

City Council Staff Report

December 2, 2015

Applicant: Mapleton City

Ems Department

Prepared by:

Josh Diamond

Public Hearing: No

REQUEST

Consideration for the purchase of a 2016 Braun North Star Type I Ambulance.

BACKGROUND AND PROJECT DESCRIPTION

The Mapleton City EMS Department currently responds with, and maintains two Type I ambulances. A 1997 two wheel drive ford (purchased new in 1997), and a 2000 four wheel drive ford (purchased used in 2010). Both vehicles have served our community well and need to be replaced to ensure efficient, effective, and safe emergency response to the citizens we have sworn to serve. Over the past 18 month both ambulances have begun experiencing numerous mechanical and electrical maintenance issues which have led to unsafe driving conditions, increased maintenance costs and more importantly out of service time. Currently our department uses an every other response model rotating each apparatus in an effort to extend the life of each vehicle.

Since 2010 our department has experienced a 34% increase in emergency responses, and 2015 has surpassed each year in the 20 year history of the Mapleton EMS Department with 224 calls for service (end of second week of November). With the Mapleton City Master plan projecting a nearly double population over the next number of years these numbers will inevitably continue to increase, and as these numbers increase it will continue to put strain on our aging apparatus fleet.

We have explored numerous options for vehicle replacement for our immediate need as well as for future replacement. In the time that Mapleton City purchased the 1997 ford, we have also purchased four used ambulances from various agencies. We have found that this is the least beneficial option as our department inherits a vehicle that has reached its service life limit, or become too costly to maintain by the other agencies, and therefore they are looking to replace them. We put them in service and continue to maintain them at our expense.

Purchasing an ambulance that has not been built yet and can be designed to our exact specification is the preferred option but currently we are not in a position to work through the process of design and build. This would take between 10 and 12 months. Through our exploration of responsible options we have found the ability to purchase a demonstration model ambulance that is currently being built and will save approximately \$70,000.

This option will allow our department to specify certain configuration that enhance our operation and have the ability to put this ambulance in service in our community in an eight week time frame opposed to a year. For our current situation this is the preferred option.

This apparatus will serve as the front line response ambulance and the current ambulance will be moved to a back-up/reserve apparatus (available for second incidents, multiple patient incidents, etc. This will replace the current rotation model being used and prolong the service life of the current front line ambulance another 5-10 years and allow for proper budgeting of future replacements.

This apparatus will enhance our response capabilities, make our operations more effective and efficient, and assist our employees with providing the professional service and care that we strive to provide.

COST:

Ambulance	\$155,405.00
UCAN Radio/Electronic Equipment	\$ 8,063.50
<u>Misc. Loose Equipment</u>	<u>\$ 4,000.00</u>
Total Cost	\$167,473.50

Budget Findings

In speaking with the City Administrator, Cory Branch, \$75,769 will come from the vehicle replacement program with the remaining \$91,704.50 coming from the unrestricted general fund.

STAFF RECOMMENDATION

Recommend the City Council approve the purchase of a 2016 Braun North Star Type I “Demonstrator” Ambulance.

BRAUN-NW inc.

150 North Star Drive / PO Box 1204 / Chehalis, WA 98532 / 360.748.0195 / 800.245.6303 / fax 360.748.0256

DEMONSTRATOR PROPOSAL

NOVEMBER 23, 2015

MAPLETON EMS DEPARTMENT
ATTN: JOSH DIAMOND, EMS DIRECTOR
305 NORTH MAIN STREET
MAPLETON, UT 84664
Joshdiamond9@msn.com

RE: 2015 NORTH STAR 147-1 AMBULANCE DEMONSTRATOR #2248-1

BRAUN NORTHWEST IS PLEASED TO OFFER THE FOLLOWING PROPOSAL:

ONE (1) 2015 NORTH STAR 147-1 DEMONSTRATOR #2248-1 AMBULANCE ON A 2016 DODGE 3500 4X4 AMBULANCE PREP CHASSIS PER ENCLOSED SPECIFICATIONS DATED 10/13/15 AND DRAWINGS DATED 5/27/15 WITH THE FOLLOWING CHANGES:

- ADDITION OF A STAIR CHAIR POCKET TO COMPARTMENT 2 DOOR
- GRAPHICS ALLOWANCE OF \$10,000.00 FOR STRIPING AND LETTERING
- INSTALLATION OF A FIXED WINDOW ON THE CURBSIDE OF THE MODULE
- ADDITION OF 2 SURFACE MOUNT GLOVE BUTLERS ABOVE THE CURBSIDE DOOR
- INSTALLATION OF WIRING FOR CUSTOMER RADIO, NOT TO INCLUDE RADIO INSTALL
- INSTALLATION OF SIX LED FLASHERS IN LIEU OF HALOGEN LIGHTS
- ADDITION OF SAFETY NET TO FRONT OF SQUAD BENCH
- ADDITION OF A TRILOGY LOCK TO EXISTING DRAWER
- ADDITION OF ELECTRIC OXYGEN SYSTEM
- ADDITION OF TIP OUT CABINET FOR STORAGE OF 2 D SIZE OXYGEN CYLINDERS
- ADDITION OF A BACKUP CAMERA WITH MIRROR MONITOR IN THE CAB
- ADDITION OF A STRYKER COT CENTER MOUNT AND SAFETY HOOK

Pricing includes one way travel expenses from Salt Lake City to Chehalis for final inspection.

TOTAL AMOUNT F.O.B. CHEHALIS, WA \$155,405.00

Sales tax not included

F.O.B.: CHEHALIS, WASHINGTON

DELIVERY: TO BE DETERMINED

TERMS: NINETY PERCENT (90%) PAYMENT DUE UPON RECEIPT OF VEHICLE. BALANCE DUE IN THIRTY (30) DAYS.

THIS VEHICLE IS OFFERED ON A FIRST COME, FIRST SERVE BASIS AND IS CONTINUING TO BE OFFERED TO OTHER AGENCIES

This demonstrator is in fabrication, and this pricing is dependent upon receipt of a signed agreement by December 1, 2015.

Braun Northwest, Inc. is a licensed distributor/manufacturer (7985) with insurance information available upon request.

Respectfully Submitted by
BRAUN NORTHWEST, INC

We agree to accept the above proposal:
MAPLETON EMS DEPARTMENT


Tami McCallum, Sales Manager

Signature

Date

Date: 11/23/15

Printed Name

Title



TM/sel
cc: RC

Enclosures: Specifications, drawings

EMERGENCY VEHICLES

www.braunnw.com

Braun Northwest, Inc.
DETAILED SPECIFICATIONS
FOR
DEMO D3500, 4 X 4
147" MODULE, TYPE 1
COLOR/RED
VEHICLE #2248-1

1 **CHASSIS**

1.01 **OEM CHASSIS**

- 2016 Dodge 3500, 4 x 4, ST, meeting all the specifications of Section 1.01.
 - 3 year/36,000 mile Basic Limited Warranty
 - Ambulance Prep Group
 - Dual Rear Wheels
 - Provided by Braun Northwest

1.01.01 **SPECIFIC RATINGS**

- Drive – 4 x 4
- G.V.W.R. – 14,000 lbs.
- Wheelbase – 167.3"
- Cab to Axle – 84"
- Payload – 2,100 lbs. Approximate
- Front Spring Capacity – 6,000 lbs.
- Rear Spring Capacity – 9,750 lbs.
- Front Axle – 6,000 lbs.
- Rear Axle – 9,850 lbs.
- Rear Differential – 3.73 ratio, Anti-Spin Differential Rear Axle

1.01.02 **POWER TRAIN**

- Engine
 - 6.7L I6 Cummins Turbo diesel, B-20 Bio Diesel capability
 - Diesel Emission Fluid (DEF) System
 - 5 years/100,000 mile warranty
 - External oil cooler
 - Engine Block Heater (Cold Weather Group)
 - Factory diesel package
 - Diesel Exhaust Brake
 - Heavy duty dry type air cleaner with flow restriction indicator
- Engine Cooling System
 - Heavy duty, closed-air, free-liquid state type
 - Coolant recovery system
- Transmission
 - Six (6) speeds Heavy Duty Automatic, AISIN AS69RC
 - Auxiliary Transmission Oil Cooler
 - Electronic Shift on the Fly

- Exhaust System
 - System complies with Federal Motor Carrier Safety Regulations, Part 393.83
 - Suspended using three (3) hangers, excluding manifold attachment
 - Discharge at right rear side of module
 - Tailpipe shall not terminate within twelve (12) inches of the vertical axis of the fuel tank filler opening.

1.01.03 STEERING

- Power assisted
- Tilt steering wheel

1.01.04 SHOCK ABSORBERS/STABILIZER BARS

- OEM Heavy-duty shock absorbers front and rear
- OEM front and rear stabilizer bars

1.01.05 BRAKES

- Heavy duty power assisted; Front and rear disc
- Four wheel ABS

1.01.06 TIRES AND WHEELS

- Seven (7) OEM LT 235-80R-17E All Season
- Seven (7) OEM 17” Steel Wheels
- Spare tire and steel wheel shipped loose

1.01.07 ELECTRICAL

- Alternators – OEM Dual 220 Amp
- Batteries – OEM Dual 730 CCA
- Auto Throttle – OEM installed

1.01.08 INSTRUMENT PANEL AND CONTROLS

- Gauges
 - Odometer/Trip odometer
 - Speedometer
 - Voltmeter
 - Fuel
 - Coolant temperature
 - Oil pressure
 - Diesel engine warning lights
 - Tachometer
- Engine Hour Meter
- Temperature and Compass Gauge
- Controls – Cruise
- Audio – OEM AM/FM

1.01.09

CAB EXTERIOR

- Horn – OEM dual note electric
- Windows – Tinted safety glass
- Windshield wipers – Variable, Intermittent
- Mirrors
 - Interior Day/Night rear view mirror
 - Two (2) black, Trailer Tow with convex
 - Supplemental Signals and Courtesy Lamps
 - Power, Heated glass
- Bright Front Bumper and Grille
- Lighting
 - Aerodynamic Halogen Headlamps
 - Daytime Running Headlamps, low beam
 - Clearance Lamps
- Fuel tank – OEM 52 Gallons

1.01.10

CAB INTERIOR

- Seats – OEM
 - Vinyl bench seat 40/20/40
 - Delete Front Center Seat
 - Combination lap and shoulder harness
 - Retractable arms on inside, side door armrest
- Climate Control – OEM
 - Heavy duty, fresh air, high capacity heater/defroster
 - Dehumidifying air conditioning system
- Interior Upgrade Package
 - Cloth Headliner
 - Cloth Sun Visors
 - High-Series Door Trim Panels
 - Black Vinyl Floor Covering
 - Power Windows & Power Door Locks, with FOB
- Lights and Convenience Group
 - Courtesy light switches on all doors
 - Warning chimes
 - Headlight-on audible alert
 - Illuminated entry

1.01.11

COLORS

- Exterior – Red
- Interior – Gray

1.02 CHASSIS MODIFICATIONS

The following modifications will be made to the chassis by Braun Northwest.

1.02.04 EXHAUST HEAT SHIELDS

Shall be formed from 20 ga. galvanized steel sheets with stamped reinforcements and formed edges. Access openings shall be provided for shock absorber, mounting bolts, etc. Heat shields shall be bolted to chassis frame and extend from back of cab to the frame cross member just behind the rear axle.

1.02.05A RUNNING BOARDS WITH SPLASH GUARDS

Shall be installed on both sides of the vehicle. They shall be made of 0.125" polished aluminum diamond plate. The running boards shall be flared to the front corner of module. The splashguards shall be welded to the forward end of the running boards. The entire assembly shall be securely mounted with stainless steel 1/4"-20 Truss head bolts.

1.02.09 MUD FLAPS

Mud flaps with the "North Star" logo on them shall be installed behind each rear wheel.

1.02.12 A MAP BOOK HOLDER / CONSOLE

Shall be an integral part of the driver's console. (Section 6.09 Related)

1.02.30A CHASSIS MODIFICATION

Lower the load height for the vehicle by removing the spacer block under rear leaf springs to provide a 36.25" rear load height.

