



NKANGALA DISTRICT MUNICIPALITY



Project No. 156244
SUPPLY, DELIVERY AND REGISTRATION OF CONSTRUCTION AND WASTE REMOVAL PLANT
(COMPACTOR TRUCK, GRADER AND TIPPER TRUCK) IN DR. JS MOROKA LOCAL MUNICIPALITY

SCOPE OF WORK/SPECIFICATIONS

Part C3: Scope of Work/Specifications

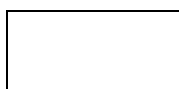
C3.1 TIPPER TRUCK

C3.1.1 SPECIFICATIONS FOR TIPPER TRUCK

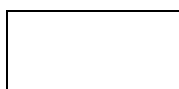
The tipper truck should have a **6 x 4 traction** capability and should have a 10 cubic metre loading capacity. The technical specifications should be as shown on the table below:

Section	Specifications
Engine	Water cooled turbo diesel
	Engine must be protected by a sectional relief valve in case of lubricant or coolant loss.
	Rated Power - 180 Kw
	A six cylinder 4-Stroke intercooler turbocharged diesel engine with direct injection and pressure lubricated is required.
	A 2 stage air filter / cleaner with safety element and pre-cleaner must be fitted.
	Fuel - replaceable filters including water separators.
	Oil - full flow replaceable filter.
Brakes	A parking brake with hand lever shall be provided.
	Piping and couplers must be included for auxiliary brakes (trailer)
	Air operated brakes and exhaust brake must be fitted as standard.
Transmission	6 speed automatic gearbox
	PTO drive should be standard
	Allison 3000 transmission
Steering	Power Steering
Super structure	Capacity minimum 5.3 m3

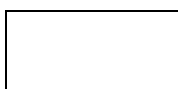
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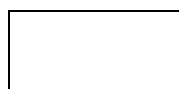
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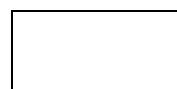
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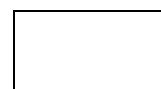
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	PTO fitted as standard
	5mm Mild steel floor
	5mm Mild steel front panel
	5mm Mild steel sides
	5mm Mild steel tailgate - Auto locking
	Rolled steel channel runners & cross members
	Air tank and fuel tank guards
	Safety stay
	Tipping Gear
	Body primed and painted to match cab
	Original lights to be fitted
	Side chassis mounted spare-wheel carrier
	A heavy duty under run protective bar must be fitted as standard.
	A reverse light and backup alarm must be fitted as standard.
	White in colour
Wheels and Tyres	Rear: Tyres suitable for road usage must be provided.
	Front: Tyres suitable for road usage must be provided.
	A spare Tyres, per model, for the front and rear respectively, and the suitable rims must be tendered as standard equipment.
	Vehicles with the same size rear and front wheel shall receive preference
	A suitable jack and wheel spanner with an extended handle must be fitted as standard
Minimum Instrumentation Requirements	Immobilizer
	Engine temperature gauge
	Electrical fuel gauge
	Alternator warning light
	Engine oil pressure warning light
	Odometer and Rev Counter
Manuals	Warning system for when PTO or other equipment is activated must be fitted
	1 operators manual
	2 maintenance manuals
	2 spare parts manuals
	2workshop maintenance manual
Optional	Two-way radio - F 1-10 Icom mobile two-way radio (128 channels) and antenna which is compatible with the two-way radio system of Dr JS MorokaLocal Municipality (High Band VHF). A 24 Volt to 12 V DC 10 AMP converters is also needed to accommodate this system.
	First aid bag - Fully equipped.
	Orange rotating beacon light must be bid as optional.
	Fire Extinguisher - 9kg dry powder

C3.1.2 SERVICE MAINTENANCE PLAN

The Service Provider shall provide individual service maintenance plan for the one (1) Tipper Truck for a 3 Year Period or 120 000 kilometres whichever comes first, at no cost to the receiving Local Municipality or Nkangala District Municipality.

