DEPARTMENT OF PUBLIC WORKS

NOTES TO CONSULTANT QUANTITY SURVEYORS ON THE PREPARATION OF BILLS OF QUANTITIES

PW 37/E
Printed 2001/04

NOTES TO CONSULTANT QUANTITY SURVEYORS ON THE PREPARATION OF BILLS OF QUANTITIES

NB: Bold printed sections with headings in capital letters denote preambles or items which should be inserted in specific trades where necessary.

NOTES

1. GENERALLY

1.1 The preparation of Bills of Quantities must be in accordance with Section 9 of the "Manual for Private Quantity Surveyors appointed by the Department - QS 90/E.

1.2 The WCS number code is to be printed on the top right hand corner of each page of the Bills of Quantities.

1.3 The term "Representative/Agent" is to be used instead of Architect, Engineer or Quantity surveyor.

1.4 Trade headings are to be the same as those in the "Standard System of Measuring Building Work".

1.5 (a) The policy of the Department is that no trade names or catalogue references may be used on Drawings or in Bills of Quantities (see clause 9.5.4 of the "Manual for Private Quantity Surveyors - QS 90/E.)

(b) In unusual cases where trades names are approved for inclusion in the Bills of Quantities they are to be described as "or other approved".

(c) All materials, articles, etc. must be of S.A. manufacture except if the Project Managers approves that the imported item may be used (refer to clause 9.5.3-QS90/E.)

(d) Provisional Sums where possible is not allowed in the Bills of Quantities. All items should be measured.

2. COVER PAGE (refer to Annexure B)

2.1 The name of the department is:

Department of Public Works.

2.2 The name of the service to be the same as used on the letter of appointment, but will be corrected on the draft cover page if changes are necessary.

2.3 The bills are to be labelled "Bills of Quantities" or "Provisional Bills of Quantities" as necessary.

2.4 Only the Architect's and Quantity Surveyor's name and town of residence to appear on the cover page. Any additional information deemed necessary may be given on a fly leaf.

2.5 The number code of a drawing is to be printed on the bottom right hand corner. The WCS number code to be printed underneath the drawing number code.

2.6 The date printed above (2.5) is to be the month/year when copies of the Bills of Quantities are printed.

3. INDEX

3.1 An index is to appear in the front of the Bills of Quantities indicating the page numbers for:

a) sections
b) trades in each section
c) collections/summaries/final summary
d) alternative tenders
e) addenda etc.

4. INSERT SHEET: NOTICE TO TENDERERS

4.1 A brief description of the scope of the works in accordance with item B1 of Preliminaries should be

given on the insert sheet "Notice to Tenderers" preceding Section 1, Preliminaries. The description must contain information concerning:

a) new work or repair and renovation work
b) the number of blocks
c) number of storeys above and below ground level
d) framed concrete structures
e) the construction generally of foundations, walls, roofs, ceilings, floors, etc.
f) internal and external finishes
g) roof coverings
h) general scope of site works, drainage, etc.

4.2 The insert sheet must also be used to draw tenderers' attention to any special notice, condition, clause or circumstances pertaining to the contract, site inspection, etc.

4.3 The .time, date and place should be mentioned under the heading of site inspection or as stated in the tender advertisement.

4.4 The drawings referred to in item B1.2 in Section 1. Preliminaries and listed in the Schedule of Supplementary Information shall take precedence of any description given of the scope of the works.

4.5 The following paragraph should be inserted under a heading of "Value-Added Tax" in Notice to Tenderers:

The tendered price must include for Value-Added Tax (VAT). All rates, in these bills of quantities must however be net with VAT calculated and added to the total value thereof in the Final Summary.

5. SECTION 1 (PRELIMINARIES)

5.1 General notes on the "Preliminaries" are scheduled in PW772.

5.2 If the whole or part of the contract is to be executed inside an existing or occupied building, the following items could be described and/or indicated on the drawings:

a) Entrance to place of work
b) Space for sheds and offices
c) Use of existing toilets
d) Use of existing lifts
e) Disturbance
f) Working hours
g) Standing time
h) Special security

Items e) to h) are also applicable to Supreme Court Buildings only.

