOD MOUNTED AIR INTAKE GRILLE
FIBERGLASS HOOD
HOOD LINER INSULATION WITH SINGLE
FIREWALL INSULATION
SINGLE 14 INCH ROUND HADLEY AIR HORN
UNDER LH DECK
DUAL ELECTRIC HORNS
SINGLE HORN SHIELD
ALL UNIT(S) KEYED ALIKE WITH CUSTOMER
SPECIFIED KEY NUMBER

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Description

REAR LICENSE PLATE MOUNT END OF FRAME
HALOGEN COMPOSITE HEADLAMPS WITH
BLACK BEZELS
LED AERODYNAMIC MARKER LIGHTS
HEADLIGHTS ON WITH WIPERS, WITH LOW
BEAM DAYTIME RUNNING LIGHTS
OMIT STOP/TAIL/BACKUP LIGHTS AND PROVIDE
WIRING FOR COMBINED STOP/TURN LIGHTS TO
FOUR FEET BEYOND END OF FRAME
STANDARD FRONT TURN SIGNAL LAMPS
DUAL WEST COAST MOLDED-IN COLOR
HEATED MIRRORS
DOOR MOUNTED MIRRORS
102 INCH EQUIPMENT WIDTH
LH AND RH 8 INCH MOLDED-IN COLOR CONVEX
MIRRORS MOUNTED UNDER PRIMARY
MIRRORS
RH DOWN VIEW MIRROR
RH AND LH 8 INCH HEATED STAINLESS STEEL
FENDER MOUNTED CONVEX MIRRORS WITH
TRIPOD BRACKETS
STANDARD SIDE/REAR REFLECTORS
BUSTIN SERRATED ALUMINUM CAB ACCESS
STEPS, BOTH SIDES, WITH RH
AFTERTREATMENT SYSTEM CAB ACCESS WITH
PLAIN DIAMOND PLATE SHIELDING
ELECTRIC HORN WARNING SYSTEM FOR PARK
BRAKE NOT SET WITH DOOR OPEN AND ALL
IGNITION KEY POSITIONS
COMPOSITE EXTERIOR SUN VISOR
63X14 INCH TINTED REAR WINDOW
TINTED DOOR GLASS LH AND RH WITH TINTED
OPERATING WING WINDOWS
MANUAL DOOR WINDOW REGULATORS
LOWER RH DOOR WINDOW WITH FRESNEL
LENS
1-PIECE TINTED CURVED BONDED WINDSHIELD
WITH HEATED WIPER BLADE PARK AREAS
8 LITER WINDSHIELD WASHER RESERVOIR,
CAB MOUNTED, WITHOUT FLUID LEVEL
INDICATOR

Cab Interior

OPAL GRAY VINYL INTERIOR

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Description

MOLDED PLASTIC DOOR PANEL WITHOUT
VINYL INSERT WITH ALUMINUM KICKPLATE
LOWER DOOR

MOLDED PLASTIC DOOR PANEL WITHOUT
VINYL INSERT WITH ALUMINUM KICKPLATE
LOWER DOOR

BLACK MATS WITH SINGLE INSULATION

DASH MOUNTED ASH TRAY(S) WITHOUT
LIGHTER

NO FORWARD ROOF MOUNTED CONSOLE
IN DASH STORAGE BIN

CENTER STORAGE CONSOLE MOUNTED ON
BACKWALL

(2) CUP HOLDERS LH AND RH DASH

GRAY/CHARCOAL FLAT DASH

SMART SWITCH EXPANSION MODULE

2-1/2 LB. FIRE EXTINGUISHER

HEATER, DEFROSTER AND AIR CONDITIONER

STANDARD HVAC DUCTING WITH SNOW
SHIELD FOR FRESH AIR INTAKE

MAIN HVAC CONTROLS WITH RECIRCULATION
SWITCH

STANDARD HEATER PLUMBING

DENSO HEAVY DUTY AIR CONDITIONER
COMPRESSOR

BINARY CONTROL, R-134A

STANDARD INSULATION

SOLID-STATE CIRCUIT PROTECTION AND
FUSES

12V NEGATIVE GROUND ELECTRICAL SYSTEM

DOME DOOR ACTIVATED LH AND RH, DUAL
READING LIGHTS, FORWARD CAB ROOF

CAB DOOR LATCHES WITH MANUAL DOOR
LOCKS

(1) 12 VOLT POWER SUPPLY IN DASH

TRIANGULAR REFLECTORS WITHOUT FLARES

PREMIUM HIGH BACK AIR SUSPENSION DRIVER
SEAT WITH 3 CHAMBER AIR LUMBAR,
INTEGRATED CUSHION EXTENSION, FORWARD
AND REAR CUSHION TILT, ADJUSTABLE SHOCK
ABSORBER

BASIC HIGH BACK AIR SUSPENSION
PASSENGER SEAT WITH MECHANICAL LUMBAR
AND INTEGRATED CUSHION EXTENSION

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Description

DUAL DRIVER AND PASSENGER SEAT
ARMRESTS
LH AND RH INTEGRAL DOOR PANEL ARMRESTS
BLACK CORDURA PLUS CLOTH DRIVER SEAT
COVER
BLACK CORDURA PLUS CLOTH PASSENGER
SEAT COVER
BLACK SEAT BELTS
ADJUSTABLE TILT AND TELESCOPING
STEERING COLUMN
4-SPOKE 18 INCH (450MM) STEERING WHEEL
DRIVER AND PASSENGER INTERIOR SUN
VISORS

Instruments & Controls

GRAY DRIVER INSTRUMENT PANEL
GRAY CENTER INSTRUMENT PANEL
BLACK GAUGE BEZELS
LOW AIR PRESSURE INDICATOR LIGHT AND
AUDIBLE ALARM
2 INCH PRIMARY AND SECONDARY AIR
PRESSURE GAUGES
ENGINE COMPARTMENT MOUNTED AIR
RESTRICTION INDICATOR WITH GRADUATIONS,
WITH WARNING LIGHT IN DASH
ELECTRONIC CRUISE CONTROL WITH
SWITCHES IN LH SWITCH PANEL
KEY OPERATED IGNITION SWITCH AND
INTEGRAL START POSITION; 4 POSITION
OFF/RUN/START/ACCESSORY
ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28
LED WARNING LAMPS AND DATA LINKED
HEAVY DUTY ONBOARD DIAGNOSTICS
INTERFACE CONNECTOR LOCATED BELOW LH
DASH
2 INCH ELECTRIC FUEL GAUGE
PROGRAMMABLE RPM CONTROL -
ELECTRONIC ENGINE
ELECTRICAL ENGINE COOLANT TEMPERATURE
GAUGE
2 INCH TRANSMISSION OIL TEMPERATURE
GAUGE
ENGINE AND TRIP HOUR METERS INTEGRAL
WITHIN DRIVER DISPLAY
ELECTRIC ENGINE OIL PRESSURE GAUGE

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Description

OVERHEAD INSTRUMENT PANEL
SMARTPLEX HUB MODULE WITH OVERHEAD SWITCH MOUNTING, DRIVER SIDE AND CENTER CONSOLE (12 SWITCH SLOTS)
AM/FM/WB WORLD TUNER RADIO WITH BLUETOOTH AND USB AND AUXILIARY INPUTS, J1939
DASH MOUNTED RADIO
(2) RADIO SPEAKERS IN CAB
AM/FM ANTENNA MOUNTED ON FORWARD LH ROOF
POWER AND GROUND WIRING PROVISION OVERHEAD
ROOF/OVERHEAD CONSOLE CB RADIO PROVISION
RADIO WIRING WITH POWER CUTOFF WHEN VEHICLE IN REVERSE GEAR
ELECTRONIC MPH SPEEDOMETER WITH SECONDARY KPH SCALE, WITHOUT ODOMETER
STANDARD VEHICLE SPEED SENSOR WITH ADDITIONAL SIGNAL FOR CUSTOMER USE LOCATED BETWEEN DRIVER AND PASSENGER SEATS
ELECTRONIC 3000 RPM TACHOMETER
IGNITION SWITCH CONTROLLED ENGINE STOP
6 ON/OFF LATCHING SMARTPLEX SWITCHES
1 ON/OFF MOMENTARY SMARTPLEX SWITCH
1 ON/OFF/ON LATCHING SMARTPLEX SWITCH
1 ON/OFF/ON MOMENTARY SMARTPLEX SWITCH
BODY UP AND GATE OPEN SMARTPLEX INDICATOR LAMPS
0-RED, 1-AMBER, 0-GREEN SMARTPLEX INDICATOR LAMPS
DIGITAL VOLTAGE DISPLAY INTEGRAL WITH DRIVER DISPLAY
SINGLE ELECTRIC WINDSHIELD WIPER MOTOR WITH DELAY PROGRAMMED TO SLOWEST SPEED WITH PARK BRAKE SET
MARKER LIGHT SWITCH INTEGRAL WITH HEADLIGHT SWITCH AND SINGLE CONNECTOR AND SWITCH FOR CUSTOMER FURNISHED SNOW PLOW LIGHTS, LOW BEAMS OFF WITH HIGH BEAMS

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Description

ONE VALVE PARKING BRAKE SYSTEM WITH
DASH VALVE CONTROL AUTONEUTRAL AND
WARNING INDICATOR

SELF CANCELING TURN SIGNAL SWITCH WITH
DIMMER, WASHER/WIPER AND HAZARD IN
HANDLE

INTEGRAL ELECTRONIC TURN SIGNAL
FLASHER WITH HAZARD LAMPS OVERRIDING
STOP LAMPS

Color

CAB COLOR A: L6389EB OMAHA ORANGE ELITE
BC

BLACK, HIGH SOLIDS POLYURETHANE CHASSIS
PAINT

POWDER WHITE (N0006EA) FRONT
WHEELS/RIMS (PKWHT21, TKWHT21, W, TW)

POWDER WHITE (N0006EA) REAR
WHEELS/RIMS (PKWHT21, TKWHT21, W, TW)

STANDARD BLACK BUMPER PAINT

SUNVISOR PAINTED SAME AS CAB COLOR A

STANDARD E COAT/UNDERCOATING

Certification / Compliance

U.S. FMVSS CERTIFICATION

Secondary Factory Options

STANDARD ROUTING AND CLIPPING

Extended Warranty

CUM 2017 L9: HD1 MD DTY 5 YEARS / 150,000 MILES / 241,500 KM
EXTENDED WARRANTY. FEX APPLIES

CUM 2017 L9: AT3 MD DTY 5 YEARS / 150,000 MILES / 241,500 KM
AFTERTREATMENT. FEX APPLIES

TC4: HD MODERATE 2 YEARS/200,000 MILES / 322,000 KM
EXTENDED TRUCK COVERAGE. FEX APPLIES

COOLING: HD MODERATE 5 YEARS/500,000 MILES/805,000 KM EXT
COVERAGE FEX APPLIES

WIRING: HD MODERATE 5 YEAR/200,000 MILES/322,000 KM
EXTENDED COVERAGE FEX APPLIES

ALLISON 2500/3000 RDS SERIES TRANSMISSION EXTENDED
WARRANTY, 5 YEARS/UNLIMITED MILES FEX

AXLE: FRONT/SINGLE REAR HD MODERATE 3 YEAR/200,000
MILE/322,000 KM EXTENDED AXLE COVERAGE.

SINGLE AXLE BODY Item 1B

Precise ARC with Display
Plow lights
AL plow light fender brackets
10 ft side dump with Poly headboard Prewet tank & 5 year warranty
Conspicuity tape on tailgate
Tailgate lamp & alarm (Labor Only)
Pintle plate
Spinner guard
Hyd prewet unit
Prewet plumbing kit
Teejet nozzle
Pump bracket (5/8)
Body up light & alarm (Labor Only)
ICC lighting required
Ecco 500 backup alarm
License light
LDGTR Bobtail plug
Junction box
Whelen CTSYS1SS System w/ photo eye and heated rear lights
Whelen Headboard light and box
Whelen spinner light
Body ladder
Shovel holder
Wheel chocks
Front mudflaps w/ Antisail
Rear mudflaps
30 ton hook
D-rings
Toolbox 1702300
Toolbox brackets
Bar/shovel holder
Cone holder
Tailgate chevron striping
Conspicuity on body sides
Tilt hitch w/ dual push centers
3/4 side plate upgrade
Lift cylinder
Lift yoke
Labor to install all the above

SINGLE AXLE HYDRAULICS - Basic Item 1C	
	Spare hyd filter to replace filter used after startup
	75cc front mount pump
	Low oil override
	Driveline
	Spreader control & Valve Assembly
	Valve enclosure
	40 gal tank
	Hyd oil
	Cab control Quadco with cables (4) handles
	Return manifold
	Low oil switch, lamp & alarm
	Hydraulic hose kit with SS tubes and disconnects
	Labor to install all the above
	Extended Warranty per Spec (Valves and Controller 3 year)
SINGLE AXLE TARP Item 1D	
	Roll Rite electric tarp w/ relay upgrade
	Labor to install all the above
POWER ANGLE 11' SNOW PLOW Item 1E	
	PRRL1136ME
	Installed
Mid Mount Wing System Item 1F	
	120WMM Wing with cylinder and brackets
	Front mid mount Support
	Rear mid mount Support
	Timbren Hinge
	Arm
	Upgrade Valve Assembly and additional cab controls (2)
	Additional Hydraulic hose kit & Disconnects
	Additional switch requirements
	Whelen Tir3 Light
	Whelen Wing Light
	Labor to install all the above
POWER ANGLE 12' SNOW PLOW Item 1G	
	PRRL123645FE
	Installed

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Revised specification (10/31/2017)
62,000 GVW Ultra-Shift Plus
Changes have been incorporated

- Remove regular coolant in original proposal. Insert extended life coolant.
- Remove 10C-VAS UltraShift transmission in original proposal. Insert Eaton Fuller FO-16E308LL-VCS.
- Remove paddle shifter on column in original proposal. Insert Push button electronic shift control, dash mounted.
- Change originally proposed location of oil/air power steering cooler to mount above front closing cross-member.
- Remove 20,000 # flat leaf front suspension in original proposal. Insert 23,000 # Flat leaf front suspension.
- Remove 164P in original proposal. Insert RT-46-160P 46,000 # R-series tandem rear axle.
- Remove 4.89 axle ratio in original proposal. Insert 4.56 Axle ratio.
- Remove 18T main driveline in original proposal. Insert RPL25SD Meritor drive-line.
- Remove 17T inter-axle drive-line in original proposal. Insert RPL20 Meritor inter-axle driveline.
- Insert blinking lamp with each mode switch, differential unlock with ignition off, active < 5 mph, deactivate > 25 mph.
- Remove 16.5x7 rear brakes in original proposal. Insert Meritor 16.5 x 8.62 Q+ cast spider cam rear brakes, double anchor, fabricated shoes.
- Remove 56" axle spacing in original proposal. Insert 60" axle spacing.
- Insert Rear shock absorbers – two axles.
- Insert Aluminum air brake reservoirs.
- Remove basic combination primary receptacle. Insert pre-wire package into cab for body builder installed electric brake controller.
- Insert supplemental J560 7-way receptacle located with primary receptacle.
- Remove 7/16" frame in original proposal. Insert ½" x 3.64 x 11-7/8" steel frame.
- Insert heavy duty steel 6-piece bolted construction mid-ship cross-member.
- Remove Huck bolts on suspension only in original proposal. Insert Huck spin round collar chassis fasteners.
- Remove Davco 482 in original proposal. Insert Davco 482 fuel/water separator with 12 volt and 120 volt preheater.
- Insert hood liner insulation with single firewall insulation.
- Insert dual electric horns.
- Insert all units keyed alike with customer specified key number.
- Insert LED aerodynamic marker lights.

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- Insert RH down view mirror.
- Remove Bustin steps with steel shield in original proposal. Insert Bustin serrated aluminum cab access steps, both sides, with RH after-treatment system cab access with plain diamond plate shielding.
- Electric horn warning system for park brake not set with door open and all ignition key positions.
- Remove non-operating wing windows in original proposal. Insert tinted operating wing windows.
- Insert Lower RH door window with Fresnel lens.
- Insert 1-Piece tinted curved bonded windshield with heated wiper blade park areas.
- Insert aluminum kick-plate on interior lower door driver.
- Insert aluminum kick-plate on interior lower passenger driver.
- Insert center storage console mounted on back wall.
- Insert standard HVAC ducting with snow shield for fresh air intake.
- Remove basic air driver seat in original proposal. Insert premium high back air suspension driver seat with 3 chamber air lumbar, integrated cushion extension, forward and rear cushion tilt, adjustable shock absorber.
- Remove drive seat only armrest as originally proposed. Insert dual driver and passenger seat armrests.
- Insert adjustable tilt and telescoping steering column.
- Insert engine oil temperature gauge.
- Remove dash mounted PTO switch.
- Remove 6 pack of optional switches as originally proposed. Insert SmartPlex hub module with overhead switch mounting, driver side and center console accommodating 12 slots.
- Remove basic radio as originally proposed. Insert AM/FM/WB radio with Bluetooth and microphone, front USB port, front and rear auxiliary inputs and J1939.
- Insert power and ground wiring provision overhead.
- Insert roof/overhead console CB radio provision.
- Insert standard vehicle speed sensor with additional signal for customer use located between seats.
- Remove 4 latching switches as originally proposed. Insert 6 On/off latching SmartPlex switches.
- Insert 1 On/off momentary SmartPlex switch.
- Insert 1 On/off/on latching SmartPlex switch.
- Insert 1 On/off/on momentary SmartPlex switch.
- Insert 1 Amber SmartPlex indicator lamp.

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- Remove wipers as originally proposed. Insert single electric windshield wiper motor with delay programmed to slowest speed with park brake set.
- Insert 5 Year Virtual Technician service contract.
- Wiring extended warranty 5 year / 200,000-mile extended warranty.
- Diagnostic software support, annual renewals and updates in lieu of one Panasonic Toughbook laptop configured with diagnostic software, annual renewals and updates for every three trucks purchased.
- Precise Road Conditions System in lieu of RoadWatch.

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Description

Vehicle Configuration

114SD CONVENTIONAL CHASSIS
SET FORWARD AXLE - TRUCK
TRAILER TOWING PROVISION AT END OF
FRAME FOR TRUCK
LH PRIMARY STEERING LOCATION

General Service

TRUCK/TRAILER CONFIGURATION
DOMICILED, USA 50 STATES (INCLUDING
CALIFORNIA AND CARB OPT-IN STATES)
UTILITY/REPAIR/MAINTENANCE SERVICE
GOVERNMENT BUSINESS SEGMENT
DIRT/SAND/ROCK COMMODITY
TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN
TRANSIT, IS SPENT ON PAVED ROADS
MAXIMUM 8% EXPECTED GRADE
SMOOTH CONCRETE OR ASPHALT PAVEMENT -
MOST SEVERE IN-TRANSIT (BETWEEN SITES)
ROAD SURFACE
FREIGHTLINER LEVEL II WARRANTY
EXPECTED FRONT AXLE(S) LOAD: 20000.0 lbs.
EXPECTED REAR DRIVE AXLE(S) LOAD: 46000.0
lbs.
EXPECTED GROSS VEHICLE WEIGHT
CAPACITY: 66000.0 lbs.
EXPECTED GROSS COMBINATION WEIGHT:
80000.0 lbs.

Truck Service

FRONT PLOW/END DUMP BODY
EXPECTED TRUCK BODY LENGTH: 14.0 ft.
EXPECTED TRUCK BODY WIDTH: 96.0 in
VIKING CIVES, LTD.

Engine

DETROIT DD13 12.8L 435 HP @ 1625 RPM, 1900
GOV RPM, 1550 LB/FT @ 975 RPM

Electronic Parameters

65 MPH ROAD SPEED LIMIT
CRUISE CONTROL SPEED LIMIT SAME AS ROAD
SPEED LIMIT, WITH AUTO RESUME AFTER
SHIFT

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Description

10 MINUTES IDLE SHUTDOWN WITH CLUTCH
AND SERVICE BRAKE OVERRIDE
PTO MODE CANCEL VEHICLE SPEED - 30 MPH
PTO GOVERNOR RAMP RATE - 100 RPM PER
SECOND
ENABLE REGENERATION IN PTO MODE
ENABLE AUTO ENGINE RPM ELEVATE FOR
EXTENDED IDLE

Engine Equipment

2016 ONBOARD DIAGNOSTICS/2010
EPA/CARB/FINAL GHG17 CONFIGURATION
2008 CARB EMISSION CERTIFICATION - CLEAN
IDLE (INCLUDES 6X4 INCH LABEL ON LOWER
FORWARD CORNER OF DRIVER DOOR)
STANDARD OIL PAN
ENGINE MOUNTED OIL CHECK AND FILL
SIDE OF HOOD AIR INTAKE WITH FIREWALL
MOUNTED DONALDSON AIR CLEANER WITH
SAFETY ELEMENT AND INSIDE/OUTSIDE AIR
WITH SNOW DOOR
DR 12V 160 AMP 36-SI BRUSHLESS
QUADRAMOUNT PAD ALTERNATOR WITH
REMOTE BATTERY VOLT SENSE
(3) ALLIANCE MODEL 1231, GROUP 31, 12 VOLT
MAINTENANCE FREE 3375 CCA THREADED
STUD BATTERIES
BATTERY BOX FRAME MOUNTED
STANDARD BATTERY JUMPERS
SINGLE BATTERY BOX FRAME MOUNTED LH
SIDE UNDER CAB
WIRE GROUND RETURN FOR BATTERY CABLES
WITH ADDITIONAL FRAME GROUND RETURN
NON-POLISHED BATTERY BOX COVER
POSITIVE LOAD DISCONNECT WITH CAB
MOUNTED CONTROL SWITCH MOUNTED
OUTBOARD DRIVER SEAT
EATON FULLER ECA CLUTCH
ZERK FITTING WITH EXTENSION HOSE AT
CLUTCH RELEASE BEARING
ELECTRONIC CLUTCH CONTROL
BW MODEL BA-921 19.0 CFM SINGLE CYLINDER
AIR COMPRESSOR WITH SAFETY VALVE
ELECTRONIC ENGINE INTEGRAL SHUTDOWN
PROTECTION SYSTEM
JACOBS COMPRESSION BRAKE

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Description

RH OUTBOARD UNDER STEP MOUNTED
HORIZONTAL AFTERTREATMENT SYSTEM
ASSEMBLY WITH RH B-PILLAR MOUNTED
VERTICAL TAILPIPE

ENGINE AFTERTREATMENT DEVICE,
AUTOMATIC OVER THE ROAD REGENERATION
AND DASH MOUNTED REGENERATION
REQUEST SWITCH

10 FOOT 06 INCH (126 INCH+0/-5.9 INCH)
EXHAUST SYSTEM HEIGHT

RH CURVED VERTICAL TAILPIPE B-PILLAR
MOUNTED ROUTED FROM STEP

6 GALLON DIESEL EXHAUST FLUID TANK
100 PERCENT DIESEL EXHAUST FLUID FILL
STANDARD DIESEL EXHAUST FLUID PUMP
MOUNTING

LH MEDIUM DUTY STANDARD DIESEL EXHAUST
FLUID TANK LOCATION

STANDARD DIESEL EXHAUST FLUID TANK CAP
ALUMINUM AFTERTREATMENT
DEVICE/MUFFLER/TAILOUT SHIELD(S)

BORG WARNER (KYSOR) REAR AIR ON/OFF
ENGINE FAN CLUTCH

AUTOMATIC FAN CONTROL WITHOUT DASH
SWITCH, NON-ENGINE MOUNTED

DDC SUPPLIED ENGINE MOUNTED FUEL
FILTER/FUEL WATER SEPARATOR WITH
WATER-IN-FUEL INDICATOR

FULL FLOW OIL FILTER

1500 SQUARE INCH ALUMINUM RADIATOR
ANTIFREEZE TO -34F, OAT (NITRITE AND
SILICATE FREE) EXTENDED LIFE COOLANT
GATES BLUE STRIPE COOLANT HOSES OR
EQUIVALENT

CONSTANT TENSION HOSE CLAMPS FOR
COOLANT HOSES

HDEP FIXED RATIO COOLANT PUMP AND
RADIATOR DRAIN VALVE

1350 ADAPTER FLANGE FOR FRONT PTO
PROVISION

PHILLIPS-TEMRO 1500 WATT/115 VOLT BLOCK
HEATER

BLACK PLASTIC ENGINE HEATER RECEPTACLE
MOUNTED UNDER LH DOOR

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Description

DELCO 12V MOD 3.175-39MT+ OCP STARTER
WITH THERMAL PROTECTION AND
INTEGRATED MAGNETIC SWITCH

Transmission

EATON FULLER FO-16E308LL-VCS ULTRASHIFT
PLUS TRANSMISSION

Transmission Equipment

VEHICLE INTERFACE WIRING CONNECTOR
WITHOUT BLUNT CUTS, AT BACK OF CAB
ELECTRONIC TRANSMISSION CUSTOMER
ACCESS CONNECTOR FIREWALL MOUNTED
ALUMINUM CLUTCH HOUSING
MAGNETIC TRANSMISSION FILL AND DRAIN,
AXLE(S) FILL AND DRAIN, ENGINE DRAIN; PAINT
DRAIN PLUGS YELLOW
PUSH BUTTON ELECTRONIC SHIFT CONTROL,
DASH MOUNTED
WATER TO OIL TRANSMISSION COOLER, IN
RADIATOR END TANK
SYNTHETIC TRANSMISSION LUBE

Front Axle and Equipment

DETROIT DA-F-20.0-5 20,000# FL1 71.0 KPI/3.74
DROP SINGLE FRONT AXLE
MERITOR 16.5X6 Q+ CAST SPIDER CAM FRONT
BRAKES, DOUBLE ANCHOR, FABRICATED
SHOES
NON-ASBESTOS FRONT BRAKE LINING
CONMET CAST IRON FRONT BRAKE DRUMS
FRONT BRAKE DUST SHIELDS
FRONT OIL SEALS
SKF SCOTSEAL TF VENTED FRONT HUB CAPS
WITH WINDOW, CENTER AND SIDE PLUGS - OIL
STANDARD SPINDLE NUTS FOR ALL AXLES
HALDEX AUTOMATIC FRONT SLACK
ADJUSTERS WITH STAINLESS STEEL CLEVIS
PINS
STANDARD KING PIN BUSHINGS
TRW THP-60 POWER STEERING WITH RCH45
AUXILIARY GEAR
POWER STEERING PUMP
4 QUART POWER STEERING RESERVOIR
OIL/AIR POWER STEERING COOLER MOUNTED
ABOVE FRONT CLOSING CROSSMEMBER

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Description

SYNTHETIC 75W-90 FRONT AXLE LUBE

Front Suspension

23,000# FLAT LEAF FRONT SUSPENSION
GRAPHITE BRONZE BUSHINGS WITH SEALS -
FRONT SUSPENSION
FRONT SHOCK ABSORBERS

Rear Axle and Equipment

RT-46-160P 46,000# R-SERIES TANDEM REAR
AXLE
4.56 REAR AXLE RATIO
IRON REAR AXLE CARRIER WITH STANDARD
AXLE HOUSING
RPL25SD MERITOR MAIN DRIVELINE
RPL20 MERITOR INTERAXLE DRIVELINE
DRIVER CONTROLLED TRACTION
DIFFERENTIAL - BOTH TANDEM REAR AXLES
(1) INTERAXLE LOCK VALVE, (1) DRIVER
CONTROLLED DIFFERENTIAL LOCK FORWARD-
REAR AND REAR-REAR AXLE VALVE
BLINKING LAMP WITH EACH INTERAXLE LOCK
SWITCH, INTERAXLE UNLOCK DEFAULT WITH
IGNITION OFF
BLINKING LAMP WITH EACH MODE SWITCH,
DIFFERENTIAL UNLOCK WITH IGNITION OFF,
ACTIVE <5 MPH, DEACTIVATE >25 MPH
MERITOR 16.5X8.62 Q+ CAST SPIDER CAM
REAR BRAKES, DOUBLE ANCHOR, FABRICATED
SHOES
NON-ASBESTOS REAR BRAKE LINING
BRAKE CAMS AND CHAMBERS ON FORWARD
SIDE OF DRIVE AXLE(S)
CONMET CAST IRON REAR BRAKE DRUMS
REAR BRAKE DUST SHIELDS
REAR OIL SEALS
WABCO TRISTOP-D LONGSTROKE 30/36 2-
DRIVE AXLE SPRING PARKING CHAMBERS
HALDEX AUTOMATIC REAR SLACK ADJUSTERS
WITH STAINLESS STEEL CLEVIS PINS
SYNTHETIC 75W-90 REAR AXLE LUBE
STANDARD REAR AXLE BREATHER(S)

Rear Suspension

TUFTRAC 46,000# REAR SPRING SUSPENSION
TUFTRAC STANDARD RIDE HEIGHT

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Description

AXLE CLAMPING GROUP
60 INCH AXLE SPACING
FORE/AFT AND TRANSVERSE CONTROL RODS
REAR SHOCK ABSORBERS - TWO AXLES
(TANDEM)

Brake System

WABCO 4S/4M ABS WITH HILL START AID AND
AUTOMATIC TRACTION CONTROL
REINFORCED NYLON, FABRIC BRAID AND WIRE
BRAID CHASSIS AIR LINES
FIBER BRAID PARKING BRAKE HOSE
STANDARD BRAKE SYSTEM VALVES
STANDARD AIR SYSTEM PRESSURE
PROTECTION SYSTEM
STD U.S. FRONT BRAKE VALVE
RELAY VALVE WITH 5-8 PSI CRACK PRESSURE,
NO REAR PROPORTIONING VALVE
WABCO SS-1200 PLUS AIR DRYER WITH
INTEGRAL AIR GOVERNOR AND HEATER
WABCO OIL COALESCING FILTER FOR AIR
DRYER
AIR DRYER MOUNTED INBOARD ON LH RAIL
ALUMINUM AIR BRAKE RESERVOIRS;
CUSTOMER ACCEPTS TANKS MOUNTED
PERPENDICULAR TO RAIL
PERP TANKS 47" BOC
USF BRACKET FOR BELOW RAIL TANK
CLEAR FRAME RAIL FROM BACK OF CAB TO
FRONT REAR SUSPENSION BRACKET, RH RAIL
INSIDE/OUTBOARD AND BELOW
BW DV-2 AUTO DRAIN VALVE WITH HEATER TO
WET TANK; DRAIN VALVE CABLES ON ALL
OTHER TANKS

Trailer Connections

AIR CONNECTIONS TO END OF FRAME WITH
GLAD HANDS FOR TRUCK AND NO DUST
COVERS
PRIMARY CONNECTOR/RECEPTACLE WIRED
FOR COMBINATION STOP/TURN, CENTER PIN
POWERED THROUGH IGNITION WITH STOP
SIGNAL PREWIRE PACKAGE
SAE J560 7-WAY PRIMARY TRAILER CABLE
RECEPTACLE MOUNTED END OF FRAME
UPGRADED CHASSIS MULTIPLEXING UNIT
SUPPLEMENTAL J560 7-WAY RECEPTACLE
LOCATED WITH PRIMARY RECEPTACLE

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Description

Wheelbase & Frame

5375MM (212 INCH) WHEELBASE
1/2X3.64X11-7/8 INCH STEEL FRAME
(12.7MMX301.6MM/0.5X11.88 INCH) 120KSI
PARTIAL INNER FRAME REINFORCEMENT AT
FRONT SUSPENSION
BODY COMPANY INSTALLED ADDITIONAL
FRONT FRAME REINFORCEMENT FOR SNOW
FLOW
1600MM (63 INCH) REAR FRAME OVERHANG
FRAME OVERHANG RANGE: 61 INCH TO 70
INCH
24 INCH INTEGRAL FRONT FRAME EXTENSION
CALC'D BACK OF CAB TO REAR SUSP C/L (CA):
128.54 in
CALCULATED EFFECTIVE BACK OF CAB TO
REAR SUSPENSION C/L (CA): 125.54 in
CALC'D FRAME LENGTH - OVERALL: 326.69
CALC'D SPACE AVAILABLE FOR DECKPLATE:
128.54 in
CALCULATED FRAME SPACE LH SIDE: 36.38 in
CALCULATED FRAME SPACE RH SIDE: 93.03 in
SQUARE END OF FRAME
FRONT CLOSING CROSSMEMBER
STANDARD WEIGHT ENGINE CROSSMEMBER
HEAVY DUTY STEEL 6 PIECE BOLTED
CONSTRUCTION MIDSHIP CROSSMEMBER(S)
REARMOST CROSSMEMBER MOUNTED WITH
LAST CROSSMEMBER 13 INCHES FROM END
OF FRAME
HEAVY DUTY SIX PIECE BOLTED
CONSTRUCTION SUSPENSION CROSSMEMBER

Chassis Equipment

16.5 INCH PAINTED STEEL STRAIGHT BUMPER
FRONT TOW HOOKS - FRAME MOUNTED
BUMPER MOUNTING FOR SINGLE LICENSE
PLATE
HUCK-SPIN ROUND COLLAR CHASSIS
FASTENERS

Fuel Tanks

70 GALLON/264 LITER RECTANGULAR
ALUMINUM FUEL TANK - LH
RECTANGULAR FUEL TANK

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Description

PLAIN ALUMINUM/PAINTED STEEL
FUEL/HYDRAULIC TANK(S) WITH PAINTED
BANDS
FUEL TANK FORWARD
PLAIN STEP FINISH
FUEL TANK CAP
DAVCO 487 FUEL/WATER SEPARATOR WITH
ESOC AND 12 VOLT AND 120 VOLT PREHEATER
EQUIFLO INBOARD FUEL SYSTEM
HIGH TEMPERATURE REINFORCED NYLON
FUEL LINE

Tires

GOODYEAR G296 MSA 425/65R22.5 20 PLY
RADIAL FRONT TIRES
MICHELIN XDN2 12R22.5 16 PLY RADIAL REAR
TIRES

Hubs

CONMET PRESET PLUS PREMIUM IRON FRONT
HUBS
CONMET PRESET PLUS PREMIUM IRON REAR
HUBS

Wheels

MAXION WHEELS 10035 22.5X12.25 10-HUB
PILOT 4.75 INSET 5-HAND STEEL DISC FRONT
WHEELS
ACCURIDE 28828 22.5X8.25 10-HUB PILOT 2-
HAND HD STEEL DISC REAR WHEELS
FORCEMATCH TIRE/WHEEL RUNOUT
CHECK/MARK AND STATIC BALANCING - ALL
TIRES/WHEELS

Cab Exterior

114 INCH BBC FLAT ROOF ALUMINUM
CONVENTIONAL CAB
AIR CAB MOUNTING
NONREMOVABLE BUGSCREEN MOUNTED
BEHIND GRILLE
FRONT FENDERS
3-1/2 INCH FENDER EXTENSIONS
LH AND RH GRAB HANDLES
STATIONARY BLACK GRILLE
BLACK HOOD MOUNTED AIR INTAKE GRILLE
FIBERGLASS HOOD

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Description

HOOD LINER INSULATION WITH SINGLE
FIREWALL INSULATION
SINGLE 14 INCH ROUND HADLEY AIR HORN
UNDER LH DECK
DUAL ELECTRIC HORNS
SINGLE HORN SHIELD
ALL UNIT(S) KEYED ALIKE WITH CUSTOMER
SPECIFIED KEY NUMBER
REAR LICENSE PLATE MOUNT END OF FRAME
HALOGEN COMPOSITE HEADLAMPS WITH
BLACK BEZELS
LED AERODYNAMIC MARKER LIGHTS
HEADLIGHTS ON WITH WIPERS, WITH LOW
BEAM DAYTIME RUNNING LIGHTS
OMIT STOP/TAIL/BACKUP LIGHTS AND PROVIDE
WIRING FOR COMBINED STOP/TURN LIGHTS TO
FOUR FEET BEYOND END OF FRAME
STANDARD FRONT TURN SIGNAL LAMPS
DUAL WEST COAST MOLDED-IN COLOR
HEATED MIRRORS
DOOR MOUNTED MIRRORS
102 INCH EQUIPMENT WIDTH
LH AND RH 8 INCH MOLDED-IN COLOR CONVEX
MIRRORS MOUNTED UNDER PRIMARY
MIRRORS
RH DOWN VIEW MIRROR
RH AND LH 8 INCH HEATED STAINLESS STEEL
FENDER MOUNTED CONVEX MIRRORS WITH
TRIPOD BRACKETS
STANDARD SIDE/REAR REFLECTORS
BUSTIN SERRATED ALUMINUM CAB ACCESS
STEPS, BOTH SIDES, WITH RH
AFTERTREATMENT SYSTEM CAB ACCESS WITH
PLAIN DIAMOND PLATE SHIELDING
ELECTRIC HORN WARNING SYSTEM FOR PARK
BRAKE NOT SET WITH DOOR OPEN AND ALL
IGNITION KEY POSITIONS
COMPOSITE EXTERIOR SUN VISOR
63X14 INCH TINTED REAR WINDOW
TINTED DOOR GLASS LH AND RH WITH TINTED
OPERATING WING WINDOWS
MANUAL DOOR WINDOW REGULATORS
LOWER RH DOOR WINDOW WITH FRESNEL
LENS

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Description

1-PIECE TINTED CURVED BONDED WINDSHIELD
WITH HEATED WIPER BLADE PARK AREAS
8 LITER WINDSHIELD WASHER RESERVOIR,
CAB MOUNTED, WITHOUT FLUID LEVEL
INDICATOR

Cab Interior

OPAL GRAY VINYL INTERIOR
MOLDED PLASTIC DOOR PANEL WITHOUT
VINYL INSERT WITH ALUMINUM KICKPLATE
LOWER DOOR
MOLDED PLASTIC DOOR PANEL WITHOUT
VINYL INSERT WITH ALUMINUM KICKPLATE
LOWER DOOR
BLACK MATS WITH SINGLE INSULATION
DASH MOUNTED ASH TRAY(S) WITHOUT
LIGHTER
NO FORWARD ROOF MOUNTED CONSOLE
IN DASH STORAGE BIN
CENTER STORAGE CONSOLE MOUNTED ON
BACKWALL
(2) CUP HOLDERS LH AND RH DASH
GRAY/CHARCOAL FLAT DASH
SMART SWITCH EXPANSION MODULE
2-1/2 LB. FIRE EXTINGUISHER
HEATER, DEFROSTER AND AIR CONDITIONER
STANDARD HVAC DUCTING WITH SNOW
SHIELD FOR FRESH AIR INTAKE
MAIN HVAC CONTROLS WITH RECIRCULATION
SWITCH
STANDARD HEATER PLUMBING
DENSO HEAVY DUTY AIR CONDITIONER
COMPRESSOR
BINARY CONTROL, R-134A
STANDARD INSULATION
SOLID-STATE CIRCUIT PROTECTION AND
FUSES
12V NEGATIVE GROUND ELECTRICAL SYSTEM
DOME DOOR ACTIVATED LH AND RH, DUAL
READING LIGHTS, FORWARD CAB ROOF
CAB DOOR LATCHES WITH MANUAL DOOR
LOCKS
(1) 12 VOLT POWER SUPPLY IN DASH
TRIANGULAR REFLECTORS WITHOUT FLARES

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Description

PREMIUM HIGH BACK AIR SUSPENSION DRIVER SEAT WITH 3 CHAMBER AIR LUMBAR, INTEGRATED CUSHION EXTENSION, FORWARD AND REAR CUSHION TILT, ADJUSTABLE SHOCK ABSORBER

BASIC HIGH BACK AIR SUSPENSION PASSENGER SEAT WITH MECHANICAL LUMBAR AND INTEGRATED CUSHION EXTENSION

DUAL DRIVER AND PASSENGER SEAT ARMRESTS

LH AND RH INTEGRAL DOOR PANEL ARMRESTS

BLACK CORDURA PLUS CLOTH DRIVER SEAT COVER

BLACK CORDURA PLUS CLOTH PASSENGER SEAT COVER

BLACK SEAT BELTS

ADJUSTABLE TILT AND TELESCOPING STEERING COLUMN

4-SPOKE 18 INCH (450MM) STEERING WHEEL

DRIVER AND PASSENGER INTERIOR SUN VISORS

Instruments & Controls

GRAY DRIVER INSTRUMENT PANEL

GRAY CENTER INSTRUMENT PANEL

BLACK GAUGE BEZELS

LOW AIR PRESSURE INDICATOR LIGHT AND AUDIBLE ALARM

2 INCH PRIMARY AND SECONDARY AIR PRESSURE GAUGES

ENGINE COMPARTMENT MOUNTED AIR RESTRICTION INDICATOR WITH GRADUATIONS, WITH WARNING LIGHT IN DASH

ELECTRONIC CRUISE CONTROL WITH SWITCHES IN LH SWITCH PANEL

KEY OPERATED IGNITION SWITCH AND INTEGRAL START POSITION; 4 POSITION OFF/RUN/START/ACCESSORY

ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28 LED WARNING LAMPS AND DATA LINKED

HEAVY DUTY ONBOARD DIAGNOSTICS INTERFACE CONNECTOR LOCATED BELOW LH DASH

2 INCH ELECTRIC FUEL GAUGE

FUEL FILTER RESTRICTION INDICATOR

EMISSIONS LIMITED IDLE ADJUST

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Description

ELECTRICAL ENGINE COOLANT TEMPERATURE GAUGE
ENGINE OIL TEMPERATURE GAUGE
2 INCH TRANSMISSION OIL TEMPERATURE GAUGE
ENGINE AND TRIP HOUR METERS INTEGRAL WITHIN DRIVER DISPLAY
ELECTRIC ENGINE OIL PRESSURE GAUGE
OVERHEAD INSTRUMENT PANEL
SMARTPLEX HUB MODULE WITH OVERHEAD SWITCH MOUNTING, DRIVER SIDE AND CENTER CONSOLE (12 SWITCH SLOTS)
AM/FM/WB WORLD TUNER RADIO WITH BLUETOOTH AND USB AND AUXILIARY INPUTS, J1939
DASH MOUNTED RADIO
(2) RADIO SPEAKERS IN CAB
AM/FM ANTENNA MOUNTED ON FORWARD LH ROOF
POWER AND GROUND WIRING PROVISION OVERHEAD
ROOF/OVERHEAD CONSOLE CB RADIO PROVISION
ELECTRONIC MPH SPEEDOMETER WITH SECONDARY KPH SCALE, WITHOUT ODOMETER
STANDARD VEHICLE SPEED SENSOR WITH ADDITIONAL SIGNAL FOR CUSTOMER USE LOCATED BETWEEN DRIVER AND PASSENGER SEATS
ELECTRONIC 3000 RPM TACHOMETER
VT-HU CONNECTIVITY PLATFORM HARDWARE
5 YEARS DETROIT CONNECT BASE PACKAGE (VIRTUAL TECHNICIAN, DETROIT CONNECT PORTAL ACCESS) FOR VT-HU CONNECTIVITY PLATFORM
IGNITION SWITCH CONTROLLED ENGINE STOP
6 ON/OFF LATCHING SMARTPLEX SWITCHES
1 ON/OFF MOMENTARY SMARTPLEX SWITCH
1 ON/OFF/ON LATCHING SMARTPLEX SWITCH
1 ON/OFF/ON MOMENTARY SMARTPLEX SWITCH
BODY UP AND GATE OPEN SMARTPLEX INDICATOR LAMPS

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Description

0-RED, 1-AMBER, 0-GREEN SMARTPLEX
INDICATOR LAMPS
BW TRACTOR PROTECTION VALVE
TRAILER HAND CONTROL BRAKE VALVE
DIGITAL VOLTAGE DISPLAY INTEGRAL WITH
DRIVER DISPLAY
SINGLE ELECTRIC WINDSHIELD WIPER MOTOR
WITH DELAY PROGRAMMED TO SLOWEST
SPEED WITH PARK BRAKE SET
MARKER LIGHT SWITCH INTEGRAL WITH
HEADLIGHT SWITCH AND SINGLE CONNECTOR
AND SWITCH FOR CUSTOMER FURNISHED
SNOW PLOW LIGHTS, LOW BEAMS OFF WITH
HIGH BEAMS
TWO VALVE PARKING BRAKE SYSTEM WITH
DASH VALVE CONTROL AUTONEUTRAL AND
WARNING INDICATOR
SELF CANCELING TURN SIGNAL SWITCH WITH
DIMMER, WASHER/WIPER AND HAZARD IN
HANDLE
INTEGRAL ELECTRONIC TURN SIGNAL
FLASHER WITH HAZARD LAMPS OVERRIDING
STOP LAMPS

Color

CAB COLOR A: L6389EB OMAHA ORANGE ELITE
BC
BLACK, HIGH SOLIDS POLYURETHANE CHASSIS
PAINT
POWDER WHITE (N0006EA) FRONT
WHEELS/RIMS (PKWHT21, TKWHT21, W, TW)
POWDER WHITE (N0006EA) REAR
WHEELS/RIMS (PKWHT21, TKWHT21, W, TW)
STANDARD BLACK BUMPER PAINT
SUNVISOR PAINTED SAME AS CAB COLOR A
STANDARD E COAT/UNDERCOATING

Certification / Compliance

U.S. FMVSS CERTIFICATION

Secondary Factory Options

STANDARD ROUTING AND CLIPPING

Extended Warranty

EW4 DD13 VOC \$0 DEDUCTIBLE 5 YEAR/200000 MILES FULL
COVERAGE
TC4: HD MODERATE 2 YEARS/200,000 MILES / 322,000 KM
EXTENDED TRUCK COVERAGE. FEX APPLIES

Prepared for:
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State Contract # 14PSX0239
Revised specification
(10/31/2017)
62,000 GVW Ultra-Shift Plus
Changes have been
incorporated

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Description

COOLING: HD MODERATE 5 YEARS/500,000 MILES/805,000 KM EXT
COVERAGE FEX APPLIES

WIRING: HD MODERATE 5 YEAR/200,000 MILES/322,000 KM
EXTENDED COVERAGE FEX APPLIES

AXLE: FRONT/TANDEM REAR HD MODERATE 3 YEAR/200,000
MILE/322,000 KM EXTENDED AXLE COVERAGE.

TRI AXLE AXLE BODY Item 3B	
Precise ARC with Display	
Plow lights	
AL plow light fender brackets	
17' Body	
2x4 oak sideboards	
Conspicuity tape on tailgate	
Tailgate lamp & alarm (Labor Only)	
Pintle plate	
Pump bracket (5/8)	
Body up light & alarm (Labor Only)	
ICC lighting required	
Ecco 500 backup alarm	
License light	
LDGTR Bobtail plug	
Junction box	
Whelen CTSYS1SS System w/ photo eye and heated rear lights	
Whelen Headboard light and box	
Whelen spinner light	
Wheel chocks	
Front mudflaps w/ Antisail	
Rear mudflaps	
30 ton hook	
D-rings	
Tailgate chevron striping	
Conspicuity on body sides	
Tilt hitch w/ dual push centers	
3/4 side plate upgrade	
Lift cylinder	
Lift yoke	
Labor to install all the above	
TRI AXLE HYDRAULICS - Basic Item 3C	
Spare hyd filter to replace filter used after startup	
75cc front mount pump	
Low oil override	
Driveline	
Spreader control & Valve Assembly	
Valve enclosure	
40 gal tank	
Hyd oil	
Cab control Quadco with cables (3) handles	
Return manifold	
Low oil switch, lamp & alarm	
Hydraulic hose kit with SS tubes and disconnects	
Labor to install all the above	
Extended Warranty per Spec (Valves and Controller 3 year)	

TRI AXLE SS VBOX SPREADER Item 3D	
	Vbox Spreader
	Lag Stand
	Dual Side Liquid tanks 600 gallon
	Hyd prewet unit Anti Ice
	Prewet plumbing kit
	Labor to install all the above
TRI AXLE TARP Item 3E	
	Roll Rite electric tarp w/ relay upgrade
	Labor to install all the above
POWER ANGLE 11' SNOW PLOW Item 3F	
	PRRL113645FE
	Installed
RIGHT WING PLOW Item 3G	
	Additional valving
	Additional cab controls
	Additional Hydraulic hose kit & Disconnects
	Hitch Upgrade
	Front Post
	Front Hinge
	Wing
	Wing Arms
	Rear Support
	TIR3 Whelen Light
	Whelen Wing Light
	Labor to install all the above
	Extended Warranty per Spec (Valves 3 year)
DOUBLE WING PLOW Item 3I	
	Additional valving
	Additional cab controls
	Additional Hydraulic hose kit & Disconnects
	Hitch Upgrade
	Front Posts
	Front Hinges
	Wings
	Wing Arms
	Rear Support
	TIR3 Whelen Light
	Whelen Wing Light
	Labor to install all the above
	Extended Warranty per Spec (Valves 3 year)

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- Remove 13-gallon DEF tank. Insert 6-gallon tank.
- Remove regular coolant in original proposal. Insert extended life coolant.
- Remove 10C-VAS UltraShift transmission in original proposal. Insert Eaton Fuller FO-16E308LL-VCS.
- Remove paddle shifter on column in original proposal. Insert Push button electronic shift control, dash mounted.
- Change originally proposed location of oil/air power steering cooler to mount above front closing cross-member.
- Remove 20,000 # flat leaf front suspension in original proposal. Insert 23,000 # Flat leaf front suspension.
- Remove 164P in original proposal. Insert RT-46-160P 46,000 # R-series tandem rear axle.
- Remove 4.89 axle ratio in original proposal. Insert 4.56 Axle ratio.
- Remove 18T main driveline in original proposal. Insert RPL25SD Meritor drive-line.
- Remove 17T inter-axle drive-line in original proposal. Insert RPL20 Meritor inter-axle driveline.
- Insert blinking lamp with each mode switch, differential unlock with ignition off, active < 5 mph, deactivate > 25 mph.
- Remove 16.5x7 rear brakes in original proposal. Insert Meritor 16.5 x 8.62 Q+ cast spider cam rear brakes, double anchor, fabricated shoes.
- Remove 56" axle spacing in original proposal. Insert 60" axle spacing.
- Insert Rear shock absorbers – two axles.
- Insert Aluminum air brake reservoirs.
- Remove basic combination primary receptacle. Insert pre-wire package into cab for body builder installed electric brake controller.
- Insert supplemental J560 7-way receptacle located with primary receptacle.
- Remove 7/16" frame in original proposal. Insert ½" x 3.64 x 11-7/8" steel frame.
- Remove ¼" C-channel inner frame reinforcement.
- Insert heavy duty steel 6-piece bolted construction mid-ship cross-member.
- Remove Huck bolts on suspension only in original proposal. Insert Huck spin round collar chassis fasteners.
- Remove 100-gallon cylindrical aluminum fuel tank. Insert 70-gallon rectangular aluminum fuel tank.
- Remove Davco 482 in original proposal. Insert Davco 482 fuel/water separator with 12 volt and 120 volt preheater.
- Insert hood liner insulation with single firewall insulation.
- Insert dual electric horns.

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- Insert all units keyed alike with customer specified key number.
- Insert LED aerodynamic marker lights.
- Insert RH down view mirror.
- Remove Bustin steps with steel shield in original proposal. Insert Bustin serrated aluminum cab access steps, both sides, with RH after-treatment system cab access with plain diamond plate shielding.
- Electric horn warning system for park brake not set with door open and all ignition key positions.
- Insert composite exterior sun visor.
- Remove non-operating wing windows in original proposal. Insert tinted operating wing windows.
- Insert Lower RH door window with Fresnel lens.
- Insert 1-Piece tinted curved bonded windshield with heated wiper blade park areas.
- Insert aluminum kick-plate on interior lower door driver.
- Insert aluminum kick-plate on interior lower passenger driver.
- Insert center storage console mounted on back wall.
- Insert standard HVAC ducting with snow shield for fresh air intake.
- Remove basic air driver seat in original proposal. Insert premium high back air suspension driver seat with 3 chamber air lumbar, integrated cushion extension, forward and rear cushion tilt, adjustable shock absorber.
- Remove basic non-suspension passenger seat. Insert basic high back air suspension passenger seat with mechanical lumbar and integrated cushion extension.
- Remove drive seat only armrest as originally proposed. Insert dual driver and passenger seat armrests.
- Insert adjustable tilt and telescoping steering column.
- Remove dash mounted PTO switch.
- Remove 6 pack of optional switches as originally proposed. Insert SmartPlex hub module with overhead switch mounting, driver side and center console accommodating 12 slots.
- Remove basic radio as originally proposed. Insert AM/FM/WB radio with Bluetooth and microphone, front USB port, front and rear auxiliary inputs and J1939.
- Insert power and ground wiring provision overhead.
- Insert roof/overhead console CB radio provision.
- Insert standard vehicle speed sensor with additional signal for customer use located between seats.
- Remove 4 latching switches as originally proposed. Insert 6 On/off latching SmartPlex switches.

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- Insert 1 On/off momentary SmartPlex switch.
- Insert 1 On/off/on latching SmartPlex switch.
- Insert 1 On/off/on momentary SmartPlex switch.
- Insert 1 Amber SmartPlex indicator lamp.
- Remove wipers as originally proposed. Insert single electric windshield wiper motor with delay programmed to slowest speed with park brake set.
- Insert two valve parking brake system with dash valve control auto-neutral and indicator.
- Insert 5 Year Virtual Technician service contract.
- Wiring extended warranty 5 year / 200,000-mile extended warranty.
- Diagnostic software support, annual renewals and updates in lieu of one Panasonic Toughbook laptop configured with diagnostic software, annual renewals and updates for every three trucks purchased.
- Precise Road Conditions System in lieu of RoadWatch.

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Description

Vehicle Configuration

114SD CONVENTIONAL CHASSIS
SET FORWARD AXLE - TRUCK
TRAILER TOWING PROVISION AT END OF
FRAME FOR TRUCK
LH PRIMARY STEERING LOCATION

General Service

TRUCK/TRAILER CONFIGURATION
DOMICILED, USA 50 STATES (INCLUDING
CALIFORNIA AND CARB OPT-IN STATES)
UTILITY/REPAIR/MAINTENANCE SERVICE
GOVERNMENT BUSINESS SEGMENT
DIRT/SAND/ROCK COMMODITY
TERRAIN/DUTY: 100% (ALL) OF THE TIME, IN
TRANSIT, IS SPENT ON PAVED ROADS
MAXIMUM 8% EXPECTED GRADE
SMOOTH CONCRETE OR ASPHALT PAVEMENT -
MOST SEVERE IN-TRANSIT (BETWEEN SITES)
ROAD SURFACE
FREIGHTLINER LEVEL II WARRANTY
EXPECTED FRONT AXLE(S) LOAD: 20000.0 lbs.
EXPECTED REAR DRIVE AXLE(S) LOAD: 46000.0
lbs.
EXPECTED PUSHER AXLE(S) LOAD: 20000.0 lbs.
EXPECTED GROSS VEHICLE WEIGHT
CAPACITY: 86000.0 lbs.
EXPECTED GROSS COMBINATION WEIGHT:
86000.0 lbs.

Truck Service

FRONT PLOW/END DUMP BODY
EXPECTED TRUCK BODY LENGTH: 17.0 ft.
EXPECTED TRUCK BODY WIDTH: 96.0 in
VIKING CIVES, LTD.

