SPECIFICATIONS:

The Knysna Municipality will indicate the specific site, where the installation shall occur, once the service provider has been appointed.

SPECIFICATIONS 4 IN 1 GYM

1. Steel construction, pipework and timber

1.1. Unless otherwise directed all pipework shall be Class B galvanised pipe, free of joints and with an internal diameter as specified.
1.2. All pipework shall comply with BS 1387/1985 for steel tubes.
1.3. All steelwork shall be hot dipped galvanised in accordance with BS 729/1971 and SABS 763/1988. The galvanising process shall penetrate all areas (inside and out) of any tem of equipment.
1.4. Tenderers shall note that prior to painting of the finish coat, all iron and steel work, be it galvanised, or black, shall be pre-treated with Calcium Plumbate weldable primer (NS4) or equal approved primer and in accordance with SABS 064/1979 (latest amended edition). At least two final high gloss finish coats (each with a DFT of 30 micron) shall be applied to the colour specified for each item. The primer coat and one coating of the final colour shall be applied in the workshop with the final coat being applied on site. Final coating shall be approved high gloss enamel paint, tenderer to state products and brand.
1.5. All open pipe ends shall be fully closed, either by steel capping or sealed crimping and shall be ground smooth. Joints between all pipework shall be mitred. A slight degree of flattening the ends is allowable but this should not exceed 10 mm out of round when measured end on. The intent must be to ensure a profiled end on any pipe which allows a small (+ - 2 mm) acceptable gap for welding when placed in position with its mating component. Multiple welds to fill gaps is not acceptable.
1.6. All welds shall be ground smooth, free from blow holes and zinc sprayed.
1.7. Any timber used shall be well seasoned, flat Meranti free from knots, cracks or splinters and shall have been treated with raw Linseed oil or equivalent. Timber used for the slide side guides shall be planed smooth.
2. FASTENERS AND ANCHOR BOLTS

2.1. All bolts, nuts and washers utilised in the construction of any item of equipment shall be galvanised.

2.2. Base plate anchor bolts shall be constructed in an "L" shape or equivalent and only one washer shall be fitted under each anchor nut. No washers, wedges or distance pieces shall be fitted between the concrete base and steel base plate of any item. Anchor bolt size in the bent position, unless otherwise stated, shall be 250 mm long and 16 mm in diameter. All base plate holes shall be drilled as specified on the individual play equipment plans.

2.3. After bolting tight, no bolt anywhere on the structure shall protrude more than two thread pitches above the nut. Either these threads are to be filed flat or a sacrificial nut must be used to destroy the thread on tightening. This is to ensure that the nut cannot be loosened by vibration or vandalism. Fasteners will be ground off should they require removal. All base plates shall rest flat and square on the pedestal bases. Bolt threads shall pass completely through the nut.

2.4. If sawn off, anchor bolt shall be filed free of burs and bolts or fasteners to be cold galvanised after installation. These shall be torqued to a torque not less than 65Nm.

2.5. Holding down bolts for bearing pedestals shall each be fitted with a lock washer

2.6. Where specified locknuts shall be provided.

3. FINISH
The exercise items shall be finished in a colour specified in the picture below.

4. INSTALLATION.

4 – in- One Machine.: Concrete pedestal to be 1500mm x 1500mm x 900mm.
Centre Post 165x4 2100 High Base Plate 10x600x600
Handles on Pull up Chair 48x3 1000 Long
Chair 60x3 support 900 long Meranti 300x400x200x40
Side Twister 50x3 1400 Long Foot Plate 400x350x2
Twister Base Pipe 60x3 600 Long Foot Plates 400 Diameter
Push Chair Middle 60x3 2500 long Handles 48x3 450 long on both Sides
Chair Meranti 300x400x200x40 Foot Plate ex2 160x400x2
3. SEATER SWING

SPECIFICATION FOR SWINGS

1. LEGS
   1.1 These shall be of 50 mm diameter pipe inclined at a 65° angle to the ground.
   1.2 There shall be 2 pairs of stays for the 3-seater swings and 3 pairs of legs
       2.9m apart.
   1.3 The legs shall be joined together at the top by a joint assembly.