6. SCHEDULE OF SUPPLEMENTARY INFORMATION (Refer to PW772)

6.1 Item A13: If no amount of insurance is required for A13, the Schedule should contain the words "not specifically prescribed" and special note should be taken that item A13 in the "Preliminaries" is not to be marked N/A as the remainder of this item is still applicable.

6.2 Item A20: The contract period must be determined in consultation with the Private Architect and also if the Works is to be completed in phases.

6.3 Item A24: The penalty amount will be determined by the relevant Project Manager. Where the Works is to be completed and handed over in phases, the penalties will be based on the total estimate of each phase as estimated by the Private Quantity Surveyor.

6.4 Item B1.2: Drawings are to be kept to a minimum. Provide only site plan, 1/100 floor plans, 1/100 sections and elevations and all drawings specially referred to in descriptions in the Bills of Quantities.

6.5 Item B1.6: The edition of the Standard System must be the one applicable during measuring stage of

the Bills of Quantities.

6.6 Item B8.1 An additional item could be added under this schedule if the security % requirements is changed. Refer to QS 37 E - Addendum to Notes to QS in this regard.

7 ALTERATIONS

7.1 Over and above the Private Quantity Surveyor's own preambles, the following preambles must also be included:

OLD MATERIALS TO BECOME THE PROPERTY OF THE CONTRACTOR: Old materials from alterations, except where described to be re-used or handed over, become the property of the contractor who must allow credit for same in the Final Summary.

OLD MATERIALS TO BE CARTED AWAY: Old materials from the alterations. except where described to be re-used or handed over, as well as all rubbish, etc., must be regularly carted from the site and not be allowed to accumulate on or around the site.

OLD MATERIALS NOT TO BE RE-USED: None of the old materials are to be used for new work except where specifically described being set aside for reuse.

HANDING OVER OF MATERIALS: Where certain materials or articles from demolitions or articles are described as to be handed over by the Contractor to the Regional Representative or Representative/Agent, such materials or articles shall be properly stored by the contractor, until handing over thereof. The contractor must obtain an official receipt listing the materials or articles and dates of handing over. If the contractor fails to submit the receipt when requested, it shall be deemed that the materials or articles are still in his possession and he will be held liable to the Department for the full replacement value thereof, which amount will be deducted from any monies due to the contractor.

7.2 a) Credit for old material. Where materials from demolitions and alterations become the property of the contractor, such credit-worthy items must be identified by the Private Quantity Surveyor and to be indicated by allowing for credit at the end thus: (Total credit R..)

AND

b) Insert separate section "Credit for Old Materials" where credit items can be listed, e.g.Item 13/92 and the total carried to the Final Summary.

8 DEMOLITIONS

8.1 See "Alterations" (Clause 7 hereof): the same preambles can be used but in all cases the word "alterations" is to be substituted with "demolitions".

9 PILING ETC.

9.1 If piling is measured, a soil report is to be attached to the back of the Bills of Quantities.

10. EARTHWORKS

10.1 The following preambles are to be included:

(a) NATURE OF MATERIAL TO BE EXCAVATED

The tenderer must acquaint himself with the nature of the material to be excavated

OR

(b) A soil report is available and attached to the back of the Bills of Quantities.

(c) SUBTERRANEAN WATER

No information regarding subterranean water is available. The tenderer must acquaint himself of the presence and depth of subterranean water and allow therefor in his prices.

OR

(d) If information on subterranean water is available it must be described fully, or inserted as an addendum to the Bills of Quantities.

10.2 Excavations to be described in "earth" - (not "ground" or "pickable material").

10.3 Soft rock and hard rock:

(a) Soft rock and hard rock must be allowed where necessary.

(b) For basement and mass excavations soft rock must not be allowed separately, but the excavations to be described as **"in earth and soft rock".**

(c) Quantities must be realistic and reflect the information of the soil report correctly (if a soil report is available).

10.4 Protection against termites must only be measured if the site is north of the Orange river. Descriptions to include V-grooves.

11. CONCRETE, FORMWORK AND REINFORCEMENT

11.1 Concrete mixes are to be given in classes as set out in PW 371.

11.2 "**MPa**" may only be described where SABS 1200 is used in lieu of PW 371.