Engine

DETROIT DD13 12.8L 435 HP @ 1625 RPM, 1900
GOV RPM, 1550 LB/FT @ 975 RPM

Electronic Parameters

65 MPH ROAD SPEED LIMIT
CRUISE CONTROL SPEED LIMIT SAME AS ROAD
SPEED LIMIT, WITH AUTO RESUME AFTER
SHIFT

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Description

10 MINUTES IDLE SHUTDOWN WITH CLUTCH
AND SERVICE BRAKE OVERRIDE
PTO MODE CANCEL VEHICLE SPEED - 30 MPH
PTO GOVERNOR RAMP RATE - 100 RPM PER
SECOND
ENABLE REGENERATION IN PTO MODE
ENABLE AUTO ENGINE RPM ELEVATE FOR
EXTENDED IDLE

Engine Equipment

2016 ONBOARD DIAGNOSTICS/2010
EPA/CARB/FINAL GHG17 CONFIGURATION
2008 CARB EMISSION CERTIFICATION - CLEAN
IDLE (INCLUDES 6X4 INCH LABEL ON LOWER
FORWARD CORNER OF DRIVER DOOR)
STANDARD OIL PAN
ENGINE MOUNTED OIL CHECK AND FILL
SIDE OF HOOD AIR INTAKE WITH FIREWALL
MOUNTED DONALDSON AIR CLEANER WITH
SAFETY ELEMENT AND INSIDE/OUTSIDE AIR
WITH SNOW DOOR
DR 12V 160 AMP 36-SI BRUSHLESS
QUADRAMOUNT PAD ALTERNATOR WITH
REMOTE BATTERY VOLT SENSE
(3) ALLIANCE MODEL 1231, GROUP 31, 12 VOLT
MAINTENANCE FREE 3375 CCA THREADED
STUD BATTERIES
BATTERY BOX FRAME MOUNTED
STANDARD BATTERY JUMPERS
SINGLE BATTERY BOX FRAME MOUNTED LH
SIDE UNDER CAB
WIRE GROUND RETURN FOR BATTERY CABLES
WITH ADDITIONAL FRAME GROUND RETURN
NON-POLISHED BATTERY BOX COVER
POSITIVE LOAD DISCONNECT WITH CAB
MOUNTED CONTROL SWITCH MOUNTED
OUTBOARD DRIVER SEAT
EATON FULLER ECA CLUTCH
ZERK FITTING WITH EXTENSION HOSE AT
CLUTCH RELEASE BEARING
ELECTRONIC CLUTCH CONTROL
BW MODEL BA-921 19.0 CFM SINGLE CYLINDER
AIR COMPRESSOR WITH SAFETY VALVE
ELECTRONIC ENGINE INTEGRAL SHUTDOWN
PROTECTION SYSTEM
JACOBS COMPRESSION BRAKE

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Description

RH OUTBOARD UNDER STEP MOUNTED
HORIZONTAL AFTERTREATMENT SYSTEM
ASSEMBLY WITH RH B-PILLAR MOUNTED
VERTICAL TAILPIPE

ENGINE AFTERTREATMENT DEVICE,
AUTOMATIC OVER THE ROAD REGENERATION
AND DASH MOUNTED REGENERATION
REQUEST SWITCH

10 FOOT 06 INCH (126 INCH+0/-5.9 INCH)
EXHAUST SYSTEM HEIGHT

RH CURVED VERTICAL TAILPIPE B-PILLAR
MOUNTED ROUTED FROM STEP

6 GALLON DIESEL EXHAUST FLUID TANK
100 PERCENT DIESEL EXHAUST FLUID FILL
STANDARD DIESEL EXHAUST FLUID PUMP
MOUNTING

LH MEDIUM DUTY STANDARD DIESEL EXHAUST
FLUID TANK LOCATION

STANDARD DIESEL EXHAUST FLUID TANK CAP
ALUMINUM AFTERTREATMENT
DEVICE/MUFFLER/TAIPIPE SHIELD(S)

BORG WARNER (KYSOR) REAR AIR ON/OFF
ENGINE FAN CLUTCH

AUTOMATIC FAN CONTROL WITHOUT DASH
SWITCH, NON-ENGINE MOUNTED

DDC SUPPLIED ENGINE MOUNTED FUEL
FILTER/FUEL WATER SEPARATOR WITH
WATER-IN-FUEL INDICATOR

FULL FLOW OIL FILTER

1500 SQUARE INCH ALUMINUM RADIATOR
ANTIFREEZE TO -34F, OAT (NITRITE AND
SILICATE FREE) EXTENDED LIFE COOLANT
GATES BLUE STRIPE COOLANT HOSES OR
EQUIVALENT

CONSTANT TENSION HOSE CLAMPS FOR
COOLANT HOSES

HDEP FIXED RATIO COOLANT PUMP AND
RADIATOR DRAIN VALVE

1350 ADAPTER FLANGE FOR FRONT PTO
PROVISION

PHILLIPS-TEMRO 1500 WATT/115 VOLT BLOCK
HEATER

BLACK PLASTIC ENGINE HEATER RECEPTACLE
MOUNTED UNDER LH DOOR

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Description

DELCO 12V MOD 3.175-39MT+ OCP STARTER
WITH THERMAL PROTECTION AND
INTEGRATED MAGNETIC SWITCH

Transmission

EATON FULLER FO-16E308LL-VCS ULTRASHIFT
PLUS TRANSMISSION

Transmission Equipment

VEHICLE INTERFACE WIRING CONNECTOR
WITHOUT BLUNT CUTS, AT BACK OF CAB
ELECTRONIC TRANSMISSION CUSTOMER
ACCESS CONNECTOR FIREWALL MOUNTED
ALUMINUM CLUTCH HOUSING
MAGNETIC TRANSMISSION FILL AND DRAIN,
AXLE(S) FILL AND DRAIN, ENGINE DRAIN; PAINT
DRAIN PLUGS YELLOW
PUSH BUTTON ELECTRONIC SHIFT CONTROL,
DASH MOUNTED
WATER TO OIL TRANSMISSION COOLER, IN
RADIATOR END TANK
SYNTHETIC TRANSMISSION LUBE

Front Axle and Equipment

MFS-20-133A 20,000# FL1 71.0 INCH KPI/3.74
INCH DROP SINGLE FRONT AXLE
MERITOR 16.5X6 Q+ CAST SPIDER CAM FRONT
BRAKES, DOUBLE ANCHOR, FABRICATED
SHOES
NON-ASBESTOS FRONT BRAKE LINING
CONMET CAST IRON FRONT BRAKE DRUMS
FRONT BRAKE DUST SHIELDS
FRONT OIL SEALS
SKF SCOTSEAL TF VENTED FRONT HUB CAPS
WITH WINDOW, CENTER AND SIDE PLUGS - OIL
STANDARD SPINDLE NUTS FOR ALL AXLES
HALDEX AUTOMATIC FRONT SLACK
ADJUSTERS WITH STAINLESS STEEL CLEVIS
PINS
STANDARD KING PIN BUSHINGS
TRW THP-60 POWER STEERING WITH RCH45
AUXILIARY GEAR
POWER STEERING PUMP
4 QUART POWER STEERING RESERVOIR
OIL/AIR POWER STEERING COOLER MOUNTED
ABOVE FRONT CLOSING CROSSMEMBER

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Description

SYNTHETIC 75W-90 FRONT AXLE LUBE

Front Suspension

23,000# FLAT LEAF FRONT SUSPENSION
GRAPHITE BRONZE BUSHINGS WITH SEALS -
FRONT SUSPENSION
FRONT SHOCK ABSORBERS

Rear Axle and Equipment

RT-46-160P 46,000# R-SERIES TANDEM REAR
AXLE
4.56 REAR AXLE RATIO
IRON REAR AXLE CARRIER WITH STANDARD
AXLE HOUSING
RPL25SD MERITOR MAIN DRIVELINE
RPL20 MERITOR INTERAXLE DRIVELINE
DRIVER CONTROLLED TRACTION
DIFFERENTIAL - BOTH TANDEM REAR AXLES
(1) INTERAXLE LOCK VALVE, (1) DRIVER
CONTROLLED DIFFERENTIAL LOCK FORWARD-
REAR AND REAR-REAR AXLE VALVE
BLINKING LAMP WITH EACH INTERAXLE LOCK
SWITCH, INTERAXLE UNLOCK DEFAULT WITH
IGNITION OFF
BLINKING LAMP WITH EACH MODE SWITCH,
DIFFERENTIAL UNLOCK WITH IGNITION OFF,
ACTIVE <5 MPH, DEACTIVATE >25 MPH
MERITOR 16.5X8.62 Q+ CAST SPIDER CAM
REAR BRAKES, DOUBLE ANCHOR, FABRICATED
SHOES
NON-ASBESTOS REAR BRAKE LINING
BRAKE CAMS AND CHAMBERS ON FORWARD
SIDE OF DRIVE AXLE(S)
CONMET CAST IRON REAR BRAKE DRUMS
REAR BRAKE DUST SHIELDS
REAR OIL SEALS
WABCO TRISTOP-D LONGSTROKE 30/36 2-
DRIVE AXLE SPRING PARKING CHAMBERS
HALDEX AUTOMATIC REAR SLACK ADJUSTERS
WITH STAINLESS STEEL CLEVIS PINS
SYNTHETIC 75W-90 REAR AXLE LUBE
STANDARD REAR AXLE BREATHER(S)

Rear Suspension

TUFTRAC 46,000# REAR SPRING SUSPENSION
TUFTRAC STANDARD RIDE HEIGHT

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Description

AXLE CLAMPING GROUP
60 INCH AXLE SPACING
FORE/AFT AND TRANSVERSE CONTROL RODS
REAR SHOCK ABSORBERS - TWO AXLES
(TANDEM)

Pusher / Tag Equipment

HENDRICKSON HLM-2 20,000# NON-STEER
PUSHER SUSPENSION, N-SERIES DROP
CENTER AXLE
HENDRICKSON HLM 20,000# N-SERIES NON-
STEER 16.5X7 BRAKE INTEGRAL DROP CENTER
PUSHER AXLE
(1) DASH VALVE AND (1) GAUGE FOR SINGLE
LIFT AXLE
LIFT AXLE WIRING WITHOUT REVERSE AUTO-
LIFT/CASTER WITH LAST STATE RETENTION
WITH IGNITION OFF
AIR PIPING FOR (1) LIFT/NON-LIFT AXLE WITH
REGULATOR CHASSIS MOUNTED
HENDRICKSON 16.5X7 CAM PUSHER/TAG
BRAKES, DOUBLE ANCHOR, FABRICATED
SHOES
NON-ASBESTOS PUSHER/TAG BRAKE LINING
CONMET CAST IRON PUSHER/TAG BRAKE
DRUMS
PUSHER/TAG BRAKE DUST SHIELDS
PUSHER/TAG OIL SEALS
VENTED PUSHER/TAG HUB CAPS WITH
WINDOW, CENTER AND SIDE PLUGS - OIL
HALDEX LONGSTROKE PUSHER/TAG AXLE
SERVICE CHAMBERS
BENDIX VERSAJUST AUTOMATIC PUSHER/TAG
SLACK ADJUSTERS
HENDRICKSON HLM-2 20,000# NON-STEER AIR
LIFT PUSHER SUSPENSION
54 INCH AXLE SPACING PUSHER/TAG

Brake System

WABCO 4S/4M ABS WITH HILL START AID AND
AUTOMATIC TRACTION CONTROL
REINFORCED NYLON, FABRIC BRAID AND WIRE
BRAID CHASSIS AIR LINES
FIBER BRAID PARKING BRAKE HOSE
STANDARD BRAKE SYSTEM VALVES

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Description

STANDARD AIR SYSTEM PRESSURE
PROTECTION SYSTEM
STD U.S. FRONT BRAKE VALVE
(2) 3-4.5 PSI RELAY VALVES, ONE FOR TANDEM
AXLE AND ONE FOR PUSHER/TAG
WABCO SS-1200 PLUS AIR DRYER WITH
INTEGRAL AIR GOVERNOR AND HEATER
WABCO OIL COALESCING FILTER FOR AIR
DRYER
AIR DRYER MOUNTED INBOARD ON LH RAIL
ALUMINUM AIR BRAKE RESERVOIRS;
CUSTOMER ACCEPTS TANKS MOUNTED
PERPENDICULAR TO RAIL
CLEAR FRAME RAIL FROM BACK OF CAB TO
FRONT REAR SUSPENSION BRACKET, RH RAIL
INSIDE/OUTBOARD AND BELOW
BW DV-2 AUTO DRAIN VALVE WITH HEATER TO
WET TANK; DRAIN VALVE CABLES ON ALL
OTHER TANKS

Trailer Connections

AIR CONNECTIONS TO END OF FRAME WITH
GLAD HANDS FOR TRUCK AND NO DUST
COVERS
PRIMARY CONNECTOR/RECEPTACLE WIRED
FOR COMBINATION STOP/TURN, CENTER PIN
POWERED THROUGH IGNITION WITH STOP
SIGNAL PREWIRE PACKAGE
SAE J560 7-WAY PRIMARY TRAILER CABLE
RECEPTACLE MOUNTED END OF FRAME
UPGRADED CHASSIS MULTIPLEXING UNIT
SUPPLEMENTAL J560 7-WAY RECEPTACLE
LOCATED WITH PRIMARY RECEPTACLE

Wheelbase & Frame

5375MM (212 INCH) WHEELBASE
1/2X3.64X11-7/8 INCH STEEL FRAME
(12.7MMX301.6MM/0.5X11.88 INCH) 120KSI
PARTIAL INNER FRAME REINFORCEMENT AT
FRONT SUSPENSION
BODY COMPANY INSTALLED ADDITIONAL
FRONT FRAME REINFORCEMENT FOR SNOW
PLOW
1600MM (63 INCH) REAR FRAME OVERHANG
FRAME OVERHANG RANGE: 61 INCH TO 70
INCH
24 INCH INTEGRAL FRONT FRAME EXTENSION

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Description

CALC'D BACK OF CAB TO REAR SUSP C/L (CA):
128.54 in
CALCULATED EFFECTIVE BACK OF CAB TO
REAR SUSPENSION C/L (CA): 125.54 in
CALC'D FRAME LENGTH - OVERALL: 326.69
CALC'D SPACE AVAILABLE FOR DECKPLATE:
128.54 in
CALCULATED FRAME SPACE LH SIDE: 10.57 in
CALCULATED FRAME SPACE RH SIDE: 66.82 in
SQUARE END OF FRAME
FRONT CLOSING CROSSMEMBER
STANDARD WEIGHT ENGINE CROSSMEMBER
HEAVY DUTY STEEL 6 PIECE BOLTED
CONSTRUCTION MIDSHIP CROSSMEMBER(S)
REARMOST CROSSMEMBER MOUNTED WITH
LAST CROSSMEMBER 13 INCHES FROM END
OF FRAME
HEAVY DUTY SIX PIECE BOLTED
CONSTRUCTION SUSPENSION CROSSMEMBER

Chassis Equipment

16.5 INCH PAINTED STEEL STRAIGHT BUMPER
FRONT TOW HOOKS - FRAME MOUNTED
BUMPER MOUNTING FOR SINGLE LICENSE
PLATE
HUCK-SPIN ROUND COLLAR CHASSIS
FASTENERS

Fuel Tanks

70 GALLON/264 LITER RECTANGULAR
ALUMINUM FUEL TANK - LH
RECTANGULAR FUEL TANK
PLAIN ALUMINUM/PAINTED STEEL
FUEL/HYDRAULIC TANK(S) WITH PAINTED
BANDS
FUEL TANK(S) FORWARD
PLAIN STEP FINISH
FUEL TANK CAP
DAVCO 487 FUEL/WATER SEPARATOR WITH
ESOC AND 12 VOLT AND 120 VOLT PREHEATER
EQUIFLO INBOARD FUEL SYSTEM
HIGH TEMPERATURE REINFORCED NYLON
FUEL LINE

Tires

Prepared for:
Patrick DeConti
CT Dept of Admin Services
450 Columbus Blvd
Hartford, CT 06103
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State Contract # 14PSX0239
Revised specification
(10/31/2017)
72,000 GVW Ultra-Shift Plus
Changes have been
incorporated

Prepared by:
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Description

GOODYEAR G296 MSA 425/65R22.5 20 PLY
RADIAL FRONT TIRES
MICHELIN XDN2 12R22.5 16 PLY RADIAL REAR
TIRES
MICHELIN XZU-S2 315/80R22.5 20 PLY RADIAL
PUSHER/TAG TIRES

Hubs

CONMET PRESET PLUS PREMIUM IRON FRONT
HUBS
CONMET PRESET PLUS PREMIUM IRON REAR
HUBS
CONMET PRESET PLUS PREMIUM IRON
PUSHER/TAG HUBS

Wheels

MAXION WHEELS 10035 22.5X12.25 10-HUB
PILOT 4.75 INSET 5-HAND STEEL DISC FRONT
WHEELS
ACCURIDE 28828 22.5X8.25 10-HUB PILOT 2-
HAND HD STEEL DISC REAR WHEELS
ACCURIDE 29039 22.5X9.00 10-HUB PILOT 5.25
INSET 5-HAND STEEL DISC PUSHER/TAG
WHEELS
FORCEMATCH TIRE/WHEEL RUNOUT
CHECK/MARK AND STATIC BALANCING - ALL
TIRES/WHEELS

Cab Exterior

114 INCH BBC FLAT ROOF ALUMINUM
CONVENTIONAL CAB
AIR CAB MOUNTING
NONREMOVABLE BUGSCREEN MOUNTED
BEHIND GRILLE
FRONT FENDERS
3-1/2 INCH FENDER EXTENSIONS
LH AND RH GRAB HANDLES
STATIONARY BLACK GRILLE
BLACK HOOD MOUNTED AIR INTAKE GRILLE
FIBERGLASS HOOD
HOOD LINER INSULATION WITH SINGLE
FIREWALL INSULATION
SINGLE 14 INCH ROUND HADLEY AIR HORN
UNDER LH DECK
DUAL ELECTRIC HORNS
SINGLE HORN SHIELD

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Description

ALL UNIT(S) KEYED ALIKE WITH CUSTOMER SPECIFIED KEY NUMBER
REAR LICENSE PLATE MOUNT END OF FRAME
HALOGEN COMPOSITE HEADLAMPS WITH BLACK BEZELS
LED AERODYNAMIC MARKER LIGHTS
HEADLIGHTS ON WITH WIPERS, WITH LOW BEAM DAYTIME RUNNING LIGHTS
OMIT STOP/TAIL/BACKUP LIGHTS AND PROVIDE WIRING FOR COMBINED STOP/TURN LIGHTS TO FOUR FEET BEYOND END OF FRAME
STANDARD FRONT TURN SIGNAL LAMPS
DUAL WEST COAST MOLDED-IN COLOR HEATED MIRRORS
DOOR MOUNTED MIRRORS
102 INCH EQUIPMENT WIDTH
LH AND RH 8 INCH MOLDED-IN COLOR CONVEX MIRRORS MOUNTED UNDER PRIMARY MIRRORS
RH DOWN VIEW MIRROR
RH AND LH 8 INCH HEATED STAINLESS STEEL FENDER MOUNTED CONVEX MIRRORS WITH TRIPOD BRACKETS
STANDARD SIDE/REAR REFLECTORS
BUSTIN SERRATED ALUMINUM CAB ACCESS STEPS, BOTH SIDES, WITH RH AFTERTREATMENT SYSTEM CAB ACCESS WITH PLAIN DIAMOND PLATE SHIELDING
ELECTRIC HORN WARNING SYSTEM FOR PARK BRAKE NOT SET WITH DOOR OPEN AND ALL IGNITION KEY POSITIONS
COMPOSITE EXTERIOR SUN VISOR
63X14 INCH TINTED REAR WINDOW
TINTED DOOR GLASS LH AND RH WITH TINTED OPERATING WING WINDOWS
MANUAL DOOR WINDOW REGULATORS
LOWER RH DOOR WINDOW WITH FRESNEL LENS
1-PIECE TINTED CURVED BONDED WINDSHIELD WITH HEATED WIPER BLADE PARK AREAS
8 LITER WINDSHIELD WASHER RESERVOIR, CAB MOUNTED, WITHOUT FLUID LEVEL INDICATOR

Cab Interior

OPAL GRAY VINYL INTERIOR

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Description

MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR

MOLDED PLASTIC DOOR PANEL WITHOUT VINYL INSERT WITH ALUMINUM KICKPLATE LOWER DOOR

BLACK MATS WITH SINGLE INSULATION

DASH MOUNTED ASH TRAY(S) WITHOUT LIGHTER

NO FORWARD ROOF MOUNTED CONSOLE IN DASH STORAGE BIN

CENTER STORAGE CONSOLE MOUNTED ON BACKWALL

(2) CUP HOLDERS LH AND RH DASH

GRAY/CHARCOAL FLAT DASH

SMART SWITCH EXPANSION MODULE

2-1/2 LB. FIRE EXTINGUISHER

HEATER, DEFROSTER AND AIR CONDITIONER

STANDARD HVAC DUCTING WITH SNOW SHIELD FOR FRESH AIR INTAKE

MAIN HVAC CONTROLS WITH RECIRCULATION SWITCH

STANDARD HEATER PLUMBING

DENSO HEAVY DUTY AIR CONDITIONER COMPRESSOR

BINARY CONTROL, R-134A

STANDARD INSULATION

SOLID-STATE CIRCUIT PROTECTION AND FUSES

12V NEGATIVE GROUND ELECTRICAL SYSTEM

DOMED DOOR ACTIVATED LH AND RH, DUAL READING LIGHTS, FORWARD CAB ROOF

CAB DOOR LATCHES WITH MANUAL DOOR LOCKS

(1) 12 VOLT POWER SUPPLY IN DASH

TRIANGULAR REFLECTORS WITHOUT FLARES

PREMIUM HIGH BACK AIR SUSPENSION DRIVER SEAT WITH 3 CHAMBER AIR LUMBAR, INTEGRATED CUSHION EXTENSION, FORWARD AND REAR CUSHION TILT, ADJUSTABLE SHOCK ABSORBER

BASIC HIGH BACK AIR SUSPENSION PASSENGER SEAT WITH MECHANICAL LUMBAR AND INTEGRATED CUSHION EXTENSION

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Description

DUAL DRIVER AND PASSENGER SEAT
ARMRESTS
LH AND RH INTEGRAL DOOR PANEL ARMRESTS
BLACK CORDURA PLUS CLOTH DRIVER SEAT
COVER
BLACK CORDURA PLUS CLOTH PASSENGER
SEAT COVER
BLACK SEAT BELTS
ADJUSTABLE TILT AND TELESCOPING
STEERING COLUMN
4-SPOKE 18 INCH (450MM) STEERING WHEEL
DRIVER AND PASSENGER INTERIOR SUN
VISORS

Instruments & Controls

GRAY DRIVER INSTRUMENT PANEL
GRAY CENTER INSTRUMENT PANEL
BLACK GAUGE BEZELS
LOW AIR PRESSURE INDICATOR LIGHT AND
AUDIBLE ALARM
2 INCH PRIMARY AND SECONDARY AIR
PRESSURE GAUGES
ENGINE COMPARTMENT MOUNTED AIR
RESTRICTION INDICATOR WITH GRADUATIONS,
WITH WARNING LIGHT IN DASH
ELECTRONIC CRUISE CONTROL WITH
SWITCHES IN LH SWITCH PANEL
KEY OPERATED IGNITION SWITCH AND
INTEGRAL START POSITION; 4 POSITION
OFF/RUN/START/ACCESSORY
ICU3S, 132X48 DISPLAY WITH DIAGNOSTICS, 28
LED WARNING LAMPS AND DATA LINKED
HEAVY DUTY ONBOARD DIAGNOSTICS
INTERFACE CONNECTOR LOCATED BELOW LH
DASH
2 INCH ELECTRIC FUEL GAUGE
FUEL FILTER RESTRICTION INDICATOR
EMISSIONS LIMITED IDLE ADJUST
ELECTRICAL ENGINE COOLANT TEMPERATURE
GAUGE
ENGINE OIL TEMPERATURE GAUGE
2 INCH TRANSMISSION OIL TEMPERATURE
GAUGE
ENGINE AND TRIP HOUR METERS INTEGRAL
WITHIN DRIVER DISPLAY

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Description

ELECTRIC ENGINE OIL PRESSURE GAUGE
OVERHEAD INSTRUMENT PANEL
SMARTPLEX HUB MODULE WITH OVERHEAD
SWITCH MOUNTING, DRIVER SIDE AND CENTER
CONSOLE (12 SWITCH SLOTS)
AM/FM/WB WORLD TUNER RADIO WITH
BLUETOOTH AND USB AND AUXILIARY INPUTS,
J1939
DASH MOUNTED RADIO
(2) RADIO SPEAKERS IN CAB
AM/FM ANTENNA MOUNTED ON FORWARD LH
ROOF
POWER AND GROUND WIRING PROVISION
OVERHEAD
ROOF/OVERHEAD CONSOLE CB RADIO
PROVISION
ELECTRONIC MPH SPEEDOMETER WITH
SECONDARY KPH SCALE, WITHOUT
ODOMETER
STANDARD VEHICLE SPEED SENSOR WITH
ADDITIONAL SIGNAL FOR CUSTOMER USE
LOCATED BETWEEN DRIVER AND PASSENGER
SEATS
ELECTRONIC 3000 RPM TACHOMETER
VT-HU CONNECTIVITY PLATFORM HARDWARE
5 YEARS DETROIT CONNECT BASE PACKAGE
(VIRTUAL TECHNICIAN, DETROIT CONNECT
PORTAL ACCESS) FOR VT-HU CONNECTIVITY
PLATFORM
IGNITION SWITCH CONTROLLED ENGINE STOP
6 ON/OFF LATCHING SMARTPLEX SWITCHES
1 ON/OFF MOMENTARY SMARTPLEX SWITCH
1 ON/OFF/ON LATCHING SMARTPLEX SWITCH
1 ON/OFF/ON MOMENTARY SMARTPLEX
SWITCH
BODY UP AND GATE OPEN SMARTPLEX
INDICATOR LAMPS
0-RED, 1-AMBER, 0-GREEN SMARTPLEX
INDICATOR LAMPS
BW TRACTOR PROTECTION VALVE
TRAILER HAND CONTROL BRAKE VALVE
DIGITAL VOLTAGE DISPLAY INTEGRAL WITH
DRIVER DISPLAY

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Description

SINGLE ELECTRIC WINDSHIELD WIPER MOTOR
WITH DELAY PROGRAMMED TO SLOWEST
SPEED WITH PARK BRAKE SET

MARKER LIGHT SWITCH INTEGRAL WITH
HEADLIGHT SWITCH AND SINGLE CONNECTOR
AND SWITCH FOR CUSTOMER FURNISHED
SNOW PLOW LIGHTS, LOW BEAMS OFF WITH
HIGH BEAMS

TWO VALVE PARKING BRAKE SYSTEM WITH
DASH VALVE CONTROL AUTONEUTRAL AND
WARNING INDICATOR

SELF CANCELING TURN SIGNAL SWITCH WITH
DIMMER, WASHER/WIPER AND HAZARD IN
HANDLE

INTEGRAL ELECTRONIC TURN SIGNAL
FLASHER WITH HAZARD LAMPS OVERRIDING
STOP LAMPS

Color

CAB COLOR A: L6389EB OMAHA ORANGE ELITE
BC

BLACK, HIGH SOLIDS POLYURETHANE CHASSIS
PAINT

POWDER WHITE (N0006EA) FRONT
WHEELS/RIMS (PKWHT21, TKWHT21, W, TW)

POWDER WHITE (N0006EA) REAR
WHEELS/RIMS (PKWHT21, TKWHT21, W, TW)

POWDER WHITE (N0006EA) PUSHER/TAG
WHEELS/RIMS (PKWHT21, TKWHT21, W, TW)

STANDARD BLACK BUMPER PAINT

SUNVISOR PAINTED SAME AS CAB COLOR A

STANDARD E COAT/UNDERCOATING

Certification / Compliance

U.S. FMVSS CERTIFICATION

Secondary Factory Options

STANDARD ROUTING AND CLIPPING

Extended Warranty

EW4 DD13 VOC \$0 DEDUCTIBLE 5 YEAR/200000 MILES FULL
COVERAGE

TC4: HD MODERATE 2 YEARS/200,000 MILES / 322,000 KM
EXTENDED TRUCK COVERAGE. FEX APPLIES

COOLING: HD MODERATE 5 YEARS/500,000 MILES/805,000 KM EXT
COVERAGE FEX APPLIES

WIRING: HD MODERATE 5 YEAR/200,000 MILES/322,000 KM
EXTENDED COVERAGE FEX APPLIES

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Description

AXLE: FRONT/TANDEM REAR HD MODERATE 3 YEAR/200,000
MILE/322,000 KM EXTENDED AXLE COVERAGE.

TRI AXLE AXLE BODY Item 3B	
Precise ARC with Display	
Plow lights	
AL plow light fender brackets	
17' Body	
2x4 oak sideboards	
Conspicuity tape on tailgate	
Tailgate lamp & alarm (Labor Only)	
Pintle plate	
Pump bracket (5/8)	
Body up light & alarm (Labor Only)	
ICC lighting required	
Ecco 500 backup alarm	
License light	
LDGTR Bobtail plug	
Junction box	
Whelen CTSYS1SS System w/ photo eye and heated rear lights	
Whelen Headboard light and box	
Whelen spinner light	
Wheel chocks	
Front mudflaps w/ Antisail	
Rear mudflaps	
30 ton hook	
D-rings	
Tailgate chevron striping	
Conspicuity on body sides	
Tilt hitch w/ dual push centers	
3/4 side plate upgrade	
Lift cylinder	
Lift yoke	
Labor to install all the above	
TRI AXLE HYDRAULICS - Basic Item 3C	
Spare hyd filter to replace filter used after startup	
75cc front mount pump	
Low oil override	
Driveline	
Spreader control & Valve Assembly	
Valve enclosure	
40 gal tank	
Hyd oil	
Cab control Quadco with cables (3) handles	
Return manifold	
Low oil switch, lamp & alarm	
Hydraulic hose kit with SS tubes and disconnects	
Labor to install all the above	
Extended Warranty per Spec (Valves and Controller 3 year)	

TRI AXLE SS VBOX SPREADER Item 3D	
	Vbox Spreader
	Lag Stand
	Dual Side Liquid tanks 600 gallon
	Hyd prewet unit Anti Ice
	Prewet plumbing kit
	Labor to install all the above
TRI AXLE TARP Item 3E	
	Roll Rite electric tarp w/ relay upgrade
	Labor to install all the above
POWER ANGLE 11' SNOW PLOW Item 3F	
	PRRL113645FE
	Installed
RIGHT WING PLOW Item 3G	
	Additional valving
	Additional cab controls
	Additional Hydraulic hose kit & Disconnects
	Hitch Upgrade
	Front Post
	Front Hinge
	Wing
	Wing Arms
	Rear Support
	TIR3 Whelen Light
	Whelen Wing Light
	Labor to install all the above
	Extended Warranty per Spec (Valves 3 year)
DOUBLE WING PLOW Item 3I	
	Additional valving
	Additional cab controls
	Additional Hydraulic hose kit & Disconnects
	Hitch Upgrade
	Front Posts
	Front Hinges
	Wings
	Wing Arms
	Rear Support
	TIR3 Whelen Light
	Whelen Wing Light
	Labor to install all the above
	Extended Warranty per Spec (Valves 3 year)

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
1.	41,000 GVWR Single Axle Dump Trucks with Plows Fixed pricing for model years 2018, 2019 and 2020		
1a.	41,000 GVWR Conventional Cab, Single axle chassis with automatic transmission. Pursuant to revised (10/31/2017) specification. Make: Freightliner Model: 114SD	each	<u>1a. \$95,997.00</u>
1b.	Steel 10 ft. 6 Cubic Yard severe duty dump body with front plow hitch installed. Pursuant to revised (10/31/2017) specification. Make: Viking Model: PL 1011 SD	each	<u>1b. \$42,680.00</u>
1c.	Complete hydraulic system and controller installed. Pursuant to revised (10/31/2017) specification. Make: Cirus Model: ConnDOT closed system	each	<u>1c. \$14,995.00</u>
1d.	Tarpping system installed. Pursuant to revised (10/31/2017) specification. Make: Roll Rite Model: Tarp Master 400	each	<u>1d. \$1,991.00</u>
1e.	11 ft. Power angle snowplow with positive locking pawl and integral extended moldboard, metro full trip moldboard. Make: Viking Model: PRRL1136ME	each	<u>1e. \$6,633.00</u>
1f.	Mid mount wing plow installed.	each	<u>1f. \$10,775.00</u>
1g.	12 ft. power angle snowplow with positive locking pawl and integral extended moldboard installed. Make: Viking Model: PRRL123645FE	each	<u>1g. \$7,460.00</u>
1h.	Percentage discount off MSRP for chassis.	% off	<u>1h. 30% off</u>
1i.	Percentage discount off MSRP for up fitting OEM repair parts.	% off	<u>1i. 30% off</u>
1j.	Percentage discount off MSRP for any Allied Equipment.	% off	<u>1j. 20% off</u>
1k.	Hourly labor rate.	hour	<u>1k. \$98.00</u>

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
2.	62,000 GVWR Tandem Axle Dump Trucks with Plows Fixed pricing for model years 2018, 2019 and 2020		
2a.	62,000 GVWR Conventional Cab, Tandem axle chassis with automated manual Pursuant to revised (10/31/2017) specification. Make: Freightliner Model: 114 SD	each	<u>2a. \$113,581.00</u>
2b.	Steel 14 ft. 10 Cubic yard severe duty dump body with front tilt over plow hitch installed Pursuant to revised (10/31/2017) specification. Make: Viking Model: PL 1314 LW	each	<u>2b. \$43,925.00</u>
2c.	Complete hydraulic system and controller installed Pursuant to revised (10/31/2017) specification. Make: Cirus	each	<u>2c. \$14,500.00</u>
2d.	Underbody scraper plow. Pursuant to revised (10/31/2017) specification. Make: Viking Model: UB 101020	each	<u>2d. \$11,500.00</u>
2e.	Tarpping system installed Pursuant to revised (10/31/2017) specification. Make: Roll Rite Model: Tarp Master 400	each	<u>2e. \$2,145.00</u>
2f.	11 ft. Power angle snowplow with positive locking pawl and integral extended moldboard, metro full trip moldboard. Make: Viking Model: PRRL 113645 FE	each	<u>2f. \$6,765.00</u>
2g.	Right wing plow installed. Pursuant to revised (10/31/2017) specification.	each	<u>2g. \$13,800.00</u>
2h.	Left wing plow installed. Pursuant to revised (10/31/2017) specification.	each	<u>2h. \$13,800.00</u>
2i.	Double wing plow installed. Pursuant to revised (10/31/2017) specification.	each	<u>2i. \$23,805.00</u>
2j.	Duel cross auger spinner installed	each	<u>2j. \$4,500.00</u>

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
	62,000 GVWR Tandem Axle Dump Trucks with Plows (continued) Fixed pricing for model years 2018, 2019 and 2020		
2k.	Front discharge cross conveyor single pin	each	<u>2k. \$1,075.00</u>
2l.	12 ft. power angle snowplow with positive locking pawl and integral extended moldboard Make: Viking Model: PRRL123645FE	each	<u>2l. \$7,460.00</u>
2m.	Tow plow TP26 ConnDOT package	each	<u>2m. \$104,114.00</u>
2n.	Required package to operate the tow plow	each	<u>2n. \$4,775.00</u>
2o.	Rear facing viewing camera with in cab display installed	each	<u>2o. \$825.00</u>
2p.	LaserLine GL3000PMC roadside laser guiding system with pedestal installed	each	<u>2p. \$4,250.00</u>
2q.	Percentage discount off MSRP for chassis.	% off	<u>2q. 30% off</u>
2r.	Percentage discount off MSRP for up fitting OEM repair parts.	% off	<u>2r. 30% off</u>
2s.	Percentage discount off MSRP for any Allied Equipment.	% off	<u>2s. 20% off</u>
2t.	Hourly labor rate.	hour	<u>2t. \$98.00</u>

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
3.	72,000 GVWR Tri-Axle Dump Trucks with Plows Fixed pricing for model years 2018, 2019 and 2020		
3a.	72,000 GVWR Conventional Cab, Tri axle chassis with automated manual transmission. Pursuant to revised (10/31/2017) specification. Make: Freightliner Model: 114 SD	each	<u>3a. \$119,650.00</u>
3b.	17 ft. 22 Cubic yard severe duty dump body with front tilt over plow hitch installed. Pursuant to revised (10/31/2017) specification. Make: Beau Roc Model: DH	each	<u>3b. \$33,835.00</u>
3c.	Complete hydraulic system and controller installed Pursuant to revised (10/31/2017) specification. Make: Cirus Model: ConnDOT closed system	each	<u>3c. \$14,500.00</u>
3d.	Complete 16 ft. Stainless steel V-box. Pursuant to revised (10/31/2017) specification. Make: Bonnel Model: BVDA 1660 S2 DDR	each	<u>3d. \$38,915.00</u>
3e.	Tarpping system installed Pursuant to revised (10/31/2017) specification. Make: Roll Rite Model: Tarp Master 400	each	<u>3e. \$2,205.00</u>
3f.	11 ft. Power angle snowplow with positive locking pawl and integral extended moldboard, metro full trip moldboard. Make: Viking Model: PRRL 113645 FE	each	<u>3f. \$6,765.00</u>
3g.	Right wing plow installed Pursuant to revised (10/31/2017) specification.	each	<u>3g. \$13,800.00</u>
3h.	Left wing plow installed Pursuant to revised (10/31/2017) specification.	each	<u>3h. \$13,800.00</u>
3i.	Double wing plow installed Pursuant to revised (10/31/2017) specification.	each	<u>3i. \$23,805.00</u>

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
	72,000 GVWR Tandem Axle Dump Trucks with Plows (continued) Fixed pricing for model years 2018, 2019 and 2020		
3j.	12 ft. power angle snowplow with positive locking pawl and integral extended moldboard Make: Viking Model: PRRL123645FE	each	<u>3j. \$7,460.00</u>
3k.	Tow plow TP26 ConnDOT package	each	<u>3k. \$104,114.00</u>
3l.	Required package to operate the tow plow	each	<u>3l. \$4,775.00</u>
3m.	Rear facing viewing camera with in cab display installed	each	<u>3m. \$825.00</u>
3n.	LaserLine GL3000PMC roadside laser guiding system with pedestal installed	each	<u>3n. \$4,250.00</u>
3o.	Percentage discount off MSRP for chassis.	% off	<u>3o. 30% off</u>
3p.	Percentage discount off MSRP for up fitting OEM repair parts.	% off	<u>3p. 30% off</u>
3q.	Percentage discount off MSRP for any Allied Equipment.	% off	<u>3q. 20% off</u>
3r.	Hourly labor rate	hour	<u>3r. \$98.00</u>

Patrick DeConti
Contract Specialist

860-713-5061
Telephone Number

STATE OF CONNECTICUT

DEPARTMENT OF ADMINISTRATIVE SERVICES

PROCUREMENT DIVISION

165 Capitol Avenue, 5th Floor South

HARTFORD, CT 06106-1659

CONTRACT AWARD NO.:

14PSX0239

Contract Award Date:

4 March 2015

SUPPLEMENT DATE:

18 March 2016

CONTRACT AWARD SUPPLEMENT #1

IMPORTANT: THIS IS NOT A PURCHASE ORDER. Do NOT PRODUCE OR SHIP WITHOUT AN AGENCY PURCHASE ORDER.

DESCRIPTION: **Sever Service Snow and Ice Plow Trucks in 41,000, 62,000 and 72,000 GVWR for Maintaining the State Roadways**

FOR: Department of Administrative Services, Department of Transportation, All Using State Agencies, and Political Subdivisions		TERM OF CONTRACT: March 4, 2015 through August 31, 2020	
		AGENCY REQUISITION NUMBER: 0000095696	
CHANGE TO IN STATE (NON-SB) CONTRACT VALUE	CHANGE TO DAS-CERTIFIED SMALL BUSINESS CONTRACT VALUE	CHANGE TO OUT OF STATE CONTRACT VALUE	CHANGE TO TOTAL CONTRACT AWARD VALUE
n/a	n/a	n/a	n/a

NOTICE TO CONTRACTORS: This notice is not an order to ship. Purchase Orders against contracts will be furnished by the using agency or agencies on whose behalf the contract is made. INVOICE SHALL BE RENDERED DIRECT TO THE ORDERING AGENCY.

NOTE: Dollar amounts listed next to each contractor are possible award amounts, however, they do not reflect any expected purchase amounts (actual or implied). They are for CHRO use only.

NOTICE TO AGENCIES: A complete explanatory report shall be furnished promptly to the Procurement Manager concerning items delivered and/or services rendered on orders placed against awards listed herein which are found not to comply with the specifications or which are otherwise unsatisfactory from the agency's viewpoint, as well as failure of the contractor to deliver within a reasonable period of time specified. Please issue orders and process invoices promptly.

CASH DISCOUNTS: Cash discounts, if any, shall be given SPECIAL ATTENTION, but such cash discount shall not be taken unless payment is made within the discount period.

PRICE BASIS: Unless otherwise noted, prices include delivery and transportation charges fully prepaid f.o.b. agency. No extra charge is to be made for packing or packages.

CONTRACTOR INFORMATION:

REFER TO THE CONTRACT ON THE DAS PROCUREMENT WEB PAGE FOR THE MOST CURRENT CONTRACTOR INFORMATION. (<http://das.ct.gov/mp1.aspx?page=8>)

Company Name: **Freightliner of Hartford, Inc.**

Company Address: **222 Roberts Street East Hartford, CT 06108**

Tel. No.: **(860) 289-0201 ext. 1208**

Fax No.: **(860) 610-6242**

Contract Value: **est. \$110,000,000.00**

Contact Person: **Kevin Bigliuzzi**

Delivery: **180 days ARO**

Contact Person email: kevinbigliuzzi@freightlinerofhartford.com

Company Web Site: www.freightlinerofhartford.com

Certification Type (None): **Agrees to Supply Political SubDivisions: Yes Prompt Payment Terms: 0% 00 Net 45**

PLEASE NOTE:

The State of Connecticut has approved a price increase for the 2017 Model year trucks and equipment.
Please refer to the attached Exhibit B Price Schedule for current pricing.

All terms and conditions not otherwise affected by this supplement remain unchanged and in full force and effect.

DEPARTMENT OF ADMINISTRATIVE SERVICES

By: _____
(Original Signature on Document in Procurement Files)

Name: **PATRICK DECONTI**

Title: **Contract Specialist**

Date:

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
1.	41,000 GVWR Single Axle Dump Trucks with Plows		
1a.	41,000 GVWR CONVENTIONAL CAB, SINGLE AXLE CHASSIS WITH MANUAL TRANSMISSION, PURSUANT TO SPECIFICATION CT-5-15. Make: Freightliner Model: 114SD	Each	<u>1a. \$81,900.00</u>
1b.	41,000 GVWR CONVENTIONAL CAB, SINGLE AXLE CHASSIS WITH AUTOMATIC TRANSMISSION PURSUANT TO SPECIFICATION CT-5-15. Make: Freightliner Model: 114SD	Each	<u>1b. \$84,350.00</u>
1c.	41,000 GVWR CONVENTIONAL CAB, SINGLE AXLE CHASSIS WITH AUTOMATED MANUAL TRANSMISSION, PURSUANT TO SPECIFICATION CT-5-15. Make: Freightliner Model: 114SD	Each	<u>1c. \$87,600.00</u>
1d.	STEEL 10 ft. 6 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-5-15. Make: Viking Model: PL 1011 SD	Each	<u>1d. \$43,070.52</u>
1e.	STAINLESS STEEL 10 ft. 6 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-5-15 Make: Viking Model: PL 1011 SD SS	Each	<u>1e. \$45,807.18</u>
1f.	COMPLETE HYDRAULIC SYSTEM AND CONTROLLER INSTALLED PURSUANT TO SPECIFICATION CT-5-15. Make: Cirus Model: ConnDOT closed system	Each	<u>1f. \$17,789.82</u>
1g.	TARPING SYSTEM OPTION INSTALLED PURSUANT TO SPECIFICATION CT-5-15. Make: Roll Rite Model: Tarp Master 400	Each	<u>1g. \$1,928.82</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
1h.	POWER ANGLE 11' SNOWPLOW WITH POSITIVE LOCKING PAWL & INTEGRAL EXTENDED MOLDBOARD, METRO FULL TRIP MOLDBOARD. Make: Viking Model: PRRL 113645 FE	Each	<u>1h. \$6,765.66</u>
1i.	PERCENTAGE DISCOUNT OFF MSRP FOR CHASSIS OPTIONS.	% off	<u>1i. 25%off</u>
1j.	PERCENTAGE DISCOUNT OFF MSRP FOR UP FITTING OEM REPAIR PARTS.	% off	<u>1j. 30% off</u>
1k.	PERCENTAGE DISCOUNT OFF MSRP FOR ALL ALLIED EQUIPMENT.	% off	<u>1k. 30% off</u>
1l.	HOURLY SHOP LABOR RATE.	Hour	<u>1l. \$98.00</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
2.	62,000 GVWR Tandem Axle Dump Trucks with Plows		
2a.	62,000 GVWR CONVENTIONAL CAB, TANDEM AXLE CHASSIS WITH MANUAL TRANSMISSION, PURSUANT TO SPECIFICATION CT-4-15. Make: Freightliner Model: 114 SD	Each	<u>2a. \$103,900.00</u>
2b.	62,000 GVWR CONVENTIONAL CAB, TANDEM AXLE CHASSIS WITH AUTOMATIC TRANSMISSION PURSUANT TO SPECIFICATION CT-4-15. Make: Freightliner Model: 114 SD	Each	<u>2b. \$115,587.00</u>
2c.	62,000 GVWR CONVENTIONAL CAB, TANDEM AXLE CHASSIS WITH AUTOMATED MANUAL TRANSMISSION, PURSUANT TO SPECIFICATION CT-4-15. Make: Freightliner Model: 114 SD	Each	<u>2c. \$109,000.00</u>
2d.	STEEL 14 ft. 10 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT TILT OVER PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-4-15. Make: Viking Model: PL 1314 LW	Each	<u>2d. \$44,640.30</u>
2e.	STAINLESS STEEL 14 ft. 10 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT TILT OVER PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-4-15. Make: Viking Model: PL 1314 LW SS	Each	<u>2e. \$53,516.64</u>
2f.	COMPLETE HYDRAULIC SYSTEM AND CONTROLLER INSTALLED PURSUANT TO SPECIFICATION CT-4-15. Make: Cirus	Each	<u>2f. \$18,838.38</u>
2g.	UNDERBODY SCRAPER PLOW PURSUANT TO SPECIFICATION CT-4-15 Make: Viking Model: UB 101020	Each	<u>2g. \$11,634.12</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY:180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
2h.	TRAILER AIR BRAKE OPTION INSTALLED PURSUANT TO SPECIFICATION CT-4-15	Each	<u>2h. \$250.92</u>
2i.	TARPING SYSTEM OPTION INSTALLED PURSUANT TO SPECIFICATION CT-4-15 Make: Roll Rite Model: Tarp Master 400	Each	<u>2i. \$2,112.42</u>
2j.	POWER ANGLE 11' SNOWPLOW WITH POSITIVE LOCKING PAWL & INTEGGRAL EXTENDED MOLD-BOARD, FULL MOLD-BOARD TRIP. Make: Viking Model: PRRL 113645 FE	Each	<u>2j. \$6,765.66</u>
2k.	RIGHT WING PLOW INSTALLED ,PURSUANT TO ConnDOT SPECIFICATION CT-4-15	Each	<u>2k. \$14,087.22</u>
2l.	LEFT WING PLOW INSTALLED ,PURSUANT TO SPECIFICATION CT-4-15	Each	<u>2l. \$14,189.22</u>
2m.	DOUBLE WING PLOW INSTALLED ,PURSUANT TO ConnDOT SPECIFICATION CT-4-15	Each	<u>2m \$25,490.82</u>
2n.	PERCENTAGE DISCOUNT OFF MSRP FOR CHASSIS OPTIONS.	% off	<u>2n. 25% off</u>
2o.	PECENTAGE DISCOUNT OFF MSRP FOR UP FITTING OEM REPAIR PARTS.	% off	<u>2o. 30% off</u>
2p.	PERCENTAGE DISCOUNT OFF MSRP FOR ALL ALLIED EQUIPMENT.	% off	<u>2p. 30% off</u>
2q.	HOURLY SHOP LABOR RATE.	Hour	<u>2q. \$98.00</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
3.	72,000 GVWR Tri-Axle Dump Trucks with Plows		
3a.	72,000 GVWR CONVENTIONAL CAB, TRI AXLE CHASSIS WITH MANUAL TRANSMISION, PURSUANT TO SPECIFICATION CT-1-15. Make: Freightliner Model: 114 SD	Each	<u>3a. \$109,650.00</u>
3b.	72,000 GVWR CONVENTIONAL CAB, TRI AXLE CHASSIS WITH AUTOMATIC TRANSMISION, PURSUANT TO SPECIFICATION CT-1-15. Make: Freightliner Model: 114 SD	Each	<u>3b. \$121,587.00</u>
3c.	72,000 GVWR CONVENTIONAL CAB, TRI AXLE CHASSIS WITH AUTOMATED MANUAL TRANSMISION, PURSUANT TO SPECIFICATION CT-1-15. Make: Freightliner Model: 114 SD	Each	<u>3c. \$115,134.00</u>
3d.	17 ft. 22 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT TILT OVER PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-1-15. Make: Beau Roc Model: DH	Each	<u>3d. \$34,303.62</u>
3e.	COMPLETE HYDRAULIC SYSTEM AND CONTROLLER INSTALLED PURSUANT TO SPECIFICATION CT-1-15. Make: Cirus Model: ConnDOT closed system	Each	<u>3e. \$17,197.20</u>
3f.	COMPLETE 16FT. STAINLESS STEEL VBOX SPREADER PURSUANT TO SPECIFICATION CT-1-15. Make: Bonnel Model: BVDA 1660 S2 DDR	Each	<u>3f. \$39,694.32</u>
3g.	TRAILER AIR BRAKE OPTION INSTALLED PURSUANT TO SPECIFICATION CT-1-15	Each	<u>3g. \$250.92</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY:180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
3h.	TARPING SYSTEM OPTION INSTALLED PURSUANT TO SPECIFICATION CT-1-15 Make: Roll Rite Model: Tarp Master 400	Each	<u>3h. \$2,176.68</u>
3i.	POWER ANGLE 11' SNOWPLOW WITH POSITIVE LOCKING PAWL & INTEGRAL EXTENDED MOLDBOARD, FULL MOLDBOARD TRIP. Make: Viking Model: PRRL 113645 FE	Each	<u>3i. \$6,765.66</u>
3j.	RIGHT WING PLOW INSTALLED ,PURSUANT TO SPECIFICATION CT-1-15	Each	<u>3j. \$14,087.22</u>
3k.	LEFT WING PLOW INSTALLED ,PURSUANT SPECIFICATION CT-1-15	Each	<u>3k. \$14,189.22</u>
3l.	DOUBLE WING PLOW INSTALLED ,PURSUANT TO SPECIFICATION CT-1-15	Each	<u>3l. \$25,490.82</u>
3m.	PERCENTAGE DISCOUNT OFF MSRP FOR CHASSIS OPTIONS.	% off	<u>3m. 25% off</u>
3n.	PERCENTAGE DISCOUNT OFF MSRP FOR UP FITTING OEM REPAIR PARTS.	% off	<u>3n. 30% off</u>
3o.	PERCENTAGE DISCOUNT OFF MSRP FOR ALL ALLIED EQUIPMENT.	% off	<u>3o. 30% off</u>
3p.	SHOP LABOR RATE	Hour	<u>3p. \$98.00</u>

CONTRACT AWARD
RFP-38 Rev. 3/12/14
Prev. Rev. 1/3/14

STATE OF CONNECTICUT

DEPARTMENT OF ADMINISTRATIVE SERVICES

Patrick DeConti
Contract Specialist

860-713-5061
Telephone Number

PROCUREMENT DIVISION
165 Capitol Avenue, 5th Floor South
HARTFORD, CT 06106-1659

CONTRACT AWARD NO.:

14PSX0239

Contract Award Date:

4 March 2015

RFP Due Date:

25 November 2014

CONTRACT AWARD

IMPORTANT: THIS IS NOT A PURCHASE ORDER. DO NOT PRODUCE OR SHIP WITHOUT AN AGENCY PURCHASE ORDER.

DESCRIPTION: Severe Service Snow and Ice Plow Trucks in 41,000, 62,000 and 72,000 GVWR for Maintaining the State Roadways

FOR:
Department of Administrative Services, Department of
Transportation, All Using State Agencies, and Political
Subdivisions

TERM OF CONTRACT:
4 March 2015 through 31 August 2020

AGENCY REQUISITION NUMBER: 0000095696

IN STATE (NON-SB) CONTRACT VALUE	DAS CERTIFIED SMALL BUSINESS CONTRACT VALUE	OUT OF STATE CONTRACT VALUE	TOTAL CONTRACT AWARD VALUE
\$110,000,000.00			\$110,000,000.00

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CONTRACTOR INFORMATION:

REFER TO THE CONTRACT ON THE DAS PROCUREMENT WEB PAGE FOR THE MOST CURRENT CONTRACTOR INFORMATION. (<http://das.ct.gov/mp1.aspx?page=8>)

Company Name: **Freightliner of Hartford, Inc.**

Company Address: **222 Roberts Street East Hartford, CT 06108**

Tel. No.: **(860) 289-0201 ext. 1208**

Fax No.: **(860) 610-6242**

Contract Value: **est. \$110,000,000.00**

Contact Person: **Kevin Bigliuzzi**

Delivery: **180 days ARO**

Contact Person Address: kevinbigliuzzi@freightlinerofhartford.com

Company E-mail Address and/or Company Web Site: www.freightlinerofhartford.com

Certification Type (None): Agrees to Supply Political SubDivisions: **Yes** Prompt Payment Terms: **0% 00 Net 45**

The signature below by the DAS Contract Specialist is evidence that the Contractor's solicitation response has/have been accepted and that the Contractor(s) and DAS are bound by all of the terms and conditions of the Contract.

DEPARTMENT OF ADMINISTRATIVE SERVICES

APPROVED _____
(Original Signature on Document in Procurement Files)

MELODY A. CURREY
Commissioner
Date:

By: _____
(Original Signature on Document in Procurement Files)

PATRICK DECONTI
Contract Specialist
Date:

Contract # **14PSX0239**

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

CONTRACT

14PSX0239

Between

THE STATE OF CONNECTICUT

Acting by its

DEPARTMENT OF ADMINISTRATIVE SERVICES

AND

Freightliner of Hartford, Inc.

Awarded Contractor

**Severe Service Chassis with Allied Equipment
for Maintaining State Roadways**

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

Contract Table of Contents

1. Definitions
 2. Term of Contract; Contract Extension
 3. Description of Goods and Services
 4. Price Schedule, Payment Terms and Billing, and Price Adjustments
 5. Rejected Items; Abandonment
 6. Order and Delivery
 7. Contract Amendments
 8. Assignment
 9. Termination
 10. Cost Modifications
 11. Breach
 12. Waiver
 13. Open Market Purchases
 14. Purchase Orders
 15. Indemnification
 16. Forum and Choice of Law
 17. Contractor Guaranties
 18. Implied Warranties
 19. Goods, Standards and Appurtenances
 20. Delivery
 21. Goods Inspection
 22. Emergency Standby for Goods and/or Services
 23. Setoff
 24. Force Majeure
 25. Advertising
 26. Americans With Disabilities Act
 27. Representations and Warranties
 28. Representations and Warranties Concerning Motor Vehicles
 29. Disclosure of Contractor Parties Litigation
 30. Entirety of Contract
 31. Exhibits
 32. Executive Orders
 33. Non-Discrimination
 34. Tangible Personal Property
 35. Whistleblowing
 36. Notice
 37. Insurance
 38. Headings
 39. Number and Gender
 40. Parties
 41. Contractor Changes
 42. Further Assurances
 43. Audit and Inspection of Plants, Places of Business and Records
 44. Background Checks
 45. Continued Performance
 46. Working and Labor Synergies
 47. Contractor Responsibility
 48. Severability
 49. Confidential Information
 50. References to Statutes, Public Acts, Regulations, Codes and Executive Orders
 51. Cross-Default
 52. Disclosure of Records
 53. Summary of State Ethics Laws
 54. Sovereign Immunity
 55. Time of the Essence
 56. Certification as Small Contractor or Minority Business Enterprise
 57. Campaign Contribution Restriction
 58. Health Insurance Portability and Accountability Act
 59. Protection of Confidential Information
 60. Audit Requirements for Recipients of State Financial Assistance
- EXHIBIT A** - Description of Goods & Services and Additional Terms & Conditions
- EXHIBIT B** - Price Schedule
- EXHIBIT C** - Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

This Contract (the "Contract") is made as of March 6, 2015 (the "Effective Date") by and between, Freightliner of Hartford, Inc. (the "Contractor,") with a principal place of business at 222 Roberts Street, East Hartford, Connecticut, acting by Greg Martinotti, its Government Sales Manager and the State of Connecticut, Department of Administrative Services ("DAS"), with a principal place of business at 165 Capitol Ave, Hartford, Connecticut 06106-1659, acting by Martin Anderson, its Deputy Commissioner, in accordance with Sections 4a-2 and 4a-51 of the Connecticut General Statutes.

Now therefore, in consideration of these presents, and for other good and valuable consideration, the receipt and sufficiency of which the parties acknowledge, the Contractor and the State agree as follows:

1. Definitions. Unless otherwise indicated, the following terms shall have the following corresponding definitions:
 - (a) **Claims:** All actions, suits, claims, demands, investigations and proceedings of any kind, open, pending or threatened, whether mature, unmaturred, contingent, known or unknown, at law or in equity, in any forum.
 - (b) **Client Agency:** Any department, commission, board, bureau, agency, institution, public authority, office, council, association, instrumentality or political subdivision of the State of Connecticut, as applicable, who is authorized and chooses to make purchases under, and pursuant to the terms and conditions of, this Contract.
 - (c) **Confidential Information:** This shall mean any name, number or other information that may be used, alone or in conjunction with any other information, to identify a specific individual including, but not limited to, such individual's name, date of birth, mother's maiden name, motor vehicle operator's license number, Social Security number, employee identification number, employer or taxpayer identification number, alien registration number, government passport number, health insurance identification number, demand deposit account number, savings account number, credit card number, debit card number or unique biometric data such as fingerprint, voice print, retina or iris image, or other unique physical representation. Without limiting the foregoing, Confidential Information shall also include any information that the Client Agency or DAS classifies as "confidential" or "restricted." Confidential Information shall not include information that may be lawfully obtained from publicly available sources or from federal, state, or local government records which are lawfully made available to the general public.
 - (d) **Confidential Information Breach:** This shall mean, generally, an instance where an unauthorized person or entity accesses Confidential Information in any manner, including but not limited to the following occurrences: (1) any Confidential Information that is not encrypted or protected is misplaced, lost, stolen or in any way compromised; (2) one or more third parties have had access to or taken control or possession of any Confidential Information that is not encrypted or protected without prior written authorization from the State; (3) the unauthorized acquisition of encrypted or protected Confidential Information together with the confidential process or key that is capable of compromising the integrity

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

of the Confidential Information; or (4) if there is a substantial risk of identity theft or fraud to Client Agency, the Contractor, DAS or State.

- (e) Contract: The agreement, as of its Effective Date, between the Contractor and the State for any or all Goods or Services at the Proposal price.
- (f) Contractor: A person or entity who submits a Proposal and who executes a Contract.
- (g) Contractor Parties: A Contractor's members, directors, officers, shareholders, partners, managers, principal officers, representatives, agents, servants, consultants, employees or any one of them or any other person or entity with whom the Contractor is in privity of oral or written contract and the Contractor intends for such other person or entity to Perform under the Contract in any capacity.
- (h) Day: All calendar days other than Saturdays, Sundays and days designated as national or State of Connecticut holidays upon which banks in Connecticut are closed.
- (i) Force Majeure: Events that materially affect the cost of the Goods or Services or the time schedule within which to Perform and are outside the control of the party asserting that such an event has occurred, including, but not limited to, labor troubles unrelated to the Contractor, failure of or inadequate permanent power, unavoidable casualties, fire not caused by the Contractor, extraordinary weather conditions, disasters, riots, acts of God, insurrection or war.
- (j) Goods: For purposes of the Contract, all things which are movable at the time that the Contract is effective and which include, without limiting this definition, supplies, materials and equipment, as specified in the Request for Proposals and set forth in Exhibit A.
- (k) Goods or Services: Goods, Services or both, as specified in the Request for Proposals and set forth in Exhibit A.
- (l) Proposal: A submittal in response to a Request for Proposals.
- (m) Records: All working papers and such other information and materials as may have been accumulated by the Contractor in performing the Contract, including but not limited to, documents, data, plans, books, computations, drawings, specifications, notes, reports, records, estimates, summaries and correspondence, kept or stored in any form.
- (n) Request for Proposals: A State request inviting proposals for Goods or Services. This Contract shall be governed by the statutes, regulations and procedures of the State of Connecticut, Department of Administrative Services.
- (o) Services: The performance of labor or work, as specified in the Request for Proposals and set forth in Exhibit A.
- (p) State: The State of Connecticut, including DAS, the Client Agency and any office, department, board, council, commission, institution or other agency of the State.
- (q) Termination: An end to the Contract prior to the end of its term whether effected pursuant to a right which the Contract creates or for a breach.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

- (r) Title: all ownership, title, licenses, rights and interest, including, but not limited to, perpetual use, of and to the Goods or Services.
- (s) Term of Contract; Contract Extension. The Contract will be in effect from the Effective Date through August 31, 2020.
DAS, in its sole discretion, may extend this Contract for additional terms beyond the original term, prior to Termination or expiration, one or more times for a combined total period not to exceed the complete length of the original term.
2. Description of Goods or Services and Additional Terms and Conditions. The Contractor shall perform as set forth in Exhibit A. For purposes of this Contract, to perform and the performance in Exhibit A is referred to as "Perform" and the "Performance."
4. Price Schedule, Payment Terms and Billing, and Price Adjustments.
- (a) Price Schedule: Price Schedule under this Contract is set forth in Exhibit B.
- (b) Payment Terms and Billing: Payment shall be made only after the Client Agency receives and accepts the Goods or Services and after it receives a properly completed invoice. Unless otherwise specified in the Contract, payment for all accepted Goods or Services shall be due within forty-five (45) days after acceptance of the Goods or Services, or thirty (30) days if the Contractor is a certified small contractor or minority business enterprise as defined in Conn. Gen. Stat. § 4a-60g. The Contractor shall submit an invoice to the Client Agency for the Performance. The invoice shall include detailed information for Goods or Services, delivered and Performed, as applicable, and accepted. Any late payment charges shall be calculated in accordance with the Connecticut General Statutes.
- (c) If applicable to and during the term of this Contract, the Price Schedule will be adjusted to reflect any increase in the minimum wage rate that may occur, as mandated by state law. The Price Schedule will not be adjusted until the Contractor provides documentation, in the form of certified payroll or other documentation acceptable to the State, substantiating the increase in minimum wage rate.
- (d) Equipment prices listed in Exhibit B shall remain unchanged for the vehicle model year following the Effective Date. Thereafter, the Contractor shall have the right to request a price adjustment for each vehicle model year as soon as pricing becomes available from the manufacturer. The Contractor may submit a request in writing to DAS for a price adjustment that is consistent with and relative to price changes originating with and compelled by manufacturer and/or market trends and which changes are outside of the Contractor's control. The Contractor shall fully document its request, attaching to the request, without limitation, such manufacturer and market data, as support the requested adjustment. DAS may, in its sole discretion, approve or disapprove the requested adjustment, in whole or in part. Any approved adjustment shall be final and shall remain unchanged until the next model year becomes available.

The Contractor shall submit all requests in accordance with Section #35. Notice. A request made to the Client Agency shall not be valid and the parties shall treat it as if the Contractor had not made the request at all. A request made to the Client Agency shall not be considered timely and shall not toll or extend the running of the thirty (30) days. The right of the Contractor to request a particular price adjustment shall lapse upon the expiration of the applicable thirty (30) days. If the Contractor fails to make a timely request, then the price shall remain unchanged from the previous year and shall continue through the next succeeding twelve (12) months and until the second annual anniversary of the Effective

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

Date of the Contract, If approved, price adjustments shall become effective ten (10) days after the date of the approval. The Contractor shall honor any purchase orders issued prior to the effective date of the approval at the price in effect at the time of the issuance of the purchase order.

5. Rejected Items; Abandonment.

(a) The Contractor may deliver, cause to be delivered, or, in any other way, bring or cause to be brought, to any State premises or other destination, Goods, as samples or otherwise, and other supplies, materials, equipment or other tangible personal property. The State may, by written notice and in accordance with the terms and conditions of the Contract, direct the Contractor to remove any or all such Goods ("the "Rejected Goods") and any or all other supplies, materials, equipment or other tangible personal property (collectively, the "Contractor Property") from and out of State premises and any other location which the State manages, leases or controls. The Contractor shall remove the Rejected Goods and the Contractor Property in accordance with the terms and conditions of the written notice. Failure to remove the Rejected Goods or the Contractor Property in accordance with the terms and conditions of the written notice shall mean, for itself and all Contractor Parties, that:

- (1) they have voluntarily, intentionally, unconditionally, unequivocally and absolutely abandoned and left unclaimed the Rejected Goods and Contractor Property and relinquished all ownership, title, licenses, rights, possession and interest of, in and to (collectively, "Title") the Rejected Goods and Contractor Property with the specific and express intent of (A) terminating all of their Title to the Rejected Goods and Contractor Property, (B) vesting Title to the Rejected Goods and Contractor Property in the State of Connecticut and (C) not ever reclaiming Title or any future rights of any type in and to the Rejected Goods and Contractor Property;
- (2) there is no ignorance, inadvertence or unawareness to mitigate against the intent to abandon the Rejected Goods or Contractor Property;
- (3) they vest authority, without any further act required on their part or the State's part, in the Client Agency and the State to use or dispose of the Rejected Goods and Contractor Property, in the State's sole discretion, as if the Rejected Goods and Contractor Property were the State's own property and in accordance with law, without incurring any liability or obligation to the Contractor or any other party;
- (4) if the State incurs any costs or expenses in connection with disposing of the Rejected Goods and Contractor Property, including, but not limited to, advertising, moving or storing the Rejected Goods and Contractor Property, auction and other activities, the State shall invoice the Contractor for all such cost and expenses and the Contractor shall reimburse the State no later than thirty (30) days after the date of invoice; and
- (5) they do remise, release and forever discharge the State and its employees, departments, commissions, boards, bureaus, agencies, instrumentalities or political subdivisions and their respective successors, heirs, executors and assigns (collectively, the "State and Its Agents") of and from all Claims which they and their respective successors or assigns, jointly or severally, ever had, now have or will have against the State and Its Agents arising from the use or disposition of the Rejected Goods and Contractor Property.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

- (b) The Contractor shall secure from each Contractor Party, such document or instrument as necessary or appropriate as will vest in the Contractor plenary authority to bind the Contractor Parties to the full extent necessary or appropriate to give full effect to all of the terms and conditions of this section. The Contractor shall provide, no later than fifteen (15) days after receiving a request from the State, such information as the State may require to evidence, in the State's sole determination, compliance with this section.
6. Order and Delivery. The Contract shall bind the Contractor to furnish and deliver the Goods or Services in accordance with Exhibit A and at the prices set forth in Exhibit B. Subject to the sections in this Contract concerning Force Majeure, Termination and Open Market Purchases, the Contract shall bind the Client Agency to order the Goods or Services from the Contractor, and to pay for the accepted Goods or Services in accordance with Exhibit B.
7. Contract Amendments.
No amendment to or modification or other alteration of the Contract shall be valid or binding upon the State unless made in writing, signed by both parties and, if applicable, approved by the Connecticut Attorney General.
8. Assignment. The Contractor shall not assign any of its rights or obligations under the Contract, voluntarily or otherwise, in any manner without the prior written consent of DAS. DAS may void any purported assignment in violation of this section and declare the Contractor in breach of Contract. Any Termination by DAS for a breach is without prejudice to DAS's or the State's rights or possible Claims.
9. Termination.
- (a) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may Terminate the Contract whenever DAS makes a written determination that such Termination is in the best interests of the State. DAS shall notify the Contractor in writing of Termination pursuant to this section, which notice shall specify the effective date of Termination and the extent to which the Contractor must complete its Performance under the Contract prior to such date.
- (b) Notwithstanding any provisions in this Contract, DAS, through a duly authorized employee, may, after making a written determination that the Contractor has breached the Contract, Terminate the Contract in accordance with the provisions in the Breach section of this Contract.
- (c) DAS shall send the notice of Termination via certified mail, return receipt requested, to the Contractor at the most current address which the Contractor has furnished to DAS for purposes of correspondence, or by hand delivery. Upon receiving the notice from DAS, the Contractor shall immediately discontinue all services affected in accordance with the notice, undertake all commercially reasonable efforts to mitigate any losses or damages, and deliver to the Client Agency all Records. The Records are deemed to be the property of the Client Agency and the Contractor shall deliver them to the Client Agency no later than thirty (30) days after the Termination of the Contract or fifteen (15) days after the Contractor receives a written request from either DAS or the Client Agency for the Records. The Contractor shall deliver those Records that exist in electronic, magnetic or other intangible form in a non-proprietary format, such as, but not limited to, ASCII or .TXT.
- (d) Upon receipt of a written notice of Termination from DAS, the Contractor shall cease operations as DAS directs in the notice, and take all actions that are necessary or appropriate, or that DAS may reasonably direct, for the protection, and preservation of the

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

Goods and any other property. Except for any work which DAS directs the Contractor to Perform in the notice prior to the effective date of Termination, and except as otherwise provided in the notice, the Contractor shall terminate or conclude all existing subcontracts and purchase orders and shall not enter into any further subcontracts, purchase orders or commitments.

- (e) The Client Agency shall, within forty-five (45) days of the effective date of Termination, reimburse the Contractor for its Performance rendered and accepted by the Client Agency in accordance with Exhibit A, in addition to all actual and reasonable costs incurred after Termination in completing those portions of the Performance which the notice required the Contractor to complete. However, the Contractor is not entitled to receive and the Client Agency is not obligated to tender to the Contractor any payments for anticipated or lost profits. Upon request by DAS or the Client Agency, as applicable, the Contractor shall assign to DAS or the Client Agency, or any replacement contractor which DAS or the Client Agency designates, all subcontracts, purchase orders and other commitments, deliver to DAS or the Client Agency all Records and other information pertaining to its Performance, and remove from State premises, whether leased or owned, all of Contractor's property, equipment, waste material and rubbish related to its Performance, all as DAS or the Client Agency may request.
 - (f) For breach or violation of any of the provisions in the section concerning Representations and Warranties, DAS may Terminate the Contract in accordance with its terms and revoke any consents to assignments given as if the assignments had never been requested or consented to, without liability to the Contractor or Contractor Parties or any third party.
 - (g) Upon Termination of the Contract, all rights and obligations shall be null and void, so that no party shall have any further rights or obligations to any other party, except with respect to the sections which survive Termination. All representations, warranties, agreements and rights of the parties under the Contract shall survive such Termination to the extent not otherwise limited in the Contract and without each one of them having to be specifically mentioned in the Contract.
 - (h) Termination of the Contract pursuant to this section shall not be deemed to be a breach of contract by DAS.
10. Cost Modifications. The parties may agree to a reduction in the cost of the Contract at any time during which the Contract is in effect. Without intending to impose a limitation on the nature of the reduction, the reduction may be to hourly, staffing or unit costs, the total cost of the Contract or the reduction may take such other form as the State deems to be necessary or appropriate.
11. Breach. If either party breaches the Contract in any respect, the non-breaching party shall provide written notice of such breach to the breaching party and afford the breaching party an opportunity to cure the breach within ten (10) days from the date that the breaching party receives such notice. Any other time provided for in the notice shall trump such ten (10) days. Such right to cure period shall be extended if the non-breaching party is satisfied that the breaching party is making a good faith effort to cure but the nature of the breach is such that it cannot be cured within the right to cure period. The notice may include an effective Contract Termination date if the breach is not cured by the stated date and, unless otherwise modified by the non-breaching party in writing prior to the Termination date, no further action shall be required of any party to effect the Termination as of the stated date. If the notice does not set forth an effective Contract Termination date, then the non-breaching party may Terminate the Contract by giving the breaching party no less than

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

twenty four (24) hours' prior written notice. If DAS believes that the Contractor has not performed according to the Contract, the Client Agency may withhold payment in whole or in part pending resolution of the Performance issue, provided that DAS notifies the Contractor in writing prior to the date that the payment would have been due in accordance with Exhibit B.

12. Waiver.

- (a) No waiver of any breach of the Contract shall be interpreted or deemed to be a waiver of any other or subsequent breach. All remedies afforded in the Contract shall be taken and construed as cumulative, that is, in addition to every other remedy provided in the Contract or at law or in equity.
- (b) A party's failure to insist on strict performance of any provision of the Contract shall only be deemed to be a waiver of rights and remedies concerning that specific instance of Performance and shall not be deemed to be a waiver of any subsequent rights, remedies or breach.

13. Open Market Purchases. Failure of the Contractor to Perform within the time specified in the Contract, or failure to replace rejected or substandard Goods or fulfill unperformed Services when so requested and as the Contract provides or allows, constitutes a breach of the Contract and as a remedy for such breach, such failure shall constitute authority for DAS, if it deems it to be necessary or appropriate in its sole discretion, to Terminate the Contract and/or to purchase on the open market, Goods or Services to replace those which have been rejected, not delivered, or not Performed. The Client Agency shall invoice the Contractor for all such purchases to the extent that they exceed the costs and expenses in Exhibit B and the Contractor shall pay the Client Agency's invoice immediately after receiving the invoice. If DAS does not Terminate the Contract, the Client Agency will deduct such open market purchases from the Contract quantities. However, if the Client Agency deems it to be in the best interest of the State, the Client Agency may accept and use the Goods or Services delivered which are substandard in quality, subject to an adjustment in price to be determined by the Client Agency.