1.03 MODULE-TO-CHASSIS MOUNTING SYSTEM

1.03.01 MODULE MOUNTING SYSTEM

The module shall be bolted to the chassis frame in twelve (12) locations. Each mounting location shall include a hard rubber isolation pad between the chassis frame and the module lateral frame. Eight (8) 3/4" Grade 5 bolts shall extend through the lateral and sides of the frame member and bolt to the web of the chassis frame with a 3/4" Grade 5 bolt. The four (4) rearmost bolts shall be 5/8" bolts. All bolts shall be secured with locking nuts.

1.03.02 CAB-TO-MODULE ATTACHMENT

The module shall be attached to the cab with a flexible watertight boot to allow cab-body flex as designed by the chassis manufacturer. A painted insert shall be installed.

2 MODULAR CONSTRUCTION

All material utilized shall be of the correct type, alloy, and thickness to withstand the intended usage and provide protection against cracking, corrosion, or metal fatigue. All materials utilized shall be of open stock origin, commonly available through local sources, for rapid and economical repair or modification of the body. Any use of proprietary parts or materials in the construction of the body is unacceptable, due to potential delays or difficulties in future repairs or service. **NO EXCEPTIONS TO BE TAKEN IN THIS AREA.** This specification has been designed and written to fill specific needs of this agency. Where brand name, make, or model of equipment has been specified, no exceptions will be allowed. Where compartment and cabinet sizes have been specified, bidder must bid substantially (plus or minus 1") the size specified. The module shall have a transferable lifetime structural warranty.

2.01

MATERIAL

<u>EXTRUSIONS</u>	<u>SIZE</u>	<u>ALLOY</u>
Structural Tubing	1" x 2" x 0.125" sq.	6063-T52
Structural Tubing	2" x 2" x 0.125" sq.	6063-T52
Cross Members	3" x 3" x 0.375"	6061-T6
Cross Members	1.5" x 3" x 0.25"	6061-T6

<u>FORMED SHEETING</u>	<u>SIZE</u>	<u>ALLOY</u>
Skin/Roof/Compartments/Subfloors/Doors	0.125"	5052-H32
Interior Cabinets	0.090"	5052-H32
Diamond Plate	0.125"/0.08"	3003-H32
Stainless Steel	16 ga., 20 ga.	304 # 4B

2.02

MODULE DIMENSIONS

Overall Vehicle Dimensions: (Specifications are listed as minimums.)

Length:	23' 1"	(277")
Width:	7' 10"	(94") Excluding Mirrors
Height:	8' 11.125"	(107.125")

Exterior Module Dimensions: (Specifications are listed as minimums.)

Length:	12' 3"	(147")
Width:	7' 10"	(94")
Height:	7' 4.375"	(88.375")

Interior Dimensions: (Specifications are listed as minimums.)

Length:	Forward Wall to Rear Doors	139"
Width:	Left Wall to Right Wall	89"
Floor Width:	Left Cabinets to Squad Bench	50.25"
Height:	Floor to Ceiling	72"

Load Height:	Ground to Floor Height Approximately	36.25"
--------------	---	--------

2.03

STRUCTURAL FRAMING

Side wall and rear wall construction shall consist of 2" x 2" x 0.125" aluminum square tubing extensions welded together with a maximum of 14" centers. 1" x 2" x 0.125" aluminum tubing may be utilized in addition to the 2" x 2" tubing to accommodate custom compartment sizes. The bottom of the wall structure shall be sealed with welded 2" x 2" tube, 2" x 2" angle, or 0.125" plate depending upon location. Wall structure shall be capped with 2" x 2" x 0.125" header upon which the 2" x 2" x 0.125" roof structure is welded. This process provides a utilized roll cage for greater occupant safety. The front wall structure shall be constructed of a minimum of 1.250" x 3.875" x 0.125" formed aluminum channel to allow ample space for wiring raceways, heater A/C hoses, and cold air return duct.

2.04

FOUNDATION SYSTEM

Shall consist of a 0.125" aluminum sheet subfloor with foundation members securely welded under the subfloor. Members shall consist of six (6) 3" x 3" x 0.375" structural angles, with two (2) 0.250" x 1.5" aluminum members running lengthwise between the structural angles.

2.05

MODULE SEAMS

All body and compartment seams at or below floor level shall be full seam welded. The entire perimeter of the subfloor shall be completely sealed with a caulking material, creating a watertight, dust-free module environment.

2.06.01

EXTERIOR SKIN

In addition to welding the exterior skin to structural framing, a Norton very high bond system shall be utilized full length on all wall and roof frame members. A polyurethane adhesive sealant shall be applied to the edges of structural tubing at the exterior wall surfaces.

The module shall be constructed utilizing full size sheet construction to minimize body seams. Seams above the passage doors and cab shall be minimal. There shall be no corner or mid body seams.

2.07A

MODULE ROOF

In order to improve module strength and reduce roof seams the following roof system shall be utilized. The roof shall be seamed in the center, shall be crowned, have a 1.500" radius at the corners, and provide a weatherproof overlap of the aluminum side sheets 5.250" below the roof line. The roof shall be supported by positive contact between sidewall framing and roof framing. All seams on the roof surface shall be full seam welded on the outside and caulked on the inside. The module roof edges, front and rear, shall be constructed to allow mounting of the recessed light bars. This roof design shall have been tested to meet A.M.D. standards and a detailed exploded drawing of the roof structure shall be provided. In order to avoid the possibility of paint and/or weld cracking, no extrusions shall be used in the exterior construction of the roof or corners of the vehicle.

2.08X

MODULE EXTERIOR COMPARTMENTS

All compartments are constructed from formed 0.125" aluminum and are securely welded to the subfloor and structural framing. A baffled drain hole shall be provided in all exterior compartment bottoms that extend below the floor line. All exterior adjustable shelves shall be mounted on heavy-duty aluminum unistrut track, which is securely welded to compartment interiors. Each shelf shall support at least 300 lbs. of equipment.

COMPARTMENT #1

Interior Dimensions – 52"W x 35"H x 19"D

Doorway Dimensions – 52"W x 35"H

Location – Streetside, forward

Shelving – Two (2) adjustable: one (1) bin type 17.5"W, one (1) full width (shipped loose).

Door(s) – Double

Light(s) – One (1) LED strip light

Additional Instructions – The 120VAC Power Box shall be installed in the forward wall (Section 6.21 related), recessed so as not to protrude into the compartment.

Compartment will have four (4) vertical strips of unistrut on the back wall. This will allow the bin shelf to be installed fore or aft in the compartment. The side walls of the bin shelf shall be notched to allow better access to the 120VAC box.

Two (2) vertical strips of unistrut shall be added to each of the side walls for future installation of a full length shelf. The adjustable shelf will be shipped loose.

A spare tire mount shall be mounted on the back wall of the aft section.

An inverter with perforated surround shall be installed in the forward section of this compartment.

A filtered vent shall be added to the back and forward wall of the compartment.

COMPARTMENT #2

Interior Dimensions – 25"W x 74"H x 19"D

Doorway Dimensions – 25"W x 70"H

Location – Streetside, rear

Shelving – Three (3) bin type 12.625"W

Door(s) – Single

Light(s) – One (1) LED strip light

Additional Instructions – Three (3) heavy-duty aluminum unistrut tracks will be installed on back wall to accommodate bin type shelving on either side.

A filtered vent shall be added to the aft wall of the compartment.

COMPARTMENT #3

Interior Dimensions – 15.5"W x 77"H x 19"D

Doorway Dimensions – 15.5"W x 70"H

Location – Curbside, rear

Shelving – None

Door(s) – Single

Light(s) – One (1) LED strip light

Additional Instructions – This compartment shall have three (3) straps setup for storage of an "M" size cylinder.

Two (2) backboard-restraining straps shall be installed in aft section. A formed stainless steel gasket cover shall be installed so that backboards do not cut gasket material.

A filtered vent shall be added to the aft wall of the compartment.

COMPARTMENT #4

Interior Dimensions – 22.5W x 25"H x 19"D

Doorway Dimensions – 20.5"W x 25"H

Location – Curbside, rear, aft of wheel well

Shelving – None

Door(s) – Single

Light(s) – One (1) LED strip light

Additional Instructions – None

COMPARTMENT #5

Interior Dimensions – 27.75"W x 56.25"H x 32"D

Doorway Dimensions – 25.75"W x 56.25"H

Location – Curbside, forward

Shelving – See Interior Cabinet #19

Door(s) – Single

Light(s) – One (1) LED strip light

Additional Instructions – This compartment shall provide inside/outside access to Cabinet #19 with a full width stainless steel threshold on the floor level shelf. There shall be storage located below the floor. Area shall be vented by louvers in the lower portion of the door.

2.09X

MODULE DOORS

The doors shall be flangeless box pan formed with a total thickness of 2".

2.09.01

DOOR FRAME AND SEAL

Each door frame shall have a flange for the installation of an air cell hollow core, 360-degree compression door seal. This seal creates watertight, dust-free compartment integrity. Door seal shall be knock-on type. Door frames shall be bonded to the adjacent tubes such that no exterior flange is required.

2.09.02

DOOR HINGES

Shall be full length, piano type, stainless steel hinges, 2.5" wide with a 0.25" pin. The hinges shall be attached with 12 x 3/4 stainless steel truss head screws spread 4" apart. All curbside and streetside doors shall be hinged on the forward sides. All rear doors shall be hinged on the outboard sides.

2.09.03X

DOOR LATCHES

Exterior door handles shall be semi-flush, cast aluminum, Eberhard E Grabber model 21100. Passage doors shall have release handles on the inside of each door. All exterior doors shall have rotary latches and striker posts that meet FMVSS 206 requirements. Striker posts shall be adjustable and shall be secured with a nut from behind the door frame. The striker washer shall not be removed. Doors greater than 45" tall shall have double rotary latches activated by stainless steel rods. Once final adjustments have been made, threads shall have Loctite or equivalent applied. All double-door compartments shall have an exterior E Grabber handle and rotary latches on each door. Doors shall latch to doorframe-mounted striker posts only and not to one another. Curbside passage and rear curbside doors shall have interior handles with dual-point, rod-actuated, rotary latch systems that are lockable inside and out. All locks shall be keyed J236.

- 2.09.04X COMPARTMENT DOOR CONTROL**
A heavy-duty, double spring door control capable of holding the door open at approximately a 90-degree angle on any road surface shall be installed at the top of each compartment door, except compartment #3. A 1" rubber bumper shall be installed on the door for compartment #3.
- 2.09.05 CURBSIDE DOOR CONTROL**
Shall be a heavy-duty, double spring door check installed at the top of the door. This door check will hold the door open at approximately a 90-degree angle on any road surface.
- 2.09.06 REAR DOOR CONTROL**
Shall be Cast Products "grabber" type hold-open devices with replaceable rubber catches.
- 2.09.07 COMPARTMENT DOOR SKINS**
Shall be 0.080" bright aluminum diamond plate and be removable to service door hardware. Red/white 1.5" conspicuity tape shall be installed on the vertical edge of each door.
- 2.09.08 ENTRANCE DOOR SKINS**
Shall be 0.080" bright aluminum diamond plate and be removable to service door hardware. Red/white 1.5" conspicuity tape shall be installed on the vertical edge of the side passage door, top, and bottom of rear doors.
- 2.09.09A ENTRANCE DOORWAYS**
One (1) curbside and two (2) rear module entrance doors shall be provided. The curbside doorway dimensions shall be 28"W x 73.75"H. The rear doorway dimensions shall be 49.75"W x 66"H.
- 2.09.10 THRESHOLDS**
All compartment and module access doorframes shall have full width formed stainless steel threshold plates to protect the lower edge of frame.
- 2.10X MODULE INTERIOR CABINETS**
Shall be formed of 0.090" aluminum and shall be securely welded or mounted to the structural framing. All interior adjustable shelves shall be mounted on 1" wide aluminum Unistrut track.
- CABINET #1 PINK #01 10/13/15**
Dimensions – 39.5"W x 13.75"H x 14.75"D
Location – Streetside, upper forward
Shelving – One (1) adjustable, aft of divider
Door(s) – Sliding, clear 0.177" acrylic with felt lined anodized aluminum track and full extruded aluminum door pulls
Additional Instructions – Cabinet shall be divided in the center by a vertical fixed divider. An IV Warmer shall be located in the lower aft corner of this cabinet. [A 120VAC receptacle shall be installed on the back wall.](#)

CABINET #2**Dimensions** – 39.5"W x 13.75"H x 14.75"D**Location** – Streetside, upper center**Shelving** – One (1) adjustable**Door(s)** – Sliding, clear 0.177" acrylic with felt lined anodized aluminum track and full extruded aluminum door pulls**Additional Instructions** – None**CABINET #3****Dimensions** – 20"W x 13.75"H x 14.75"D**Location** – Streetside, upper rear**Shelving** – One (1) adjustable**Door(s)** – Sliding, clear 0.177" acrylic with felt lined anodized aluminum track and full extruded aluminum door pulls**Additional Instructions** – None**CABINET #4****Dimensions** – 20 "W x 15"H x 19"D**Location** – Streetside, center rear**Shelving** – One (1) adjustable**Door(s)** – Sliding, clear 0.177" acrylic with felt lined anodized aluminum track and full extruded aluminum door pulls**Additional Instructions** – None**CABINET #5 – Open Storage****Dimensions** – 22"W x 15.75"H x 19"D**Location** – Streetside, lower rear**Shelving** – None**Door(s)** – None**Additional Instructions** – The counter top shall be one-piece 16 ga, 304 stainless steel with a 0.5" aluminum retaining lip.

