



Shop Order

Town of Cow Head
 PO Box 40
 Cow Head, NL A0K 2A0

ERL
 Norman Knabb
 St. John's, NL

Sales Rep: Ryan Stacey, CET Metalfab LTD	Terms: Chassis, Body, & Equipment COD
Drawing #: FT-11665	
Est. Delivery Date: / /	
Customer PO #:	Penalty:
Customer #:	\$200.00 per day after 12 months from receipt of chassis
QPF #:	

Exp. Date: 07/08/2023
Quote No: NLFES-NL-0308
Job/Order No: 23126
BODY: 00-10-15 Metalfab Pumper - ULC 05/13

05/02/2025

PART NO	QTY	DESCRIPTION
== Metalfab Pumper - ULC 05/13 - 0.000 ==		
Change Order D		
00-05-0030	1	Dealer - Emergency Repair Ltd
00-10-1500	1	Metalfab Pumper
00-20-0500	1	List of References not provided
00-20-1000	1	Company Profile
00-20-1500	1	Standard Body Warranty
00-20-1550	1	Metalfab Limited Ten (10) Year Paint and Corrosion Warranty Pro rated against manufacturer's defects and corrosion perforation. Requires annual application of KROWN.
00-20-15AA	1	20 year body structural warranty Non pro rated against manufacturer's defects and corrosion perforation. Requires annual application of KROWN.
00-20-15BB	1	10 year stainless steel plumbing warranty Non pro rated against manufacturer's defects and corrosion perforation of stainless steel piping. Requires annual application of KROWN.
00-20-1600	1	Waterous Pump Warranty - 5 years
00-20-1800	1	Polypropylene Tank Lifetime Warranty
00-20-2000	1	Plant Visits - unlimited at customer expense
00-20-3000	1	No Bonding Required
00-20-3500	1	Certification for Fusion Welding of Steel and Aluminum
00-20-4000	1	Quality System registered to ISO 9001:2015

PART NO	QTY	DESCRIPTION
00-20-4500	1	Fire Apparatus Manufacturers' Association Membership
		GENERAL INFORMATION
10-11-0000	1	Intent
10-11-0105	1	Vehicle Data Recorder not requested
10-11-1100	1	ULC S515-13 Compliance
10-11-1500	1	ULC Testing - Pumper - Imperial units of measure
10-11-2100	1	Maximum length not specified
10-11-2200	1	Maximum height 119" Maximum 119" to top of light bar and monitor, body maximum 114" requested
10-11-2300	1	Overall length exceeds 30'
10-11-2500	1	General Construction
10-11-3000	1	Manuals - two copies ***Two copies of chassis manuals are required.
10-11-3600	1	Delivery - FOB Fire Department Delivery no later than 12 months after receipt of chassis - \$200.00 per day after 12 months inform town when chassis arrives Current estimate of chassis arrival is July 26, 2024 based on a chassis build date of June 6, 2024 - Serial Number VP0897
10-11-4200	1	Payment Terms - Chassis and Body COD
10-20-1400	1	Hose capacity exceeding ULC/NFPA requirements Requested hose bed capacity: 1500' x 2-1/2" standard double jacket hose 800' x 1-1/2" standard double jacket hose including crosslays Additional weight allowance of 550 pounds
10-20-2000	1	Equipment carrying capacity - standard ULC Pumper
		CHASSIS INFORMATION
20-11-1010	1	Chassis supplied by Metalfab Freightliner M2 106 PLUS 4-door cab 41,600 lb GVWR 14,000 lb front axle 27,000 lb rear axle Cummins B 6.7 360 hp @2600 rpm 2600 governed rpm 248" wheelbase 135.24" cab to axle 800 lb/ft torque @ 1800 rpm Allison 3000 EVS 6 speed automatic transmission, 275 amp alternator 189 litre fuel tank, LH Fixed steering column ESC L3240EY red Driveline 17T 5 person cab Air conditioner Wheels are polished aluminum and wheel trim (nut covers, hub caps and high hats) are installed. 1U1-002 RAM mount on dash to be provided Metalfab will install a switch on the chassis dash to control high idle through the Pump Governor with the appropriate interlocks.
20-11-1500	1	2013 Emission chassis modifications
20-11-1700	1	Chassis Motor Vehicle Inspection required - NB