14. Purchase Orders.

- (a) The Contract itself is not an authorization for the Contractor to ship Goods or begin Performance in any way. The Contractor may begin Performance only after it has received a duly issued purchase order against the Contract for Performance.
- (b) The Client Agency shall issue a purchase order against the Contract directly to the Contractor and to no other party.
- (c) All purchase orders shall be in written or electronic form, bear the Contract number (if any) and comply with all other State and Client Agency requirements, particularly the Client Agency's requirements concerning procurement. Purchase orders issued in compliance with such requirements shall be deemed to be duly issued.
- (d) A Contractor making delivery without a duly issued purchase order in accordance with this section does so at the Contractor's own risk.
- (e) The Client Agency may, in its sole discretion, deliver to the Contractor any or all duly issued purchase orders via electronic means only, such that the Client Agency shall not have any

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

additional obligation to deliver to the Contractor a "hard copy" of the purchase order or a copy bearing any hand-written signature or other "original" marking.

15. Indemnification.

- (a) The Contractor shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all (1) Claims arising, directly or indirectly, in connection with the Contract, including the acts of commission or omission (collectively, the "Acts") of the Contractor or Contractor Parties; and (2) liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Contract. The Contractor shall use counsel reasonably acceptable to the State in carrying out its obligations under this section. The Contractor's obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Contractor's bid, proposal or any Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopied compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance.
- (b) The Contractor shall not be responsible for indemnifying or holding the State harmless from any liability arising due to the negligence of the State or any other person or entity acting under the direct control or supervision of the State.
- (c) The Contractor shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Contractor or any Contractor Parties. The State shall give the Contractor reasonable notice of any such Claims.
- (d) The Contractor's duties under this section shall remain fully in effect and binding in accordance with the terms and conditions of the Contract, without being lessened or compromised in any way, even where the Contractor is alleged or is found to have merely contributed in part to the Acts giving rise to the Claims and/or where the State is alleged or is found to have contributed to the Acts giving rise to the Claims.
- (e) The Contractor shall carry and maintain at all times during the term of the Contract, and during the time that any provisions survive the term of the Contract, sufficient general liability insurance to satisfy its obligations under this Contract. The Contractor shall cause the State to be named as an additional insured on the policy and shall provide (1) a certificate of insurance, (2) the declaration page and (3) the additional insured endorsement to the policy to the Client Agency prior to the Effective Date of the Contract evidencing that the State is an additional insured. The Contractor shall not begin Performance until the delivery of these 3 documents to the Client Agency. State shall be entitled to recover under the insurance policy even if a body of competent jurisdiction determines that State is contributorily negligent.
- (f) This section shall survive the Termination of the Contract and shall not be limited by reason of any insurance coverage.

16. Forum and Choice of Law. The parties deem the Contract to have been made in the City of Hartford, State of Connecticut. Both parties agree that it is fair and reasonable for the validity and construction of the Contract to be, and it shall be, governed by the laws and court decisions of the State of Connecticut, without giving effect to its principles of conflicts of laws. To the extent that any immunities provided by Federal law or the laws of the State of Connecticut do not bar an action against the State, and to the extent that these courts are courts of competent jurisdiction, for the purpose of venue, the complaint shall be made

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

returnable to the Judicial District of Hartford only or shall be brought in the United States District Court for the District of Connecticut only, and shall not be transferred to any other court, provided, however, that nothing here constitutes a waiver or compromise of the sovereign immunity of the State of Connecticut. The Contractor waives any objection which it may now have or will have to the laying of venue of any Claims in any forum and further irrevocably submits to such jurisdiction in any suit, action or proceeding.

17. Contractor Guaranties. Contractor shall:

- (a) Perform fully under the Contract;
- (b) Guarantee the Goods or Services against defective material or workmanship and to repair any damage or marring occasioned in transit or, at the Client Agency's option, replace them;
- (c) Furnish adequate protection from damage for all work and to repair damage of any kind, for which its workers are responsible, to the premises, Goods, the Contractor's work or that of Contractor Parties;
- (d) With respect to the provision of Services, pay for all permits, licenses and fees and give all required or appropriate notices;
- (e) Adhere to all Contractual provisions ensuring the confidentiality of Records that the Contractor has access to and are exempt from disclosure under the State's Freedom of Information Act or other applicable law; and
- (f) Neither disclaim, exclude nor modify the implied warranties of fitness for a particular purpose or of merchantability.

18. Implied Warranties. DAS does not disclaim, exclude or modify the implied warranty of fitness for a particular purpose or the warranty of merchantability.

19. Goods, Standards and Appurtenances. Any Goods delivered must be standard new Goods, latest model, except as otherwise specifically stated in the Contract. Remanufactured, refurbished or reconditioned equipment may be accepted but only to the extent allowed under the Contract. Where the Contract does not specifically list or describe any part or nominal appurtenances of equipment for the Goods, it shall be understood that the Contractor shall deliver such parts and appurtenances as are usually provided with the manufacturer's stock model.

20. Delivery.

- (a) Delivery shall be made as ordered and in accordance with the Contract. Unless otherwise specified in the Contract, delivery shall be to a loading dock or receiving platform. The Contractor or Contractor's shipping designee shall be responsible for removal of Goods from the carrier and placement on the Client Agency loading dock or receiving platform. The receiving personnel of the Client Agency are not required to assist in this process. The decision of DAS as to reasonable compliance with delivery terms shall be final and binding. The burden of proof of proper receipt of the order shall rest with the Contractor.
- (b) In order for the time of delivery to be extended, the Client Agency must first approve a request for extension from the time specified in the Contract, such extension applying only to the particular item or shipment.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

- (c) Goods shall be securely and properly packed for shipment, according to accepted standard commercial practice, without extra charge for packing cases, baling or sacks. The containers shall remain the property of the Client Agency unless otherwise stated in the Contract.
- (d) All risk of loss and damage to the Goods transfers to the Client Agency upon Title vesting in the Client Agency.
21. Goods Inspection. The Client Agency shall determine the manner and prescribe the inspection of all Goods and the tests of all samples submitted to determine whether they comply with all of the specifications in the Contract. If any Goods fail in any way to meet the specifications in the Contract, the Client Agency may, in its sole discretion, either reject it and owe nothing or accept it and pay for it on an adjusted price basis, depending on the degree to which the Goods meet the specifications. Any decision pertaining to any such failure or rejection shall be final and binding.
22. Emergency Standby for Goods and/or Services. If any Federal or State official, having authority to do so, declares an emergency or the occurrence of a natural disaster within the State of Connecticut, DAS and the Client Agency may request the Goods and Services on an expedited and prioritized basis. Upon receipt of such a request the Contractor shall make all necessary and appropriate commercially reasonable efforts to reallocate its staffing and other resources in order to give primary preference to Performing this Contract ahead of or prior to fulfilling, in whole or in part, any other contractual obligations that the Contractor may have. The Contractor is not obligated to make those efforts to Perform on an expedited and prioritized basis in accordance with this paragraph if doing so will make the Contractor materially breach any other contractual obligations that the Contractor may have. Contractor shall acknowledge receipt of any request made pursuant to this paragraph within 2 hours from the time that the Contractor receives it via purchase order or through a request to make an expedited or prioritized purchase through the State of Connecticut Purchasing Card (MasterCard) Program (the "P-Card Program"). If the Contractor fails to acknowledge receipt within 2 hours, confirm its obligation to Perform or actually Perform, as set forth in the purchase order or through the P-Card Program, then DAS and the Client Agency may procure the Performance from another source without further notice to Contractor and without creating any right of recourse at law or in equity against DAS or Client Agency.
23. Setoff. In addition to all other remedies available hereunder, the State, in its sole discretion, may setoff (1) any costs or expenses that the State incurs resulting from the Contractor's unexcused nonperformance under the Contract and under any other agreement or arrangement that the Contractor has with the State and (2) any other amounts that are due or may become due from the State to the Contractor, against amounts otherwise due or that may become due to the Contractor under the Contract, or under any other agreement or arrangement that the Contractor has with the State. The State's right of setoff shall not be deemed to be the State's exclusive remedy for the Contractor's or Contractor Parties' breach of the Contract, all of which shall survive any setoffs by the State.
24. Force Majeure. The State and the Contractor shall not be excused from their obligation to Perform in accordance with the Contract except in the case of Force Majeure events and as otherwise provided for in the Contract. In the case of any such exception, the nonperforming party shall give immediate written notice to the other, explaining the cause and probable duration of any such nonperformance.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

25. Advertising. The Contractor shall not refer to sales to the State for advertising or promotional purposes, including, but not limited to, posting any material or data on the Internet, without DAS's prior written approval.
26. Americans With Disabilities Act. The Contractor shall be and remain in compliance with the Americans with Disabilities Act of 1990 ("Act"), to the extent applicable, during the term of the Contract. DAS may Terminate the Contract if the Contractor fails to comply with the Act.
27. Representations and Warranties. The Contractor, represents and warrants to DAS for itself and Contractor Parties, that:
- (a) if they are entities, they are duly and validly existing under the laws of their respective states of organization and authorized to conduct business in the State of Connecticut in the manner contemplated by the Contract. Further, as appropriate, they have taken all necessary action to authorize the execution, delivery and Performance of the Contract and have the power and authority to execute, deliver and Perform their obligations under the Contract;
 - (b) they will comply with all applicable State and Federal laws and municipal ordinances in satisfying their obligations to the State under and pursuant to the Contract, including, but not limited to (1) Connecticut General Statutes Title 1, Chapter 10, concerning the State's Codes of Ethics and (2) Title 4a concerning State purchasing, including, but not limited to Section 22a-194a concerning the use of polystyrene foam;
 - (c) the execution, delivery and Performance of the Contract will not violate, be in conflict with, result in a breach of or constitute (with or without due notice and/or lapse of time) a default under any of the following, as applicable: (1) any provision of law; (2) any order of any court or the State; or (3) any indenture, agreement, document or other instrument to which it is a party or by which it may be bound;
 - (d) they are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any governmental entity;
 - (e) as applicable, they have not, within the three years preceding the Contract, in any of their current or former jobs, been convicted of, or had a civil judgment rendered against them or against any person who would Perform under the Contract, for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a transaction or contract with any governmental entity. This includes, but is not limited to, violation of Federal or state antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
 - (f) they are not presently indicted for or otherwise criminally or civilly charged by any governmental entity with commission of any of the offenses listed above;
 - (g) they have not within the three years preceding the Contract had one or more contracts with any governmental entity Terminated;
 - (h) they have not employed or retained any entity or person, other than a bona fide employee working solely for them, to solicit or secure the Contract and that they have not paid or agreed to pay any entity or person, other than a bona fide employee working solely for them, any fee, commission, percentage, brokerage fee, gifts, or any other consideration

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

contingent upon or resulting from the award or making of the Contract or any assignments made in accordance with the terms of the Contract;

- (i) to the best of their knowledge, there are no Claims involving Contractor or Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract;
- (j) they shall disclose, to the best of their knowledge, to DAS in writing any Claims involving them that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. For purposes of the Contractor's obligation to disclose any Claims to DAS, the ten (10) Days in the section of this Contract concerning Disclosure of Contractor Parties Litigation shall run consecutively with the ten (10) Days provided for in this representation and warranty;
- (k) their participation in the Request for Proposals process is not a conflict of interest or a breach of ethics under the provisions of Title 1, Chapter 10 of the Connecticut General Statutes concerning the State's Code of Ethics;
- (l) the Proposal was not made in connection or concert with any other person or entity, including any affiliate (as defined in the Tangible Personal Property section of this Contract) of the Contractor, submitting a proposal for the same Goods or Services, and is in all respects fair and without collusion or fraud;
- (m) they are able to Perform under the Contract using their own resources or the resources of a party who is not a Contractor;
- (n) the Contractor shall obtain in a written contract all of the representations and warranties in this section from any Contractor Parties and to require that provision to be included in any contracts and purchase orders with Contractor Parties;
- (o) they have paid all applicable workers' compensation second injury fund assessments concerning all previous work done in Connecticut;
- (p) they have a record of compliance with Occupational Health and Safety Administration regulations without any unabated, willful or serious violations;
- (q) they owe no unemployment compensation contributions;
- (r) they are not delinquent in the payment of any taxes owed, or, that they have filed a sales tax security bond, and they have, if and as applicable, filed for motor carrier road tax stickers and have paid all outstanding road taxes;
- (s) all of their vehicles have current registrations and, unless such vehicles are no longer in service, they shall not allow any such registrations to lapse;
- (t) each Contractor Party has vested in the Contractor plenary authority to bind the Contractor Parties to the full extent necessary or appropriate to ensure full compliance with and Performance in accordance with all of the terms and conditions of the Contract and that all appropriate parties shall also provide to DAS, no later than fifteen (15) days after receiving a

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

request from DAS, such information as DAS may require to evidence, in DAS's sole determination, compliance with this section;

- (u) except to the extent modified or abrogated in the Contract, all Title shall pass to the Client Agency upon complete installation, testing and acceptance of the Goods or Services and payment by the Client Agency;
- (v) if either party Terminates the Contract, for any reason, they shall relinquish to the Client Agency all Title to the Goods delivered, accepted and paid for (except to the extent any invoiced amount is disputed) by the Client Agency;
- (w) with regard to third party products provided with the Goods, they shall transfer all licenses which they are permitted to transfer in accordance with the applicable third party license;
- (x) they shall not copyright, register, distribute or claim any rights in or to the Goods after the Effective Date of the Contract without DAS's prior written consent;
- (y) they either own or have the authority to use all Title of and to the Goods, and that such Title is not the subject of any encumbrances, liens or claims of ownership by any third party;
- (z) the Goods do not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (aa) the Client Agency's use of any Goods shall not infringe or misappropriate any patent, trade secret or other intellectual property right of a third party;
- (bb) if they procure any Goods, they shall sub-license such Goods and that the Client Agency shall be afforded the full benefits of any manufacturer or subcontractor licenses for the use of the Goods; and
- (cc) they shall assign or otherwise transfer to the Client Agency, or afford the Client Agency the full benefits of any manufacturer's warranty for the Goods, to the extent that such warranties are assignable or otherwise transferable to the Client Agency.

28. Representations and Warranties Concerning Motor Vehicles. If in the course of Performance or in any other way related to the Contract the Contractor at any time uses or operates "motor vehicles," as that term is defined by Conn. Gen. Stat. §14-1 (including, but not limited to such services as snow plowing, sanding, hauling or delivery of materials, freight or merchandise, or the transportation of passengers), the Contractor, represents and warrants for itself and the Contractor Parties, that:

- (a) It is the owner of record or lessee of record of each such motor vehicle used in the Performance of the Contract, and each such motor vehicle is duly registered with the Connecticut Department of Motor Vehicles ("ConnDMV") in accordance with the provisions of Chapter 246 of the Connecticut General Statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV, for any reason or cause. If such motor vehicle is not registered with ConnDMV, then it shall be duly registered with another state or commonwealth in accordance with such other state's or commonwealth's applicable statutes. Each such registration shall be in valid status, and shall not be expired, suspended or revoked by such other state or commonwealth for any reason or cause.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

- (b) Each such motor vehicle shall be fully insured in accordance with the provisions of Sections 14-12b, 14-112 and 38a-371 of the Connecticut General Statutes, as amended, in the amounts required by the said sections or in such higher amounts as have been specified by ConnDMV as a condition for the award of the Contract, or in accordance with all substantially similar provisions imposed by the law of the jurisdiction where the motor vehicle is registered.
- (c) Each Contractor Party who uses or operates a motor vehicle at any time in the Performance of the Contract shall have and maintain a motor vehicle operator's license or commercial driver's license of the appropriate class for the motor vehicle being used or operated. Each such license shall bear the endorsement or endorsements required by the provisions of Section 14-36a of the Connecticut General Statutes, as amended, to operate such motor vehicle, or required by substantially similar provisions imposed by the law of another jurisdiction in which the operator is licensed to operate such motor vehicle. The license shall be in valid status, and shall not be expired, suspended or revoked by ConnDMV or such other jurisdiction for any reason or cause.
- (d) Each motor vehicle shall be in full compliance with all of the terms and conditions of all provisions of the Connecticut General Statutes and regulations, or those of the jurisdiction where the motor vehicle is registered, pertaining to the mechanical condition, equipment, marking and operation of motor vehicles of such type, class and weight, including, but not limited to, requirements for motor vehicles having a gross vehicle weight rating of 18,000 pounds or more or motor vehicles otherwise described by the provisions of Conn. Gen. Stat. § 14-163c(a) and all applicable provisions of the Federal Motor Carrier Safety Regulations, as set forth in Title 49, Parts 382 to 399, inclusive, of the Code of Federal Regulations.
29. Disclosure of Contractor Parties Litigation. The Contractor shall require that all Contractor Parties, as appropriate, disclose to the Contractor, to the best of their knowledge, any Claims involving the Contractor Parties that might reasonably be expected to materially adversely affect their businesses, operations, assets, properties, financial stability, business prospects or ability to Perform fully under the Contract, no later than ten (10) Days after becoming aware or after they should have become aware of any such Claims. Disclosure shall be in writing.
30. Entirety of Contract. The Contract is the entire agreement between the parties with respect to its subject matter, and supersedes all prior agreements, proposals, offers, counteroffers and understandings of the parties, whether written or oral. The Contract has been entered into after full investigation, neither party relying upon any statement or representation by the other unless such statement or representation is specifically embodied in the Contract.
31. Exhibits. All exhibits referred to in and attached to this Contract are incorporated in this Contract by such reference and shall be deemed to be a part of it as if they had been fully set forth in it.
32. Executive Orders. This Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. The Contract may also be subject to Executive Order No. 7C of Governor M. Jodi Rell, promulgated July 13, 2006, concerning contracting reforms and Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

procurement of cleaning products and services, in accordance with their respective terms and conditions. If Executive Orders 7C and 14 are applicable, they are deemed to be incorporated into and are made a part of the Contract as if they had been fully set forth in it. At the Contractor's request, the Client Agency or DAS shall provide a copy of these orders to the Contractor.

33. Non-discrimination.

(a) For purposes of this Section, the following terms are defined as follows:

- (1) "Commission" means the Commission on Human Rights and Opportunities;
- (2) "Contract" and "contract" include any extension or modification of the Contract or contract;
- (3) "Contractor" and "contractor" include any successors or assigns of the Contractor or contractor;
- (4) "Gender identity or expression" means a person's gender-related identity, appearance or behavior, whether or not that gender-related identity, appearance or behavior is different from that traditionally associated with the person's physiology or assigned sex at birth, which gender-related identity can be shown by providing evidence including, but not limited to, medical history, care or treatment of the gender-related identity, consistent and uniform assertion of the gender-related identity or any other evidence that the gender-related identity is sincerely held, part of a person's core identity or not being asserted for an improper purpose.
- (5) "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations;
- (6) "good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements;
- (7) "marital status" means being single, married as recognized by the state of Connecticut, widowed, separated or divorced;
- (8) "mental disability" means one or more mental disorders, as defined in the most recent edition of the American Psychiatric Association's "Diagnostic and Statistical Manual of Mental Disorders", or a record of or regarding a person as having one or more such disorders;
- (9) "minority business enterprise" means any small contractor or supplier of materials fifty-one percent or more of the capital stock, if any, or assets of which is owned by a

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

person or persons: (1) who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise, and (3) who are members of a minority, as such term is defined in subsection (a) of Connecticut General Statutes § 32-9n; and

(10) "public works contract" means any agreement between any individual, firm or corporation and the State or any political subdivision of the State other than a municipality for construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, or which is financed in whole or in part by the State, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

For purposes of this Section, the terms "Contract" and "contract" do not include a contract where each contractor is (1) a political subdivision of the state, including, but not limited to, a municipality, (2) a quasi-public agency, as defined in Conn. Gen. Stat. Section 1-120, (3) any other state, including but not limited to any federally recognized Indian tribal governments, as defined in Conn. Gen. Stat. Section 1-267, (4) the federal government, (5) a foreign government, or (6) an agency of a subdivision, agency, state or government described in the immediately preceding enumerated items (1), (2), (3), (4) or (5).

(b)

(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved;

(2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission;

(3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and

(5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

- (c) Determination of the Contractor's good faith efforts shall include, but shall not be limited to, the following factors: The Contractor's employment and subcontracting policies, patterns and practices; affirmative advertising, recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission may prescribe that are designed to ensure the participation of minority business enterprises in public works projects.
- (d) The Contractor shall develop and maintain adequate documentation, in a manner prescribed by the Commission, of its good faith efforts.
- (e) The Contractor shall include the provisions of subsection (b) of this Section in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes §46a-56; provided if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.
- (f) The Contractor agrees to comply with the regulations referred to in this Section as they exist on the date of this Contract and as they may be adopted or amended from time to time during the term of this Contract and any amendments thereto.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

(g)

(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of sexual orientation, in any manner prohibited by the laws of the United States or the State of Connecticut, and that employees are treated when employed without regard to their sexual orientation;

(2) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the Commission on Human Rights and Opportunities advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(3) the Contractor agrees to comply with each provision of this section and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes § 46a-56; and

(4) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor which relate to the provisions of this Section and Connecticut General Statutes § 46a-56.

(h) The Contractor shall include the provisions of the foregoing paragraph in every subcontract or purchase order entered into in order to fulfill any obligation of a contract with the State and such provisions shall be binding on a subcontractor, vendor or manufacturer unless exempted by regulations or orders of the Commission. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions including sanctions for noncompliance in accordance with Connecticut General Statutes § 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission, the Contractor may request the State of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the State and the State may so enter.

34. Tangible Personal Property.

(a) The Contractor on its behalf and on behalf of its Affiliates, as defined below, shall comply with the provisions of Conn. Gen. Stat. §12-411b, as follows:

(1) For the term of the Contract, the Contractor and its Affiliates shall collect and remit to the State of Connecticut, Department of Revenue Services, any Connecticut use tax due under the provisions of Chapter 219 of the Connecticut General Statutes for items of tangible personal property sold by the Contractor or by any of its Affiliates in the same manner as if the Contractor and such Affiliates were engaged in the business of selling tangible personal

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

- property for use in Connecticut and had sufficient nexus under the provisions of Chapter 219 to be required to collect Connecticut use tax;
- (2) A customer's payment of a use tax to the Contractor or its Affiliates relieves the customer of liability for the use tax;
 - (3) The Contractor and its Affiliates shall remit all use taxes they collect from customers on or before the due date specified in the Contract, which may not be later than the last day of the month next succeeding the end of a calendar quarter or other tax collection period during which the tax was collected;
 - (4) The Contractor and its Affiliates are not liable for use tax billed by them but not paid to them by a customer; and
 - (5) Any Contractor or Affiliate who fails to remit use taxes collected on behalf of its customers by the due date specified in the Contract shall be subject to the interest and penalties provided for persons required to collect sales tax under chapter 219 of the general statutes.
- (b) For purposes of this section of the Contract, the word "Affiliate" means any person, as defined in section 12-1 of the general statutes, that controls, is controlled by, or is under common control with another person. A person controls another person if the person owns, directly or indirectly, more than ten per cent of the voting securities of the other person. The word "voting security" means a security that confers upon the holder the right to vote for the election of members of the board of directors or similar governing body of the business, or that is convertible into, or entitles the holder to receive, upon its exercise, a security that confers such a right to vote. "Voting security" includes a general partnership interest.
- (c) The Contractor represents and warrants that each of its Affiliates has vested in the Contractor plenary authority to so bind the Affiliates in any agreement with the State of Connecticut. The Contractor on its own behalf and on behalf of its Affiliates shall also provide, no later than 30 days after receiving a request by the State's contracting authority, such information as the State may require to ensure, in the State's sole determination, compliance with the provisions of Chapter 219 of the Connecticut General Statutes, including, but not limited to, §12-411b.
35. Whistleblowing. This Contract may be subject to the provisions of Section 4-61dd of the Connecticut General Statutes. In accordance with this statute, if an officer, employee or appointing authority of the Contractor takes or threatens to take any personnel action against any employee of the Contractor in retaliation for such employee's disclosure of information to any employee of the contracting state or quasi-public agency or the Auditors of Public Accounts or the Attorney General under the provisions of subsection (a) of such statute, the Contractor shall be liable for a civil penalty of not more than five thousand dollars for each offense, up to a maximum of twenty per cent of the value of this Contract. Each violation shall be a separate and distinct offense and in the case of a continuing violation, each calendar day's continuance of the violation shall be deemed to be a separate and distinct offense. The State may request that the Attorney General bring a civil action in the Superior Court for the Judicial District of Hartford to seek imposition and recovery of such civil penalty. In accordance with subsection (f) of such statute, each large state contractor, as defined in the statute, shall post a notice of the provisions of the statute relating to large state contractors in a conspicuous place which is readily available for viewing by the employees of the Contractor.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

36. Notice. All notices, demands, requests, consents, approvals or other communications required or permitted to be given or which are given with respect to this Contract (for the purpose of this section collectively called "Notices") shall be deemed to have been effected at such time as the notice is placed in the U.S. mail, first class and postage pre-paid, return receipt requested or placed with a recognized, overnight express delivery service that provides for a return receipt. All such Notices shall be in writing and shall be addressed as follows:

If to DAS:

State of Connecticut, Department of Administrative Services
165 Capitol Ave, 5th Floor South
Hartford, CT 06106-1659
Attention: Patrick DeConti

If to the Contractor:

Company Name: Freightliner of Hartford, Inc.
Address 222 Roberts Street, East Hartford, CT. 06108
Signatory Name: Greg Martinotti
Title: Government Sales Manager

37. Insurance. Before commencing Performance, the Contractor shall obtain and maintain at its own cost and expense for the duration of the Contract, the following insurance as described in (a) through (h) below. Contractor shall assume any and all deductibles in the described insurance policies. The Contractor's insurers shall have no right of recovery or subrogation against the State and the described Contractor's insurance shall be primary coverage. Any failure to comply with the claim reporting provisions of the policy shall not affect coverage provided to the State.

(a) Reserved

(b) Commercial General Liability: \$1,000,000 combined single limit per occurrence for bodily injury, personal injury and property damage. Coverage shall include, Premises and Operations, Independent Contractors, Products and Completed Operations, Contractual Liability and Broad Form Property Damage coverage. If a general aggregate is used, the general aggregate limit shall apply separately to the project or the general aggregate limit shall be twice the occurrence limit.

(c) Automobile Liability: \$1,000,000 combined single limit per accident for bodily injury. Coverage extends to owned, hired and non-owned automobiles. If the vendor/contractor does not own an automobile, but one is used in the execution of the contract, then only hired and non-owned coverage is required. If a vehicle is not used in the execution of the contract then automobile coverage is not required.

(d) Workers' Compensation and Employers Liability: Statutory coverage in compliance with the Compensation laws of the State of Connecticut. Coverage shall include Employer's Liability with minimum limits of \$100,000 each accident, \$500,000 Disease – Policy limit, \$100,000 each employee.

(e) Reserved

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

(f) **Umbrella Liability:** Excess/umbrella liability insurance may be included to meet minimum requirements. Umbrella coverage must indicate the existing underlying insurance coverage.

(g) **Claims Made:** Not acceptable with the exception of Professional Liability when specified.

(h) Reserved

38. **Headings.** The headings given to the sections in the Contract are inserted only for convenience and are in no way to be construed as part of the Contract or as a limitation of the scope of the particular section to which the heading refers.

39. **Number and Gender.** Whenever the context so requires, the plural or singular shall include each other and the use of any gender shall include all genders.

40. **Parties.** To the extent that any Contractor Party is to participate or Perform in any way, directly or indirectly in connection with the Contract, any reference in the Contract to "Contractor" shall also be deemed to include "Contractor Parties", as if such reference had originally specifically included "Contractor Parties" since it is the parties' intent for the terms "Contractor Parties" to be vested with the same respective rights and obligations as the terms "Contractor."

41. **Contractor Changes.** The Contractor shall notify DAS in writing no later than ten (10) Days from the effective date of any change in:

- a) its certificate of incorporation or other organizational document;
- b) more than a controlling interest in the ownership of the Contractor; or
- c) the individual(s) in charge of the Performance.

This change shall not relieve the Contractor of any responsibility for the accuracy and completeness of the Performance. DAS, after receiving written notice by the Contractor of any such change, may require such agreements, releases and other instruments evidencing, to DAS's satisfaction, that any individuals retiring or otherwise separating from the Contractor have been compensated in full or that provision has been made for compensation in full, for all work performed under terms of the Contract. The Contractor shall deliver such documents to DAS in accordance with the terms of DAS's written request. DAS may also require, and the Contractor shall deliver, a financial statement showing that solvency of the Contractor is maintained. The death of any Contractor Party, as applicable, shall not release the Contractor from the obligation to Perform under the Contract; the surviving Contractor Parties, as appropriate, must continue to Perform under the Contract until Performance is fully completed.

42. **Further Assurances.** The parties shall provide such information, execute and deliver any instruments and documents and take such other actions as may be necessary or reasonably requested by the other party which are not inconsistent with the provisions of this Contract and which do not involve the vesting of rights or assumption of obligations other than those provided for in the Contract, in order to give full effect to the Contract and to carry out the intent of the Contract.

43. **Audit and Inspection of Plants, Places of Business and Records.**

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

- (a) Audit and Inspection of Plants, Places of Business and Records. The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's and Contractor Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Contract.
 - (b) The Contractor shall maintain, and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.
 - (c) The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.
 - (d) All audits and inspections shall be at the State's expense.
 - (e) The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Contract, or (ii) the expiration or earlier termination of this Contract, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.
 - (f) The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.
 - (g) The Contractor shall incorporate this entire Section verbatim into any contract or other agreement that it enters into with any Contractor Party.
44. Background Checks. The State may require that the Contractor and Contractor Parties undergo criminal background checks as provided for in the State of Connecticut Department of Emergency Services and Public Protection Administration and Operations Manual or such other State document as governs procedures for background checks. The Contractor and Contractor Parties shall cooperate fully as necessary or reasonably requested with the State and its agents in connection with such background checks.
45. Continued Performance. The Contractor and Contractor Parties shall continue to Perform their obligations under the Contract while any dispute concerning the Contract is being resolved.
46. Working and Labor Synergies. The Contractor shall be responsible for maintaining a tranquil working relationship between the Contractor work force, the Contractor Parties and their work force, State employees, and any other contractors present at the work site. The Contractor shall quickly resolve all labor disputes which result from the Contractor's or Contractor Parties' presence at the work site, or other action under their control. Labor disputes shall not be deemed to be sufficient cause to allow the Contractor to make any claim for additional compensation for cost, expenses or any other loss or damage, nor shall

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

those disputes be deemed to be sufficient reason to relieve the Contractor from any of its obligations under the Contract.

47. Contractor Responsibility.

- (a) The Contractor shall be responsible for the entire Performance under the Contract regardless of whether the Contractor itself performs. The Contractor shall be the sole point of contact concerning the management of the Contract, including Performance and payment issues. The Contractor is solely and completely responsible for adherence by the Contractor Parties to all applicable provisions of the Contract.
- (b) The Contractor shall exercise all reasonable care to avoid damage to the State's property or to property being made ready for the State's use, and to all property adjacent to any work site. The Contractor shall promptly report any damage, regardless of cause, to the State.

48. Severability. If any term or provision of the Contract or its application to any person, entity or circumstance shall, to any extent, be held to be invalid or unenforceable, the remainder of the Contract or the application of such term or provision shall not be affected as to persons, entities or circumstances other than those as to whom or to which it is held to be invalid or unenforceable. Each remaining term and provision of the Contract shall be valid and enforced to the fullest extent possible by law.

49. Confidential Information. The State will afford due regard to the Contractor's request for the protection of proprietary or confidential information which the State receives. However, all materials associated with the Proposal and the Contract are subject to the terms of the Connecticut Freedom of Information Act ("FOIA") and all corresponding rules, regulations and interpretations. In making such a request, the Contractor may not merely state generally that the materials are proprietary or confidential in nature and not, therefore, subject to release to third parties. Those particular sentences, paragraphs, pages or sections that the Contractor believes are exempt from disclosure under the FOIA must be specifically identified as such. Convincing explanation and rationale sufficient to justify each exemption consistent with the FOIA must accompany the request. The rationale and explanation must be stated in terms of the prospective harm to the competitive position of the Contractor that would result if the identified material were to be released and the reasons why the materials are legally exempt from release pursuant to the FOIA. To the extent that any other provision or part of the Contract, especially including the Proposal, the Records and the specifications, conflicts or is in any way inconsistent with this section, this section controls and shall apply and the conflicting provision or part shall not be given effect. If the Contractor indicates that certain documentation is submitted in confidence, by specifically and clearly marking said documentation as CONFIDENTIAL, DAS will endeavor to keep said information confidential to the extent permitted by law. DAS, however, has no obligation to initiate, prosecute or defend any legal proceeding or to seek a protective order or other similar relief to prevent disclosure of any information that is sought pursuant to a FOIA request. The Contractor shall have the burden of establishing the availability of any FOIA exemption in any proceeding where it is an issue. In no event shall DAS or the State have any liability for the disclosure of any documents or information in its possession which the State or DAS believes are required to be disclosed pursuant to the FOIA or other requirements of law.

50. References to Statutes, Public Acts, Regulations, Codes and Executive Orders. All references in this Contract to any statute, public act, regulation, code or executive order shall mean such statute, public act, regulation, code or executive order, respectively, as it has been amended, replaced or superseded at any time. Notwithstanding any language in this

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

Contract that relates to such statute, public act, regulation, code or executive order, and notwithstanding a lack of a formal amendment to this Contract, this Contract shall always be read and interpreted as if it contained the most current and applicable wording and requirements of such statute, public act, regulation, code or executive order as if their most current language had been used in and requirements incorporated into this Contract at the time of its execution.

51. Cross-Default.

- (a) If the Contractor or Contractor Parties breach, default or in any way fail to Perform satisfactorily under the Contract, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat any such event as a breach, default or failure to Perform under any or all other agreements or arrangements (“Other Agreements”) that the Contractor or Contractor Parties have with DAS. Accordingly, DAS may then exercise at its sole option any and all of its rights or remedies provided for in the Contract or Other Agreements, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS, as if the Contractor or Contractor Parties had suffered a breach, default or failure to perform under the Other Agreements.
- (b) If the Contractor or Contractor Parties breach, default or in any way fail to Perform satisfactorily under any or all Other Agreements with DAS or the State, then DAS may, in its sole discretion, without more and without any action whatsoever required of the State, treat any such event as a breach, default or failure to Perform under the Contract. Accordingly, the State may then exercise at its sole option any and all of its rights or remedies provided for in the Other Agreements or the Contract, either selectively or collectively and without such election being deemed to prejudice any rights or remedies of DAS or the State, as if the Contractor or Contractor Parties had suffered a breach, default or failure to Perform under the Contract.

52. Disclosure of Records. This Contract may be subject to the provisions of section 1-218 of the Connecticut General Statutes. In accordance with this statute, each contract in excess of two million five hundred thousand dollars between a public agency and a person for the performance of a governmental function shall (a) provide that the public agency is entitled to receive a copy of records and files related to the performance of the governmental function, and (b) indicate that such records and files are subject to FOIA and may be disclosed by the public agency pursuant to FOIA. No request to inspect or copy such records or files shall be valid unless the request is made to the public agency in accordance with FOIA. Any complaint by a person who is denied the right to inspect or copy such records or files shall be brought to the Freedom of Information Commission in accordance with the provisions of sections 1-205 and 1-206 of the Connecticut General Statutes.

53. Summary of State Ethics Laws. Pursuant to the requirements of section 1-101qq of the Connecticut General Statutes, the summary of State ethics laws developed by the State Ethics Commission pursuant to section 1-81b of the Connecticut General Statutes is incorporated by reference into and made a part of the Contract as if the summary had been fully set forth in the Contract.

54. Sovereign Immunity. The parties acknowledge and agree that nothing in the Request for Proposals or the Contract shall be construed as a modification, compromise or waiver by the State of any rights or defenses of any immunities provided by Federal law or the laws of the State of Connecticut to the State or any of its officers and employees, which they may have had, now have or will have with respect to all matters arising out of the Contract. To the extent that this section conflicts with any other section, this section shall govern.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

55. Time of the Essence. Time is of the essence with respect to all provisions of this Contract that specify a time for performance; provided, however, that this provision shall not be construed to limit or deprive a party of the benefits of any grace or use period allowed in this Contract.

56. Certification as Small Contractor or Minority Business Enterprise.

This paragraph was intentionally left blank.

57. Campaign Contribution Restriction. For all State contracts as defined in Conn. Gen. Stat. § 9-612(g)(1) having a value in a calendar year of \$50,000 or more or a combination or series of such agreements or contracts having a value of \$100,000 or more, the authorized signatory to this Contract expressly acknowledges receipt of the State Elections Enforcement Commission's notice advising state contractors of state campaign contribution and solicitation prohibitions, and will inform its principals of the contents of the notice, as set forth in "Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations," attached as Exhibit C.

58. Health Insurance Portability and Accountability Act.

This paragraph was intentionally left blank.

59. Protection of Confidential Information.

(a) Contractor and Contractor Parties, at their own expense, have a duty to and shall protect from a Confidential Information Breach any and all Confidential Information which they come to possess or control, wherever and however stored or maintained, in a commercially reasonable manner in accordance with current industry standards.

(b) Each Contractor or Contractor Party shall develop, implement and maintain a comprehensive data - security program for the protection of Confidential Information. The safeguards contained in such program shall be consistent with and comply with the safeguards for protection of Confidential Information, and information of a similar character, as set forth in all applicable federal and state law and written policy of DAS or State concerning the confidentiality of Confidential Information. Such data-security program shall include, but not be limited to, the following:

(1) A security policy for employees related to the storage, access and transportation of data containing Confidential Information;

(2) Reasonable restrictions on access to records containing Confidential Information, including access to any locked storage where such records are kept;

(3) A process for reviewing policies and security measures at least annually;

(4) Creating secure access controls to Confidential Information, including but not limited to passwords; and

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

(5)Encrypting of Confidential Information that is stored on laptops, portable devices or being transmitted electronically.

- (c) The Contractor and Contractor Parties shall notify DAS, Client Agency and the Connecticut Office of the Attorney General as soon as practical, but no later than twenty-four (24) hours, after they become aware of or suspect that any Confidential Information which Contractor or Contractor Parties have come to possess or control has been subject to a Confidential Information Breach. If a Confidential Information Breach has occurred, the Contractor shall, within three (3) business days after the notification, present a credit monitoring and protection plan to the Commissioner of Administrative Services, the Client Agency and the Connecticut Office of the Attorney General, for review and approval. Such credit monitoring or protection plan shall be made available by the Contractor at its own cost and expense to all individuals affected by the Confidential Information Breach. Such credit monitoring or protection plan shall include, but is not limited to reimbursement for the cost of placing and lifting one (1) security freeze per credit file pursuant to Connecticut General Statutes § 36a-701a. Such credit monitoring or protection plans shall be approved by the State in accordance with this Section and shall cover a length of time commensurate with the circumstances of the Confidential Information Breach. The Contractors' costs and expenses for the credit monitoring and protection plan shall not be recoverable from DAS, the Client Agency or any State of Connecticut entity or any affected individuals.
- (d) The Contractor shall incorporate the requirements of this Section in all subcontracts requiring each Contractor Party to safeguard Confidential Information in the same manner as provided for in this Section.
- (e) Nothing in this Section shall supersede in any manner Contractor's or Contractor Party's obligations pursuant to HIPAA or the provisions of this Contract concerning the obligations of the Contractor as a Business Associate of Covered Entity.

60. Audit Requirements for Recipients of State Financial Assistance.

This paragraph was intentionally left blank.

Contract # 14PSX0239

Contract Document

RFP-50 Rev. 9/3/14

Prev. Rev. 4/3/14

IN WITNESS WHEREOF, the parties have executed this Contract by their duly authorized representatives with full knowledge of and agreement with its terms and conditions.

Freightliner of Hartford, Inc.

STATE OF CONNECTICUT
Department of Administrative Services

By: _____

By: _____

Name: Greg Martinotti

Name: Melody A. Currey

Print or Type Name

Title: Government Sales Manager

Title: Commissioner

Date: _____

Date: _____

EXHIBIT A

DESCRIPTION OF GOODS & SERVICES AND ADDITIONAL TERMS & CONDITIONS

41,000 Lb. GVWR Single Axle Dump Trucks with Snow Plows
62,000 Lb. GVWR Tandem Axle Dump Trucks with Snow Plows
72,000 Lb. GVWR TRI - Axle Dump Trucks with Snow Plows

This Contract covers the Client Agency's requirements for the 41,000 Lb. Gross Vehicle Weight Rating (GVWR) single axle dump trucks with snow plows and anti-ice units, the 62,000 Lb. GVWR Tandem Axle Dump Trucks with Snow Plows and anti-ice units and the 72,000 Lb. GVWR Chassis with a 17 foot body, Snow Plows and anti ice units. All trucks and their related accessories are referred to collectively herein as the "Equipment."

Contractor shall provide Equipment only of the current model which is in production at the time of delivery to the Client Agency as evidenced by the current Equipment manufacturer's published literature.

GENERAL:

All supplies, parts and/or attachments not specifically mentioned, but necessary to make the Equipment complete and operational for its intended purpose must be furnished by the Contractor

All Equipment must conform in strength, quality of material and workmanship in keeping with then current industry standards. Contractor shall install any accessories or other parts required by the Client Agency in such a manner so as not to adversely affect the Original Equipment Manufacturers (OEM's) product or its associated warranty.

DELIVERY INSPECTION:

All Equipment is subject to inspection upon delivery to the Client Agency. In the event that any Equipment is found to be defective in material or workmanship or otherwise does not conform to the requirements of the Contract in the sole judgment of the Client Agency, the Client Agency shall have the right to either reject such Equipment or to require its repair or replacement.

PRODUCTION PROCEDURE AND MINIMUM PRODUCTION RATE:

Upon receipt of a purchase order from the Client Agency, Contractor shall order the applicable assembled cab and chassis from the Equipment manufacturer. Contractor shall ensure that the cab and chassis are delivered to its facility within (180) one hundred and eighty days from the order.

Contractor and Client Agency shall schedule a [pre build meeting (the "Pre Build Meeting") within (30) thirty days of the issuance and receipt of a Purchase Order. Contractor and Client Agency shall finalize specifications for the ordered Equipment during the Pre Build Meeting.

Contractor shall provide a fully assembled pilot vehicle (the "Pilot Vehicle") for Client Agency inspection and approval (20) twenty days after the Contractor's receipt of a cab and chassis. Client Agency shall inspect the Pilot Vehicle and report any deficiencies or changes to Contractor within a reasonable time following inspection. Contractor shall make any modifications necessary to the Equipment to comply with Client Agency changes within (15) fifteen days of Contractor's receipt of such changes. Full production of ordered Equipment will start after the acceptance of a Pilot Model and continue at the delivery schedule described in this section until the requirements of a particular Client Agency purchase order are fulfilled.

Following Client Agency acceptance of a Pilot Vehicle, Contractor guarantees a minimum production rate of (3) three completed and Client Agency accepted vehicles per week. Each piece of Equipment must be fully up fitted and ready to be put into service upon delivery to the Client Agency. .

EXHIBIT A

DESCRIPTION OF GOODS & SERVICES AND ADDITIONAL TERMS & CONDITIONS

41,000 Lb. GVWR Single Axle Dump Trucks with Snow Plows
62,000 Lb. GVWR Tandem Axle Dump Trucks with Snow Plows
72,000 Lb. GVWR TRI - Axle Dump Trucks with Snow Plows

If the Contractor falls short of the minimum production rate and fails to deliver the Equipment as described in this Exhibit A above, and in any related purchase order, the Client Agency may assess late fees up to a maximum of \$1,500.00 (FIFTEEN HUNDRED DOLLARS) per day per non delivered and accepted vehicle. Client Agency may deduct assessed late fees from any amounts due to Contractor under any outstanding invoice. The late fees may only be assessed by DAS for the Connecticut Department of Transportation (ConnDOT) as the Client Agency. Late fees do not apply to Towns Municipalities or Not for Profits.

LIQUIDATED DAMAGES

Liquidated damages may be assessed by DAS for the Connecticut Department of Transportation (ConnDOT) as the Client Agency to compensate the State for all additional costs incurred because of the failure of the Contractor to fully execute the Contract, DAS estimates that its damage in the event of a material breach would be in excess of \$25,000.00 (TWENTY FIVE THOUSAND DOLLARS).

SAFETY AND STANDARDS:

Contractor shall ensure that all Equipment complies with all applicable Federal and State Motor Vehicle, Occupational Safety and Health Administration (OSHA) and Interstate Commerce Commission (ICC) regulations and safety standards and codes and any other applicable laws or regulations in force during the term of this Contract. All required guards, warnings, warning labels and any other safety equipment or features must meet the conditions imposed by all applicable laws and regulations as described in the preceding sentence. It is expected that all similar Equipment ordered and delivered under the Contract will be built and delivered with identical and interchangeable parts and components. Any substitutions or changes made for such reasons as production or improvement of products must be approved by the Client Agency in writing before such substitutions or changes are made.

END PRODUCT MANUFACTURER:

Upon delivery of each vehicle, the Contractor shall issue a complete vehicle sticker to the Client Agency rating the axles, suspension, wheel rims, and tires and establishing a Gross Axle Weight Rating (GAWR) that is in accordance with Federal Motor Vehicle Safety Standards (FMVSS) standards.

Contractor shall deliver a printout of the weight imposed on each wheel position when the vehicle is empty for each type of body configuration supplied.

Contractor shall deliver a printout of the weight imposed on each wheel position when the completed vehicle is loaded to legal GVWR and legal GAWR or each type of body configuration supplied.

WARRANTY SERVICE:

If Contractor's up fitter is at an out-of-State location, the Contractor shall supply written documentation stating the facility name and location within the State of Connecticut as to where all factory authorized warranty service work will be performed. The Contractor shall utilize their own equipment and personnel to provide all warranty services. Warranty Service must be scheduled and approved by the Client Agency.

Warranty repairs may be completed at the Contractors location or at the Client Agencies location. It shall be at the Client Agency discretion to repair at the Contractors facilities or at the Client Agency. Any work performed at the Client Agency facility must be performed between the hours of 8:00 am to 4:00 p.m., Monday through Friday, excluding holidays.

EXHIBIT A

DESCRIPTION OF GOODS & SERVICES AND ADDITIONAL TERMS & CONDITIONS
41,000 Lb. GVWR Single Axle Dump Trucks with Snow Plows
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72,000 Lb. GVWR TRI - Axle Dump Trucks with Snow Plows

LISTING OF CRITICAL PARTS:

The Contractor shall keep available on hand within the State of Connecticut, 2 hydraulic pumps, 2 complete valve bodies and 2 electronic ground speed electronic control units and the associated peripherals. The Contractor may be contacted by the Client Agency 24/7/365 should an emergency occur requiring the installation of critical parts.

STANDARDIZATION:

A separate (specification sheet) for each serial numbered body and plow installed must be furnished to the Client Agency upon delivery.

MANUALS:

The Contractor shall furnish the Client Agency all applicable manuals per model year purchased as follows:

1. 32 Operators Manuals
2. 16 Parts Manuals
3. 16 Service Manuals
4. 16 Engine Manuals
5. 16 Transmission (Automatic/Manual) Manuals
6. 16 Body and Sub-Frame (parts and service) Manuals
7. 16 Complete sets of manuals for any additional items/equipment added to chassis
8. 16 Electrical System Charts
9. 16 Control System / Hydraulic and Electrical System Schematics

The manuals listed above must be official OEM publications supplemented with technical manuals for all components as published by sub-vendors / manufacturers.

Manuals presented must be specific to each part or accessory of the Equipment and must include appropriate part numbers.

Delivery of manuals must be completed before the last Equipment delivery of the model year purchased.

Manuals may be supplied on CD in lieu of paper.

Manuals may be supplied on a dedicated website.

One Panasonic Toughbook laptop/tablet computer must be provided with every (3) three trucks ordered. Laptops should be provided with the manufacturer's diagnostic software loaded and licensed to the Client Agency. Electronic software must include annual subscription renewals and updates for (5) five years. Media must be capable of being moved to a new computer or reloaded in the event of a hard drive crash without additional charge.

OMISSION OF DETAILS:

No advantage may be taken by the Contractor in the omission of any part or detail to make the Equipment complete and ready for service, even though such part or detail is not mentioned explicitly in this Contract. All units or parts not specified must be the manufacturer's standard unit and conform to the highest standards in the industry.

EXHIBIT A

DESCRIPTION OF GOODS & SERVICES AND ADDITIONAL TERMS & CONDITIONS

41,000 Lb. GVWR Single Axle Dump Trucks with Snow Plows
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72,000 Lb. GVWR TRI - Axle Dump Trucks with Snow Plows

TRAINING:

The Contractor shall provide competent representatives to provide a minimum of (4) four hours of operator training for each complete vehicle purchased. The training must include all aspects of operating and servicing the Equipment. Videotape training series may be used to supplement training with Client Agency approval.

The Contractor shall provide factory representatives to provide the following training for each configuration purchased:

1. (40) Forty hours of engine training to include troubleshooting and repair.
2. (20) Twenty hours of hydraulic system training too include troubleshooting and repair
3. (10) Ten hours of chassis electrical training too include troubleshooting and repair
4. (10) Ten hours of emissions training too include troubleshooting and repair.

All training must be conducted within the State of Connecticut at a centrally located area or at various repair facilities located across the State, during normal working hours of 9:00 AM and 3 PM. The Client Agency training center may be available for use at no charge. If requested by the Client Agency, the Contractor shall submit lesson plans on the intended training for approval before a purchase order is issued.

If available, the Contractor shall supply (5) five, ½" inch VHS videocassette tapes or CD's relative to operating and servicing the body, plow and hydraulic system for each vehicle type. **PRICING:**

The Contractor shall indicate the individual price per unit for each of the options listed in Exhibit B. Each option, if selected by the Client Agency shall be added to the base price of the unit specified in Exhibit B. The Client Agency reserves the right to purchase any combination of Equipment options during the term of the Contract.

INSPECTIONS & PILOT REVIEWS:

Contractor shall ensure that DAS and the Client Agency may inspect Contractor's dealer and up fitter anytime during Equipment production.

DELIVERY

The Contractor shall perform pre-delivery operations as specified by the manufacturer. All Equipment must be ready to be put into immediate service upon delivery. The Contractor shall notify the Client Agency 48-hours in advance of scheduled delivery in order to allow for acceptance inspection at the location determined by the purchase order. Acceptance inspections will be carried out by the Client Agency personnel. Items inspected will include, but not be limited to, conformance of Equipment with specifications, the complete installation of up fitting components, quality of workmanship, the general appearance of the interior and exterior of the Equipment including body finish for completeness, fluid levels, and complete mechanical operation of the Equipment.

Contractor shall furnish a certificate of origin for all Equipment to the Client Agency. The certificate of origin must be mailed or delivered to the Client Agency, along with the original invoice for payment once Equipment is delivered. All information on the certificate must be completed accurately and match serial numbers, model, and include the following: Name of Purchaser, Address, Odometer Reading, and Signature of authorized representative transferring ownership to the Client Agency. Failure to provide the proper certificate of origin will result in the delay of payment.

EXHIBIT A

DESCRIPTION OF GOODS & SERVICES AND ADDITIONAL TERMS & CONDITIONS
41,000 Lb. GVWR Single Axle Dump Trucks with Snow Plows
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PURCHASE ORDERS ConnDOT as Client Agency:

All questions pertaining to purchase orders issued by ConnDOT must be directed to the Department of Transportation's Processing Unit at (860) 594-2337.

INVOICING ConnDOT as Client Agency:

Payment and invoicing inquiries relative to ConnDOT issued purchase orders must be directed to Accounts Payable Unit at (860) 594-2305. Contractor must invoice ConnDOT promptly after delivery. All ConnDOT billing **MUST BE FORWARDED DIRECTLY TO ACCOUNTS PAYABLE AT:**

State of Connecticut - Department of Transportation
P.O. Box 317546
Newington, Connecticut 06131-7546
Attention: Accounts Payable - SW1A

INVOICES FORWARDED TO ANY ADDRESS OTHER THAN NOTED ABOVE MAY NOT BE PROCESSED FOR PAYMENT. All billing must contain the vendor federal identification number (FEIN), State of Connecticut Purchase Order Number and the Company Invoice Number.

MANDATORY EXTENSION to STATE ENTITIES:

Contractor shall offer and extend the contract (including pricing, terms and conditions) to political sub-Divisions of the State (towns and municipalities), schools, and not-for-profit organizations.

MOTOR CARRIER SAFETY REVIEW:

If the performance of the Contract requires the use and operation of any commercial motor vehicle, as defined in section 14-1 of the Connecticut General Statutes, or other motor vehicle with a gross vehicle weight rating (GVWR) of 18,000 pounds or more, each proposer will be the subject of an evaluation, conducted by the Connecticut Department of Motor Vehicles (CTDMV) of its motor carrier safety fitness. The primary factor in the evaluation is the current SAFESTAT score, calculated by the U.S. Federal Motor Carrier Safety Administration (FMCSA) in accordance with the provisions of Title 49, Section 385.1, et seq., of the Code of Federal Regulations.

To be deemed qualified, the proposer must have an overall SAFESTAT category rating of "D" or better, on the date of evaluation. In addition, the proposer's driver and vehicle out-of-service rates will be consulted. The rates are determined by the number of out-of-service violations cited to the motor carrier in the course of all official, reported vehicle and/or driver inspections conducted during the preceding thirty (30) months. To be deemed qualified, the proposer must not have either a vehicle or driver out-of-service rate, by percentage of out-of-service violations per the total number of inspections reported, that is more than twice the national average. In addition, the proposer must have a current federal safety management practices rating of "Satisfactory," as defined in 49 CFR Section 385.3, as amended.

EXHIBIT A

DESCRIPTION OF GOODS & SERVICES AND ADDITIONAL TERMS & CONDITIONS
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Proposer must provide the company's Federal DOT ID number where specified in Exhibit B. Failure to provide this information may result in the rejection of your proposer.

Further information concerning the motor carrier safety evaluation, to which a proposer is subject, may be obtained from CTDMV, at www.ct.gov/dmv/cwp/view.asp?a=798&q=413206&dmvPNavCtr=|#49068 . All official inspection and rating data that is used in the performance of each evaluation is available to any motor carrier through the federal SAFESTAT website, at www.ai.volpe.dot.gov/.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TRUCK SPECIFICATIONS:

A. Intent Statement

B. Weight Distribution

C. Power train Overview

D. Vehicle Components

1. Axle Front
2. Axle Rear
3. Brakes
4. Cab
5. Drive Line
6. Electrical
7. Engine
8. Engine Accessories
9. Exhaust
10. Frame and Frame Extension
11. Instrumentation
12. Paint
13. Steering
14. Suspension: Front
15. Suspension: Rear
16. Tank- Fuel
17. Wheels/Tires
18. Transmission

E. Dump Body and Equipment Mandatory Minimum Specifications

1. Dump Body Structure, Steel (Corten)
2. Side Tilt Floor Section
3. Conveyor Assembly
4. Spinner Assembly
5. Liquid Pre-Wet System
6. Central Hydraulic System/Hydraulics
7. Dump Body & Chassis Paint
8. Body / Warning Lighting System
9. Allied Equipment / Accessories
10. Load Cover System (Option)

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TRUCK SPECIFICATIONS: *(Continued)*

F. General Snow Plow Hitch

1. Intent Statement
2. Specifications

G. Installation Practices

H. Safety

II. DRAWINGS:

III. MANUALS:

IV. TRAINING:

V. WARRANTY:

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TRUCK SPECIFICATIONS: *(Continued)*

A. INTENT STATEMENT:

The purpose of these specifications is to describe a conventional cab, single-axle dump truck, equipped with dual rear wheels, dump body, hoist, hydraulic power system, liquid tank and snow plow hitch. It must be capable of one-man operation while plowing snow and simultaneously spreading granular and liquid materials during winter operations, and of hauling, stockpiling and unloading maintenance materials into a chip spreader or paver during summer operations. Further, it must be capable of being loaded with a front-end loader.

NOTE: The Client Agency requires that the latest and current version of this truck as of the Effective Date is included as a part of this specification. All units must be delivered by the Contractor within 180 days after their receipt of a purchase order.

B. WEIGHT DISTRIBUTION:

Weight distribution charts must be submitted with the pilot model for all models being delivered. Weight distribution charts must be submitted for two modes listed below.

1. Summer mode including the portion of the plow frame assembly that remains on the vehicle all year.
2. Winter mode with front plow, loaded and liquid tanks full.

Engineering certified weigh slips must be provided with the pilot model and signed by the manufacturer's Engineering Department. It is understood that the components specified are the minimum that the manufacturer's Engineering Department recommends or deems necessary for a particular weight distribution. Larger components or a larger Gross Axle Weight Rating (GAWR) may be required by the Client Agency for certain applications. The burden of responsibility is hereby placed upon the Contractor to require the Manufacturer's Engineering Department to supply a unit that is totally engineered to meet the Client Agency's needs.

1. Frame
2. Axle
3. Tires
4. Steering unit and components
5. Rims
6. Suspension
7. Brakes
8. Any other items as required

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

B. WEIGHT DISTRIBUTION: (Continued)

1. The dynamic and static loads created by the unit, plus operational stresses, must be reviewed by all parties to ensure the Client Agency of a properly designed/engineered unit.

In addition to the Engineering Certified weight distribution provided at the pilot model inspection, the following information is required to be included with the pilot model.

The vehicle must be certified for 41,000 lb. Gross Vehicle Weight Rating (GVWR) minimum rating. The GVWR must be identified in the cab or on the door as the final complete certification label. In addition to the GVWR certification, the following certifications must also be provided by the Contractor:

Actual Truck Weight: (LB)

"Chassis only" (must be signed by a certified weigh master.)

_____ Front Axle
 _____ Rear Axle
 _____ Total

"Chassis with body" (must be signed by a certified weigh master).

_____ Front Axle
 _____ Rear Axle
 _____ Total

Truck GAWR's as Built (LB)

	<u>Front GAWR</u>	<u>Rear GAWR</u>
Axle	_____	_____
Tires	_____	_____
Springs	_____	_____
Rims	_____	_____

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

C. POWER TRAIN OVERVIEW:

ENGINE:

Diesel, in-line six (6) cylinder, liquid cooled, wet sleeve
Displacement, minimum 9.0 liters (actual engine liters)
Horsepower, minimum 345 HP at governed rpm
Torque, minimum 1,150 lb. ft.

TRANSMISSION:

Automatic, Allison 3000 RDS 6 speed.
Manual, Eaton-Fuller RTO 11908LL
Automated Manual, Eaton-Fuller *UltraShift Plus* FO-12E310C-VAS

REAR AXLE: (References)

Dana-Eaton, S23 Series
Meritor-Spicer RS-23-160
Meritor-Spicer RS-23-186
Mack RA23R

NOTE: All rear axles must provide axle shafts with a minimum diameter of 2.19 inch at the spline. All rear axle(s) must have an extended breather tube to prevent debris buildup from entering axle housing.

NOTE: Lubricants for front axle hubs, automatic transmission and all rear differentials must meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and must have all plugs identified as synthetic oil, or painted red.

D. VEHICLE COMPONENTS:

1. AXLE FRONT:

The set forward front axle must be rated at 18,000 LB minimum capacity. The front axle, drag links and tie rods must have grease zerks installed. Kingpin or bushings must be grooved to permit grease flow. Sufficient tire clearance at maximum turning angles. Wheel ends shall be equipped with Timken *Set-Right* wheel bearing sets (**or Client Agency approved equal**) and SKF *Scotseal Plus XL* oil seals (**or approved equal**) and SKF *TF Splashguard* vented hub caps with plug type window (**or Client Agency approved equal**). Each unit must receive a front-end alignment prior to delivery. A setback axle is unacceptable.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS:

2. AXLE REAR: (See power train overview for acceptable models.)

All rear axles must provide axle shafts with a minimum diameter of 2.19 inch at the spline. All rear axle(s) must have an extended breather tube to prevent debris buildup from entering axle housing. Lubricants for all rear axles must meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and must have all fill plugs identified as synthetic oil, or painted red. Wheel ends shall be equipped with Timken *Set-Right* wheel bearing sets (**or Client Agency approved equal**) and SKF *Scotseal Plus XL* oil seals (**or Client Agency approved equal**) and SKF *TF Splashguard* vented hub caps with plug type window (**or Client Agency approved equal**). All axles must have magnetic drain plugs.

NOTE: Aluminum or lightweight housing is unacceptable.

NOTE: Rear axle ratio selection will be made after the award and may be a mix of ratios as required. The rear axle ratios must be "identical" throughout the entire build.

3. BRAKES:

Full air antilock brake system in compliance with the most current Federal Motor Vehicle Safety Standards (FMVSS) requirements, The Anti-Lock Braking System (ABS) must incorporate a diagnostic fault switch that is capable of illuminating a fault light for diagnostic purposes. The switch must be easily accessible and can be either dash or under-dash mounted. A dash-mounted display that will show all Society of Automotive Engineers (SAE) message descriptions for the ABS is an acceptable means of diagnostics in lieu of the fault switch.

Rear Brakes: 16.5 inch x 8.62 inch "S" cam with quick-change type single or double anchor pin.
Steer-Axle Brakes: 16.5 inch x 6 inch or a power front disc brake system providing equal performance. Quick-change type single or double anchor pin if drum type brakes are furnished.
Drum Brakes: must have automatic slack adjusters and must be clearance-sensing single pin type only, with adjustment on application of the brake. All brake clevis pins to be stainless steel.
Backing plates must be installed on all drum brakes.

Air Compressor: Per truck manufacturer's recommendation. Compressor must be fitted with a safety valve to prevent mechanical failure.

Buzzer-type, low air pressure indicator.

Parking Brake: rear wheel piston-spring type, MGM MJS3028ET951 long stroke, tamper and corrosion resistant, combination chambers (**or approved equal**). Parking brake must provide modulated emergency braking via the foot valve in the event of a rear service system failure. Rear service brake chambers must be mounted to provide adequate clearance for backing into bituminous paving machines.

Air Tanks: automatic drain valve, with heater on wet (first) tank. Each of the remaining air tanks must have a manual drain valve.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

Air Dryer: with heater, inboard mounted, away from road splashing and a minimum of 20 inches above road surface. Dryer must be compatible with the body company clearance requirements for sub-frame, valve body, etc. Bendix AD-IP (**No exceptions**) installation made in concurrence with the air compressor manufacturer's recommendations.

All electrical connectors for drain valve and air dryer must be covered with heat shrink material or have sealed connections.

System must be equipped with anti-compounding valve to prevent mechanical failure of the foundation brakes, slack adjusters, etc.

4. CAB:

Aluminum or galvanized steel cab. *Reference: Mack Granite, Freightliner SD 114, International Paystar, Kenworth 470, Volvo VHD200, Peterbilt 365 or Client Agency approved equal.*

Grab handles must be supplied on all cab entry locations. Three points of contact must be achievable at all cab entry locations.

Hood: fiberglass, tilting. Fenders must be part of tilting hood. Grille must be fixed.

Air suspension system for the cab must be factory installed.

Front fenders must have extensions to cover the width of the front tires.

Deluxe fresh air hot water heater and defroster, manufacturer's highest output.

AM/FM radio with weather band.

Air horn(s): Minimum 1 horn with snow-shield (not required if under hood mount).

All controls and knobs must be properly identified.

Brake pedal, clutch pedal and throttle must be suspended if available from the factory.

Minimum of 6 up fitter switches to be used for various applications

Cab floor covering must be heavy-duty rubber with closed cell rubber or heavy felt backing.

Cruise control.

Cup holder in the cab within easy reach of the operator.

Dome light.

Dual sun visors.

Exterior windshield sun shade (visor).

Windshield: One (1) or two (2) piece construction is acceptable, must be tinted safety glass.

Windshield Wipers: dual, arctic type with the heaviest arms, linkages and motor available.

Wipers must be minimum 2-speed electric with intermittent feature.

Windshield washer system must be electric. Minimum capacity of four (4) quarts of washer fluid and shall be filled with an anti-freeze type solvent.

Mirrors: exterior drivers and passengers side mirrors, west coast style minimum 6 inch X 16 inch manufacturers standard heavy-duty breakaway arms. Mirrors must be heated with a lighted toggle switch mounted within accessible reach of the operator, automatic on/off is acceptable.

