

PREAMBLES TO ALL TRADES

1.0 GENERALLY

- A. These preambles set out amplifications to methods of measurement, including those contrary to the Standard Method of Measurement of Building Works (For Use In Malaysia) (hereinafter referred to as the SMM,) together with factors to be taken into account when pricing. They apply to the whole of the works regardless of the headings under which they have been described.
- B. The description stated in the Bills are not comprehensive. Reference should be made to the 'Specification of Materials and Workmanship' for details of types of materials and quality of workmanship; to Part A : 'General Conditions and Preliminaries' for conditions affecting the whole of the Works; and to these Preambles for methods of measurement and pricing factors.
- C. The Contractor's rates and prices shall allow for compliance with the above-mentioned documents.
- D. The requirements of all items contained in this section shall apply to the whole of the works regardless of the Trade Headings under which they have been described and are to be taken into account when pricing these Bills of Quantities.
- E. The prices entered against the items in the Bills of Quantities shall be the full inclusive values of the finished work shown on the Drawings and/or described or implied in the specifications and/or Bills of Quantities, and shall cover the costs for supply of materials including cutting and waste, unloading, storage, packing, carriage and cartage, hoisting, all labour for plant, supervision, fuel, establishment charges; duties, taxes, profit and any other expenses and everything else indispensable necessary for the due and proper completion of each item and fulfillment of all the Contractor's duties and obligations under the Contract.
- F. When any item is not priced or left blank by the Contractor, the value of work under the particular item shall be deemed to be included under other items in the Bills of Quantities, or allowed for in the Contract Sum.
- G. The Contractor shall be held to have fully understood all matters concerning the works to be carried out under this Contract. Any query should be settled with the Tender Secretary prior to submission of the Tender. No consideration shall be given to any query raised by the Contractor indicating lack of comprehension of the works to be done or material to be supplied after acceptance of the tender.
- H. Unless otherwise specifically stated in the Bills, the following shall be deemed to be included with all items :-
 - (a) Labour and all costs in connection therewith, including supervision.
 - (b) Materials, goods and all costs in connection therewith, including unloading, storage, packing, carriage and cartage, duties, taxes and surtaxes.
 - (c) Plant and all costs in connection therewith, including fuel and lubricating oil.
 - (d) Assembling, hoisting, fitting and fixing materials and goods in position.
 - (e) All cutting.
 - (f) Waste of materials.

- (g) Establishment charges, overhead charges and profit.
- I. Where items are described as 'Supply only', the rates and prices shall be deemed to include (a), (b), (c) and (g) above.
- J. Where items are described as 'Fix only', the rates and prices shall be deemed to include (a) - (g) inclusive above, except (b).
- K. Items described as curved or circular shall be deemed to include for all junctions between straight and curved or circular work.
- L. The term "approved" shall mean granting of approval by the Developer or his authorised representative.

2.0 **ABBREVIATIONS**

2.1 Throughout these Bills of Quantities the following abbreviations have been used:

i) General

(a)	M.S.	-	The latest standard for a particular building material or component issued at Standards and Industrial Research Institute of Malaysia (SIRIM).
(b)	B.S.	-	The latest standard for a particular building material or component issued at the British Standards Institution.
(c)	CP (B.S.)	-	The latest British Code of Practice issued by the Council of Codes of Practice, the British Standards Institution.
(d)	CP (CE)	-	The latest Civil Engineering Code of Practice, issued by the Institution of Civil Engineers, United Kingdom.
(e)	Gauge	-	Imperial standard wire gauge.
(f)	S.W.G	-	Ditto
(g)	NO	-	Number
(h)	PRS	-	Pairs
(i)	S.O.	-	Superintending Officer
(j)	RHS	-	Rectangular Hollow Section
(k)	UPVC	-	Unplasticised Polyvinyl Chloride
(l)	W.C	-	Water Closet

ii) Metric Units

(a)	MC or M3	-	Metre cube
(b)	MS or M2	-	Metre superficial

ABBREVIATIONS (Cont'd)

(c)	MR or M	-	Metre lineal
(d)	CM	-	Centimetre
(e)	mm	-	Millimetre
(f)	KG	-	Kilogram
(g)	KN	-	Kilo Newton

iii) Imperial Units

(a)	FC	-	Feet cube
(b)	FS	-	Feet superficial
(c)	FR	-	Feet lineal
(d)	YC	-	Yard cube
(e)	YS	-	Yard superficial
(f)	YR	-	Yard lineal
(g)	Ton	-	Imperial tonne
(h)	LBS	-	Pound
(i)	OZ	-	Ounce

3.0 CONSTRUCTION PLANT, EQUIPMENT, VEHICLE AND MACHINERY

- 3.1 The costs of providing constructional plant, equipment, vehicles and machinery for use directly in connection with the construction and completion of the Works are to be priced in the Preliminary Section of these Bills of Quantities. However, the costs of operating the same are to be included in the prices and rates of the relevant items in these Bills of Quantities.

4.0 CURVED OR CIRCULAR WORK

- 4.1 Work described in these Bills of Quantities as curved or circular shall be deemed to include all junctions between straight and curved or circular work.

5.0 NEW AND OLD WORK

- 5.1 Unless otherwise specified the cost of making good at junction between new and old works shall be included in the prices and rates of the new works.

6.0 ITEMS/WORKS MEASURED AS LUMP SUM ITEMS

- 6.1 Prices and rates for items/works measured as Lump Sum items shall be deemed to cover for providing everything necessary for the proper execution and completion of the items/works according to the true intent and meaning of the Contract Documents taken together whether the same may not be particularly shown or described provided the same is reasonably inferred to therein.

7.0 PRICING OF BILLS OF QUANTITIES

- 7.1 All Items in these Bills of Quantities shall be priced by the Contractor. Should Contractor fail to price any item, the value thereof shall be deemed to be included in the prices and rates of other items therein.

8.0 PILING WORKS

8.1 General

Prices and rates for piling shall be deemed to include for works in whatever nature of site, water levels and soil strata through which the pile are to be driven or bored and any excavation required for working space.

8.2 Bakau Piles

8.2.1 Payable Lengths

Payable lengths for bakau piles shall measured and paid for by linear metre measured from the tip of the pile when pitched to the tip of the pile when driven. Fractions of a metre shall be measured to the nearest metre.

8.2.2 Piling Rates

The rates are to include for :-

1. Keeping and submission of piling records in triplicate for certification by the Architect.
2. Handling, transporting, pitching, shaping ends, cutting off tops and extra wastage in non-reusable cut-off lengths.

8.3 Tanalised Timber Piles

8.3.1 Methods of Measurement

1. The quantity for supply of piles shall be measured and paid for based on the actual number and lengths of piles supplied and delivered to the site for purposes of the Works, including wastage.
2. Initial and extension piles are separately described.
3. Tanalised timber piles are measured in linear metres and described.
4. Driving of piles singly or in clusters are not separately described

PILING WORKS (Cont'd)

8.3.2 Payable Lengths for Driving

Driving of tanalised timber piles shall be paid for by linear metre measured from the tip of the pile when pitched to the tip of the pile when driven. Fraction of a metre shall be measured to the nearest metre.

8.3.3 Piling Rates

The rates for piles and piling are to include for:-

1. All labour and materials for complete pile installation inclusive of wastage.
2. All necessary excavation works incidental to piling.
3. Driving piles singly or in cluster.
4. Re-driving of upheaved pile, if any.
5. Replacement of damaged pile and any pile which failed under tests.
5. Filling up with approved fill materials any gap appearing between pile and ground due to displacement of ground on completion of piling.
6. Normal wet weather delays.
8. Standing time for equipment and labour due to all the foregoing circumstances

8.3.4 Handling, Transporting, Pitching and Driving

1. The prices for handling, transporting, pitching and driving shall be deemed to include for:
 - a. Moving of pile frame about the site
 - b. Extra excavation, earth filling and ramming entailed in the movement/positioning of the pile frames
 - c. Handling, transporting, pitching and driving of initial or extension piles irrespective of lengths
 - d. Shaping of one end of initial pile (if required)
 - e. Preparing pile head and fitting the same with protective strap/helmet
 - f. Redriving of heaved piles
 - g. Marking the piles
 - h. Keeping and monitoring driving logs.