C3.1.3 REGISTRATION AND BRANDING OF THE TIPPER TRUCK

Following the manufacturing of the Tipper Truck according to the prescribed specifications, and delivery to the Dr JS Moroka Local Municipality, the Vehicles shall be branded with colours and logo of the Dr JS Moroka Local Municipality. The vehicles shall also be registered by Service Provider at the respective Vehicle Licensing Centre, under the name of Dr JS Moroka Local Municipality, after which Roadworthiness Certificates, License discs and Number Plates shall be delivered to NDM. All costs relating to the registration shall be built in to the total



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tendered amount as approved by NDM and awarded to the Service Provider. Tipper Truck shall be branded with Dr JS Moroka Local Municipality's branding and logo.

C3.1.4 TRANSPORTATION AND DELIVERY OF THE TIPPER TRUCK

Following the manufacturing of the truck according to the prescribed specifications, the Tipper Truck shall be delivered to Dr JS Moroka Local Municipality. All costs relating to the transporting and delivery of the truck to Dr JS Moroka Local Municipality in Siyabuswa shall be built in to the total tendered amount as approved by NDM and awarded to the Service Provider.

C3.1.5 INSURANCE COVER FOR TIPPER TRUCK

Until such time the vehicles are delivered to Dr JS Moroka Local Municipality, the Service Provider shall be responsible for the insurance cover for the vehicle during its manufacturing and transportation to Dr JS Moroka Local Municipality.

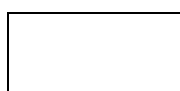
C3.2 MOTOR GRADER

C3.2.1 SPECIFICATIONS FOR MOTOR GRADERS

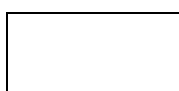
The Service Provider shall supply the Motor Graders (with tandem and 4-wheel drive capabilities) manufactured strictly under the following minimum specifications:

ENGINE	UNITS
Net Engine power	138 kW
Displacement	6.8 L
Bore	125 mm
Stroke	140 mm
Torque rise	45%
Maz torque @ 1000rpm	848 N.m
HYDRAULIC SYSTEM	UNITS
Circuit type	Closed center load sense
Pump type	Axial Piston
Pump output @ 2100 RPM	206 L/min
Maximum System Pressure	18 961 kPa
Reservoir tank capacity	38 L

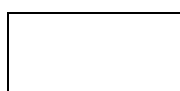
OPERATING SPECIFICATION	UNITS
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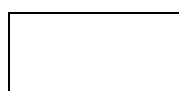
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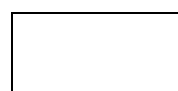
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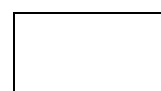
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Top Speed	44 km/h
Turning Radius (outside front line)	7 m
Steering range	Left / right 50°
Articulation angle	Left / right 20°

C3.2.1SERVICE MAINTENANCE PLAN

The Service Provider shall price for maintenance plan for the Grader for up to a maximum of 3000 hours. The first service on these Plant and Equipment shall be undertaken at the first 100 hours. Subsequent services thereafter shall be undertaken at every 500 hours until the maximum 3000 hours' service maintenance periods are reached.

C3.3 REFUSE REMOVAL COMPACTOR TRUCK SPECIFICATIONS

1. SCOPE

This section of the specification covers the supply and delivery of one (1) 20.9m³ rear loading, compacting refuse body mounted on a truck, complete with carrier and boxed roofed over crew platform for six men, front and rear amber LED strobe lights. Delivery and maintaining under guarantee, **including a full maintenance contract for 3 years on the chassis.**

2. GENERAL

2.1 The vehicle shall be a new, currently advertised and produced product of a well-established manufacturer of this type of product. The successful Tenderer shall satisfy the Council that he is maintaining a branch or store within a reasonable distance from the working location of the vehicle, staffed for securing parts within a reasonable length of time.