PART NO	QTY	DESCRIPTION
20-21-0500	1	Fluid capacity plate
20-21-0600	1	Pumping test plate
20-21-1030	1	Maximum riders sign - 5 persons
20-21-1510	1	Seat belt warning labels - 4 door chassis
20-21-1560	1	LED Tire Pressure Indicators - Single Axle
20-21-1600	1	Apparatus Information Label
		An information label is provided in the chassis cab, visible to the driver, stating: "When manufactured, this vehicle was: ** m high ** m long ** kg GVW Changes in height since the apparatus was manufactured shall be noted on this plate by the Fire Department"
20-21-2000	1	Non removable key
20-21-2500	1	Shifter lock not required
20-21-3500	1	Rear step warning label
20-21-3810	1	Front mudflaps provided with chassis
20-21-4000	1	Rear mudflaps - Metalfab Logo
20-31-0200	1	Fuel fill label -Ultra Low Sulfur Diesel only
20-31-1100	1	Alum tread fuel tank covers, diamond grip steps, Conv - 4 dr
20-31-1900	1	Chassis cab not painted
20-31-7510	1	Console in cab not requested
20-41-0600	1	Intake air shutoff for engine not required
20-41-0900	1	Auxiliary braking system disabled when pumping
20-41-1100	1	Transmission programming - Allison WT ***Includes "Pump Engaged" light next to pump shift on chassis instrument panel.
20-41-1500	1	Extend exhaust pipe - RS front of rear wheels Engineering to specify exhaust pipe material as required by the chassis manufacturer. Engineering to sign off on the exhaust configuration to make sure it meets the chassis manufacturer's emission specifications.
20-41-1900	1	Battery boost terminals with chassis Included with chassis
20-41-2000	1	Chassis batteries remain in OEM location
20-41-2510	1	Fuel fill at step fuel tank under cab
20-41-2600	1	Chassis fuel tank remains in OEM location
20-41-5000	1	Rear Tow Hooks - under body *** Flat bar tow hooks under rear step (2)
20-41-5500	1	ON SPOT Automatic traction chains Install switch with guard on chassis dash to right of driver, confirmed at precon
20-51-0710	1	Master Battery Disconnect included with Freightliner chassis
20-51-2500	1	Back up alarm included with chassis
20-51-3100	1	Air inlet not required
20-51-3400	1	Protection valve installed for air operated accessories
20-51-6200	2	120 volt 20 A shore line connection in chassis cab Standard 5-20R duplex receptacle in chassis cab, not fused Confirm location of receptacles at precon: Provide one behind the driver's seat, one behind the officer's seat 12" above interior floor height to meet ULC 20.12.2.1.4.

PART NO	QTY	DESCRIPTION
		The battery conditioner will be plugged into an additional outlet installed behind the seats in the crew area - 3 receptacles total to be installed.
20-51-6600	1	Kussmaul Pump Plus conditioner/compressor Locate the battery conditioner behind the crew area seats Locate the 12 volt compressor in the body pump house with protective shield
20-51-7101	1	Electric System Management through VMUX control
20-51-7500	1	Super Auto eject for 120 v - 20 A with sealed enclosure Located on LS pump panel as shown on drawing, confirmed at precon.
20-51-8505	1	Engine compartment light included with chassis Single LED controlled by a switch in the cab and by a hood switch, confirmed OK at precon.
20-51-9001	1	Air horns provided with chassis ***Controlled by foot switches at driver and officer positions
20-52-3500	1	Chassis steering wheel lined up by Metalfab Lined up when vehicle is loaded to ULC standard
20-52-4000	1	Rear View Camera system Rearview Systems STM5600 with 5.6" colour monitor in cab Add the 1U1-002 RAM mount on dash for the monitor (from Freightliner) Mount the camera on the rear of the vehicle above the rear door.
20-60-0400	1	Chassis wheelbase does not change
20-99-05AA	1	Deflector Shield for Exhaust A deflector shield shall be installed where the tail pipe is routed under any side compartmentation.
PUMP AND PLUMBING		
30-12-4000	1	Mechanical seals for Waterous pumps
30-12-5500	1	Waterous CS single stage 1050 IGPM
30-15-0203	1	Plumbing - Waterous manifold pump SM
30-20-0500	1	Valves and controls - side mount panel
30-20-1003	1	Elkhart valves specified
30-20-1600	1	Piping stainless steel - general
30-20-1700	1	1-1/2" thread specifications NPSH Thread confirmed at precon
30-20-1800	1	2-1/2" thread specifications 3.25 x 5V Thread confirmed at precon
30-20-2000	1	Piping hydrostatic test
30-20-2500	1	Anodes in suction and discharge piping Install one anode on discharge side of pump, one anode on suction side of pump - do not use teflon tape or thread sealant. Paint flange silver and mask brass anode before painting for visibility. Order with pump
30-21-5560	1	Tank to Pump 3" w/check valve manifold pump
30-22-0620	1	Tank Fill valve 2"