A 120VAC receptacle shall be located on the back wall.

CABINET #6 – Action Area**Dimensions** –55.625"W x 31.75"H x 19"D**Location** – Streetside**Shelving** – None**Door(s)** – None**Additional Instructions** – It shall contain one (1) oxygen outlet, vacuum connection, suction collector, attendant control panel, inverter status panel, digital thermostat, one (1) 120VAC receptacle, and one (1) 12VDC receptacle.

The entire action wall area shall be lighted utilizing a Thin-Lite Model #612 light with 12VDC dual 11" fluorescent bulbs.

A full depth counter top shall be located below the action wall. The counter top shall be one-piece 16 ga, 304 stainless steel with a 0.5" aluminum retaining lip.

A sharps and waste space (sized for a Becton-Dickinson, 8.2 Qt., sharps container and a 7 Qt. waste) shall be located at the aft of the countertop. The sharps and waste shall be accessible and changeable thru a hinged acrylic flip up door.

CABINET #7 – Radio Cabinet

Dimensions – 8"W x 27.75"H x 19.5"D

Location – Front, behind attendant seat

Shelving – None

Door(s) – Aluminum, hinged door, and a quarter turn slotted latch.

Additional Instructions – This cabinet is intended for radio component storage and shall be supplied with access to electrical component panel. Antenna cables shall terminate in this cabinet.

Shall be vented by louvers in the upper and lower portion of the door.

CABINET #8 – Miscellaneous Storage

Dimensions – 8"W x 25"H x 19.5"D

Location – Front, under Cabinet #7

Shelving – Two (2) adjustable

Door(s) – None

Additional Instructions – Open storage for map books and miscellaneous.

CABINET #9 – Attendant Seat Cabinet

Dimensions – 25"W x 8"H x 19.5"D

Location – Streetside, below Attendant Seat

Shelving – None

Door(s) – None

Additional Instructions – This cabinet shall be open to the aisle side and have a 1" lip along floor edge to hold items in place.

CABINET #10 – CPR Seat with Storage

Dimensions – Bench: 25.5"W x 18.75"H x 19"D

Storage: 25.5"W x 8.125"H x 19"D

Location – Streetside

Shelving – None

Door(s) – Hinged aluminum bench lid, with high-density foam padding covered with seamless vinyl shall provide access to the storage area. It shall have a 1.5" overhang, an automatic hold-open device, and stainless steel paddle latch. The pad shall be removable.

Additional Instructions – The CPR seat back pad shall have high-density foam padding covered with seamless vinyl. One (1) set of seatbelts shall be installed on the seat.

The CPR seat base to be formed from aluminum and securely anchored to sub-floor. The bottom and unfinished sides of the storage area shall be sprayed with textured gray polyurethane and painted white with gray splatter.

CABINET #11

Dimensions – 31.5"W x 10"H x 9"D

Location – Curbside, upper rear

Shelving – None

Door(s) – Sliding, clear 0.177" acrylic with felt lined anodized aluminum track and full extruded aluminum door pulls

Additional Instructions – None

CABINET #12**Dimensions** – 31.5"W x 10"H x 9"D**Location** – Curbside, upper forward**Shelving** – None**Door(s)** – Sliding, clear 0.177" acrylic with felt lined anodized aluminum track and full extruded aluminum door pulls**Additional Instructions** – This cabinet shall have three (3) adjustable vertical dividers.**CABINET #13****Dimensions** – 12"W x 21"H x 6.5"D**Location** – Curbside, aisle side of right front stack**Shelving** – None**Door(s)** – None**Additional Instructions** – None**CABINET #14 – Squad Bench with Storage****Dimensions** – Bench: 66.125"W x 18.75"H x 19"D

Storage: 43.375"W x 8.125"H x 19"D

Location – Curbside**Shelving** – None**Door(s)** – Hinged aluminum split lid bench, with high-density foam padding covered with seamless vinyl shall provide access to the storage area. It shall have a 1.5" overhang, an automatic hold-open device, and a stainless steel paddle latch.

The forward lid shall provide access to the storage area. The aft lid shall be fixed. The pad shall be removable.

Additional Instructions – The squad bench back and/or head pads shall have high-density foam padding covered with seamless vinyl. Three (3) sets of seatbelts shall be installed on the bench and set up for use with sit-up or stretcher patients.

The squad bench base to be formed from aluminum and securely anchored to sub-floor. The bottom and unfinished sides of the storage area shall be sprayed with textured gray polyurethane and painted white with gray splatter.

An Oxygen window and clock shall be installed in the wall at the aft end of the bench.

An Oxygen outlet and a fifteen-minute timer shall be installed on the curbside wall over the bench.

CABINET #15 – HVAC**Dimensions** – 34.75"W x 16.5"H x 27.875"D**Location** – Front, right upper**Shelving** – None**Door(s)** – None**Additional Instructions** – This cabinet shall house heater/AC unit and suction pump.**CABINET #16 – Electrical Cabinet****Dimensions** – 30.75"W x 13"H x 10"D**Location** – Front, center over walk-thru**Shelving** – None**Door(s)** – Aluminum, hinged, swing up door with a hold-open device, a quarter turn slotted latch, and an automatic compartment light.**Additional Instructions** – This cabinet shall house the electrical component module.

CABINET #17

Dimensions – 18.75"W x 29.25"H x 10"D

Location – Front, forward of action area

Shelving – Two (2) adjustable shelves

Door(s) – None

Additional Instructions – None

CABINET #18

Dimensions – 31.75"W x 16.5"H x 27.875"D

Location – Front, right center

Shelving – One (1) adjustable

Door(s) – Sliding, clear 0.177" acrylic with felt lined anodized aluminum track and full extruded aluminum door pulls

Additional Instructions – None

CABINET #19 – Drawers

Dimensions – 32"W x 7.75"H x 27.875"D

Location – Front, right below Cabinet #17

Additional Instructions – There shall be two (2) 13"W x 5"H x 19"D metal drawers in this area. Each drawer shall operate on 18" slides rated at 300 lbs. per set and have a gas shock hold open/closed device to ensure drawers do not accidentally open or close during operation of the vehicle. Drawers shall be formed of 16 ga. steel welded construction with an automotive gray enamel finish, and formed structural support on the sides and front of drawers. Each drawer shall have machine stamped divider supports along the side for at least four (4) dividers per drawer with four (4) adjustable dividers provided with each drawer.

CABINET #20 – Inside/Outside Access

Dimensions – 32"W x 42.5"H x 27.875"D

Location – Front, right lower

Shelving – Two (2) adjustable, with 1" x 1" lip down facing doorway

Door(s) – None

Additional Instructions – This cabinet shall be accessible from the outside via exterior Compartment #5.

One (1) 120VAC receptacle and one (1) 12VDC receptacle shall be installed in the upper forward portion of the left wall.

The HVAC shall be distributed thru a vertical plenum on the aisle side of the right front stack.

2.11A**SIDE DOORSTEP**

A recessed curbside side doorstep shall be provided which is 11.5" deep x 28" wide. There shall be a drain hole and an open grate step plate, which is removable for cleaning purposes. Polished aluminum diamond plate kick panel will be installed on the sides and face of doorstep.

2.13A**CAB TO MODULE PASSAGE**

Shall be a walk-thru measuring 15.75" W x 37" H.

2.14**WHEEL WELL LINERS**

Shall be installed in the wheel wells over the rear wheels. The liners shall be formed aluminum.

3 COATINGS AND FINISHES

3.01 MODULE FINISH PREPARATION

The module shall be seam sealed and all imperfections on aluminum surfaces of module shall be sanded smooth. The entire exterior shall be mechanically etched and washed with wax and grease remover to ensure proper primer and paint adhesion.

3.02 MODULE PRIMER

Module shall be primed with urethane primer prior to applying the finish coat of acrylic urethane paint.

3.03 PAINT TYPE

Shall be Sherwin Williams acrylic urethane.

3.04X COLOR SCHEME

Base color: Red (SW #GB-46916)

Stripe #1	Color:	White Multi Stripe
	Width:	6"
	Style:	Beltline
	Material:	Vinyl
	Location:	Sides, rear of module, sides of chassis
	Reference:	Drawings 1, 2, 3

3.05X LETTERING/DECALS

Item #1	Decal:	"North Star"
	Font:	Die Cut
	Color:	White
	Size:	4" Lettering
	Material:	Vinyl
	Location:	Sides of Module

Item #2	Decal:	"Emergency Vehicles"
	Font:	Die Cut
	Color:	White
	Size:	2.7"
	Material:	Vinyl
	Location:	Sides of Module

3.06X COMPARTMENT FINISH

All compartments shall be sanded, etched, washed, primed, coated with textured polyurethane finish, and painted white with light gray splatter paint. (G8-33631 Alt 2 / G8-51748)

All shelves and trays shall be sanded, etched, washed, primed, and painted white with light gray splatter paint. (G8-33631 Alt 2 / G8-51748)

3.07X**INTERIOR CABINERY FINISH**

All interior cabinetry shall be sanded, etched, washed, primed, coated with textured polyurethane finish, and painted white with light gray splatter paint. (G8-33631 Alt 2 / G8-51748)

All shelves and trays shall be sanded, etched, washed, primed, and painted white with light gray splatter paint. (G8-33631 Alt 2 / G8-51748)

3.08X**MODULE UPHOLSTERY**

Shall be Spradling vinyl Dove Gray, and be seamless.

3.09**MODULE FLOORING MATERIAL**

Shall be Genome (#TFM2702) Altro Transflor Meta Slip-Retardant Sheet flooring providing durability, ease of maintenance, and stain resistance. It shall contain a high concentration of microscopic aluminum oxide particles and colored quartz crystals suspended throughout the thickness with silicon carbide grains in the entire wear surface for slip-retardant performance. It shall have a bacteriostat incorporated to give flooring excellent anti-bacterial activity and an overall thickness of 0.11" nominal. Flooring shall be manufactured for Wear Resistance to meet ASTM C 501, indentation resistance in accordance with ASTM F 1303 and ASTM F 970, Grade 1 standards, shall meet ASTM D 2047 Slip Retardant, ASTM F 970 Static Load, ASTM E648, CMVSS, FMVSS 302, CAN ULC S102.2 Fire Data Tests.

It shall be seamless and cove up the side walls a minimum of 5" as a seal.

An insulated floor shall be installed over the subfloor. It shall be constructed with square tubing (0.75" x 0.75" x 0.063"), filled with 0.75" thick polyiso foam insulation, and covered with 0.125" aluminum sheet. (Section 2.04 related)

3.10**COMPARTMENT LINING**

Compartment floors shall be lined with light gray Mate'flex material and all shelves with easy sweep mat.

3.11**CABINET LINING**

Interior cabinet shelves shall be lined with easy sweep mats, which are removable for ease of cleaning.

3.12**SURFACES AND FINISHES**

All surfaces and finishes shall be impervious to soap, disinfectants, and water, to permit washing and sanitizing.

3.13**AUTOMOTIVE UNDERCOATING SEAL**

The entire chassis and module underbody (excluding drive shafts, wheels, exhaust system, and lubrication fittings, per manufacturer's specifications) shall be sprayed with undercoating for reduced corrosion and added sound deadening.