2.2. The vehicle **must** comply in all respects with the Road Traffic Acts/ ordinances and will be compliant with registrations as required by the NATIS system. This includes all the requirements for equipment that must be part of or fitted to the vehicle. Amongst the other prescription an under-run bar and the necessary mud flaps and the fitment of reflective tape must be provided for, the necessary reflective triangles must also be provided.

2.3 Tenderer's **must** submit with their tenders, specifications and drawings to ensure that the vehicle offered, complies with the Council's requirements.

2.4 The successful Tenderer **must** register and fit licence plates to the truck prior to delivery.

3. SPECIFICATION

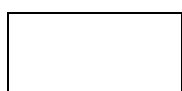
(Price of all "extra's" to be included in the total price of the vehicles).

In addition, the unit must be equipped as follows:

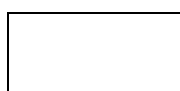
2.1 A hoisting mechanism capable of lifting mini refuse containers with a capacity of 700 – 1 100 litre each for both plastic and metal containers.

2.2 A roof mounted hydraulic cylinder and cable winch system in order to handle 4,5m³, 5m³ and 5.5m³ open containers.

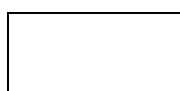
2.3 The truck body shall comprise a 20.6 m³ all steel rear loading refuse collecting body with hydraulically operated pacing and ejecting mechanism powered by a hydraulic pump of 17.5 MPa working pressure through wire braid reinforced fluid hoses and hydraulic cylinders with chromium plated rods.



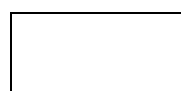
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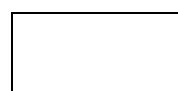
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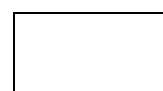
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- 2.4 The body shall be provided with the necessary safety equipment including safety stops and valves for the packing and ejecting mechanism, non-slip steps, grab handles for workmen and signalling buzzer for the driver.
- 2.5 Fully licensed and number plates supplied and fitted.
- 2.6 Lockable fuel tank cap with sieve in fuel filling pipe.
- 2.7 One comprehensive workshop repair manual must be supplied.
- 2.8 Rear view mirrors left and right sides shall be fitted.
- 2.9 Vehicle shall conform to the Road Traffic Act in all respects. In addition, the vehicles shall comply with the requirements of the Compulsory Vehicle Standards, copies of which are obtainable from the SABS.
- 2.10 A 9kg Dry powder fire extinguisher shall be fitted to the vehicle.
- 2.11 An "AA" type "FAMILY FIRST AID KIT" or equivalent shall be supplied with the vehicle.
- 2.12 Vehicle shall be painted white.
- 2.13 The successful bidder will be required to provide a sticker with the emblem of the municipality to be supplied and fitted to both front doors.
- 2.14 Vehicles to be supplied with an immobiliser, alarm and permanent anti hi-jack system and automatic gear box.
- 2.15 Registration number of vehicle to be painted onto the roof of the vehicle.
- 2.16 A reverse warning alarm shall be fitted.
- 2.17 A side ladder shall be fitted to enable access to the top of the compacting body.
- 2.18 Vehicle to be supplied with a rev limiter to prevent over revving of vehicle.
- 2.19 Vehicle to be supplied with a PTO fail safe device.
- 2.20 Vehicle to be fitted with front and rear amber LED strobe lights.
- 2.21 Headlights to be switched on automatically when engine is started.
- 2.22 Vehicle to be supplied with a 3-year full maintenance programme (on average of 100km per day X 21 days per month), price to be included in the purchase price of the vehicle.

3.1 **ENGINE'S MINIMUM REQUIREMENTS**

- The engine shall be commercial water cooled six –cycle diesel. The truck shall also be equipped with radiator, cooling fan and all other standard accessories.
- Engine must be protected by a sectional relief valve in case of lubricant or coolant loss.
- The engine shall have 6 cylinders (minimum) with a minimum engine output of at least 243 kW and a minimum of torque output of 1200- 1600Nm.