PILING WORKS (Cont'd)

0. Handling, transporting, pitching and driving of initial piles and extension piles are measured under an item. No distinction is made between initial and extension piles.

8.4 **Bored Cast In Place Concrete Piles**

8.4.1 Methods of Measurement

1. Piles to be installed to depth beyond 10.00 metres are given in successive stages of 3.00 metres; with the commencing level stated.

2. Steel reinforcement in piles are measured and given separately.
3. Permanent casing are separately measured in linear metre.
4. Boring through rock has been measured as extra over items for bored piles irrespective of the depth the rock strata is found.
5. The level of the ground surface in relation to high and low water mark of nearby rivers or underground waters, and records of highest flood water level are not given in the Bills of Quantities. The Contractor is responsible to ascertaining such information prior to submitting a tender.
6. Removal of excavated material arising from boring of cylinder sinking is not given separately.

8.4.2 Payable Lengths

Piles shall be measured and paid for by linear metres measured from the tip of toe to the cut-off level of the piles. Fractions of a metre shall be measured to the nearest metre.

8.4.3 Piling Rates

The rates for piles and piling are to include for :-

1. All labour and materials for complete pile installation inclusive of wastage.
2. All necessary excavation works incidental to piling.
3. installing, coring, boring, etc. in all soil (excluding solid rock) to the given level including all labour, equipment, plant and tools.
4. Temporary casing or lining, and its subsequent removal.
5. Empty bores and filling empty bores with sand or other suitable material
6. Providing pile shoes or formation of enlarged bases.
7. Normal wet weather delays.
8. Replacement of any pile that fail under test.

PILING WORKS (Cont'd)

9. Standing time for equipment and labour due to all the foregoing circumstances.
10. Staging and platform for the installation of piles on embankments and slopes.

8.5 Preformed (Precast) Concrete Piles

8.51 Method of Measurement

- A. The quantities for supply of piles shall be measured and paid for based on the actual pitched lengths of piles. Piles supplied and delivered to the site for purposes of the work, but which are subsequently not pitched and driven, shall not be paid.

- B. Initial and extension piles are separately described.

8.52 Contrary to SMM

- C. The level of the ground surface in relation to high and low water mark of nearby rivers or underground waters, and records of highest flood water level are not given in the Bills of Quantities. The Contractor is responsible to ascertaining such information prior to submitting a tender.
- D. Driving of piles singly or in clusters is not stated.
- E. Heads are not separately measured and are deemed included.
- F. Steel reinforcement in precast concrete piles is not separately measured.

8.53 Payable Lengths for Driving

- G. Driving of precast concrete piles shall be measured and paid for by linear metres measured from shoe point when pitched to the shoe point when driven.

8.54 Piling Rates

- H. The rates for piles and piling are to include for :-

- (1) All labour and materials for complete pile installation inclusive of wastage.
- (2) All necessary excavation works incidental to piling.
- (3) Driving piles singly or in clusters.
- (4) Redriving of upheaved piles if any.
- (5) Replacement of damaged piles and any pile which fail under test.
- (6) Filling up with approved fill materials any gap appearing between pile and ground due to displacement of ground on completion of piling.

PILING WORKS (Cont'd)

- (7) Normal wet weather delays.
- (8) Standing time for equipment and labour due to all the foregoing circumstances.
- (9) Staging and platform for the installation of piles on embankments and slopes.

8.6 Micropiles

8.61 General

- A. Micropiles is design and built by Contractor and the bill provided is deviate from the British Standard Method of Measurement and the latest Standard of Measurement of Building works for use in Malaysia

8.62 Measurement of Design, Construction and Completion of Piles

- B Micropiles are measured nett from the starting point of the socket to the bottom level of the pile cap. The prices shall include for all necessary provisions to complete the works
- C Subject to paragraph above, the Contractor shall allow in his prices and rates any extra length that may be required above the bottom level of the pile cap.

8.63 Measurement of Micropiles Socket In Rocks.

- D The prices for design, construction and completion of micropiles socketed in rocks shall be deemed to cover for the cost of micropiles inside the socket.

8.7 Steel Sheet Piling

8.71 Measurement

- E Only steel sheet piling which form a permanent part of the Works is allowed in this Bill of Quantities. The cost of providing steel sheet piling which do not form a permanent part of the Work is deemed to be included in the prices and rates of the permanent part of the Works for which the use of sheet piling is necessary.

8.72 Supplying of Steel Sheet Piling

- A Prices and rates for supplying of steel sheet piling shall be deemed to include for extra material at laps, welding along interlocks and coating with approved anti-rust paint.

8.73 Driving of Steel Sheet Piling

- B The items given under paragraphs 8.3.4, i.e. Handling, Transporting, Pitching and Driving Precast Concrete/Timber Piles shall apply accordingly.

DEMOLITIONS AND ALTERATIONS

Definitions

A. In respect of demolitions and alterations the following words or expressions shall have the meanings hereunder assigned to them :-

Shoring	- Shoring including erecting, cutting holes in the structure, maintaining, clearing away and making good all works disturbed.
Demolishing	- Disconnecting all services, demolishing and removing incidental debris.
Making good	- Making good in its fullest sense to match existing work and through, around, into, over and up to new items, openings and the like and the proper jointing to existing.
Overhauling	- Cleaning, renewing parts and all incidentals and leaving in proper working order.
Setting aside	- Setting aside for re-use including handling, cleaning, temporarily casing up, covering, protecting and the like, moving about the site and if required removing from and returning to site.
Making good structure	- Making good structure and cutting, toothing and bonding, pinning up, leveling and preparing, filling and facing up.
Making good finishing	- Making good finishing (including dubbing out) to ceilings and soffits, walls and floors and making good skirting, architraves and joinery.
Making good decorations	- Making good as previously defined all decoration to ceilings and soffits, walls, floors, skirting, architraves and joinery including preparing, priming and bringing forward to the full number of existing coats and matching in texture and colour.
Cutting openings	Cutting openings including quoning up jambs, forming recessed reveals, cutting, toothing and bonding, leveling and preparing bottom of openings, cutting and pinning lintels and the like and pinning up over.
Blocking Up Openings	- Blocking up openings including cutting, toothing and bonding, pinning up and leveling and preparing bottom of openings.

DEMOLITIONS AND ALTERATIONS (Cont'd)

Definitions (Cont'd)

- A. In respect of demolitions and alterations the following words or expressions shall have the meanings hereunder assigned to them :- (Cont'd)
- | | |
|--|---|
| Overhauling And Repairing Door And Frame | - Piecing out and repairing damaged portions of door frame and lining; repairing and refixing frame architraves including renewing as necessary; refixing frame and lining; hacking out broken glass and reglazing; raking out and repainting frames; overhauling, oiling and adjusting ironmongery; easing and adjusting door; taking out door and shooting bottom to clear new floor finish and rehang. |
| Overhauling And Repairing Window | - Piecing out and repairing damaged portions of window frame and lining; repairing and refixing architraves including renewing as necessary; refixing frame and lining; hacking out defective putties and repainting; hacking out broken glass and reglazing; raking out and repainting frames, overhauling, oiling, and adjusting ironmongery; easing and adjusting window. |
| Taking Out Door And Frame | - Taking off door; taking out frame, lining, architraves and all associated joinery; taking out threshold and any steps; taking out pelmet and curtain rails; taking up floor springs; preparing opening to receive new work. |
| Taking Out Window And Frame | - Taking out window; taking out frame, lining, architraves, shutter boxes and all architraves joinery; taking out internal and external sills; taking out pelmet and curtain rails; rails preparing opening to receive new work. |
| Taking Out Sanitary Fittings | - Taking out sanitary fittings complete with brackets, bearers, backboards, drainers and the like; disconnecting wastes and services; stopping off pipes out of sight and making good. |

Materials

- B. Unless otherwise described in the Bills of Quantities, all materials arising out of demolitions and alteration work shall become the property of the Contractor who shall allow credit for the full value to him of all materials salvage.
- C. Where provision is made in the Bills of Quantities for the value of credits to be shown separately, the Employer shall be entitled to purchase salvaged materials from the Contractor upon payment to the Contractor of the credit value (if any) shown in the Bills.