2. END STAYS
   2.1 An end stay, inclined at 65° to the ground, shall be bolted to both the outer
       leg joint assemblies using 12 mm thick lugs welded to the top flattened end of
       each stay.

3. ANCHOR BASE PLATES
   3.1 All legs and stays shall be welded to 230 x 230 x 12 mm base plates each
       symmetrically drilled to accommodate four 16 mm diameter anchor bolts
       spaced.

4. CROSS BAR
   4.1 This shall be a continuous 50 mm diameter pipe held in place by the joint
       assemblies and shall be 3.3 m above ground level.

5. JOINT ASSEMBLY
   5.1 This shall consist of three thick walled 70 mm O D pipes, machined to
       accommodate in a slide fit the 50 mm diameter legs and cross bars, welded to
       two 6 mm end plates.
   5.2 A 12 mm weld nut shall be suitably positioned on each of these thick walled
       pipes to enable satisfactory locking of the legs and crossbar after assembly
       using 12 mm lock bolts.
   5.3 The two outer joint assemblies shall each have a 19 mm thick lug welded to
       its centre pipe for bolting to the end stays.

6. BEARING AND CHAIN
   6.1 All bearings shall be sealed for life ball bearings mounted in either fabricated
       steel or cast steel housings, which are to be bolted to the crossbar using 12 mm
       diameter bolts. The bearings shall suit a chain swivel shaft of not less than 12
       mm diameter. A grease nipple is to be provided in the bearing housing for
       greasing of the bearing assemblies.
   6.2 The swing chain shall be a short link No. 13 galvanised 7.1 mm chain
       attached to the bearing assembly using a 10 mm galvanised "D" shackle and
       to the seat using an 8 mm galvanised "D" shackle. Chain length shall ensure
       that the shackle point of the seat is 1 100 mm above the ground.
7. **FINISH**
   7.1 The final paint colour shall be bright yellow.

8. **INSTALLATION**
   8.1 Concrete pedestal bases shall be 300 x 300 x 450 mm deep each set with four 16 mm diameter anchor bolts.
   8.2 The tarmac base shall be 4 m wide and exceed the stays by 500mm on each side in length.

**SPECIFICATION FOR SWING SEATS (BABY AND CHILD)**
The tenderer shall manufacture the swing seats from old motor car tyres and shall comply with the following specifications.

**TYRE SEAT**
This shall be used 330 mm (13 inch) diameter, cross ply, unretreaded motor car tyre cut to the shape and size as shown on the accompanying drawing. The tyre shall be turned inside out to form a seat as shown and when in this form shall have no bumps or bulges.
No steel capped tyres shall be used.
The tyre used shall not be torn or have any steel beading showing or protruding. All sharp edges shall be cut away or rounded off.
A rain water drain hole, 20 mm diameter, shall be drilled in the centre of the seat to ensure proper drainage once the seating is hung.

**ATTACHMENTS FOR TYRE SEAT**
All attachments shall be of galvanised iron with any sharp edges ground smooth. Bolts and nuts used shall be of the wide headed cup type fitted with flat washers. The hanger bracket shall be of 3 mm galvanised plate and shall be drilled to allow fitting of an 8 mm pin diameter Screw Pin Chain shackle.
Each swing seat shall be supplied with two such shackles attached to it. All nuts shall be locked by peening over the bolt end.

**SPECIFICATION FOR SLIDES**
All pipework shall be galvanised pipe, prepared as detailed in the "General Specification for Playground Equipment".

1. **PLATFORM**
   1.1 The platform base shall be of 8 mm over 6 mm "Vastrap" steel plate 1 200 x 600 mm in size and shall be reinforced on the underside using 75 x 38 mm channel.
1.2 This platform shall be bolted lengthwise to the slide chute to facilitate attaching the ladder assembly next to the chute.
1.3 Two 50 mm diameter pipe legs, 1.86 m long / 2.5 m long, shall be bolted/welded to the underside of the platform as shown. An end stay leg shall be centrally bolted to the underside of the platform and positioned as shown. A 230 x 230 x 12 mm base plate shall be welded to each leg and drilled to accommodate four 16 mm diameter anchor bolts.