The wires must be fitted in such a way that the mirror glass/element can be changed by a weather-tight quick disconnect the two-wire lead. There must be a heated convex mirror both sides, minimum 5.5 inch X 8.8 inch or 8" diameter, minimum.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

4. CAB: *(Continued)*

Blind-spot elimination mirrors must be mounted on the front fender's and must be 8-inch minimum diameter, stainless steel or aluminum head with mirror. Mirror must be a conventional convex mirror, and must not be of the half-round cross view type. All arms and hardware must also be stainless steel. Fender type washers stainless, or aluminum, with rubber pads to be placed on both sides of the fender must be included. Pedestal system must be single, double or triple mounting assemblies (stainless steel or aluminum). Mirror must be mounted in rubber or vinyl. *Reference: Grote (800-628-0809)*

Seats: driver's seat shall be high back adjustable Bostrom air 915 Series with lumbar support or National 195 Series with lumbar or DuraForm Air Command Series (fabri form cushions with lumbar support), with body cloth insert and three-point retractable seat belt . A bellow-type or protective skirt must cover the seat suspension mechanism. There must be an inside armrest on the driver's seat plus an outside armrest installed on the seat or the driver's door. Color coordinated to cab interior. Passenger seat shall be a Bostrom air 915 Series with lumbar support or National 195 Series with lumbar or DuraForm Air Command Series (fabri form cushions with lumbar support), with body cloth insert and three-point retractable seat belt and armrest . A bellow-type or protective skirt must cover the seat suspension mechanism. If a Bostrom 915 or National 195 seat cannot be used, a Bostrom 910 may be substituted. All other requirements must be met.

Steering Wheel: diameter must be approximately 18 inch and meet or exceed Manufacturers standard.

Road & Ambient Temperature System: There must be either a RoadWatch road/air temperature system or a Quixote Transportation Technologies road/air temperature system installed with 2" temperature display (*mounting location to be approved at pilot review*)

Steps: drivers and passenger entrance steps must be aluminum, serrated. The outer step edge must be serrated in lieu of plain (*overlay is not acceptable*). Step design material must be the same, both left and right side. *Reference: Bustin No. NST4 full size, Ohio Grating No. JA21195G4 serrated, IKG. Industries Type B54 or Mack Part # 85QM423OM4.*

Top of the first step must be approximately 21 inch above the ground.

5. DRIVE LINE:

Main Driveline: Spicer Life XL or Meritor RPL Series. **"Factory balanced"** greaseable, (one zerk minimum). Heavy-duty driveline must be engineered and be compatible to engine, drive train and transmission torque. Heavy-duty center bearing, if required, with due consideration to drive shaft angles, length, location, proper bolting based upon engine and transmission selection. Inter-axle driveline: Spicer Life XL Series.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

6. ELECTRICAL:

All copper system, negative ground.

Alternator: Delco SI36 160 amp minimum **(or Client Agency approved equal)**, high performance, solid state, brushless, with battery cable from battery negative terminal to starter motor or frame. All alternator and starter bolts must be grade 8.

Starter: Delco 39 MT gear reduction starter **(or Client Agency approved equal)**.

Batteries: three (3), heavy-duty, 12 volt, maintenance-free, BCI Group Size 31, with stud-type posts and anti-corrosion treatment on each terminal. 2500 total cold cranking amperes (CCA) at 0 degrees F. 640 minutes of total reserve capacity at 80 degrees F as per SAE.

Battery mounting must include the following:

- a.) 0.25 inch thick rubber shock pad under the battery.
- b.) Box with cover. Cover shall be constructed of fiberglass, poly, or aluminum (if aluminum there must be an insulated liner).
- c.) Mounting bolts must be grade 8 with self-locking nuts.

Mounting of accessories within the battery box is prohibited.

Battery cables must have "sealed" terminal ends for stud-type battery posts.

Battery Disconnect Switch: heavy-duty, rated for 250 amp continuous service mounted to the battery box **(location to be approved by Client Agency)**. *Flaming River #FR-1005, Maval #8070050 or Client Agency approved equal.*

Electrical System: must be circuit-breaker-equipped, in an easily accessible location and weatherproof. Fuses are acceptable in circuit so identified by manufacturer as safety factor. Any fuse or circuit breaker liable to be damaged during truck operation must have an easily removable protective cover. All wire splices in the cab must be insulated with heat shrink materials.

Electrical Chassis Wiring: factory heavy duty harness to power components in rear light module.

Flasher: heavy-duty electrical, *Tridon Model EL 12 (or Client Agency approved equal)*.

Note: If an audible alarm is supplied for the 4-way and turn signal circuit, it must have on/off capability.

Lights: all lights must meet all Federal and State regulations. The head lights must be halogen with (DRL's) daytime running lights. Body lights must have their own dedicated complete circuit. The chassis manufacturer shall route the dedicated body circuit/harness to the rear center portion of cab, with 4' of extra wire coiled on floor between seats. All pass-through points must be properly sealed and protected. This must be the access/connection point for the Whelen Model # CTSYS1SS.

Plow Lights: must be Truck-Lite part #80893 **(or Client Agency approved equal)**. Bracket design must be either aluminum or stainless steel with two (2) brackets mounted to the truck hood. Brackets must be designed/constructed to provide sustained support of the light assembly while offering minimum vibration/jiggle. The height and width of the bracket will be governed by the application and must meet all Federal and State lighting regulations. Final design must be approved by the Client Agency. The factory chassis plow light circuit must be used and all areas where the wires might contact a rub point must be protected by grommets, loom, etc. All connections must be made using sealed connections and dielectric grease.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

7. ENGINE:

Automatic idle shutdown must be set to five (15) minutes.

ECM must be set to a maximum of sixty five (65) miles per hour.

The engine components facing wheel areas, on both sides, and the areas to the rear of wheels must be shielded. The shield must protect the engine, fan, radiator and areas behind tires from stones and debris.

Replaceable heavy-duty oil filter(s) as recommended by the manufacturer and bearing a legible OEM part number.

Diesel Fuel Filters: in addition to the OEM standard fuel filters, there must be a DAVCO Fuel Pro 382 filtration unit installed and mounted in a location to accommodate filter replacements, yet be protected from road debris. Unit must be equipped with a 12 volt pre heater circuit and fluid heat ***(or Client Agency approved equal)***.

Cooling System: must be the largest factory engine cooling capacity, compatible with engines and transmissions referenced for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gears. The water pump must be adequately sized to provide proper cooling and be of sufficient size to accommodate the larger pulley to adequately handle the specified options. Cooling system must be fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank (e.g. sight glass, transparent expansion tank). The antifreeze solution must meet all applicable EPA requirements. A non-charged spin-on coolant filter must be installed if required by engine manufacturer.

8. ENGINE ACCESSORIES:

Oil Dipstick: must have tubing and dipstick with sufficient length to provide reasonable access for checking the oil level.

Engine Block Heater: immersion in-block type, for cooling system, with waterproof plug, flush-mounted in an accessible location at the front/side of the vehicle, outside the cab/hood, 110 volt, 3-prong plug. The electrical cable from the heater to plug must be one piece and waterproof.

Air Cleaner: air filter must be manufacturer's heaviest duty air cleaner that meets all the requirements of the extended engine warranty.

Air intake system must be fitted with inside/outside air.

Engine Fan: must be thermostatically controlled viscous type or manufacturer's recommended automatic fan.

A screening system must be installed that will protect the radiator from stones and bugs.

Engine Vibration Dampener: with PTO flange yoke adapter.

Governor: set at manufacturer's recommended maximum rpm.

Air Intake Hoses: the air induction system and large radiator cooling system hoses must be clamped with 0.500 inch wide, 150-inch LB stainless steel, constant torque, spring-loaded worm clamps. *Reference: Wittek Manufacturing (Tel: (312) 492-9400) or Breeze Clamp Co, Constant Torque clamps with liner for silicone hoses.*

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

8. ENGINE ACCESSORIES: (Continued)

Cooling System Hoses: under 1 inch OD may use factory standard hose clamps, as a minimum acceptable standard. Air intake hoses must be 0.250-inch minimum thickness, molded hoses. *Reference: Gates, Goodyear or equal.* Silicone or premium rubber radiator and heater hoses to be provided. Hoses must not be painted.

Lubricating Oil Lines: High quality flexible wire-braid type, "Aeroquip" or approved equal system, minimum standard if hoses are used.

Drive Belts: Cog belts or serpentine (cog belts not required for power steering).

Engine Brake: Minimum of 2 -stage, full engine compression brake. *Reference: Jacobs*

9. EXHAUST:

Vertical tailpipe with elbow and muffler system or horizontal muffler and vertical tail pipe with elbow, exhaust system must neither interfere with the operation of the dump body or equipment, nor may it be close to any fluid tank. The tail pipe must be installed in a manner that will keep the muffler and tail pipe away from dump truck body. The flex in the body, when operating on an uneven terrain, must be considered in the design. The muffler and tail pipe must be shielded or insulated to protect personnel from burns when entering or exiting the cab. The shield must be 180 degrees to 360 degrees and must be of corrosion resistant material such as stainless steel or aluminum.

10. FRAME AND FRAME EXTENSION:

Resisting Bending Moment (RBM): must be a minimum of 2.5 million inch LB per rail, including extension, for the entire length of the frame, including any frame liners. Where engine and radiator adjustments are required, a minimum of one million inch LB per rail RBM. Will be accepted. Minimum frame RBM must be approved by manufacturer's Engineering Department. If a larger RBM is required to perform the specified operational duties, the Contractor shall bid a frame concurrent with the intent and spirit of this Contract. Ref: Snow removal operations, full payload snowplow, right and/or left patrol wing plow, etc. Mainframe and any required liners must be either straight channel or offset channel, full length. Bolt-on or welded extension will not be accepted. Front frame must accommodate the Client Agencies standard hydraulic PTO shaft and pump and the plow frame. It must provide easy service accessibility. The frame after frame (AF) must incorporate a cross member at the rear of the frame to reinforce the body pivot point. (Local installation is acceptable).

Yield Strength: must be of at least, 120,000-PSI yield strength.

Cab to Axle (CA) (back of cab to centerline of rear axle) dimension, Wheel base dimension required for optimum weight distribution to be provided by Proposer at time of bid submittal. Full chassis dimensional drawing must be provided.

Front Bumper: heavy duty swept back design, mounted to the frame with the inner face of the bumper against the chassis frame.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

10. FRAME AND FRAME EXTENSION: *(Continued)*

Frame mounted tow hooks or eyes two (2) front. These may be installed by the body company after completion of the plow hitch mounting, using grade 8 bolts (minimum) of sufficient length, and grade 8 elastic type self-locking nuts, or by full welding.

License Plate Bracket: Front and rear. Securely mounted to prevent damage when backing into material piles.

11. INSTRUMENTATION:

All instruments and gauges must be illuminated and dash-mounted, except where specified otherwise. All standard instruments must be supplied, including, but not limited to the following:

Oil pressure gauge with warning light or audible alarm.

Air pressure gauge(s) for dual circuit, dual indicator with low-pressure audible alarm and warning light.

Coolant temperature with warning light or audible alarm.

Transmission oil temperature gauge with warning light or audible alarm.

Fuel gauge.

Hour meter that records only when the engine is running. Must be in – dash, integral with instrument panel and readable from the operator's seat.

Speedometer with odometer and a dual speedometer lead to interface with the ground speed spreader control system.

Tachometer.

Voltmeter.

Parking brake indicator light.

Air Restriction Gauge: Flush, dash-mounted with indicator slide for engine air cleaner, If the vehicle is OEM equipped with an electronic dash that incorporates an air restriction gauge or indicator light, it must be approved prior to installation by Client Agency.

12. PAINT:

Cab must be completely painted with lead free Omaha Orange paint acceptable to Client Agency. Frame and all underside components must be painted black with Genesis GC upon completed build. Front bumper and plow frame must be primed with Genesis E2W805 and painted black (with hardener) Genesis GC low VOC. All bare metal surfaces must be coated using Genesis E2W805 primer prior to paint. All surfaces must be properly cleaned, shot blasted, mill scale removed and prepared prior to paint, with all weld splatter and debris removed.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

13. STEERING:

The steering system (e.g. flow, pressure, relief valve etc.) must be selected considering the full front-GAWR axle loading. Hydraulic supply pump must be vane or roller type design with sufficient oil flow to permit one (1) steering wheel revolution per second with front axle loaded to rated capacity, with plow on, in a "park" condition.

Power Steering: Dual integral or single integral type hydraulic power steering with right wheel power-assist cylinder.

Steering Shaft: glide-coated splined shaft. *Bendix wedge lock lube-for-life shaft or ZF type steering shaft.*

Power Steering Pump Motor: must not be the integral filter type unit.

Power Steering Fluid Reservoir: must be remote mounted, minimum 1.5 -quart capacity, incorporating a filter that is easy to remove and replace. The remote filter referenced above must be factory mounted, certified and engineering approved in conjunction with the appropriate pump.

14. SUSPENSION: FRONT:

The front suspension must be rated for at least a 9,000 lb. capacity at ground, each front spring. Front spring to be multi-leaf or parabolic type springs. The front spring pins or bearings/bushing must be furnished with 360-degree grease grooves to insure adequate lubricant penetration. Spring hangers must be heavy castings with sufficient pin and bearing surface to render trouble free service. Maintenance free front spring bushings are acceptable.

15. SUSPENSION: REAR:

The rear suspension must be rated for at least a 13,000 LB capacity at ground, each rear spring. The rear spring assemblies must be multi-leaf with an auxiliary spring assembly. Suspension shall be tailored to axle loads and shall be adequate to sustain maximum GVW, without overload or permanent set. The spring hanger brackets must be severe duty castings with sufficient bearing surface/wall thickness to prevent premature bolt wear. The spring center bolts must be a minimum of .4375-inch size, preferably .5000 inch. The rear spring hanger pins if applicable to suspension bid must be the greaseable type. Bolts must be of sufficient length to go through the washer, spring bracket and truck frame with sufficient length to install a self-locking nut.

16. TANK - FUEL:

Safety- type fuel tank as per the requirements of FMVSS. Trucks must have one (1) 70 GAL minimum total capacity tank, frame mounted, under the left door (*Dual tanks are unacceptable*). Tank mounting must provide clear back of cab configuration for left and dual wings. Tank mounting hardware and brackets must be for "severe duty" applications. Heavy-duty aluminum or stainless steel, minimum 1.9-inch wide straps with rubber shims/liners must be used.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

16. TANK – FUEL: (Continued)

Aluminum or stainless steel tank required. Fill pipe must be accessible with the dump body in the down position; pipe can be located at either end of tank to avoid interference with steps. System must be a top or side draw for suction and return lines. DEF (Diesel Exhaust Fluid) tank, if required, must be the largest available to fit configuration ordered. Both tanks (fuel and DEF) must be full upon delivery.

17. WHEELS/TIRES:

Each truck must be equipped with hub piloted steel disc wheels for tubeless tires. The wheel end must be equipped with outboard cast brake drums, and 15 degree tubeless steel wheels, hub piloted, 10 hole - 285.75mm bolt circle with 22mm two-piece flange nuts. The dual rear wheel/tire assembly must have clearance between the tires, which permits the use of dual tire chains.

Wheels, Front: 22.5 x 9, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,500 lb. at a maximum inflation pressure of 120 psi. *Accuride part #28300PK-WHT21 (or Client Agency approved equal).*

Wheels, Rear: 22.5 x 8.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 7,500 lb. at a maximum inflation pressure of 120 psi. *Accuride part #28828PK-WHT21 (or Client Agency approved equal).*

Wheels, Paint: The wheels must be zinc-phosphate pre-treated, with an epoxy electro coating and powder top-coated high gloss white *(or Client Agency approved equal).*

Tires, Front: 315/80R/22.5 radials

Tires, Rear: 12R22.5H radials

All tires and wheels must be factory balanced and front end aligned.

TIRE TREAD REFERENCE:

<u>Manufacturer</u>	<u>Front Tire</u>	<u>Rear Tire</u>
Goodyear	G289WHA	G-282 MSD / G622 RSD
Michelin	XZY3	XDS -2
Bridgestone	M843	M799

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

18. TRANSMISSION:

See POWER TRAIN OVERVIEW for acceptable transmission.

AUTOMATIC:

Dash mounted console with push button shift selector. There must be an external oil cooler (stainless steel if available). The oil cooler for transmission is required due to prolonged transmission torque converter operation in low gears. Cooler size must be adequate to keep the transmission fluid at an acceptable operating temperature under these prolonged conditions. (Water to oil type cooler). An Allison approved cooling system must be installed regardless of whether retarder is incorporated in the system or not.

MANUAL:

Clutch: Externally lubricated with an extended lube hose if applicable, Eaton/Fuller EZ pedal or Meritor with torque limiting clutch brake. Clutch adjustment must be set to Client Agency specifications prior to delivery. There must be a neutral safety device to ensure that the vehicle cannot be started in gear. Geared for PTO application, right and left side or right side and bottom. Magnetic drain plug, Input transmission shaft at a minimum 1.5 inch, 12 to 1, minimum low gear and low reverse ratio.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

INTENT:

The purpose of these body specifications is to describe the minimum requirements for a severe duty 10 foot long, 6 cubic yard (approximate without side-boards) combination side dump material spreader body fabricated from Corten with a cab-shield mounted liquid tank. Body must be capable of being loaded with a 2.5 cu/yd. front-end loader. Body should be a combination side dump material spreader body designed for conventional use along with sand and chloride spreading. Dump body to remain stationary on the chassis while spreading. The body must tilt from the curbside to the street side transferring material to the conveyor assembly. A conveyor chain will discharge material at the front left-hand side of body on to the spinner assembly.

1. DUMP BODY STRUCTURE, STEEL:

Dump Body Structure, General:

The body must be reinforced to withstand SEVERE duty service and be capable of being utilized in the raised position for extended use or excavation with rip rap being dropped in the bed.

Overall body length – 120"

Inside body width – 88"

Sidewall height – 24"

Tailgate height – 39"

Capacity – 6-7 cubic yards

Rear dump angle to be approximately 47 – 50 degrees.

Side tilt angle approximately 33 degrees.

Tailgate to be properly fit with no gaps between it and the floor or sides any larger than ¼".

Full length material shedding box type top rail with side board extension pockets.

Full boxed / full depth front and rear corner posts.

Full width ½ cab protector to be seam welded on both sides.

Radius corners formed between sidewalls and floor.

Full width, double acting heavy duty tailgate.

Full length formed "S" beam understructure.

Hoist lift cylinder to be front trunion mounted minimum 20 ton (*NTEA Class 60*) capacity hydraulic lift cylinder.

All welds to be continuous throughout.

All fabricated construction must be constructed of light weight, high tensile strength steel (*unless specified otherwise*)

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

1. DUMP BODY STRUCTURE, STEEL: *(Continued)*

Dump Body Materials Requirements - Minimum:

Longsill Members:

Size – Minimum 8” high, longitudinal “S” beam or formed type rail from ¼” material

Material – Minimum grade steel Domex 100W **(or Client Agency approved equal)**.

Body Guides: There must be steel body guides mounted to the longitudinal beams (both sides). There must be mated steel reinforced guides bolted to the truck frame. Steel guides must be constructed using minimum 1/4” steel.

Body Floor: Constructed of 3/16”, Hardox AR450, 205,000psi. tensile strength **(no exceptions)**.

Conveyor Floor: Fabricated from 3/16”, Hardox AR450, 205,000psi. tensile strength fully welded **(no exceptions)**.

Front Body Bulkhead: One-piece design must be fabricated using 3/16” Corten steel, reinforced with two full length vertical C channels or boxed angle.

Cab Shield: One-half (1/2) cab shield, full width, constructed using a minimum 10 gauge HT steel and have a 4” formed front face extending over the cab **(or Client Agency approved equal)**.

Body Sides: Must be constructed using a minimum of 3/16” thick Corten steel and be 24” high from top of bed floor to top of bed rails (one piece per side). Top rails must be a minimum of 4”x 3”x 3/16” boxed tubing, continuous welding. Top rails must be one-piece construction: NO SPLICING. There must be integrated side board pockets to the top rail of both sidewalls, front and rear.

Front Corner Posts: Must be constructed using 3/16” Corten steel, both must be full depth one-piece construction.

Rear Corner Posts: Must be constructed using 3/16” Corten steel, both must be full depth one-piece construction from the top of the tailgate to the bottom of the rear bolster and must be free of holes. There must be two-spreader chain holders on each rear corner post (*top and bottom banjo style*) fully welded. Final location to be determined at pre build meeting. Whelen stainless steel light head housings recessed and fully welded into rear posts.

Tailgate: Double acting tailgate must be manufactured using 3/16” Corten steel and must be a minimum of 39” tall. Tailgate must be a formed six panel design, reinforced with four vertical posts and three horizontal boxed “C” channels. There must be a material shedding, inverted angle on top of the tailgate. There must be two (2) “J” hooks welded to the tailgate as chain holders. There must be four (4) tailgate chain brackets fully welded to the tailgate, two (2) on each side. The spreader chains must be 3/8” proof coil zinc plated and covered with black expandable braided sleeve monofilament. Upper and lower tailgate pins must be a minimum of 1 ¼” diameter cold rolled steel. The lower tailgate latch pin must be the full width of the body. Conspicuity required on the tailgate, **Reference: drawing CTEQN-14.**

Tailgate Latches: The latch ears must be flame cut 1” steel. Tailgate latching system must be operated by a double acting air cylinder or air brake chamber type actuator. (*air cylinders with directly mounted electrical solenoids will not be accepted*). Operation must be a positive cam locking mechanism. Latching mechanism must be operated via an in cab dash mounted pneumatic or air/electric switch (*under dash mounted switches are unacceptable*). A dual linkage design, with a greaseable cross over shaft. Tailgate operation to have a “tailgate open” indicator lamp and audible alarm in clear view of the driver. All air piping and connections must be Client Agency approved, with minimum .25” nylon tubing and brass compression fittings.

Note: Tailgate hinge and latch design must be approved by Client Agency prior to build.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

1. DUMP BODY STRUCTURE, STEEL: (Continued)

Dump Body Materials Requirements – Minimum: (Continued)

Hoist Cylinder Mounting: The telescopic hoist cylinder must be mounted to an upper & lower trunion heavy-duty hoist mount with minimum 2" diameter pins and 2.125" x ½" greaseable.

Note: the base must be fabricated (*no bolt together or cast mounts will be accepted*). Hoist must have remote bleed point. **Reference: drawing CTEQN-29**

Steel Body Props: There shall be two OSHA approved safety props to support the body in both raised body positions.

Hitch Assembly: a pintle plate must be made using ¾" inch steel. It must be inserted within the frame rails. It must extend the full width of frame rails and have a ground clearance of 20". The lower portion of the plate must be channeled towards the front of the vehicle, with proper gussets added between frame rails and plate. There must be two (2) safety chain hooks mounted to the plate. **Reference: drawing CTEQN-31**

Dump Body First Primer Coat: must be a self-etching primer such as PPG *DelFleet Essentials ESU400* wash-primer or DuPont *VariPrime* approximately dry thickness of 1.0 mil. (*E-coating or powered coating will be accepted*).

Dump Body Second Primer Coat: must be two (2) coats of epoxy urethane primer such as Sherwin Williams *Genesis DTM*, PPG *DelFleet Essentials* or DuPont *Chromate LF DTM* with a minimum dry thickness of 1.5 mil.

Dump Body Final Topcoat: must be Sherwin Williams *Genesis* acrylic urethane, PPG *DelFleet Essentials* or Dupont *Imron* polyurethane, low VOC, single stage finish with a minimum dry thickness of 2.5 mil. Final topcoat shall be baked on and tinted to match chassis cab.

2. SIDE TILT FLOOR SECTION:

As a sand/salt spreader, the body must tilt sideways (approximately 33 degrees) from the right (curbside) to the left (street-side) transferring material to the conveyor assembly. The right body side panel and floor shall rise together as one assembly. The side tilt floor section must be actuated by two hydraulic double acting cylinders.

Side Tilt Floor: Must be made of minimum 3/16" Hardox 450 steel. The underside of the floor must be reinforced with a minimum of eight (8) 4" x 2" x 3/16" "C" channel (*"honeycomb type" reinforcement will not be accepted*). The front of the side tilt floor section must be made from 3/16" Corten steel, tapered from the hinge point to the top of the side panel with a 2" x 2" angle iron welded to the top of the front panel. The front panel must be equipped with a wiper made of rubber able to withstand hot asphalt temperatures.

Hydraulic Cylinders: Two (2) double acting hydraulic cylinders with a combined minimum load capacity of twenty (20) ton. Cylinder rods must be constructed of stainless steel or other highly corrosion resistant metal or coating approved by ConnDOT. Cylinders must be attached with greaseable stainless steel pins at both ends. These pins must have a spiral cut grease groove to allow grease to flow throughout the pin. Access holes must be constructed for easy installation or removal of cylinder pins.

Hinge Assembly: The side tilt floor assembly must swivel on a minimum 1 ¼" diameter stainless steel solid rod. All hinge points to be greaseable.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

3. CONVEYOR ASSEMBLY:

In the sand/salt spreading mode, the material is moved to the front left (street-side) of the body by a hydraulically driven conveyor that is recessed into the floor of the dump body. The conveyor must discharge the material through an adjustable gate onto a chute to the hydraulically driven spinner pedal.

Conveyor Assembly: must be constructed of a minimum 3/16" Hardox 450 steel mounted the length of the body, approximately eighteen (18") inches wide. Full length conveyor covers must be equipped to protect the conveyor chain when conveyor is not in use. The conveyor covers shall be hinged to the lower side of the body and able to lock in the open position.

Conveyor Chain Wear Strips: there must be two (2) replaceable conveyor chain wear strips mounted on the return side of the conveyor must be equipped (*poly or Hardox 450 is acceptable*).

Conveyor Chain Drive: the conveyor chain must be driven by a hydraulic motor coupled to a 25:1 direct drive reducer, cast (*cast iron or aluminum is acceptable*) gearbox with a 1 1/2" driveshaft. The gearbox mounting must be spaced away from the discharge box.

Conveyor Chain Driveshaft, Idler Shaft and Sprockets: the conveyor chain drive and idler shafts must be constructed of 1 1/2" diameter high-resistance, stress proofed, SAMSON 100 steel. The drive and idler sprockets to be a minimum of eight (8) tooth made from C1030 cast steel. Two (2) greaseable roller bearings must support each end of the drive and idler shafts.

Conveyor Chain: the conveyor chain must be a minimum of 21,000 lbs. tensile strength, steel, self-cleaning, #667X open pintle type chain with 3/8" x 1 1/4" flights fully welded to the chain every other every 2nd link.

Conveyor Chain Adjuster: the conveyor chain must have an adjusting mechanism mounted on the idler end of the conveyor chain assembly (*grease activated rams will be accepted*). This mechanism must be easily accessed from the side or rear of the body. Adjustment bolts, nuts and all fasteners must be stainless steel.

Conveyor Discharge Box: the discharge box must be fully enclosed, integrated as part of the conveyor assembly. A removable top cover must be hinged at the body for access to clear any lumped material.

Conveyor Discharge Gate: a crank operated gate to control the discharge rate with clearly marked settings for calibration purposes to be included. The gate channels must be bolted with stainless steel bolts for easy serviceability.

Conveyor Chute: an adjustable polyurethane chute must direct material to the spinner. The chute assembly must be mounted for easy removal without the use of any tools.

4. SPINNER ASSEMBLY:

The spinner assembly must be operated by a hydraulic motor through the electronic spreader controls. The spinner function shall be capable of spreading materials equally from 0' to a twenty (20') foot radius. The spinner disc height must be adjustable from twelve (12") inches to twenty (20") inches off ground level. The spinner disc must be made of polyurethane and approximately eighteen (18") inches in diameter. A spinner disc protection guard *must* be provided. The spinner assembly must be chassis frame mounted directly in front of the left rear wheels, behind the truck cab. The spinner assembly must be capable of easy removal without the use of any special tools. The hydraulic lines must have quick disconnect couplers for easy removal. The spinner shaft *must* be supported by a minimum of two (2) sealed, greaseable bearings or bushings.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

5. LIQUID PRE-WET SYSTEM:

The combination side dump material spreader body must be equipped with an on-board liquid pre-wet system. The automated spreader control system must provide ground speed oriented closed-loop automated control of liquid pre-wet materials such as liquid magnesium, calcium chloride or salt brine solutions. The liquid pre-wet system must be adequately sized for a liquid fill rate of a minimum 40 GPM and a discharge rate of 10 – 30 gallons per ton of granular material. The liquid pre-wetting of granular material will occur at the point of material discharge from the main conveyor via *Tee-Jet* replaceable pressure sensitive spray nozzles.

Liquid Pre-Wet System must be equipped with the following components:

One (1) polyethylene liquid tank with a minimum of 120 gallon capacity.

Tank to be constructed of polyethylene material with UV stabilizer, capable of holding 16 lb. per gallon liquids and designed transport liquids such as magnesium, calcium chloride and salt brine solutions.

Tank must be equipped with internal baffles.

The top of the tanks must be equipped with splash proof vent adequately sized.

Tank must be equipped with a sight tube clearly marked every ten (10) gallons of capacity.

Tank must be mounted to the headboard/cab shield of dump body. (*mounting to be approved at pilot review*)

One (1) liquid pre-wet pump/motor assembly mounted in a weather-tight poly enclosure consisting of:

1. One (1) hydraulically driven gear type liquid pump (*liquid pump must be bronze*)
2. One (1) flow meter with a M-12 connector (**or Client Agency approved equal**)
3. The feed side of the liquid pump must furnish a gate with a drop hose to bleed system.

Built-in ability to allow simple quick and efficient flushing of liquid system.

A plumbing/quick fill kit is to be provided consisting of:

1. Fill port must be a Banjo polypropylene 1" cam and groove quick male adapter with a dust cap (*Banjo #100125CAP*) for loading and unloading. Operator to be able to load the tank from the ground without raising body (*fill port location to be approved at pilot review*).
2. All liquid supply hoses must be resistant to liquids such described and be UV stabilized for extreme duty service.
3. Polypropylene shut-off valves must be installed at both the fill port and feed side of the tank.
4. All necessary fittings and couplers to plumb system must be made of polypropylene.
5. Polypropylene filter assembly installed inline between the feed and liquid pump.

A spray bar with minimum two (2) *Tee-Jet QuickJet series* nozzles with a no-drip shut-off check valve and adequately sized stainless steel tips. All spray bar brackets and hardware must be stainless steel.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

6. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS:

Intent/Installation Practices:

The pressure compensated, load sensing central hydraulic system must operate all functions (plow, dump body, spreader, conveyor and pre wet) from a hydraulic system independently and simultaneously, without interruption of any other hydraulic functions. All controls and components must be of the latest design and installed to provide simple and convenient operation. All system operations must be achieved from a single pump matching all required flow and pressure demands. This system must provide the most fuel efficient, safest, simplest and consistent operation possible. All hydraulic components must be installed and serviced by a single manufacturer. Full responsibility for a serviceable system lies with the Contractor. All wiring and cables must be securely clamped at approximately 18 inch intervals, shielded from exhaust and include a protective sleeve where necessary to prevent damage and/or failure. Upon start up the hydraulic system must be operated at maximum flow for not less than 15 minutes and then have a new hydraulic filter installed on the truck.

Note: It is the sole responsibility of the Contractor to ensure that the chassis and the ground speed control wiring harness is totally compatible.

Hydraulic Pump:

Sauer Danfoss model JRL-S75C 75cc Load Sense Pump part #SDPP 83010875:

Keyed input/crankshaft driven (***No substitute, standardization***). Pump must include low-oil shut down with dash mounted override switch. Shutdown shall be direct mounted to the pump (*remote mounted valve will be unacceptable*). Valve must be a normally closed, energize to open cartridge valve. Valve shall be controlled by the hydraulic control system. The pump must match system flow and pressure (horsepower) requirements to provide maximum fuel economy. An unloader or by-pass system is not an acceptable means of regulating excess oil flow.

Pump Mounting Bracket:

Regardless of design the bracket must be a minimum of 5/8" formed steel channel. The pump bracket must be sloped to match the engine crankshaft. Width dimensions must be full frame rail width. Bracket to attach pump to the truck frame rails must be a minimum of 5/8" thickness. Brackets must either be fully welded or use 3/4" grade 8 (eight) bolts of sufficient length and grade 8 (eight) locknuts, minimum of four (4) bolts per mounting side. ***Reference: CTEQN-16***

Hydraulic Pump Driveline:

Hydraulic pump must be driven by a Spicer 1310 series or NEAPCO factory balanced drive shaft. Driveline shall be capable of 130-foot pounds of torque and have a tubular shaft of 1141 steel. Tubular shaft shall have 16-spline heat treated to a (40) Rockwell hardness. A groove must be machined the length of the shaft to provide proper phasing of universal joints at time of shaft assembly. Driveline installation must be in accordance to manufacturer's recommended procedures. Slip assembly must provide a minimum of 2.25 inch of travel to allow ease of engine drive belt replacement. The truck engine radiator and frame construction must readily accommodate the installation of a front mounted crankshaft driven hydraulic pump. The engine crankshaft pulley or vibration damper must be drilled and tapped to accommodate a power take off drive shaft adapter plate required under hydraulic system section of these specifications. Loctite must be used for the installation of all mounting bolts. ***Reference drawing CTEQN-15.***

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

6. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: *(Continued)*

System Control Operation:

Certified Power Freedom ACS (No substitutes, standardization)

The system must be closed loop and communicate over a CAN Open system bus using CAN Open protocol and not a proprietary communications protocol. The system must consist of four primary modules that reside on the BUS and allow flexibility in mounting configurations. The system must be expandable and allow for additional modules to be added to the CAN BUS. All four primary components of the system must be upgradeable by laptop and interface cable. The configuration file of a calibrated system must be saved for transfer to other systems or as backup. The in-cab control system panel must be contained in an enclosure and mounted in a position easy to service.

Software:

System must incorporate three levels of security and access that is password protected and defined by the user. The three levels of access called operator, technician and administrator shall give the user multiple levels access to system setup, data configuration and parameters based on access given. The administrator must have full access to all menus in the system and have the ability to make system changes. Spreader and liquid functions when controlled utilizing closed loop feedback, must incorporate an auto trim feature that will allow system to automatically set the PWM minimums and maximums when engaged. The system must have an over-speed protection for liquid functions that will alert the operator and shut down the liquid function when the driver has exceeded the user defined speed. The software shall incorporate a test speed mode for use in testing the system without requiring the truck to be moving or drive axles engaged.

Control Console:

The control console must contain two joysticks to control hydraulic functions, one for the dump body functions and one for the plow functions. Body hoist stick must be a two axis joystick to control main dump body up and side dump up functions and contain an interlock button to protect against unintended operation. The side dump function must only be to function in a "Winter Mode" selected by an isolated toggle switch. The plow stick must be a two axis joystick to control up/down and left/right functions. All joystick functions shall be protected by software safety system to protect against unintended operation due to joystick failure. All operating levers to be located inside the truck cab within easy reach of the driver and can be repositioned so the passenger can operate the controls. The console must contain the operator interface for the spreader control, joysticks, low oil override switch, body up light and tailgate open light. All controls to be securely attached, within easy reach of the operator and console mounted (*location and set up to be approved by the Client Agency*). All controls must be connected to the valve via an electronic cable and utilize CAN bus network communications. Console base shall be constructed of steel and properly braced to eliminate floor flex. Console must be capable of adjustment vertically and horizontally to allow for comfortable positioning for the operator.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

6. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: (Continued)

Wire Harness:

All wiring for the kit must be included and be TPE type wiring. Wire harness system must meet ISO rating IP68 and NEMA 6. The connectors must be zinc die cast E-coated similar to MIL spec connector. Each must have three sealing points, the lock ring, a raised portion of the molded plastic around each pin and a Viton O-ring that seals the entire connector. The cable jacket must be TPE- thermoplastic elastomer and be molded to the connectors. Connectors must be tested water tight and corrosion resistant to 500+ hours of salt spray. Cabling must be rated excellent for low temperature flexibility and resistant to oxidation, heat, oil contamination, abrasion, etc.

Combination Tank/Valve Enclosure:

Combination tank/valve enclosure must consist of a frame mounted, enclosed cabinet to hold the hydraulic valve and must be located within the clear space behind the cab in front of the dump body. The bottom of the enclosure must serve as a cross member and to add strength to the general assembly and shall be formed from 3/8 thick plate. The main body of the valve enclosure must be formed from 8 gauge hot rolled steel sheet and must have an easily removable fitted cover. The rear support must also have integrated provisions for installing a minimum 40 gallon capacity hydraulic reservoir alongside the valve enclosure and must be designed to readily accept the hydraulic reservoir with mounting brackets and openings for hydraulic hoses. **Reference: drawing CTEQN-24 and CTEQN-25**

Hydraulic reservoir must be a minimum of 40 gallon capacity, fabricated from a minimum of 8 gauge stainless steel sheet, equipped with a vented fill cap with an integral screen, and include a ½ inch magnetic plug that is easily accessible for draining. Tank must be fitted with a drop in style, 10 micron return filter, an oil level temperature sight gauge and an internal 8 gauge baffle plate to prevent oil flow from venting directly to the suction port. The tank must have provisions for low oil level switch to be installed. Low oil level switch must thread into the side of the assembly and must have an M12 connector (**or Client Agency approved equal**). Suction and return line must have a ¼ turn 2 inch full flow ball valve in the suction line as close to the tank as possible. **Reference: drawing CTEQN-22 and CTEQN-23**

Hydraulic Control Valve:

All hydraulic control valves must be a **Danfoss PVG 32 with manual overrides** mid inlet and controlled electronically by feather-able control levers (**No substitute, standardization**).

Note: It shall be the sole responsibility of the successful truck manufacturer and body builder to ensure that the PVG 32 hydraulic control valves correctly meet the function requirements and capacities of the hydraulic function each section operates. Configuration and programming of joysticks to be approved at pilot review.

Return manifolds:

There must be a return line manifold mounted on the chassis location to be determined at the pre-build meeting. Return manifold shall be an 8 port header block with 8 # 16 SAE openings and 2 #24 SAE openings at each end. Header must be an Alamo, Damon or Hycoa or Client Agency approved equal. **Reference: drawing CTEQN-26**

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

6. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: *(Continued)*

Hydraulic Hose/Piping:

All hoses and hose ends must be matched and assembled on a hose machine to prevent hose failure. All hydraulic plumbing practices must conform to JIC H11 standards. Pressure and return hoses shall be SAE 100R2, and suction lines must be SAE 100R4. Stainless steel piping to be used where ever possible with connections being made at flex points only. All stainless piping to be secured using Hydro Craft mounting brackets **(or approved equal)**. Velocity in pressure lines must not exceed twenty (20) feet per second, return lines must not exceed ten (10) feet per second, and must not exceed four (4) feet per second in suction lines. All hoses must include JIC female swivel ends with the exception of the suction line. All hydraulic components must have SAE porting wherever possible. All hydraulic hoses must be securely clamped at approximately 18 inch intervals, shielded from exhaust and include a protective sleeve where necessary to prevent damage and/or failure. All hoses must have female JIC swivel connections at each end and be located in such a manner to aid in easy component replacement. All hydraulic quick disconnect couplers must be SafeWay S70 series **(No substitute, standardization)** push-pull type connect under full system hydraulic pressure. **Reference: drawing CTEQN-21.**

Low Hydraulic Oil Level Alarm and Shutdown System:

There must be a low hydraulic oil alarm system to alert the operator of a low hydraulic oil situation and allow ample time to take preventative action and avoid damage to the central hydraulic system pump. It must be operated via a 12 volt system. All wiring must be routed to prevent damage from heat, sharp edges and moving parts. An in-tank float switch must be mounted to provide a signal to the control system. The warning lamp and audible alarm must come on whenever the oil level drops below a safe reserve, and the pump mounted low oil shutdown manifold must deactivate to prevent pump damage. A console mounted low-oil override switch must be provided to allow momentary operation in an emergency.

Body-up Alarm System:

There must be a body-up alarm system to alert the operator of the body being in the raised position. Warning must include a dash mounted warning light with audible alarm. Alarm and light shall function as soon as the body is raised from the rested position. All wiring must be routed to prevent damage from heat, sharp edges and moving parts. Switch must be mounted within the hoist cradle assembly. Note: Switches must be mechanical, Mercury type switches are unacceptable.

Note: All electronics associated with the hydraulic system must be protected against and must not cause interference to the operation of the vehicle or the land mobile radio communications system when properly installed in the vehicle.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

7. DUMP BODY and CHASSIS PAINT:

The entire dump body and any area in which the body installer has affected must be free of any welding spatter, shot blasted and properly prepped prior to application of paint.

Dump Body First Primer Coat: must be a self-etching primer such as PPG *DelFleet Essentials ESU400* wash-primer or DuPont *VariPrime* approximately dry thickness of 1.0 mil. (*E-coating or powered coating will be accepted*)

Dump Body Second Primer Coat: must be two (2) coats of epoxy urethane primer such as Sherwin Williams *Genesis DTM*, PPG *DelFleet Essentials* or DuPont *Chromate LF DTM* with a minimum dry thickness of 1.5 mil.

Dump Body Final Topcoat: must be Sherwin Williams *Genesis* acrylic urethane, PPG *DelFleet Essentials* or Dupont *Imron* polyurethane, low VOC, single stage finish with a minimum dry thickness of 2.5 mil. Final topcoat shall be baked on and tinted to match chassis cab.

Chassis Primer Coat: must be two (2) coats of epoxy urethane primer such as Sherwin Williams *Genesis DTM*, PPG *DelFleet Essentials* or DuPont *Chromate LF DTM* with a minimum dry thickness of 1.5 mil.

Chassis Topcoat: must be Dupont *Imron* polyurethane or PPG *DelFleet* polyurethane, low VOC, single stage finish with a minimum dry thickness of 2.5 mil.

8. BODY / WARNING LIGHTING SYSTEM:

Intent/Installation Practices:

All lighting must be LED and meet FMVSS.

All lighting components must be mounted free of chaffing and protected against damage.

Wiring harnesses must be a sealed automotive style (*all connections must be weather tight*).

All electrical connections must be made within a dry seal electrical junction panel and powered through the original chassis harness. The sealed electrical junction panel/box must be mounted for easy access. All electrical connections must be coated with di-electric grease. Component placement on the module as per drawing **CTEQN-31**.

There must be no splices outside the junction panel or fixture.

Rear Light Module:

There must be a rear light module containing the following components:

Dump body clearance/identification lights, corrosion resistant, such as Grote LED lamps #47122 with rubber grommets #91410 (**or Client Agency approved equal**).

Dump body clearance/identification lighting must be completely sealed such as Grote Ultra Blue wiring harness system (**or Client Agency approved equal**).

One back-up alarm, ECCO 500 Series part # SA950 mounted to the back side of the tow plate between the frame rails. (**No substitute, standardization**).

One license plate lamp Truck Light 36 series part # 36042C (**No substitute, standardization**).

One 6-way female electrical trailer receptacle - Bobtail part # LDGTR-10ft. (**No substitute standardization**) **Reference: drawing CTEQN-31**.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

8. BODY LIGHTING/WARNING SYSTEM: (Continued)

One 3-lamp identification bar mounted in the recessed area of the body hinge or on rear panel of body. Location to be approved at pilot.

License plate mounting holes, with stainless steel hardware included.

All electrical connections must be made within a dry seal junction box. Grote part #351044 (**or Client Agency approved equal**) and powered through the original chassis harness. All electrical connections must be coated with di-electric grease. Component placement on the module as per **CTEQN-6**.

Whelen ConnDOT Body/Warning Lighting System:

The Whelen body/warning lighting system mentioned is specific to the Client Agency. All components must be supplied and installed utilizing the OEM chassis body up-fitter switch panel module. All functions of the lighting system to be operated by separate illuminated and properly labeled toggle switches. All wiring must be properly sized to accept the amperage load of the circuit and conform to any and all of the manufacturers' specifications. Any wiring must not be affected by the any movement of the dump body.

Whelen Super-LED lighting system Model # CTSYS1SS (**No substitute, standardization**).

This system contains stop/turn/taillights, reverse lights, front and rear warning lights, stainless steel light head housings, wiring harnesses and an electronic flasher/junction box. The stop/turn/taillights and reverse lights to be operated through the OEM chassis switches. The front and rear warning lights are to be controlled by two separate correctly labeled dash mounted switches, one for front and one for rear strobes. A two-way toggle switch must also be equipped to control the high/low intensity of the warning lights.

One (1) Whelen Pioneer Micro Super-LED work light part #MPBBCT to be mounted recessed in the headboard to illuminate the dump body controlled by one separate correctly labeled dash mounted switch. Location to be determined at pilot review.

One (1) Whelen Pioneer Micro Super-LED work light part #MPBBCT to be mounted to illuminate spinner area controlled by a separate correctly labeled dash mounted switch. Location to be determined at pilot review.

9. ALLIED EQUIPMENT / ACCESSORIES:

All listed allied equipment or accessories must be supplied and installed prior to delivery of the completed units. Mounting locations are to be approved by the Client Agency.

Retractable Step Ladder: Buyer's Products part #RS2 (**or Client Agency approved equal**) 400 lb. capacity rating with grab handles mounted to the left front corner of the dump body for 3-points of contact when accessing the dump body.

Shovel Holder: Buyer's Products part #SH675 (**or Client Agency approved equal**) mounted to the front, right side of the headboard.

Two (2) Wheel Chock and Holders: Buyer's Products part #WC1086 (**or Client Agency approved equal**). (**Drawing CTEQN-03**)

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

9. ALLIED EQUIPMENT / ACCESSORIES: *(Continued)*

Splash Guards: Both front and rear splashguard assemblies must be properly braced. The rear splashguards must be attached to the dump body on each side, behind the rearmost dual wheel, and extend downward to accommodate a 30-inch or 36-inch flap in order to meet Connecticut State Inspection Requirements. Mud flap sizes permitted are 30 inch or 36 inch. **(No substitute, standardization)**. The rubber splashguards must be bolted to these metal splashguards using self-locking nuts and metal strips. Flaps must be heavy duty anti sail/anti spray and be razor split and contain no advertisement or logos. The forward splashguards must extend downward 3/4 of the length of the rear splash guard/mud flap, with a 1/4" length, unmarked mud flap attached for the remaining distance. Forward splashguard must have a 1-inch lip for entire length-outside extremity (90 degree) with bottom outside corner rounded and have rolled edges. Splashguards must be full length and width. **Reference: CTEQN-18 and CTEQN-27**

Pintle Hook: There must be one of the following manufacturer's 30-ton pintle hook mounted to the hitch assembly, Wallace Forge part #R30, Buyers PH30 **(or Client Agency approved equal)**. Pintle hook mounted as **Reference: CTEQN-08**

Two (2) D-Rings: Buyer's Products part #B-5055 **(or Client Agency approved equal)** mounted to hitch as **Reference: CTEQN-31**

Toolbox: Buyer's Products part #1702300 black powder coated steel, underbody toolbox **(or Client Agency approved equal)** to be mounted on the right side frame rail directly in front of rear wheels. Mounting location to be approved at pilot review.

Bar and Shovel Holder: mounted to the front plow hitch. Mounting location to be approved at pilot review.

Traffic Cone Holder: capable of holding three (3) Client Agency safety cones. Dimensions: 12 pound, 36" height with a 16"x16" base. Mounting location to be approved at pilot review.

Reflective Chevron Tailgate Striping: The tailgate must be stripped with six (6") inch wide alternating red/yellow bands creating a Chevron (inverted 'V') at 45 degree angles, covering the entire inner panel as **Reference: CTEQN-14**. Tape shall be Orafol Reflexite V98 Daybrite conspicuity sheeting (part #19716 red & #19718 yellow) **(or Client Agency approved equal, must be complaint to NFPA 1901 specifications)**.

Conspicuity Tape: The lower outside rails of the dump body must have two (2") inch wide red and white conspicuity tape the entire length of the body. Tape shall be Orafol Reflexite V82 OEM Grade or V92 Daybrite or 3M Series 963 **(or Client Agency approved equal, must be compliant to FMVSS 108, DOT-C2 specifications)**.

Rust/Corrosion Protection: The complete chassis and all allied equipment must be treated with Fluid Film **(or approved equal)** automotive undercoating.

10. LOAD COVERING SYSTEM

Tarp: Must be a 22 oz. vinyl coated material capable of withstanding use with hot asphalt. Material must have a "Rip Stop" construction consisting of a 1300 x 1300 denier – 24 x 23 thread per inch weave. To have 18" rear corner reinforcements. Must be equipped with the following:

- 12" Tail Flap
- Full Flap Length Shock Cords (for tie down purposes)

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

10. LOAD COVERING SYSTEM:(Continued)

Tarp Spool: must have a one piece aluminum wind deflector, this can be integrated into the body. It must include an extruded aluminum roll pipe with 5 full length threaded grooves for easy tarp installation. Extrusion must be a 6005 T5 aluminum and must have a steel stub shaft to connect it to a grease able bearing on the idler end of the roll pipe. The steel stub shaft must be Nitro Carburized to prevent corrosion. Zinc plating is insufficient.

Gear Motor: shall be a 12 volt Electric Gear Motor designed to operate at fewer than 35 amps. Gear case to be chrome plated, snap or bolt over gear case covers are not acceptable. Gear case output shaft must be tool steel and be nitro carburized to prevent corrosion. All gears and gear motor assembly to be made in the United States. Gear motor to have a minimum of a 3 year non-prorated limited warranty against wear out and manufacturing defects.

Controls: system to be operated by a low voltage in cab switch - relay and all high voltage wires to be kept outside the cab of the truck and installed in a weather tight box. For safety there is to be a maximum of a 35 amp circuit breaker mounted at the power supply in the tarp system circuit.

Pivots: must be mounted on the flat face of the shedder rail on a 1 ¼" aluminum pivot pin. Pivots must contain Teflon coated spiral torsion springs. Double helix spiral torsion and other forms of torsion springs are not acceptable. Spring tension to be adjustable by simply relocating a tension adjustment pin without unbolting the pivot pin itself. Where the arm connects to the pivot pin it must ride on a self-lubricating poly bearing. Metal on metal pivots will not be accepted. Spring pack to be an open design allowing moisture and contaminants to naturally clear out of the springs. Enclosed spring packs are not acceptable. Pivot arms must be United States made 6005 T5 aluminum extrusions and be universal driver to passenger side.

Bow Set: must be a 3 piece 6005 T5 aluminum straight arm extrusion set. Pre-bent side arms will not be accepted. They must connect to the pivots in a telescopic fashion and be universal driver to passenger side allowing for ease of install and adjustment. Must provide the following options for bolt on accessories to accommodate varying truck configurations:

- 30° or 45° offset elbows
- Pivot tube mounted tension bow in cases where there is more than 8" of drop behind bulkhead.

F. GENERAL SNOW PLOW HITCH:

1. INTENT STATEMENT

The purpose of these specifications is to describe **minimum** requirements for severe service front plow hitch. It is the Contractor's responsibility to provide full drawings of the plow hitch at time of bid submittal.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

F. GENERAL SNOW PLOW HITCH: (Continued)

2. PLOW HITCH SPECIFICATIONS

Front Plow Hitch: Side-mounting plates must be constructed using $\frac{3}{4}$ " steel. Lower plow mount bracket center must be 8" to 10" from ground (both sides). There must be a minimum of five (5) $\frac{7}{8}$ " grade eight (8) bolts per side with washers and lock nuts to mount the plow frame to the truck frame. Lift height must be sufficient to afford unrestricted lift for the Client Agency

Plows, (16" minimum lift). Side strengthening bars (two per side) must be fabricated using $\frac{3}{4}$ " steel, 16" long by 2" wide and mounted to the external side of the plow hitch. Plow push plate
Reference: CTEQN-30. The hydraulic fittings on the plow hoist cylinder must be positioned as to keep them from being stuck and damaged, while connecting or disconnecting the front plow. All other hydraulic connections mounted to the plow frame must also be positioned to keep them from damage.

G. INSTALLATION PRACTICES:

Any place steel and aluminum contact each other Mylar or an approved equal must be used as a buffer. Laminate rubber is unacceptable.

All welding must be in accordance with standard welding practices as set forth by the American Welding Society. All corners must be angled or rounded for safety.

All vertical and horizontal seams of the body sides must be continuous welds with full penetration. All mounting procedures must be in accordance with **NTEA** standards.

All hydraulic circuits must be tested for proper operation and flow. Control systems must be tested and calibrated and programmed for the Client Agency's material spread rates prior to delivery. Material spread rates will be disclosed at the pre-build meeting.

All electrical connections must be treated with di-electric grease.

The use of any of the following items or practices WILL NOT BE ACCEPTED.

The use of accumulators or auxiliary pumps.

Non-steel fittings on hydraulic pressure lines.

Excessive use of elbows on hydraulic lines.

Use of thread tape on hydraulic fittings.

Use of galvanized fittings or components on hydraulic system.

Improper hydraulic line size.

Use of high-pressure hose for hydraulic suction line.

Scotchlok-type wire splices.

Non-insulated wire splices.

Improper hose or wire routing near exhaust, over-sharp edges or through holes without grommets, or sharp edges.

Improperly prepared, primed and painted surfaces.

Non-fused electric circuits.

Hydraulic circuits without pressure relief protection.

Laminated Rubber and non-threaded zerk fittings.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

H. SAFETY:

Anti-slip paint is required on all handholds.

All handrails, ladders, and step configurations must be built for three points of contact.

All corners must be angled or rounded for safety.

There must be a triangle warning kit mounted in the cab. **Reference: CTEQN-28**

There must be a fire extinguisher mounted in the cab.

II. DRAWINGS:

CTEQN-03	dated 3-24-14	6" WHEEL CHOCK AND HOLDER
CTEQN-31	dated 7-23-14	25 TON REAR TOW HITCH PLATE
CTEQN-14	dated 3-6-14	DUMP BODY REFLECTIVE SHEETING
CTEQN-15	dated 3-6-14	DUMP TRUCK PTO ASSEMBLY
CTEQN-16	dated 3-6-14	PUMP MOUNTING BRACKET
CTEQN-18	dated 3-5-14	SPLASH GUARDS RUBBER
CTEQN-20	dated 3-7-14	WIRING DIAGRAM 6-WAY CONNECTOR
CTEQN-21	dated 3-6-14	HOSES AND CLAMPS
CTEQN-22	dated 3-17-14	40 GALLON OIL RESERVOIR ISOMETRIC
CTEQN-23	dated 3-14-14	40 GALLON OIL RESERVOIR SIDE & END VIEW
CTEQN-24	dated 3-19-14	REAR SUPPORT VALVE ENCLOSURE ISOMETRIC VIEW
CTEQN-25	dated 3-19-14	REAR SUPPORT VALVE ENCLOSURE SIDE AND END VIEW
CTEQN-26	dated 2-19-14	RETURN MANIFOLD
CTEQN-27	dated 2-19-14	DETAIL SPLASH GUARDS RUBBER
CTEQN-28	dated 2-20-14	TRIANGLE STORAGE BOX AND BRACKET
CTEQN-29	dated 2-19-14	DUMP BODY HOIST CYLINDER BLEEDER
CTEQN-30	dated 3-28-14	PLOW PUSH PLATE

The above referenced drawings are a part of these specifications.

These drawings reflect the intent of the Client Agency.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

III MANUALS:

The Contractor shall furnish all applicable manuals as described below for each vehicle and provide an additional complete set for Client Agency's Equipment Operations Section Newington:

- 2 Operator's
- 1 Parts
- 1 Service
- 1 Engine
- 1 Transmission (Automatic/manual)
- 1 Body and Sub-frame (Parts and Service)
- 1 Complete set of manuals for any additional items/equipment added to a piece of equipment.
- 1 Electrical System Charts
- 1 Control System/Hydraulic and Electrical System Schematics

The manuals listed above must be official O.E.M. publications supplemented with technical manuals for all components as published by sub-vendors/manufacturers.

Parts Manual presented must be relative to "all" items utilized to build units, with appropriate part numbers.

Delivery of these manuals must be completed with delivery of each unit.

Manuals may be supplied on CD Disc in lieu of paper manuals.

Manuals may be supplied on a dedicated website in lieu of paper manuals.

One Panasonic Toughbook laptop/tablet computer must be provided with every 3 trucks ordered. Laptop should be provided with the manufacturer's diagnostic software loaded and licensed to the Client Agency. Electronic software must include annual subscription renewals and updates for 5 years. Media must be capable of being moved to a new computer or reloaded in the event of a hard drive crash without additional charge.

IV. TRAINING:

The Contractor shall supply competent representatives to provide a minimum of four (4) hours of operator training for each truck purchased, for various segments of the vehicle and allied equipment. The training must include all aspects of operating and servicing the entire equipment. Videotape training series may be used to supplement training with Client Agency approval.

The Contractor must supply factory representatives to provide the following:

1. Forty(40) hours of engine training to include troubleshooting and repair
2. Twenty (20) hours of hydraulic training to include troubleshooting and repair.
3. Ten (10) hours of chassis electrical troubleshooting and repair.
4. Ten (10) hours of emissions troubleshooting and repair.

Online Training Course for above mechanical training may be used with Client Agency approval.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

V. WARRANTY:

This warranty is in effect as follows, starting from date of acceptance by the Client Agency. Warranty may not be voided due to Client Agencies operation as explained in the Intent Statement. It is understood that the components specified are minimum and if the manufacturer's Engineering Department recommends or deems necessary a more robust component, other than specified, may be installed to meet the requirements of the intent statement while not voiding any warranty. .

1. BUMPER-TO-BUMPER WARRANTY:

Minimum of one (1) year / 100,000 miles starting from the Client Agency acceptance date.

2. CAB / COWL STRUCTURE WARRANTY:

Manufacturer's service and warranty policy for the entire cab structure (*regardless of atmospheric conditions*) must be for a minimum of 60 months / 125,000 miles, 100% parts and labor.

3. FRAME – SIDE RAILS AND CROSSMEMBERS:

Manufacturer's service and warranty policy for the chassis frame side rails and cross members (*regardless of atmospheric conditions*) must be for a minimum of 60 months / 125,000 miles, 100% parts and labor.

4. BRAKE WARRANTY:

Manufacturer's service and warranty policy for automatic slack adjusters must be for a minimum of 24 months / unlimited miles, 100% parts only.

5. RADIATOR WARRANTY:

Manufacturer's service and warranty policy for radiator (*regardless of atmospheric conditions*) must be for a minimum of 24 months / 50,000 miles, 100% parts and labor plus an additional 36 months / 75,000 miles, 100% parts only.

6. ENGINE WARRANTY:

The Contractor and or supplying OEM shall provide the Client Agency with a 100% parts and labor engine warranty for a minimum of 24 months / 250,000 miles. In addition to the engine warranty, the engine block must be warranted against external perforation from corrosion (*regardless of atmospheric conditions*) for a minimum of 120 months / 200,000 miles, 100% parts and labor.

NOTE: The oil pan must be warranted against corrosion, rust, rust thru etc. (*regardless of atmospheric conditions*) for a minimum of 60 months / 150,000 miles / 5,400 hours, 100% parts and labor.

7. EMISSION WARRANTY:

The successful Contractor and or supplying OEM shall provide the Client Agency with a 100% parts and labor warranty for all emission related components to include the diesel particulate filter (DPF) for a minimum of 60 months / 150,000 miles / 5,400 hours. *Shall be warranted against rust and corrosion regardless of atmospheric conditions.*

8. TRANSMISSION WARRANTY:

Manufacturer's service and warranty policy for automatic and manual transmissions must be for a minimum of five (2) years / unlimited miles, 100% parts and labor.

41,000 GVWR Single Axle Plow Truck w/ Plow
SPECIFICATIONS
CT-5-15

V. WARRANTY: (Continued)

9. DIFFERENTIAL/AXLE WARRANTY:

Manufacturer's service and warranty policy for differential and axles must be for a minimum of 36 months / 300,000 miles, 100% parts and labor.

10. DUMP BODY WARRANTY:

Constructability and durability of vehicle bodies a minimum of be guaranteed for a minimum of five (5) years, parts and labor. A decal must be affixed to the driver's door, on the inside, stating the company's name, address and phone number.

- Dump body construction a minimum of be warranted against rust and corrosion (*regardless of atmospheric conditions*) a minimum of three (3) years, 100% parts and labor.
- Body hoist hydraulic cylinder, a minimum of three (3) years, 100% parts and labor.
- Side tilt floor hydraulic cylinders, a minimum of three (3) years, 100% parts and labor.
- Tailgate linkage and spring-over-air cylinder system, a minimum of three (3) years, 100% parts and labor.

11. CENTRAL HYDRAULIC SYSTEM:

Complete central hydraulic system and components a minimum of 3-year 100% parts and labor including but not limited to the following:

Valves and Pump
Controller and Joysticks

All wiring harnesses must be warranted for a minimum of 5 years 100% parts and labor.

12. HYDRAULIC PUMP

Manufacturer's service and warranty policy for hydraulic pump must be for a minimum of three (3) year 100% parts and labor.

13. BODY ELECTRICAL/LIGHTING:

Wiring harness must be for a minimum of 5 years 100% parts. First year must include 100% labor. All LED lights must be for a minimum of 5 years 100% parts.

DETAILED SPECIFICATIONS CHECK SHEET
41,000 lb. Single Axle Cab and Chassis with Body and Plow

GENERAL INFORMATION:

CHASSIS INFORMATION:

Chassis shall be the current model and meets the attached specification. Primary application for cab and chassis is for snow and ice removal operations

WHEELBASE:

Wheelbase Dimension : 180"

CAB TO AXLE:

Dimension: 96"

1	Weight Distribution Provided	Meets specification: Yes
2	Vehicle Certification for 41,000	Meets specification: Yes
3	Engine	Meets specification: Yes, Exceeded, Model: Cummins HP:345, TQ: 1,150 lb./ft., CARB Emission Certification for Clean Idle with badging on lower forward corner of drivers door.
4	Transmission as per specification CT-5-15	Automatic model: Allison 3000 RDS, Allison transmission programmed on the secondary MODE for highest 3rd gear. Transmission Prognostics system enabled. This will continually monitor transmission filter life, oil life and clutch plate wear. Servicing will not be required until wrench icon is illuminated on the shifter control. Automatic electronic oil level check with indicator in addition to the traditional dipstick and filler neck
5	Rear Axle	Meets specification: Yes, Per Addendum 2, SKF Scotseal Plus XL rear oil seal Model: Meritor RS-23-160 23,000# R-Series All yellow magnetic drain plugs.
6	Rear Suspension	Meets specification: Yes, Exceeded, Model: 26,000# Flat Leaf Spring w/Helper, Fore/Aft and radius rod on rear suspension
7	Rear Axle shaft diameter	Meets specification: Yes, Exceeded, Rear axle shaft is 2.35" in diameter
8	Front Axle	Meets specification: Yes, Per Addendum 2, Model: Detroit DA-F-18.0-5 18,000# FL1, SKF Scotseal TF vented front hub caps w/window, center and side plugs-oil.

DETAILED SPECIFICATIONS CHECK SHEET
41,000 lb. Single Axle Cab and Chassis with Body and Plow

9	Rear Brakes	Meets specification: Yes, Per Addendum 1&2, Meritor 16.5x7 Q+ cast spider heavy duty cam rear brakes, double anchor, fabricated shoes. BW AD-9SI brake line air dryer with heater.
10	Rear Brake Chambers	Meets specification: Yes, Per Addendum 2, Model: Haldex gold seal long stroke 1-drive axle spring parking chambers
11	Antilock brakes	Meets specification: Yes, Model: Wabco 4S/4M ABS
12	Cab Specification	Meets specification: Yes, Exceeded, Per Addendum 2, Model: Freightliner 114SD, (1) 12V power supply in dash, 16.5" painted steel straight bumper, Shield for air horn
13	Seats	Meets specification: Yes, Exceeded, Per Addendum 2, Model: CVG Model C27-000086-010. high back air suspension driver and passenger seats with mechanical lumbar and integrated cushion extension. No bellow type seat skirt., Duel driver seat armrests
14	Road Watch road/air temperature system	Meets specification: Yes, Model: Road watch Bullet RWI
15	Drive Line Specification	Meets specification: Yes, Model: Meritor MXL 176T Extended lube main drive line with half round yokes
16	Alternator as per specification CT-5-15	Meets specification: Yes
17	Starter as per specification CT-5-15	Meets specification: Yes
18	Batteries as per specification CT-5-15	Meets specification: Yes, Exceeded, Total CCA of batteries is 2,850
19	Electrical system as per specification CT-5-15	Meets specification: Yes, Exceeded, Per Addendum 2, Littlefuse model A06-88420 master disconnect switch mounted inside of cab out board of driver seat. Standard turn signal utilizing multiplex modules. Windshield wiper activation automatically turns on all exterior chassis lights.