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- An engine protection device must be fitted to protect damage to the engine, Safestop preferred.
- The engine shall have the following filters:
 - Air filter / Air Cleaner – a 2 stage Air filter / Air Cleaner with safety element and pre-cleaner must be fitted
 - Fuel - replaceable filters including water separators.
 - Oil - full flow replaceable filter
 - Hydraulic Filter replaceable filter

3.2 **BRAKES**

- A parking brake with hand lever shall be provided.
- Air operated brakes and exhaust brake must be fitted as standard.

3.3 **STEERING**

- Power assisted steering must be fitted as standard

3.4 **WHEELS AND TYRES**

- Rear: Tyres suitable for road usage must be provided.
- Front: Tyres suitable for road usage must be provided.
- A spare tyre, per model, for the front and rear respectively, and the suitable rims must be tendered as **standard equipment**.
- Vehicles with the same size rear and front wheel shall receive preference
- A suitable jack and wheel spanner with an extended handle must be fitted as standard

3.5 **INSTRUMENTATION MINIMUM REQUIREMENTS**

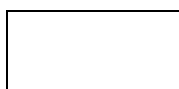
- Engine temperature gauge
- Electrical fuel gauge
- Alternator warning light
- Engine oil pressure warning light
- Odometer and Rev Counter
- Warning system for when PTO or other equipment is activated must be fitted

3.6 **CREW PLATFORM**

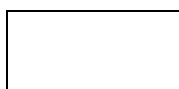
- An enclosed crew platform must be provided between the body and cab, entrance on left hand side only.
- In addition to the platform, reaching steps and grab handles must be provided on each side of the tailgate, allowing standing room for two members of the crew per side.

3.7 **COMPACT UNIT – BODY**

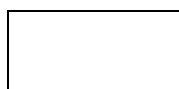
- Capacity – **20.6 m³** compacted refuse as per supplier's specifications.
- Material – The body must be manufactured from corrosive resistant steel, together with high yield strength and abrasion resistant steels in critical wear areas. The floor is to be supported by pressed sections, placed to maintain support, while at the same time allowing the necessary flexibility of the structure in coordination with the vehicle chassis design.
- Roof and sides – Pressure during compaction which tends to deform the body must be offset by the structural the design.
- Floor construction – Rolled floor edges, forming the sides are preferred. The floor must be water treated.
- Inside finish – All welding must be continuous to avoid crevices. All joints must be smoothly finished.



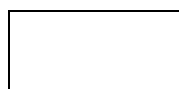
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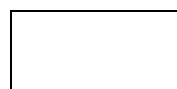
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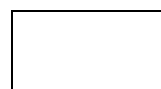
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- Exterior – All welding must be continuous for strength and neatness, water pockets must be eliminated.
- Ejection of load – The load must be ejected in one continuous thrust; ejection system must be suited to the handling of general waste and ash.
- All the hydraulics must be of industrial types

3.8 TAIL GATE AND HOPPER

- Hopper capacity – A full width stationery hopper with capacity in excess of 2.00 m³ with loading height below the truck chassis is preferred. Hopper design must offer adequate prevention against refuse spillage during loading operations.
- The unit must be fitted with the **Top Reef System** suitable for the loading of 5.5m³ / 6m³ refuse containers.
- Compacting cycle – The operator must be given safe positive control over compacting cycle and the cycle must be of the shortest possible duration.
- Maintenance – All hydraulic cylinders must operate without any direct contact with refuse. Pipes and wiring must not be exposed and must be side wall mounted to prevent any incidental damage.
- Pack-ability – The maximum legally possible payload must be attained.
- Safety – Compactor bodies offered must have built in safety features.