12. MASONRY

12.1 Cement mortar is to be described fully, e.g. 5:1 cement mortar.

12.2 Facings

a) The proprietary name to be stated.

b) The term "....or other approved...." not to be used in descriptions.

c) Alternative Tenders for face bricks to be included in the Bills of Quantities (See 12.3 hereof).

d) For extensions and alterations the face bricks may be described as "...of colour and texture to match existing..." in which case no Alternative Tender is necessary.

12.3 Alternative Tender for face bricks (see Annexure A)

a) The following note must appear at the beginning of Brickwork, or precede Facings:

ALTERNATIVE TENDER FOR FACE BRICKS

The tenderer must take note that an Alternative Tender for facings is included after the Final Summary.

b) More than one alternative tender for face bricks may be included, if more than one alternative is available.

c) Alternative face bricks must be available in sufficient quantities and comply with the prescribed specifications (PW 371).

13. ROOF COVERINGS ETC.

13.1 Galvanised roofing sheets shall be of the following classes:

a) Class Z275 for inland use
b) Class Z600 for coastal use

13.2 The following preamble to be included:

CERTIFICATE FOR GALVANISED ROOF COVERING

The contractor is to submit a certificate signed by the merchant, stating that the galvanised roof covering supplied, complies with the required thickness specified.

14. CARPENTRY AND JOINERY

14.1 Gangboarding to be measured "provisional".

14.2 Steel splitring connectors in accordance with clause 8.9.1 of PW 371 to be measured.

14.3 Timber roof trusses:

14.3.1 Should conventional roof trusses be indicated on the drawings and measured in the Bills of Quantities, provision should be made in the Bills of Quantities for the tenderer, if he so prefers, to base his tender on prefabricated trusses in lieu of conventional trusses. The following headings and preambles, must be used:

TIMBER ROOF TRUSSES

SPECIAL NOTE

The tenderer is free, if he so prefers, to use pre-fabricated roof trusses in lieu of the conventional trusses (listed hereafter in items ...to...), in which case the following shall apply:

a) the pre-fabricated timber roof trusses shall be designed by a registered professional engineer and shall be in accordance with SABS 0160 and 0163 as well as the additional requirements of PW 371, clause 8.10

b) the items replaced in the Bills of Quantities must be indicated by the tenderer by using the inscription "Replaced" in the money column

c) the tenderer shall compile a list of alternative items with quantities and prices reflecting the complete alternative, with all items priced, extended and totaled and this total when added to the total of the remaining items in the Bills of Quantities shall equal the tender amount. The list of alternative items shall be submitted with the priced Bills of Quantities

d) the list of alternative items shall be deemed to be measured and billed in accordance with the rules laid down in the Standard System (refer to item B1.6, Section 1 of the Bills of Quantities)

CONVENTIONAL ROOF TRUSSES

THE FOLLOWING IN COMPLETE ROOF CONSTRUCTION

14.3.2 A list of all relevant conventional roof items must follow the preambles and headings. The list must include trusses, purlins, valleys, ridges, hips, braces, sundry items such as splayed ends, holes for bolts, mild steel bolts, steel splitrings, etc. The list must be complete, embracing all items that can be replaced by pre-fabricated roof trusses.

14.3.3 The following to be described in the preambles if pre-fabricated timber roof trusses are indicated on the drawings and measured in the Bills of Quantities:

Pre-fabricated timber roof trusses

a) Roof pitch in degrees

b) Type of roof covering, battens, purlins, spacing, etc.

c) Type of ceiling, brandering, spacing, etc. •

d) Trusses to be designed by a registered professional engineer

e) All requirements laid down in PW 371 clause 8.10 must also be complied with

14.4 The term hardwood shall not be used unless it is properly defined to mean Iroko, Kiaat, etc. A general preamble to this effect may be used.