PART NO	QTY	DESCRIPTION
30-31-4010	1	Suction - 6" not gated each side manifold pump
30-32-7645	1	Suction - 2-1/2" left side, bleeder, Waterous manifold pump
30-32-8145	1	Suction - 2-1/2" right side, bleeder, Waterous manifold pump
30-41-2105	1	2-1/2" RS discharge, bleeder, Waterous manifold pump
30-41-2625	2	2-1/2" LS discharge, bleeder, Waterous manifold pump
30-43-2520	1	2-1/2" rear discharge, plumbed 2-1/2", bleeder Left side
30-44-0570	2	1-1/2" crosslay (each), 2" valve, bleeder Interlocking plastic tile in crosslay floor Capacity 200' x 1-3/4" hose in each crosslay
30-44-6620	1	Piping for monitor, plumbed 3", bleeder Maximum height with monitor installed - 119" confirmed at precon. To rotate 360 degrees Make and Model of Monitor - 80-99-05AA Elkhart Vulcan 8500-02 with 3" female NPT inlet
30-51-0510	1	Pump shift - Midship air ***Includes "Pump Engaged" and "OK to Pump" indicator lights on chassis instrument panel ***Includes "Throttle Ready" indicator light on Pump operating panel Mount to right of driver under cup holder
30-51-0700	1	Pump Gearbox mounted manual over ride for pump shift
30-51-6640	1	Class One "TPG Plus" Governor/Throttle plus High Idle Provide a high idle switch on the chassis dash to provide stationary high idle with the appropriate interlocks to meet ULC
30-51-7000	1	Suction side relief V/V, manifold pump Mount behind the RS pump panel with access door to allow adjustment
30-51-7500	1	Primer electric vane type 12V with oil tank Waterous Indicator light on panel to show when primer is operating
30-51-8000	1	Heat exchanger Metalfab supplied and installed, not available with this chassis
30-52-1000	1	Master drain V/V, 12 port
30-52-2000	1	Drain valve for foam system header
30-52-5515	1	Foam system-Hypro FoamPro 2001 Single Tank Foam system is plumbed to crosslays and rear 2-1/2" discharges
30-52-9100	1	Foam concentrate label at foam tank fill
30-52-9200	1	Foam System Instruction Plates
30-52-9400	1	NFPA Foam System certification test
WATER AND FOAM TANKS		
40-11-2100	1	Polypropylene water tank (Imperial gallons)
40-11-2200	1	Water tank capacity certification (tank manufacturer)
40-11-5000	1	Tank capacity 1000 Imperial Gallons
40-12-5000	1	Foam cell - 30 Imperial gallon
40-21-0500	1	3" tank to pump connection
40-22-0500	1	2" tank fill connection