3.9 Further Specific Specifications

- GVM above :27 900 Kg
- Automatic gear box transmission
- Body Work and Chassis to have a combined or separate warrantee and three (3) years Maintenance Plan (on average of 100km per day X 21 days per month) for the chassis
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Detail specifications

Body Specifications

a)	Nominal compaction rating 600 Kgs / m ³	
b)	Flat floor – 5.0mm 550 MPa minimum yield strength	
c)	Apron plate in 6 mm, 700 MPa a yield, abrasion resistant plates	
d)	Curved sides to body, free of stiffeners	
e)	Integrated top and bottom rive to maintain integrity of body under load	
f)	700 MPa yield steel used in structural applications. All seems are fully welded	
g)	Main members assembled using peg and strut technology for accuracy of assembly	
h)	Curved, clean roof line, material 550 MPa yield strength. Services mounted on off side to reduce chances of tree damaged.	

Tailgate Specifications

a)	Hopper floor – 6 mm, 1000 MPa yield strength, abrasion resistant, one piece contraction	
b)	Hopper sides – 3 mm 550 MPa yield strength, with replaceable wear plates in hopper sides from 3mm high abrasion resistant plate	
c)	Hopper sill – 700 MPa yield strength, with internal reinforcing for resistance to loads when emptying large bins	
d)	Inside tailgate loading width 2083 mm	
e)	Loading sill height below rail shall be 120 mm	
f)	Grab handles each side of tailgate	



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g)	Rear steps – each side, slip resistant and self-cleaning material	
h)	One piece replaceable rubber gasket for water tight seal between apron and tailgate	
i)	Automatic tail gate locking	

Compaction Mechanism Specifications

a)	Packing blade (Upper) – 400 MPa & 500 MPa yield steel	
b)	Sweeper blade 550 MPa & 750 MPa yield strength with abrasion resistant tip liner	
c)	Primary compaction by panel accomplished by two(2) double acting hydraulic cylinders located at the tailgate upper side	
d)	Packing mechanism located into integral guide channels via heavy duty guide blocks with removable wear plates	
g)	Packing mechanism cylinders have replaceable bushings for extended service life	
h)	Packing mechanism allows the ejector panel to automatically advance via an ejector drift relief valve in the system	

Ejector Panel Specifications

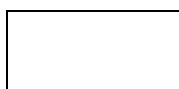
a)	Ejector panel – Concave face 3 mm 550 MPa yield strength steel force on RHS sub structure	
b)	Discharge of load by means of double acting, telescopic cylinder to extend and retract the ejector panel the full length of the body	
c)	Removable slide shoes located in tracks mounted along the lower body sides. Replaceable wear plates are fitted to shoes and track	
e)	Guide shoes are removable with ejector in place	
f)	Guide tracks are mounted above floor level, away from waste residues	

Control and Hydraulic Systems

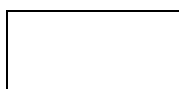
a)	Ejector panel & tailgate raise controls are mounted outside on the front right hand side of the body	
b)	The maximum hydraulic system operating pressure is 15 MPa to 17,5 MPa dependant on auxiliaries fitted	
c)	The hydraulic pump is a heavy duty gear pump rated at 98 LPM at 1 200 RPM	
d)	All hydraulic hoses conform to SAE DIN standards and double wire braid hose or steel hydraulic pipe	
e)	The hydraulic tank has a capacity of 190 l	
f)	The hydraulic system have a tank mounted strainer and a 10 micron in line return filter.	
g)	Compaction controls are located on the left side of tailgate	
h)	The system is semi-automatic with hydraulic kick – out for sequence control	

Electrical and Light Systems

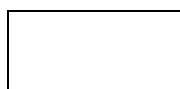
a)	All electrical wiring connectors are automotive double seal with wiring in split convoluted loom	
b)	All wiring connections soldered with rubber moulded covering or crimp type connector with shrink wrap	
c)	All limit switches are heavy duty type	
d)	Clearance, back up and directional lights are to SABS standards and provided	