14.5 Fire door, frame and ironmongery be described as a complete unit, e.g. Fire door **size ....X.... in accordance with SABS 1253 class ...(A,B,C or D), including frame and ironmongery (building in elsewhere)**

14.6 Decorative plastic laminate shall be 1.2 mm thick

14.7 Joinery fittings shall be measured in detail

15. CEILINGS, ETC

15.1 Ceiling insulation not to be less than 75mm thick and laid in single thickness.

16. FLOOR COVERINGS, ETC.

16.1 PVC floor tiles to be described as "semi-flexible" or "fully flexible" tiles. The term vinyl asbestos not be used.

17. IRONMONGERY

17.1 Prefabricated, adjustable and loose shelving to be included in Bills of Quantities.

17.2 Kitchen fittings:

a) Kitchen fittings are to be measured
b) Specification and list of standard descriptions will be supplied by the Department
c) The fittings may also be billed under "Metalwork" or as a separate trade
d) All items must be grouped together and not billed in different trades or different sections

18. STRUCTURAL STEELWORK

18.1 (a) Protection against corrosion to be measured for all structural steelwork and roof trusses.

Measure 18.9.1 (a) - (d) for coastal regions
Measure 18.9.2 (a) - (d) for inland regions, except 18.9.1 (d) and 18.9.2 (c) to be measured in "Paintwork" trade.

(b) Structural steelwork covered by roofs, ceilings, etc. also to be protected against corrosion as described above in (a)

(c) The following preamble to be included to allow for (a) and (b):

PROTECTION AGAINST CORROSION

Prices for structural steelwork are to include for corrosion protection as PW 371 clause 18.9.1 (a) (b) and (d) for coastal regions or as clause 18.9.2 (a) (b) and (d) for inland regions. See "Paintwork" for 18.9.1 (c) or 18.9.2 (c)

19. METALWORK

19.1 Galvanising for coastal areas.

a) External steelwork and windows to be hot dip galvanised

b) Steel door frames to be formed of class Z600 galvanised sheet iron (not hot dip galvanised)

c) Structural steelwork not to be hot dip galvanised (see "Structural Steelwork" for protection against corrosion and "Paintwork" for paint).

19.2 Framework to prison cell beds:

Not to be measured as the supply and fixing will be executed under a separate contract after the First Delivery date of the main contract.

20. PLUMBING AND DRAINAGE

20.1 Galvanising to sheet iron flashings, rainwater goods, etc.:

a) Inland class Z275 galvanised
b) Coastal class Z600 galvanised

20.2 Lighting protection to be measured if details are available.

20.3 "Soft" and "hard" rock:

a) must be provided for
b) quantities must be realistic and be in accordance with the available soil report.

20.4 Reference to Drainage Details to be as per Revised Edition December 1998.

20.5 Piping to be as per Memorandum on Domestic Water Supply Piping.

20.6 The following items must be measured and referred to SABS specifications or described in full (items not supplied by Department):

a) Fire hydrant

b) Fire hose reel

c) Fire extinguisher

d) Extinguishing blanket

e) Cupboards for reels and extinguishers

f) Respirators

21. GLAZING

21.1 The performance classes (strength) of laminated safety glass to be mentioned.

22. ROADWORK

22.1 Maintenance period (Applicable only to civil work such as roads, parking and related earthworks)

The following preamble to be included if necessary:

The maintenance period for the following work shall be 12 calendar months.

23. PROVISIONAL SUMS. ETC.

23.1 Provisional sums only used in exceptional cases of which the Project Manager should be aware of and has approval.

23.2 For ease of reference all provisional sums to be kept in a separate section.

23.3 An example of the setting out and preambles could be as follows:

PROVISIONAL SUMS, ETC.

All provisional sums cover the supply of material and equipment and of installation where applicable by firms of specialists. Provisional sums are not and do not include for builder's discount, but the tenderer may allow under the item for "Profit" any profit he considers necessary. The tenderer is referred to Item B7.1 and B7.2 in Section 1 ("Preliminaries") for the definitions and adjustment of "Attendance".

23.4 Note: Items and amounts for the following to be billed in the relevant trades:

a) Stormwater connection

b) Sewer connection

c) Water connection

d) Cell locks

i) Provide the sum of R... (R280/lock)... (this sum will be deducted from the contract sum) for... (no of locks)... cell locks complete with keys, etc. provided to the contractor (taking delivery and fixing elsewhere)

Item Amount

ii) Allow for profit

Item

NOTE:

Pretoria area: Allow for taking delivery, storing and fixing in position only……

Rest of RSA: Allow for taking delivery at nearest railway station, carting to site, storing and fixing in position only ……..

e) Coat of arms:

i) Similar to cell locks

ii) R250/each

NOTE:

The provision of sums for cell locks and framework for cell beds to be discussed with the relevant Project Manager as it could be a separate contract contract (i.e. for prison services) executed after the First Delivery date of the main contract.