DETAILED SPECIFICATIONS CHECK SHEET
41,000 lb. Single Axle Cab and Chassis with Body and Plow

20	Automatic idle shut down as per specification CT-5-15	Meets specification: Yes
21	ECM set to maximum of 65 mph as per specification CT-5-15	Meets specification: Yes
22	Oil filter part number as per specification CT-5-15	Meets specification: Yes Part number: FG/LF 9009
23	Davco 382 as per specification CT-5-15	Meets specification: Yes, Per Addendum 2, Part number: Davco 243 fuel/water separator with 12V preheater and water in fuel indicator light. Filter element part # FG/FS19624
24	Cooling system as per specification CT-5-15	Meets specification: Yes
25	Engine Accessories as per specification CT-5-15	Meets specification: Yes
26	Exhaust as per specification CT-5-15	Meets specification: Yes
27	Frame as per specification CT-5-5	Meets specification: Yes, Exceeded, RBM of frame 2,592,000 LBF-IN per rail. Section modulus: 21.60 cu.in. per rail
28	Instrumentation as per specification CT-5-15	Meets specification: Yes
29	Paint as per specification CT-5-15	Meets specification: Yes Paint code: L6389EB Omaha Orange Elite BC Paint brand: Dupont
30	Steering system as per specification CT-5-15	Meets specification: Yes, Exceeded, Oil/air power steering cooler, 4 quart CLEAR power steering reservoir.
31	Front Suspension as per specification CT-5-15	Meets specification: Yes, Exceeded, Front shock absorbers also provided

DETAILED SPECIFICATIONS CHECK SHEET
41,000 lb. Single Axle Cab and Chassis with Body and Plow

32	Rear Suspension as per specification CT-5-15	Meets specification: Yes, Exceeded, Model: 26,000# flat leaf spring with helper. Fore/aft and radius rod on rear suspension
33	Fuel tank as per specification CT-5-15	Meets specification: Yes, Exceeded, Per Addendum 2, 70 gallon, Plain aluminum fuel tank w/treated painted steel straps and rubber isolators. High temperature reinforced nylon fuel lines.
34	Wheels/Tires as per specification CT-5-15	Meets specification: Yes, Exceeded, Per Addendum 2, Tire Manufacturer: Michelin/Goodyear Wheel manufacturer: Accuride 29039 22.5x9.00 10-hub pilot 5.25 inset 5-hand steel disc front wheels. Rear wheels each have a rating of 8,000 #.
35	Dump Body as per specification CT-5-15	Meets specification: Yes, Model: Viking PL 1011 SD
36	Tailgate as per Specification CT-5-15	Meets specification: Yes
37	Tailgate Latches as per specification CT-5-15	Meets specification: Yes
38	Hoist Cylinder mounting as per specification CT-5-15	Meets specification: Yes
39	Hitch Assembly as per specification CT-5-15	Meets specification: Yes
40	Pintle Hook as per specification CT-5-15	Meets specification: Yes
41	Body lighting to meet specification CT-5-15 and all Federal Motor Carrier Regulations	Meets specification: Yes
42	Splash Guards as per specification CT-5-15	Meets specification: Yes
43	Central Hydraulic system as per Specification CT-5-15	Meets specification: Yes

DETAILED SPECIFICATIONS CHECK SHEET
41,000 lb. Single Axle Cab and Chassis with Body and Plow

44	Tarpping system as per specification CT-5-15	Meets specification: Yes Make; Roll Rite Model: Tarp Master 400
45	Liquid per wet pump as per specification CT-5-15	Meets specification: Yes Make: Cirus Model: PWCL HYD
46	Plow Hitch as per specification CT-5-15	Meets specification: Yes Make: Viking Model: Custom Tilt over
47	Manuals as per specification CT-5-15	Meets specification: Yes
48	Training as per specification CT-5-15	Meets specification: Yes
49	Warranty as per specification CT-5-15	Meets specification: Yes, Exceeded, Base vehicle bumper to bumper chassis warranty for 2 years / 200,000 miles with no hour limitation. Brake warranty that covers automatic slack adjusters for 2 years / unlimited miles, 100 % parts and labor. Frame, side rails, cross-member Cab/Cowl structure warranty for 5 years / unlimited miles, 100 % parts and labor. Cooling system (Including radiator) warranty for 5 years / 500,000 miles, 100 % parts and labor with no hour limitation. Cummins Protection Plan #1 engine warranty full coverage for 5 years 150,000 miles with \$0 deductible and no hour limitation. Cummins ATD (emission) warranty full coverage for 5 years 150,000 miles with \$0 deductible and no hour limitation

-1-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS:

A. Intent Statement

B. Weight Distribution

C. Power train Overview

D. Vehicle Components

1. Axle Front
2. Axle Rear
3. Brakes
4. Cab
5. Drive Line
6. Electrical
7. Engine
8. Engine Accessories
9. Exhaust
10. Frame and Frame Extension
11. Instrumentation
12. Paint
13. Steering
14. Suspension: Front
15. Suspension: Rear
16. Tank- Fuel
17. Wheels/Tires
18. Transmission

E. Dump Body and Equipment Mandatory Minimum Specifications

1. Steel Dump Body Structure Corten
2. Central Hydraulic System/Hydraulics
3. Load Cover System

F. General Plow Mounting/Accessories

1. Intent Statement
2. Specifications

-2-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: *(Continued)*

G. Wing Plow Specifications

1. Intent Statement
2. Specifications
3. Minimum Alterations
4. Plow Identification
5. Paint
6. Conspicuity Tape
7. Wing Plow Light

H. Underbody Scraper Plow

I. Installation Practices

J. Safety

II. DRAWINGS:

III. MANUALS:

IV. TRAINING:

V. WARRANTY:

-3-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: *(Continued)*

A. INTENT STATEMENT:

The purpose of these specifications is to describe a conventional cab, tandem-axle dump truck, equipped with dual rear wheels, dump body, hoist, hydraulic power system, liquid tanks and snow plow hitch. It must be capable of one-man operation while plowing snow and simultaneously spreading granular and liquid materials during winter operations, and of hauling, stockpiling and unloading maintenance materials into a chip spreader or paver during summer operations. Further, it must be capable of being loaded with a front-end loader.

NOTE: The Client Agency requires that the latest and current version of this truck as of the Effective Date is included as a part of this specification. All units must be delivered by the Contractor within 180 days after their receipt of a purchase order.

B. WEIGHT DISTRIBUTION:

Weight distribution charts must be submitted with the pilot model for all models being delivered. Weight distribution charts must be submitted for two modes listed below.

1. Summer mode including the portion of the plow frame assembly that remains on the vehicle all year.
2. Winter mode with front plow, loaded and liquid tanks full.

Engineering certified weigh slips must be provided with the pilot model and signed by the manufacturer's Engineering Department. It is understood that the components specified are the minimum that the manufacturer's Engineering Department recommends or deems necessary for a particular weight distribution. Larger components or a larger Gross Axle Weight Rating (GAWR) may be required by the Client Agency for certain applications. The burden of responsibility is hereby placed upon the Manufacturer's Engineering Department to supply a unit that is totally engineered to meet the Client Agency's needs.

1. Frame
2. Axle
3. Tires
4. Steering unit and components
5. Rims
6. Suspension
7. Brakes
8. Any other items as required

-4-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

B. WEIGHT DISTRIBUTION: (Continued)

The dynamic and static loads created by the unit, plus operational stresses, must be reviewed by all parties to ensure the Client Agency of a properly designed/engineered unit.

In addition to the Engineering Certified weight distribution provided at the pilot model inspection, the following information is required to be included with the pilot model.

The vehicle must be certified for 62,000 LB Gross Vehicle Weight Rating (GVWR) minimum rating. The GVWR must be identified in the cab or on the door as the final complete certification label. In addition to the GVWR certification, the following certifications must also be provided by the Contractor:

Actual Truck Weight: (LB)

"Chassis only" (must be signed by a certified weigh master.)

_____ Front Axle

_____ Rear Axle

_____ Total

"Chassis with body" (must be signed by a certified weigh master).

_____ Front Axle

_____ Rear Axle

_____ Total

Truck GAWR's as Built (LB)

	<u>Front GAWR</u>	<u>Rear GAWR</u>
Axle	_____	_____
Tires	_____	_____
Springs	_____	_____
Rims	_____	_____

-5-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

C. POWER TRAIN OVERVIEW:

ENGINE:

Diesel, Min. 425 HP at Governed rpm, min. peak torque of 1550 lb. /ft. 12.4 liter

TRANSMISSION

Automatic - Allison-4500-RDS 6 speed.

Manual – Eaton RTO 16210C

Automated Manual – Eaton FO-16E310C-VAS Ultra-Shift

REAR AXLE

Dana – DS463P

Meritor RT 46-164-P

Mack S462

REAR SUSPENSION

Mack Camel Back

Freightliner Tuff Trac

Hendrickson Haulmax

NOTE: All rear axles must provide axle shafts with a minimum diameter of 2.19 inch at the spline. All rear axle(s) must have an extended breather tube to prevent debris buildup from entering axle housing.

NOTE: Lubricants for front axle hubs, automatic transmission and all rear differentials must meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and must have all plugs identified as synthetic oil, or painted red.

D. VEHICLE COMPONENTS:

1. AXLE FRONT:

The set forward front axle must be rated at 20,000 LB minimum capacity. The front axle, drag links and tie rods must have grease zerks installed. Kingpin or bushings must be grooved to permit grease flow. Sufficient tire clearance at maximum turning angles. Complete "Stemco" oil seal assembly, including hub, plug type window, and "Guardian" seal, (**or Client Agency approved equal**). Each unit must receive a front-end alignment prior to delivery. A setback axle is unacceptable.

-6-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS:

2. AXLE REAR: (See power train overview for acceptable models.)

All rear axles must provide axle shafts with a minimum diameter of 2.19 inch at the spline. All rear axle(s) must have an extended breather tube to prevent debris buildup from entering axle housing. Lubricants for all rear axles must meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and must have all fill plugs identified as synthetic oil, or painted red. .

NOTE: Lubricants for all rear axles must meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and must have all fill plugs identified as synthetic oil, or painted red. Stemco guardian rear wheel seals, (**or approved equal**). All axles must have magnetic drain plugs. There must be an inter-axle differential lock and driver controlled traction control for both rear axles controlled by manual switches in the cab.

NOTE: Aluminum or lightweight housing is unacceptable.

NOTE: Rear axle ratio selection will be made after the award and may be a mix of ratios as required. The rear axle ratios must be "identical" throughout the entire build.

3. BRAKES:

Full air antilock brake system in compliance with the most current Federal Motor Vehicle Safety Standards (FMVSS) requirements, The Anti-Lock Braking System (ABS) must incorporate a diagnostic fault switch that is capable of illuminating a fault light for diagnostic purposes. The switch must be easily accessible and can be either dash or under-dash mounted. A dash-mounted display that will show all Society of Automotive Engineers (SAE) message descriptions for the ABS is an acceptable means of diagnostics in lieu of the fault switch.

Rear Brakes: 16.5 inch x 8.62 inch "S" cam with quick-change type single or double anchor pin.
Steer-Axle Brakes: 16.5 inch x 6 inch or a power front disc brake system providing equal performance. Quick-change type single or double anchor pin if drum type brakes are furnished.
Drum Brakes: must have automatic slack adjusters and must be clearance-sensing single pin type only, with adjustment on application of the brake. All brake clevis pins to be stainless steel. Backing plates must be installed on all drum brakes.

Air Compressor: Per truck manufacturer's recommendation. Compressor must be fitted with a safety valve to prevent mechanical failure.

Buzzer-type, low air pressure indicator.

Parking Brake: rear wheel piston-spring type, MGM E 30/30 long stroke, Anchorlock 30/30 long stroke gold seal chambers (**or approved equal**). Parking brake must provide modulated emergency braking via the foot valve in the event of a rear service system failure.

Rear service brake chambers and spring-brake chambers must be mounted to provide adequate clearance for backing into bituminous paving machines.

Air Tanks: automatic drain valve, with heater on wet (first) tank. Each of the remaining air tanks must have a manual drain valve.

-7-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

Air Dryer: with heater, inboard mounted, away from road splashing and a minimum of 20 inches above road surface. Dryer must be compatible with the body company clearance requirements for sub-frame, valve body, etc. Bendix AD-IP (**No exceptions**) installation made in concurrence with the air compressor manufacturer's recommendations.

All electrical connectors for drain valve and air dryer must be covered with heat shrink material or have sealed connections.

System must be equipped with anti-compounding valve to prevent mechanical failure of the foundation brakes, slack adjusters, etc.

4. CAB:

Aluminum or galvanized steel cab. *Reference: Mack Granite, Freightliner SD 114, International Paystar, Kenworth 470, Volvo VHD200, Peterbilt 365 or Client Agency approved equal.*

Grab handles must be supplied on all cab entry locations. Three points of contact must be achievable at all cab entry locations.

Hood: fiberglass, tilting. Fenders must be part of tilting hood. Grille must be fixed.

Air suspension system for the cab must be factory installed.

Front fenders must have extensions to cover the width of the front tires.

Deluxe fresh air hot water heater and defroster, manufacturer's highest output.

Heat and Air Conditioning: Highest output available as OEM option.

AM/FM radio with weather band.

Air horn(s): Minimum 1 horn with snow-shield (not required if under hood mount).

All controls and knobs must be properly identified.

Brake pedal, clutch pedal and throttle must be suspended if available from the factory.

Minimum of 6 up fitter switches to be used for various applications

Cab floor covering must be heavy-duty rubber with closed cell rubber or heavy felt backing.

Cruise control.

Cup holder in the cab within easy reach of the operator.

Dome light.

Dual sun visors.

Exterior windshield sun shade (visor).

Windshield: One (1) or two (2) piece construction is acceptable, must be tinted safety glass.

Windshield Wipers: dual, arctic type with the heaviest arms, linkages and motor available. Wipers must be minimum 2-speed electric with intermittent feature.

Windshield washer system must be electric. Minimum capacity of four (4) quarts of washer fluid and shall be filled with an anti-freeze type solvent.

Mirrors: exterior drivers and passengers side mirrors, west coast style minimum 6 inch X 16 inch manufacturers standard heavy-duty breakaway arms. Mirrors must be heated with a lighted toggle switch mounted within accessible reach of the operator, automatic on/off is acceptable. The wires must be fitted in such a way that the mirror glass/element can be changed by a weather-tight quick disconnect the two-wire lead. There must be a heated convex mirror both sides, minimum 5.5 inch X 8.8 inch or 8" diameter, minimum.

-8-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

4. CAB: *(Continued)*

Blind-spot elimination mirrors must be mounted on the front fender's and must be 8-inch minimum diameter, stainless steel or aluminum head with mirror. Mirror must be a conventional convex mirror, and must not be of the half-round cross view type. All arms and hardware must also be stainless steel. Fender type washers stainless, or aluminum, with rubber pads to be placed on both sides of the fender must be included. Pedestal system must be single, double or triple mounting assemblies (stainless steel or aluminum). Mirror must be mounted in rubber or vinyl. *Reference: Grote (800-628-0809)*

Seats: driver's seat shall be high back adjustable Bostrom air 915 Series with lumbar support or National 195 Series with lumbar or DuraForm Air Command Series (fabri form cushions with lumbar support), with body cloth insert and three-point retractable seat belt . A bellow-type or protective skirt must cover the seat suspension mechanism. There must be an inside armrest on the driver's seat plus an outside armrest installed on the seat or the driver's door. Color coordinated to cab interior. Passenger seat shall be a Bostrom air 915 Series with lumbar support or National 195 Series with lumbar or DuraForm Air Command Series (fabri form cushions with lumbar support), with body cloth insert and three-point retractable seat belt and armrest . A bellow-type or protective skirt must cover the seat suspension mechanism. If a Bostrom 915 or National 195 seat cannot be used, a Bostrom 910 may be substituted. All other requirements must be met.

Steering Wheel: diameter must be approximately 18 inch and meet or exceed Manufacturers standard. Road & Ambient Temperature System: There must be either a RoadWatch road/air temperature system or a Quixote Transportation Technologies road/air temperature system installed with 2" temperature display (*mounting location to be approved at pilot review*)

Steps: drivers and passenger entrance steps must be aluminum, serrated. The outer step edge must be serrated in lieu of plain (*overlay is not acceptable*). Step design material must be the same, both left and right side. *Reference: Bustin No. NST4 full size, Ohio Grating No. JA21195G4 serrated, IKG. Industries Type B54 or Mack Part # 85QM423OM4.* Top of the first step must be approximately 21 inch above the ground.

CT (cab to tandem) dimension, Wheel base dimension and axle spread required for optimum weight distribution to be provided by the Contractor as a part of the full chassis dimensional drawing presented by Contractor during the Pre-Build Meeting..

The after frame shall incorporate a cross member at the rear of the frame to reinforce the body pivot point. (Local installation is acceptable).

Front Bumper: Heavy duty swept back design, mounted to the frame with the inner face of the bumper against the chassis frame.

Frame mounted tow hooks or eyes Two (2) front. These may be installed by the body company after completion of the plow hitch mounting, using grade 8 bolts (minimum) of sufficient length, and grade 8 elastic type self-locking nuts, or by full welding.

License plate bracket: Front and rear. Securely mounted to prevent damage when backing into material piles.

-9-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

5. DRIVE LINE:

Main Driveline: Spicer Life XL or Meritor RPL Series. "***Factory balanced***" greaseable, (one zerk minimum). Heavy-duty driveline must be engineered and be compatible to engine, drive train and transmission torque. Heavy-duty center bearing, if required, with due consideration to drive shaft angles, length, location, proper bolting based upon engine and transmission selection. Inter-axle driveline: Spicer Life XL Series.

6. ELECTRICAL:

All copper system, negative ground.

Alternator: Delco SI36 160 amp minimum (***or Client Agency approved equal***), high performance, solid state, brushless, with battery cable from battery negative terminal to starter motor or frame. All alternator and starter bolts must be grade 8.

Starter: Delco 39 MT gear reduction starter (***or Client Agency approved equal***).

Batteries: three (3), heavy-duty, 12 volt, maintenance-free, BCI Group Size 31, with stud-type posts and anti-corrosion treatment on each terminal. 2500 total cold cranking amperes (CCA) at 0 degrees F. 640 minutes of total reserve capacity at 80 degrees F as per SAE.

Battery mounting must include the following:

- a.) 0.25 inch thick rubber shock pad under the battery.
- b.) Box with cover. Cover shall be constructed of fiberglass, poly, or aluminum (if aluminum there must be an insulated liner).
- c.) Mounting bolts must be grade 8 with self-locking nuts.

Mounting of accessories within the battery box is prohibited.

Battery cables must have "sealed" terminal ends for stud-type battery posts.

Battery Disconnect Switch: heavy-duty, rated for 250 amp continuous service mounted to the battery box (***location to be approved by Client Agency***). *Flaming River #FR-1005, Maval #8070050 or Client Agency approved equal.*

Electrical System: must be circuit-breaker-equipped, in an easily accessible location and weatherproof. Fuses are acceptable in circuit so identified by manufacturer as safety factor. Any fuse or circuit breaker liable to be damaged during truck operation must have an easily removable protective cover. All wire splices in the cab must be insulated with heat shrink materials.

Electrical Chassis Wiring: factory heavy duty harness to power components in rear light module.

Flasher: heavy-duty electrical, *Tridon Model EL 12 (or Client Agency approved equal)*.

Note: If an audible alarm is supplied for the 4-way and turn signal circuit, it must have on/off capability.

Lights: all lights must meet all Federal and State regulations. The head lights must be halogen with (DRL's) daytime running lights. Body lights must have their own dedicated complete circuit. The chassis manufacturer shall route the dedicated body circuit/harness to the rear center portion of cab, with 4' of extra wire coiled on floor between seats. All pass-through points must be properly sealed and protected. This must be the access/connection point for the Whelen Model # CTSYS1SS. Pass-through point and/or routing location to be determined

-10-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

Plow Lights: must be Truck-Lite part #80893 (***or Client Agency approved equal***). Bracket design must be either aluminum or stainless steel with two (2) brackets mounted to the truck hood. Brackets must be designed/constructed to provide sustained support of the light assembly while offering minimum vibration/jiggle. The height and width of the bracket will be governed by the application and must meet all Federal and State lighting regulations. Final design must be approved by the Client Agency. The factory chassis plow light circuit must be used and all areas where the wires might contact a rub point must be protected by grommets, loom, etc. All connections must be made using sealed connections and dielectric grease.

7. ENGINE:

Automatic idle shutdown must be set to five (15) minutes.

ECM must be set to a maximum of sixty five (65) miles per hour.

The engine components facing wheel areas, on both sides, and the areas to the rear of wheels must be shielded. The shield must protect the engine, fan, radiator and areas behind tires from stones and debris.

Replaceable heavy-duty oil filter(s) as recommended by the manufacturer and bearing a legible OEM part number.

Diesel Fuel Filters: in addition to the OEM standard fuel filters, there must be a DAVCO Fuel Pro 483 filtration unit installed and mounted in a location to accommodate filter replacements, yet be protected from road debris. Unit must be equipped with a 12 volt pre heater circuit and fluid heat (***or Client Agency approved equal***).

Cooling System: must be the largest factory engine cooling capacity, compatible with engines and transmissions referenced for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gears. The water pump must be adequately sized to provide proper cooling and be of sufficient size to accommodate the larger pulley to adequately handle the specified options. Cooling system must be fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank (e.g. sight glass, transparent expansion tank). The antifreeze solution must meet all applicable EPA requirements. A non-charged spin-on coolant filter must be installed if required by engine manufacturer.

8. ENGINE ACCESSORIES:

Oil Dipstick: must have tubing and dipstick with sufficient length to provide reasonable access for checking the oil level.

Engine Block Heater: immersion in-block type, for cooling system, with waterproof plug, flush-mounted in an accessible location at the front/side of the vehicle, outside the cab/hood, 110 volt, 3-prong plug. The electrical cable from the heater to plug must be one piece and waterproof.

Air Cleaner: air filter must be manufacturer's heaviest duty air cleaner that meets all the requirements of the extended engine warranty.

Air intake system must be fitted with inside/outside air.

Engine Fan: must be thermostatically controlled viscous type or manufacturer's recommended automatic fan.

A screening system must be installed that will protect the radiator from stones and bugs.

Engine Vibration Dampener: with PTO flange yoke adapter.

-11-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

8. ENGINE ACCESSORIES: *(Continued)*

Governor: set at manufacturer's recommended maximum rpm.

Air Intake Hoses: the air induction system and large radiator cooling system hoses must be clamped with 0.500 inch wide, 150-inch LB stainless steel, constant torque, spring-loaded worm clamps.

Reference: Wittek Manufacturing (Tel: (312) 492-9400) or Breeze Clamp Co, Constant Torque clamps with liner for silicone hoses.

Cooling System Hoses: under 1 inch OD may use factory standard hose clamps, as a minimum acceptable standard. Air intake hoses must be 0.250-inch minimum thickness, molded hoses.

Reference: Gates, Goodyear or equal. Silicone or premium rubber radiator and heater hoses to be provided. Hoses must not be painted.

Lubricating Oil Lines: High quality flexible wire-braid type, "Aeroquip" or approved equal system, minimum standard if hoses are used.

Drive Belts: Cog belts or serpentine (cog belts not required for power steering).

Engine Brake: Minimum of 2 -stage, full engine compression brake. *Reference: Jacobs*

9. EXHAUST:

Vertical tailpipe with elbow and muffler system or horizontal muffler and vertical tail pipe with elbow, exhaust system must neither interfere with the operation of the dump body or equipment, nor may it be close to any fluid tank, and PERMIT WING PLOW operation. The tail pipe must be installed in a manner that will keep the muffler and tail pipe away from dump truck body. The flex in the body, when operating on an uneven terrain, must be considered in the design. The muffler and tail pipe must be shielded or insulated to protect personnel from burns when entering or exiting the cab. The shield must be 180 degrees to 360 degrees and must be of corrosion resistant material such as stainless steel or aluminum.

10. FRAME AND FRAME EXTENSION:

Resisting Bending Moment (RBM): must be a minimum of 2.5 million inch LB per rail, including extension, for the entire length of the frame, including any frame liners. Where engine and radiator adjustments are required, a minimum of one million inch LB per rail RBM. Will be accepted. Minimum frame RBM must be approved by manufacturer's Engineering Department. If a larger RBM is required to perform the specified operational duties, the Contractor shall bid a frame concurrent with the intent and spirit of this Contract. Ref: Snow removal operations, full payload snowplow, right and/or left patrol wing plow, etc. Mainframe and any required liners must be either straight channel or offset channel, full length. Bolt-on or welded extension will not be accepted. Front frame must accommodate the Client Agencies standard hydraulic PTO shaft and pump and the plow frame. It must provide easy service accessibility.

Yield Strength: must be of at least, 120,000-PSI yield strength.

-12-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

FRAME AND FRAME EXTENSION: *(Continued)*

11. INSTRUMENTATION:

All instruments and gauges must be illuminated and dash-mounted, except where specified otherwise. All standard instruments must be supplied, including, but not limited to the following:

- Oil pressure gauge with warning light or audible alarm.
- Air pressure gauge(s) for dual circuit, dual indicator with low-pressure audible alarm and warning light.
- Coolant temperature with warning light or audible alarm.
- Transmission oil temperature gauge with warning light or audible alarm.
- Fuel gauge.
- Hour meter that records only when the engine is running. Must be in – dash, integral with instrument panel and readable from the operator's seat.
- Speedometer with odometer and a dual speedometer lead to interface with the ground speed spreader control system.
- Tachometer.
- Voltmeter.
- Parking brake indicator light.
- Hydraulic fluid level gauge.
- Air Restriction Gauge: Flush, dash-mounted with indicator slide for engine air cleaner, (Filter Minder). If the vehicle is OEM equipped with an electronic dash that incorporates an air restriction gauge or indicator light, it must be approved prior to installation by Client Agency.

12. PAINT:

Cab must be completely painted with lead free Omaha Orange paint acceptable to Client Agency. Frame and all underside components must be painted black with Genesis GC upon completed build. Front bumper and plow frame must be primed with Genesis E2W805 and painted black (with hardener) Genesis GC low VOC. All bare metal surfaces must be coated using Genesis E2W805 primer prior to paint. All surfaces must be properly cleaned, shot blasted, mill scale removed and prepared prior to paint, with all weld splatter and debris removed.

-13-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

13. STEERING:

Glidecoat steering shaft, Bendix wedge lock lube-for-life shaft or ZF type steering shaft. The steering system (e.g. flow, pressure, relief valve etc.) must be selected considering the full front-GAWR axle loading. Hydraulic supply pump must be vane or roller type design with sufficient oil flow to permit one (1) steering wheel revolution per second with front axle loaded to rated capacity, with plow on, in a "park" condition.

Power Steering: Dual integral or single integral type hydraulic power steering with right wheel power-assist cylinder.

Power Steering Pump Motor: must not be the integral filter type unit.

Power Steering Fluid Reservoir: must be remote mounted, minimum 1.5 -quart capacity, incorporating a filter that is easy to remove and replace. The remote filter referenced above must be factory mounted, certified and engineering approved in conjunction with the appropriate pump.

14. SUSPENSION: FRONT:

The front suspension must be rated for at least a 10,000 lb. capacity at ground, each front spring. Front spring to be multi-leaf or parabolic type springs. The front spring pins or bearings/bushing must be furnished with 360-degree grease grooves to insure adequate lubricant penetration. Spring hangers must be heavy castings with sufficient pin and bearing surface to render trouble free service. Maintenance free front spring bushings are acceptable.

15. SUSPENSION: REAR:

The rear suspension must be rated for at least a 23,000 LB capacity at ground, each rear spring. The rear spring assemblies must be multi-leaf with an auxiliary spring assembly. Suspension must be tailored to axle loads and shall be adequate to sustain maximum GVW, without overload or permanent set. The spring hanger brackets must be severe duty castings with sufficient bearing surface/wall thickness to prevent premature bolt wear. The spring center bolts must be a minimum of .4375-inch size, preferably .5000 inch. The rear spring hanger pins if applicable to suspension bid must be the greaseable type. Bolts must be of sufficient length to go through the washer, spring bracket and truck frame with sufficient length to install a self-locking nut.

16. TANK - FUEL:

Safety- type fuel tank as per the requirements of FMVSS. Trucks with no wing and trucks with a right wing must have one (1) 80 GAL minimum total capacity tank, frame mounted, under the left door. Left wing and dual wing trucks must have one (1) 80 GAL minimum total capacity tank, frame mounted, under the left door. *(Dual tanks are unacceptable)*. Tank mounting must provide clear back of cab configuration for left and dual wings. Tank mounting hardware and brackets must be for "severe duty" applications. Heavy-duty aluminum or stainless steel, minimum 1.9-inch wide straps with rubber shims/liners must be used.

-14-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

TANK – FUEL: (Continued)

Aluminum or stainless steel tank required. Fill pipe must be accessible with the dump body in the down position; pipe can be located at either end of tank to avoid interference with steps. System must be a top or side draw for suction and return lines.

DEF (Diesel Exhaust Fluid) tank, if required, must be the largest available to fit configuration ordered. Both tanks (fuel and DEF) must be full upon delivery.

17. WHEELS/TIRES:

Each truck must be equipped with hub piloted steel disc wheels for tubeless tires. The wheel end must be equipped with outboard cast brake drums, and 15 degree tubeless steel wheels, hub piloted, 10 hole - 285.75mm bolt circle with 22mm two-piece flange nuts. The dual rear wheel/tire assembly must have clearance between the tires, which permits the use of dual tire chains.

Wheels, Front: 22.5 x 12.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,500 LBS at a maximum inflation pressure of 120 PSIG. Accuride part number 29806. **(or Client Agency approved equal).**

Wheels, Rear: 22.5 x 8.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 7,500 lb. at a maximum inflation pressure of 120 psi. *Accuride part* number 28828 or 29169. **(or Client Agency approved equal).**

Paint: The wheels shall be topcoat Powder Coated High Gloss White applied over Cathodic Electro-Disposition Gray Primer.

Tires All tires must be radials.

Front Tires: 425/65R22.5 (18-ply min).

Rear Tires: 12R22.5H

All tires and wheels must be factory balanced and front end aligned.

TIRE TREAD REFERENCE:

<u>Manufacturer</u>	<u>Front Tire</u>	<u>Rear Tire</u>
Goodyear	G-296 MSA	G-282 MSD / G622 RSD
Michelin	XZY3	XDS -2
Bridgestone	M844F	M799

-15-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

18. TRANSMISSION:

See POWER TRAIN OVERVIEW for acceptable transmission.

AUTOMATIC:

Dash mounted console with push button shift selector. There must be an external oil cooler (stainless steel if available). The oil cooler for transmission is required due to prolonged transmission torque converter operation in low gears. Cooler size must be adequate to keep the transmission fluid at an acceptable operating temperature under these prolonged conditions. (Water to oil type cooler). An Allison approved cooling system must be installed regardless of whether retarder is incorporated in the system or not.

MANUAL:

Clutch: Externally lubricated with an extended lube hose if applicable, Eaton/Fuller EZ pedal or Meritor with torque limiting clutch brake. Clutch adjustment must be set to Client Agency specifications prior to delivery. There must be a neutral safety device to ensure that the vehicle cannot be started in gear. Geared for PTO application, right and left side or right side and bottom. Magnetic drain plug, Input transmission shaft: Minimum 2.00 inch, 12 to 1, minimum low gear and low reverse ratio.

-16-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

INTENT:

The purpose of these body specifications is to describe the minimum requirements for a severe duty 14 FT long 10 cubic yard (approximate without side-board) radius style combination Rear Discharge Dump body Salt Spreader fabricated from Corten with liquid tanks. Body must be capable of being loaded with a 2.5 Cu/yd. front-end loader. Body should be all season combination dump body designed for conventional use along with sand and chloride spreading. Dump body to remain stationary on the chassis while spreading. Ref: Viking Proline, Tenco U Combo, Monroe RDS, Henderson Muni 22 ***(or Client Agency approved equal)***.

1. DUMP BODY STRUCTURE, STEEL:

Dump Body Structure, General:

The body must be reinforced to withstand SEVERE duty service and be capable of being utilized in the raised position for extended use or excavation with rip rap being dropped in the bed.

Paint: Full body to be shot blasted and primed with Sherwin Williams E2W805 Urethane primer minimum of 2.5 mills dry and painted with Genesis GC single stage paint tinted to match the cab minimum of 2.5 mills dry.

Longsill Members:

Size – Minimum 8" I beam or formed type rail from 1/4 inch material

Material – Minimum grade steel Domex 100W ***(or Client Agency approved equal)***.

Conveyor Floor: Fabricated from ¼ Inch Hardox 450

Bulkhead: Fabricated from 3/16 Corten Steel

Sides: Approximately 54" from floor to top of rail fabricated from 3/16 Corten steel

Tailgate: 60" formed fabricated from 3/16 Corten Steel

Headboard: ¼, full width headboard fabricated from a minimum 10 gauge HT Steel.

Ladder: Fold up type mounted to passenger side rear of body.

Body Guides: There must be steel body guides mounted to the longitudinal beams (both sides). There must be mated steel reinforced guides bolted to the truck frame. Steel guides must be constructed using minimum 1/4" steel.

Body Sides: must be constructed using a minimum of 3/16" thick Corten Steel and be 54" high from top of bed floor to top of bed rails (one piece per side). Top rails must be a minimum of 4x 3x 3/16 boxed tubing, continuous welding. Top rails must be one-piece construction: NO SPLICING. There must be steel gussets for side boards mounted to the top rail front, mid and rear. There must be 2" by 4", full length, and oak side boards securely installed on both sides

Steel Body Props: There must be two (2) props, (one per side) welded or bolted to the long bed beam or approved method to safely prop body.

Conveyor Floor: Must be a minimum of 1/4" thick Hardox 450 one piece and fully welded.

Front Body Bulkhead: One-piece design must be fabricated using 3/16 Corten Steel. There shall be a shovel holder assembly mounted on the left front outside of the bulkhead, (final location to be determined at pilot review. Complete continuous welding.

-17-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

1. DUMP BODY STRUCTURE, STEEL: *(Continued)*

Rear Corner Posts: Must be constructed using ¼" Corten Steel, both must be full depth one-piece construction from the top of the tailgate to the bottom of the rear bolster and shall be free of holes. There must be two-spreader chain holders on each rear corner post (top and bottom banjo style) fully welded.

Cab Shield: One-quarter (1/4) full width cab shield constructed using a minimum 10 gauge HT steel and have a 4" formed front face extending over the cab. ***(Or Client Agency approved equal)***.

Liquid Chemical Pump and Storage

- 200 gallons minimum of liquid storage divided equally per side of the body
- Tanks to be constructed of polyethylene material and designed for severe service.
- Tanks are to be plumbed together with 1 ½ id hose
- A top fill port with splash proof vent and 1 ½ suction port are to be provided in each tank.
- A plumbing/quick fill kit is to be provided consisting of:
 - Shut-off valves at each tank end
 - Banjo coupler and all necessary fittings to plumb the tanks together
 - Provisions to fill one tank only or both tanks at the same time
 - Operator to be able to fill tanks without raising body.
- Pump to be heavy duty closed loop variable rate hydraulic driven centrifugal type pump capable of providing multiple settings ranging from 10 gallon per ton to 25 gallons per ton as various RPM ranges.
- A minimum of two adequately sized spray nozzles to apply the liquid deicers between 10 and 25 gallons per ton. (location of spray nozzles to be approved by Client Agency at pilot review)
- Tank and pump must have a flushing system utilizing a common garden hose.

Tailgate: Double acting tailgate must be manufactured using 3/16" Corten Steel and must be a minimum of 60" tall. Tailgate must be a formed single panel design. There must be a material shedding, inverted angle on top of the tailgate. There must be two (2) "J" hooks welded to the tailgate as chain holders. There must be four (4) tailgate chain brackets fully welded to the tailgate, two (2) on each side. The spreader chains must be 3/8" proof coil zinc plated and covered with black expandable braided sleeve monofilament. Tailgate latch pin must be the full width of the body. Conspicuity required on the tailgate, ***Reference: drawing CTEQN-14.***

Tailgate Latches: Must be steel construction and grease able. Air operated tailgate must be a spring-over-air system and fail in the closed position. Latch mechanism must be operated via an in cab dash mounted pneumatic switch; (under dash mounted switches are unacceptable). A dual linkage design, with a greasable cross over shaft. Tailgate to have an open audible and lamp warning system in clear view of the driver. All air piping and connections must be Client Agency approved, with minimum .25" nylon tubing and brass compression fittings. ***Note: Tailgate hinge and latch design must be approved by Client Agency prior to build.***

-18-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

1. DUMP BODY STRUCTURE, STEEL: (Continued)

Dump Body Materials Requirements – Minimum: (Continued)

Hoist Cylinder Mounting: The telescopic hoist cylinder must be mounted to an upper & lower heavy-duty hoist mount with minimum 2" diameter pins and 2.125" x 1/2" greaseable. Note: the base must be fabricated (*no bolt together or cast mounts will be accepted*). Hoist must have remote bleed point.

Reference: drawing CTEQN-29

Hitch Assembly: A pintle plate must be made using 3/4" inch steel. It must be inserted within the frame rails, with sufficient clearance for body dump pin. It must extend the full width of frame rails and have a ground clearance of 20". The lower portion of the plate must be channeled towards the front of the vehicle, with proper gussets added between frame rails and plate. There must be two (2) safety chain hooks mounted to the plate. **Reference: drawing CTEQN-31**

Pintle Hook: There shall be one.

The following manufacturer's 30-ton Pintle hook mounted to the hitch assembly, Wallace Forge part # 2058115, Buyers PH30 or approved equal. Pintle hook mounted as Ref: **CTEQN-6**

Rear Light Module: There must be a rear light module containing the following components:

- (1) One back-up alarm, ECCO 500 Series part # SA950 mounted to the back side of the tow plate between the frame rails. (No substitute, standardization).
- (1) One license plate lamp Truck Light 36 series part # 36042C (No substitute, standardization).
- (1) One 6-way female electrical trailer plug connection Bobtail part # LDGTR-10ft. (No Substitute standardization) Ref **CTEQN-20**.
- One 3-lamp cluster mounted in the recessed area of the body hinge or on rear panel of body. Location to be approved at pilot
- License plate mounting holes, with stainless steel hardware included.

All lamps must be LED. All electrical connections must be made within a dry seal connection box.

Grote 351044 (or approved equal), and powered through the original chassis harness. All electrical connections shall be coated with di-electric grease. Component placement on the module per **CTEQN-6**.

Body Lighting System

(1) Whelen Model # CTSYS1SS. Controlled by two separate correctly labeled dash mounted switches, one for front one for rear strobes. Warning light system (No Substitute Standardization)

(2) 1 Whelen Pioneer Nano part # NP3BB to be mounted recessed in the headboard to illuminate the dump body controlled by one separate correctly labeled dash mounted switch. Location will be determined by Client Agency

(3) 1 Whelen Pioneer Nano part # NP3BB to be mounted to illuminate spinner area controlled by a separate correctly labeled dash mounted switch. Location will be determined at pilot review.

-19-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

1. DUMP BODY STRUCTURE, STEEL: *(Continued)*

Dump Body Materials Requirements – Minimum: *(Continued)*

Splash Guards Both front and rear splashguard assemblies shall be properly braced. Rear splashguards must be attached to the dump body on each side, behind the rearmost dual wheel, and extend downward to accommodate a 30-inch or 36-inch flap in order to meet Connecticut State Inspection Requirements. Mud flap sizes permitted are 30 inch or 36 inch. **(No substitute, standardization)**. The rubber splashguards must be bolted to these metal splashguards using self-locking nuts and metal strips. Flaps must be heavy duty anti sail/anti spray and be razor split and contain no advertisements or logos. **Ref: CTEQN-18 and CTEQN-27**

Front The forward splashguards must extend downward 3/4 of the length of the rear splash guard/mud flap, with a 1/4" length, unmarked mud flap attached for the remaining distance. Forward splashguard must have a 1-inch lip for entire length-outside extremity (90 degree) with bottom outside corner rounded and have rolled edges. Splashguards must be full length and width.

-20-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

2. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS:

Intent/Installation Practices:

The pressure compensated, load sensing central hydraulic system must operate all functions (plow, dump body, spreader, conveyor and pre wet) from a hydraulic system independently and simultaneously, without interruption of any other hydraulic functions. All controls and components must be of the latest design and installed to provide simple and convenient operation. All system operations must be achieved from a single pump matching all required flow and pressure demands. This system must provide the most fuel efficient, safest, simplest and consistent operation possible. All hydraulic components must be installed and serviced by a single manufacturer. Full responsibility for a serviceable system lies with the Contractor. All wiring and cables must be securely clamped at approximately 18 inch intervals, shielded from exhaust and include a protective sleeve where necessary to prevent damage and/or failure. Upon start up the hydraulic system must be operated at maximum flow for not less than 15 minutes and then have a new hydraulic filter installed on the truck. **Note: It is the sole responsibility of the Contractor to ensure that the chassis and the ground speed control wiring harness is totally compatible.**

System Operation: Certified Power Freedom ACS, (**no substitution, standardization**). The system must be closed loop and communicate over a CAN Open system bus using CAN Open protocol and not a proprietary communications protocol. The system must consist of four primary modules that reside on the BUS and allow flexibility in mounting configurations. The system must be expandable and allow for additional modules to be added to the CAN BUS. All four primary components of the system must be upgradeable by laptop and interface cable. The configuration file of a calibrated system must be saved for transfer to other systems or as backup. The in-cab control system panel must be contained in an enclosure and mounted in a position easy to service.

Software: System must incorporate three levels of security and access that is password protected and defined by the user. The three levels of access called operator, technician and administrator must give the user multiple levels access to system setup, data configuration and parameters based on access given. The administrator must have full access to all menus in the system and have the ability to make system changes. Spreader and liquid functions when controlled utilizing closed loop feedback, must incorporate an auto trim feature that will allow system to automatically set the PWM minimums and maximums when engaged. The system must have an over-speed protection for liquid functions that will alert the operator and shut down the liquid function when the driver has exceeded the user defined speed. The software shall incorporate a test speed mode for use in testing the system without requiring the truck to be moving or drive axles engaged.

Control Console: The control console must contain two (non-wing), three (wing and underbody) or four (dual wing) joysticks to control hydraulic functions. Body hoist stick must contain an interlock button to protect against unintended operation. Wing joysticks must contain a mode button to allow for operation of multiple valve sections using a standard two axis joystick. The plow stick must be a two axis joystick to control up/down and left/right functions. All joystick functions must be protected by software safety system to protect against unintended operation due to joystick failure.

-21-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

2. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: *(Continued)*

The console must contain the operator interface for the spreader control, joysticks, low oil override switch, wing float control switch, body up light and tailgate open light. All controls to be securely attached, within easy reach of the operator and console mounted. (Location and set up to be approved by the Client Agency at pilot review). All controls must be connected to the valve via an electronic cable and utilize CAN network communications. Console base must be constructed of steel and properly braced to eliminate floor flex. Console must be capable of adjustment vertically and horizontally to allow for comfortable positioning for the operator.

Wire Harness: All wiring for the kit must be included and be type wiring. Wire harness system must meet ISO rating IP68 and NEMA 6. The connectors must be zinc die cast E-coated similar to MIL spec connector. Each must have three sealing points, the lock ring, a raised portion of the molded plastic around each pin and a Viton o-ring that seals the entire connector. The cable jacket must be TPE-thermoplastic elastomer and be molded to the connectors. Connectors must be tested water tight and corrosion resistant to 500+ hours of salt spray. Cabling must be rated excellent for low temperature flexibility and resistant to oxidation, heat, oil contamination, abrasion, ect.

Combination Tank/Valve Enclosure: Combination tank/valve enclosure must consist of a frame mounted, enclosed cabinet to hold the hydraulic valve and must be located within the clear space behind the cab of the dump body. The bottom of the enclosure must serve as a cross member and to add strength to the general assembly and shall be formed from 3/8 thick plate. The main body of the valve enclosure shall must be formed from 8 gauge hot rolled steel sheet and have an easily removable fitted cover. The rear support must also have integrated provisions for installing a minimum 40 gallon capacity hydraulic reservoir alongside the valve enclosure and must be designed to readily accept the hydraulic reservoir with mounting brackets and openings for hydraulic hoses. **Ref: drawing CTEQN-24, CTEQN-25**

Hydraulic reservoir must be a minimum of 40 gallon capacity, fabricated from a minimum of 8 gauge stainless steel sheet, equipped with a vented fill cap with integral screen, and include a ½ inch magnetic plug that is easily accessible for draining. Tank must be fitted with a drop in style, 10 micron return filter, an oil level temperature sight gauge and an internal 8 gauge baffle plate to prevent oil flow from venting directly to the suction port. . The tank must have provisions for low oil float to be installed. Low level float shall thread into the side of the assembly and have an M12 connector (**or Client Agency approved equal**). Suction and return line must have a ¼ turn 2 inch full flow ball valve in the suction line as close to the tank as possible. **Ref: drawing CTEQN-22 and CTEQN-23**

Hydraulic control valve: All hydraulic control valves must be Danfoss PVG 32 with manual overrides mid inlet and controlled electronically by featherable control levers . (No substitute, standardization). Cab controls to be proportional feather able joysticks. All operating levers to be located inside the truck cab within easy reach of the driver and can be repositioned so the passenger can operate the controls. It is the responsibility of the Contractor to ensure that the PVG 32 hydraulic control valves correctly meet the function requirements and capacities of the hydraulic function each section operates. Configuration and programing of joysticks to be approved by the Client Agency at pilot review.

-22-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

2 CENTRAL HYDRAULIC SYSTEM/HYDRAULICS:(Continued)

Return manifolds: There must be a return line manifold mounted on the chassis location to be determined at the pre-build meeting. Return manifold must be an 8 port header block with 8 # 16 SAE openings and 2 #24 SAE openings at each end. Header must be an Alamo, Damon or Hycoa or equal. **Ref: drawing CTEQN-26**

Hydraulic Pump: **Saur Danfoss SDPP83010875** : KEYED Crankshaft Driven. (No substitute, standardization). Pump must include low-oil shut down with dash mounted override switch. Shutdown shall be direct mounted to the pump (*remote mounted valve will be unacceptable*). Valve must be a normally closed, energize to open cartridge valve. Valve shall be controlled by the hydraulic control system. The pump must match system flow and pressure (horsepower) requirements to provide maximum fuel economy. An unloader or by-pass system is not an acceptable means of regulating excess oil flow.

Pump Mounting Bracket: Regardless of design the bracket must be a minimum of 5/8" formed steel channel. The pump bracket must be sloped to match the engine crankshaft. Width dimensions must be full frame rail width. Bracket to attach pump to the truck frame rails must be a minimum of 5/8" thickness. Brackets must either be fully welded or use 3/4" grade 8 (eight) bolts of sufficient length and grade 8 (eight) locknuts, minimum of four (4) bolts per mounting side. **Reference: CTEQN-16**

Hydraulic Pump Driveline: Hydraulic pump must be driven by a Spicer 1310 series or NEAPCO factory balanced drive shaft. Driveline shall be capable of 130-foot pounds of torque and have a tubular shaft of 1141 steel. Tubular shaft shall have 16-spline heat treated to a (40) Rockwell hardness. A groove must be machined the length of the shaft to provide proper phasing of universal joints at time of shaft assembly. Driveline installation must be in accordance to manufacturer's recommended procedures. Slip assembly must provide a minimum of 2.25 inch of travel to allow ease of engine drive belt replacement. The truck engine radiator and frame construction must readily accommodate the installation of a front mounted crankshaft driven hydraulic pump. The engine crankshaft pulley or vibration damper must be drilled and tapped to accommodate a power take off drive shaft adapter plate required under hydraulic system section of these specifications. Loctite must be used for the installation of all mounting bolts. **Reference drawing CTEQN-15.**

Hydraulic Hose/Piping: All hoses and hose ends must be matched and assembled on a hose machine to prevent hose failure. All hydraulic plumbing practices must conform to JIC H11 standards. Pressure and return hoses shall be SAE 100R2, and suction lines must be SAE 100R4. Stainless steel piping to be used where ever possible with connections being made at flex points only. All stainless piping to be secured using Hydro Craft mounting brackets (**or approved equal**). Velocity in pressure lines must not exceed twenty (20) feet per second, return lines must not exceed ten (10) feet per second, and must not exceed four (4) feet per second in suction lines. All hoses must include JIC female swivel ends with the exception of the suction line. All hydraulic components must have SAE porting wherever possible. All hydraulic hoses must be securely clamped approximately 18 inch intervals, shielded from exhaust and include a protective sleeve where necessary to prevent damage and/or failure. All hoses must have female JIC swivel connections at each end and be located in such a manner to aid in easy component replacement. **Ref: CTEQN-21.**

-23-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

2. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: *(Continued)*

Low Hydraulic Oil Level Alarm and Shutdown System:

There must be a low hydraulic oil alarm system to alert the operator of a low hydraulic oil situation and allow ample time to take preventative action and avoid damage to the central hydraulic system pump. It must be operated via a 12 volt system. All wiring must be routed to prevent damage from heat, sharp edges and moving parts. An in-tank float switch must be mounted to provide a signal to the control system. The warning lamp and audible alarm must come on whenever the oil level drops below a safe reserve, and the pump mounted low oil shutdown manifold must deactivate to prevent pump damage. A console mounted low-oil override switch must be provided to allow momentary operation in an emergency.

Body-up Alarm System: There must be a body-up alarm system to alert the operator of the body being in the raised position. Warning must include a dash mounted warning light with audible alarm. Alarm and light shall function as soon as the body is raised from the rested position. All wiring must be routed to prevent damage from heat, sharp edges and moving parts. Switch must be mounted within the hoist cradle assembly. Note: Switches must be mechanical, Mercury type switches are unacceptable.

Note: All electronics associated with the hydraulic system must be protected against and must not cause interference to the operation of the vehicle or the land mobile radio communications system when properly installed in the vehicle.

3. LOAD COVER SYSTEM

Reference: Roll Rite (or Client Agency approved equal)

Tarp Spool: must have a one piece aluminum wind deflector, this can be integrated into the body. It must include an extruded aluminum roll pipe with 5 full length threaded grooves for easy tarp installation. Extrusion must be a 6005 T5 aluminum and must have a steel stub shaft to connect it to a grease able bearing on the idler end of the roll pipe. The steel stub shaft must be Nitro Carburized to prevent corrosion. Zinc plating is insufficient.

Gear Motor: shall be a 12 volt Electric Gear Motor designed to operate at fewer than 35 amps. Gear case to be chrome plated, snap or bolt over gear case covers are not acceptable. Gear case output shaft must be tool steel and be nitro carburized to prevent corrosion. All gears and gear motor assembly to be made in the United States. Gear motor to have a minimum of a 3 year non-prorated limited warranty against wear out and manufacturing defects.

Controls: system to be operated by a low voltage in cab switch - relay and all high voltage wires to be kept outside the cab of the truck and installed in a weather tight box. For safety there is to be a maximum of a 35 amp circuit breaker mounted at the power supply in the tarp system circuit.

-24-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

3. LOAD COVER SYSTEM: *(Continued)*

Pivots: Must be mounted on the flat face of the shedder rail on a 1 ¼" aluminum pivot pin. Pivots must contain Teflon coated spiral torsion springs. Double helix spiral torsion and other forms of torsion springs are not acceptable. Spring tension to be adjustable by simply relocating a tension adjustment pin without unbolting the pivot pin itself. Where the arm connects to the pivot pin it must ride on a self-lubricating poly bearing. Metal on metal pivots will not be accepted. Spring pack to be an open design allowing moisture and contaminants to naturally clear out of the springs. Enclosed spring packs are not acceptable. Pivot arms must be United States made 6005 T5 aluminum extrusions and be universal driver to passenger side.

Bow Set: must be a 3 piece 6005 T5 aluminum straight arm extrusion set. Pre-bent side arms will not be accepted. They must connect to the pivots in a telescopic fashion and be universal driver to passenger side allowing for ease of install and adjustment. Must provide the following options for bolt on accessories to accommodate varying truck configurations:

- 30° or 45° offset elbows
- Pivot tube mounted tension bow (in cases where there is more than 8" of drop behind bulkhead.

Tarp: Shall be a 22 oz. vinyl coated material capable of withstanding use with hot asphalt. Material shall have a "Rip Stop" construction consisting of a 1300 x 1300 denier – 24 x 23 thread per inch weave. To have 18" Rear Corner reinforcements.

Shall be equipped with the following: 12" Tail Flap, Full Flap Length Shock Cords (for tie down purposes) Ref: *Roll Rite (or approved equal)*

-25-
Tandem Axle
SPECIFICATIONS
CT-4-15

F. GENERAL SNOW MOUNTING/ACCESSORIES:

1. INTENT STATEMENT

The purpose of these specifications is to describe **minimum** requirements for severe service front plow hitch.

2. PLOW HITCH SPECIFICATIONS

Front Plow Hitch: Side-mounting plates must be constructed using $\frac{3}{4}$ " steel. Lower plow mount bracket center must be 8" to 10" from ground (both sides). Trucks that do not have a wing, braces must be installed using .31" wall 2" x 2" steel tubing. There must be a minimum of five (5) $\frac{7}{8}$ " grade eight (8) bolts per side with washers and lock nuts to mount the plow frame to the truck frame. Lift height must be sufficient to afford unrestricted lift for the Client Agency

Plows: (16" minimum lift). Side strengthening bars (two per side) must be fabricated using $\frac{3}{4}$ " steel 16" long by 2" wide and mounted to the external side of the plow hitch. All grease zerks must be surrounded by a short length of pipe (welded in place) or be in a recessed hole. The zerks for the plow arm bushings must be mounted on the underside of the bracket. Plow push plate **Reference: CTEQN-30**

The hydraulic fittings on the plow hoist cylinder must be positioned as to keep them from being stuck and damaged, while connecting or disconnecting the front plow. All other hydraulic connections mounted to the plow frame must also be positioned to keep them from damage.

-26-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

G. WING PLOW SPECIFICATIONS:

1. INTENT STATEMENT:

The purpose of these specifications is to describe **minimum** requirements for a full floating patrol wing plow with tripping action and telescoping action mechanism and a capability to lower the assembly into the travel position for improved visibility and to allow emergency egress. It is the responsibility of the Contractor to provide full engineered drawings of the wing plow and hitch with submission.

It shall be the responsibility of the Contractor to certify through proper chassis stress analysis the adequacy of the existing truck frames to accommodate the patrol wing plow in addition to a front mounted plow weighing approximately 3500 LB.

The aforementioned plow will be used for severe duty high-speed plowing by the Client Agency. The written text are to be considered minimum and the Contractor shall ensure that the manufacturer reinforces the plow, framing and hydraulic cylinders by means of gussets, or increased material strength or thickness to present a plow designed to meet the severe duty operational setting.

The patrol wing must be designed to be attached or detached independently from the frame assembly. It must be installed in such a manner as to ensure quick access to the engine and all accessories. (Hood on dump truck must tilt without obstruction.)

2. SPECIFICATIONS:

All parts not specifically mentioned, which are necessary in order to provide a complete snowplow must be furnished by the Contractor. The plow fabrication and assembly must be to the latest engineering techniques.

All steel unless otherwise specified, must be hot-rolled steel (HRS) as per ASTM A-36.

When wing assembly is disconnected from the truck, no parts may extend past the bodyline of the truck.

All bolts must be grade 8.

Shock Absorbing Rear Wing Brace: The rear wing brace must be a minimum of a single fixed hinge pin type with an adjustable bottom wing brace, or the formed type wing tube support to attach to a single fixed hinge pin. The rear wing brace must be equipped with a telescoping arm and an adjustable type tension spring. If required by manufacturer. The rear wing "A" frame support strut/girder arrangement of MC 7 inch x 22.7 LB/feet minimum channel, or fabricated from 7 inch x 12.25 LB/feet channel, 6 inch/feet x 8.2 LB/feet channel, .500 inch plate, 6 inch x 4 inch x .3750 inch structural tubing and other component pieces. It must be attached in such a way that the load is properly distributed to both chassis frame rails. "A" frame must be detachable for summer use. One (1) top wing brace cylinder constructed of 3 inch x 15 inch minimum single acting ram, chrome plated piston rods. Adjustable trip-spring mounted from wing lift cylinder housing to the back of wing. The rear brace must be equipped with a 3 inch x 24 inch or 3 inch x 15 inch DA cylinder to actuate the telescoping strut with crossover relief. Bottom wing brace constructed of four in/10cm O.D. square outer tubing with a 3 inch O.D. square inner tube. Wear guides are welded to inner side of four in/10cm tube and to the outside of the 3 inch tube to prevent binding.

-27-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

G. WING PLOW SPECIFICATIONS: *(Continued)*

2. SPECIFICATIONS: *(continued)*

The rear wing lift cylinder will be a double acting 3 inch x 27 inch minimum cylinder, chrome plated piston rods with neoprene packing. Cylinder must float with a 500-PSI relief on the down side. The tripping spring/eyon rubber compression will be mounted to allow the wing to trip in any of the telescoping positions. The spring/eyon rubber compression must be adjustable and have a quick release handle to remove tension for detaching the wing. The spring/eyon rubber compression will also be mounted to have tension on the wing in all telescoping positions. The telescoping strut cylinder must have incorporated in the hydraulic system an adjustable pressure relief valve for safety, when contacting heavy objects.

Front Wing Mast: Wing mast must not block the O.E.M. headlight. Minimum 7 inch x 15.3 LB/feet I Beam must be used for the wing post. 5/8" inch minimum steel wing post slide lift with 10" minimum lift from ground to bottom of plow edge for travel. Front wing post cylinder double acting ram with float and 500 PSI relief on the down side is required. Cylinders must be chrome plated piston rods with adjustable chevron type packing, neoprene wipers and bleed screw. Front wing post and support strut/girder arrangement must be attached in such a way that the load is properly distributed to both chassis frame rails without the use of bracing tubes. Support struts must be 1.250-inch diameter schedule 80 ASTM A106 Grade A or B seamless pipe brace, minimum of two. One strut must be mounted to chassis frame. One strut must be mounted to plow frame. Horizontal support girder 7 inch cross channel or 7-inch ship and car channel at 22.7 LB/feet or tubing 7 inch x 4 inch x .3750 inch. Bolts must be minimum grade 8, .6250 inch N.C. Hinge assembly must be detachable from the slider assembly of the wing mast. Formed wing post mounted on cross tube mounted to truck frame members. Wing slide plate bears on flanged surfaces of formed channel enclosing single acting cylinder, which provides full power up. Wing Plow Alarm (Mechanical): Wing plow must have a mechanical alarm system to alert the operator of the position of the plow. It must be visible from the driver's seat.

Hydraulic Power: The front wing mast must have a double acting cylinder vertical lift type, hydraulically controlled by a double acting cylinder direct lift. The front cylinder must have quick connected coupler/s.

Double Acting Cylinder: A 3 inch x 15 inch minimum double acting cylinder from rear "A" frame to mold board to raise the rear of the wing and fold the wing close to the truck for transport.

Snow Leveling Wing: The wing assembly must in no way interfere with the turning of the right or left front tire. The wing must not be less than 11 feet long overall, 27 inch high at the front and 34 inch (minimum) high at the discharge end. The moldboard must be fabricated from 0.1719 inch thick (eight USS gauge) minimum steel and weigh a minimum of 755 LBS. It must be drilled to accept standard AASHTO spacing plow blade.

-28-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

G. WING PLOW SPECIFICATIONS: *(Continued)*

2. SPECIFICATIONS: *(continued)*

Steel Blade: The cutting edge shall be of 5/8" x 6" C1090 steel, at least 10 feet long with standard AASHTO blade punch. The wing plow must have two cast wing shoes. The patrol wing must be hydraulically operated with the controls conveniently mounted, (to be discussed at pre-build meeting) in the truck cab with the addition of three valves to the existing valve bank. These valves must provide lift to the front of wing, the rear of the wing and the folding of the wing toward the cab and control in and out of the strut. The front of the wing must be controlled by a single acting ram mounted within wing post that permits the front of the wing to be vertically lifted for transportation purposes. The rear of the wing must be hydraulically controlled and attached to tele-strut and a 3"/7.6cm x 24"/61cm single acting cylinder with 3/8" quick disconnects, (male, female, cap and plug) which must be connected to a 7" sloped channel located under the dump body and at the rear of the truck cab. The 7" channel must be adequately supported by brackets and cross braces to the truck frame. Bottom bracing must extend to the rear with bridge type bracing. Wing must not obstruct driver vision while in transport mode.

Tripping: The wing must be of the full tripping type consisting of a special spring-loaded front end. Tripping actuation must be accomplished through a .8750-inch diameter wire torsion spring at the front end and a tension spring attached to the front and rear of the wing or timbrom rubber compression system. Each spring must be adjustable and must automatically return the wing to its normal plowing position after it has passed over any obstruction encountered. Provision for locking out the tripping action must be supplied for operations requiring a rigid wing.

3. THE FOLLOWING MINIMUM ALTERATIONS:

- a. Add two Timbren load booster or active ride control stabilizers.
- b. Brace right/left hand side plate to truck frame.
- c. Add additional steel to side plates to provide increased strength and more substantial mounting for the 7 inch cross channel.

4. PLOW IDENTIFICATION:

Each unit must bear the manufacturer's model number, serial number and weight affixed to the plow, by means of a permanently affixed non-rusting metallic tag located on the right hand backside of the moldboard as viewed from truck operator's seat.

-29-
Tandem Axle
SPECIFICATIONS
CT-4-15

5. **PAINT:**

Color: Client Agency Omaha Orange on plow moldboards. All metal surfaces must be cleaned and shot blasted prior to being primed with Genesis E2W805 urethane primer and final painting with Genesis GC. Frame and mounting hardware must be primed with Genesis E2W805 and painted black single stage Sherwin Williams Genesis GC (with hardener) low VOC. All bare metal surfaces must be coated using etching primer prior to paint. All surfaces must be properly cleaned and prepared prior to paint, with all weld splatter and debris removed.

6. **CONSPICUITY TAPE:**

The rear of the wing plow must have a strip of retro-reflective sheeting across the top and down the outside in order to outline the plow when viewed from the rear. Material must be: 2 in/5.08 cm wide Reflexite Conspicuity II System of 3M Scotchlite Conspicuity Series 980, red/silver continuous backing. **Ref: CTEQN-4**

7. **WING PLOW LIGHT:**

The rear of the wing plow must have a Whelen TIR – 3 Super LED lighting system #(WPLOWZ1A) in amber permanently mounted on the wing tip for protection and be visible when the wing plow is in use. Light must be controlled by a separate dash mounted switch in the cab. There must be a Deutsch connector installed at the wing hinge point to allow for easy removal. All wiring connections must be sealed and water tight.

There must be one Whelen Pioneer Nano part # NP3BB with flood lens to illuminate the wing plow(s). Light must be mounted on the curb side of truck, location to be determined at pilot review. Light shall be controlled by a dedicated, illuminated, dash mounted switch.

-30-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

H. UNDERBODY SCRAPER PLOW SPECIFICATIONS

1. INTENT STATEMENT

The purpose of these specifications is to describe the minimum requirements for a Underbody Scraper plow designed for the purpose of snow and ice control, road and road maintenance. The Underbody Scraper design must incorporate a shock absorbing trip mechanism. It is the responsibility of the Contractor to provide full engineered drawings of the underbody plow and hitch at the Pilot Review.

2. SPECIFICATIONS

Moldboard: To be constructed of a minimum of 5/8 thick C1045 steel, 10' long and 20" high formed to a radius of approximately 17" and have a full length crimp along the lower edge to allow flush mounting of a replaceable carbide edge. The moldboard must attach to the support connection at the turntable by a 1 ½ minimum diameter steel pin. The pin connections must incorporate three hinge positions, one on each side and one centered on the moldboard.

Support Connection: Support weldment, including a main horizontal member to be constructed of not less the 3/8th thick A36 H.R.S formed into a channel and reinforced with a minimum of four 3/8 x 1 ½ flat bars spanning flange to flange. There must be six 1" minimum A36 H.R.S hanger lugs incorporated into the channel design and used to fasten the moldboard to the support. Main pivot pin must be a minimum of 5" cold rolled steel and have grease fittings to lubricate the main pivot.

Moldboard Motion: To be accomplished by two 3" diameter 10" stroke double acting cylinders with 1 ½ rods. Cylinder rods are to be hardened and chrome plated. Each cylinder must be fitted with a spring cushioned trip canister to provide a buffer when cutting edge comes in contact with obstructions.