PART NO	QTY	DESCRIPTION
40-23-0500	1	1" water level gauge connection
40-30-0500	1	Sump drain valve (3" gate valve) with linkage Install control under L1 compartment
40-30-1000	1	Water Fill Box front left corner
40-31-0400	1	Rear dump valve not requested
40-31-6050	1	Rear fill not requested
ELECTRICAL		
50-11-0300	1	Base electrical system - multiplex
50-11-0600	1	Warning Light Certification
50-11-0700	1	Low Voltage Electrical system test
50-11-0800	1	Low Voltage Electrical System Documents As required by ULC and NFPA standards
50-11-0900	1	Rocker switch panel with master warning switch Locate in overhead panel above windshield Rocker switch assignments: MASTER -LIGHT BAR RED -LIGHT BAR CLEAR -REAR BEACONS -FLASHING WARNING -REAR FLOODS
50-11-1400	1	Federal PA300 100 watt siren Locate in overhead panel above windshield
50-11-1620	1	Siren speaker, 100 watt, in front bumper - Federal AS124
50-11-2600	1	Siren to be accessible to driver and officer
50-11-5812	1	Federal Allegiant NFPA LED light bar Configurator file is in Basecamp
50-11-6501	1	Rear Directional Light not required
50-11-9026	1	Rear beacons - Federal NVG10 LED (pr) - Red RS, Amber LS - w/ height restriction
50-12-5028	1	Front LED flashers (pr)-red Federal QL43XF-R
50-12-5118	1	Rear LED flashers (pr)-red Federal QL43XF-R
50-12-5218	1	Front side inter lts (pr)-red LED Federal QL43XF-R
50-12-5318	1	Body side inter lts (pr)-red LED Federal QL43XF-R
50-21-1505	1	Unity LED rear floods (pr) Switched in cab, on the light, and when vehicle is in reverse This light cannot be load managed, required for ULC compliance
50-21-25AA	2	FRC telescoping SPECTRA LED 12V flood (ea) FRC SPA530-Q20-SW-ON-NS-SR Switched on light head Wired to Door Ajar warning light when not stowed Mount on front corners of pump house This light can be load managed
50-21-3010	1	Remote control electric spot (ea) Nightspire Mount on hood on RS as shown on drawing Mount the wireless control on the passenger side dash

PART NO	QTY	DESCRIPTION
50-21-5100	1	Compartment lighting - LED tube lights in each compartment (rollup doors)
50-21-5600	1	Door Ajar warning light with buzzer Warning label in cab to read: "Do Not Move Apparatus when Light is on"
50-21-8001	1	Step lights for body steps - 4" LED Lights on when park brake is set
50-21-8200	1	Step lights for chassis steps - LED marker type Lights on when park brake is set
50-21-8600	1	LED clearance lts and reflectors
50-21-8605	1	Polished aluminum license plate holder on rear of body, with LED light
50-21-8700	1	Intermediate turn signal/clearance/reflector length >30'
50-22-0700	1	Whelan 64 LED tail/brake-turn-backup module (pr)
50-22-07AA	1	Auxiliary stop/turn signals on rear rub rail Required due to beavertails blocking tail lights
50-31-6600	1	Ground lighting (4" LED) - 2 door chassis Lights on when park brake is set
50-31-6620	1	Ground lighting (4" LED) - side mount body Lights on when park brake is set
50-31-7000	1	Work light for crosslay hose beds 1571318 LED work light on front of body to illuminate hose bed Lights on when park brake is set
50-35-0560	1	VHF antenna with base - commercial chassis Wire to centre of dash with a free 3' loop for customer use
50-35-0590	1	Cellular/TMR antenna with base - commercial chassis Wire to centre of dash with a free 3' loop for customer use
51-31-2500	1	5000 watt portable generator, electric start, includes on board battery Located in LS rear compartment Honda EM5000S3CT2 model is current part number, confirmed OK at precon
51-31-3000	1	120 volt wiring for portable generator Note that Neutral is bonded to chassis ground. 1 - twist lock L5-20 amp each side forward rear fender well Install panel in driver's side front compartment (L1) with the power cord running to the generator compartment (L3)
51-31-4500	1	Dielectric strength test for line voltage system BODY
60-10-1400	1	Single axle extruded aluminum body 1" lip on comp bottom
60-10-4000	1	Tapered "beavertail" rear step supports Upper section full depth of hose bed to be lined with stainless steel where couplings can contact