DEMOLITIONS AND ALTERATIONS (Cont'd)

Workmanship

- D. Demolitions are to be carried out in such a manner and sequence as to cause the least possible disturbance to those parts of the work which are to remain.

Protection

- E. The Contractor shall be responsible for the full protection of those parts of the buildings which are to remain including the provision of temporary dust-proof screens, tarpaulins, dust sheets and the like.

Dimensions

- F. Dimensions of buildings and other structures to be demolished, where given in the description of work, are approximate and are for guidance only.

Rates to include

- G. The rates are to include for :-
- (1) Any temporary shoring, needling, strutting, scaffolding, screens and the like and other temporary works.
 - (2) Cleaning and stacking materials which the Contractor may require for making good.
 - (3) Removing all debris from site.
 - (4) Executing the whole of the demolitions and alterations in phases as may be directed by the Architect.

EXCAVATOR

Method of Measurement

- A. The area of site to be cleared has been measured flat on plan.
- B. The quantities of excavation have been measured nett and the Contractor shall allow in his prices for increase in bulk after excavation.
- C. The quantities of filling have been measured as equal to the void to be filled and no allowance has been made for loss in consolidation. Thickness stated is those after compacting.

Commencing Level of Excavation

- D. Unless otherwise described in the Bills, excavation shall be deemed to commence at existing ground levels.

Excavating In Rock

- E. Excavating in natural rock (other than boulders not exceeding 1 cubic metre in volume each) as defined in the Specification is measured separately.
- F. To qualify for rock excavation rates, the S.O. must certify that material encountered is to be classified as rock and measurements of the volumes excavated be agreed between the Contractor and S.O. prior to commencement of work.
- G. Rock excavation shall be measured and paid for based on the volume insitu, viz. its natural accuring state prior to excavating.

Contrary to SMM

- H. For the purposes of site clearance, small trees are defined as not exceeding 600mm girth at a height of 1 metre above ground.
- I. Planking and strutting requiring to be left in is not measured separately.
- J. Excavating in rock is measured separately as extra over the various classes of excavation. Boulders not exceeding 1 cubic metre in volume each shall be deemed included in the rates for excavation.
- K. Breaking up and removing buried brickwork, concrete, reinforced concrete or other hard substances met within in excavations are not measured separately.
- L. Keeping excavations free from storm and percolating water are not measured separately.

EXCAVATOR (Cont'd)

EXCAVATIONS AND EARTHWORKS

- A Unless otherwise stated, depths of excavation are measured from the general formation levels to the bottom of the excavations.
- B The depths of trench excavation are given in 1.50 M stages.
- C Quantities of each fill are measured nett (i.e. excluding volumes occupied by permanent parts of the Works to be executed under the Contract).
- D Prices for excavation shall be deemed to include for:
 - (a) Excavating in whatever type of material met with excluding rock as defined in the Specification met with on the surface or in the excavations
 - (a) Getting the material out of the excavations
 - (b) Levelling bottoms of the excavations or grading the bottom of the excavations to falls or cambers, and compacting the same
 - (c) Trimming sides of the excavations to form vertical, battering or sloping faces
 - (d) Upholding and maintaining sides of the excavations by whatever means necessary including the use of bentonite and any special shoring or sheet piling etc. as may be necessary but which do not form a permanent part of the work to be executed, but excluding any planking and strutting to be left in or any sheet piling etc. which form a permanent part of the work to be executed
 - (e) Removing of loose boulders of size not exceeding 0.17 MC if in general excavation or of size not exceeding 0.08 MC if in excavation for trenches and foundation pits
 - (f) Backfilling of selected excavated materials into the excavations and compacting the same by methods and in the manners as specified in the Specification. Disposal of surplus excavated material (the balance after backfilling) shall be measured separately
 - (g) Multiple handling and transporting above the site.
 - (h) Deposit, spread and level in making up levels of surplus excavated materials within the site.
 - (i) Keeping the excavations free from storm, percolating or spring water by pumping or whatever other means necessary
- E Prices for trench excavations shall include for surface and basement trenches. No distinction shall be made between surface and basement trenches.
- F Prices for disposal of surplus excavated materials (the balance after backfilling) shall include for multiple handling of the materials or transporting the material about the site as may be necessary prior to disposal.

EXCAVATOR (Cont'd)

- G Prices for earth, sand, quarry dust and the like material in filling, beds and blinding etc. shall include for levelling surfaces of the same or grading surfaces of the same to falls or cambers, trimming sides of the same to form vertical, battering or sloping surfaces, and any temporary retaining boards as may be required.
- H Prices for hardcore, crusher run and the like material in filling and beds etc. shall include for hand packing the same to form vertical, battering or sloping surfaces and any temporary retaining boards as may be required.
- I Prices for hardcore, crusher run and the like material in fillings and beds etc. to receive concrete or paving shall include for blinding the same with sand or quarry dust, and levelling surfaces of the same or grading surfaces of the same to falls or cambers.
- J Prices for each fill shall be deemed to include for:
- (j) Settlement or displacement of fill over soft areas
 - (k) Upholding and maintaining sides of the filling by whatever means necessary including the use of bentonite and any special shoring or sheet piling etc. as may be necessary but which do not form a permanent part of the Work to be executed, but excluding any planking and strutting to be left in or any sheet piling etc. which form a permanent part of the Work to be executed.

Excavation

- K. The rates are to include for :-
- (1) Excavating and getting out.
 - (2) Excavating by hand and/or mechanical means in any materials encountered including excavating below the water table and for grubbing up roots of trees, breaking up disused sewers and manholes, breaking up old reinforced or mess concrete, brick foundations and the like and extracting old piles.
 - (3) Excavating around and removing boulders not exceeding 1 cubic metre in volume each.
 - (4) Leveling or grading and ramming of bottoms and trimming sides.
 - (5) Multiple handling of excavated material and all transport and handling charges at loading and unloading ends.
 - (6) Planking and strutting including any left-in including special shoring and/or any other means of withholding the sides of the excavation and ensuring the safety of adjoining structures.
 - (7) Additional excavation and backfilling for planking and strutting or to batter the face of the excavation.
 - (8) Clearing any falls of earth into excavations.
 - (9) Keeping all excavations free from water, mud, etc. by pumping or baling if required, and for providing any temporary drains required.

EXCAVATOR (Cont'd)

K. The rates are to include for :-

- (10) Protection of all services encountered.
- (11) Complying with the S.O.'s instructions issued from time to time to ensure the safety of excavation and adjoining structures.
- (12) Reinstatement to original condition existing ground or surface finish affected by the excavations.

Backfill, hardcore and the like

L. The rates are to include for :-

- (1) Spreading, leveling, watering, ramming and consolidating.
- (2) Loss of materials in compaction and due to the soft nature of the ground, sinking or erosion.
- (3) Temporary retaining boards.

Waterproofing membrane, lining and the like

N. The rates are to include for :-

- (1) All laps, joints including bonding adhesives, reinforcing or batten strips, etc.
- (2) Narrow widths.
- (3) Fitting and sealing around inlets, outlets, projections and the like.
- (4) Tests on joints.

CONCRETOR

Method of Measurement

- A. Upstaged beams, isolated beams and lintels are grouped together and commonly classified as beams.
- B. Arbitrary decisions have been made as to whether small items are to be precast or cast insitu. The Contractor may adopt either method of casting but payment will be in accordance with the method of measurement expresses in the Bills.
- C. Where sliding formwork is specifically required to be used by the Contract Documents, it is measured the actual vertical surface of concrete over which the slipforms pass, measured over all openings, holes, recesses, rebates and the like. No deduction in sliding formwork areas are made for openings. A separate item is given for bringing to site, maintaining and removing all plant and equipment required. Deductions for voids and openings in concrete walls shall be made in accordance with the SMM.
- D. Boxings for permanent openings are enumerated separately. Alternatively, the formwork to the reveals shall be given in linear metres where under 300mm in width and grouped in stages of 100mm, and given in square metres when over 300mm in width.
- E. Where sliding formwork or other formwork systems are adopted by choice by the Contractor, measurement and payment will be based upon traditional methods of construction.