2. HAND RAILINGS
2.1 All hand railings shall be of 25 mm diameter pipe and shall be welded to 25 mm pipe uprights. The platform handrail shall be 760 mm high with the uprights first welded to 50 x 50 x 6 mm steel base lugs and then these lugs welded to the platform.
2.2 The hand railing from the ladder shall be joined to the two platform handrails in a smooth, pinch-free joint. Nine vertical 19 mm diameter uprights and two horizontal 12 mm diameter bars shall be welded, evenly spaced between the platform handrails.
2.3 Both outer and inner hand rails on the platform shall extend down the chute for approximately 1 metre and shall be bent to follow the incline of the slide. Suitable bracing shall be provided.

3. ACCESS LADDER
3.1 This shall be made from 65 x 6 mm flat iron sides having 400 x 100 x 8 over 6 mm ‘Vastrap’ plate steps welded between them at 175 mm pitch.
3.2 The ladder shall be positioned as shown on the picture.
3.3 Hand railings on the ladder shall be 25 mm pipe. Each rail shall be welded to three 300 mm x 25 mm diameter pipe uprights evenly spaced along the length of the ladder.
3.4 The ladder shall be securely bolted to the platform and anchored at the ground using two 16 mm diameter anchor bolts for each leg. 150 x 150 x 12 mm anchor bases shall be welded to the base of each leg.

4. SLIDING CHUTE
4.1 The chute slide shall be 2, 5 mm (12 gauge) sheet steel plate, 3.6 m / 5.5 m / 6.4 m long bent as shown on the respective drawings and shall level off to 300 mm above the tarmac base for the last 1, 2 m of its length. Any joints shall be fillet welded and ground smooth. This chute shall be sandblasted and zinc sprayed both inside and out after fabrication.
4.2 The slides of the chute shall be 200 mm high for the first 1, 8 m from the top and then shall taper to 100 mm over the remaining length.
4.3 The full base-sliding surface of the chute shall be covered with 1, 25 mm (18 gauge) 304 stainless steel plate, preferably without joints. If jointing takes place a full weld length, ground smooth, is required. This plate shall be curled around the discharge lip of the steel chute.
4.4 Rivets, running both side and the full slide length, shall attach the stainless steel slide to the steel chute. Prior to fitting the stainless steel slide, a 1 mm thick coating of bitumen sealer compound shall be applied between the steel chute and stainless slide to prevent the ingress of water.

4.5 The slide to platform top joint shall be covered with a 2, 5 mm (12 gauge) stainless steel cover plate suitably bent and held in place by 38 x 6 mm flat steel strips countersunk to take 8 mm diameter countersunk bolts, three per side.

4.6 This cover plate shall be 460 mm wide and shall extend 250 mm into the chute and 75 mm on to the platform.

4.7 25 mm thick planed Meranti timber shall be attached on top of the stainless steel slide and against the chute sides. This timber shall be fully coated on all contact surfaces with a bitumen sealer compound and shall follow the shape of steel slide sides. It shall be fastened down, using a minimum of 44 x 6 mm cup headed galvanised bolts for each side. The cup head of each bolt shall be countersunk into the wood, ensuring it to be flush with the wood surface. The bolts shall be peened over at the nut.

4.8 The top edge of the timber shall be covered with a 32 x 5 mm steel strip screwed down using countersunk brass screws at 150 mm pitch. On any curbed portion of this strip the screw pitch shall be 50 mm. All edges shall be ground smooth.

4.9 No openings or gaps, however slight, shall exist between the timber and this top strip.

5. SLIDE SUPPORT LEGS

5.1 Two pairs of 50 mm diameter pipe legs shall be bolted to suitable lugs welded underneath the chute.

5.2 The legs shall be positioned 460 mm and 3, 3 m respectively from the discharge end of the chute.

5.3 Anchor base plates shall be 200 x 200 x 12 mm, each symmetrically drilled to accommodate two 16 mm diameter anchor bolts.