Turntable and Mounting Assembly: Circle must be constructed from a minimum 1" A36H.R.S fitted with two 3/4 " formed bars for securing the table to ¾ " minimum vertical gusset supports with grade 8 bolts. The vertical supports shall fasten to the respective right and left hand truck frame rails.

Power Reversing: The moldboard must be power reversing using 2 hydraulic cylinders which will position the underbody blade up to a maximum of 45 degrees to the right or left of bulldozing position (truck configuration permitting) Cylinders to be plumbed with a hydraulic cushion valve to protect equipment in the event of contacting an obstruction.

Paint: All scraper components must be shot blasted and primed with Sherwin Williams E2W805 urethane primer and Genesis GC paint color black.

-31-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

I. INSTALLATION PRACTICES:

Any place steel and aluminum contact each other Mylar or an approved equal must be used as a buffer. Laminated rubber is unacceptable.

All welding must be in accordance with standard welding practices as set forth by the American Welding Society.

All corners must be angled or rounded for safety.

All vertical and horizontal seams of the body sides must be continuous welds with full penetration.

All mounting procedures must be in accordance with **NTEA** standards.

All hydraulic circuits must be tested for proper operation and flow. Control systems must be tested and calibrated and programmed for the Client Agency's material spread rates prior to delivery. Material spread rates will be disclosed at the pre-build meeting.

All electrical connections must be treated with di-electric grease.

The use of any of the following items or practices WILL NOT BE ACCEPTED.

The use of accumulators or auxiliary pumps.

Non-steel fittings on hydraulic pressure lines.

Excessive use of elbows on hydraulic lines.

Use of thread tape on hydraulic fittings.

Use of galvanized fittings or components on hydraulic system.

Improper hydraulic line size.

Use of high-pressure hose for hydraulic suction line.

Scotchlok-type wire splices.

Non-insulated wire splices.

Improper hose or wire routing near exhaust, over-sharp edges or through holes without grommets, or sharp edges.

Improperly prepared, primed and painted surfaces.

Non-fused electric circuits.

Hydraulic circuits without pressure relief protection.

Laminated Rubber

Non threaded zerkl fittings.

-32-
Tandem Axle
SPECIFICATIONS
CT-4-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

J. SAFETY:

Anti-slip paint is required on all handholds.

All handrails, ladders, and step configurations must be built for three points of contact.

There shall be two wheel chocks per truck Ref: buyers WC1086 or equal. Mounting location will be determined at pilot review meeting. **Ref: CTEQN-3**

All corners must be angled or rounded for safety.

There must be a triangle warning kit mounted in the cab. **Reference: CTEQN-28**

There must be a fire extinguisher mounted in the cab.

Cone holder capable of holding 3 Client Agency safety cones. Mounting location will be approved by Client Agency

Bar and shovel holder mounting location to be approved at pilot review.

Tool Box 18 x18x18 Bauer # TB-181818BSD (**or Client Agency approved equal**).mounting location to be determined and approved by Client Agency at pilot review.

-33-
Tandem Axle
SPECIFICATIONS
CT-4-15

II. DRAWINGS:

CTEQN-3	dated 3-24-14	6" WHEEL CHOCK AND HOLDER
CTEQN-4	dated 3-6-14	PATROL WING GENERIC MOUNTING ARRANGEMENTS
CTEQN-6	dated 7-23-14	REAR TOW PLATE
CTEQN-14	dated 3-6-14	DUMP BODY REFLECTIVE SHEETING
CTEQN-15	dated 3-6-14	DUMP TRUCK PTO ASSEMBLY
CTEQN-16	dated 3-6-14	PUMP MOUNTING BRACKET
CTEQN-18	dated 3-5-14	Notes: SPLASH GUARDS RUBBER
CTEQN-20	dated 3-7-14	WIRING DIAGRAM 6-WAY CONNECTOR
CTEQN-21	dated 3-6-14	HOSES AND CLAMPS
CTEQN-22	dated 3-17-14	40 GALLON OIL RESERVOIR ISOMETRIC
CTEQN-23	dated 3-14-14	40 GALLON OIL RESERVOIR SIDE & END VIEW
CTEQN-24	dated 3-19-14	REAR SUPPORT VALVE ENCLOSURE ISOMETRIC VIEW
CTEQN-25	dated 3-19-14	REAR SUPPORT VALVE ENCLOSURE SIDE AND END VIEW
CTEQN-26	dated 2-19-14	RETURN MANIFOLD
CTEQN-27	dated 2-19-14	DETAIL SPLASH GUARDS RUBBER
CTEQN-28	dated 2-20-14	TRIANGEL STORAGE BOX AND BRAKET
CTEQN-29	dated 2-19-14	DUMP TRUCK HOIST CYLINDER BLEEDER
CTEQN-30	dated 3-28-14	PLOW PUSH PLATE

The above referenced drawings are a part of these specifications.
These drawings reflect the intent of the Client Agency

III MANUALS:

The Contractor shall furnish all applicable manuals as described below for each vehicle and provide an additional complete set for Client Agency's Equipment Operations Section.

- 2 Operator's
- 1 Parts
- 1 Service
- 1 Engine
- 1 Transmission (Automatic/manual)
- 1 Body and Sub-frame (Parts and Service)
- 1 Complete set of manuals for any additional items/equipment added to a piece of equipment.
- 1 Electrical System Charts
- 1 Control System/Hydraulic and Electrical System Schematics

-34-
Tandem Axle
SPECIFICATIONS
CT-4-15

III. MANUALS: (Continued)

The manuals listed above must be official O.E.M. publications supplemented with technical manuals for all components as published by sub-vendors/manufacturers.

Parts Manual presented must be relative to "all" items utilized to build units, with appropriate part numbers.

Delivery of these manuals must be completed with delivery of each unit.

Manuals may be supplied on CD Disc in lieu of paper manuals.

Manuals may be supplied on a dedicated website in lieu of paper manuals.

One Panasonic Toughbook laptop/tablet computer must be provided with every 3 trucks ordered. Laptop should be provided with the manufacturer's diagnostic software loaded and licensed to the Client Agency. Electronic software must include annual subscription renewals and updates for 5 years. Media must be capable of being moved to a new computer or reloaded in the event of a hard drive crash without additional charge.

IV. TRAINING:

The Contractor shall supply competent representatives to provide a minimum of four (4) hours of operator training for each truck purchased, for various segments of the vehicle and allied equipment. The training must include all aspects of operating and servicing the entire equipment. Videotape training series may be used to supplement training with Client Agency approval.

The Contractor must supply factory representatives to provide the following:

1. Forty(40) hours of engine training to include troubleshooting and repair
2. Twenty (20) hours of hydraulic training to include troubleshooting and repair.
3. Ten (10) hours of chassis electrical troubleshooting and repair.
4. Ten (10) hours of emissions troubleshooting and repair.

Online Training Course for above mechanical training may be used with Client Agency approval.

V. WARRANTY:

This warranty is in effect as follows, starting from date of acceptance by the Client Agency. Warranty may not be voided due to Client Agencies operation as explained in the Intent Statement. It is understood that the components specified are minimum and if the manufacturer's Engineering Department recommends or deems necessary a more robust component, other than specified, may be installed to meet the requirements of the intent statement while not voiding any warranty. .

BUMPER-TO-BUMPER WARRANTY: Minimum of one (1) year / 100,000 miles starting from the Client Agency acceptance date. Manufacturer's service and warranty policy for automatic slack adjusters must be for at least two (2) years unlimited miles 100% parts only.

-35-
Tandem Axle
SPECIFICATIONS
CT-4-15

V. WARRANTY: (Continued).

RADIATOR WARRANTY: Manufacturer's service and warranty policy for radiator must be for at least two (2) years 50,000 miles, 100% parts and labor plus at least an additional three (3) years 75,000 miles, 100% parts only.

ENGINE WARRANTY: The Contractor shall ensure that it or the supplying manufacturer provide the Client Agency with a 100% parts and labor engine warranty for at least 24 months / 250,000 miles. In addition to the engine warranty, the engine block must be warranted against external perforation from corrosion for at least 10 years, 100% parts and labor.

NOTE: The oil pan must be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions for at least 5 years, 100% parts and labor.

EMISSION WARRANTY: The Contractor shall ensure that it or the supplying manufacturer the Client Agency with a 100% parts and labor warranty for all emission related components to include the diesel particulate filter (DPF) for 60 months / 150,000 miles. Shall be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions

TRANSMISSION WARRANTY: Manufacturer's service and warranty policy for automatic and manual transmissions shall be at least five (5) years unlimited miles 100% parts and labor.

DIFFERENTIAL/AXLE WARRANTY: Manufacturer's service and warranty policy for differential and axles must be for at least three (3) years 300,000 miles 100% parts and labor.

DUMP BODY WARRANTY: Constructability and durability of body must be guaranteed by the Contractor for at least five (5) years, parts and labor. A decal must be affixed to the driver's door, on the inside, stating the company's name, address and phone number.

Body hoist assembly must be guaranteed by the Contractor for at least 3 years, 100% parts and labor.

Tailgate spring-over-air cylinder system, must be guaranteed by the Contractor for at least 3 years 100% parts and labor.

CENTRAL HYDRAULIC SYSTEM: Complete Central Hydraulic system and components must be guaranteed by the Contractor for at least 3-year 100% parts and labor including but not limited to the following:

Danfoss Valve and pump

Controller

Joysticks

All wiring harnesses must be guaranteed by the Contractor for at least 5 years 100% parts and labor.

CAB / COWL STRUCTURE WARRANTY: Manufacturer's service and warranty policy for the entire cab structure (*regardless of atmospheric conditions*) must be for a minimum of 60 months / 125,000 miles, 100% parts and labor.

FRAME – SIDE RAILS AND CROSSMEMBERS: Manufacturer's service and warranty policy for the chassis frame side rails and cross members (*regardless of atmospheric conditions*) must be for a minimum of 60 months / 125,000 miles, 100% parts and labor.

BRAKE WARRANTY: Manufacturer's service and warranty policy for automatic slack adjusters must be for a minimum of 24 months / unlimited miles, 100% parts

-36-
Tandem Axle
SPECIFICATIONS
CT-4-15

V. WARRANTY: (Continued)

HYDRAULIC PUMP: Manufacturer's service and warranty policy for hydraulic pump must be for a minimum of three (3) year 100% parts and labor.

BODY ELECTRICAL/LIGHTING: Wiring harness must be guaranteed by the Contractor for at least f5 years 100% parts. First year must include 100% labor.
All LED lights must be guaranteed by the Contractor for at least for a minimum of 5 years 100% parts.

WING PLOW/UNDERBODY PLOW WARRANTY: The manufacturer's standard service and warranty policy must be for a minimum of two (2) years. This warranty will start on the final date of acceptance of the entire order and continue for the two (2) years thereafter, including two (2) full winter plowing seasons.

DETAILED SPECIFICATIONS CHECK SHEET
62,000 lb. Tandem Axle Cab and Chassis with Body and Plow

GENERAL INFORMATION:

CHASSIS INFORMATION:

Chassis shall be the current model and meets the attached specification. Primary application for cab and chassis is for snow and ice removal operations

WHEELBASE:

Wheelbase Dimension : 208"

CAB TO TANDEM:

Dimension: 124"

1	Weight Distribution Provided	Meets specification: Yes
2	Vehicle Certification for 62,000	Meets specification: Yes, Exceeded, 66,000 GVW
3	Engine	Meets specification: Yes, Exceeded, Model: Detroit DD-13, HP: 435, TQ: 1,550 LB/FT 12.8L Engine, CARB Emission Certification for Clean Idle with badging on lower forward corner of drivers door.
4	Transmission as per specification CT-4-15	Automatic model: Allison 4500 RDS, Manual model: Eaton Fuller FRO-16210C, Automated Manual model: Eaton Fuller FO-16E310C-VAS Water to oil transmission cooler mounted in radiator end tank. One Valve parking brake system with dash valve control auto- neutral and warning indicator.
5	Rear Axle	Meets specification: Yes, Per Addendum 2, Model: Meritor RT-46-164P 46,000# R-Series. All yellow magnetic drain plugs.
6	Rear Suspension	Meets specification: Yes, Exceeded, Model: Tuftrac 46,000# Rear suspension
7	Rear Axle shaft diameter	Meets specification: Yes, Exceeded, Rear axle shaft is 2.35" in diameter
8	Front Axle	Meets specification: Yes, Per Addendum 2, Model: Detroit DA-F-20.0-5 20,000# FL1, SKF Scotseal TF vented front hub caps w/window, center and side plugs-oil.
9	Rear Brakes	Meets specification: Yes, Per Addendum 1, Meritor 16.5x7 Q+ cast spider cam rear brakes, double anchor, fabricated shoes.
10	Rear Brake Chambers	Meets specification: Yes, Per Addendum 2, Model: Haldex gold seal long stroke 2-drive axles spring parking chambers
11	Antilock brakes	Meets specification: Yes, Exceeded, Model: Wabco 4S/4M ABS. With hill start aid and automatic traction control.

DETAILED SPECIFICATIONS CHECK SHEET
62,000 lb. Tandem Axle Cab and Chassis with Body and Plow

12	Cab Specification	Meets specification: Yes, Exceeded, Per Addendum 2, Model: Freightliner 114SD, (1) 12V power supply in dash, 16.5" painted steel straight bumper, Shield for air horn.
13	Seats	Meets specification: Yes, Exceeded, Per Addendum 2, Model: CVG Model C27-000086-010. high back air suspension driver and passenger seats with mechanical lumbar and integrated cushion extension. No bellow type seat skirt., Duel driver seat armrests
14	Road Watch road/air temperature system	Meets specification: Yes, Model: Road watch Bullet RWI
15	Drive Line Specification	Meets specification: Yes, Model: Meritor MXL 176T Extended lube main drive line with half round yokes and Meritor MXL 17T extended lube inter-axle drive line with half round yokes.
16	Alternator as per specification CT-4-15	Meets specification: Yes
17	Starter as per specification CT-4-15	Meets specification: Yes
18	Batteries as per specification CT-4-15	Meets specification: Yes, Exceeded, Total CCA of batteries is 3,375
19	Electrical system as per specification CT-4-15	Meets specification: Yes, Exceeded, Per Addendum 2, Standard turn signal utilizing multiplex modules. Windshield wiper activation automatically turns on all exterior chassis lights.
20	Automatic idle shut down as per specification CT-4-15	Meets specification: Yes
21	ECM set to maximum of 65 mph as per specification CT-4-15	Meets specification: Yes
22	Oil filter part number as per specification CT 4-15	Meets specification: Yes, Part number DDE/A422800509
23	Davco 482 as per specification CT-4-15	Meets specification: Yes, Part number # DAVCO 482 Filter element part # DE/A0000903651
24	Cooling system as per specification CT-4-15	Meets specification: Yes
25	Engine Accessories as per specification CT-4-15	Meets specification: Yes
26	Exhaust as per specification CT-4-15	Meets specification: Yes

DETAILED SPECIFICATIONS CHECK SHEET
62,000 lb. Tandem Axle Cab and Chassis with Body and Plow

27	Frame as per specification CT-4-5	Meets specification: Yes RBM of frame is 2,592,000 LBF-IN per rail
28	Instrumentation as per specification CT-4-15	Meets specification: Yes
29	Paint as per specification CT-4-15	Meets specification: Yes Paint code: L6389EB Omaha Orange Elite BC Paint brand: Dupont
30	Steering system as per specification CT-4-15	Meets specification: Yes, Exceeded, Oil / Air power steering cooler, 4 quart CLEAR power steering reservoir.
31	Front Suspension as per specification CT-4-15	Meets specification: Yes, Exceeded, Front shock absorbers also provided
32	Rear Suspension as per specification CT-4-15	Meets specification: Yes, Exceeded, Model: Tuftrac 46,000# rear suspension. Fore/aft and transverse control rods on rear suspension, Rear shock absorbers on one rear axle, Heavy duty suspension cross-member
33	Fuel tank as per specification CT-4-15	Meets specification: Yes, Exceeded, Per Addendum 2, 70 gallon, Plain aluminum fuel tank w/treated painted steel straps and rubber isolators. High temperature reinforced nylon fuel lines. Fuel filter restriction indicator. Additional engine supplied fuel filter / fuel water separator with water-in-fuel indicator light. This is in addition to the requested and supplied DAVCO filter.
34	Wheels/Tires as per specification CT-4-15	Meets specification: Yes, Exceeded, Per Addendum 2, Tire Manufacturer: Goodyear Wheel manufacturer: Accuride / Maxion wheels 10035 22.5 x 12.25 10-hub pilot 4.75 inset 5-hand steel disc front wheels. Rear wheels each have a rating of 8,000 #.
35	Dump Body as per specification CT-4-15	Meets specification: Yes Model: Viking PL 1314 LW
36	Tailgate as per Specification CT-4-15	Meets specification: Yes
37	Tailgate Latches as per specification CT-4-15	Meets specification: Yes
38	Hoist Cylinder mounting as per specification CT-4-15	Meets specification: Yes
39	Hitch Assembly as per specification CT-4-15	Meets specification: Yes
40	Pintle Hook as per specification CT-4-15	Meets specification: Yes

DETAILED SPECIFICATIONS CHECK SHEET
62,000 lb. Tandem Axle Cab and Chassis with Body and Plow

41	Body lighting to meet specification CT-4-15 and all Federal Motor Carrier Regulations	Meets specification: Yes
42	Splash Guards as per specification CT-4-15	Meets specification: Yes
43	Central Hydraulic system as per Specification CT-4-15	Meets specification: Yes
44	Tarpping system as per specification CT-4-15	Meets specification: Yes Make: Roll Rite Model: Tarp Master 400
45	Liquid per wet pump as per specification CT-4-15	Meets specification: Yes Make: Cirus Model: PWCL HYD
46	Plow Hitch as per specification CT-4-15	Meets specification: Yes Make: Viking Model: Custom Tilt over
47	Wing Plow as per specification CT-4-15	Meets specification: Yes Make: Viking Model: 132AHESTP
48	Manuals as per specification CT-4-15	Meets specification: Yes
49	Training as per specification CT-4-15	Meets specification: Yes
50	Warranty as per specification CT-4-15	Meets specification: Yes, Exceeded, Base vehicle bumper to bumper chassis warranty for 2 years / 200,000 miles with no hour limitation. Brake warranty that covers automatic slack adjusters for 2 years / unlimited miles, 100 % parts and labor. Frame, Side Rails, Cross-Member Cab/Cowl structure warranty for 5 years / unlimited miles, 100 % parts and labor. Cooling system (Including radiator) warranty for 5 years / 500,000 miles, 100 % parts and labor with no hour limitation. Detroit EW4 engine and emission warranty full coverage for 5 years / 200,000 miles with \$0 deductible and no hour limitation.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS:

A. Intent Statement

B. Weight Distribution

C. Power train Overview

D. Vehicle Components

1. Axle Front
2. Axle Rear
- 2a. Pusher Axle
3. Brakes
4. Cab
5. Drive Line
6. Electrical
7. Engine
8. Engine Accessories
9. Exhaust
10. Frame and Frame Extension
11. Instrumentation
12. Paint
13. Steering
14. Suspension: Front
15. Suspension: Rear
16. Tank- Fuel
17. Wheels/Tires
18. Transmission

E. Dump Body and Equipment Mandatory Minimum Specifications

1. Steel Dump Body Structure Corten
2. Central Hydraulic System/Hydraulics
3. Load Cover System Option
4. Granular/Liquid Spreader Option, V-Box Spreader

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: *(Continued)*

F. General Plow Mounting/Accessories

1. Intent Statement
2. Specifications

G. Wing Plow Specifications

1. Intent Statement
2. Specifications
3. Minimum Alterations
4. Plow Identification
5. Paint
6. Conspicuity Tape
7. Wing Plow Light

H. Installation Practices

I. Safety

II. DRAWINGS:

III. MANUALS:

IV. TRAINING:

V. WARRANTY:

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: *(Continued)*

A. INTENT STATEMENT:

The purpose of these specifications is to describe a conventional cab, tri-axle dump truck, equipped with dual rear wheels and pusher axle, dump body, hoist, hydraulic power system and snow plow hitch. It must be capable of one-man operation while plowing snow and simultaneously spreading granular and liquid materials during winter operations, and of hauling, stockpiling and unloading maintenance materials into a chip spreader or paver during summer operations. Further, it must be capable of being loaded with a front-end loader.

NOTE: The Client Agency requires that the latest and current version of this truck as of the Effective Date is included as a part of this specification. All units must be delivered by the Contractor within 180 days after their receipt of a purchase order.

B. WEIGHT DISTRIBUTION:

Weight distribution charts must be submitted with the pilot model for all models being delivered. Weight distribution charts must be submitted for the two (2) modes listed below.

1. Summer mode including the portion of the plow frame assembly that remains on the vehicle all year.
2. Winter mode with front plow, loaded and liquid tanks full.

Engineering certified weigh slips must be provided with the pilot model and signed by the manufacturer's Engineering Department. It is understood that the components specified are the minimum that the manufacturer's Engineering Department recommends or deems necessary for a particular weight distribution. Larger components or a larger Gross Axle Weight Rating (GAWR) may be required by the Client Agency for certain applications. The burden of responsibility is hereby placed upon the Manufacturer's Engineering Department to supply a unit that is totally engineered to meet the Client Agency's needs.

1. Frame
2. Axle
3. Tires
4. Steering unit and components
5. Rims
6. Suspension
7. Brakes
8. Any other items as required

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

B. WEIGHT DISTRIBUTION: (Continued)

1. The dynamic and static loads created by the unit, plus operational stresses, must be reviewed all parties to ensure the Client Agency of a properly designed/engineered unit.

In addition to the Engineering Certified weight distribution provided at the pilot model inspection, the following information is required to be included with the pilot model.

The vehicle must be certified for 72,000 LB Gross Vehicle Weight Rating (GVWR) minimum rating. The GVWR must be identified in the cab or on the door as the final complete certification label. In addition to the GVWR certification, the following certifications must also be provided by the Contractor:

Actual Truck Weight: (LB)

"Chassis only" (must be signed by a certified weigh master.)

_____ Front Axle

_____ Rear Axle

_____ Total

"Chassis with body" (must be signed by a certified weigh master).

_____ Front Axle

_____ Rear Axle

_____ Total

Truck GAWR's as Built (LB)

	<u>Front GAWR</u>	<u>Rear GAWR</u>
Axle	_____	_____
Tires	_____	_____
Springs	_____	_____
Rims	_____	_____

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

C. POWER TRAIN OVERVIEW:

ENGINE:

DIESEL, MIN. 425 HP AT GOVERNED RPM, MIN. PEAK TORQUE OF 1550 LB/FT. 12.4 LITER (actual engine liters).

TRANSMISSION

AUTOMATIC ALLISON 4500 RDS 6 SPEED.

MANUAL – EATON RTO 16210C

MANUAL - Mack – TM – 310

AUTOMATED MANUAL –MACK M-DRIVE

AUTOMATED MANUAL – EATON FO-16E310C-VAS ULTRA-SHIFT

REAR AXLE

DANA DS463P

MERITOR RT46 -164 –P

MACK S462

REAR SUSPENSION

Mack Camel Back

Freightliner Tuff Trac

Hendrickson Haulmax

NOTE: All rear axles must provide axle shafts with a minimum diameter of 2.19 inch at the spline. All rear axle(s) must have an extended breather tube to prevent debris buildup from entering axle housing.

NOTE: Lubricants for front axle hubs, automatic transmission and all rear differentials must meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and must have all plugs identified as synthetic oil, or painted red.

D. VEHICLE COMPONENTS:

1. AXLE FRONT:

The set forward front axle must be rated at 20,000 LB minimum capacity. The front axle, drag links and tie rods must have grease zerks installed. Kingpin or bushings must be grooved to permit grease flow. Sufficient tire clearance at maximum turning angles. Complete "Stemco" oil seal assembly, including hub, plug type window, and "Guardian" seal, (**or Client Agency approved equal**). Each unit must receive a front-end alignment prior to delivery. A setback axle is unacceptable.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS:

2. AXLE REAR: (See power train overview for acceptable models.)

All rear axles must provide axle shafts with a minimum diameter of 2.19 inch at the spline. All rear axle(s) must have an extended breather tube to prevent debris buildup from entering axle housing. Lubricants for all rear axles must meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and must have all fill plugs identified as synthetic oil, or painted red. .

NOTE: Lubricants for all rear axles must meet or exceed all appropriate MIL and SAE specifications for synthetic lubricants and must have all fill plugs identified as synthetic oil, or painted red. Stemco guardian rear wheel seals, **(or approved equal)**. All axles must have magnetic drain plugs. There must be an inter-axle differential lock and driver controlled traction control for both rear axles controlled by manual switches in the cab.

NOTE: Aluminum or lightweight housing is unacceptable.

NOTE: Rear axle ratio selection will be made after the award and may be a mix of ratios as required. The rear axle ratios must be "identical" throughout the entire build.

2a. PUSHER AXLE:

Axle must be mounted forward of rear tandems and incorporate air lift and 16.5 x 7 brakes. Height of lift axle will be determined by Contractor and approved by Client Agency. Contractor shall supply/mount either Goodyear; Bridgestone or Michelin tires with highway tread design on all tag axle wheels (quantity- 2). Contractor shall be responsible for legal air reserves. Axle must include all in-cab controls and air pressure gauge(s): Neway tag series with AL series air lift, Turner/Hendrickson, Watsin & Chalin WCAL-2200 Series **(or Client Agency approved equal)**.

3. BRAKES:

Full air antilock brake system in compliance with the most current Federal Motor Vehicle Safety Standards (FMVSS) requirements, The Anti-Lock Braking System (ABS) must incorporate a diagnostic fault switch that is capable of illuminating a fault light for diagnostic purposes. The switch must be easily accessible and can be either dash or under-dash mounted. A dash-mounted display that will show all Society of Automotive Engineers (SAE) message descriptions for the ABS is an acceptable means of diagnostics in lieu of the fault switch.

Rear Brakes: 16.5 inch x 8.62 inch "S" cam with quick-change type single or double anchor pin.
Steer-Axle Brakes: 16.5 inch x 6 inch or a power front disc brake system providing equal performance. Quick-change type single or double anchor pin if drum type brakes are furnished.
Drum Brakes: must have automatic slack adjusters and must be clearance-sensing single pin type only, with adjustment on application of the brake. All brake clevis pins to be stainless steel.
Backing plates must be installed on all drum brakes.

Air Compressor: Per truck manufacturer's recommendation. Compressor must be fitted with a safety valve to prevent mechanical failure.

Buzzer-type, low air pressure indicator.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

Parking Brake: rear wheel piston-spring type, MGM E 30/30 long stroke, Anchorlock 30/30 long stroke gold seal chambers (**or Client Agency approved equal**). Parking brake must provide modulated emergency braking via the foot valve in the event of a rear service system failure. Rear service brake chambers and spring-brake chambers must be mounted to provide adequate clearance for backing into bituminous paving machines.

Air Tanks: automatic drain valve, with heater on wet (first) tank. Each of the remaining air tanks must have a manual drain valve.

Air Dryer: with heater, inboard mounted, away from road splashing and a minimum of 20 inches above road surface. Dryer must be compatible with the body company clearance requirements for sub-frame, valve body, etc. Bendix AD-IP (**No exceptions**) installation made in concurrence with the air compressor manufacturer's recommendations.

All electrical connectors for drain valve and air dryer must be covered with heat shrink material or have sealed connections.

System must be equipped with anti-compounding valve to prevent mechanical failure of the foundation brakes, slack adjusters, etc.

4. CAB:

Aluminum or galvanized steel cab. *Reference: Mack Granite, Freightliner SD 114, International Paystar, Kenworth 470 or Client Agency approved equal.*

Grab handles must be supplied on all cab entry locations. Three points of contact must be achievable at all cab entry locations.

Hood: fiberglass, tilting. Fenders must be part of tilting hood. Grille must be fixed.

Air suspension system for the cab must be factory installed.

Front fenders must have extensions to cover the width of the front tires.

Deluxe fresh air hot water heater and defroster, manufacturer's highest output.

Heat and Air Conditioning: Highest output available as OEM option.

AM/FM radio with weather band.

Air horn(s): Minimum 1 horn with snow-shield (not required if under hood mount).

All controls and knobs must be properly identified.

Brake pedal, clutch pedal and throttle must be suspended if available from the factory.

CB Power connections One (1) pair, on the dash

Minimum of 6 up fitter switches to be used for various applications

Cab floor covering must be heavy-duty rubber with closed cell rubber or heavy felt backing.

Cruise control.

Cup holder in the cab within easy reach of the operator.

Dome light.

Dual sun visors.

Exterior windshield sun shade (visor).

Windshield: One (1) or two (2) piece construction is acceptable, must be tinted safety glass.

Windshield Wipers: dual, arctic type with the heaviest arms, linkages and motor available.

Wipers must be minimum 2-speed electric with intermittent feature.

Windshield washer system must be electric. Minimum capacity of four (4) quarts of washer fluid and shall be filled with an anti-freeze type solvent.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

D. VEHICLE COMPONENTS: (Continued)

4. CAB: (Continued)

Mirrors: exterior drivers and passengers side mirrors, west coast style minimum 6 inch X 16 inch manufacturers standard heavy-duty breakaway arms. Mirrors must be heated with a lighted toggle switch mounted within accessible reach of the operator, automatic on/off is acceptable. The wires must be fitted in such a way that the mirror glass/element can be changed by a weather-tight quick disconnect to the two-wire lead. There must be a heated convex mirror both sides, minimum 5.5 inch X 8.8 inch or 8" diameter, minimum.

Blind-spot elimination mirrors must be mounted on the front fender's and must be 8-inch minimum diameter, stainless steel or aluminum head with mirror. Mirror must be a conventional convex mirror, and must not be of the half-round cross view type. All arms and hardware must also be stainless steel. Fender type washers stainless, or aluminum, with rubber pads to be placed on both sides of the fender must be included. Pedestal system must be single, double or triple mounting assemblies (stainless steel or aluminum). Mirror must be mounted in rubber or vinyl. *Reference: Grote (800-628-0809)*

Seats: driver's seat shall be high back adjustable Bostrom air 915 Series with lumbar support or National 195 Series with lumbar or DuraForm Air Command Series (fabri form cushions with lumbar support), with body cloth insert and three-point retractable seat belt . A bellow-type or protective skirt must cover the seat suspension mechanism. There must be an inside armrest on the driver's seat plus an outside armrest installed on the seat or the driver's door. Color coordinated to cab interior. Passenger seat shall be the manufacturer's standard non-suspension (static) high back type and shall have a three-point retractable seat belt. All other requirements must be met.

Steering Wheel: diameter must be approximately 18 inch and meet or exceed Manufacturers standard. Road & Ambient Temperature System: There must be either a RoadWatch road/air temperature system or a Quixote Transportation Technologies road/air temperature system installed with 2" temperature display (*mounting location to be approved at pilot review*)

Steps: drivers and passenger entrance steps must be aluminum, serrated. The outer step edge must be serrated in lieu of plain (*overlay is not acceptable*). Step design material must be the same, both left and right side. *Reference: Bustin No. NST4 full size, Ohio Grating No.*

JA21195G4 serrated, IKG. Industries Type B54 or Mack Part # 85QM423OM4. Top of the first step must be approximately 21 inch above the ground.

CT (cab to tandem) dimension, Wheel base dimension and axle spread required for optimum weight distribution to be provided by the Contractor as a part of the full chassis dimensional drawing presented by Contractor during the Pre-Build Meeting.

The after frame shall incorporate a cross member at the rear of the frame to reinforce the body pivot point. (Local installation is acceptable).

Front Bumper: Heavy duty swept back design, mounted to the frame with the inner face of the bumper against the chassis frame.

Frame mounted tow hooks or eyes Two (2) front. These may be installed by the body company after completion of the plow hitch mounting, using grade 8 bolts (minimum) of sufficient length, and grade 8 elastic type self-locking nuts, or by full welding.

License plate bracket: Front and rear. Securely mounted to prevent damage when backing into material piles.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

5. DRIVE LINE:

Main Driveline: Spicer Life XL or Meritor RPL Series. "***Factory balanced***" greaseable, (one zerker minimum). Heavy-duty driveline must be engineered and be compatible to engine, drive train and transmission torque. Heavy-duty center bearing, if required, with due consideration to drive shaft angles, length, location, proper bolting based upon engine and transmission selection. Inter-axle driveline: Spicer Life XL Series.

6. ELECTRICAL:

All copper system, negative ground.

Alternator: Delco SI36 160 amp minimum (***or Client Agency approved equal***), high performance, solid state, brushless, with battery cable from battery negative terminal to starter motor or frame. All alternator and starter bolts must be grade 8.

Starter: Delco 39 MT gear reduction starter (***or Client Agency approved equal***).

Batteries: three (3), heavy-duty, 12 volt, maintenance-free, BCI Group Size 31, with stud-type posts and anti-corrosion treatment on each terminal. 2500 total cold cranking amperes (CCA) at 0 degrees F. 640 minutes of total reserve capacity at 80 degrees F as per SAE.

Battery mounting must include the following:

- a.) 0.25 inch thick rubber shock pad under the battery.
- b.) Box with cover. Cover shall be constructed of fiberglass, poly, or aluminum (if aluminum there must be an insulated liner).
- c.) Mounting bolts must be grade 8 with self-locking nuts.

Mounting of accessories within the battery box is prohibited.

Battery cables must have "sealed" terminal ends for stud-type battery posts.

Battery Disconnect Switch: heavy-duty, rated for 250 amp continuous service mounted to the battery box (***location to be approved by Client Agency***). *Flaming River #FR-1005, Maval #8070050 or Client Agency approved equal.*

Electrical System: must be circuit-breaker-equipped, in an easily accessible location and weatherproof. Fuses are acceptable in circuit so identified by manufacturer as safety factor. Any fuse or circuit breaker liable to be damaged during truck operation must have an easily removable protective cover. All wire splices in the cab must be insulated with heat shrink materials.

Electrical Chassis Wiring: factory heavy duty harness to power components in rear light module.

Flasher: heavy-duty electrical, *Tridon Model EL 12 (or Client Agency approved equal)*.

Note: If an audible alarm is supplied for the 4-way and turn signal circuit, it must have on/off capability.

Lights: all lights must meet all Federal and State regulations. The head lights must be halogen with (DRL's) daytime running lights. Body lights must have their own dedicated complete circuit. The chassis manufacturer shall route the dedicated body circuit/harness to the rear center portion of cab, with 4' of extra wire coiled on floor between seats. All pass-through points must be properly sealed and protected. This must be the access/connection point for the Whelen Model # CTSYSLSS. Pass-through point and/or routing location determined

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

Plow Lights: must be Truck-Lite part #80893 (***or Client Agency approved equal***). Bracket design must be either aluminum or stainless steel with two (2) brackets mounted to the truck hood. Brackets must be designed/constructed to provide sustained support of the light assembly while offering minimum vibration/jiggle. The height and width of the bracket will be governed by the application and must meet all Federal and State lighting regulations. Final design must be approved by the Client Agency. The factory chassis plow light circuit must be used and all areas where the wires might contact a rub point must be protected by grommets, loom, etc. All connections must be made using sealed connections and dielectric grease.

7. ENGINE:

Automatic idle shutdown must be set to five (15) minutes.

ECM must be set to a maximum of sixty five (65) miles per hour.

The engine components facing wheel areas, on both sides, and the areas to the rear of wheels must be shielded. The shield must protect the engine, fan, radiator and areas behind tires from stones and debris.

Replaceable heavy-duty oil filter(s) as recommended by the manufacturer and bearing a legible OEM part number.

Diesel Fuel Filters: in addition to the OEM standard fuel filters, there must be a DAVCO Fuel Pro 483 filtration unit installed and mounted in a location to accommodate filter replacements, yet be protected from road debris. Unit must be equipped with a 12 volt pre heater circuit and fluid heat (***or Client Agency approved equal***).

Cooling System: must be the largest factory engine cooling capacity, compatible with engines and transmissions referenced for continuous high engine output under extreme temperatures and/or operating conditions due to prolonged snow plowing operations in low gears. The water pump must be adequately sized to provide proper cooling and be of sufficient size to accommodate the larger pulley to adequately handle the specified options. Cooling system must be fitted with provisions for visually monitoring coolant without necessitating removal of the cap from the radiator or expansion tank (e.g. sight glass, transparent expansion tank). The antifreeze solution must meet all applicable EPA requirements. A non-charged spin-on coolant filter must be installed if required by engine manufacturer.

8. ENGINE ACCESSORIES:

Oil Dipstick: must have tubing and dipstick with sufficient length to provide reasonable access for checking the oil level.

Engine Block Heater: immersion in-block type, for cooling system, with waterproof plug, flush-mounted in an accessible location at the front/side of the vehicle, outside the cab/hood, 110 volt, 3-prong plug. The electrical cable from the heater to plug must be one piece and waterproof.

Air Cleaner: air filter must be manufacturer's heaviest duty air cleaner that meets all the requirements of the extended engine warranty.

Air intake system must be fitted with inside/outside air.

Engine Fan: must be thermostatically controlled viscous type or manufacturer's recommended automatic fan.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

8. ENGINE ACCESSORIES: *(Continued)*

A screening system must be installed that will protect the radiator from stones and bugs.

Engine Vibration Dampener: with PTO flange yoke adapter.

Governor: set at manufacturer's recommended maximum rpm.

Air Intake Hoses: the air induction system and large radiator cooling system hoses must be clamped with 0.500 inch wide, 150-inch LB stainless steel, constant torque, spring-loaded worm clamps. *Reference: Wittek Manufacturing (Tel: (312) 492-9400) or Breeze Clamp Co, Constant Torque clamps with liner for silicone hoses.*

Cooling System Hoses: under 1 inch OD may use factory standard hose clamps, as a minimum acceptable standard. Air intake hoses must be 0.250-inch minimum thickness, molded hoses. *Reference: Gates, Goodyear or equal.* Silicone or premium rubber radiator and heater hoses to be provided. Hoses must not be painted.

Lubricating Oil Lines: High quality flexible wire-braid type, "Aeroquip" or approved equal system, minimum standard if hoses are used.

Drive Belts: Cog belts or serpentine (cog belts not required for power steering).

Engine Brake: Minimum of 2 -stage, full engine compression brake. *Reference: Jacobs*

9. EXHAUST:

Vertical tailpipe with elbow and muffler system or horizontal muffler and vertical tail pipe with elbow, exhaust system must neither interfere with the operation of the dump body or equipment, nor may it be close to any fluid tank, and PERMIT WING PLOW operation. The tail pipe must be installed in a manner that will keep the muffler and tail pipe away from dump truck body. The flex in the body, when operating on an uneven terrain, must be considered in the design. The muffler and tail pipe must be shielded or insulated to protect personnel from burns when entering or exiting the cab. The shield must be 180 degrees to 360 degrees and must be of corrosion resistant material such as stainless steel or aluminum.

10. FRAME AND FRAME EXTENSION:

Resisting Bending Moment (RBM): must be a minimum of 2.5 million inch LB per rail, including extension, for the entire length of the frame, including any frame liners. Where engine and radiator adjustments are required, a minimum of one million inch LB per rail RBM. Will be accepted. Minimum frame RBM must be approved by manufacturer's Engineering Department. If a larger RBM is required to perform the specified operational duties, the Contractor shall bid a frame concurrent with the intent and spirit of this Contract. Ref: Snow removal operations, full payload snowplow, right and/or left patrol wing plow, etc. Mainframe and any required liners must be either straight channel or offset channel, full length. Bolt-on or welded extension will not be accepted. Front frame must accommodate the Client Agencies standard hydraulic PTO shaft and pump and the plow frame. It must provide easy service accessibility.
Yield Strength: must be of at least, 120,000-PSI yield strength.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

FRAME AND FRAME EXTENSION: (Continued)

11. INSTRUMENTATION:

All instruments and gauges must be illuminated and dash-mounted, except where specified otherwise. All standard instruments must be supplied, including, but not limited to the following:
Oil pressure gauge with warning light or audible alarm.

Air pressure gauge(s) for dual circuit, dual indicator with low-pressure audible alarm and warning light.

Coolant temperature with warning light or audible alarm.

Transmission oil temperature gauge with warning light or audible alarm.

Fuel gauge.

Hour meter that records only when the engine is running. Must be in – dash, integral with instrument panel and readable from the operator's seat.

Speedometer with odometer and a dual speedometer lead to interface with the ground speed spreader control system.

Tachometer.

Voltmeter.

Parking brake indicator light.

Hydraulic fluid level gauge.

Air Restriction Gauge: Flush, dash-mounted with indicator slide for engine air cleaner, If the vehicle is OEM equipped with an electronic dash that incorporates an air restriction gauge or indicator light, it must be approved prior to installation by Client Agency.

12. PAINT:

Cab must be completely painted with lead free Omaha Orange paint acceptable to Client Agency. Frame and all underside components must be painted black with Genesis GC upon completed build. Front bumper and plow frame must be primed with Genesis E3W805 and painted black (with hardener) Genesis GC low VOC. All bare metal surfaces must be coated using primer prior to paint. All surfaces must be properly cleaned, shot blasted, mill scale removed and prepared prior to paint, with all weld splatter and debris removed.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

13. STEERING:

Glidecoat steering shaft, Bendix wedge lock lube-for-life shaft or ZF type steering shaft. The steering system (e.g. flow, pressure, relief valve etc.) must be selected considering the full front-GAWR axle loading. Hydraulic supply pump must be vane or roller type design with sufficient oil flow to permit one (1) steering wheel revolution per second with front axle loaded to rated capacity, with plow on, in a "park" condition.

Power Steering: Dual integral or single integral type hydraulic power steering with right wheel power-assist cylinder.

Power Steering Pump Motor: must not be the integral filter type unit.

Power Steering Fluid Reservoir: must be remote mounted, minimum 1.5 -quart capacity, incorporating a filter that is easy to remove and replace. The remote filter referenced above must be factory mounted, certified and engineering approved in conjunction with the appropriate pump.

14. SUSPENSION: FRONT:

The front suspension must be rated for at least a 10,000 lb. capacity at ground, each front spring. Front spring to be multi-leaf or parabolic type springs. The front spring pins or bearings/bushing must be furnished with 360-degree grease grooves to insure adequate lubricant penetration. Spring hangers must be heavy castings with sufficient pin and bearing surface to render trouble free service. Maintenance free front spring bushings are acceptable.

15. SUSPENSION: REAR:

The rear suspension must be rated for at least a 23,000 LB capacity at ground, each rear spring. The rear spring assemblies must be multi-leaf with an auxiliary spring assembly. Suspension must be tailored to axle loads and shall be adequate to sustain maximum GVW, without overload or permanent set. The spring hanger brackets must be severe duty castings with sufficient bearing surface/wall thickness to prevent premature bolt wear. The spring center bolts must be a minimum of .4375-inch size, preferably .5000 inch. The rear spring hanger pins if applicable to suspension must be the greaseable type. Bolts must be of sufficient length to go through the washer, spring bracket and truck frame with sufficient length to install a self-locking nut.

16. TANK - FUEL:

Safety- type fuel tank as per the requirements of FMVSS. Trucks with no wing and trucks with a right wing must have one (1) 100 GAL minimum total capacity tank, frame mounted, under the left door. Left wing and dual wing trucks must have one (1) 80 GAL minimum total capacity tank, frame mounted, under the left door. *(Dual tanks are unacceptable)*. Tank mounting must provide clear back of cab configuration for left and dual wings. Tank mounting hardware and brackets must be for "severe duty" applications. Heavy-duty aluminum or stainless steel, minimum 1.9-inch wide straps with rubber shims/liners must be used.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TUCK SPECIFICATION: (Continued)

D. VEHICLE COMPONENTS: (Continued)

TANK – FUEL: (Continued)

Aluminum or stainless steel tank required. Fill pipe must be accessible with the dump body in the down position; pipe can be located at either end of tank to avoid interference with steps. System must be a top or side draw for suction and return lines. Diesel Exhaust Fluid (DEF) tank, if required, must be the largest available to fit configuration ordered. Both tanks (fuel and DEF) must be full upon delivery.

17. WHEELS/TIRES:

Each truck must be equipped with hub piloted steel disc wheels for tubeless tires. The wheel end must be equipped with outboard cast brake drums, and 15 degree tubeless steel wheels, hub piloted, 10 hole - 285.75mm bolt circle with 22mm two-piece flange nuts. The dual rear wheel/tire assembly must have clearance between the tires, which permits the use of dual tire chains.

Wheels, Front: 22.5 x 12.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,500 LBS at a maximum inflation pressure of 120 PSIG. Accuride part number 29806. **(or Client Agency approved equal).**

Wheels, Rear: 22.5 x 8.25, 10 hole - 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 7,500 lb. at a maximum inflation pressure of 120 psi. *Accuride part number 28828 or 29169. (or Client Agency approved equal).*

Pusher Axle: Wheels 22.5X9 10 hole 285.75mm bolt circle with 220mm bore, tubeless steel disc wheel rated at 10,000 LBS at maximum inflation pressure of 120 PSIG. Accuride part number 29039. *(Or Client Agency approved equal)*

The dual rear wheel/tire assembly must have clearance between the tires, which permits the use of dual tire chains.

Paint: The wheels must be topcoat Powder Coated High Gloss White applied over Cathodic Electro-Disposition Gray Primer.

Tires All tires must be radials.

Front Tires: 425/65R22.5 (18-ply min).

Rear Tires: 12R22.5H

Pusher Axle: 315/80R22.5

MANUFACTURER

PUSHER AXLE

FRONT TIRE

REAR TIRE

Goodyear	G289WHA	G-296 MSA	G-282 MSD / G622 RSD
Michelin	XZU-S2	XZY3	XDS -2
Bridgestone	M860	M844F	M799

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TUCK SPECIFICATION: *(Continued)*

D. VEHICLE COMPONENTS: *(Continued)*

18. TRANSMISSION:

See POWER TRAIN OVERVIEW for acceptable transmission.

AUTOMATIC:

Dash mounted console with push button shift selector. There must be an external oil cooler (stainless steel if available). The oil cooler for transmission is required due to prolonged transmission torque converter operation in low gears. Cooler size must be adequate to keep the transmission fluid at an acceptable operating temperature under these prolonged conditions. (Water to oil type cooler). An Allison approved cooling system must be installed regardless of whether retarder is incorporated in the system or not.

MANUAL:

Clutch: Externally lubricated with an extended lube hose if applicable, Eaton/Fuller EZ pedal or Meritor with torque limiting clutch brake. Clutch adjustment must be set to Client Agency specifications prior to delivery. There must be a neutral safety device to ensure that the vehicle cannot be started in gear. Geared for PTO application, right and left side or right side and bottom. Magnetic drain plug, Input transmission shaft: Minimum 2.00 inch, 12 to 1, minimum low gear and low reverse ratio.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

INTENT:

The purpose of these body specifications is to describe the minimum requirements for a severe duty 17 FT long 22 cubic yard (approximate without side-board) cross member less (WESTERN STYLE UNDERSTRUCTURE) smooth side steel dump body. Body must be capable of being loaded with a 2.5 Cu/yd. front-end loader. The body must be capable of having the following components connected and or mounted to it: slide in salt spreader, anti-ice insert and tarp. Body should be the same as what is provided to the heavy haul paving and construction industry. Ref: J & J Ultra-Light LWC, Biebeau BMT450-S, Brandon Dura Light, Henderson Mark E, Crysteel Select, Viking Cives body or (approved Equal)

1. DUMP BODY STRUCTURE, STEEL CORTEN:

The body must be reinforced to withstand SEVERE duty service and be capable of being utilized in the raised position for extended use or excavation with rip rap being dropped in the bed.

Paint: Full body to be shot blasted and primed with Sherwin Williams E2W805 Urethane primer minimum of 2.5 mills dry and painted with Genesis GC single stage paint tinted to match the cab minimum of 2.5 mills dry.

Longsill Members:

Size – Minimum 8” I beam or formed type rail from 1/4 inch material

Material – Minimum grade steel Domex 100W (*or Client Agency approved equal*).

Conveyor Floor: Fabricated from ¼ Inch Hardox 450

Bulkhead: Fabricated from 3/16 Hardox 450

Sides: 54 “from floor to top of rail fabricated from 3/16 Hardox 450

Tailgate: 60 “formed 1 panel design fabricated from 3/16 Hardox 450

Headboard: ¼, full width headboard fabricated from a minimum 10 gauge HT Steel.

Body Guides: There must be steel body guides mounted to the longitudinal beams (both sides). There must be mated steel reinforced guides bolted to the truck frame. Steel guides must be constructed using minimum 1/4” steel.

Body Sides: must be constructed using a minimum of 3/16” thick Corten Steel and be 54” high from top of bed floor to top of bed rails (one piece per side). Top rails must be a minimum of 4x 3x 3/16 boxed tubing, continuous welding. Top rails must be one-piece construction: NO

SPLICING. There must be steel gussets for side boards mounted to the top rail front, mid and rear. There must be 2” by 4”, full length, and oak side boards securely installed on both sides

Note: There must be 2 steps mounted on the front, inside of the bed on the driver’s side. Steps must be Bustin part # HA0602, installed on a diagonal and evenly spaced. **Ref: CTEQN-2.**

Steel Body Props: There must be two (2) props, (one per side) welded or bolted to the long bed beam. There must be a three (3)-pocket rest bolted to the truck frame rail on each side. When released from the cradle, the body props must be free to fall. Props must fall into step retainer as bed is raised, un-assisted.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

1. DUMP BODY STRUCTURE, STEEL CORTEN: (Continued)

Floor: Must be a minimum of 1/4" thick Hardox 450 one piece and fully welded. Floor must have inside clean outs (*dirt shedders*) fully welded to the floor and side sheets, entire bed length, both sides.

Front Body Bulkhead: One-piece design must be fabricated using 3/16 Hardox 450. Front corner posts to have a 15" side face and fabricated from 3/16 Hardox 450. There must be a shovel holder assembly mounted on the left front outside of the bulkhead, (final location to be determined at pre-build meeting. Complete continuous welding. .

Rear Corner Posts: Must be constructed using 1/4" Hardox 450, both must be full depth one-piece construction from the top of the tailgate to the bottom of the rear bolster and shall be free of holes. There must be two-spreader chain holders on each rear corner post (top and bottom banjo style) fully welded. Final location to be determined at pre build meeting.

Cab Shield: One-quarter (1/4) full width cab shield constructed using a minimum 10 gauge HT steel and have a 4" formed front face extending over the cab. (***or Client Agency approved equal***).

Tailgate: Double acting tailgate with BARN DOOR option must be manufactured using 3/16 Hardox 450 and must be a minimum of 60" tall. Tailgate must be a formed single panel design. Barn door option required to have a mechanical lock to hold gate open while in use. There must be a material shedding, inverted angle on top of the tailgate. There must be two (2) "J" hooks welded to the tailgate as chain holders. There must be four (4) tailgate chain brackets fully welded to the tailgate, two (2) on each side. The spreader chains must be 3/8" proof coil zinc plated and covered with black expandable braided sleeve monofilament. Tailgate latch pin must be the full width of the body. Conspicuity required on the tailgate, **Reference: drawing CTEQN-14**.

Tailgate Latches: Must be steel construction and grease able. Air operated tailgate must be a spring-over-air system and fail in the closed position. Latch mechanism must be operated via an in cab dash mounted pneumatic switch; (under dash mounted switches are unacceptable). A dual linkage design, with a greasable cross over shaft. Tailgate to have an open audible and lamp warning system in clear view of the driver. All air piping and connections must be Client Agency approved, with minimum .25" nylon tubing and brass compression fittings. **Note: Tailgate hinge and latch design must be approved by Client Agency prior to build.**

Hoist Cylinder Mounting: The telescopic hoist cylinder must be mounted to an upper & lower heavy-duty hoist mount with minimum 2" diameter pins and 2.125" x 1/2" greasable wall bushings Note: the base must be fabricated (*no bolt together or cast mounts will be accepted*). Hoist must have remote bleed point. **Reference: drawing CTEQN-29**

Hitch Assembly: A Pintle plate must be made using 3/4" inch steel. It must be inserted within the frame rails, with sufficient clearance for body dump pin. It must extend the full width of frame rails and have a ground clearance of 20". The lower portion of the plate must be channeled towards the front of the vehicle, with proper gussets added between frame rails and plate. There must be two (2) safety chain hooks mounted to the plate. **Reference: drawing CTEQN-31**

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

1. DUMP BODY STRUCTURE, STEEL CORTEN: (Continued)

Pintle Hook: There shall be one of the following manufacturer's 30-ton Pintle hooks mounted to the hitch assembly, Wallace Forge part # 2058115, Buyers PH30 or approved equal. Pintle hook mounted as Ref: **CTEQN-6**

Paint:

- Dump Body First Primer Coat: must be a self-etching primer such as PPG *DelFleet Essentials ESU400* wash-primer or DuPont *VariPrime* approximately dry thickness of 1.0 mil. (*E-coating or powered coating will be accepted*)
- Dump Body Second Primer Coat: must be two (2) coats of epoxy urethane primer such as Sherwin Williams *Genesis DTM*, PPG *DelFleet Essentials* or DuPont *Chromate LF DTM* with a minimum dry thickness of 1.5 mil.
- Dump Body Final Topcoat: must be Sherwin Williams *Genesis* acrylic urethane, PPG *DelFleet Essentials* or Dupont *Imron* polyurethane, low VOC, single stage finish with a minimum dry thickness of 2.5 mil. Final topcoat must be baked on and tinted to match chassis cab.

Rear Light Module: There must be a rear light module containing the following components:

- (1) One back-up alarm, ECCO 500 Series part # SA950 mounted to the back side of the tow plate between the frame rails. (No substitute, standardization).
- (1) One license plate lamp Truck Light 36 series part # 36042C (No substitute, standardization).
- (1) One 6-way female electrical trailer plug connection Bobtail part # LDGTR-10ft. (No Substitute standardization) Ref **CTEQN-20**.
- One 3-lamp cluster mounted in the recessed area of the body hinge or on rear panel of body. Location to be approved at pilot
- License plate mounting holes, with stainless steel hardware included.

All lamps must be LED. All electrical connections must be made within a dry seal connection box. **Grote 351044 (or approved equal)**, and powered through the original chassis harness. All electrical connections shall be coated with di-electric grease. Component placement on the module per **CTEQN-6**.

Body Lighting System:

1. Whelen Model # CTSYSLSS. Controlled by two separate correctly labeled dash mounted switches, one for front one for rear strobes. Warning light system (No Substitute Standardization)
2. 1 Whelen Pioneer Nano part # NP3BB to be mounted recessed in the headboard to illuminate the dump body controlled by one separate correctly labeled dash mounted switch. Location will be determined by Client Agency.
3. 1 Whelen Pioneer Nano part # NP3BB to be mounted at bottom rear corners of dump body to illuminate spinner area controlled by a separate correctly labeled dash mounted switch. Location will be determined at pilot review.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

1. DUMP BODY STRUCTURE, STEEL CORTEN: (Continued)

Splash Guards: Both front and rear splashguard assemblies shall be properly braced. Rear splashguards must be attached to the dump body on each side, behind the rearmost dual wheel, and extend downward to accommodate a 30-inch or 36-inch flap in order to meet Connecticut State Inspection Requirements. Mud flap sizes permitted are 30 inch or 36 inch. **(No substitute, standardization).**

The rubber splashguards must be bolted to these metal splashguards using self-locking nuts and metal strips. Flaps must meet Federal Regulation of 22 degree. Flaps must be heavy duty anti sail/anti spray and be razor split and contain no advertisements or logos. **Ref: CTEQN-18 and CTEQN-27**

Front: The forward splashguards must extend downward 3/4 of the length of the rear splash guard/mud flap, with a 1/4" length, unmarked mud flap attached for the remaining distance. Forward splashguard must have a 1-inch lip for entire length-outside extremity (90 degree) with bottom outside corner rounded and have rolled edges. Splashguards must be full length and width.

2. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS:

Intent/Installation Practices:

The pressure compensated, load sensing central hydraulic system must operate all functions (plow, dump body, spreader, conveyor, pre-treat and anti-ice circuits) from a hydraulic system independently and simultaneously, without interruption of any other hydraulic functions. All controls and components must be of the latest design and installed to provide simple and convenient operation. All system operations must be achieved from a single pump matching all required flow and pressure demands. This system must provide the most fuel efficient, safest, simplest and consistent operation possible. All hydraulic components must be installed and serviced by a single manufacturer. Full responsibility for a serviceable system lies with the Contractor. All wiring and cables must be securely clamped at approximately 18 inch intervals, shielded from exhaust and include a protective sleeve where necessary to prevent damage and/or failure. Upon start up the hydraulic system must be operated at maximum flow for not less than 15 minutes and then have a new hydraulic filter installed on the truck.

Note: It is the sole responsibility of the Contractor to ensure that the chassis and the ground speed control wiring harness is totally compatible.

System Operation: Certified Power Freedom ACS, **(no substitution, standardization)**. The system must be closed loop and communicate over a CAN Open system bus using CAN Open protocol and not a proprietary communications protocol. The system must consist of four primary modules that reside on the BUS and allow flexibility in mounting configurations. The system must be expandable and allow for additional modules to be added to the CAN BUS. All four primary components of the system must be upgradeable by laptop and interface cable. The configuration file of a calibrated system must be saved for transfer to other systems or as backup. The in-cab control system panel must be contained in an enclosure and mounted in a position easy to service.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

2. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: (Continued)

Software: System must incorporate three levels of security and access that is password protected and defined by the user. The three levels of access called operator, technician and administrator must give the user multiple levels access to system setup, data configuration and parameters based on access given. The administrator must have full access to all menus in the system and have the ability to make system changes. Spreader and liquid functions when controlled utilizing closed loop feedback, must incorporate an auto trim feature that will allow system to automatically set the PWM minimums and maximums when engaged. The system must have an over-speed protection for liquid functions that will alert the operator and shut down the liquid function when the driver has exceeded the user defined speed. The software shall incorporate a test speed mode for use in testing the system without requiring the truck to be moving or drive axles engaged.

Control Console: The control console must contain two (non-wing), three (wing and underbody) or four (dual wing) joysticks to control hydraulic functions. Body hoist stick must contain an interlock button to protect against unintended operation. Wing joysticks must contain a mode button to allow for operation of multiple valve sections using a standard two axis joystick. The plow stick must be a two axis joystick to control up/down and left/right functions. All joystick functions must be protected by software safety system to protect against unintended operation due to joystick failure. The console must contain the operator interface for the spreader control, joysticks, low oil override switch, wing float control switch, body up light and tailgate open light. All controls to be securely attached, within easy reach of the operator and console mounted. (Location and set up to be approved by the Client Agency at pilot review). All controls must be connected to the valve via an electronic cable and utilize CAN network communications. Console base must be constructed of steel and properly braced to eliminate floor flex. Console must be capable of adjustment vertically and horizontally to allow for comfortable positioning for the operator.

Wire Harness: All wiring for the kit must be included and be thermoplastic elastomers (TPE) type wiring. Wire harness system must meet ISO rating IP68 and NEMA 6. The connectors must be zinc die cast E-coated similar to MIL spec connector. Each must have three sealing points, the lock ring, a raised portion of the molded plastic around each pin and a Viton O-ring that seals the entire connector. The cable jacket must be TPE- thermoplastic elastomer and be molded to the connectors. Connectors must be tested water tight and corrosion resistant to 500+ hours of salt spray. Cabling must be rated excellent for low temperature flexibility and resistant to oxidation, heat, oil contamination, abrasion, ect.

Combination Tank/Valve Enclosure: Combination tank/valve enclosure must consist of a frame mounted, enclosed cabinet to hold the hydraulic valve and must be located within the clear space behind the cab of the dump body. The bottom of the enclosure must serve as a cross member and to add strength to the general assembly and shall be formed from 3/8 thick plate. The main body of the valve enclosure must be formed from 8 gauge hot rolled steel sheet and have an easily removable fitted cover. The rear support must also have integrated provisions for installing a minimum 40 gallon capacity hydraulic reservoir alongside the valve enclosure and must be designed to readily accept the hydraulic reservoir with mounting brackets and openings for hydraulic hoses. **Ref: drawing CTEQN-24, CTEQN-25**

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. **GENERAL TRUCK SPECIFICATIONS: (Continued)**

E. **DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:**

2. **CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: (Continued)**

Hydraulic reservoir must be a minimum of 40 gallon capacity, fabricated from a minimum of 8 gauge stainless steel sheet, equipped with a vented fill cap with integral screen, and include a ½ inch magnetic plug that is easily accessible for draining. Tank must be fitted with a drop in style, 10 micron return filter, an oil level temperature sight gauge and an internal 8 gauge baffle plate to prevent oil flow from venting directly to the suction port. . The tank must have provisions for low oil float to be installed. Low level float shall thread into the side of the assembly and have an M12 connector (***or Client Agency approved equal***). Suction and return line must have a ¼ turn 2 inch full flow ball valve in the suction line as close to the tank as possible. **Ref: drawing CTEQN-22 and CTEQN-23**

Hydraulic control valve: All hydraulic control valves must be Danfoss PVG 32 with manual overrides mid idle and controlled electronically by featherable control levers . (No substitute, standardization). Cab controls to be proportional feather able joysticks. All operating levers to be located inside the truck cab within easy reach of the driver and can be repositioned so the passenger can operate the controls. It is the responsibility of the Contractor to ensure that the PVG 32 hydraulic control valves correctly meet the function requirements and capacities of the hydraulic function each section operates. Configuration and programing of joysticks to be approved by the Client Agency at pilot review.

Return manifolds: There must be a return line manifold mounted on the chassis location to be determined at the pre-build meeting. Return manifold must be an 8 port header block with 8 # 16 SAE openings and 2 #24 SAE openings at each end. Header must be an Alamo, Damon or Hycoa or equal. **Ref: drawing CTEQN-26**

There must be a 4 port connection block to control spinner, conveyor, pre-wet and anti-ice mounted at the rear of the truck chassis to provide hydraulic function for the Vbox spreader. A hydraulic return line manifold should be mounted to the Vbox spreader to allow a common hydraulic return line back to the truck chassis from all spreader functions. Hydraulic pressure and return line set to be sized correctly not to effect full operation of the sander unit. **Ref: drawing CTEQN-26 and CTEQN-8**

Hydraulic Pump: **Saur Danfoss SDPP83010875** : KEYED Crankshaft Driven. (No substitute, standardization). Pump must include low-oil shut down with dash mounted override switch. Shutdown shall be direct mounted to the pump (*remote mounted valve will be unacceptable*). Valve must be a normally closed, energize to open cartridge valve. Valve shall be controlled by the hydraulic control system. The pump must match system flow and pressure (horsepower) requirements to provide maximum fuel economy. An unloader or by-pass system is not an acceptable means of regulating excess oil flow.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

2. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: (Continued)

Pump Mounting Bracket: Regardless of design the bracket must be a minimum of 5/8" formed steel channel. The pump bracket must be sloped to match the engine crankshaft. Width dimensions must be full frame rail width. Bracket to attach pump to the truck frame rails must be a minimum of 5/8" thickness. Brackets must either be fully welded or use 3/4" grade 8 (eight) bolts of sufficient length and grade 8 (eight) locknuts, minimum of four (4) bolts per mounting side. **Reference: CTEQN-16**

Hydraulic Pump Driveline: Hydraulic pump must be driven by a Spicer 1310 series or NEAPCO factory balanced drive shaft. Driveline shall be capable of 130-foot pounds of torque and have a tubular shaft of 1141 steel. Tubular shaft shall have 16-spline heat treated to a (40) Rockwell hardness. A groove must be machined the length of the shaft to provide proper phasing of universal joints at time of shaft assembly. Driveline installation must be in accordance to manufacturer's recommended procedures. Slip assembly must provide a minimum of 2.25 inch of travel to allow ease of engine drive belt replacement. The truck engine radiator and frame construction must readily accommodate the installation of a front mounted crankshaft driven hydraulic pump. The engine crankshaft pulley or vibration damper must be drilled and tapped to accommodate a power take off drive shaft adapter plate required under hydraulic system section of these specifications. Loctite must be used for the installation of all mounting bolts. **Reference drawing CTEQN-15.**

Hydraulic Hose/Piping: All hoses and hose ends must be matched and assembled on a hose machine to prevent hose failure. All hydraulic plumbing practices must conform to JIC H11 standards. Pressure and return hoses shall be SAE 100R2, and suction lines must be SAE 100R4. Stainless steel piping to be used where ever possible with connections being made at flex points only. All stainless piping to be secured using Hydro Craft mounting brackets (**or approved equal**). Velocity in pressure lines must not exceed twenty (20) feet per second, return lines must not exceed ten (10) feet per second, and must not exceed four (4) feet per second in suction lines. All hoses must include JIC female swivel ends with the exception of the suction line. All hydraulic components must have SAE porting wherever possible. All hydraulic hoses must be securely clamped approximately 18 inch intervals, shielded from exhaust and include a protective sleeve where necessary to prevent damage and/or failure. All hoses must have female JIC swivel connections at each end and be located in such a manner to aid in easy component replacement. **Ref: CTEQN-21.**

Low Hydraulic Oil Level Alarm and Shutdown System: There must be a low hydraulic oil alarm system to alert the operator of a low hydraulic oil situation and allow ample time to take preventative action and avoid damage to the central hydraulic system pump. It must be operated via a 12 volt system. All wiring must be routed to prevent damage from heat, sharp edges and moving parts. An in-tank float switch must be mounted to provide a signal to the control system. The warning lamp and audible alarm must come on whenever the oil level drops below a safe reserve, and the pump mounted low oil shutdown manifold must deactivate to prevent pump damage. A console mounted low-oil override switch must be provided to allow momentary operation in an emergency.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

2. CENTRAL HYDRAULIC SYSTEM/HYDRAULICS: (Continued)

Body-up Alarm System: There must be a body-up alarm system to alert the operator of the body being in the raised position. Warning must include a dash mounted warning light with audible alarm. Alarm and light shall function as soon as the body is raised from the rested position. All wiring must be routed to prevent damage from heat, sharp edges and moving parts. Switch must be mounted within the hoist cradle assembly. Note: Switches must be mechanical, Mercury type switches are unacceptable.