Contrary to SMM

- F. Concrete in foundations and bases less than 0.15 cubic metre each is given separately without stating the number.
- G. Curved formwork is given separately irrespective of the radius which is not stated.
- H. Precast copings, lintels and the like are given in metres without stating the number.
- I. Stressing steel is enumerated describing the diameter and ultimate tensile strength of the wire.
- J. The rates are to include for :-
 - (1) Providing preliminary trial mixes, tests on cement, aggregate, water and mixed concrete as stipulated in the specification.
 - (2) Hoisting or pumping and placing in position.
 - (3) Tamping and/or vibrating to give through compaction.
 - (4) Working between and around reinforcement.
 - (5) Laying on any type of sub-base and for preparing and leaving surfaces to receive structural toppings, screeds, pavings, rendering and the like.
 - (6) Laying in bays including all labour associated with projecting reinforcement and all necessary formwork..

CONCRETOR (*Cont'd*)

Contrary to SMM (*Cont'd*)

- J. The rates are to include for :- (*Cont'd*)
- (7) All construction joints whether Contractor or Consultant designed including temporary formwork to form joggled joints and cleaning and preparing for subsequent pours. (Water bars have been measured separately where required to be incorporated in construction joints).
 - (8) Curing of concrete.
 - (9) Continuous daily pours of very large quantities.
 - (10) Forming and cutting and subsequent making good of :-
 - (a) Grooves, chases, rebates and the like.
 - (b) Mortices, holes and other sundry like items, displacing 0.05 cubic metre or under of concrete.
 - (c) Opening in walls, floors, roof slabs and the like of 0.20 square metre superficial or under.

Reinforcement

- K. All mild steel and high tensile steel bar reinforcement shall be in lengths not exceeding 12 metres unless otherwise stated.
- L. No allowance has been made in the weights of steel reinforcement for tying wire, spacers, chairs, rolling margin or the weight of weld metal.
- M. The rates for bar reinforcement are to include for :-
- (1) Allowance for rolling margin and the weight of welds.
 - (2) Cutting the length.
 - (3) Hooked ends and bends including to large radii.
 - (4) Brushing, cleaning and fixing in position.
 - (5) Providing and fixing annealed iron tying wire at all intersections.
 - (6) Distance blocks and ordinary chairs and spacers.
- N. The rates for reinforcement in ground beams, columns and walls are also to include placing of steel bars among or around existing starter bars.

CONCRETOR (Cont'd)

- O. Fabric reinforcement has been measured nett and no allowance for laps is made. The rates for fabric reinforcement are to include for :-

- (1) Allowance for rolling margin.
- (2) Allowance for laps.
- (3) Bendings.
- (4) Straight, circular and raking cutting and notching.
- (5) Brushing, cleaning and fixing in position.
- (6) Providing and fixing annealed iron tying wire at all intersection.
- (7) Distance blocks and ordinary chairs and spacers.

Formwork

- P. The rates are to include for :-

- (1) Erecting.
- (2) Raking and curved cutting.
- (3) Splayed edges.
- (4) Notching.
- (5) Allowances for overlaps, waste and passing at angles.
- (6) Battens.
- (7) Filleting to form chamfered edges or splayed angles not exceeding 50mm wide.
- (8) Strutting, bolting, wedging, easing, striking and removing.
- (9) Oiling or lime washing surfaces in contact with concrete.
- (10) In addition to the above, the rates for formwork to produce a fair faced concrete finish are to include for stopping all holes, cracks and the like in cement mortar and rubbing down with a carborundum stone immediately upon removal of the formwork to remove fins, board marks and other irregularities.

- Q. Rates for formwork to vertical surfaces i.e. columns, walls, etc. are to include for strutting to any height required.

- R. "Wrot formwork" shall mean formwork to produce a fair faced concrete finish. If patterns are required to be formed on the concrete surfaces, it shall be fully described.

- S. "Sawn formwork" shall mean formwork to produce concrete surface on which plastering or tiling will be applied.

CONCRETOR (Cont'd)

Horizontal Faces above 3.50 metres

- T The prices for formwork to horizontal surfaces i.e. beam, slab etc. are to include for strutting any height when required

Left-in Formwork

- U 'Left in' formwork as specified in these Bills of Quantities shall mean formwork which will form a permanent part of the Works.

Slip-form Construction Work

- V. The rates are to include for :-

- (1) All labour, materials, plant and equipment including cranes, hoists, gantries and personnel access, welding appliances, oxygen cutting sets, compressed air supply and other facilities for the proper execution of the work.
- (2) Providing competent and experienced foremen, supervisors, mechanical fitters, relevant tradesmen and operators for the slipform operation including labour for cleaning formwork, platform and the like.
- (3) Theodolite, plumb bobs and other necessary equipment for checking to ensure the accuracy of the vertical plane and heights of the slipform walls.
- (4) Forming blockouts for openings, holes, rebates, recesses and the likes.
- (5) Making structural connections between the slipform walls and subsequent construction including bolts, pins, brackets, splicing or anchorage bars well tied to the main reinforcement and suitably bent and boxed prior to concreting.
- (6) Adjusting the sliding formwork, equipment, platforms and the like to suit any changes in the thickness, length or cross-section of the slipform walls.
- (7) Using retarder in the concrete mix if required.
- (8) Overtime costs for labour for continuous concreting after normal working hours.
- (9) Idling time for all equipment, plant and labour for whatever reason.
- (10) Provision of jack rods.

Prestressed Concrete Work

- W. The rates are to include for :-

- (1) Providing, assembling, moving about the site and subsequently removing all necessary tensioning equipment, plant, tools and the like, including spare/standby units.

CONCRETOR (*Cont'd*)

Prestressed Concrete Work (*Cont'd*)

W. The rates are to include for :- (*Cont'd*)

- (2) Submitting method statements with calculations, preliminary drawings and specification, details of proposed additional reinforcement or modifications to reinforcement shown on the drawings, shop drawings accompanied by outlines of construction procedures, stressing sequences, expected friction and other losses, stressing and anchoring forces, etc., manufacturer's mill certificates, test certificates and stress/strain, curves, results of laboratory tests and certified calibration curves for each jack including providing the requisite number of copies of the foregoing to all concerned.
- (3) Taking all necessary field measurements.
- (4) All strand, grout and other tests.
- (5) Wrapping prestressing steel in suitable paper covering before dispatch from the manufacturer.
- (6) Tagging all wire or strand and anchorage assemblies for identification purposes.
- (7) Forming ducts or grooves including the provision of straight or curved sleeves on sheathing and temporary supports and examining ducts for punctures and leaks.
- (8) Forming air holes at the ends or sides of ducts and subsequently grouting.
- (9) Forming anchoring and jacking recesses.
- (10) Forming temporary openings in slabs for jacking purposes.
- (11) Forming temporary construction joints between sections.
- (12) Degreasing, straightening, cutting to length and assembling wires and cables.
- (13) Cleaning tendons, cleaning and drying out ducts.
- (14) Providing adequate protection against corrosion for all tendons, anchorages and ducts.
- (15) Cones, wedges, anchor plates, spacers or chairs, distance piece and the like expandable items.
- (16) Tensioning in a sequence recommended by the prestressing specialist and approved by the Architect.
- (17) Providing facilities for measuring the extension of tendons and movement of tendons in gripping devices.
- (18) Allowances in lengths of tendons for ends of tendons projecting beyond anchorages and jacking equipment for method of stressing and for initial slip in the gripping devices.

