

# **CSIR**

**THE INSTALLATION OF TURNSTILE, BOOM GATES WITH  
RETRACTABLE SPIKES AND SEARCH BAYS FOR THE  
SECURITY UPGRADE AROUND THE CSIR ENTRANCES**

**PARTICULAR SPECIFICATION**

## **Particular Specification**

### **1. APPLICABLE STANDARDISED SPECIFICATIONS**

The following SANS 1200 Standardized Specifications for civil engineering construction are applicable:

SANS 1200 A	:	General (1986)
SANS 1200 C	:	Site clearance (1980)
SANS 1200 D	:	Earthworks (1988)
SANS 1200 DB	:	Earthworks (pipe trenches) (1989)
SANS 1200 DM	:	Earthworks (roads, subgrade) (1981)
SANS 1200 LB	:	Bedding (pipes) (1983)
SANS 1200 LC	:	Cable ducts (1981)
SANS 1200 ME	:	Subbase (1981)
SANS 1200 MF	:	Base (1981)
SANS 1200 MH	:	Asphalt base and surfacing (1996)
SANS 1200 MJ	:	Segmented paving (1984)
SANS 1200 MK	:	Kerbing and channelling (1983)
SANS 1200 MM	:	Ancillary roadworks (1984)

The term "project specification" must be replaced by "scope of works" wherever it appears in these standardized specifications. The following Particular Specifications for work not covered by the SANS 1200 Standardized Specifications are also included hereunder in section 3 (Particular Specifications):

PA : Fencing

### **2. PARTICULAR / PROJECT SPECIFIC SPECIFICATIONS**

The following variations and additions to the SANS 1200 Standardized Specifications referred to above apply to this Contract. The prefix PS indicates an amendment to SANS 1200. The letters and numbers following these prefixes respectively indicate the relevant Standardized Specification and clause numbers in SANS 1200 to which the variation or addition thereto applies.

## **PSA GENERAL**

### **PSA 3 MATERIALS**

#### **PSA 3.1 QUALITY**

*ADD THE FOLLOWING AT THE END OF SUBCLAUSE 3.1:*

"All manufactured materials supplied shall be new materials unless the contrary is specified. All materials specified to be in accordance with SABS Specifications shall bear the SABS mark, where such a mark is available for the type of product."

### **PSA 5 CONSTRUCTION**

#### **PSA 5.3 PROTECTION OF EXISTING STRUCTURES**

*REPLACE "Machinery and Occupational Safety Act, 1983 (Act No 6 of 1983)" WITH "Occupational Health and Safety Act, 1993 (Act No 85 of 1993), as amended," AND INSERT THE FOLLOWING AFTER "(Act No. 27 of 1956)": "as amended".*

**PSA 7            TESTING**

**PSA 7.2            APPROVED LABORATORIES**

*REPLACE THE CONTENTS OF SUBCLAUSE 7.2 WITH THE FOLLOWING:*

"Unless otherwise specified in the relevant specification or elsewhere in the Project Specification, the following shall be deemed to be approved laboratories in which design work, or testing required in terms of a specification for the purposes of acceptance by the Engineer of the quality of materials used and/or workmanship achieved, may be carried out:

- (a) Any testing laboratory certified by the South African National Accreditation Systems (SANAS) in respect of the nature and type of testing to be undertaken for the purposes of the Contract;
- (b) Any testing laboratory owned, managed or operated by the Employer or the Engineer;
- (c) Any testing laboratory established and operated on the Site by or on behalf of the Employer or the Engineer.
- (d) Any other laboratory that the Engineer approves in his absolute discretion."

**PSA 8            MEASUREMENT AND PAYMENT**

**PSA 8.6            PRIME COST ITEMS**

**PSA 8.6.1            Additional tests required by the engineer ..... Unit: Prov Sum**

The tendered sum shall include the full amount for the appointment of the relevant personnel, sub-contractor or laboratory to conduct the tests required by the engineer.

**PSA 8.6.2            Contractor's handling cost, profit and all other charges in respect of item 110.04.01 above ..... Unit: %**

The tendered percentage shall include the full amount for the handling cost, profit and all other related charges in respect of the item PSA 8.6.1.

**PSA 8.8            TEMPORARY WORKS**

**PSA 8.8.2            Accommodation of traffic ..... Unit: Prov Sum**

*ADD THE FOLLOWING:*

"The tendered rates shall include full compensation for all general obligations and incidental items of cost necessary for the safe accommodation of traffic during the construction period. The tendered rates shall also include supply, erection and maintenance of all road signs to the satisfaction of the engineer and the local authority and shall comply with South African Road and Traffic Signs Manual (SARTSM) - Road Note 13. No old-style signs shall be permitted."

ADD THE FOLLOWING ITEMS:

**PSA 8.9**      **COMPLIANCE WITH OHS ACT, CONSTRUCTION REGULATIONS, 2014 AND OHS SPECIFICATION** ..... Unit: Sum

The tendered sum shall include full compensation to the Contractor for compliance with all the requirements of the OHS Act and Regulations (including the Construction Regulations 2014 and OHS Specification) at all times for the full duration of the Contract. The successful tenderer shall provide the Engineer with a complete breakdown of this tendered sum.