Note: All electronics associated with the hydraulic system must be protected against and must not cause interference to the operation of the vehicle or the land mobile radio communications system when properly installed in the vehicle.

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

3. LOAD COVER SYSTEM:

Reference: Roll Rite (or Client Agency approved equal)

Tarp Spool: must have a one piece aluminum wind deflector, this can be integrated into the body. It must include an extruded aluminum roll pipe with 5 full length threaded grooves for easy tarp installation. Extrusion must be a 6005 T5 aluminum and must have a steel stub shaft to connect it to a grease able bearing on the idler end of the roll pipe. The steel stub shaft must be Nitro Carburized to prevent corrosion. Zinc plating is insufficient.

Gear Motor: shall be a 12 volt Electric Gear Motor designed to operate at fewer than 35 amps. Gear case to be chrome plated, snap or bolt over gear case covers are not acceptable. Gear case output shaft must be tool steel and be nitro carburized to prevent corrosion. All gears and gear motor assembly to be made in the United States. Gear motor to have a minimum of a 3 year non-prorated limited warranty against wear out and manufacturing defects.

Controls: system to be operated by a low voltage in cab switch - relay and all high voltage wires to be kept outside the cab of the truck and installed in a weather tight box. For safety there is to be a maximum of a 35 amp circuit breaker mounted at the power supply in the tarp system circuit.

Pivots: Must be mounted on the flat face of the shedder rail on a 1 ¼" aluminum pivot pin. Pivots must contain Teflon coated spiral torsion springs. Double helix spiral torsion and other forms of torsion springs are not acceptable. Spring tension to be adjustable by simply relocating a tension adjustment pin without unbolting the pivot pin itself. Where the arm connects to the pivot pin it must ride on a self-lubricating poly bearing. Metal on metal pivots will not be accepted. Spring pack to be an open design allowing moisture and contaminants to naturally clear out of the springs. Enclosed spring packs are not acceptable. Pivot arms must be United States made 6005 T5 aluminum extrusions and be universal driver to passenger side.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

3. LOAD COVER SYSTEM: (Continued)

Bow Set: must be a 3 piece 6005 T5 aluminum straight arm extrusion set. Pre-bent side arms will not be accepted. They must connect to the pivots in a telescopic fashion and be universal driver to passenger side allowing for ease of install and adjustment. Must provide the following options for bolt on accessories to accommodate varying truck configurations:

- 30° or 45° offset elbows
- Pivot tube mounted tension bow (in cases where there is more than 8" of drop behind bulkhead.

Tarp: Shall be a 22 oz. vinyl coated material capable of withstanding use with hot asphalt. Material shall have a "Rip Stop" construction consisting of a 1300 x 1300 denier – 24 x 23 thread per inch weave. To have 18" Rear Corner reinforcements.

Shall be equipped with the following: 12" Tail Flap, Full Flap Length Shock Cords (for tie down purposes) Ref: Roll *Rite* (**or Client Agency approved equal**)

4. GRANULAR/LIQUID SPREADER OPTION-V-BOX SPREADER:

V-Box spreader: Contractor shall provide a v-box material spreader capable of hauling and spreading free flowing granular materials from a width of four (4) to forty (40) feet. The unit will consist of a hopper, discharge/feed conveyor, spinner disc, power drive, and all components necessary to make a complete operating unit. The unit must be factory ready to accept hydraulic ground speed controls from truck central hydraulic system. The manufacturing and production of this unit must utilize the best commercial practices and only materials of the finest quality.

NOTE: The V-Box must be reinforced to withstand SEVERE duty service and be capable of being utilized for extended use while spreading salt and liquid material.

Body:

- Construction – 10 Ga. Non-magnetic 201 or 304 grade stainless steel with double crimped top edge forming a 2" section for greater rigidity.
- Hopper body length – 16' with 2' of longitudinal overhang for supporting the spinner assembly.
- Outside width – 82" maximum
- Side height- 60" maximum
- Capacity- approximately 12 cubic yards water level full

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

4. GRANULAR/LIQUID SPREADER OPTION-V-BOS SPREADER: (Continued)

- Body sides 10Ga. Non-magnetic 201 or 304 stainless steel
- Body longitudinal members 10Ga. Non-Magnetic stainless steel
- Inside weld – spreader body must be 100% welded on the inside
- Channel cross sills – must be 10 Ga. Non-magnetic 201 or 304 stainless steel that tie the lower edge of the longitudinal members to each side support
- Cross supports – Must be wide enough to allow V-Box to be mounted in various dump bodies
- Channel- there shall be a 3" formed non-magnetic 201 or 304 stainless steel channel welded under the H-beam to each hopper side for additional side support.
- Body welding- body and auger conveyor must be electrically welded into a rugged solid unit
- Feed gate ruler- 10Ga. Non-magnetic 201 or 304 stainless steel 12"x18" feed gate and ruler must be provided at the rear of the hopper to allow for accurate discharge.
- Jack- A screw type jack with non-magnetic stainless steel hook must be provided and be self-locking
- Side supports- There must be 10Ga. Formed non-magnetic 201 or 304 stainless steel side supports that extend the full angle height spaced on 2' centers
- Lift hook – A heavy duty non-magnetic stainless steel lift hook must be provided at each corner.
- Endplate- The rear endplate must be sloped inward 22 degrees.
- Mounting Kit- Mounting kit is to include
- 4 ea. 4" nylon load straps which will attach to designed attachment points welded to the V-Box hopper. The straps will secure to the truck body with 4" capacity cargo winches welded to the dump body. Locations per Client Agency approval at pilot review.
- 1 ea. 3" x3" x 3/8" structural steel angle to run between the left and right side tailgate latch. The latch bar is to have a 1 1/4" round pin stock welded to the latch bar angle and positioned to allow the dump body tailgate locks to latch over the pins in order to hold the spreader securely into the dump body.
- All stainless steel joints must be welded with stainless welding wire
- All sub- assemblies must be secured with stainless steel hardware

Auger / Conveyor:

- Conveyor system to be dual 7 " auger
- Each auger to be driven independently by a low speed high torque hydraulic motor
- Hydraulic motor to be sized correctly to drive unit with hopper loaded to capacity
- Auger shafts must have heavy duty, dust sealed self-aligning 4-bolt flange bearings equipped with grease fittings
- Auger shafts must be a minimum of 2"
- Auger units to be easily serviced and replaced

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

4. GRANULAR/LIQUID SPREADER OPTION-V-BOS SPREADER: (Continued)

Spinner Assembly:

- Distributor disc -18" diameter made of polyurethane
- Mounting- disc must be mounted on a steel replaceable hub connected directly to a top mount motor
- Material must be guided from the auger/conveyor to distribution disc by means of two internal, adjustable deflectors
- Deflectors shall control the spread pattern from left to right by controlling where the material drops onto the disc.
- Unit must have a material diverter plate installed in the rear face of the spinner extension to facilitate material unloading.
- Diverter plate must be adjustable without tools
- Entire spinner assembly shall be manufactured of 10 gauge 201 or 304 stainless steel.
- Spinner assembly must include a fold up design
- Spinner must be capable of repositioning without the use of special tools to allow for cleaning, storage and unloading from the conveyor without the interference from the spinner assembly.

Liquid Chemical Pump and Storage:

- 800 gallons of liquid storage divided equally per side of the V-box spreader
- Tanks to be constructed of polyethylene material and designed for severe service.
- Tanks are to be plumbed together with 1 ½ id hose
- A 3" top fill port with splash proof vent and 1 ½ suction port are to be provided in each tank.
- A plumbing/quick fill kit is to be provided consisting of:
 1. Shut-off valves at each tank end
 2. Banjo coupler and all necessary fittings to plumb the tanks together
 3. Provisions to fill one tank only or both tanks at the same time
- Pump to be heavy duty closed loop variable rate hydraulic driven centrifugal type pump capable of providing multiple settings ranging from 10 gallon per ton to 80 gallons per ton as various RPM ranges. **REF: Hypro 9302S**
- A minimum of four adequately sized spray nozzles to apply the liquid deicers between 10 and 80 gallons per ton. (location of spray nozzles to be approved by Client Agency at pilot review)
- Tank and pump must have a flushing system utilizing a common garden hose.

Leg Stand:

- Spreader must come equipped with a storage stand system designed to be bolted directly to the V-Box
- Skid type arrangements must be constructed entirely of stainless steel tubing
- Main frame must be constructed of 3 x 4 x ¼ stainless tubing

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

E. DUMP BODY AND EQUIPMENT MANDATORY MINIMUM SPECIFICATIONS:

4. GRANULAR/LIQUID SPREADER OPTION-V-BOS SPREADER: (Continued)

- There must be sufficient lateral bracing constructed of 1 ½ x 3 x 3/16 stainless tubing to support the V-Box Hopper
- There must be longitudinal supports constructed of 1/12 x 3 x 3/16 tubing with holes spaced correctly for mounting V-box hoppers
- The forward leg must be constructed of 3 ½ x 3 ½ x 3/16 stainless tubing and must be adjustable in height and designed to fold up as the vehicle backs underneath the stand.
- Cast iron caster wheels with grease fittings shall be mounted at the front of the main frame to allow the unit to roll into the vehicle
- Rear legs must extend beyond the spinner assembly to help protect the spinner assembly from accidental damage.
- Lower legs must be equipped with a swivel mounted foot to provide additional stability during loading and unloading operations
- ICC rear crash protection to meet standard if required

F. GENERAL SNOW PLOW HITCH:

1. INTENT STATEMENT

The purpose of these specifications is to describe **minimum** requirements for severe service tilt over front plow hitch.

2. PLOW HITCH SPECIFICATIONS

Front Plow Hitch (Tilt Over): Side-mounting plates must be constructed using ¾" steel. Lower plow mount bracket center must be 14" to 16" from ground (both sides). Trucks that do not have a wing, braces must be installed using .31" wall 2" x 2" steel tubing. There must be a minimum of five (5) 7/8" grade eight (8) bolts per side with washers and lock nuts to mount the plow frame to the truck frame. Lift height must be sufficient to afford unrestricted lift for the Client Agency

Plows: (16" minimum lift). Side strengthening bars (two per side) must be fabricated using ¾" steel, 16" long by 2" wide and mounted to the external side of the plow hitch. All grease zerks must be surrounded by a short length of pipe (welded in place) or be in a recessed hole. The zerks for the plow arm bushings must be mounted on the underside of the bracket. Plow push plate **Reference: CTEQN-30**

The hydraulic fittings on the plow hoist cylinder must be positioned as to keep them from being stuck and damaged, while connecting or disconnecting the front plow. All other hydraulic connections mounted to the plow frame must also be positioned to keep them from damage.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

G. WING PLOW SPECIFICATIONS:

1. INTENT STATEMENT:

The purpose of these specifications is to describe **minimum** requirements for a full floating patrol wing plow with tripping action and telescoping action mechanism and a capability to lower the assembly into the travel position for improved visibility and to allow emergency egress.

It shall be the responsibility of the Contractor to certify through proper chassis stress analysis the adequacy of the existing truck frames to accommodate the patrol wing plow in addition to a front mounted plow weighing approximately 3500 LB.

2. SPECIFICATIONS:

The aforementioned plow will be used for severe duty high-speed plowing by the Client Agency. The written text are to be considered minimum and the Contractor shall ensure that the manufacturer reinforces the plow, framing and hydraulic cylinders by means of gussets, or increased material strength or thickness to present a plow designed to meet the severe duty operational setting.

The patrol wing must be designed to be attached or detached independently from the frame assembly. It must be installed in such a manner as to ensure quick access to the engine and all accessories. (Hood on dump truck must tilt without obstruction.)

All parts not specifically mentioned, which are necessary in order to provide a complete snowplow must be furnished by the Contractor. The plow fabrication and assembly must be to the latest engineering techniques.

All steel unless otherwise specified, must be hot-rolled steel (HRS) as per ASTM A-36.

When wing assembly is disconnected from the truck, no parts may extend past the bodyline of the truck.

All bolts must be grade 8.

Shock Absorbing Rear Wing Brace: The rear wing brace must be a minimum of a single fixed hinge pin type with an adjustable bottom wing brace, or the formed type wing tube support to attach to a single fixed hinge pin. The rear wing brace must be equipped with a telescoping arm and an adjustable type tension spring. If required by manufacturer. The rear wing "A" frame support strut/girder arrangement of MC 7 inch x 22.7 LB/feet minimum channel, or fabricated from 7 inch x 12.25 LB/feet channel, 6 inch/feet x 8.2 LB/feet channel, .500 inch plate, 6 inch x 4 inch x .3750 inch structural tubing and other component pieces. It must be attached in such a way that the load is properly distributed to both chassis frame rails. "A" frame must be detachable for summer use. One (1) top wing brace cylinder constructed of 3 inch x 15 inch minimum single acting ram, chrome plated piston rods. Adjustable trip-spring mounted from wing lift cylinder housing to the back of wing. The rear brace must be equipped with a 3 inch x 24 inch or 3 inch x 15 inch DA cylinder to actuate the telescoping strut with crossover relief.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

G. WING PLOW SPECIFICATIONS:

2. SPECIFICATIONS: (Continued)

Bottom wing brace constructed of four in/10cm O.D. square outer tubing with a 3 inch O.D. square inner tube. Wear guides are welded to inner side of four in/10cm tube and to the outside of the 3 inch tube to prevent binding. The rear wing lift cylinder will be a double acting 3 inch x 27 inch minimum cylinder, chrome plated piston rods with neoprene packing. Cylinder must float with a 500-PSI relief on the down side. The tripping spring/eyon rubber compression will be mounted to allow the wing to trip in any of the telescoping positions. The spring/eyon rubber compression must be adjustable and have a quick release handle to remove tension for detaching the wing. The spring/eyon rubber compression will also be mounted to have tension on the wing in all telescoping positions. The telescoping strut cylinder must have incorporated in the hydraulic system an adjustable pressure relief valve for safety, when contacting heavy objects.

Front Wing Mast: Wing mast must not block the O.E.M. headlight. Minimum 7 inch x 15.3 LB/feet I Beam must be used for the wing post. 5/8" inch minimum steel wing post slide lift with 10" minimum lift from ground to bottom of plow edge for travel. Front wing post cylinder double acting ram with float and 500 PSI relief on the down side is required. Cylinders must be chrome plated piston rods with adjustable chevron type packing, neoprene wipers and bleed screw. Front wing post and support strut/girder arrangement must be attached in such a way that the load is properly distributed to both chassis frame rails without the use of bracing tubes. Support struts must be 1.250-inch diameter schedule 80 ASTM A106 Grade A or B seamless pipe brace, minimum of two. One strut must be mounted to chassis frame. One strut must be mounted to plow frame. Horizontal support girder 7 inch cross channel or 7-inch ship and car channel at 22.7 LB/feet or tubing 7 inch x 4 inch x .3750 inch. Bolts must be minimum grade 8, .6250 inch N.C. Hinge assembly must be detachable from the slider assembly of the wing mast. Formed wing post mounted on cross tube mounted to truck frame members. Wing slide plate bears on flanged surfaces of formed channel enclosing single acting cylinder, which provides full power up. Wing Plow Alarm (Mechanical): Wing plow must have a mechanical alarm system to alert the operator of the position of the plow. It must be visible from the driver's seat.

Hydraulic Power: The front wing mast must have a double acting cylinder vertical lift type, hydraulically controlled by a double acting cylinder direct lift. The front cylinder must have quick connect coupler/s.

Double Acting Cylinder: A 3 inch x 15 inch minimum double acting cylinder from rear "A" frame to mold board to raise the rear of the wing and fold the wing close to the truck for transport.

Snow Leveling Wing: The wing assembly must in no way interfere with the turning of the right or left front tire. The wing must not be less than 11 feet long overall, 27 inch high at the front and 34 inch (minimum) high at the discharge end. The moldboard must be fabricated from 0.1719 inch thick (eight USS gauge) minimum steel and weigh a minimum of 755 LBS. It must be drilled to accept standard AASHTO spacing plow blade.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

G. WING PLOW SPECIFICATIONS:

2. SPECIFICATIONS: (Continued)

Steel Blade: The cutting edge shall be of 5/8" x 6" C1090 steel, at least 10 feet long with standard AASHTO blade punch. The wing plow must have two cast wing shoes. The patrol wing must be hydraulically operated with the controls conveniently mounted, (to be discussed at pre-build meeting) in the truck cab with the addition of three valves to the existing valve bank. These valves must provide lift to the front of wing, the rear of the wing and the folding of the wing toward the cab and control in and out of the strut. The front of the wing must be controlled by a single acting ram mounted within wing post that permits the front of the wing to be vertically lifted for transportation purposes. The rear of the wing must be hydraulically controlled and attached to tele-strut and a 3"/7.6cm x 24"/61cm single acting cylinder with 3/8" quick disconnects, (male, female, cap and plug) which must be connected to a 7" sloped channel located under the dump body and at the rear of the truck cab. The 7" channel must be adequately supported by brackets and cross braces to the truck frame. Bottom bracing must extend to the rear with bridge type bracing. Wing must not obstruct driver vision while in transport mode.

Tripping: The wing must be of the full tripping type consisting of a special spring-loaded front end. Tripping actuation must be accomplished through a .8750-inch diameter wire torsion spring at the front end and a tension spring attached to the front and rear of the wing or eyon rubber compression system. Each spring must be adjustable and must automatically return the wing to its normal plowing position after it has passed over any obstruction encountered. Provision for locking out the tripping action must be supplied for operations requiring a rigid wing.

3. The following alterations are the responsibility of the Contractor:

- a. Add two Timbren load booster or active ride control stabilizers.
- b. Brace right/left hand side plate to truck frame.
- c. Add additional steel to side plates to provide increased strength and more substantial mounting for the 7 inch cross channel.

4. PLOW IDENTIFICATION:

Each unit must bear the manufacturer's model number, serial number and weight affixed to the plow, by means of a permanently affixed non-rusting metallic tag located on the right hand backside of the moldboard as viewed from truck operator's seat.

5. PAINT:

Color: Client Agency Omaha Orange on plow moldboards. All metal surfaces must be cleaned and shot blasted prior to being primed with Genesis E2W805 urethane primer and final painting with Genesis GC. Frame and mounting hardware must be primed with Genesis E2W805 and painted black single stage Sherwin Williams Genesis GC (with hardener) low VOC. All bare metal surfaces must be coated using etching primer prior to paint. All surfaces must be properly cleaned and prepared prior to paint, with all weld splatter and debris removed.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

G. WING PLOW SPECIFICATIONS:

6. CONSPICUITY TAPE:

The rear of the wing plow must have a strip of retro-reflective sheeting across the top and down the outside in order to outline the plow when viewed from the rear. Material must be: 2 in/5.08 cm wide Reflexite Conspicuity II System of 3M Scotchlite Conspicuity Series 980, red/silver continuous backing. **Ref: CTEQN-4**

7. WING PLOW LIGHT:

The rear of the wing plow must have a Whelen TIR – 3 Super LED lighting system # (WPLOWZ1A) in amber permanently mounted on the wing tip for protection and be visible when the wing plow is in use. Light must be controlled by a separate dash mounted switch in the cab. There must be a Deutsch connector installed at the wing hinge point to allow for easy removal. All wiring connections must be sealed and water tight.

There must be one Whelen Pioneer Nano part # NP3BB with flood lens to illuminate the wing plow(s). Light must be mounted on the curb side of truck, location to be determined at pilot review. Light shall be controlled by a dedicated, illuminated, dash mounted switch.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

I. GENERAL TRUCK SPECIFICATIONS: (Continued)

H. INSTALLATION PRACTICES:

Any place steel and aluminum contact each other Mylar or an approved equal must be used as a buffer. Laminated rubber is unacceptable.

All welding must be in accordance with standard welding practices as set forth by the American Welding Society.

All corners must be angled or rounded for safety.

All vertical and horizontal seams of the body sides must be continuous welds with full penetration.

All mounting procedures must be in accordance with **NTEA** standards.

All hydraulic circuits must be tested for proper operation and flow. Control systems must be tested and calibrated and programmed for the Client Agency's material spread rates prior to delivery. Material spread rates will be disclosed by the Client Agency.

All electrical connections must be treated with dielectric grease.

The use of any of the following items or practices WILL NOT BE ACCEPTED.

The use of accumulators or auxiliary pumps.

Non-steel fittings on hydraulic pressure lines.

Excessive use of elbows on hydraulic lines.

Use of thread tape on hydraulic fittings.

Use of galvanized fittings or components on hydraulic system.

Improper hydraulic line size.

Use of high-pressure hose for hydraulic suction line.

Scotchlok-type wire splices.

Non-insulated wire splices.

Improper hose or wire routing near exhaust, over-sharp edges or through holes without grommets, or sharp edges.

Improperly prepared, primed and painted surfaces.

Non-fused electric circuits.

Hydraulic circuits without pressure relief protection.

Laminated Rubber

Non threaded zerk fittings.

I. SAFETY:

Anti-slip paint is required on all handholds. All handrails, ladders, and step configurations must be built for three points of contact. There shall be two wheel chocks per truck Ref: buyers WC1086 or equal. Mounting location will be determined by the Client Agency.

Ref: CTEQN-3

All corners must be angled or rounded for safety. There must be a fire extinguisher mounted in the cab

There must be a triangle warning kit mounted in the cab. **Ref: CTEQN-28**

Truck Tri Axle
SPECIFICATIONS
CT-1-15

II. DRAWINGS:

CTEQN-2	dated 3-11-14	DUMP BODY STEP CONFIGURATION
CTEQN-3	dated 3-24-14	6" WHEEL CHOCK AND HOLDER
CTEQN-4	dated 3-6-14	PATROL WING GENERIC MOUNTING ARRANGEMENTS
CTEQN-8	dated 3-20-14	REAR TOW PLATE
CTEQN-14	dated 3-6-14	DUMP BODY REFLECTIVE SHEETING
CTEQN-15	dated 3-6-14	DUMP TRUCK PTO ASSEMBLY
CTEQN-16	dated 3-6-14	PUMP MOUNTING BRACKET
CTEQN-18	dated 3-5-14	Notes: SPLASH GUARDS RUBBER
CTEQN-20	dated 3-7-14	WIRING DIAGRAM 6-WAY CONNECTOR
CTEQN-21	dated 3-6-14	HOSES AND CLAMPS
CTEQN-22	dated 3-17-14	40 GALLON OIL RESERVOIR ISOMETRIC
CTEQN-23	dated 3-14-14	40 GALLON OIL RESERVOIR SIDE & END VIEW
CTEQN-24	dated 3-19-14	REAR SUPPORT VALVE ENCLOSURE ISOMETRIC VIEW
CTEQN-25	dated 3-19-14	REAR SUPPORT VALVE ENCLOSURE SIDE AND END VIEW
CTEQN-26	dated 2-19-14	RETURN MANIFOLD
CTEQN-27	dated 2-19-14	DETAIL SPLASH GUARDS RUBBER
CTEQN-28	dated 2-20-14	TRIANGEL STORAGE BOX AND BRAKET
CTEQN-29	dated 2-19-14	DUMP TRUCK HOIST CYLINDER BLEEDER
CTEQN-30	dated 3-28-14	PLOW PUSH PLATE

The above referenced drawings are a part of these specifications. These drawings reflect the intent of the Client Agency and any discrepancies shall be resolved at the pre-build meeting between the Contractor and the Client Agency.

III. MANUALS:

The Contractor shall furnish all applicable manuals as described below for each vehicle and provide an additional complete set for Client Agency's Equipment Operations Section Newington:

- 2 Operator's
- 1 Parts
- 1 Service
- 1 Engine
- 1 Transmission (Automatic/manual)
- 1 Body and Sub-frame (Parts and Service)
- 1 Complete set of manuals for any additional items/equipment added to a piece of equipment.
- 1 Electrical System Charts
- 1 Control System/Hydraulic and Electrical System Schematics

Truck Tri Axle
SPECIFICATIONS
CT-1-15

III. MANUALS: (Continued)

The manuals listed above must be official O.E.M. publications supplemented with technical manuals for all components as published by sub-vendors/manufacturers.

Parts Manual presented must be relative to "all" items utilized to build units, with appropriate part numbers.

Delivery of these manuals must be completed with delivery of each unit.

Manuals may be supplied on CD Disc in lieu of paper manuals.

Manuals may be supplied on a dedicated website in lieu of paper manuals.

IV. TRAINING:

The Contractor shall supply competent representatives to provide a minimum of four (4) hours of operator training for each truck purchased, for various segments of the vehicle and allied equipment. The training must include all aspects of operating and servicing the entire equipment. Videotape training series may be used to supplement training with Client Agency approval.

The Contractor must supply factory representatives to provide the following:

1. Forty(40) hours of engine training to include troubleshooting and repair
2. Twenty (20) hours of hydraulic training to include troubleshooting and repair.
3. Ten (10) hours of chassis electrical troubleshooting and repair.
4. Ten (10) hours of emissions troubleshooting and repair.

Online Training Course for above mechanical training may be used with Client Agency approval.

V. WARRANTY:

This warranty is in effect as follows, starting from date of acceptance by the Client Agency. Warranty may not be voided due to Client Agencies operation as explained in the Intent Statement. It is understood that the components specified are minimum and if the manufacturer's Engineering Department recommends or deems necessary a more robust component, other than specified, may be installed to meet the requirements of the intent statement while not voiding any warranty. .

BUMPER-TO-BUMPER WARRANTY: Minimum of one (1) year / 100,000 miles starting from the Client Agency acceptance date. Manufacturer's service and warranty policy for automatic slack adjusters must be for at least two (2) years unlimited miles 100% parts only.

RADIATOR WARRANTY: Manufacturer's service and warranty policy for radiator must be for at least two (2) years 50,000 miles, 100% parts and labor plus at least an additional three (3) years 75,000 miles, 100% parts only.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

V. WARRANTY: (Continued).

ENGINE WARRANTY: The Contractor shall ensure that it or the supplying manufacturer provide the Client Agency with a 100% parts and labor engine warranty for at least 24 months / 250,000 miles. In addition to the engine warranty, the engine block must be warranted against external perforation from corrosion for at least 10 years 200,000 miles, 100% parts and labor.

NOTE: The oil pan must be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions for at least 5 years, 100% parts and labor.

EMISSION WARRANTY: The Contractor shall ensure that it or the supplying manufacturer the Client Agency with a 100% parts and labor warranty for all emission related components to include the diesel particulate filter (DPF) for 60 months / 150,000 miles. Shall be warranted against corrosion, rust, rust thru etc. regardless of atmospheric conditions

TRANSMISSION WARRANTY: Manufacturer's service and warranty policy for automatic and manual transmissions shall be at least five (5) years unlimited miles 100% parts and labor.

DIFFERENTIAL/AXLE WARRANTY: Manufacturer's service and warranty policy for differential and axles must be for at least three (3) years 300,000 miles 100% parts and labor.

DUMP BODY WARRANTY: Constructability and durability of body must be guaranteed by the Contractor for at least five (5) years, parts and labor. A decal must be affixed to the driver's door, on the inside, stating the company's name, address and phone number. Body hoist assembly must be guaranteed by the Contractor for at least 3 years, 100% parts and labor. Tailgate spring-over-air cylinder system, must be guaranteed by the Contractor for at least 3 years 100% parts and labor.

CENTRAL HYDRAULIC SYSTEM: Complete Central Hydraulic system and components must be guaranteed by the Contractor for at least 3-year 100% parts and labor including but not limited to the following:

Danfoss Valve and pump

Controller

Joysticks

All wiring harnesses must be guaranteed by the Contractor for at least 5 years 100% parts and labor.

CAB / COWL STRUCTURE WARRANTY:

Manufacturer's service and warranty policy for the entire cab structure (*regardless of atmospheric conditions*) must be for a minimum of 60 months / 125,000 miles, 100% parts and labor.

FRAME – SIDE RAILS AND CROSSMEMBERS:

Manufacturer's service and warranty policy for the chassis frame side rails and cross members (*regardless of atmospheric conditions*) must be for a minimum of 60 months / 125,000 miles, 100% parts and labor.

Truck Tri Axle
SPECIFICATIONS
CT-1-15

V. **WARRANTY:** *(Continued)*

BRAKE WARRANTY: Manufacturer's service and warranty policy for automatic slack adjusters must be for a minimum of 24 months / unlimited miles, 100% parts

HYDRAULIC PUMP: Manufacturer's service and warranty policy for hydraulic pump must be for a minimum of three (3) year 100% parts and labor.

BODY ELECTRICAL/LIGHTING: Wiring harness must be guaranteed by the Contractor for at least f5 years 100% parts. First year must include 100% labor.
All LED lights must be guaranteed by the Contractor for at least for a minimum of 5 years 100% parts.

WING PLOW/UNDERBODY PLOW WARRANTY: The manufacturer's standard service and warranty policy must be for a minimum of two (2) years. This warranty will start on the final date of acceptance of the entire order and continue for the two (2) years thereafter, including two (2) full winter plowing seasons.

DETAILED SPECIFICATIONS CHECK SHEET
72,000 lb. Tri Axle Cab and Chassis with Body and Plow

GENERAL INFORMATION:

CHASSIS INFORMATION:

Chassis shall be the current model and meets the attached specification. Primary application for cab and chassis is for snow and ice removal operations

WHEELBASE:

Wheelbase Dimension : 240"

CAB TO TANDEM:

Dimension: 156"

1	Weight Distribution Provided	Meets specification: Yes
2	Vehicle Certification for 72,000	Meets specification: Yes, Exceeded, 86,000 GVW
3	Engine	Meets specification: Yes, Exceeded, Model: Detroit DD-13, HP: 435, TQ: 1,550 LB/FT 12.8L Engine, CARB Emission Certification for Clean Idle with badging on lower forward corner of drivers door.
4	Transmission as per specification CT-1-15	Automatic model: Allison 4500 RDS, Manual model: Eaton Fuller FRO-16210C, Automated Manual model: Eaton Fuller FO-16E310C-VAS Water to oil transmission cooler mounted in radiator end tank. One Valve parking brake system with dash valve control auto-neutral and warning indicator.
5	Rear Axle	Meets specification: Yes, Per Addendum 2, Model: Meritor RT-46-164P 46,000# R-Series. All yellow magnetic drain plugs.
6	Rear Suspension	Meets specification: Yes, Exceeded, Model: Tuftrac 46,000# Rear suspension
7	Rear Axle shaft diameter	Meets specification: Yes, Exceeded, Rear axle shaft is 2.35" in diameter
8	Front Axle	Meets specification: Yes, Per Addendum 2, Model: MFS-20-133A 20,000# FL1, SKF Scotseal TF vented front hub caps w/window, center and side plugs-oil.
9	Pusher axle	Meets specification: Yes, Hendrickson HLM 20,000# N-Series Non-Steer
10	Rear Brakes	Meets specification: Yes
11	Rear Brake Chambers	Meets specification: Yes, Per Addendum 2, Haldex goldseal long-stroke 2-drive axle
12	Antilock brakes	Meets specification: Yes, Exceeded, Model: Wabco 4S/4M ABS. With hill start aid and automatic traction control.

DETAILED SPECIFICATIONS CHECK SHEET
72,000 lb. Tri Axle Cab and Chassis with Body and Plow

13	Cab Specification	Meets specification: Yes, Exceeded, Per Addendum 2, Model: Freightliner 114SD, (1) 12V power supply in dash, 16.5" painted steel straight bumper, Shield for air horn.
14	Seats	Meets specification: Yes, Exceeded, Per Addendum 2, Model: CVG Model C27-000086-010. high back air suspension driver and passenger seats with mechanical lumbar and integrated cushion extension. No bellow type seat skirt., Duel driver seat armrests
15	Road Watch road/air temperature system	Meets specification: Yes, Model: Road watch Bullet RWI
16	Drive Line Specification	Meets specification: Yes, Model: Meritor RPL-25 with RPL-20 inter-axle
17	Alternator as per specification CT-1-15	Meets specification: Yes
18	Starter as per specification CT-1-15	Meets specification: Yes
19	Batteries as per specification CT-1-15	Meets specification: Yes, Exceeded, Total CCA of batteries is 3,375
20	Electrical system as per specification CT-1-15	Meets specification: Yes, Exceeded, Per Addendum 2, Standard turn signal utilizing multiplex modules. Windshield wiper activation automatically turns on all exterior chassis lights.
21	Automatic idle shut down as per specification CT-1-15	Meets specification: Yes
22	ECM set to maximum of 65 mph as per specification CT-1-15	Meets specification: Yes
23	Oil filter part number as per specification CT 1-15	Meets specification: Yes, Part number DDE/A422180509
24	Davco 482 as per specification CT-1-15	Meets specification: Yes, Part number # DAVCO 482 Filter element part # DE/A0000903651
25	Cooling system as per specification CT-1-15	Meets specification: Yes
26	Engine Accessories as per specification CT-1-15	Meets specification: Yes
27	Exhaust as per specification CT-1-15	Meets specification: Yes

DETAILED SPECIFICATIONS CHECK SHEET
72,000 lb. Tri Axle Cab and Chassis with Body and Plow

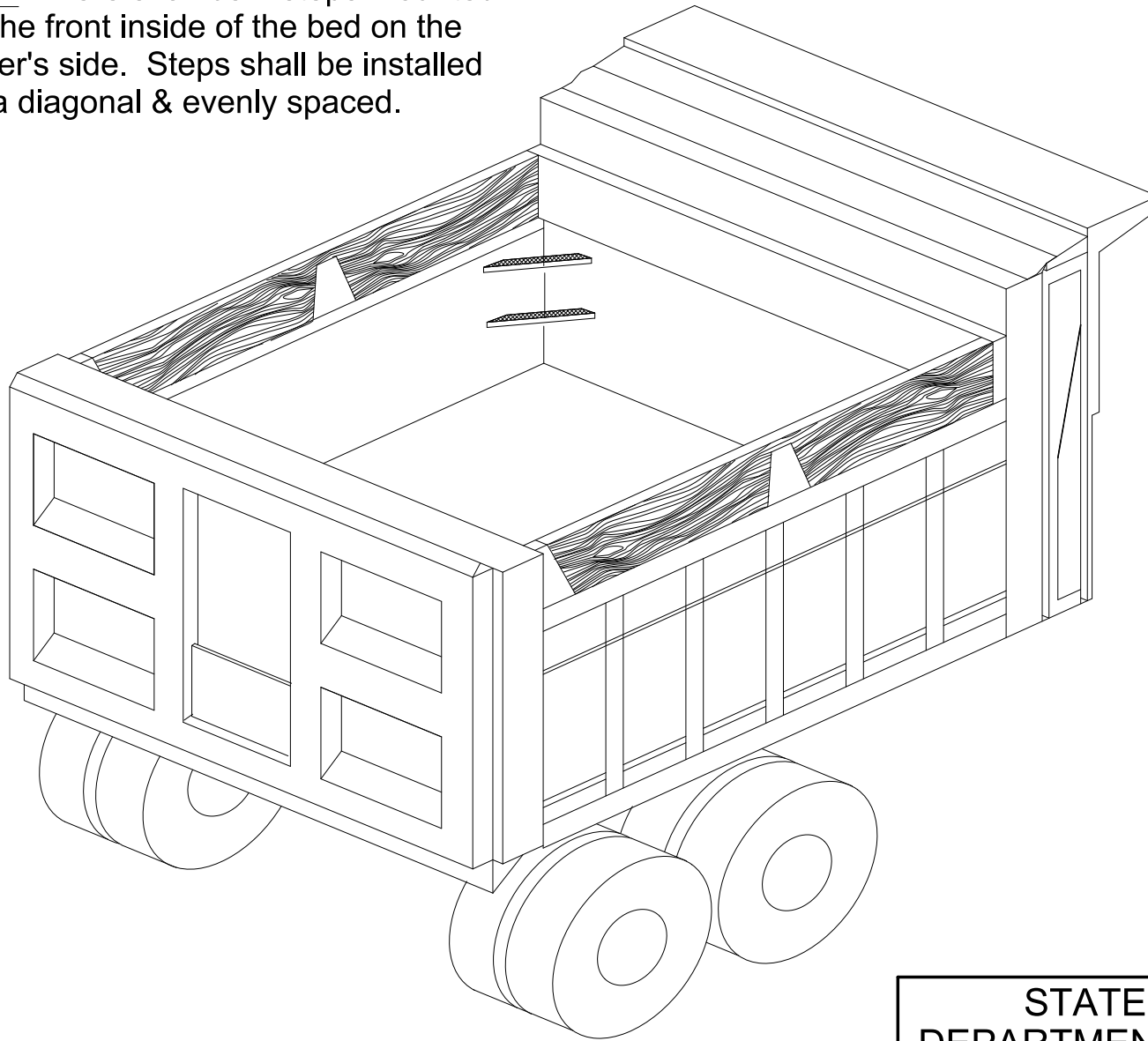
28	Frame as per specification CT-1-5	Meets specification: Yes, Exceeded, Frame RBM: 3,715,200 lb.-in per rail. Section Modulus: 31.00 cu.in per rail. Frame ls 7/16"x3-9/16"x11-1/8" 120 psi with a full 1/4" c-channel inner reinforcement
29	Instrumentation as per specification CT-1-15	Meets specification: Yes
30	Paint as per specification CT-1-15	Meets specification: Yes Paint code: L6389EB Omaha Orange Elite BC Paint brand: Dupont
31	Steering system as per specification CT-1-15	Meets specification: Yes, Exceeded, Oil / Air power steering cooler, 4 quart CLEAR power steering reservoir.
32	Front Suspension as per specification CT-1-15	Meets specification: Yes, Exceeded, Front shock absorbers also provided
33	Rear Suspension as per specification CT-1-15	Meets specification: Yes, Exceeded, Model: Tuftrac 46,000# rear suspension. Fore/aft and transverse control rods on rear suspension, Rear shock absorbers on one rear axle, Heavy duty suspension cross-member
34	Fuel tank as per specification CT-1-15	Meets specification: Yes, Exceeded, Per Addendum 2, 100 gallon, Plain aluminum fuel tank w/treated painted steel straps and rubber isolators. High temperature reinforced nylon fuel lines. Fuel filter restriction indicator. Additional engine supplied fuel filter / fuel water separator with water-in-fuel indicator light. This is in addition to the requested and supplied DAVCO filter.
35	Wheels/Tires as per specification CT-1-15	Meets specification: Yes, Per Addendum 2, Tire Manufacturer: Goodyear Wheel manufacturer: Accuride / Maxion wheels 10035 22.5 x 12.25 10-hub pilot 4.75 inset 5-hand steel disc front wheels. Rear wheels each have a rating of 8,000 #.
36	Dump Body as per specification CT-1-15	Meets specification: Yes Model: Beau Roc DH
37	Tailgate as per Specification CT-1-15	Meets specification: Yes
38	Tailgate Latches as per specification CT-1-15	Meets specification: Yes

DETAILED SPECIFICATIONS CHECK SHEET
72,000 lb. Tri Axle Cab and Chassis with Body and Plow

39	Hoist Cylinder mounting as per specification CT-1-15	Meets specification: Yes
40	Hitch Assembly as per specification CT-1-15	Meets specification: Yes
41	Pintle Hook as per specification CT-1-15	Meets specification: Yes
42	Body lighting to meet specification CT-1-15 and all Federal Motor Carrier Regulations	Meets specification: Yes
43	Splash Guards as per specification CT-1-15	Meets specification: Yes
44	Central Hydraulic system as per Specification CT-1-15	Meets specification: Yes
45	Tarpping system as per specification CT-1-15	Meets specification: Yes Make: Roll Rite Model: Tarp Master 400
46	Spreader as per specification CT-1-15	Meets specification: Yes Make: Bonnel Model: BVDA-1660-S2-DDR
47	Liquid per wet pump as per specification CT-1-15	Meets specification: Yes Make: Cirus Model: PWCL HYD
48	Plow Hitch as per specification CT-1-15	Meets specification: Yes Make: Viking Model: Custom Tilt over
49	Wing Plow as per specification CT-1-15	Meets specification: Yes Make: Viking Model: 132AHSTP
50	Manuals as per specification CT-1-15	Meets specification: Yes
51	Training as per specification CT-1-15	Meets specification: Yes
52	Warranty as per specification CT-1-15	Meets specification: Yes, Exceeded, Base vehicle bumper to bumper chassis warranty for 2 years / 200,000 miles with no hour limitation. Brake warranty that covers automatic slack adjusters for 2 years / unlimited miles, 100 % parts and labor. Frame, Side Rails, Cross-Member Cab/Cowl structure warranty for 5 years / unlimited miles, 100 % parts and labor. Cooling system (Including radiator) warranty for 5 years / 500,000 miles, 100 % parts and labor with no hour limitation. Detroit EW4 engine and emission warranty full coverage for 5 years / 200,000 miles with \$0 deductible and no hour limitation.

ATTACHMENT 8

NOTE: There shall be 2 steps mounted on the front inside of the bed on the driver's side. Steps shall be installed on a diagonal & evenly spaced.



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

DUMP BODY
STEP CONFIGURATION

DRAWN BY:

DSH

CHECKED BY:

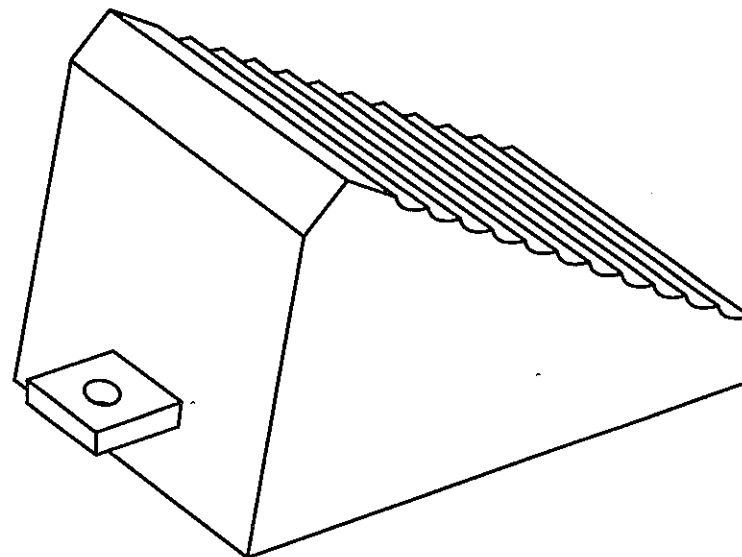
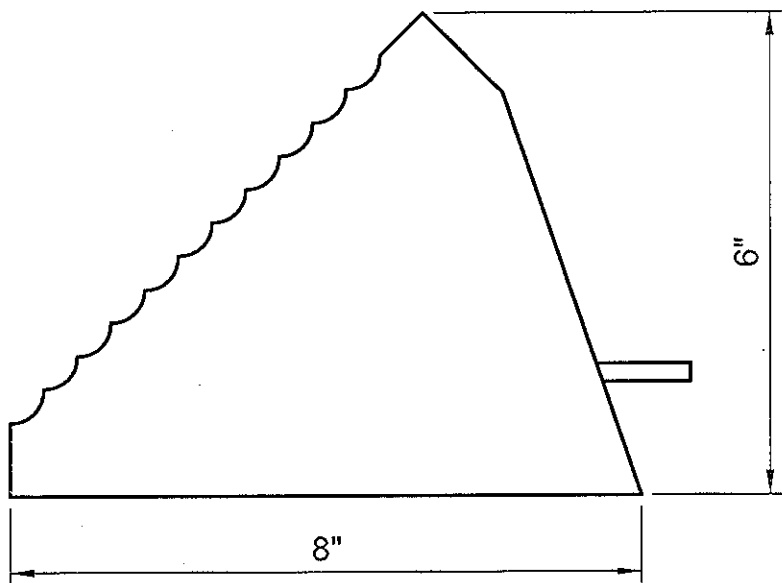
JC

DATE:

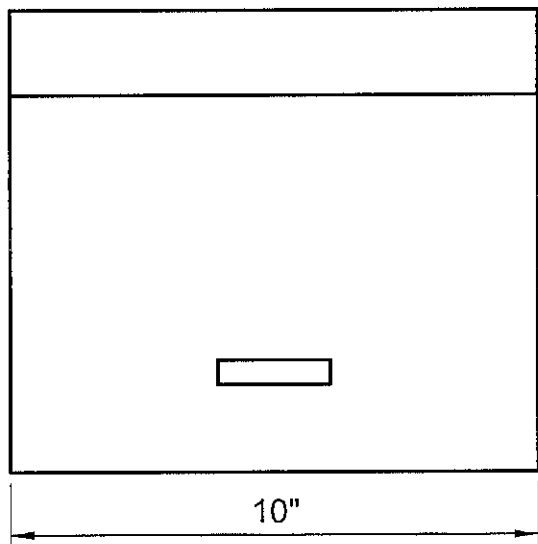
03-11-2014

CT EQN-2

CHOCK REF. BUYERS WC1086 OR EQUAL



WC 1086

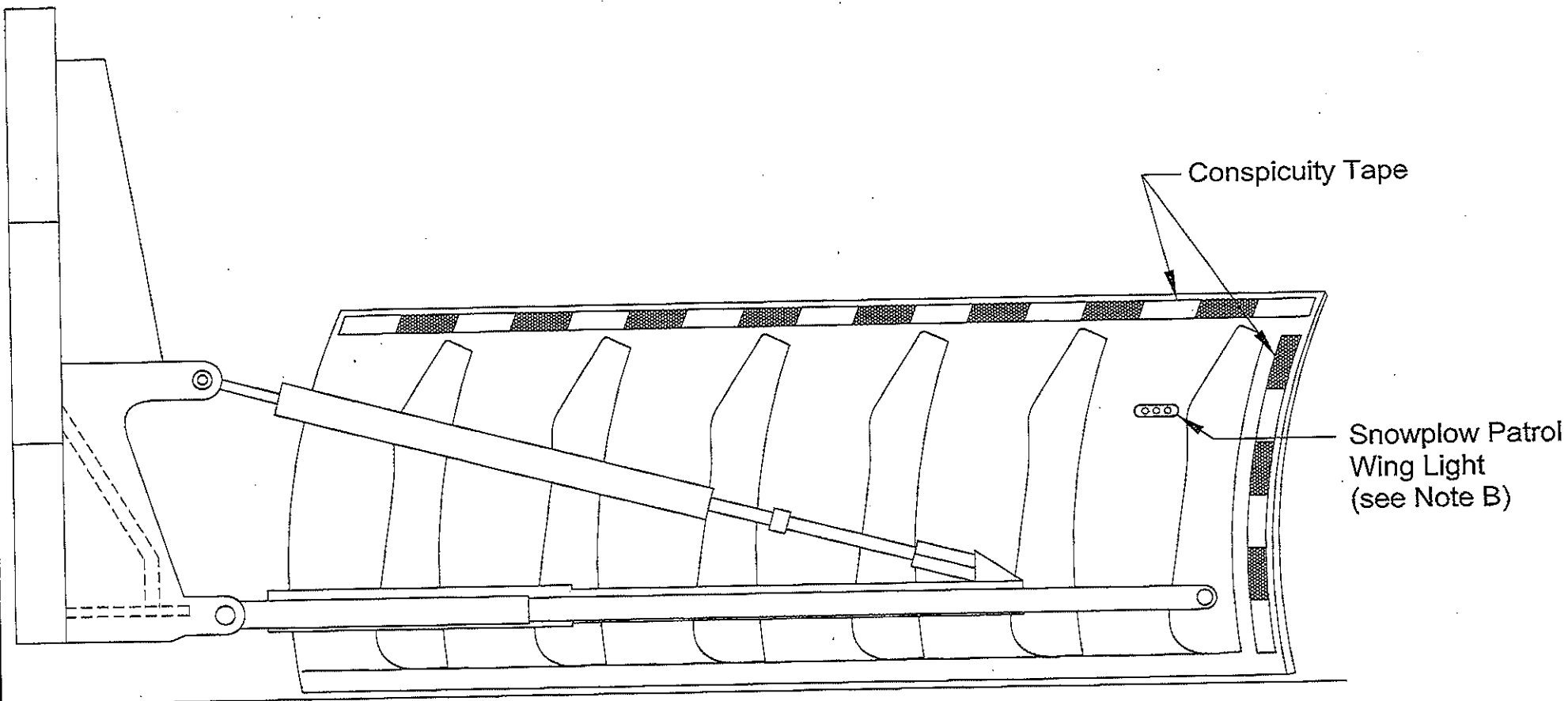


- A. Final mounting location shall be determined at the pre-build meeting.
- B. Chock holders shall be Rubber.
- C. Two chocks per truck shall be supplied.
- D. Chocks shall have an eyelet or loop with 5/8" hole to hang on truck.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

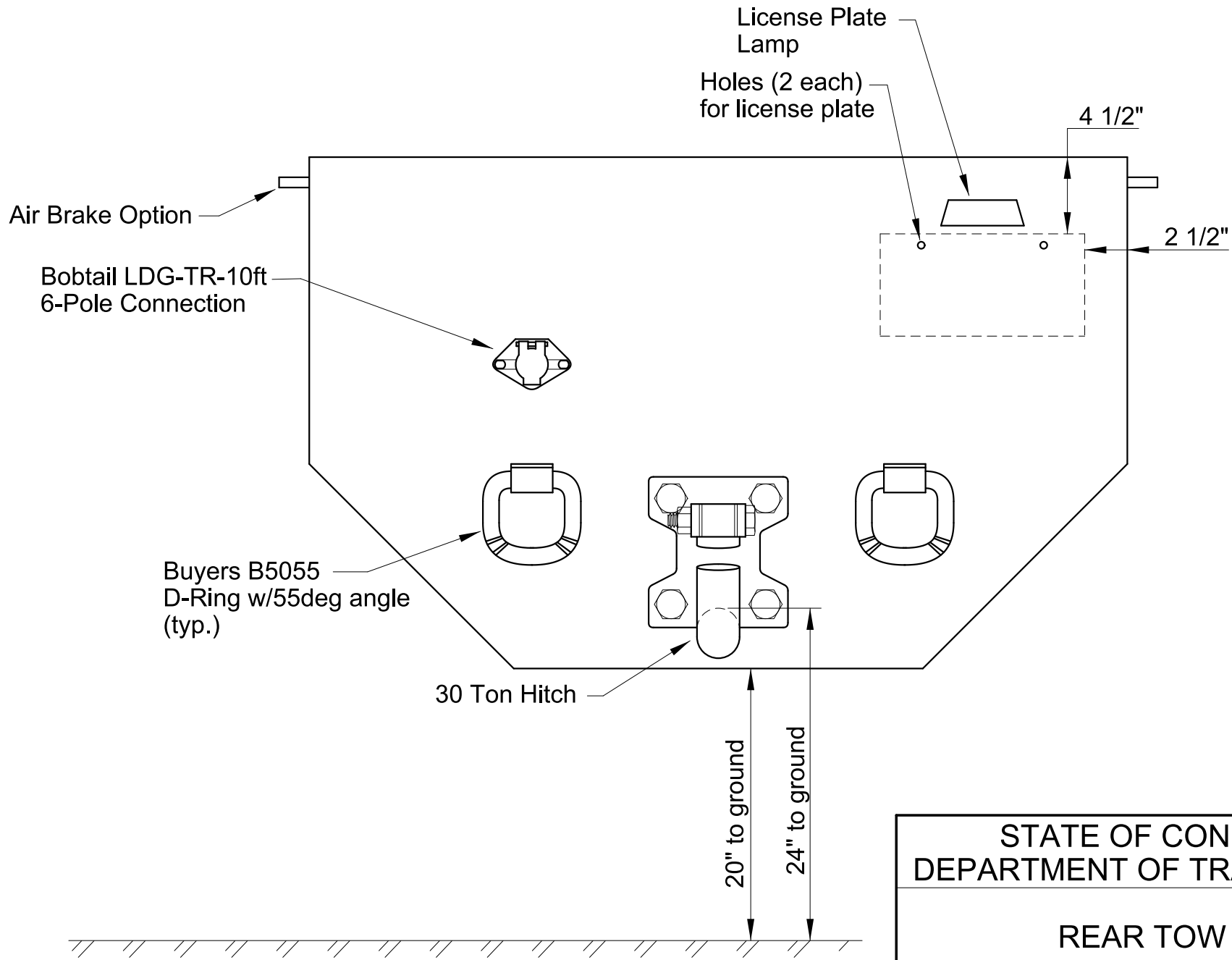
6" CHOCK AND HOLDER

DRAWN BY: DSH	CHECKED BY: JC	DATE: 03-24-2014	CT EQN-3
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- A. All wiring connections shall be sealed and weather tight.
- B. Wing light shall be WHELEN MODEL #WPLOWZ1A

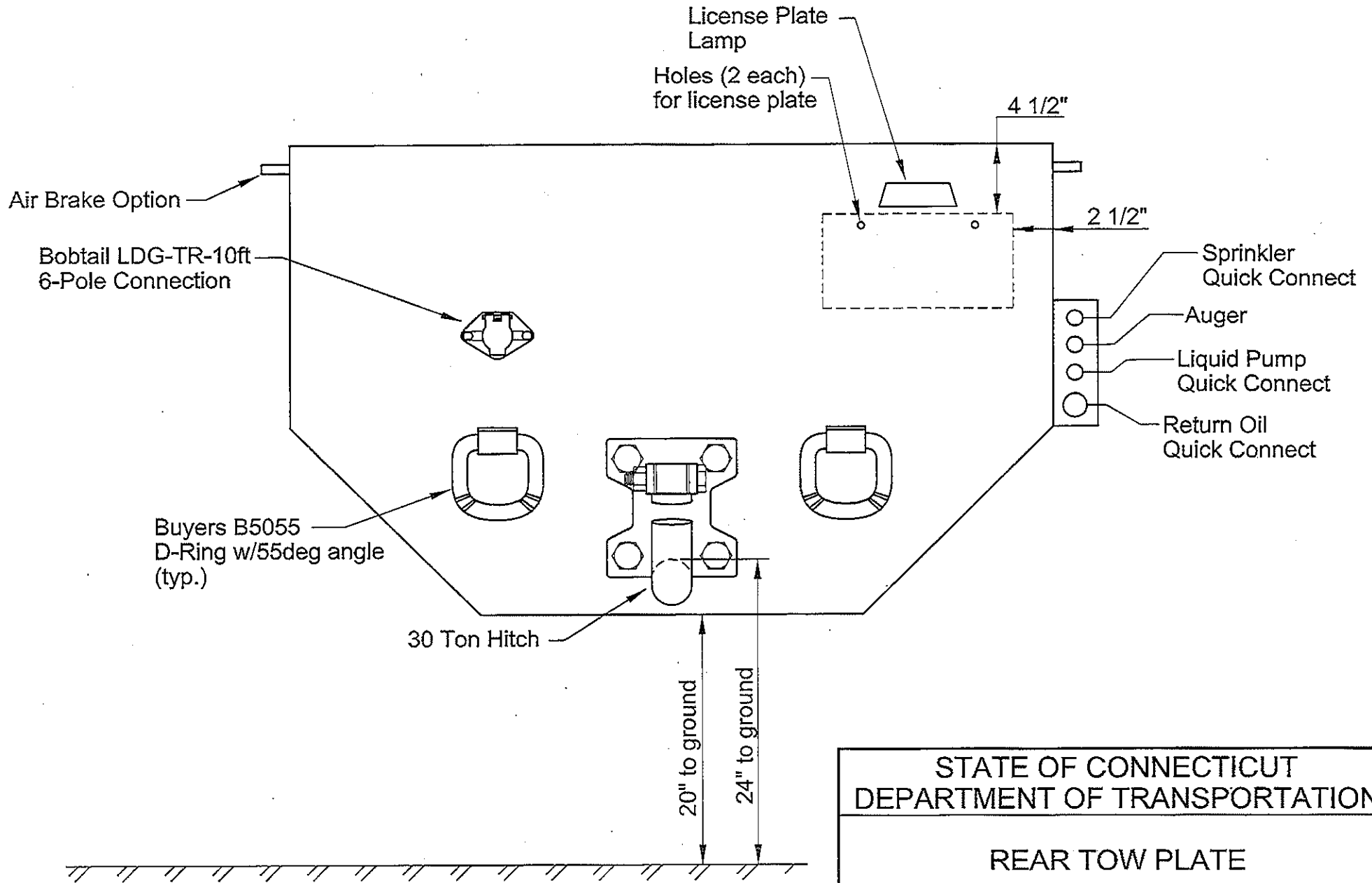
STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION			
SNOWPLOW PATROL WING, GENERIC MOUNTING ARRANGEMENTS			
DRAWN BY:	CHECKED BY:	DATE:	CT EQN-4
DSH	JC	03-06-2014	



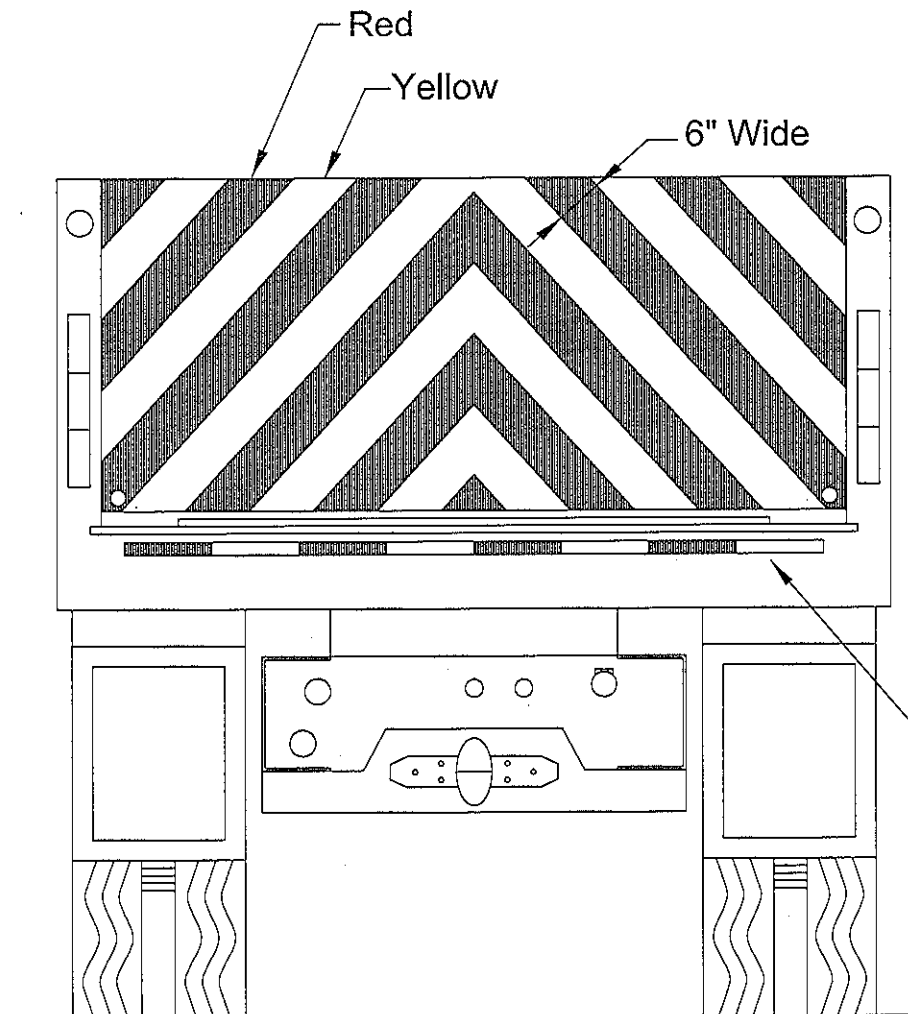
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

REAR TOW PLATE

DRAWN BY: DSH	CHECKED BY: JC	DATE: 07-23-2014	CT EQN-6
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STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION			
REAR TOW PLATE TRI-AXLE CT-1-15			
DRAWN BY:	CHECKED BY:	DATE:	CT EQN-8
DSH	JC	03-20-2014	



A. The tailgate shall be striped as shown with 6" wide alternating red/yellow bands creating a Chevron (inverted 'V') at 45 degree angles, across the gate to serve as a safety warning system.

B. Tape shall be 6" wide Reflexite Daybrite V98 Conspicuity sheeting. Red--19716 & Yellow-19718.

C. The entire width directly under the tailgate shall be covered with 1-1/2" wide Scotchlite Conspicuity sheeting Series 980 or Reflexite Conspicuity II System. Material shall be red/silver, continuous backing.

See Note "C"

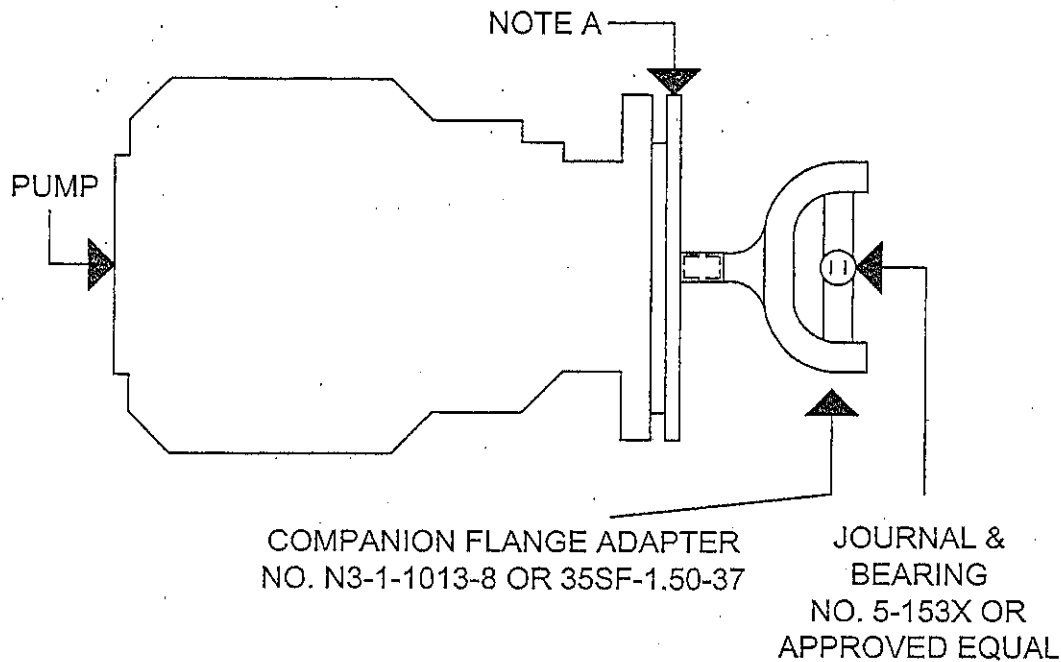
Note: Drawing is for conspicuity reference only and shall not be used in the detailing or construction of the tailgate.