CONCRETOR (Cont'd)

Prestressed Concrete Work (Cont'd)

W. The rates are to include for :- (Cont'd)

- (19) Cutting the ends of wires and cables, together with sealing and treatment after tensioning.
- (20) Grouting and sealing ducts including expanding additives to grout.
- (21) Filling in the jacking or anchoring recesses and making good after excess strands have been cut off and grouted.
- (22) Drilling of edge boards for anchorage fixing.
- (23) Special strutting and supports.
- (24) Temporary restraints for tensioning.
- (25) Edge scaffolding and access to stressing and grouting points.
- (26) Taking all necessary precautions and providing protective barriers for use behind anchorage for safety reasons.
- (27) Temporary fencing around stressing areas including altering, adapting, moving, etc. from time to time in sequence with stressing operations.
- (28) Any other equipment, materials or items required but not specifically mentioned above for the proper and efficient execution and completion of the prestressed concrete work..

Waterstops

Y. The rates are to include for :-

- (1) Forming all joints and junctions in accordance with the manufacturer's instructions.
- (2) Forming joints in the concrete walls and slabs.

Expansion Joints

Z. The rates are to include for all formwork.

CONCRETOR (Cont'd)

Precast Concrete

AA. The rates are to include for :-

- (1) All reinforcement, moulds and casting.
- (2) Finishing fair on all exposed faces.
- (3) All holes, rebates, notchings, sinkings, morticecs and the like.
- (4) Hoisting, placing in position, setting, bedding, jointing and pointing in cement mortar (1:3) unless otherwise described.

Expansion Joints

AB. Where precast concrete is described as "finished fair" the rates shall include for lining the moulds with a suitable material to produce a fair faced finish and for all necessary pointing of the bedding joints to match.

Z. Rates for precast concrete kerbs, channels, etc., shall include for all angles, stopped ends, etc.

Precast Concrete Wall Panels

AA. The rates are to include for :-

- (1) Reinforcements and projecting reinforcements for lapping into the main structure.
- (2) Lifting hooks.
- (3) Moulds and casting
- (4) Keyed finish to external surfaces to receive tiling and fair finish to all other surfaces.
- (5) Cast-in brackets, plates, U-bars, stainless steel bolts washers and brackets etc. welded or built into the main structure.
- (6) Holes, sleeves, rebates, notchings, sinkings, mortices and the like.
- (7) Hoisting, placing in position, setting, bedding, jointing and pointing in cement mortar including cutting-off lifting hooks.
- (8) Temporary supports, ties, etc.
- (9) Site welded and bolted connections.
- (10) Concrete packing before fixing of precast units in position.
- (11) Dowel bars, shear pins and grouting of holes with cement and sand mortar or epoxy as required.
- (12) Neoprene or plastic spacer tubes and applying silicone sealant to all joints.

BRICKLAYER

Concrete to SMM

- A. Curved work is given separately irrespective of the radius which is not stated.
- B. Scaffolding for building brickwork in raising is not measured except where the work is raised off an old structure.

Brickwork

- C. The rates are to include for :-
 - (1) All rough and fair cutting.
 - (2) Oversailing and receding courses.
 - (3) Rough relieving and discharging arches.
 - (4) Wedging and pinning.
 - (5) Raking out joints for flashings, roof coverings etc. and pointing with mortar.
 - (6) Bedding plates.
 - (7) Bedding and pointing frames.
 - (8) Parging and coring flues.
 - (9) Labour eaves filling.
 - (10) Plumbing.
 - (11) Angles.
 - (12) Forming square and rebated reveals, cut squints or birdmouths and notches.
 - (13) Forming, leaving or cutting chases, holes and mortices.
 - (14) Cutting and pinning and/or building in.
 - (15) All making good.
 - (16) Sundry items of a like nature.
- D. Rates for brickwork shall also include for building up to the requisite thickness with plaster where bricks of the specified thicknesses are not available and bricks of lesser thickness are allowed by the Architect to be used.

BRICKLAYER (*Cont'd*)

Blockwork

E. The rates are to include for :-

- (1) All special made blocks (or brickwork and/or in-situ concrete in lieu)
- (2) All rough and fair cutting.
- (3) Oversailing and receding courses.
- (4) Free ends.
- (5) Plumbing.
- (6) Angles.
- (7) Forming square and rebated reveals.
- (8) Notches.
- (9) Cutting and pinning at top.
- (10) Cutting at ends and around openings.
- (11) Cutting and bonding at intersections, angles, and irregular angles.
- (12) Raking out joints for flashings, roof coverings etc. and pointing with mortar.
- (13) Bedding plates.
- (14) Bedding and pointing frames.
- (15) Parging and coring flues.
- (16) Labour eaves filling.
- (17) Forming, leaving or cutting notches, chases, holes and mortices.
- (18) Cutting and pinning and/or building in.
- (19) All making good.
- (20) Sundry items of a like nature.

Reinforcement to walls

F. In addition, rates for half brick walls and block walls shall include for building in brick reinforcement at every fourth course unless otherwise specified in the Bills.

DRAINLAYER

DRAINS

- A The items given under the various Trades of Excavation and Earth Works, Concrete Works, Brickwork, etc. which are deemed to be included in the prices and rates of drains, shall apply accordingly.
- B Excavation for drain trenches shall not be less than 300mm wider than the external diameter of the pipes and prices shall include for grading ground under pipes, carefully filling in earth to avoid damaging pipes and ramming, clearing away surplus material, keeping the excavations free from water and for all necessary planking and strutting.
- C Prices and rates for cast iron, vitrified clay and salt glazed earthenware pipes shall be deemed to include short lengths, sockets, jointing, fixing and the like.

SECONDARY SOIL DRAINAGE

Other Preambles Clauses to Apply

- D. The provision of the preambles for "Excavator", "Concretor", "Bricklayer", and such other trades as may be applicable shall apply to the respective work contained in this section.

Method of Measurement

- E. All diameters of pipes are measured and described their nominal internal diameters. Where diameters described are not available, the nearest equivalent available from manufacturers and suppliers shall be used.
- F. All pipes are measured their straight run on plan. The Contractor shall be deemed to have allowed in the pipework rates for additional lengths for grading to falls and deflecting as necessary.
- G. Vertical pipes in trench are measured separately.
- H. Pipes shall be measured along their centerlines over all pipe fittings, specials and branches. Lengths of pipes built into manholes and other chambers shall be measured from the inside surface of manholes or chambers.
- I. Pipe fittings and specials are enumerated as "extra over" the pipe on which it occurs. "Extra over" shall mean the cost of the pipe fitting or special so described additional to the cost of the length of pipe displaced by the pipe fitting or special, and shall include everything necessary for the complete installation and extra joints to pipes.

Pipework & Fitting Generally

- J. Pipework rates are to include for :-
 - (1) Setting out the primary soil drainage works.
 - (2) All necessary supports, saddles, slings, fixing bolts, foundation bolts for supporting pipework and equipment during installation.
 - (3) All short lengths.
 - (4) Running joints.

DRAINLAYER (*Cont'd*)

Pipework & Fitting Generally (*Cont'd*)

J. Pipework rates are to include for :- (*Cont'd*)

- (5) Deflecting joints.
- (6) Site tests on pipework including providing test certificates and carrying out tests on samples.
- (7) Temporary stoppers or plugs for closing ends of uncompleted pipelines during progress of work..
- (8) Forming permanent vertical joints along concrete pipe bedding as required.
- (9) Purpose-made brackets and hangers within chambers, etc.
- (10) Providing and building in all necessary cast iron sleeves for drain pipes passing through concrete beams, walls slabs and the like.
- (11) Building in ends of pipes into brick or concrete chambers including providing brick-on-edge arch and concrete lintols over pipes and making good works around.
- (12) Cleaning out interior of pipes and preparing ends of pipes for pipe joints and jointing.
- (13) Cutting pipes for chamfers, bends, junctions and for jointing, etc.
- (14) All mechanical and flexible couplings and such like joints shall include all nuts, bolts, plain and spring washer, gaskets, etc. for making the complete connection.
- (15) External protection on all flanges joints and flexible couplings.
- (16) In addition, all exposed cast iron or steel pipes in chambers or above ground, manhole covers etc. shall be deemed to include painting with three coats of bituminous paint.

Testing and Commissioning of Pipelines and Manholes

- K. The testing and commissioning of pipelines and manholes shall be deemed to include the provision of all plant and equipment comprising portable hydraulic pumps, blank flanges, caps and plugs, pressure gauges, pipe connections, corks, hoses, struts, thrust blocks and all labour and everything else necessary as described in the specifications.
- L. The provisions of the preambles for "Excavator", "Concretor", "Bricklayer" and such other trades as may be applicable shall apply to the respective works contained in this section.