6. FINISH

6.1 The final paint colour shall be bright green.

7. INSTALLATION

7.1 Concrete pedestal bases shall be 300 x 300 x 460 mm deep, each set with the appropriate number of 16 mm diameter anchor bolts.
SPECIFICATION FOR 2 SEATER SEA-SAW

BEAM AND FITTINGS

1.1 The beam shall be a 4.5 m long x 125 mm diameter black steel pipe reinforced at the centre pivot point, welded to a steel rib 1000 x 50 x 10 mm positioned in a vertical plane to the top and bottom centre line of this pipe. These reinforcing ribs shall be chamfered at 45° at either end and shall have all sharp edges removed. This complete beam assembly shall be hot dipped galvanised after fabrication.

1.2 The beam shall be mounted on a 38 mm bright steel shaft running on two heavy-duty plummer blocks with self-aligning pedestal bearings each fitted with easily accessible grease nipples for lubricating.

1.3 A bearing protection cover plate shall be bolted on to a 25 x 6 mm steel frame welded centrally on the beam so as to completely straddle the bearing assembly. This cover plate shall be bent in a square and be suitably braced with cross stays welded to the pipe to ensure rigidity. It shall be made from 16 gauge galvanised sheeting, 450 mm long and folded to provide 250 mm sides. All edges shall be folded over with at least a 12 mm seam to give a smooth edge all round.

1.4 A locking device to lock the beam in either of the fully tilted positions shall be provided, fitted near to the pivot centre.
1.5 The beam shall be closed off 150 mm from the ends with expanding metal mesh.
1.6 Cut and shaped motor car tyre buffers shall be folded over and bolted at either end of the beam.
1.7 Two seats made from 300 x 180 x 25 mm solid Meranti shall be fitted, one behind each Tee hand grip. Seat edges shall be rounded smooth. Each seat shall be bolted to a suitable full size 3 mm steel plate suitably bent and welded to the pipe. The steel plate under the wooden seats should not be bent in a way that it collects water on the inside. Bolts used shall be of the wide cup headed type and shall be positioned to make tampering with the nuts impossible.
1.8 Two Tee shaped handgrips, each 230 mm high and 280 mm wide, manufactured from 25 mm galvanised pipe shall be welded vertically, two at either end and along the centre line of the pipe, and spaced 380 mm from the pipe ends. The ends of the handgrips shall be blanked off and ground smooth.

2. CENTRE BEARING SUPPORT

2.1 This shall be designed to accommodate the bearing pedestals and shall be made from four 38 mm diameter galvanised steel pipes welded trapezoidal with the legs spaced approximately 470 mm apart at the bottom and 230 mm at the top.
2.2 Overall height of the beam above ground and in the horizontal position shall be 700 mm.
2.3 The complete structure shall be braced with 38 mm diameter galvanised pipe stays welded horizontally 300 mm above the ground.
2.4 The bearing base plate shall be robustly constructed to prevent failure due to side sway of the beam.
2.5 The legs shall be welded and joined at their base to a 50 x 12 mm steel strip. Eight anchor bolt holes to suit 16 mm diameter anchor bolts shall be symmetrically drilled in this steel base strip.

3. FINISH
3.1 The complete structure shall be finished in blue enamel paint colour.

4. INSTALLATION

4.1 Eight x 16 mm diameter anchor bolts shall be set into a concrete pedestal base 900 x 900 x 1000 mm deep.
4.2 The tarmac base shall be 5, 5 m x 1, 70 m in size with the See Saw centrally positioned.
4.3 Two motor car tyres shall be set into the tarmac base one at either end of the beam to act as bump stops.
### Pricing Schedule

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<th>Item No</th>
<th>Description</th>
<th>Quantity</th>
<th>Unit Price (Excl Vat)</th>
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<td>2.</td>
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<td>3.</td>
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<td>4.</td>
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TOTAL PRICE MUST INCLUDE SUPPLY, DELIVERY AND INSTALLATION. PLEASE INDICATE THE DELIVERY AND INSTALLATION PERIOD.