PART NO	QTY	DESCRIPTION
60-10-4600	1	Painted fender surround
60-10-4770	1	Removable stainless steel fender trim - single axle Include rubber gasket between body and fender
60-10-5400	1	Diamondback pumphouse steps
60-10-5430	1	Diamondback 19" rear step Deeper step required to allow configuration of steps to clear the equipment tubes, confirmed OK at precon
60-10-6500	1	Bolt on extruded aluminum rub rail
60-11-0300	1	Front left side compartments full height - L1
60-11-0700	1	Front right side compartments full height - R1
60-11-1000	1	Rear left side compartments full height - L3 Lower portion includes a through section into the back compartment This compartment has a tread plate floor, confirm at precon ____
60-11-1400	1	Rear right side compartments full height - R3 Lower portion includes a through section into the back compartment
60-11-2000	2	High side compartment (over 18") each - L2, R2
60-11-3200	1	Full Height Rear compartment - B1 Includes through sections into rear side compartments
60-11-5500	2	Rollup door - standard height - L2, R2 Natural aluminum finish Includes magnetic door switch, LED tube lights, rubber bumpers to prevent pinch point
60-11-5520	5	Rollup door - full height - L1, L3, R1, R3, B1 Natural aluminum finish Includes magnetic door switch, LED tube lights, rubber bumpers to prevent pinch point
60-11-5655	2	Amdor pull straps - Flex - HD (for door opening 20"-37")
60-11-5660	5	Amdor pull straps - Flex - HD (for door opening 49"-70")
60-31-4100	1	Extruded aluminum handrails Minimum 2" clearance from handrail to any surface
60-31-5500	1	Steps at rear of body (folding) Maximum height between steps is 18"
60-31-5600	1	Steps and grab handles at front of body next to pump panel Maximum height between steps is 18"
60-31-6500	1	Compartment matting - black plastic interlocking tile
60-31-8000	4	BA bottle compt (ea)-fender well Include loop for valve on cylinder Cylinder diameter = 7" Cylinder length = 24" Photos of cylinder are in Basecamp (other information)
60-31-8650	1	Sliding tray (ea) - 500 pound capacity with lock-in, lock-out sliding hardware Locate in L3 compartment for portable generator Reflective tape provided on all edges visible when tray is deployed and when compartment door is open

PART NO	QTY	DESCRIPTION
		Sliding tray to be full width of compartment at floor level
60-31-9600	14	Adjustable shelf (ea) Reflective stripe is applied on the exposed edge for visibility when the compartment door is open L1 - 2 shallow shelves L2 - 2 full depth shelves L3 - 2 shallow shelves R1 - 2 shallow shelves R2 - 2 full depth shelves R3 - 2 shallow shelves B1 - 2 full depth shelves
60-32-3550	1	Two adjustable hose divider (each) Hand hold required in end
60-32-7500	1	Hose bed - aluminum 1500' 2-1/2" 400 1-1/2"
60-33-0000	1	Paint exterior - Imron Elite *** Paint code and colour to match chassis cab
60-33-0200	1	Undercoat vehicle with KROWN rust protection
60-33-0600	1	Chassis wheels not painted Polished aluminum wheels
60-33-1000	1	Paint pump and plumbing job colour
60-33-1500	1	Buffed finish compartment interior
60-33-2200	1	Lettering - 80 letters up to 3" tall - 3 colour Vinyl letters, Fire Department to provide details on location and text. To include 911 on rear compartment doors
60-33-3000	1	Reflective stripe - 4" white 50% of perimeter each side and rear, 25% of perimeter front
60-33-3310	1	Reflective stripe - red and yellow chevron at rear 50% of perimeter each side and rear, 25% of perimeter front
60-33-3500	1	Tarp over hose bed - black Tarp with weighted front, velcro straps at rear, quarter turns on each corner, and velcro strips along each side. This configuration confirmed OK at precon.
60-33-3600	1	Reflective stripe - inside entry doors 96 square inches minimum inside each cab and crew cab entry door
60-33-4000	1	Tarp over crosslays - black
60-40-5500	2	Suction hose tube (each) with door Wired to door ajar warning light
60-40-9000	2	Tube mount for ladders, with rear door Door wired to door ajar warning light Roof ladder, attic ladder, and pike poles stored in LS tube Extension ladder stored in RS tube