DRAINLAYER (Cont'd)

Pipework & Fitting Generally (Cont'd)

Method of Measurement

- M. All stormwater drain channels and culverts are measured their straight run on plan. The Contractor shall be deemed to have allowed in their rates for additional lengths for grading to falls and deflecting as necessary.
- K. Cascading steps to stormwater drains are included in the description of the drains. The Contractor shall be deemed to have allowed in their tendered rates for all necessary additional works in connection therewith.
- L. The depths of stormwater drains of the same and make are grouped in 150mm stages from platform level to invert levels.

Rates for Stormwater Drains and Culverts

- M. The rates are to include for :-
 - (1) Setting out the stormwater drainage works.
 - (2) All short lengths.
 - (3) Jointing and bedding and making smooth running joints.
 - (4) Building in ends of drains or culvert pipes into sumps.
 - (5) Cutting culvert pipes for chamfers, ends junction and for jointing.
 - (6) Additional beds and surrounds at junctions, bends, cascades, ends, etc.

MASON

Stone Waller

A. The rates are to include for :-

- (1) All rough and fair cutting.
- (2) Wedging and pinning.
- (3) Forming grooves or raking out for flashings, roof coverings etc. and pointing with mortar.
- (4) Bedding plates.
- (5) Bedding and pointing frames.
- (6) Parging and coring flues.
- (7) Labour eaves filling.
- (8) Salient angles, squints, quoins, birdsmouths, splays and rounded angles.
- (9) Forming reveals.
- (10) Forming, leaving or cutting chases, holes and mortices.
- (11) Cutting and pinning.
- (12) All making good.
- (13) Sundry items of a like nature.

ROOFER

Method of Measurement

- A. Tiling, slating and profiled sheet covering are measured the nett area covered. Felt, membranes and laminated sheet coverings are measured as the area in Contract with the base.

Concrete Tiling, Clay Tiling and Metal Roof Coverings

- B. The rates are to include for :-
- (1) Laps.
 - (2) All straight, skew and circular cutting at eaves verges, top edges, abutments, valleys, hips and the like.
 - (3) Holes for pipes and the like.

Flexible Waterproof Membrane

- C. The rates are to include for :-
- (1) Sealing tapes and adhesive.
 - (2) Narrow widths.
 - (3) Forming arises, fair edges, butt joints, etc.
- D. Rates for skirting, coverings to kerbs, etc., shall include for all angles, fair ends and any other sundry items of a like nature.
- E. Rates for linings to gutters shall include for all angles, ends, outlets and any other sundry items of a like nature.

Rendering and Screeds

- A. The rates are to include for :-
- (1) Cleaning, hacking or slurring of sub-base to form key, wetting surfaces.
 - (2) Temporary rules.
 - (3) Small quantities and narrow width.
 - (4) Rounded angles and arises.
 - (5) Working or fitting up to and around pipes, gratings etc.
 - (6) Other sundry items of a like nature.
 - (7) Making good.
 - (8) Covering up and protecting rendering and screed after laying and cleaning on completion.

Flashing and Cappings

- B. Rates for flashings and cappings are to include for laps, passing in the running lengths, fixing and pointing of edges.

CARPENTER

All work deemed to be sawn

- A. All carpenter's work shall be deemed to be left with a sawn surface unless described as wrot.

Pressure Impregnation Treatment

- B. Timber described as "pressure treated" shall mean timber subjected to pressure impregnation treatment with wood preservative in accordance with the specification.

Fixing

- C. Where work is described as "plugged" it shall include for casting in or morticing for and inserting fibrous inserts, or other approved fixing materials and fixing with suitable nails or screws to any wall or concrete surface. Where the walls are hollow block partitions, prices are to include for concrete fixing blocks and the like, built in where required.
- D. Where work is described as "cartridge fixed" or "power fixed" it shall mean fixing with cartridge fired fasteners or other equal and approved devices to any brickwall or concrete surface.

Contrary to SMM

- E. Curved work is given separately irrespective of the radius which is not stated.

Carpenter's Work

- F. The rates are to include for :-
- (1) Short lengths.
 - (2) Cutting, notching, boring, sinking, pelleting, fitting, trimming, mitring, halving, morticing, tenoning, dove-tailing, scarfing and wedging.
 - (3) All ends.
 - (4) Splayed edges.
 - (5) Temporary supports.
 - (6) Fixing with nails and glue.
 - (7) Sundry items of a like nature.
- G. The rates for insulating board, woodwool board, etc. shall include for :-
- (1) Narrow widths and small quantities.
 - (2) Cutting and boring holes for pipes, etc.
 - (3) Setting out the ceiling as shown on the drawings with equal margins all round.

JOINER

Joiner Timber

- A. All joinery timber shall be kiln-dried, selected and left clean for staining or clear finish.
- B. All joinery timber shall be wrot unless otherwise stated. Unless described as “finished”, the dimensions of all wrot timber are nominal. Wrot timber shall be within a tolerance of 2.5mm for each wrot from the nominal size.

Pressure Impregnation Treatment

- C. Timber described as “pressure treated” shall mean timber subjected to pressure impregnation treatment with wood preservative in accordance with the specification.

Fixing

- D. Where work is described as “plugged” it shall include for casting in or morticing for and inserting fibrous inserts, or other approved fixing materials and fixing with suitable nails or screws to any wall or concrete surface. Where the walls are hollow block partitions, prices are to include for concrete fixing blocks and the like, built in where required.
- E. Where work is described as “cartridge fixed” or “power fixed” it shall mean fixing with cartridge fired fasteners or other equal and approved devices to any brickwall or concrete surface.

Classification of Labour

- F. Rebates shall be deemed to include splay rebates. Splays shall be deemed to include chamfers. Grooves shall be deemed to include throats.
- G. Rates for all labours such a rebates, grooves, chamfers and any other sundry lineal items of a like nature are to include for all stopped work and work across grain.

Contrary to SMM

- H. Curved work is given separately irrespective of the radius which is not stated.
- I. Enrichments in mouldings are not separately measured but described together with the work on which it occurs.
- J. Fittings, e.g. cupboards, tables, counters, cabinets and the like are not measured in detail. Such items are generally described giving the length, width and height and remunerated. All items integral to and incidental to the fittings, viz. drawers, timber backings, moulding, steel framing, ironmongery, hardware, fixing accessories, etc. are deemed included with the fitting.

JOINER (Cont'd)

Joinery Work

- A. The rates are to include for :-
- (1) Short lengths and small quantities.
 - (2) Narrow widths of boarding.
 - (3) Cutting and notching.
 - (4) Holes.
 - (5) Fair, fitted, returned, shaped and housed ends.
 - (6) Regular and irregular mitres.
 - (7) Angles, junctions and heading joints.
 - (8) Planting on with nails or beads and the like punched in.
 - (9) Fixing with glue or other adhesive.
 - (10) Sundry items of a like nature.
- B. Rates for all joinery work described as fixed with screws are to include for using brass screws.
- C. Rates for plywood, hardboard and any other sheet materials of a like nature are to include for all necessary cutting of holes, notches, etc.

Fixing Ironmongery

- A. The rates are to include for :-
- (1) Fixing with screws of the same finish as the ironmongery.
 - (2) Cutting, sinking, boring and morticing as required.
 - (3) Oiling, easing and adjusting all moving parts.
 - (4) Taking out and refixing after painting where necessary.
 - (5) Leaving in perfect working order.
 - (6) Handling the keys properly labeled to the Architect on completion.

STEEL, IRON AND METALWORKER

Method of Measurement

- A. All structural steelwork, whether in structures which are mainly steel framed or not is measured in accordance with the Alternative Method of Measurement expressed at Clauses 38, 39 and 40 of the SMM except that all cutting, holes and openings required for other Trades, whether made at the Shop or Site, have not been measured separately and shall be deemed to be included with the items, of structural steelwork.
- B. No allowance has been made in measurement for the weight of weld metal or for rolling margin.