23.5 The following items and amounts to be allowed in the section "Provisional sums. etc".

23.5.1 FINANCIAL PROVISION

Allow the amount of R... for... This work will be measured on completion and priced at schedule rates. A complete set of working drawings will be issued to the contractor on/not later than……

Item Amount

23.5.2 PROVISIONAL SUMS (Only if the Department approves)

a) Headings and preambles as per example of Provisional Sums (see 23.3 hereof)

b) Refer to consultant architect for:

i) Type of sub-contract

ii) Amount for each type of sub-contract

c) Nominated Sub-contracts (NSC) (or Comprehensive Contracts if so required by the Department)

d) Pre-selected Sub-contracts (PSSC)

Tenderers are pre-selected before tender stage by the Tender Board (usually pre-selected together with the main contractor).

i) Any specialist work

e) Selected Domestic Sub-contracts (SDSC)

f) Lighting protection (if this protection is required) to be measured if details are available

g) Direct Domestic Sub-contracts (DDSC)

Specialist work of which the design and quantities are unknown at tender stage.

23.5.3 NOMINATED SUB-CONTRACTS

The following provisional sums for work to be executed by nominated subcontractors:

a) Installation

i)	**Provide the sum of R…… for installation**	**Item**
ii)	**Allow for profit**	**Item**
iii)	**Allow for attendance**	**Item**

23.5.4 SELECTED DOMESTIC SUB-CONTRACTS

The following provisional sums are for work to be executed by specialists who will be regarded as domestic sub-contractors to the contractor. The contractor shall call for quotations from specialists selected by the Department on documents prepared by the Department or the relevant consultant, in accordance with the Conditions of Contract and in conjunction with the Representative/Agent and the contractor shall in consultation with the relevant consultant adjudicate the tenders. The contractor shall upon the final decision of the Representative/Agent appoint the successful tenderer who shall become a selected domestic sub-contractor to the contractor. Privity of contract shall not be created between the Director-General and the domestic sub-contractor by the method of selection, tender enquiry, adjudication and appointment:

a) Lightning protection

i)	**Provide the sum of R……. for lightning protection**	**Item**
ii)	**Allow for profit**	**Item**
iii)	**Allow for attendance**	**Item**

23.5.5 DIRECT DOMESTIC SUB-CONTRACTS

The following provisional sums are for work to be executed by the specialist firms, which will be regarded as direct domestic sub-contractors to the contractor. The contractor must call for quotations from firms approved by the Representative/Agent in accordance with the conditions of contract and in conjunction with the Representative/Agent for consideration:

a) Signage:

i) Provide the sum of R……

	for signage	**Item**
ii)	**Allow for profit**	**Item**
iii)	**Allow for attendance**	**Item**

WCSNO

FINAL SUMMARY
(EXAMPLE)

SECTION		Page No	Amount
	PART A		R c
1	Preliminaries……..		
2	Block A……...		
3	External work……		
	SUB-TOTAL …….		
	PARTB		
	Electrical Installation…….… (See separate document) (Value-Added Tax excluded)		
	PARTC		
	Ventilation Installation…….. (See separate document) (Value-Added Tax excluded)		
	SUB-TOTAL.....…..... R		
	ADD * VALUE-ADDED TAX…….……		
	SUB-TOTAL.....…..R		
	LESS		
6	Credit for old materials from Demolitions/Alterations		
	TOTAL CARRIED TO TENDER FORM……		R

*Percentage must not be filled in

ANNEXURE A **WCS NO**

(EXAMPLE ONLY)

ALTERNATIVE TENDER NO. 1

ALTERNATIVE TENDER FOR "COROBRICK SUMMER GOLD"
FACINGS IN LIEU OF "CRAMMIX SAHARA SAND RUSTIC"
FACINGS AS MEASURED IN THE MAIN TENDER

ALT TENDER NO 1

WCSNO

ALTERNATIVE TENDER NO. 1

		Qnt	Rate	Amount R	c
	OMISSIONS				
	Face Brickwork				
	SECTION 2				
1	Facebrick work as item 1 page 79 to item 5				
		Item			
	SECTION 3				
2	Face brickwork as item 6 page 117 to item 10				
		Item			
	Carried forward to Collection of Omissions			R	

OMISSIONS
ALTERNATIVE TENDER NO. 1

Alt Tender No. 1

WCS NO.