4 MODULE EXTERIOR

4.01 STEP/BUMPER

Shall be a welded construction of 3" x 3" x 0.375" aluminum angle and 2" x 0.250" plate and shall be covered by 0.125" bright aluminum diamond plate. The center section, below the doors, shall have a plasma cut open flow design to prevent accumulation of water and snow and provide a 7" step width. Both outermost ends shall be angled to prevent dragging of corners in high angle of approach/departure areas. Diamond plate shall be formed on front and rear edges for channel type strength and a formed 0.090" aluminum close out shall be welded to the underside of the step/bumper. The bumper shall be bolted directly to the chassis frame using high strength Grade 5 bolts. Bumper shall be easily removable and replaceable in case of damage. Step/bumper designed to accommodate a "one-person style" cot.

4.02A RUB RAILS

Shall be bright finished extruded aluminum of a double channel design and 0.125" wall thickness for maximum strength. Rub rails shall be 2.5" high x 0.75" wide and run along the lower edge of body, interrupted only by wheel well opening. A red/white conspicuity reflective tape shall be installed in the insert area of the rub rail.

4.03 FENDER RINGS

Shall be installed on the module. They shall be bright polished aluminum with a rounded outer edge following the full contour of the wheel well opening.

4.04 DRIP RAIL

Shall be extruded, anodized aluminum running full length of module at top of sides, front, rear and over each exterior compartment. Drip rails shall be installed with bonding tape that will withstand exposure to the elements. They shall be installed to allow easy replacement without the use of mechanical type fasteners, and finished with 45 degree angled ends to avoid hooking materials which brush against the vehicle causing damage.

4.05 ROCK GUARDS

Made of bright aluminum diamond plate shall cover front module corners 24" up from bottom of the body, 2.5" down the side of body, and 15" across the front of the body.

4.06 REAR KICK PANEL

Shall extend from the top of the rear step to the bottom of the rear doors, full width formed around corners, and 2.5" forward on each side.

4.07 FUEL FILL(S)

Shall be on the streetside of the module. Each location shall have polished cast aluminum fill well and be properly vented. All fuel filler hoses will be protected with a 0.125" aluminum protection plate. Fuel fills shall be installed in accordance with "Body Builder's" recommendation.

A fill shall be provided for the DEF tank.

4.08X**MODULE WINDOWS**

Shall have black anodized aluminum frames, rubber gaskets, and be attached with screws for ease of replacement. All module windows to be dark tinted.

The side door window shall be 18.75" x 18.75" with sliding glass, a positive catch, and a screen.

The rear door windows shall be 18.75" x 18.75" fixed glass to prevent exhaust from entering the module.

Add bracing in curbside wall above squad bench for future installation of an 18.75" x 37.5" window.

4.09A**FUEL SPLASH GUARD**

Shall be made of stainless steel and shall be installed below the fuel fill.

4.17X**ELECTRIC STEP**

One (1) step shall be provided and mounted under the curbside door. It shall be a Kwikkee Model and shall be wired to open and close with the side door.

Shall be prewired for an Auto/Off switch just inside the curbside door.

5 MODULE INTERIOR

All interior hangers, supports, fasteners, latches, and hinges shall be of a near flush type design when not in use. The patient compartment shall be free of sharp projections. Exposed edges and corners shall be broken with a radius, chamfer, or covered with aluminum trim, plastic molding, or rubber edging.

5.01 UPPER WALL COVERING

Shall be covered with light gray heavy grade 0.125" ABS vinyl. All panels shall be attached with a Norton very high bond system.

5.02 HEADLINER

Shall be fiberglass reinforced 0.090" "Glasboard" with textured white surface.

5.03 HEAD PADS/CUSHIONS

Head pads located over all module access openings and seat backs shall be 1" high-density foam covered with heavy-duty vinyl matching upholstery.
Seat cushions shall be 3" high-density foam covered with heavy-duty vinyl matching upholstery. (Section 3.08 related)

5.04 LOWER WALL COVERING

The squad bench sides and lower portion of the streetside wall shall be nonporous, color-coordinated material.
Nonporous, color-coordinated material shall cover the wall from the squad bench to the rear door at the same height as the squad bench front.

5.05A GRAB RAIL

One (1) 75" long x 1.250" diameter stainless steel grab rail with three (3) support brackets shall be securely mounted to roof structural framing running through center.

5.06 ACCESS DOOR GRAB RAILS

Each module access door shall have a 1.250" "L" style stainless steel grab handle which may also be used as an entry assist rail.

5.07 IV HANGERS

One (1) retractable dual IV hanger with stabilizers shall be near flush mounted in the ceiling over the primary cot.

5.08X COT MOUNT

Prepare module underside with plating to accommodate for Ferno and Stryker dual and single position cot fasteners.
Do not cut for, or install mount plates.

5.10X ATTENDANT SEAT

A rear facing high-back bucket seat, upholstered with heavy grade vinyl, shall be located at the head of the cot position and provide easy access to all action wall controls and outlets, and to the patient. Seat shall be securely anchored to an aluminum storage cabinet with 2-point safety belt.

- 5.11 OXYGEN SYSTEM**
The entire oxygen system to be assembled with certified Oxygen hose (1000 PSI burst strength) with brass fittings, pressure tested, and certified. Ohio outlets shall be installed in the following locations: one (1) in action area, one (1) in ceiling above primary patient, and one (1) in the curbside wall above the squad bench.
A 50-PSI regulator and one (1) OXYGEN tank wrench shall be included.
A bulkhead connector shall be installed in the ceiling of Compartment #3.
- 5.12 SUCTION PUMP**
The unit shall have an electric pump as the source of suction. Control shall be on the attendant panel. Suction pump shall be vented to the outside of the vehicle under the module body.
- 5.13 SUCTION COLLECTOR**
A Rico Model RS4X-1001B suction collector with disposable canister shall be installed in the Action Area.
- 5.14A SEATBELTS**
Shall be DOT certified and shall be installed with all passenger seating. Three (3) sets shall be installed on the squad bench and set up for use with sit-up or stretcher patients. The attendant seat and the CPR seat shall each have a single seat belt.
- 5.16 INSULATION**
The module side, ends, roof, doors, and floor shall be insulated to enhance the interior environment and to restrict heat, cold, and external noise from entering the module. The insulation shall be a non-settling foam plank material of 2", 1.5", or 0.75" thickness depending upon location and available space.
Roof, doors, wall, and floor insulation shall be polyisocyanurate.
In addition, a closed-cell polyurethane tape with ultra-high-bond acrylic adhesive shall be utilized on the sidewalls and roof to provide a thermal and noise break between the outside skin and structural members. A 3" wide, 60-mil tape shall be used as a thermal break on the inside surface of the roof and wall tubes.
- 5.17A MODULE CLIMATE CONTROL SYSTEM**
Shall incorporate a combination heating/air conditioning unit with 36,000 BTU heating and 32,000 BTU cooling. The unit shall have a 580CFM fan and have controls independent of the cab system. The module system shall be controllable by a digital thermostat located on the action wall.
The HVAC shall be routed thru a vertical plenum on the aisle side of the right front stack. A 12VDC water pump shall be installed to increase the heating capacity and efficiency of the system.
- 5.18 EXTERNAL AIR INTAKE**
To supplement heated or cooled air with fresh air, an external air intake shall be provided on the side of the module. The intake shall consist of an opening protected by an aluminum vent cover. The interior chamber of the intake shall be made of aluminum and formed to prevent the collection of moisture.
Washable filter media shall be installed in the intake chamber.

- 5.19 AIR RETURN**
Designed into the front right bulkhead wall shall be an air return, which runs from the floor level to the heater A/C unit. The air return vent shall have formed louvers.
- 5.20 EXHAUST VENT**
A motor-powered exhaust vent shall be located in the streetside rear corner of the module.
- 5.21 NO SMOKING/FASTEN SEAT BELTS SIGNS**
Two (2) "No Smoking/Fasten Seat Belt" signs shall be installed – one (1) each for driver's area and module.
- 5.23A WHITE MARKER BOARD**
Shall be installed on the curbside wall of the walk-through.
- 5.24A CLOCK**
An Atomic controlled clock shall be installed at the aft end of the squad bench over the oxygen window. The clock shall be LCD display and show hours (12/24 selectable), minutes, seconds, date, day, and temperature. Clock shall be powered by one (1) "AA" alkaline battery.
- 5.26X SHARPS/HAZARDOUS WASTE CONTAINER**
One (1) Becton Dickinson 8.2 qt., sharps container and one (1) 7 qt. waste container shall be installed under the aft end of the action area countertop.
- 5.29A OXYGEN WINDOW**
Shall be a clear, 6" x 10", acrylic window. The window shall be mounted with self-closing hinges, on the forward facing wall at the aft end of the squad bench.

6 **ELECTRICAL**

All added body and chassis electrical equipment shall be served by circuits separate and distinct from the vehicle chassis circuits. All vehicle wiring shall be copper and conform to all SAE J1128 requirements. The wiring shall be colored, numbered, and function coded every 3" for permanent identification and correspond with the vehicle schematics. Solderless, insulated connectors shall be used. Wiring panduit shall be used in power component module to ensure air circulation throughout power component wiring. The wiring shall be routed in conduit or looms and wiring shall be secured to the underbody or frame with insulated metal cable straps. All power distribution cabling shall be covered with a protective split loom. The power component module shall be equipped with positive locking plugs to provide easy disconnect for remount or repair of body. All wiring devices, switches, outlets, etc., except circuit breakers, shall be rated to carry 125% of the maximum ampere load for which the circuit is protected.

6.01 OVERLOAD PROTECTION DEVICES

Body electrical wiring shall utilize overload protective devices of the automotive type circuit breaker. In addition, one (1) single pole, 20-amp circuit breaker shall be provided for future use. The circuit breakers, relays, and other electrical items shall be located in the enclosed power component module.

6.02 VOLTMETER/AMMETER

Shall be a single digital display, located in the driver's console, which displays voltage and alternator current when the ignition is on. Display includes audible and visual alarms for high and low voltage.

6.04 IGNITION CONTROL

Chassis electrical circuits will be controlled by ignition switch as provided by the OEM chassis manufacturer. The auxiliary chassis related functions shall be powered by one (1) 100-amp continuous duty solenoid (rear heater/air conditioner, siren, spotlight, etc.).

6.05A MODULE POWER

Shall be controlled by a 200-amp power (CDR-357) automatic disconnect switch that provides module power continuously when ignition is on and for fifteen (15) minutes after ignition is turned off. Cycling the ignition switch or opening a module door resets the time and provides another fifteen (15) minutes of module power.

6.06 WIRING ACCESS

All cabinets at ceiling level shall have removable backs, which are screwed in place for access to harnesses. Stack cabinets shall have removable panels for wiring and hose access.

6.07 BACK-UP ALARM

Shall be installed and have a momentary disable switch in the driver's console. If disabled while in reverse, backup alarm shall automatically reset when shifted out of reverse. The alarm shall have a sound output level of 97dB.

6.08 SERVICE LOOP

A 6" service loop of wire or harness shall be provided at all electrical components, terminals, and connection points.

6.09A

DRIVER'S CONSOLE/MAP BOOK HOLDER

Installed between the seats and made of formed aluminum, with black powder coating. It shall have a switch panel with the following layout, two (2) cup holders, and a map holder with six (6) dividers that are mill finished aluminum. A map light shall be installed in the upper right corner. (Section 1.02.12 Related)

SWITCHES

- | | | |
|---------------------|---------------------------------|---------------------|
| 1. Mod Disconnect | 4. Light Bar Red | 11. Left Scene |
| 2. Emergency Master | 5. Light Bar White | 12. Right Scene |
| 3. Back-Up Disable | 6. Flasher | 13. Rear Scene |
| | 7. Flashing Headlights | 14. Blank |
| | 8. Blank (prewire White lights) | 15. Spare |
| | 9. Blank (prewire Steady Red) | 16. Blank |
| | 10. Blank (prewire Opticom) | 17. USB Charge Port |

OTHER:

- Voltmeter/Ammeter
- Passage Door (Red) Open Warning Light
- Compartment Door (Amber) Open Warning Light
- Siren

6.10X

SWITCHES

Shall be lighted rocker type and permanently marked by function. One (1) spare switch shall be provided.

6.11

MAP LIGHT

A map light with a 19" flexible neck shall be mounted on the driver's console.