Rates to Include

- C. The rates are to include for :-
 - (1) Weight of weld metal and rolling margin.
 - (2) All straight, raking, bevel and splay cutting and notching.
 - (3) All shop and site drilling, holes and openings (no deduction in weight being made for same) and in the case of structural steelwork, including those for other trades.
 - (4) Marking, hoisting and erecting including temporary braces and supports.
 - (5) Setting out, levelling and plumbing.
- D. Rates for gratings, ladders, stair balustrade, railings and gates are to include for all labour, materials and appliances in welding.
- E. Rates for all welded work exposed to view shall include for filling the welds smooth.

PLASTERER AND OTHER FINISHING TRADES

Method of Measurement

- A. Finishing work is measured the area in Contract with the base contrary to the SMM, work to beams is classified separately from work to soffits.

Thicknesses

- B. The thicknesses stated for insitu finishings, beds and backings are nominal. The Contractor is to allow for the additional thicknesses required due to structural tolerances, keying etc.

Rates to Include

- C. The rates are to include for :-
- (1) Narrow widths and small quantities.
 - (2) Temporary rules, temporary screeds, temporary supports and template.
 - (3) Cleaning, raking out joints, hacking, slurring and wetting the base to form a key.
 - (4) All notching and holes.
 - (5) Straight, raking and curved cutting.
 - (6) Working or fitting up to and making good around frames, light fittings, grilles, air bricks, sanitary fittings, switches, sockets, pipes, brackets and the like.
 - (7) Joints between different types of finishes.
 - (8) Joints between new and old finishes.
 - (9) Dubbing out to achieve the nominal thickness stated.
 - (10) Groin point and other intersections of curved surfaces.
 - (11) In respect of linear items: Short lengths, formed, cut or purpose-made angles, junctions and ends.
 - (12) In respect of in-situ finishings : internal angles, arises, rounded edges, quirks, throats, rounded coves and external angles not exceeding 25mm radius.
 - (13) In respect of mosaic : setting one row of tesserae at and angle of 45 degrees at junctions of horizontal and vertical surfaces.
 - (14) In respect of carpeting : sewn and taped seams in carpets and underlays; matching patterns in patterned carpets.
 - (15) Masking of adjacent work.
 - (16) All other sundry items of a like nature.

PLASTERER AND OTHER FINISHING TRADES (Cont'd)

- D. Rates for laying of polished granite and marble slabs to walls are to include for metal anchorages and all necessary fixing accessories.

Specialist Suspended Ceilings

- E. Ceiling areas are measured nett, after deducting all voids and openings exceeding 0.50 square metres in area.
- F. Cutting or leaving openings for light fittings, air-conditioning grilles, etc. are payable separately only where special members and extra hangers are required to support the fittings, grilles, etc. In all other cases, they are deemed to be included in the rates for general ceilings.
- G. Rates for specialist's suspended ceilings are to include for :-
- (1) Cutting of tiles or panels.
 - (2) Forming small perforation in tiles or panels.
 - (3) Suspension system including edge framings and hangers.
 - (4) Narrow widths and small quantities.
 - (5) Trimming around isolated columns, unless special members are required.

Supply of P.C. Rated Items

- F. The P.C. rates for supply of tiles and finishes and the actual cost of the selected tiles and finishes shall include for delivery to the site.
- G. Different types of tiles are measured nett from the drawings in accordance with the SMM and payment shall be based on nett quantities as laid.
- H. The rates are to include for :-
- (1) Supply and delivery of the tiles and finishes to the site.
 - (2) Finance charges for payment to the Suppliers in accordance with the terms of the Contract provisions.
 - (3) Administrative charges and profit.
 - (4) Any other financial cost in connection with the supply of tiles and finishes under P.C. supply rates.
- I. The P.C. supply rates will be adjustable against the actual cost of the selected tiles and finishes in each case. The same percentage addition as allowed for by the Contractor in his pricing will be added back to the actual cost for the supply of tiles and finishes in each case.

PLASTERER AND OTHER FINISHING TRADES (*Cont'd*)

Laying of P.C. Rated Items

J. The rates are to include for :-

- (1) Taking delivery at site.
- (2) Sorting, storing and protecting as necessary.
- (3) Breakages, wastage, etc.
- (4) Laying to patterns.
- (5) Working with mosaic and tiles of all sizes.
- (6) Cutting and trimming of tiles and finishes, including circular and splay cutting.
- (7) Bedding and jointing in cement and sand (1 : 3) and pointing in tinted cement to match.
- (8) Adhesive compatible to the tiles and finishes to be affixed.

PLUMBER

Cast Iron Pipes

- A. The rates are to include for :-
- (1) All short lengths.
 - (2) Running joints.
 - (3) Brackets.
 - (4) Sundry items of a like nature.
- B. The rates for cast iron fittings are to include for extra joints.

Galvanised Mild Steel Pipes

- C. The rates are to include for :-
- (1) All short lengths.
 - (2) Running joints.
 - (3) Sockets.
 - (4) Connectors.
 - (5) Backnuts.
 - (6) Elbows and bends.
 - (7) Fire-bends.
 - (8) Tees.
 - (9) Diminishing pieces.
 - (10) Plugs.
 - (11) Brackets.
 - (12) Sundry items of a like nature.

Copper Pipes

- D. The rates are to include for :-
- (1) All short lengths.
 - (2) Made bends.
 - (3) Running joints.
 - (4) Brackets.
 - (5) Sundry items of a like nature.

PLUMBER (Cont'd)

PVC and Plastic Pipes

- E. The rates are to include for :-
- (1) All short lengths.
 - (2) Running joints and made bends.
 - (3) Brackets.
 - (4) Sundry items of a like nature.

Asbestos Cement Pipes

- F. The rates are to include for :-
- (1) All short lengths.
 - (2) Running joints
 - (3) Brackets.
 - (4) Sundry items of a like nature.

Concealed Pipework

- G. The rates for concealed pipework are to include for all cutting to form chases and holes and subsequent making good of all works disturbed.

ELECTRICIAN

- A. When the alternative Method of Measurement of Electrician's Work introducing the "Point" method for internal installations is adopted the rates for internal wiring are to include for :-
- (1) Chases, holes and mortices.
 - (2) Cutting away.
 - (3) Plugging and making good of walls, ceilings and other structural features where necessary.
- B. Prices for fittings shall include for fixing in any position, connecting to wiring and all necessary making good.

GLAZIER

Method of Measurement

- A. Each pane of glass is measured the nett dimensions. Panes of irregular shape are measured the smallest rectangular area out of which such irregular shape can be cut.

Contrary to SMM

- B. Holes drilled in glass are not separately measured.
- C. Polished plate glass are not classified in accordance with the sizes stated in the manufacturer's tariff.

Glass and Glazing

- D. The rates are to include for :-
- (1) Aligning patterned and wired glass.
 - (2) Blocks, setting blocks, locating blocks, distance pieces and the like accessories for fixing.
 - (3) Drilling holes and the like in glass.
 - (4) Cleaning off protective wax or tape coating in rebates prior to glazing windows, screens and doors.
 - (5) Gasket and glazing compounds recommended by glass manufacturers.
 - (6) Additional costs involved in using sheets which are larger than the manufacturer's standard stock sizes.
 - (7) Cleaning.

PAINTER

Contrary to SMM

- A. Decoration to doors, rails, skirtings, fascias, frames and the like has been grouped together and classified as “general surfaces”.

Rates to Include

- B. The rates are to include for :-
- (1) The use of different colours to walls, ceilings, doors, frames and the like in accordance with the Architect's colour scheme.
 - (2) Preparatory work such as cleaning, rubbing down, knotting, filling, stopping and the like.
 - (3) Rubbing down between coats.
 - (4) Cutting all edges to line.
 - (5) In respect of pipes and gutters: painting all tracks, wall hooks, holderbats, brackets, ears and the like.
 - (6) In respect of external paint work: additional scaffolding and staging.

EXTERNAL WORK

Other Preamble Clauses to Apply

- A. The provisions of the Preambles for “Piling”, “Demolition”, “Excavator”, “Concretor”, “Bricklayer”, “Drainlayer”, and such other trades as may be applicable shall apply to the respective works contained in this section.