This sum will be paid to the Contractor in equal monthly amounts subject to proper/substantial compliance.

**PSA 8.10**      **PROVISIONAL SUM FOR ELECTRICAL WORKS**..... Unit: Prov Sum

The tender sum provided is to allow an amount for the completion of the electrical works pertaining to the installation of all the gates, boom gates and turnstiles.

**PSA 8.12**      **PROVISIONAL SUM FOR CIVIL WORKS**..... Unit: Prov Sum

The tender sum provided is to allow an amount for the upgrade of existing civil infrastructure, as per the construction drawings. In addition to the SANS specification, the following particular specifications are to be implemented with regard to civil works.

**PSC**      **SITE CLEARANCE**

**PSC 8**      **MEASUREMENT AND PAYMENT**

**PSC 8.2.5**      **Take down and re-erect existing fences** ..... Unit : km

The rate shall cover the cost of taking down the fences, coiling wire, sorting, stacking and guarding all material, the cost of loading, transporting and off-loading such material, the cost of re-erecting the fence in its original position using the dismantled material and the cost of temporary bracing the sections of fence not taken down.

The rate shall also cover the cost of using new tying wire but not the cost of any other new material that may have to be used on the written instructions of the engineer.

**PSDM**      **EARTHWORKS (ROADS, SUBGRADE)**

**PSDM 8**      **MEASUREMENT AND PAYMENT**

**PSDM 8.3.17**      **Saw cutting of asphalt or cemented pavement layers** ..... Unit: m

The unit of measurement shall be the metre of cut as instructed by the engineer.

The tendered rates shall include full compensation for all labour, constructional plant and material required, for sawing or cutting costs, and for all incidentals of cutting or sawing in accordance with the instructions of the engineer.

**PSDM 8.3.18 Excavating and spoiling of existing bituminous material ..... Unit: m<sup>2</sup>**

The tendered rate shall include the full amount for all labour, construction plant and material required for the excavating and spoiling of the existing bituminous material and spoiling of material off site regardless of the distance hauled.

**PSDM 8.3.19 Excavating and spoiling material from existing pavement layers and/or underlying fill ..... Unit: m<sup>3</sup>**

The tendered rate shall include the full amount for all labour, construction plant and material required for the excavating and spoiling of the existing pavement layers and underlying fill and spoiling of material off site regardless of the distance hauled.

**PSDM 8.3.20 Importation of material ..... Unit: m<sup>3</sup>**

**.01 G9 material for existing search bays to be filled**

The tendered rate shall include full compensation for the cost of finding a suitable source of material, for procuring the material and paying all royalties or other charges to the owner of the source, for transporting the G9 material to the point of use regardless of the distance hauled and for excavating in intermediate, hard or boulder material as required.

**PSME SUBBASE**

**PSME 8 MEASUREMENT AND PAYMENT**

**PSME 8.3.11 Treatment of subbase with: ..... Unit: m<sup>2</sup>**

**.01 Weed Killer**

The subbase layer shall be treated before compaction by applying and mixing in granular HYVAR X or TENOC X weed-killer in accordance with the manufacturer's instructions. An approved equivalent may be used. The tendered rate shall include all the necessary equipment, material and labour for the successful treatment of the subbase layer with weed-killer. A certificate to be provided on completion.

**.02 Insecticide**

An approved insecticide such as Termidan or an approved equivalent shall be applied strictly in accordance with the manufacturer's instructions over the total area of the subbase. The instructions indicate whether the poison is to be applied before or after compaction of the layer. The tendered rate shall include all the necessary equipment, material and labour for the successful treatment of the subbase layer with the insecticide. A certificate to be provided on completion.

**PSMH ASPHALT BASE AND SURFACING**

**PSMH 8 MEASUREMENT AND PAYMENT**

**PSMH 8.5.9 Concrete surfacing ..... Unit: m<sup>2</sup>**

The tendered rate shall include the full amount for all labour, construction plant and material required to complete the 25 MPa 100mm thick concrete surfacing for the boom gate islands.

**PSMK      KERBING AND CHANNELLING**

**PSMK 8      MEASUREMENT AND PAYMENT**

**PSMK 8.2.8      Cast in situ concrete kerb ..... Unit: m<sup>3</sup>**

The tendered rate shall include the full amount for all labour, construction plant and material required cast 25 MPa 100mm in situ concrete kerbs.

**PSMK 8.2.14      Removal of existing concrete kerbs ..... Unit: m**

The tendered rate shall include the full amount for all labour, construction plant and material required to remove the existing concrete kerbs where indicated on the drawings, stockpile and dispose of these kerbs off site regardless of the distance hauled.

The following Particular Specifications are relevant to the security upgrade and fencing.

**PA      Fencing**

**PA01      SCOPE**

This is a Particular Specification and covers the erection of new fences.

**PA02      TYPE OF FENCE**

The fence shall be Clear Vu fence, or similar approved, and shall be erected in accordance with the dimensions shown on the Drawings P20009-TN-02-FN-001 to P20009-TN-02-FN-003 and Drawings P20009-TN-02-FND-001 to P20009-TN-02-FND-004. All reference to drawings in this section refers to the same drawings.