PART NO	QTY	DESCRIPTION
60-41-1000	2	Pike Pole tube Integral with one of the ladder tubes
60-41-1500	1	Attic ladder tube Integral with one of the ladder tubes
INSTRUMENTATION		
70-11-0000	1	Warning Label on Pump Operator's Panel
70-11-0500	1	Side mount instrument panel No gauge or visual display can be higher than 84" above the operator's standing position Midpoint of any control cannot be higher than 72" above the operator's standing position
70-11-1500	1	Stainless steel instrument panels No gauge or visual display can be higher than 84" above the operator's standing position Midpoint of any control cannot be higher than 72" above the operator's standing position
70-11-3200	1	Colour coded tags
70-11-4102	1	Stainless steel side panel hood left side Panel lights controlled by park brake, confirmed OK at precon.
70-11-4506	1	Diamondback grip type panel hood step right side
70-11-5000	1	Standard cover over rear top of pump house - no storage
70-11-5500	1	Right side tread plate pump access door No opening dimension less than 18" Slot required for Primer level viewing
70-11-7500	1	Heat pan-aluminum
70-11-8000	1	Heater in pump compartment
70-20-1120	2	4-1/2" compound gauge - dual face 0-400 Thuemling brand
70-20-2130	7	2-1/2" pressure gauge - dual face 0-400 - Thuemling brand
70-20-2500	1	Primer control
70-20-3100	1	Class One Governor Control Throttle can be no lower than 42" and no higher than 72" from operator's standing position.
70-20-3500	1	Electric water level gauge on pump panel, Class One
70-20-6500	1	Test gauge panel Mount below the compound gauges for proper draining
70-20-7500	1	Heat exchanger control valve
70-21-1600	1	Electric Foam Level gauge not required
70-21-5500	1	Panel readout for Battery Conditioner
ACCESSORIES		
80-11-5000	2	6" x 10' lightweight suction hose (ea) Tube mounted
80-12-2500	1	6" barrel strainer Ship loose
80-13-0500	1	Rubber mallet Ship loose
80-13-1100	2	Hose wrenches (triple) with holder Ship loose

PART NO	QTY	DESCRIPTION
80-13-1500	1	<i>Bar with bracket</i> Mount above rear step
80-13-2500	1	<i>Pike pole, fibreglass handle - 10' long</i> Tube mounted
80-13-2510	1	<i>Pike pole, fibreglass handle - 6' long</i> Tube mounted
80-13-3500	1	<i>Axe, pick head, wooden handle and bracket</i> Ship loose
80-13-3600	1	<i>Axe, flat head, wooden handle and bracket</i> Ship loose
80-14-0500	1	<i>24' 2 section extension ladder PEL 24</i> Tube mounted
80-14-5500	1	<i>14' aluminum roof ladder PRL-14</i> Tube mounted
80-14-8500	1	<i>10' aluminum folding attic ladder FL-10</i> Tube mounted
80-15-7000	1	<i>Piston Intake Relief Valve 6" NHF x 4" Storz with cap</i> Ship loose
80-17-0500	1	<i>20# dry chemical fire extinguisher and mount</i> Ship loose
80-17-1500	1	<i>2 gallon water extinguisher with mount</i> Ship loose
80-18-0600	4	<i>SCBA brkt w/strap - ZICO ULLH - crew cab mount</i> Install in chassis SCBA seats
80-19-0500	2	<i>Large folding wheel chock - aluminum (ea) not mounted</i> Ship loose
80-20-0000	1	<i>NFPA Pumper Equipment</i>
80-20-1500	1	<i>Akron 1725 adjustable combination nozzle 2-1/2"</i> Ship loose
80-20-2000	2	<i>Akron 1715 adjustable combination nozzle 1-1/2"</i> Ship loose
80-20-2500	1	<i>Akron 2393 2-1/2" playpipe with stacked tips</i> Ship loose
80-20-3000	2	<i>Portable hand light with charger Streamlight Survivor</i> Mount in chassis cab so accessible to crew in rear seats, wired to 12 volt battery saver on Battery Conditioner.

PART NO	QTY	DESCRIPTION
80-20-3500	1	First Aid Kit Ship loose
80-20-4000	2	Double female adapter 2-1/2" PYROLITE Ship loose
80-20-4500	2	Double male adapter 2-1/2" PYROLITE Ship loose
80-20-5000	2	Salvage Cover 12' x 14' Ship loose
80-20-5010	5	Traffic Vest Ship loose
80-20-5015	5	Helmet holder - Zico UHH-1 Ship loose
80-20-5020	5	Traffic Cone (ea) - 28" with reflective collars - shipped loose with apparatus
80-99-05AA	1	Elkhart Vulcan Monitor Elkhart Vulcan Model #8500-02 Master Stream Deck gun shall be provided and ready to install for use complete with master stream nozzle equal to Elkhart CSW-L Pyrolite Master Stream Nozzle with a spring loaded selector to provide flow setting selection ranging from 350-500-750-1000-1250 gpm. No stream straightener required. Customer thread is not required for 2-1/2" discharge on monitor, confirmed at precon.