PRIMARY STORMWATER DRAINAGE AND CULVERTS

Method of Measurement

- B. All stormwater drain channels and culverts are measured their straight run on plan. The Contractor shall be deemed to have allowed in their rates for stormwater drains and culvert pipes for additional lengths for grading to falls and deflecting as necessary.
- C. Cascading steps to stormwater drains are included in the description of the drains. The Contractor shall be deemed to have allowed in their Tendered rates for all necessary additional works in connection therewith.
- D. The depths of stormwater drains of the same cross-section, size and make are grouped in 150mm stages from platform level to invert level.
- E. The rates are to include for :- (*Cont'd*)
- (1) Setting out the stormwater drainage works.
 - (2) All short lengths.
 - (3) Jointing and bedding and making smooth running joints.
 - (4) Building in ends of drain or culvert pipes into sumps.
 - (5) Cutting culvert pipes for chamfers, ends, junction and for jointing.
 - (6) Additional beds and surrounds at junctions, beds, cascades, ends, etc.

PRIMARY SOIL DRAINAGE

Method of Measurement

- F. All diameters of pipes are measured and described their nominal internal diameters. Where diameter described are not available, the nearest equivalent available from manufacturers and suppliers shall be used.
- G. All pipes are measured their straight run on plan. The Contractor shall be deemed to have allowed in the pipework rates for additional lengths for grading to falls and deflecting as necessary.
- H. Vertical pipes in trench are measured separately.

EXTERNAL WORK (Cont'd)

PRIMARY SOIL DRAINAGE (Cont'd)

Method of Measurement (Cont'd)

- I. Pipes shall be measured along their centerlines over all pipes fittings, specials and branches. Lengths of pipes built into manholes and other chambers shall be measured from the inside surface of manhole or chambers.
- J. Pipe fittings and specials are enumerated as “extra over” the pipe on which it occurs. “Extra over” shall mean the cost of the pipe fitting or special so described additional to the cost of the length of pipe displaced by the pipe fitting or special, and shall include everything necessary for the complete installation and extra joints to pipes.

Pipework & Fitting Generally

- H. Pipework rates are to include for :-
 - (1) Setting out the primary soil drainage works.
 - (2) All necessary supports, saddles, slings, fixing bolts, foundation bolts for supporting pipework and equipment during installation.
 - (3) All short lengths.
 - (4) Running joints.
 - (5) Deflecting joints.
 - (6) Site tests on pipework including providing test certificates and carrying out tests on samples.
 - (7) Temporary stoppers or plugs for closing ends of uncompleted pipelines during progress of works.
 - (8) Forming permanent vertical joints along concrete pipe bedding as required.
 - (9) Purpose-made brackets and hangers within chambers, etc.
 - (10) Building in ends of pipes into or concrete chambers including providing brick-on-edge arch and concrete lintols over pipes and making good works around.
 - (11) Cleaning out interior of pipes and preparing ends of pipes for pipe joints and jointing.
 - (12) Cutting pipes for chamfers, bends, junctions and for jointing, etc.
 - (13) All mechanical and flexible couplings and suchlike joints shall include all nut, bolts, plain and spring washers, gaskets, etc. for making the complete connection.

EXTERNAL WORK (Cont'd)

WATER RETICULATION AND FIRE HYDRANTS (Cont'd)

Pipework & Fitting Generally (Cont'd)

H. Pipework rates are to include for :- (Cont'd)

- (14) External protection on all flanged joints and flexible couplings.
- (15) In addition, all exposed cast iron or steel pipes in chambers or above ground etc. shall be deemed to include painting with three coats of bituminous paint.

Testing and Commissioning of Pipelines and Manholes

I. The testing and commissioning of pipelines and manholes shall be deemed to include the provision of all plant and equipment comprising portable hydraulic pumps, blank, flanges, caps and plugs, pressure gauges, pipe connections, corks, hoses, struts, thrust blocks and all labour and everything else necessary as described in the Specification.

Method of Measurement

- J. All diameters of pipes are measured and described their nominal diameters. Where nominal diameters described are not available, the nearest equivalent of larger diameter available from manufacturers and suppliers shall be used.
- K. All pipes are measured their straight run on plan. The Contractor shall be deemed to have allowed in the pipework rates for additional lengths for grading to falls and deflecting as necessary.
- L. Vertical pipes in trench are measured separately.
- M. Pipes shall be measured along their centrelines over all pipe fittings, specials and branches. Lengths of pipes built into chambers shall be measured from the inside surface of chambers.
- N. Pipe fittings of specials are separately enumerated ; the rates of all fittings, specials, etc. shall include everything necessary for the complete installation and extra joints to pipes.
- O. Pipework rates are to include for :-
 - (1) Setting out the water reticulation works.
 - (2) Deflecting joints.
 - (3) Site tests and works tests on pipework, mechanical couplings, etc. including providing test certificate and carrying out tests on samples.
 - (4) Temporary plugs or stoppers for closing cut ends of uncompleted pipelines during progress of works.

EXTERNAL WORK (*Cont'd*)

WATER RETICULATION AND FIRE HYDRANTS (*Cont'd*)

Method of Measurement (*Cont'd*)

- O. Pipework rates are to include for :- (*Cont'd*)
- (5) Building in ends of pipe into concrete structure and making good works around.
 - (6) Cutting pipes for chamfers, bends, junctions and for jointing.
 - (7) Cleaning out interior of pipes and preparing ends for pipe joints and jointing.
 - (8) External protection on all running joints, flanged joints and flexible couplings.
 - (9) Painting all uncoated surfaces of pipework, valves and fittings, etc. with two coats of bituminous paint before or after laying and jointing.
 - (10) The rates for valve, hydrants and such like specials are to include for all component pipes necessary for the complete installation including all fixing accessories and extra joints to pipes.
- P. The rates for galvanised mild steel pipes shall be deemed to include for all running joints, short lengths, sockets, connectors, backnuts, elbows, bends, tees, diminishing pieces, plugs and such like items.

Testing and Commissioning of Water Reticulation System

- Q. The testing and commissioning of the water reticulation system shall be deemed to include the provision of all plant and equipment, portable hydraulic pumps, blank, flange, caps and plugs, pressure gauges, pipe connectors, corks, hoses, struts, thrust blocks and all labour and everything else necessary as described in the Specification.

EXTERNAL WORK (Cont'd)

ROADS

Roads and Hardstanding Generally

R. The rates are to include for :-

- (1) Sampling and testing of aggregates and bituminous mixtures as specified.
- (2) Protecting mixed material in transit and while awaiting tipping.
- (3) Laying, rolling and consolidating sub-base, base course, binder and wearing course in layers or sequence as required.
- (4) Laying by hand of narrow strips remaining alongside machine work.
- (5) Making joints, working around manhole covers and other like projections.
- (6) Finishing surfaces to gradient and falls.
- (7) Added fillers to bituminous mixture.
- (8) Maintenance of surfaces as work progresses.

TURFING

Turfing Generally

S. The rates are to include for :-

- (1) Carrying out of the Works in such sequence or section as the Architect may direct.
- (2) Preparatory work in forking and loosening ground surface.
- (3) Dressing with fertilizer, tending, watering, covering with wet sacking, moving and protection of newly turfed areas.

DEFINITION OF INVERT DEPTH

Invert depth for surface water drains, sump and manholes shall mean the depth from the top of side walls of surface water drains or sump or top of cover slab of manholes to the lowest point of the internal surface (invert) of surface water drains or sump or manholes as the case may be, when completed.

Invert depth for culverts and monsoon drains shall mean the depth from formation levels to the lowest point of the internal surface (invert) of culverts or monsoon drains as the case may be, when completed.

DESIGN AND BUILT ITEM

The Lump sum price entered into the bills of quantities in respect of a design and built item shall be deemed to include all charges for transport, handling, custom duties, sales tax and other taxes, where applicable, and other costs and expenses (including professional consultants endorsement), overheads and profit for the design and construction of the item complete. No tax exemption will be allowed by the Government.