COLLECTION
OF
OMISSIONS FOR ALTERNATIVE TENDER NO. 1

	Page No	Amount R	c
Total from page.....			

COLLECTION OF OMISSIONS

CARRIED TO SUMMARY OF
ALTERNATIVE TENDER NO. 1 _____ R _____

Alt Tender No. 1

	ADDITIONS	Qnt	Rate	Amount R c
	FACE BRICKWORK			
	"Corobrick Summer Gold"facings in horizontal stretcher bond with flush pointed joints			
	SECTION 2			
1.	Extra over ordinary brickwork for facing and pointing in foundations. (Provisional)	Square metre		
2.	Ditto, but in superstructure	Square metre		
3.	Extra on facings with flush pointed joints for 15mm deep square recessed horizontal joints at every seventh course	Square metre		
4.	Fair raking cutting	Metre		
5.	Face brick-on-edge external sloping window sill 170mm wide, without overhang, fair and pointed on top and front, including all rough and fair cutting and cement mortar bedding (In no)	Metre		
	SECTION 3			
6.	One brick wall as sample panel built fair pointed on both sides. (Provisional)	Square metre		
	Carried forward to Collection of Additions		R	
	ADDITIONS ALTERNATIVE TENDER NO. 1			

Alt Tender No. 1

		Qnt	Rate	Amount R c
7.	Extra over ordinary brickwork for facing and pointing in foundations (Provisional)	Square metre		
8.	Ditto, but in superstructure			
9.	Extra over facings with flush pointed joints for 15mm deep square recessed horizontal joints at every seventh course	Square metre		
10.	Face brick-on-edge lintel 110mm wide fair and pointed on face and soffit, including all rough and fair cutting (In no)	Metre		

Carried forward to Collection of Additions R

ADDITIONS
ALTERNATIVE TENDER No. 1

Alt Tender No. 1

WCS No.

COLLECTION
OF
ADDITIONS FOR ALTERNATIVE TENDER NO. 1

	Page No	Amount R c
Total from page……		
Total from page……		
Total from page……		

COLLECTION OF ADDITIONS

CARRIED TO SUMMARY OF

ALTERNATIVE TENDER NO. 1 R

Alt Tender No. 1

WCS No.

ALTERNATIVE TENDER NO. 1

SUMMARY

	Page No	Amount R c
SUBTOTAL (VAT excluded) from main tender (See Final Summary)	R	
DEDUCT: Omissions		
ADD: Additions…….		
SUB-TOTAL……R		
ADD: Value-Added Tax…….		
SUB-TOTAL……R		
LESS: Credit for old materials from Demolitions/Alterations……		
ALTERNATIVE TENDER NO. 1 TOTAL CARRIED TO TENDER FORM…….		R

SUMMARY
ALTERNATIVE TENDER NO. 1

ANNEXURE B

COVER PAGE

X
printed bills are
to be numbered
consecutively on
front cover

REPUBLIC OF SOUTH AFRICA

DEPARTMENT OF PUBLIC WORKS

(PROVISIONAL) BILLS OF QUANTITIES

FOR

_____

AT

_____

CONSISTING OF:

PART A
SECTION 1: Preliminaries
SECTION 2: ……
SECTION 3: ……
SECTION 4: ……

PART B
ELECTRICAL INSTALLATON
(See separate document)

PARTC
RETURNABLE SCHEDULES
(See separate document)

QUANTITY SURVEYOR

(Name) _____
(City)_____

CENTRAL GOVERNMENT OFFICES
VERMEULEN STREET
PRETORIA 0002
PRIVATE BAG X65
PRETORIA 0001

ARCHITECT:

(Name) _____
(City)_____

Month and year
When printed

No_____
WCS_____

(EXAMPLE ONLY)