This vehicle shall comply with the rules of the National Highway Traffic Safety Administration (NHTSA). The most current regulations shall be adhered to.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

DUMP BODY
REFLECTIVE SHEETING

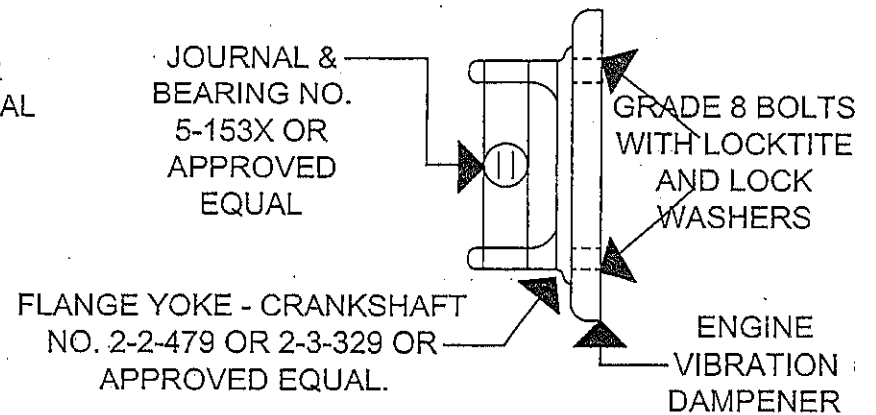
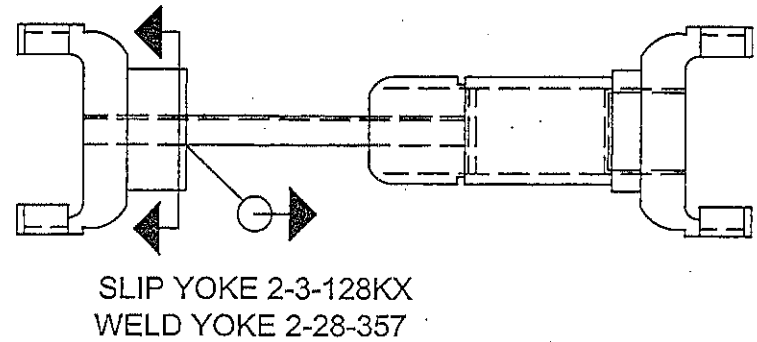
DRAWN BY: DSH	CHECKED BY: JC	DATE: 03-06-2014	CT EQN-14
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NOTE A
Pump mounting bracket shall be 5/8" min., formed steel channel.

NOTES:

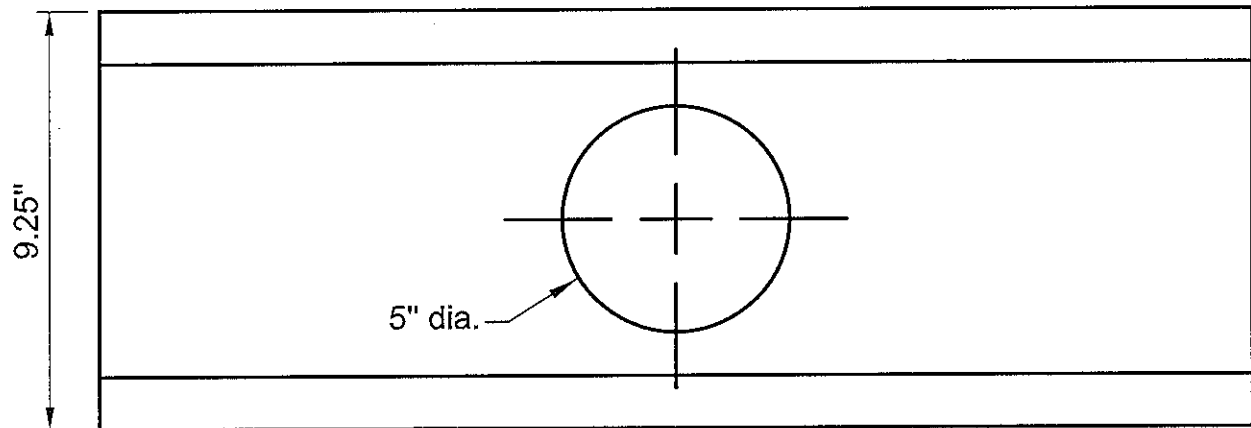
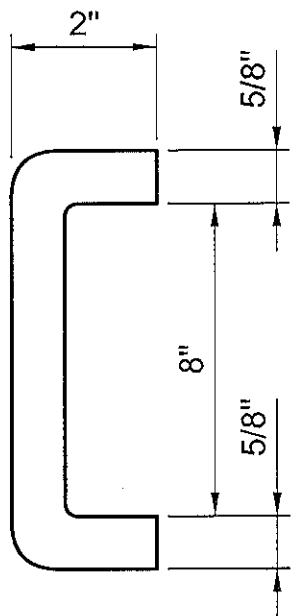
- 1) Driveshaft assembly shall be factory balanced.
- 2) Spicer 1310 Series, or Neapco. No substitute. Standardization.
- 3) Sleeve yoke shall be 1.375 inch. I.D., 16 splines.
- 4) End yoke adapter shall accomodate 1.5 inch, keyed shaft.



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

DUMP TRUCK PTO ASSEMBLY

DRAWN BY: DSH	CHECKED BY: JC	DATE: 03-06-2014	CT EQN-15
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Pump mounting bracket, regardless of design, shall be a minimum 5/8 inch formed steel channel. The pump bracket shall be sloped to match the engine crankshaft. Width dimension shall be full frame rail width. Bracketry to attach pump mounting bracket to truck frame rails shall be minimum 5/8" thickness. Brackets shall be either fully welded or use 3/4", Grade 8 bolts of sufficient length and Grade 8 lock nuts, minimum 2 bolts per mounting surface.

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION			
PUMP MOUNTING BRACKET			
DRAWN BY:	CHECKED BY:	DATE:	
DSH	JC	03-06-2014	CT EQN-16

FENDERS AND FLAPS: Vehicles specified under this subchapter shall be equipped with fenders which provide at least as much coverage of the wheel as the original equipment. All wheels shall be sufficiently covered with fenders or flaps so as to prevent loose objects, rain, snow, and the like from being thrown about in a manner which may interfere with other persons using the highway.

REAR WHEEL SHIELDS: Vehicles specified under this subchapter, except truck-tractors while towing a trailer, shall be constructed or equipped as far as to bar water or other road surfaces thrown from rear wheels of such vehicle or combination at tangents exceeding 22.5 degrees, measured from the road surface from passing in straight line to the rear of such vehicle. See Section 14-104 (relating to rear wheel shields) in Chapter 246 of Title 14, Motor Vehicles.

Area 6.75" x 24" across the top is acceptable in solid VIS ribs provided it measures 0.225" in thickness.

The body of splash guard shall be a minimum of 0.09375" .

The trim area shall be 3/8" minimum thickness.

The body area is the area within the outside dimensions of 24" x 36" tolerances +/- 0.250" .

The weight of the splash guard shall be 6lbs. for 24" x 30" and 7.5lbs for 24" x 36" minimum.

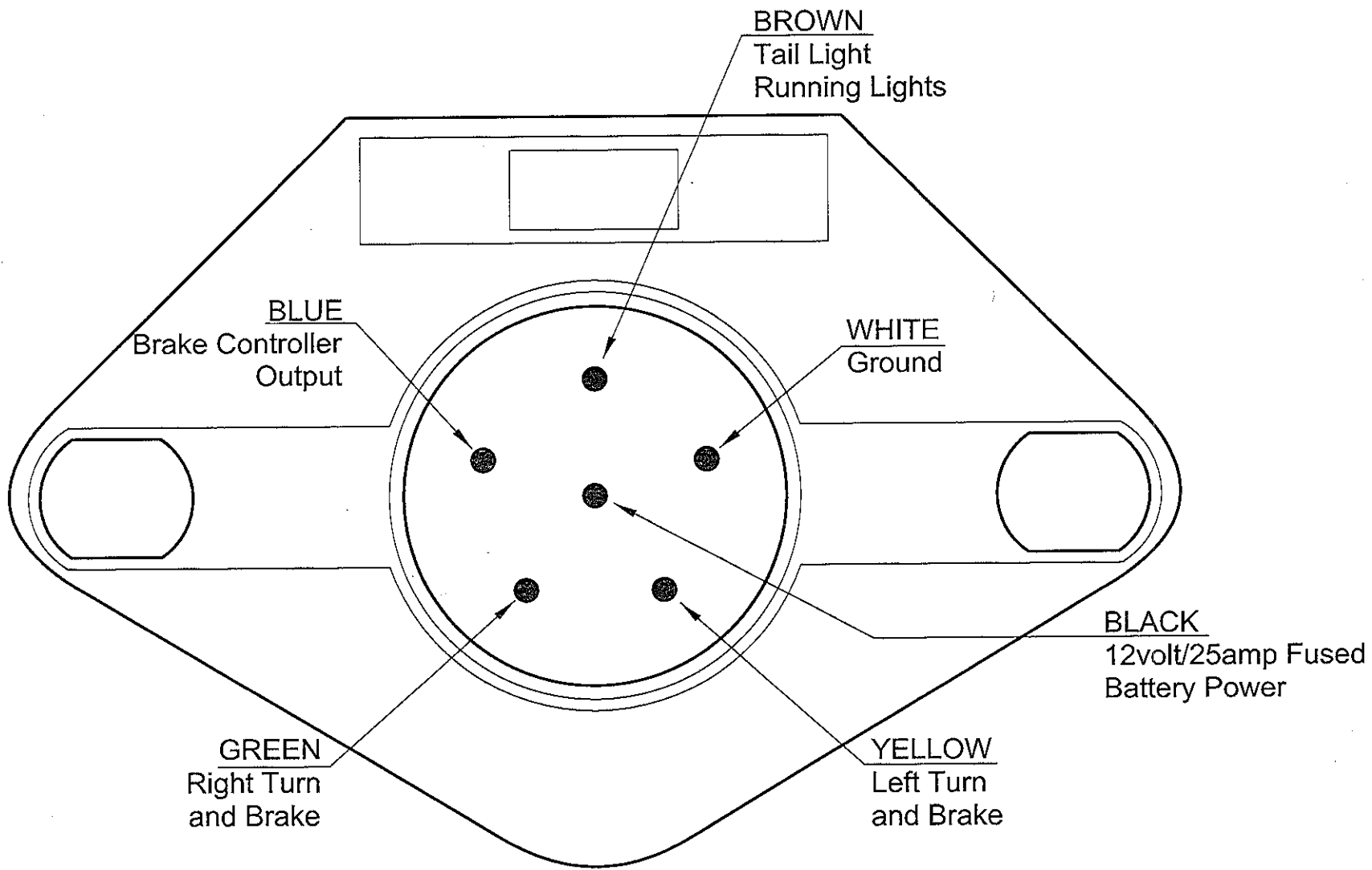
NOTES

1. MATERIAL: Molded natural or synthetic black tire chord impregnated rubber. Oil and salt resistant.
2. Anti-sail not acceptable.
3. Manufacturers standard size is acceptable if all minimum thickness, dimensions, and weight specifications are met.
4. Dimension "A" will be 30" or 36" as necessary, when installed, to meet CT Motor Vehicle Code or as specified on the Contract.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

NOTES
SPLASH GUARDS - RUBBER
TRAILER & TRUCK

DRAWN BY: DSH	CHECKED BY: JC	DATE: 03-05-2014	CT EQN-18
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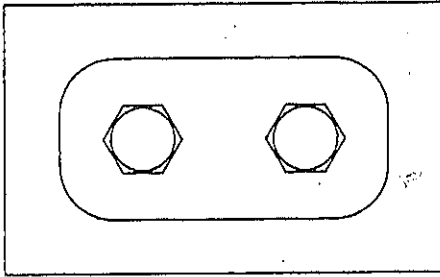
NOTES

View of female connector, standing at rear of truck, looking in at the connector---Bobtail LDGTR - 10ft
 Wire shall be 6 way (1-10 guage; 5-12 guage) per ATA color code, clamped every 18" min.
 Connection shall be made using the factory OEM trailer wiring harness.
 All connections shall be water tight.

STATE OF CONNECTICUT
 DEPARTMENT OF TRANSPORTATION

WIRING DIAGRAM
 6-WAY CONNECTOR

DRAWN BY: DSH	CHECKED BY: JC	DATE: 03-07-2014	CT EQN-20
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HYDRAULIC HOSES/FITTINGS

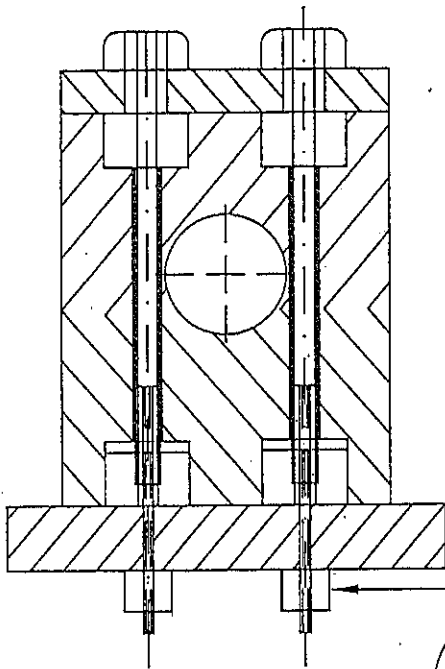
Hydraulic hoses shall not extend below the top of the front axle. All hydraulic hoses shall be adequately clamped, shielded from exhaust system and prevented from rubbing up against any part of the cab, chassis or body.

Hycon clamps are required to prevent chaffing or rubbing. Due to the variations of sizes, part numbers have not been included. Weld-on or bolt-on are acceptable. Available in standard and heavy duty series. Locations to be approved by the Department's Repair Manager.

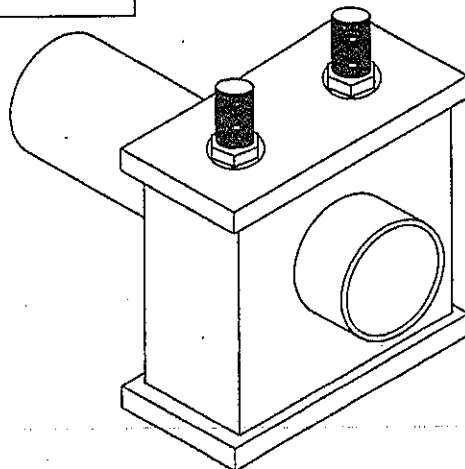
Ref: Hycon Corporation, Lehigh Valley, PA phone: 800-755-0546

NOTE:

All bolts/nuts shall be coated with Never-Sieze



BOLT SHALL EXTEND BEYOND BASE

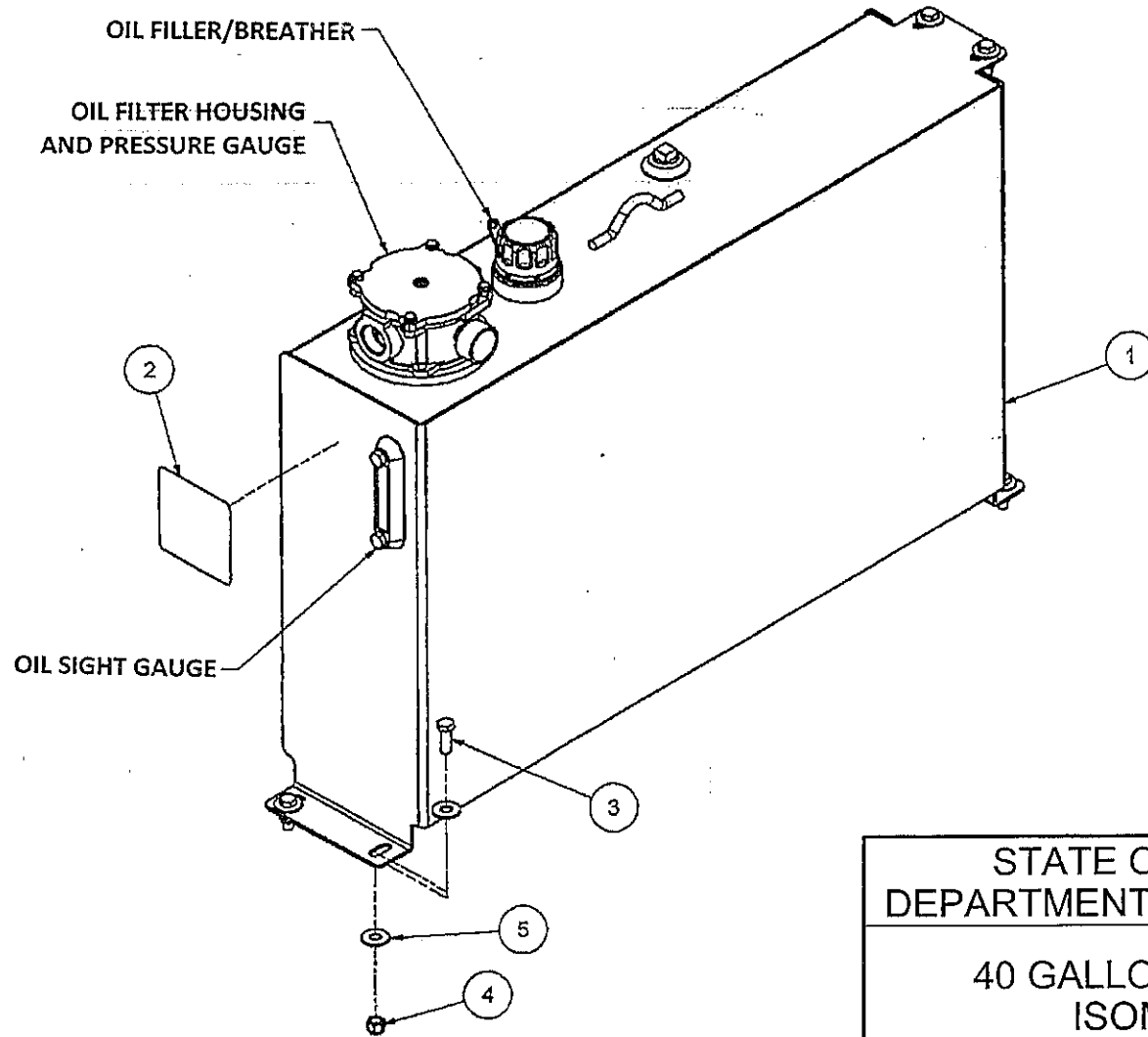


STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

HOSES AND CLAMPS

DRAWN BY: DSH	CHECKED BY: JC	DATE: 03-06-2014	CT EQN-21
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ITEM	DESCRIPTION
1	Oil Reservoir 40 Gallon Cabinet Mount Assy
2	Decal Oil level Tank
3	Bolt 1/2-13 x 1 1/2 NC HX GR8 ZYD
4	Locknut 1/2-13 NC HX ELA GR8 ZP
5	Flatwasher 1/2 USS P GR2



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

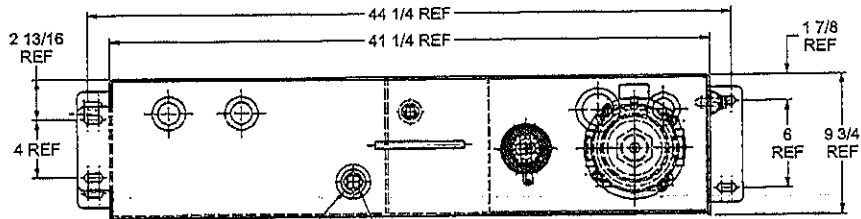
40 GALLON OIL RESERVOIR
ISOMETRIC VIEW

DATE:

03-17-2014

CT EQN-22

ITEM	DESCRIPTION
1	Oil Reservoir 40 Gallon Cabinet Mount
2	Filter Assy TR1200 New Tanks
3	Oil Filter Assembly STD
4	Oil Sight Gauge
5	Pipe 1 Plug Sq HD
6	Pipe 1/2 Magnetic Sq HD



INSTALL WITH TEFLON TAPE OR COMPARABLE THREAD SEALER

5

ZINGA WSFB-10-6S-DL FILLER/BREATHER ASSY OR EQUIVALENT (LOCATE LOCK TAB TOWARDS REAR OF TANK)

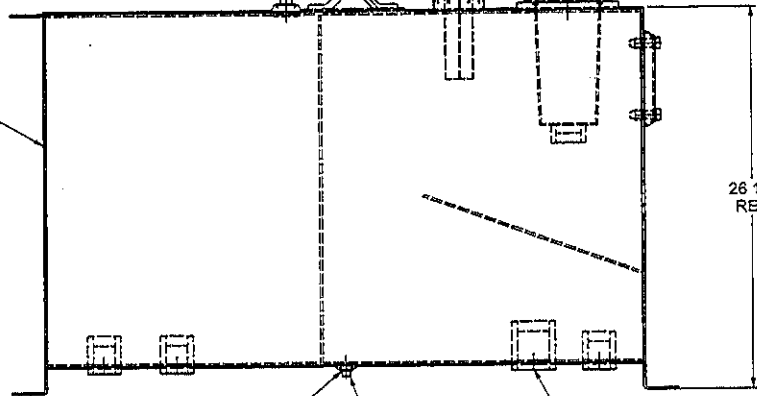
3

ZINGA TR1200-25-10-0 FILTER HOUSING
RE-409-10 FILTER ELEMENT (VIKING REF #182407A)
CI-20 PRESSURE GAUGE OR EQUIVALENT

2

INLET PORT ON FILTER HOUSING FACING OUT PLUG WITH PLASTIC PLUG

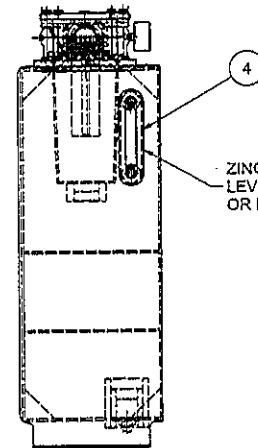
1



INSTALL WITH TEFLON TAPE OR COMPARABLE THREAD SEALER

6

CAP BOTTOM PORTS WITH PLASTIC PLUGS



4

ZINGA SG-05A-T-G SIGHT LEVEL/TEMP GAUGE OR EQUIVALENT

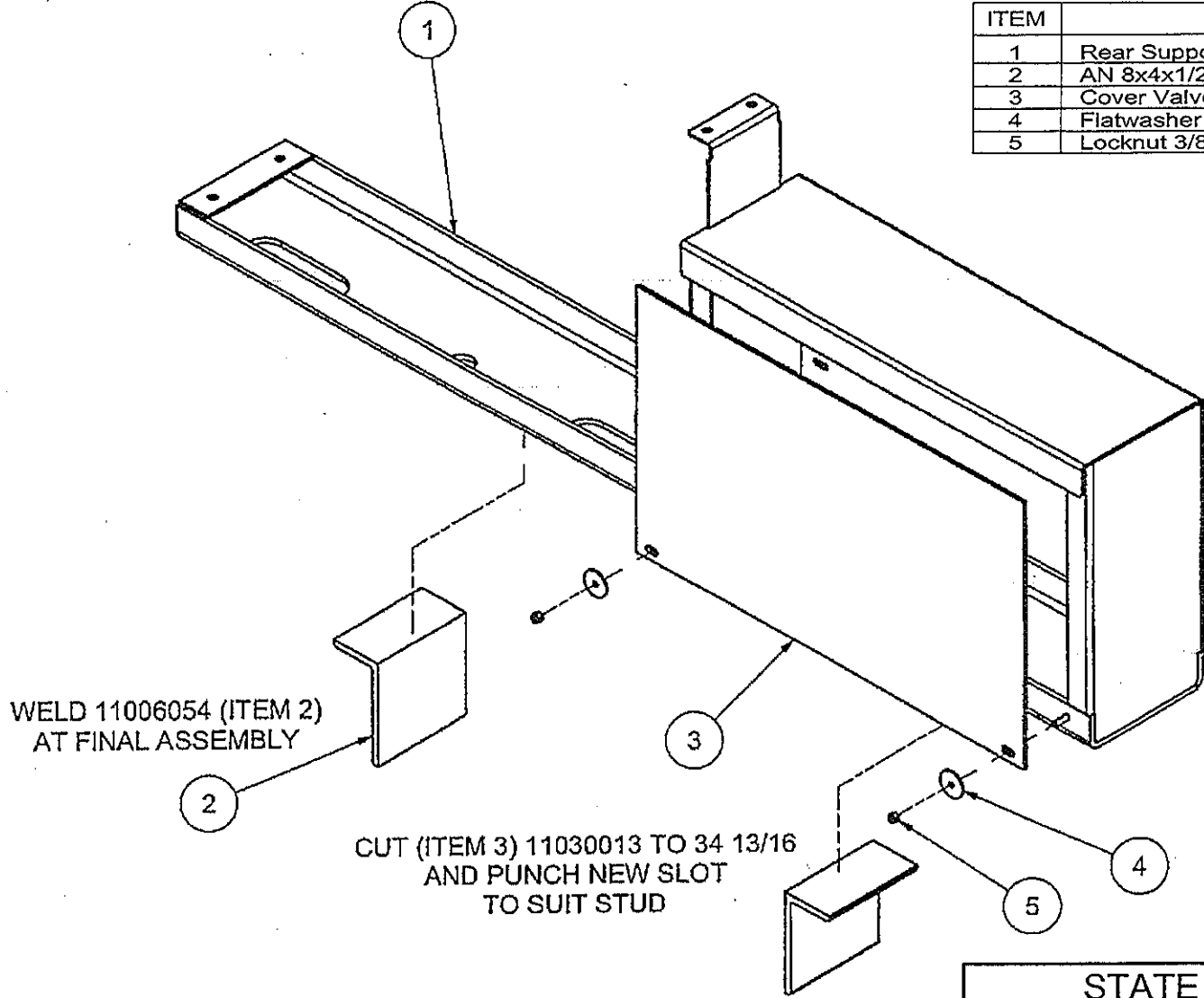
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

40 GALLON OIL RESERVOIR
SIDE & END VIEWS

DATE: 03-14-2014

CT EQN-23

ITEM	DESCRIPTION
1	Rear Support Valve Enc 40 Gal Tank Mount
2	AN 8x4x1/2x8
3	Cover Valve Box H1096 Polymer
4	Flatwasher 3/8 x 2 x 1/8 Oversize ZP
5	Locknut 3/8-16 NC HX Elas GR8 ZYD



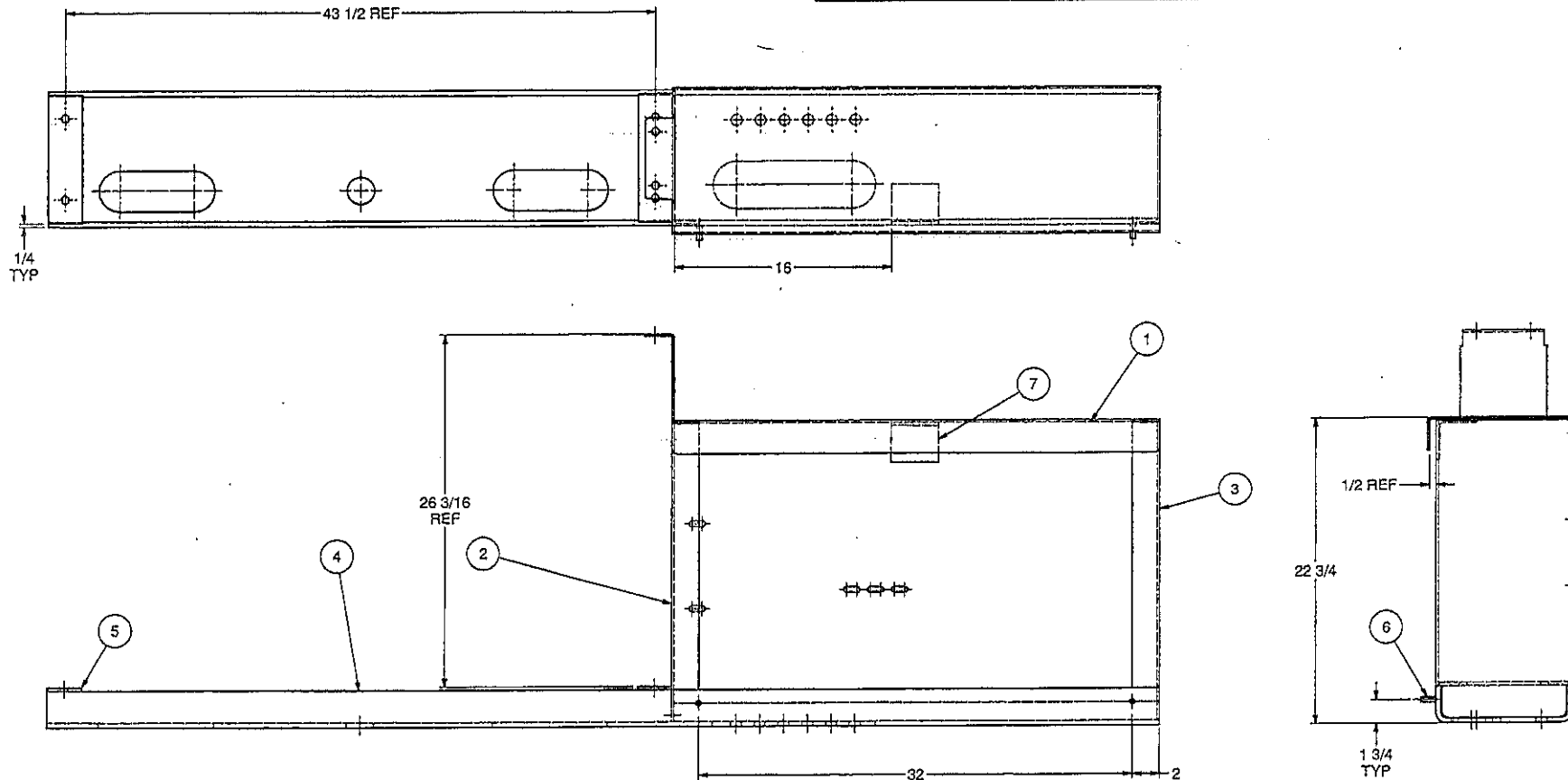
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

REAR SUPPORT VALVE ENCLOSURE
ISOMETRIC VIEW

DATE: 03-17-2014

CT EQN-24

ITEM	DESCRIPTION	MATERIAL
1	Valve Box Hyd Patrol over Frame	ST 8GA x 33 5/8 x 36
2	End PL Valve Box LH ST of CONN MMW	ST 8GA x 11 5/8 x 30 5/8
3	End PL Valve Box RH ST of CONN MMW	ST 8GA x 11 5/8 x 22 1/8
4	Bottom Channel Fab Valve Enclosure	PL 3/8 x 14 x 82
5	Lower Tank Mounting Bar SC1096	FH 1/4 x 2 1/2 x 9 1/2
6	Weld on Stud 3/8 x 1 1/8	
7	AN 3 x 3 x 1/4 x 3 1/2	AN 3 x 3 x 1/4 x 3 1/2



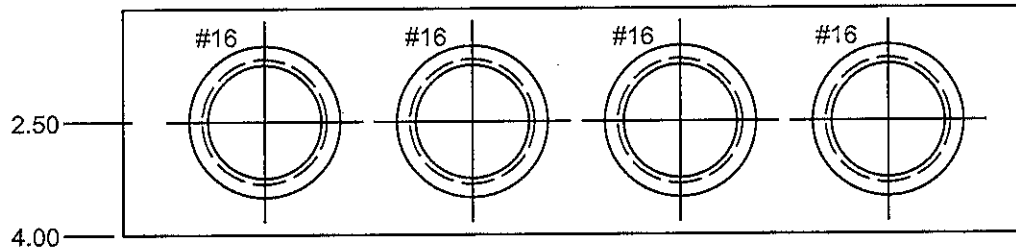
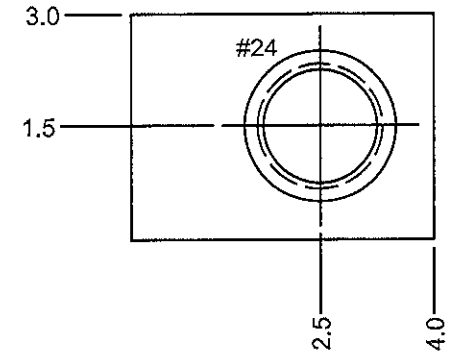
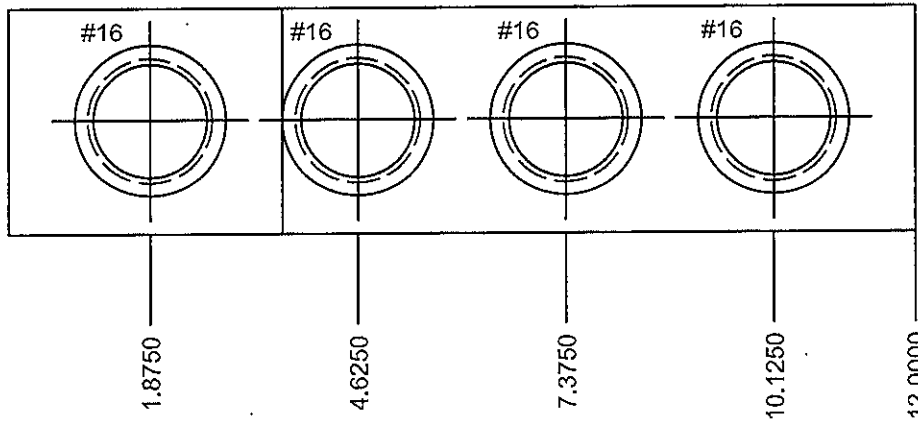
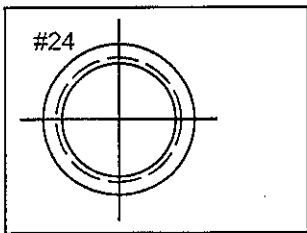
NOTE: All welds 3/16 Fillet 100%

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

REAR SUPPORT VALVE ENCLOSURE
SIDE AND END VIEWS

DATE: 03-19-2014

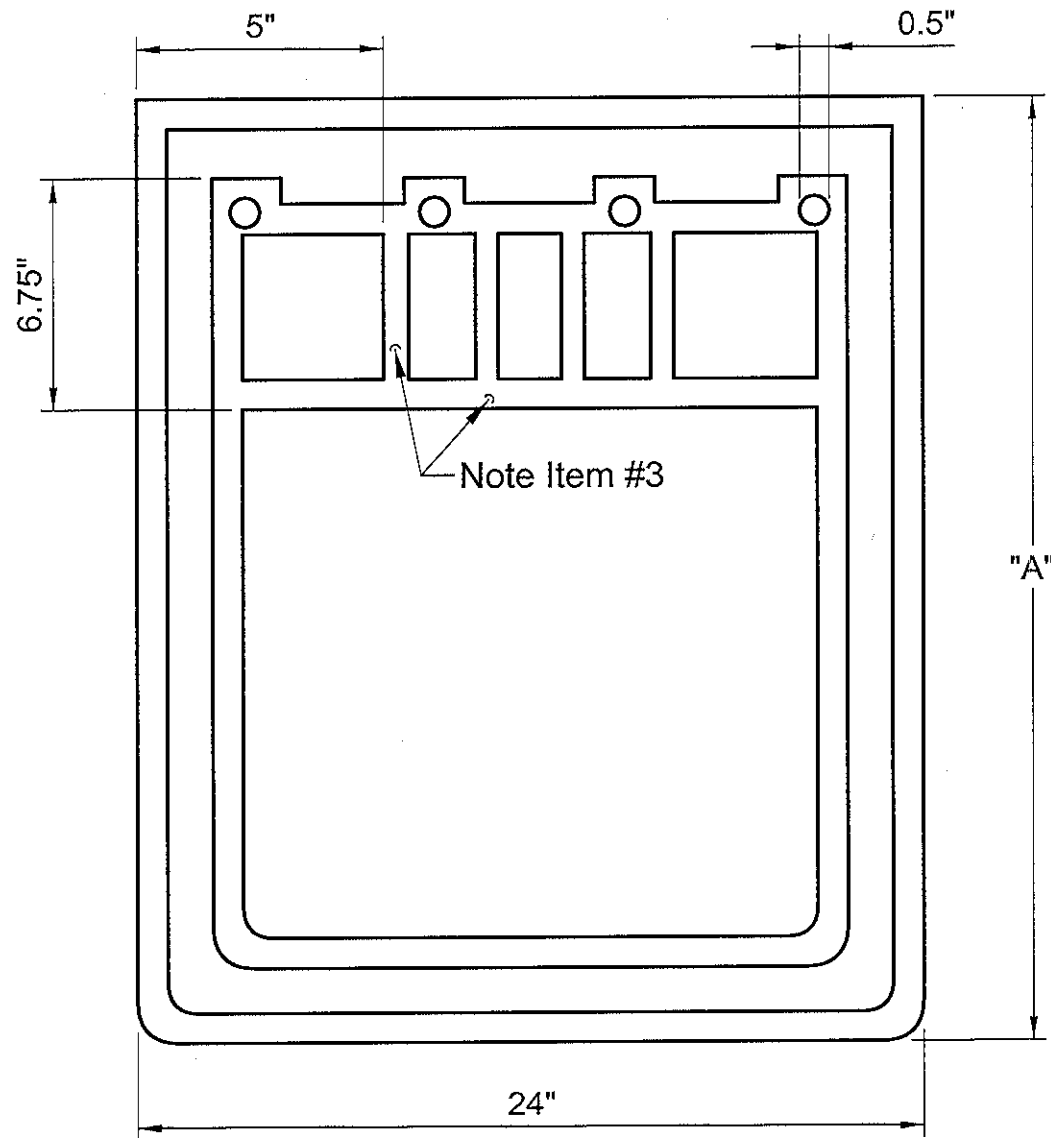
CT EQN-25



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

RETURN MANIFOLD

DRAWN BY: DSH	CHECKED BY: JC	DATE: 02-19-2014	CT EQN-26
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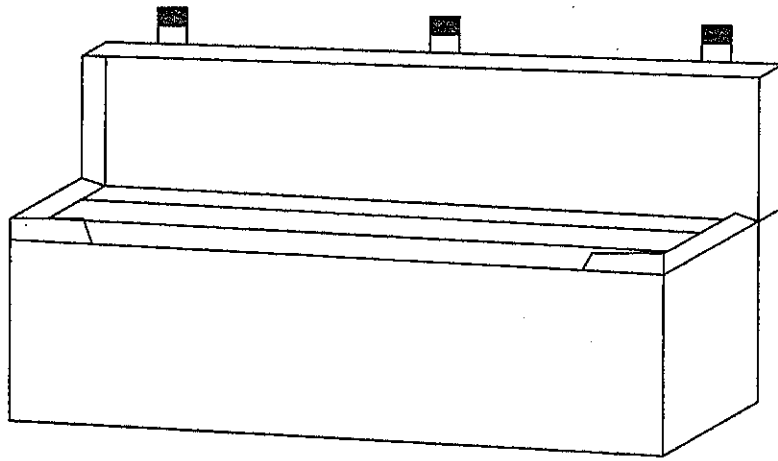
NOTE: Dimension "A"
dependent on
Requisition

SAFETY

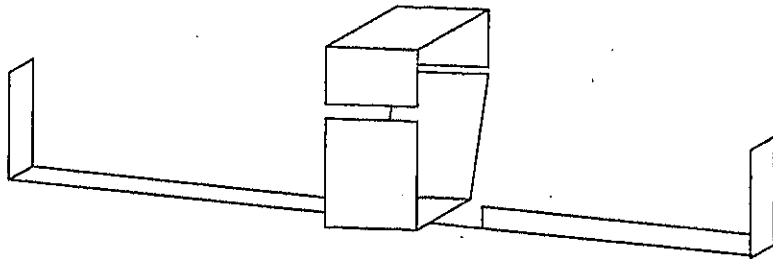
STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

DETAIL
SPLASH GUARDS - RUBBER
TRAILER & TRUCK

DRAWN BY: DSH	CHECKED BY: JC	DATE: 02-19-2014	CT EQN-27
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JAMES KING & CO.
1-800-824-8635
TRIANGLE PART #1005
OR APPROVED EQUAL



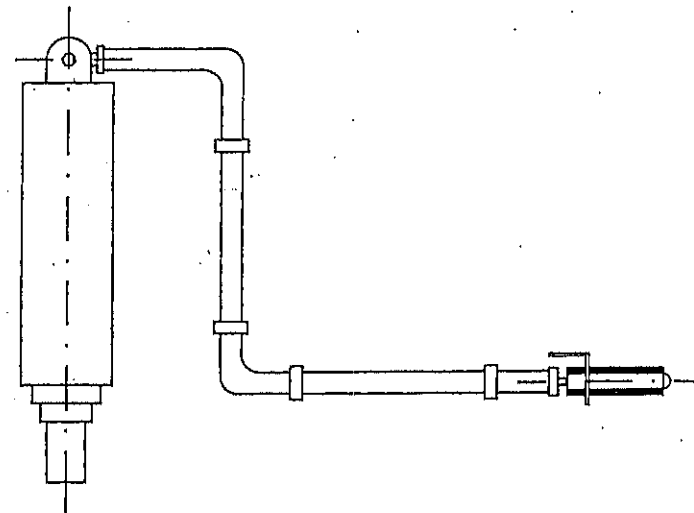
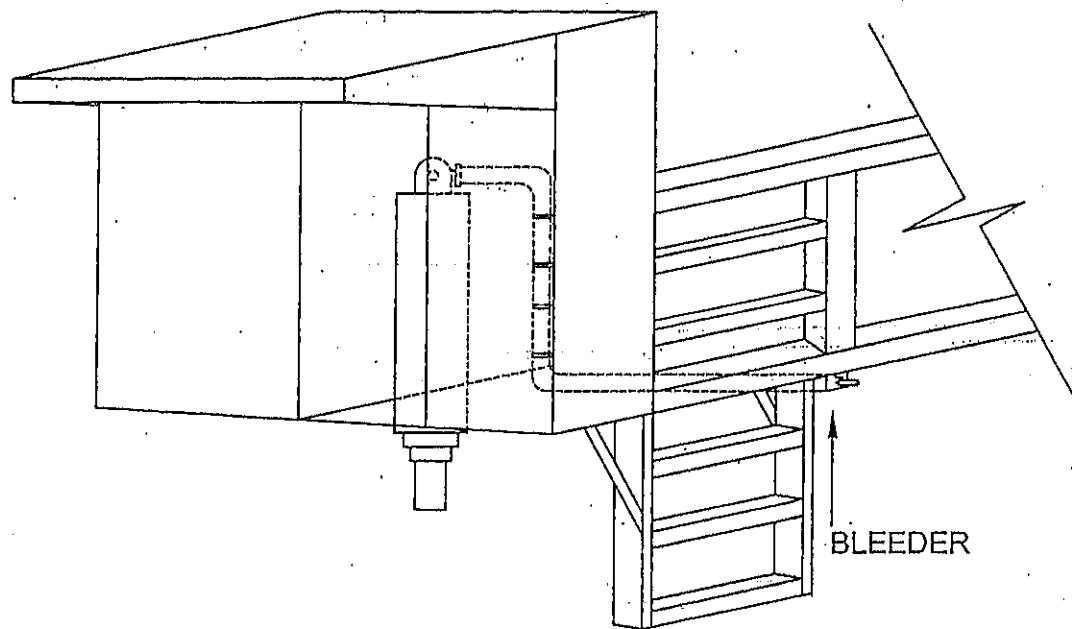
JAMES KING & CO.
1-800-824-8635
STEEL BRACKET PART #1005-B1
OR APPROVED EQUAL

BOLTS, NUTS AND FENDER WASHERS SHALL BE
USED TO SECURE METAL BRACKET.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

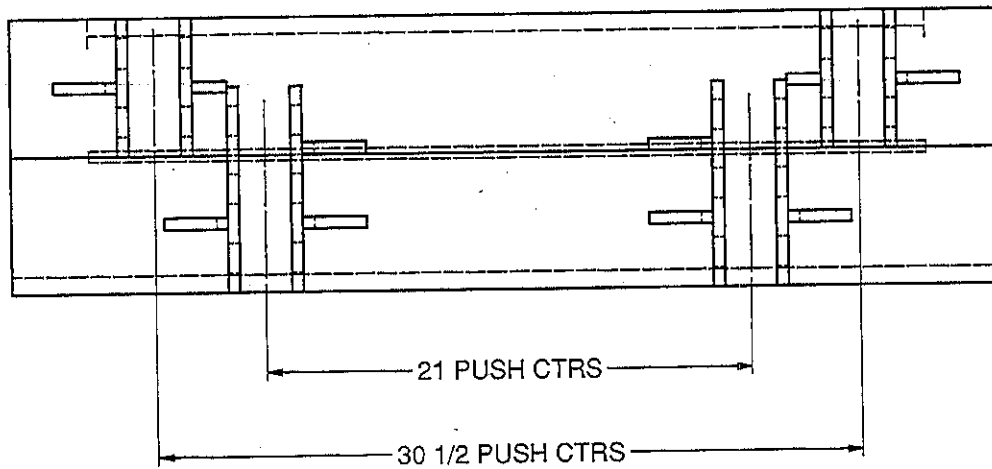
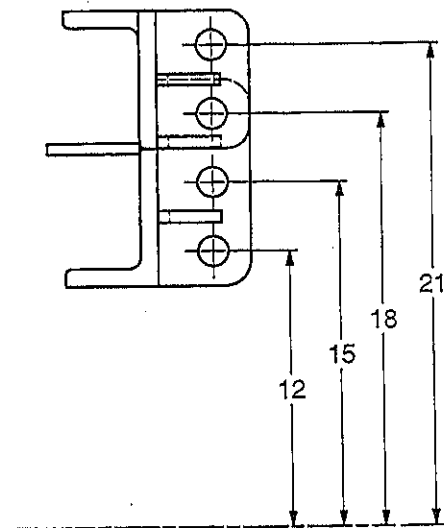
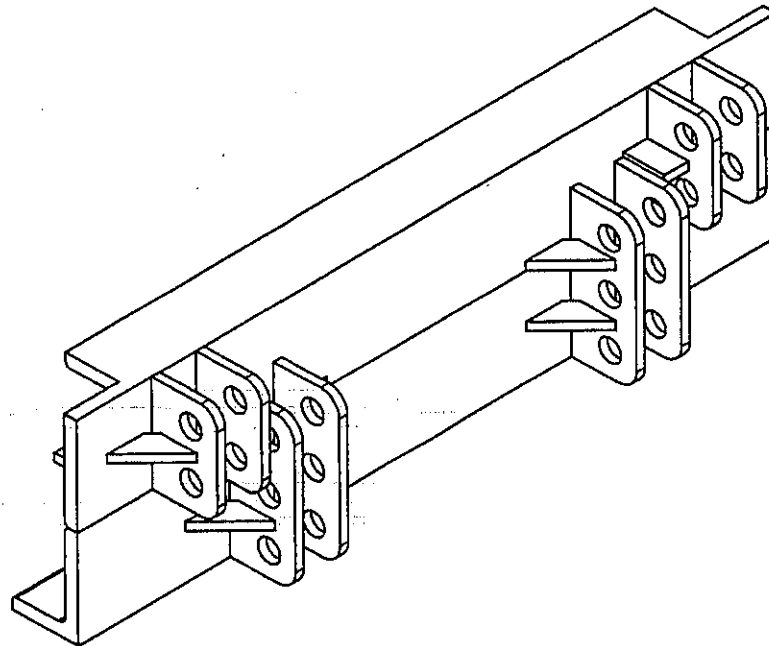
TRIANGLE STORAGE BOX
AND BRACKET

<small>DRAWN BY:</small> DSH	<small>CHECKED BY:</small> JC	<small>DATE:</small> 02-20-2014	CT EQN-28
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Line shall be secured with extruded cushion loop clamps every 12 inches (min.) utilizing studs or bolts.

STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION			
DUMP TRUCK HOIST CYLINDER BLEEDER			
DRAWN BY: DSH	CHECKED BY: JC	DATE: 02-19-2014	CT EQN-29



STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

PLOW PUSH PLATE

DRAWN BY: DSH	CHECKED BY: JC	DATE: 03-28-2014	CT EQN-30
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**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
1.	41,000 GVWR Single Axle Dump Trucks with Plows		
1a.	41,000 GVWR CONVENTIONAL CAB, SINGLE AXLE CHASSIS WITH MANUAL TRANSMISSION, PURSUANT TO SPECIFICATION CT-5-15. Make: Freightliner Model: 114SD	Each	<u>1a. \$80,000.00</u>
1b.	41,000 GVWR CONVENTIONAL CAB, SINGLE AXLE CHASSIS WITH AUTOMATIC TRANSMISSION PURSUANT TO SPECIFICATION CT-5-15. Make: Freightliner Model: 114SD	Each	<u>1b. \$82,750.00</u>
1c.	41,000 GVWR CONVENTIONAL CAB, SINGLE AXLE CHASSIS WITH AUTOMATED MANUAL TRANSMISSION, PURSUANT TO SPECIFICATION CT-5-15. Make: Freightliner Model: 114SD	Each	<u>1c. \$86,000.00</u>
1d.	STEEL 10 ft. 6 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-5-15. Make: Viking Model: PL 1011 SD	Each	<u>1d. \$42,226.00</u>
1e.	STAINLESS STEEL 10 ft. 6 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-5-15 Make: Viking Model: PL 1011 SD SS	Each	<u>1e. \$44,909.00</u>
1f.	COMPLETE HYDRAULIC SYSTEM AND CONTROLLER INSTALLED PURSUANT TO SPECIFICATION CT-5-15. Make: Cirus Model: ConnDOT closed system	Each	<u>1f. \$17,441.00</u>
1g.	TARPING SYSTEM OPTION INSTALLED PURSUANT TO SPECIFICATION CT-5-15. Make: Roll Rite Model: Tarp Master 400	Each	<u>1g. \$1,891.00</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
1h.	POWER ANGLE 11' SNOWPLOW WITH POSITIVE LOCKING PAWL & INTEGRAL EXTENDED MOLDBOARD, METRO FULL TRIP MOLDBOARD. Make: Viking Model: PRRL 113645 FE	Each	<u>1h. \$6,633.00</u>
1i.	PERCENTAGE DISCOUNT OFF MSRP FOR CHASSIS OPTIONS.	% off	<u>1i. 25%off</u>
1j.	PERCENTAGE DISCOUNT OFF MSRP FOR UP FITTING OEM REPAIR PARTS.	% off	<u>1j. 30% off</u>
1k.	PERCENTAGE DISCOUNT OFF MSRP FOR ALL ALLIED EQUIPMENT.	% off	<u>1k. 30% off</u>
1l.	HOURLY SHOP LABOR RATE.	Hour	<u>1l. \$95.00</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
2.	62,000 GVWR Tandem Axle Dump Trucks with Plows		
2a.	62,000 GVWR CONVENTIONAL CAB, TANDEM AXLE CHASSIS WITH MANUAL TRANSMISSION, PURSUANT TO SPECIFICATION CT-4-15. Make: Freightliner Model: 114 SD	Each	<u>2a. \$102,000.00</u>
2b.	62,000 GVWR CONVENTIONAL CAB, TANDEM AXLE CHASSIS WITH AUTOMATIC TRANSMISSION PURSUANT TO SPECIFICATION CT-4-15. Make: Freightliner Model: 114 SD	Each	<u>2b. \$113,987.00</u>
2c.	62,000 GVWR CONVENTIONAL CAB, TANDEM AXLE CHASSIS WITH AUTOMATED MANUAL TRANSMISSION, PURSUANT TO SPECIFICATION CT-4-15. Make: Freightliner Model: 114 SD	Each	<u>2c. \$107,100.00</u>
2d.	STEEL 14 ft. 10 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT TILT OVER PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-4-15. Make: Viking Model: PL 1314 LW	Each	<u>2d. \$43,765.00</u>
2e.	STAINLESS STEEL 14 ft. 10 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT TILT OVER PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-4-15. Make: Viking Model: PL 1314 LW SS	Each	<u>2e. \$52,432.00</u>
2f.	COMPLETE HYDRAULIC SYSTEM AND CONTROLLER INSTALLED PURSUANT TO SPECIFICATION CT-4-15. Make: Cirus	Each	<u>2f. \$18,469.00</u>
2g.	UNDERBODY SCRAPER PLOW PURSUANT TO SPECIFICATION CT-4-15 Make: Viking Model: UB 101020	Each	<u>2g. \$11,406.00</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY:180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
2h.	TRAILER AIR BRAKE OPTION INSTALLED PURSUANT TO SPECIFICATION CT-4-15	Each	<u>2h. \$246.00</u>
2i.	TARPING SYSTEM OPTION INSTALLED PURSUANT TO SPECIFICATION CT-4-15 Make: Roll Rite Model: Tarp Master 400	Each	<u>2i. \$2,071.00</u>
2j.	POWER ANGLE 11' SNOWPLOW WITH POSITIVE LOCKING PAWL & INTEGGRAL EXTENDED MOLD-BOARD, FULL MOLD-BOARD TRIP. Make: Viking Model: PRRL 113645 FE	Each	<u>2j. \$6,633.00</u>
2k.	RIGHT WING PLOW INSTALLED ,PURSUANT TO ConnDOT SPECIFICATION CT-4-15	Each	<u>2k. \$13,811.00</u>
2l.	LEFT WING PLOW INSTALLED ,PURSUANT TO SPECIFICATION CT-4-15	Each	<u>2l. \$13,911.00</u>
2m.	DOUBLE WING PLOW INSTALLED ,PURSUANT TO ConnDOT SPECIFICATION CT-4-15	Each	<u>2m \$24,991.00</u>
2n.	PERCENTAGE DISCOUNT OFF MSRP FOR CHASSIS OPTIONS.	% off	<u>2n. 25% off</u>
2o.	PECENTAGE DISCOUNT OFF MSRP FOR UP FITTING OEM REPAIR PARTS.	% off	<u>2o. 30% off</u>
2p.	PERCENTAGE DISCOUNT OFF MSRP FOR ALL ALLIED EQUIPMENT.	% off	<u>2p. 30% off</u>
2q.	HOURLY SHOP LABOR RATE.	Hour	<u>2q. \$95.00</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY: 180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
3.	72,000 GVWR Tri-Axle Dump Trucks with Plows		
3a.	72,000 GVWR CONVENTIONAL CAB, TRI AXLE CHASSIS WITH MANUAL TRANSMISION, PURSUANT TO SPECIFICATION CT-1-15. Make: Freightliner Model: 114 SD	Each	<u>3a. \$107,750.00</u>
3b.	72,000 GVWR CONVENTIONAL CAB, TRI AXLE CHASSIS WITH AUTOMATIC TRANSMISION, PURSUANT TO SPECIFICATION CT-1-15. Make: Freightliner Model: 114 SD	Each	<u>3b. \$119,987.00</u>
3c.	72,000 GVWR CONVENTIONAL CAB, TRI AXLE CHASSIS WITH AUTOMATED MANUAL TRANSMISION, PURSUANT TO SPECIFICATION CT-1-15. Make: Freightliner Model: 114 SD	Each	<u>3c. \$113,234.00</u>
3d.	17 ft. 22 CUBIC YARD SEVERE DUTY DUMP BODY AND FRONT TILT OVER PLOW HITCH INSTALLED PURSUANT TO SPECIFICATION CT-1-15. Make: Beau Roc Model: DH	Each	<u>3d. \$33,631.00</u>
3e.	COMPLETE HYDRAULIC SYSTEM AND CONTROLLER INSTALLED PURSUANT TO SPECIFICATION CT-1-15. Make: Cirus Model: ConnDOT closed system	Each	<u>3e. \$16,860.00</u>
3f.	COMPLETE 16FT. STAINLESS STEEL VBOX SPREADER PURSUANT TO SPECIFICATION CT-1-15. Make: Bonnel Model: BVDA 1660 S2 DDR	Each	<u>3f. \$38,916.00</u>
3g.	TRAILER AIR BRAKE OPTION INSTALLED PURSUANT TO SPECIFICATION CT-1-15	Each	<u>3g. \$246.00</u>

**EXHIBIT B, SP-16
PRICE SCHEDULE**

CONTRACT NO: 14PSX0239

CONTRACTOR NAME: Freightliner of Hartford, Inc.		DOT ID # 1543572	
DELIVERY:180 DAYS ARO		PROMPT PAYMENT TERMS: N/A	
ITEM #	DESCRIPTION OF COMMODITY AND/OR SERVICES	UNIT OF MEASURE	TOTAL PRICE
3h.	TARPING SYSTEM OPTION INSTALLED PURSUANT TO SPECIFICATION CT-1-15 Make: Roll Rite Model: Tarp Master 400	Each	<u>3h. \$2,134.00</u>
3i.	POWER ANGLE 11' SNOWPLOW WITH POSITIVE LOCKING PAWL & INTEGRAL EXTENDED MOLDBOARD, FULL MOLDBOARD TRIP. Make: Viking Model: PRRL 113645 FE	Each	<u>3i. \$6,633.00</u>
3j.	RIGHT WING PLOW INSTALLED ,PURSUANT TO SPECIFICATION CT-1-15	Each	<u>3j. \$13,811.00</u>
3k.	LEFT WING PLOW INSTALLED ,PURSUANT SPECIFICATION CT-1-15	Each	<u>3k. \$13,911.00</u>
3l.	DOUBLE WING PLOW INSTALLED ,PURSUANT TO SPECIFICATION CT-1-15	Each	<u>3l. \$24,911.00</u>
3m.	PERCENTAGE DISCOUNT OFF MSRP FOR CHASSIS OPTIONS.	% off	<u>3m. 25% off</u>
3n.	PERCENTAGE DISCOUNT OFF MSRP FOR UP FITTING OEM REPAIR PARTS.	% off	<u>3n. 30% off</u>
3o.	PERCENTAGE DISCOUNT OFF MSRP FOR ALL ALLIED EQUIPMENT.	% off	<u>3o. 30% off</u>
3p.	SHOP LABOR RATE	Hour	<u>3p. \$95.00</u>



Notice to Executive Branch State Contractors and Prospective State Contractors of Campaign Contribution and Solicitation Limitations

This notice is provided under the authority of Connecticut General Statutes §9-612(G)(2), as amended by P.A. 10-1, and is for the purpose of informing state contractors and prospective state contractors of the following law (italicized words are defined on the reverse side of this page).

CAMPAIGN CONTRIBUTION AND SOLICITATION LIMITATIONS

No *state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor*, with regard to a *state contract* or *state contract solicitation* with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee (which includes town committees).

In addition, no holder or principal of a holder of a valid prequalification certificate, shall make a contribution to (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of State senator or State representative, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

On and after January 1, 2011, no state contractor, prospective state contractor, principal of a state contractor or principal of a prospective state contractor, with regard to a state contract or state contract solicitation with or from a state agency in the executive branch or a quasi-public agency or a holder, or principal of a holder of a valid prequalification certificate, shall **knowingly solicit** contributions from the state contractor's or prospective state contractor's employees or from a *subcontractor* or *principals of the subcontractor* on behalf of (i) an exploratory committee or candidate committee established by a candidate for nomination or election to the office of Governor, Lieutenant Governor, Attorney General, State Comptroller, Secretary of the State or State Treasurer, (ii) a political committee authorized to make contributions or expenditures to or for the benefit of such candidates, or (iii) a party committee.

DUTY TO INFORM

State contractors and prospective state contractors are required to inform their principals of the above prohibitions, as applicable, and the possible penalties and other consequences of any violation thereof.

PENALTIES FOR VIOLATIONS

Contributions of solicitations of contributions made in violation of the above prohibitions may result in the following civil and criminal penalties:

Civil Penalties – Up to \$2,000 or twice the amount of the prohibited contribution, whichever is greater, against a principal or a contractor. Any state contractor or prospective state contractor which fails to make reasonable efforts to comply with the provisions requiring notice to its principals of these prohibitions and possible consequences of their violations may also be subject to civil penalties of up to \$2,000 or twice the amount of the prohibited contributions made by their principals.

Criminal penalties – Any knowing and willful violation of the prohibition is a Class D felony, which may subject the violator to imprisonment of not more than 5 years, or not more than \$5,000 in fines, or both.

CONTRACT CONSEQUENCES

In the case of a state contractor, contributions made or solicited in violation of the above prohibitions may result in the contract being voided.

In the case of a prospective state contractor, contributions made or solicited in violation of the above prohibitions shall result in the contract described in the state contract solicitation not being awarded to the prospective state contractor, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

The State shall not award any other state contract to anyone found in violation of the above prohibitions for a period of one year after the election for which such contribution is made or solicited, unless the State Elections Enforcement Commission determines that mitigating circumstances exist concerning such violation.

Additional information may be found on the website of the State Elections Enforcement Commission, www.ct.gov/seec. Click on the link to "Lobbyist/Contractor Limitations."



DEFINITIONS

“State contractor” means a person, business entity or nonprofit organization that enters into a state contract. Such person, business entity or nonprofit organization shall be deemed to be a state contractor until December thirty-first of the year in which such contract terminates. “State contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Prospective state contractor” means a person, business entity or nonprofit organization that (i) submits a response to a state contract solicitation by the state, a state agency or a quasi-public agency, or a proposal in response to a request for proposals by the state, a state agency or a quasi-public agency, until the contract has been entered into, or (ii) holds a valid prequalification certificate issued by the Commissioner of Administrative Services under section 4a-100.

“Prospective state contractor” does not include a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a state contractor or prospective state contractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a state contractor or prospective state contractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a state contractor or prospective state contractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a state contractor or prospective state contractor, which is not a business entity, or if a state contractor or prospective state contractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any state contractor or prospective state contractor who has *managerial or discretionary responsibilities with respect to a state contract*, (v) the spouse or a *dependent child* who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the state contractor or prospective state contractor.

“State contract” means an agreement or contract with the state or any state agency or any quasi-public agency, let through a procurement process or otherwise, having a value of fifty thousand dollars or more, or a combination or series of such agreements or contracts having a value of one hundred thousand dollars or more in a calendar year, for (i) the rendition of services, (ii) the furnishing of any goods, material, supplies, equipment or any items of any kind, (iii) the construction, alteration or repair of any public building or public work, (iv) the acquisition, sale or lease of any land or building, (v) a licensing arrangement, or (vi) a grant, loan or loan guarantee. “State contract” does not include any agreement or contract with the state, any state agency or any quasi-public agency that is exclusively federally funded, an education loan, a loan to an individual for other than commercial purposes or any agreement or contract between the state or any state agency and the United States Department of the Navy or the United States Department of Defense.

“State contract solicitation” means a request by a state agency or quasi-public agency, in whatever form issued, including, but not limited to, an invitation to bid, request for proposals, request for information or request for quotes, inviting bids, quotes or other types of submittals, through a competitive procurement process or another process authorized by law waiving competitive procurement.

“Managerial or discretionary responsibilities with respect to a state contract” means having direct, extensive and substantive responsibilities with respect to the negotiation of the state contract and not peripheral, clerical or ministerial responsibilities.

“Dependent child” means a child residing in an individual's household who may legally be claimed as a dependent on the federal income tax of such individual.

“Solicit” means (A) requesting that a contribution be made, (B) participating in any fund-raising activities for a candidate committee, exploratory committee, political committee or party committee, including, but not limited to, forwarding tickets to potential contributors, receiving contributions for transmission to any such committee or bundling contributions, (C) serving as chairperson, treasurer or deputy treasurer of any such committee, or (D) establishing a political committee for the sole purpose of soliciting or receiving contributions for any committee. Solicit does not include: (i) making a contribution that is otherwise permitted by Chapter 155 of the Connecticut General Statutes; (ii) informing any person of a position taken by a candidate for public office or a public official, (iii) notifying the person of any activities of, or contact information for, any candidate for public office; or (iv) serving as a member in any party committee or as an officer of such committee that is not otherwise prohibited in this section.

“Subcontractor” means any person, business entity or nonprofit organization that contracts to perform part or all of the obligations of a state contractor's state contract. Such person, business entity or nonprofit organization shall be deemed to be a subcontractor until December thirty first of the year in which the subcontract terminates. “Subcontractor” does not include (i) a municipality or any other political subdivision of the state, including any entities or associations duly created by the municipality or political subdivision exclusively amongst themselves to further any purpose authorized by statute or charter, or (ii) an employee in the executive or legislative branch of state government or a quasi-public agency, whether in the classified or unclassified service and full or part-time, and only in such person's capacity as a state or quasi-public agency employee.

“Principal of a subcontractor” means (i) any individual who is a member of the board of directors of, or has an ownership interest of five per cent or more in, a subcontractor, which is a business entity, except for an individual who is a member of the board of directors of a nonprofit organization, (ii) an individual who is employed by a subcontractor, which is a business entity, as president, treasurer or executive vice president, (iii) an individual who is the chief executive officer of a subcontractor, which is not a business entity, or if a subcontractor has no such officer, then the officer who duly possesses comparable powers and duties, (iv) an officer or an employee of any subcontractor who has managerial or discretionary responsibilities with respect to a subcontract with a state contractor, (v) the spouse or a dependent child who is eighteen years of age or older of an individual described in this subparagraph, or (vi) a political committee established or controlled by an individual described in this subparagraph or the business entity or nonprofit organization that is the subcontractor.