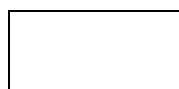
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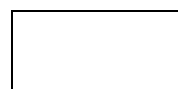
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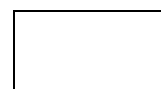
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	with light protectors	
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Painting

a)	The entire body is degreased and all weld splatter removed before a red oxide primer is applied. (Strontium chromate for coastal applications)	
b)	The top coat consists out of two coats of 2K acrylic to colour of choice	

Chassis requirements

The specifications below serve as a guideline only. A detail mass distribution will be provided taking specific chassis and body configuration into consideration.

a)	Minimum front axle rating of 7 500 kg is recommended	
c)	Minimum tandem rear axle rating of 20 400 kg is required	
d)	Gross vehicle mass – 27 900 Kg min	
e)	Wheel base 4,8 m to 5.2 m	

Hydraulic

An oil reservoir of 190 litres capacity is front mounted in a position to ensure a positive suction head to the pump at all times. Suction strainer and return line filter are fitted to the system to ensure oil cleanliness down to 10 microns. All distribution piping is in 2RS grade, double wire braid hose or steel hydraulic pipe. The compaction system is semi-automatic and controlled via adequately proportioned hydraulically controlled spool valves, developed specifically for the application. The gate lift and ejection functions are controlled via manual spool valves, located under the front edge of the body. **An Air control, from the drivers' cab should be fitted.**

MANUALS

The successful Tenderer shall supply the following manuals free of charge as well as for the accompanying equipment on the vehicle, where applicable:

- (i) One (1) only operators' manual
- (ii) Two (2) only maintenance manual (one copy may be a CD with an electronic version.)
- (iii) Two (2) only spare parts manuals (one copy may be a CD with an electronic version.)
- (iv) Two (2) only workshop maintenance manual (one copy may be a CD with an electronic version.)

The operator's manuals, maintenance manuals, spare parts and workshop manuals may be made up of:

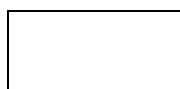
- (i) One (1) master copy (of each) able to reproduce clear copies and one (1) copy of each where necessary.
(Copy may be a CD with an electronic version.)

INFORMATION TO BE PROVIDED WITH THE BID

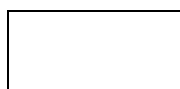
Sketches, photos and illustrations must accompany the tender documents.

Tenderer's shall clearly indicate whether production of any of the items offered will be stopped or revised during the twelve- (12) month period after the acceptance of tender, if applicable. Tenderer's who fail to supply such details will be held responsible for the replacement of such Plant and Equipment and / or equipment.

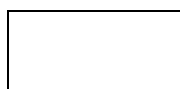
As the Plant and Equipment are to be used on public roads, the following shall be supplied with each vehicle on delivery for registration purposes:



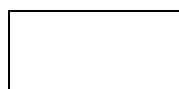
Consultant



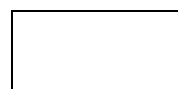
Witness 1



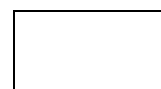
Witness 2



Employer



Witness 1



Witness 2



- Change of ownership document (NCO, PART A & C completed),
- (VAT certificate or invoice indicating VAT registration number,
- Delivery note (as well as invoice if applicable).

FIRST AID BAG

A fully equipped first aid bag that is to be kept in the cab must be included.

DRAW BAR

A heavy duty under run protective bar must be fitted as standard **(On applicable plant and equipment).**

A reverse light and backup alarm must be fitted as standard. **(On applicable plant and equipment).**

FIRE EXTINGUISHER

The fitment of a suitable fire extinguishers to the various plant and equipment must be included **(9kg Dry Powder Type).**

WARRANTEES REQUIRED

The Tenderer shall guarantee the vehicle and accessories purchased in respect of performance and defects for a period of at least twelve months from delivery date and this guarantee should include at least TWO (2) free services and shall include travelling, labour and lubricants, filters and consumables.

COLOUR

The Tenderer is to ensure that this vehicle is colour matched to the existing fleet of Plant and Equipment.

Consultant

Witness 1

Witness 2

Employer

Witness 1

Witness 2