**PA03      MATERIALS**

**PG 03.1      Posts, stays and standards**

Posts, stays and standards shall be of the type and size indicated on the Drawings. Posts shall include gate posts, straining posts and corner posts. Metal posts, stays and standards shall comply with the requirements of CKS 82 and SABS 280. "Acceptable" in CKS 82 means "acceptable to the ENGINEER ". Tubular posts, standards and stays shall be galvanized in accordance with SABS 763 Table 1 for Type B-articles. All rail and V-sections shall be provided with a protective coating of tar or other approved material. Corner, gate and straining posts shall be suitably drilled for stay bolts or gate fittings as indicated on the Drawings.

**PG 03.2      Gates**

Gates shall comply with the requirements of Clear Vu, or similar approved, and shall be manufactured to the specifications and dimensions shown on the Drawings. Gates shall be complete in every respect.

**PG 03.3      Concrete**

Concrete used for fencing shall comply with the requirements of SANS 1200 G.

**PG 03.4      Clearing of fence line**

Strip clearing for the fence shall be carried out in accordance with SANS 1200 C and will be measured and paid for under Section 1200 C of the Schedule of Quantities.

**PG 03.5**      **Installing posts and standards**

Straining posts shall be erected at all ends, corners and bends in the line of fencing and at all junctions with other fences. Straining posts shall not be spaced further apart than shown on the Drawings. The height of the posts above the ground shall be such that the correct clearance between the lowest wire and the ground can be obtained.

Posts shall be accurately set in holes and, where indicated, shall be provided with concrete bases to the dimensions shown on the Drawings. Holes shall be dug to the full specified depth.

Corner, gate, end and straining posts shall be braced by means of stays or anchors, as shown on the Drawings. Pipe stays shall be bolted to the posts. Gate posts shall not be used as straining posts, but at each gate post a straining post shall be placed as shown on the Drawings and stayed by means of an anchor consisting of six strands of wire.

Standards shall be firmly planted in the ground at the spacing shown on the Drawings or as directed by the engineer. The spacing of standards between any two straining posts shall be uniform. In rock or hard material standards shall either be driven or set in holes drilled into the rock. The size of drilled holes shall be such that a tight fit is obtained. Care shall be taken not to buckle or damage the standards when driven. Where indicated, standards shall be provided with concrete bases to the dimensions shown on the Drawings.

All posts and standards shall be accurately aligned and set plumb and shall be planted with the overhang as shown on the Drawings and at right angles to the direction of the fence. After posts and standards have been firmly set in accordance with the foregoing requirements, the fencing wire shall be attached thereto as described below.

**PG 03.6**      **Installing gates**

Gates shall be installed at the positions and to the specifications indicated on the Drawings or determined on Site. The gates shall be hung on gate fittings in accordance with the details shown on the Drawings.

**PA04**      **MEASUREMENT AND PAYMENT**

**PA01**      **Sliding gates** ..... Unit: No.

Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of Clear Vu or similar approved sliding gates as indicated on the Drawings with the respected sizes and positions.

**PA02**      **Fencing**

**.01 Clear Vu or similar approved fencing** ..... Unit: m

Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of Clear Vu or similar approved fencing as indicated on the Drawings.

**.02 Fence post with concrete base** ..... Unit: No.

Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and install the fence post with concrete base as indicated on the Drawings.

**PA03**      **Turnstile** ..... Unit: No.

**.01 Turnstar Triumph 3 or similar approved single full height turnstile**

Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of the Turnstar Triumph 3 or similar approved single full height turnstile as indicated on the Drawing P20009-TN-02-RDD-001.

**.01 Turnstar Triumph 3 or similar approved double full height turnstile**

Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of the Turnstar Triumph 3 or similar approved double full height turnstile as indicated on the Drawing P20009-TN-02-RDD-001.

**.02 Impro Metal Antenna Reader or similar approved**

Tendered rates shall include fully for all labour, materials, equipment and transportation required for the supply and installation of Impro Metal Antenna Reader or similar approved.

**PA04**      **Boom gate and claws:**

**.01 Centurion Sector II or similar approved boom gate** ..... Unit: No.

Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of the Centurion Sector II or similar approved boom gates.

**.02 Centurion direct drive claws or similar approved**..... Unit: No.

**(a) 1m section**

**(b) 1.5m section**

Tendered rates shall include fully for all labour, construction plant, materials and equipment, loading, transportation and offloading required for the supply and installation of the Centurion direct drive claws or similar approved claws.

**.03 Concrete plinth for claws** ..... Unit: m<sup>3</sup>

The tendered rate shall include the full amount for all labour, construction plant and material required cast the concrete plinths for the claws.

**PA05**      **Gooseneck**

**.01 Centurion gooseneck or similar approved** ..... Unit: No.

Tendered rates shall include fully for all labour, materials, equipment and transportation required for the supply and installation of Centurion goosenecks or similar approved.

**.02 Access card reader** ..... Unit: No.

Tendered rates shall include fully for all labour, materials, equipment and transportation required for the supply and installation of access card readers.