6.12A

DOOR AJAR WARNING LIGHT

Shall be installed on the driver's console. A red flashing light shall warn the driver of open passenger access doors and an amber flashing light shall warn the driver of open exterior compartment doors.

6.13

ATTENDANT CONTROL PANEL

Shall be located in the action area. Panel shall include one (1) row of switches, as follows:

- | | | |
|-------------------|--------------|----------|
| 1. Dome Hi/Off/Lo | 3. Aspirator | 5. Blank |
| 2. Dome Hi/Off/Lo | 4. Vent | 6. Blank |

A digital thermostat and inverter panel shall be located adjacent to the attendant control panel.

6.14

ACTION WALL AREA LIGHTING

The entire action wall area shall be lighted utilizing a Thin-Lite Model #612 light with 12VDC dual 11" fluorescent bulbs.

6.15

STEP LIGHTS

A Pre-Wire for a side door step well light shall be installed.

6.16X

MODULE INTERIOR LIGHTING

Shall be designed to keep vehicle height to a minimum without interfering with the structural integrity of the roof. Module interior lighting shall consist of six (6) dual intensity #80C0EHCR LED recessed lights - one (1) bank of three (3) lights shall be positioned toward streetside and three (3) lights toward curbside.

The three (3) lights on the curbside shall be automatically activated when the rear or side doors are opened.

There shall be a switch for each bank of lights on the action wall for Hi/Lo or Off. The bank of three (3) lights on the curbside shall be controlled by a timer switch mounted inside the curbside passage door. The timer switch shall be wired to continuous battery power.

6.17A

BASIC EXTERIOR LIGHTING

Shall include headlights, parking lights, directional signal lights, tail and stop lights, license plate light, back-up lights, side marker lights, hazard and warning lights, and clearance lights as required by FMVSS 108.

Rear, stop, back-up, and turn lights shall be Truck-Lite LED.

Side marker lights shall be "Truck-Lite" LED Model 36.

Front and rear module clearance lights shall be an integral part of the light bar system.

6.19

ANTENNA MOUNTS AND CABLES

Two (2) NMO universal antenna mounts with KHFD cables and Larsen HyPer master universal connectors and mini-UHF adapters shall be installed on the module. Antenna base access shall be through the dome light openings, and the cables shall terminate in the radio cabinet.

6.20

BLOCK HEATER

A block heater, with On/Off switch in 120VAC power box, shall be wired to the 120VAC shorepower system and shall be circuit protected (Section 1.01.02 related).

6.21X

120VAC/SHORELINE CIRCUIT BOX ~~PINK #01 10/13/15~~

Utility power shall be furnished with 120VAC shorepower via Kussmaul 20 amp Super Auto-Eject plug located on driver's side of vehicle with a green LED indicator light on a stainless steel access plate and distributed via a formed 0.125" aluminum power box recessed into compartment #1. Power box shall be flush mounted so as to maximize compartment size and shall have an easily removable cover.

The box shall contain three (3) 120VAC duplex receptacles and one (1) 120VAC duplex GFCI receptacle.

- Inverter (which feeds interior/exterior 120VAC (receptacles, IV warmer, etc.
- Block heater

Two (2) breakers shall be installed, one for protection of the block heater receptacle, the other for protection of the other 120VAC receptacles.

All exposed receptacles outside of the power box shall be ground fault circuit interrupting (GFCI) and shall have a power on indicating light.

~~Three (3)~~Four (4) interior 120VAC duplex GFCI receptacles shall be mounted:

- ~~One (1) Cabinet #1~~
- One (1) Action Area
- One (1) Cabinet #5
- One (1) Cabinet #20

6.22 BATTERY GROUNDS

In addition to OEM grounds, the following ground circuits shall be added: 4 ga. ground cable from module power component panel to frame, two (2) braided ground straps from the module body to the chassis to reduce RF interference.

6.23C BATTERY CHARGER

A 50 amp battery charger shall be provided as part of Magnum Pure Sine inverter system. (Section 6.31 related)

6.25 12VDC RECEPTACLES

Two (2) 12VDC, 15-amp lighter-style power point receptacles shall be provided:

- One (1) action area
- One (1) curbside front inside/outside compartment

Receptacles shall be powered continuously.

In addition, one (1) Kussmaul Dual USB charger will be installed:

- One (1) drivers console

6.26 COMPARTMENT LIGHTING

An LED strip light shall be installed in all outside compartments and shall be activated by a door switch.

6.27 EXTERIOR DOOR SWITCHES

Shall be 1/2" door switches.

6.30 EMERGENCY WARNING SYSTEMS

6.30.01X FRONT LIGHTBAR

Shall be a 94" Whelen #4500 Plus lightbar. Pattern curbside to streetside:

- | | |
|------------|------------------------------------|
| Curbside | Red Lens Red Super LED Flasher |
| | Red Lens Red Super LED Flasher |
| | Red Lens Red Super LED Flasher |
| | Clear Lens Clear Super LED Flasher |
| Center | Pre-Wire for Opticom |
| | Clear Lens Clear Super LED Flasher |
| | Red Lens Red Super LED Flasher |
| | Red Lens Red Super LED Flasher |
| Streetside | Red Lens Red Super LED Flasher |

The Lightbar shall be recess mounted with horizontal plane of the roof, protrude no more than 1/2" beyond the vertical plane of the front and sides of the module.

The clearance lights shall be an integral part of the light bar.

Prewire for Steady Red light(s)

6.30.02X REAR LIGHTBAR

Shall be a 94" Whelen #4500 Plus lightbar. Pattern curbside to streetside:

Curbside	Red Lens Red Super LED Flasher Red Lens Red Super LED Flasher 17 Degree Angled LED Scenelights Amber Lens Amber Super LED Flasher
Center	Red LED Brake Light Amber Lens Amber Super LED Flasher 17 Degree Angled LED Scenelights Red Lens Red Super LED Flasher
Streetside	Red Lens Red Super LED Flasher

The Lightbar shall be recess mounted with the horizontal plane of the roof, and protrude no more than 1/2" beyond the vertical plane of the rear and sides of the module.

The clearance lights shall be an integral part of the light bar.

The scenelights shall activate when rear doors are opened or when vehicle is placed in "Reverse".

6.30.03B FLASHERS

Four (4) Red halogen flashers shall be mounted two (2) on each side of module in upper corners. Lights shall be Whelen #90F000RR.

Two (2) Amber halogen flashers shall be mounted on the rear of the vehicle at window height. Lights shall be Whelen #90F000AR.

6.30.04 SCENELIGHTS

Four (4) parabolic scenelights, mounted two (2) on each side, shall be installed. The scenelights shall be flush mounted and have internal optics to deflect the light down at 8-32 degree angles. The lights shall be Whelen Model #90E000ZR Opti-Scene lights. The side door shall activate the curbside scenelights.

6.30.05 SPOTLIGHT

A 400,000cp hand-held spotlight shall be hard wired into the console and have a hanging clip.

6.30.06X INTERSECTION LIGHTS

Four (4) Intersection lights shall be installed, one (1) on each fender and one (1) above each wheel well. These shall be Whelen #WIONSMCR Clear Lens Red Super LED lights with chrome flanges.

6.30.07X FLASHING HEADLIGHTS

A switch shall be provided in the driver's console.

6.30.08X GRILLE LIGHTS

Shall be two (2) Whelen #WIONSMC Clear Lens Red Super LED with Chrome flanges.

The lights shall be switched on the console by the "Flasher" switch.

Pre-wire for White Lights(s).

6.30.09 SIREN

Shall be a Whelen 295SLSA1, 200 watt. Siren options to include radio, horn, manual, wail, yelp, and phaser.

- 6.30.10A SIREN SPEAKERS**
Shall be DynaMax ES100C with two (2) 100-watt speaker drivers installed in the open center portion of the bumper.
- 6.30.11 SEQUENTIAL SWITCHING SYSTEM**
A Kussmaul sequential switching system shall be installed to control emergency lighting.
- 6.30.12 FLASHER CONTROL**
A 50 amp per terminal Vanner 3250 GCP flasher shall be provided to control halogen and LED flashers.
- 6.31A INVERTER**
Shall be a Magnum Pure Sine 1000, 1000 watt inverter with a 50 amp battery charger installed in Compartment #1. A remote inverter status panel shall be installed in the action area. The inverter shall be configured to turn on and off with ignition
- 6.35A FLUID WARMER PINK #01 10/13/15**
A ~~12VDC/120VAC dual-voltage~~ fluid warmer shall be installed in the lower aft corner of Cabinet #1. The warmer will be thermostatically controlled at 95 to 105 degrees F. Space for ten (10) one-liter bags of fluids shall be provided.
- 6.40 ELECTRIC DOOR LOCKS**
Shall be installed on all compartment and module access doors. The module door locks shall be wired to the cab doors.
Two (2) switches shall be provided: (1) located on rear curbside door, and (1) located on the curbside passage door.
A hidden switch shall be located behind the license plate.

7 SUPPORTING DOCUMENTATION

7.01 OWNERS MANUAL

Shall be provided with vehicle and consists of the following items:

1. Chassis owner information packet.
2. Extra set of keys.
3. Lifetime module warranty.
4. Factory warranty on Chassis.
5. 7 Year/75,000 miles limited electrical warranty.
6. 2 Year/30,000 mile Conversion Warranty.
7. 5 Year Paint Warranty.
8. Module remount engineering checklist.
9. Climate control information and warranty.
10. Main schematic.
11. Electrical equipment amperage ratings.
12. Wire coding list.
13. Schematics for standard system: (As Built)
 - Driver switch console
 - Attendant switch console
 - Climate control system
 - Dual battery system
 - Module harness routing
 - Interior and exterior lights
14. Operations manual
15. Schematics for individual options.
16. Warranty and parts list for light bar, etc.

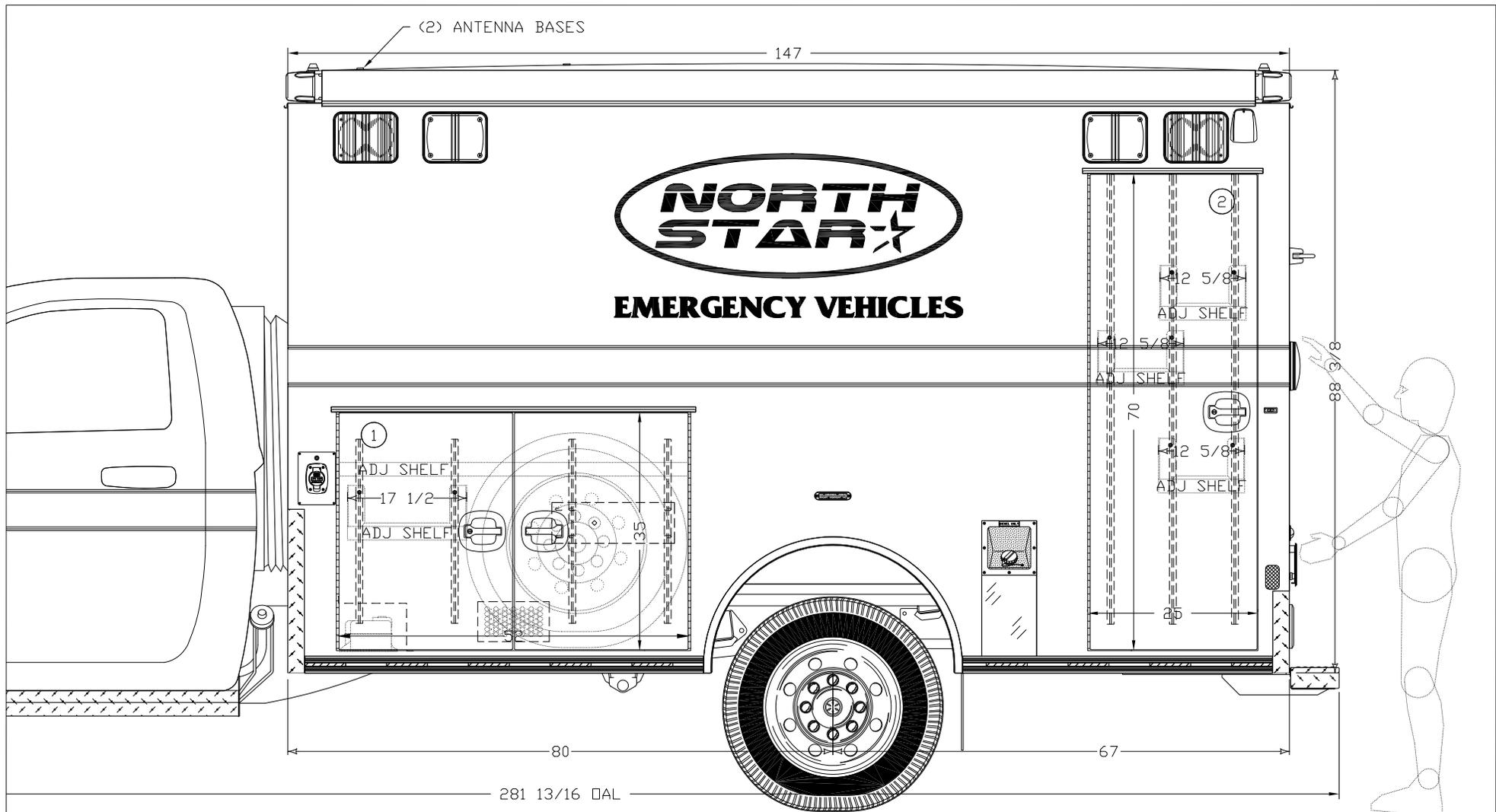
8 MISCELLANEOUS EQUIPMENT

8.01 LOOSE EQUIPMENT

The following equipment shall be shipped loose with the vehicle:

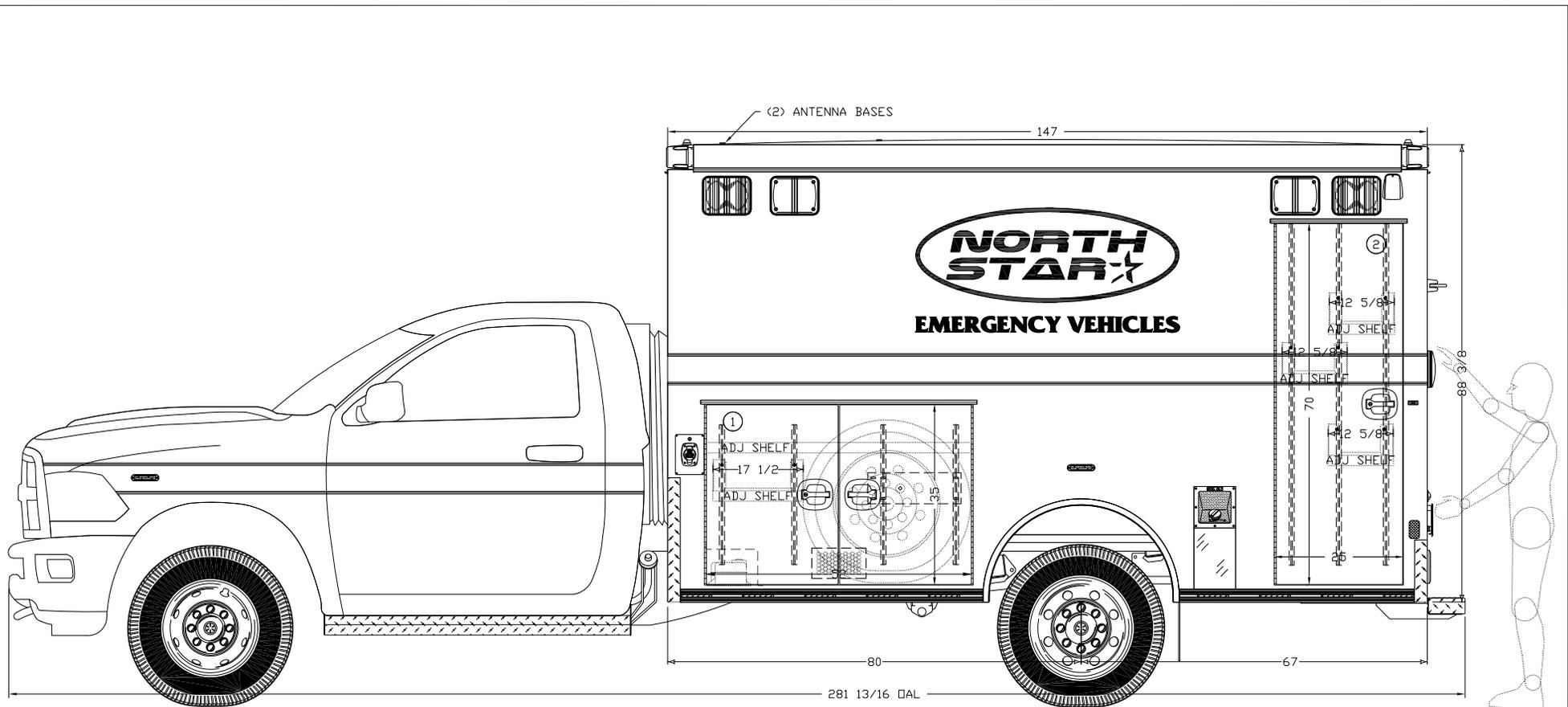
1. Touch Up Paint
2. Oxygen cylinder Wrench
3. Tire Changing tool and OEM jack
4. Antenna Coax Ends
5. 20 amp shoreline plug
6. Adjustable shelf for compartment #1
7. Road Safety Kit (includes flares, triangle and fire extinguisher)

* * * *



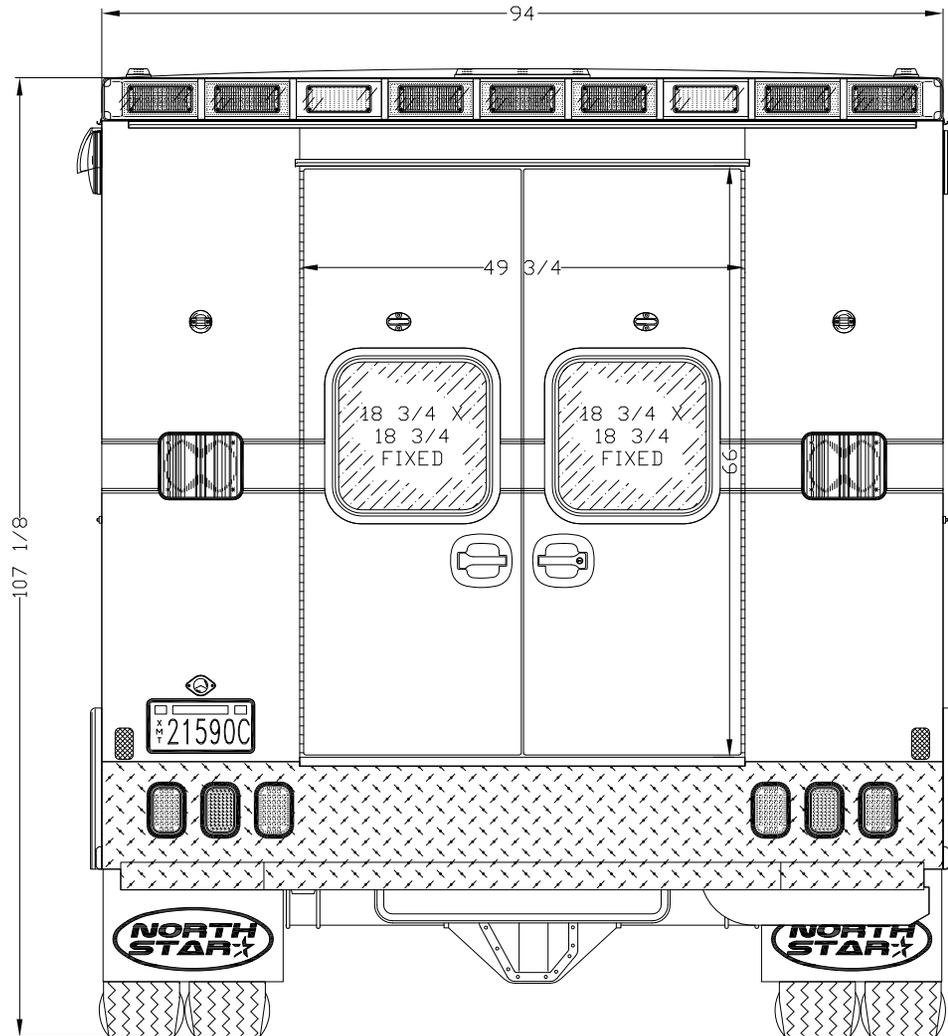
Braun Northwest, Inc.			
Department	SALES	Rev	
Dwg. Name	21331		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.

TITLE: EXTERIOR S/S VIEW



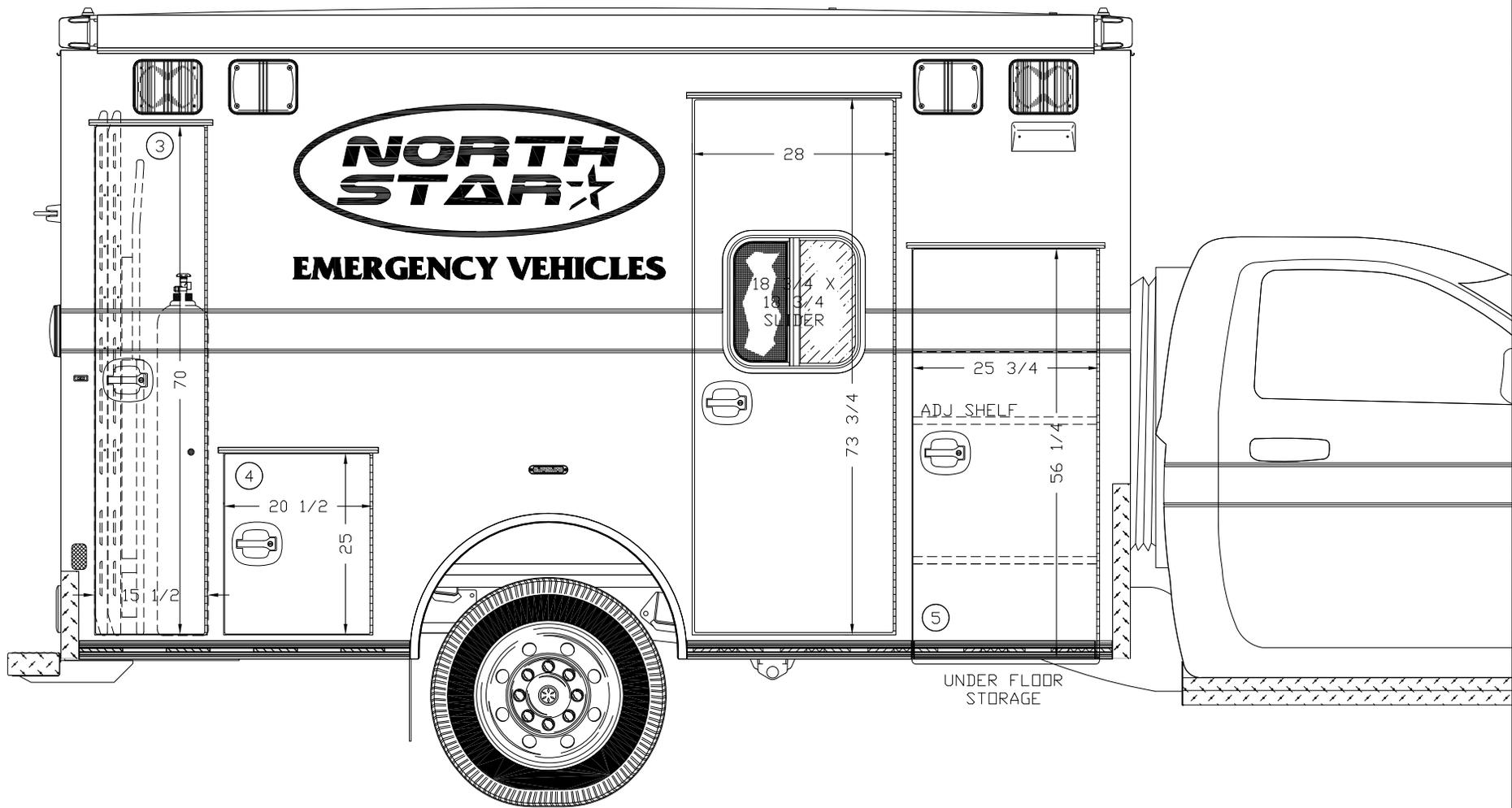
Braun Northwest, Inc.			
Department	SALES		Rev
Dwg. Name	21331		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.

TITLE: EXTERIOR S/S VIEW



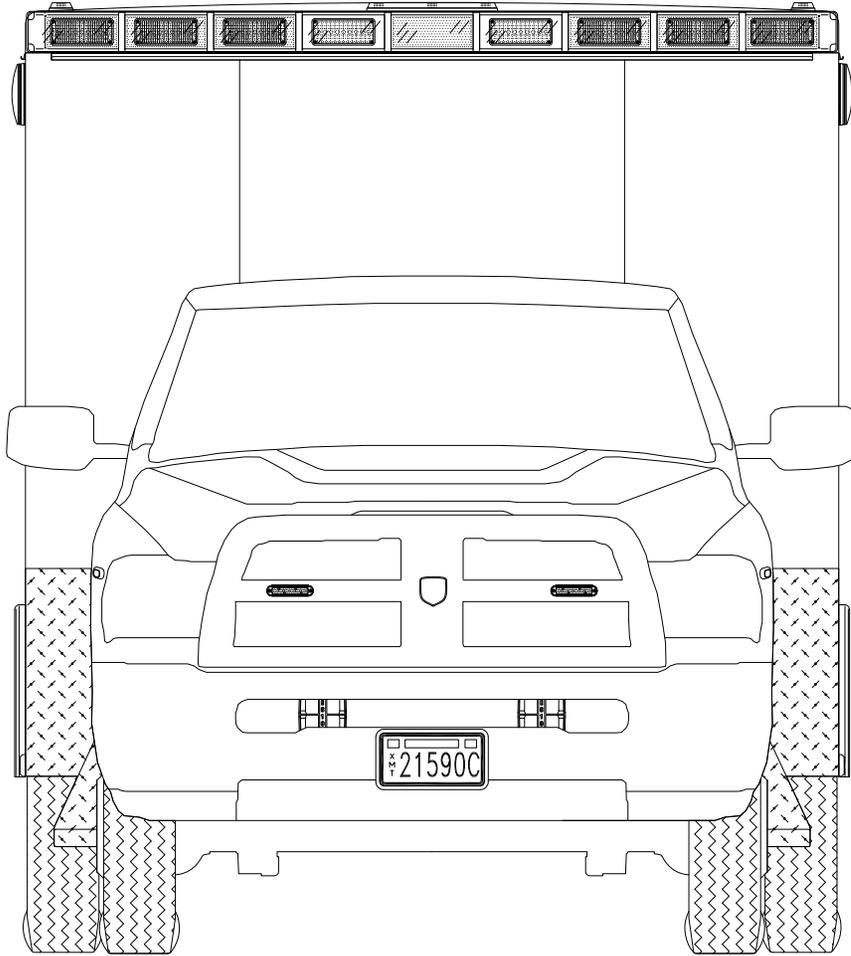
TITLE: EXTERIOR REAR VIEW

Braun Northwest, Inc.			
Department	SALES		Rev
Dwg. Name	21332		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.



TITLE: EXTERIOR C/S VIEW

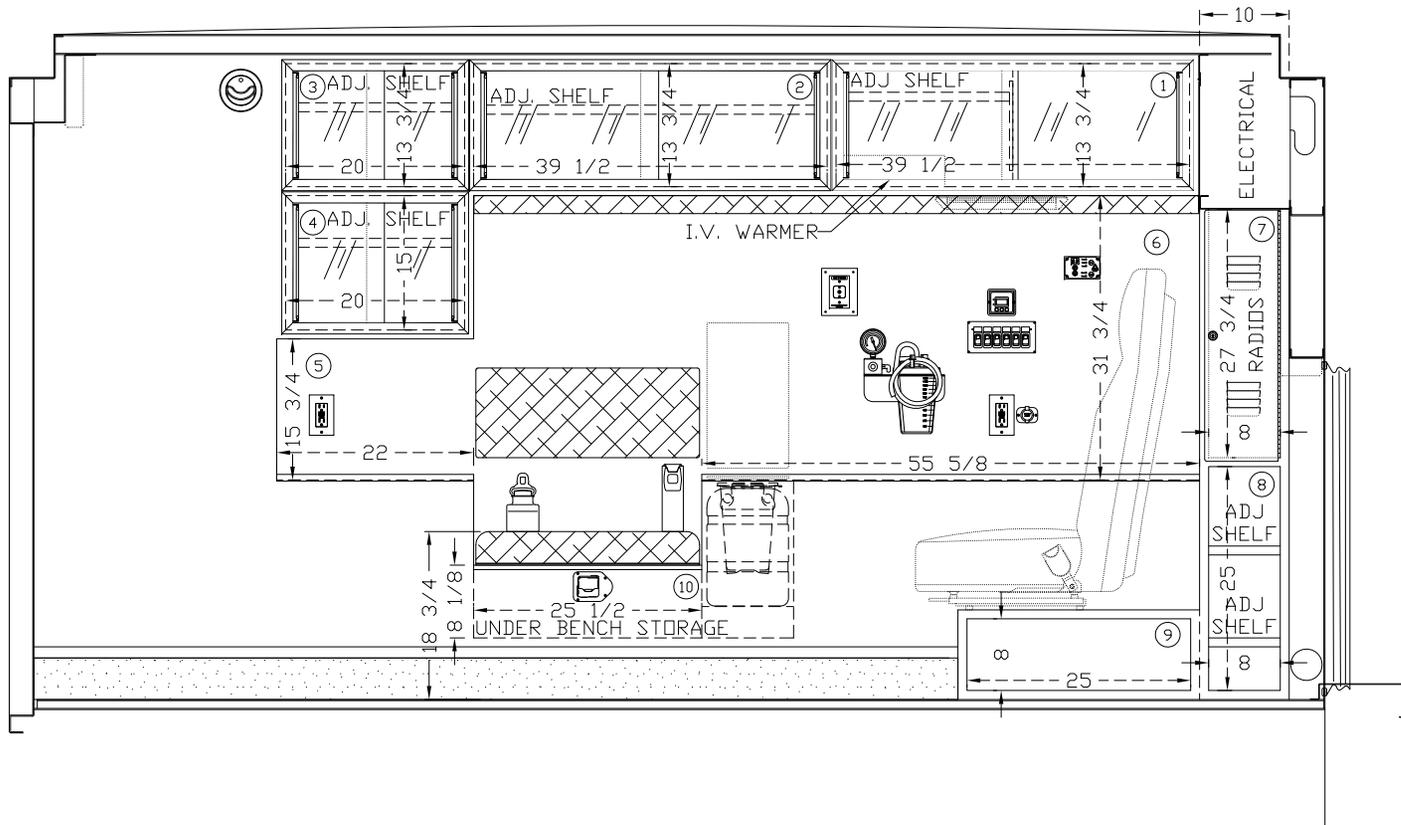
Braun Northwest, Inc.			
Department	SALES	Rev	
Dwg. Name	21333		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.



Braun Northwest, Inc.			
Department	SALES		Rev
Dwg. Name	21334		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.

TITLE:

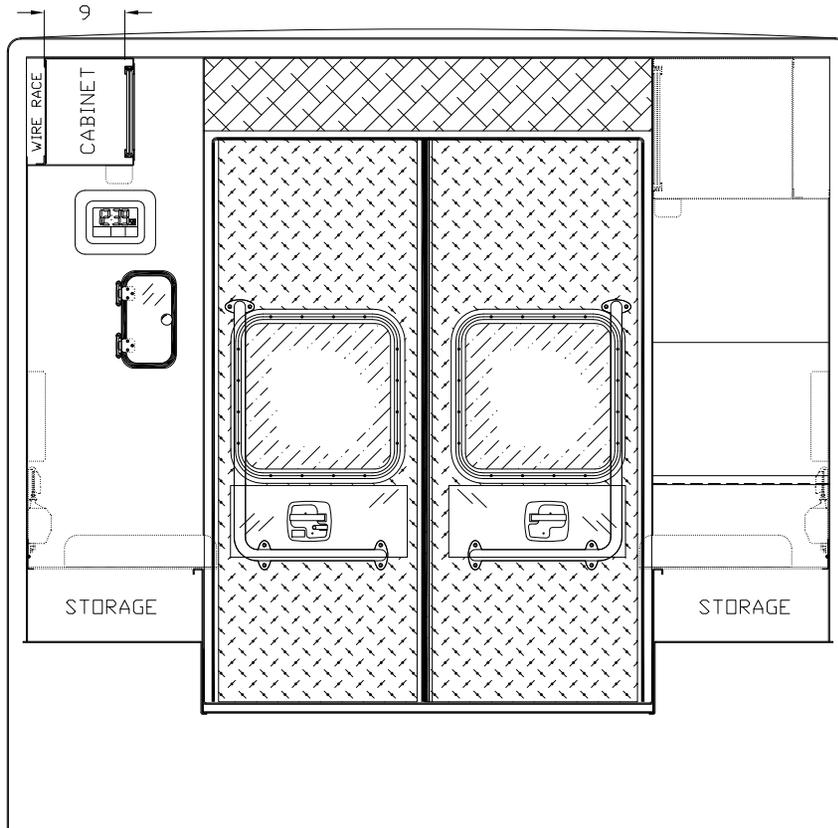
EXTERIOR FRONT VIEW



Braun Northwest, Inc.

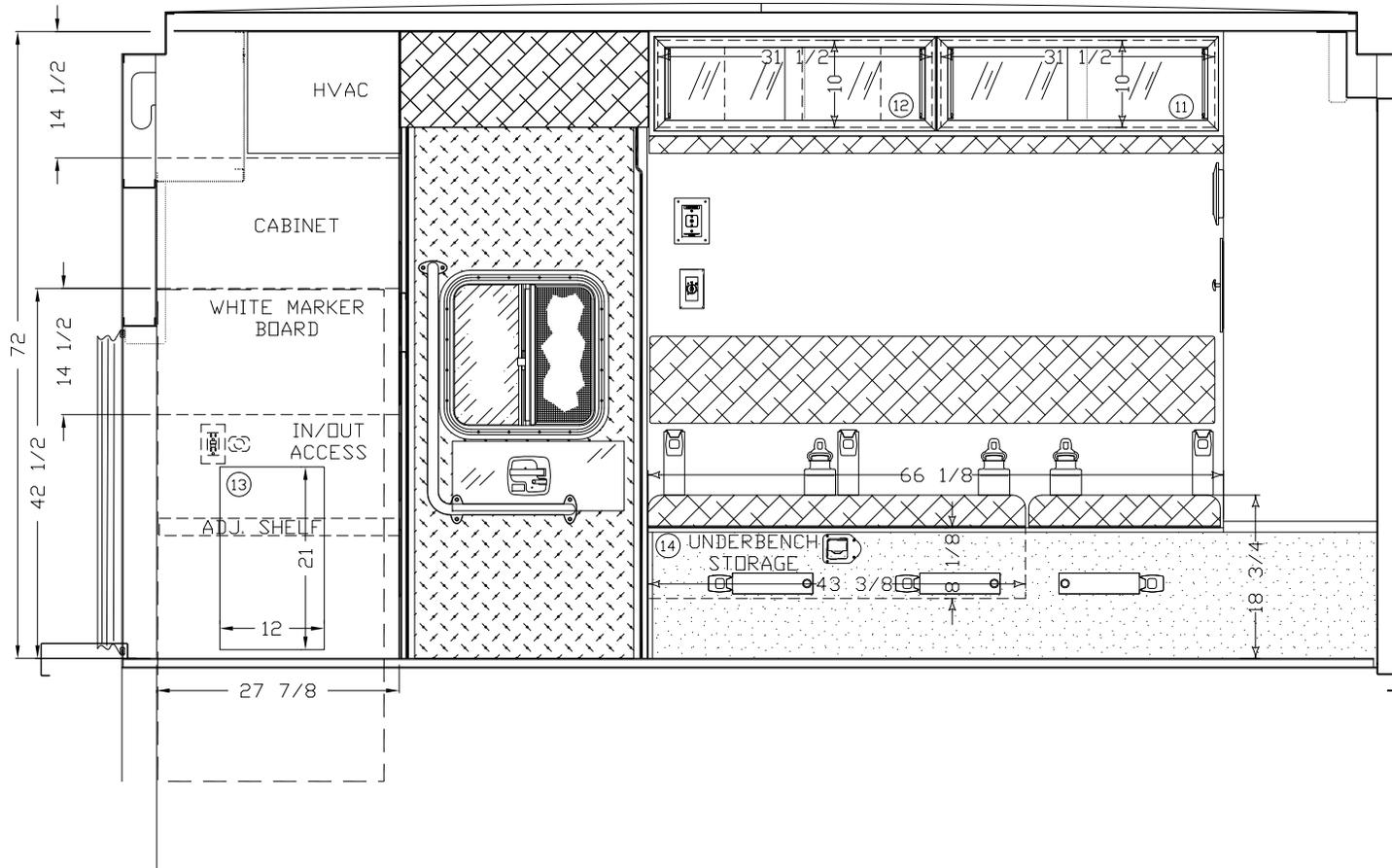
Department	SALES	Rev
Dwg. Name	21335	
Client	2015 DODGE 3500 4X4 DEMO	
Date	05/27/2015	Drawing By T.A.S.

TITLE: INTERIOR S/S VIEW



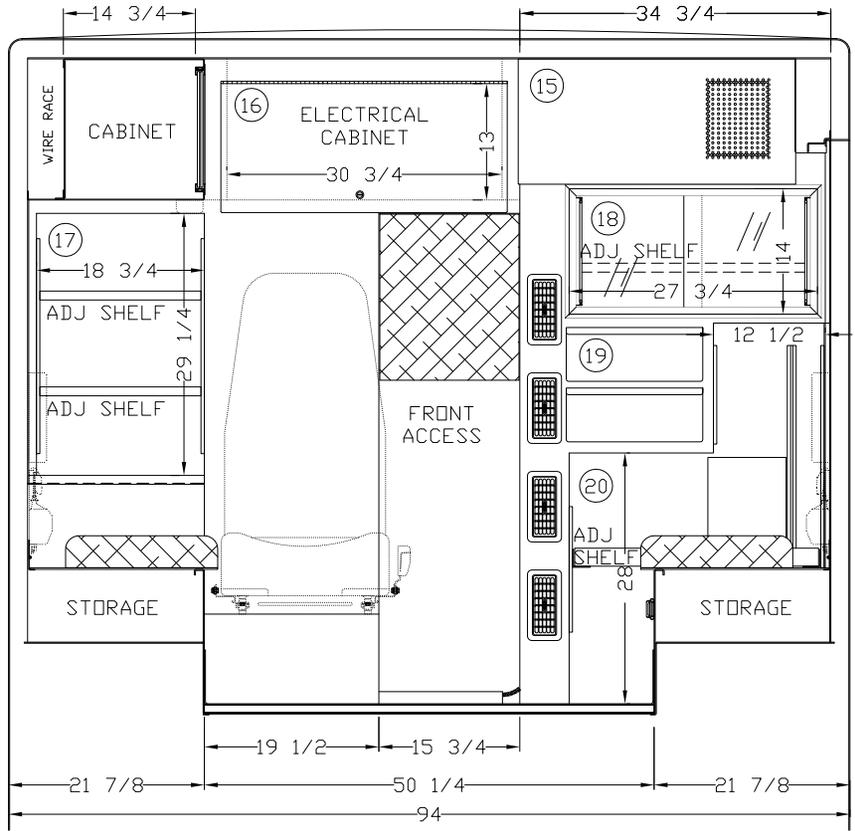
Braun Northwest, Inc.			
Department	SALES		Rev
Dwg. Name	21336		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.

TITLE: INTERIOR REAR VIEW



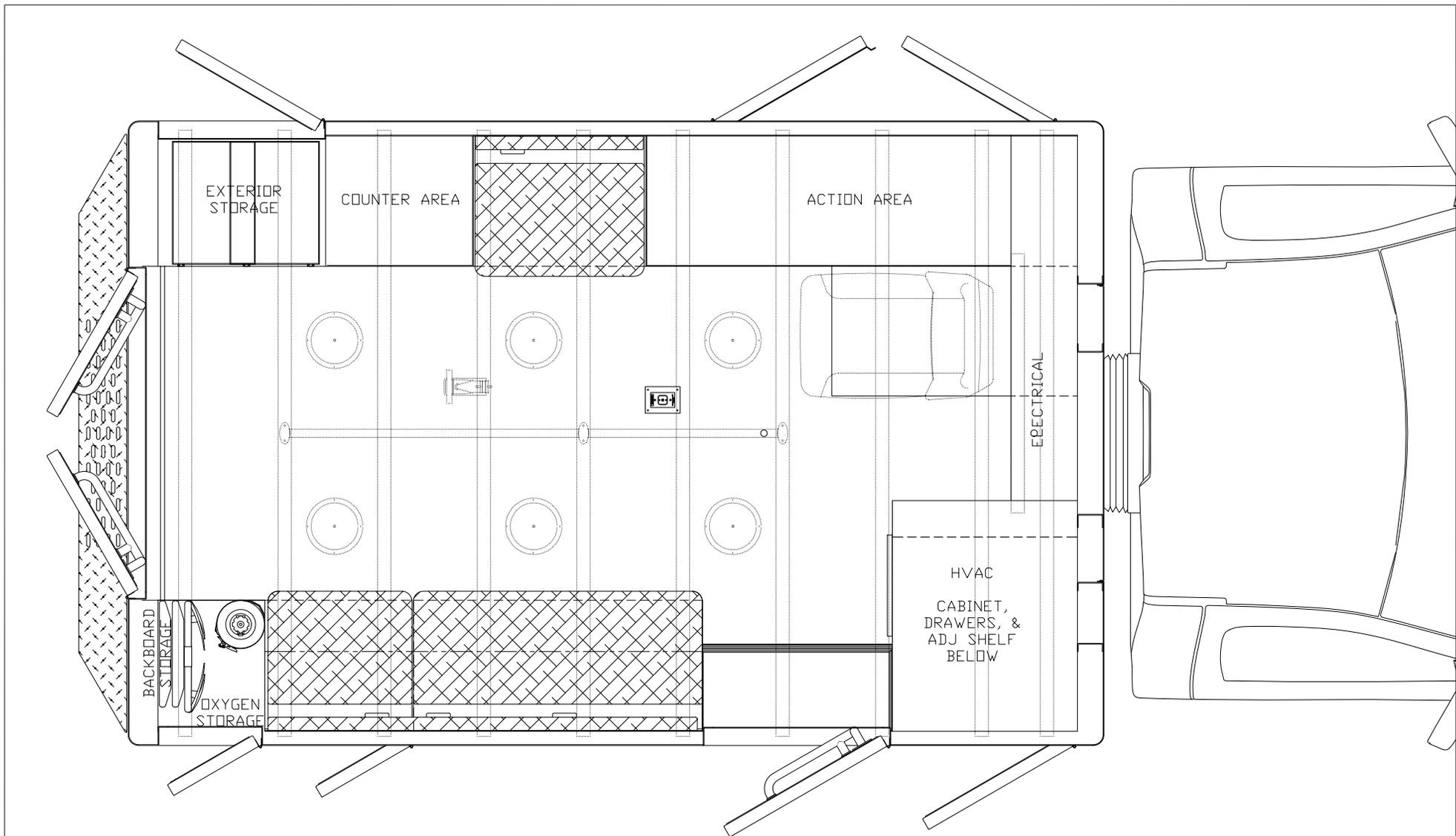
Braun Northwest, Inc.			
Department	SALES	Rev	
Dwg. Name	21337		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.

TITLE: INTERIOR C/S VIEW



Braun Northwest, Inc.			
Department	SALES		Rev
Dwg. Name	21338		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.

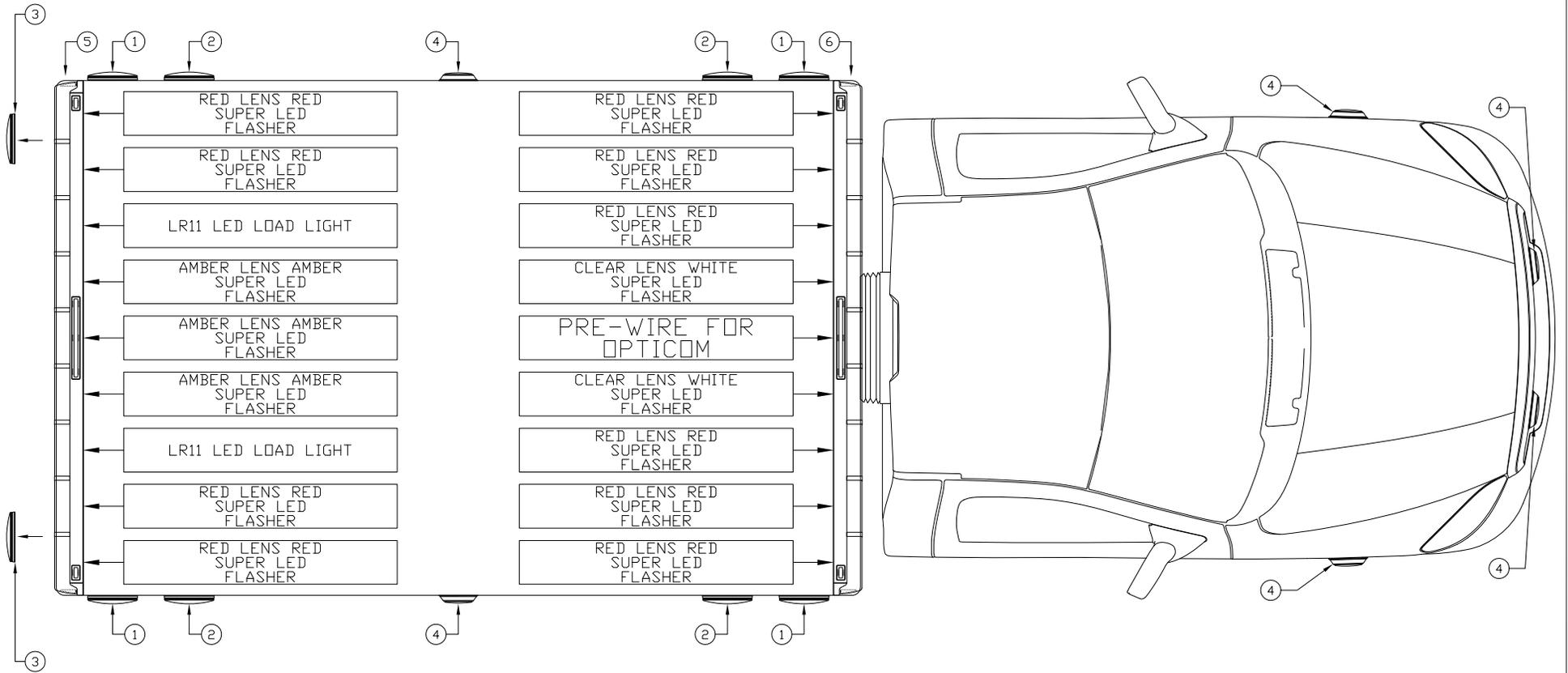
TITLE: INTERIOR FRONT VIEW



Braun Northwest, Inc.			
Department	SALES	Rev	
Dwg. Name	21339		
Client	2015 DODGE 3500 4X4 DEMO		
Date	05/27/2015	Drawing By	T.A.S.

TITLE:

PLAN VIEW



						Braun Northwest, Inc.			
6	WHELEN 94" #4500 PLUS LTBAR W/ICC'S RED/RED/RED/CLR/CLR/CLR/RED/RED/RED	1	4	WHELEN #W10NSMCR CLR LENS RED LED FLSH	6	Department	SALES		Rev
			3	WHELEN #90F000AR AMBER HALOGEN FLASHER	2	Dwg. Name	2133LTS		
5	WHELEN 94" #4500 PLUS LTBAR W/ICC'S RED/RED/CLR/AMB/AMB/AMB/CLR/RED/RED	1	2	WHELEN #90E000ZR 8-32° ANGLED OPTI-SCENE	4	Client	2015 DODGE 3500 4X4 DEMO		
			1	WHELEN #90F000RR RED HALOGEN FLASHER	4	Date	05/27/2015	Drawing By	T.A.S.
TAG	DESCRIPTION	QTY	TAG	DESCRIPTION	QTY				
TITLE:		EMERGENCY LIGHT LAYOUT							

