

Sutherland Road, Dornoch

THE BILL OF QUANTITIES

NOTE: No additional items to be added by Tenderers to this Bill of Quantities without the prior authorisation of the Employer.

Sutherland Road, Dornoch

PREAMBLE TO BILL OF QUANTITIES

1. GENERAL DIRECTIONS

In this Bill of Quantities the sub-headings and item descriptions identify the work covered by the respective items, but the exact nature and extent of the work to be performed is to be ascertained by reference to the Drawings, Specification and Conditions of Contract as the case may be read in conjunction with the matters listed against the relevant marginal headings "Item coverage" in Part IV of the Method of Measurement for Road and Bridge Works published by Her Majesty's Stationery Office in 1977 as amended by Supplement No.1 published by Her Majesty's Stationery Office in 1978. The rates and prices entered in the Bill of Quantities shall be deemed to be the full inclusive value of the work covered by the several items including the following, unless expressly stated otherwise:

- (i) Labour and costs in connection therewith.
- (ii) The supply of materials, goods, storage and costs in connection therewith including waste and delivery to site.
- (iii) Plant and costs in connection therewith.
- (iv) Fixing, erecting and installing or placing of materials and goods in position.
- (v) Temporary Works.
- (vi) The effect of the phasing of the Works of alterations or additions to existing services and mains to the extent that such work is set forth or reasonably implied in the documents on which the tender is based.
- (vii) General obligations, liabilities and risks involved in the execution of the Works set forth or reasonably implied in the documents on which the tender is based.
- (viii) **In the case of all items in Section 5 - Drainage and Section 6 - Earthworks, allowing for and working in and dealing with existing flows of water.**
- (ix) Establishment charges, overheads and profit.

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2. MEASUREMENT

The measurement of work shall be computed net from the Drawings unless stated otherwise in the Method of Measurement.

The Contractor shall allow in the rates and prices for waste.

3. UNPRICED ITEMS

All items must be priced.

4. USE OF ALTERNATIVE MATERIALS OR DESIGNS

Where in the Contract a choice of alternative materials or designs is indicated for a given purpose, the description billed and the rates and prices inserted shall be deemed to cover any of the permitted alternative materials or designs which the Contractor may elect to use and all measurement of such work shall be based upon the thinnest alternative construction permitted by the Contract.

5. PRIVATELY AND PUBLICLY OWNED SERVICES

The information in the Contract as to the whereabouts of existing services and mains is believed to be correct but the Contractor shall not be relieved of his obligations under Clause 11 of the Conditions of Contract. The Contractor shall include in his rates and prices for taking measures for the support and full protection of pipes, cables and other apparatus during the progress of the Works and for keeping the Engineer informed of all arrangements he makes with the owners of privately owned services, Statutory Undertakers and Public Authorities as appropriate and for ensuring that no existing mains and services are interrupted without the written consent of the appropriate authority.

6. LABOURS

Labours in connection with nominated Sub-Contractors shall include:

- (a) in the case of work or services executed, for affording the use of existing working space, access, temporary roads, erected scaffolding, working shelters, staging, ladders, hoists, storage, latrines, messing, welfare and other facilities existing on Site and the provision of protection, water, electricity for lighting and clearing away rubbish and debris arising from the work;
- (b) in the case of goods, materials or services supplied, for taking delivery, unloading, storing, protecting and returning crates, cartons and packing materials.

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7. ROADWORKS OVERALL REQUIREMENTS

The Contractor shall allow in the rates and prices for roadworks for complying with the requirements of the Series No.700 Roadworks Overall Requirements clauses of the Specification.

8. NOT TAKEN

9. AMENDMENT TO THE METHOD OF MEASUREMENT

For the purpose of this Contract the Method of Measurement referred to in Preambles 1 General Directions is amended in accordance with the Appendices immediately following.

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APPENDIX TO SECTION 2: SITE CLEARANCE

ADD THE FOLLOWING NEW PARAGRAPHS

Take Up or Down and Set Aside or Remove to Store Off Site

UNITS

7 . The units of measurement shall be:

Take up or down and set aside or remove to store off site the following:

- (i) gully gratings and frames and the like
..... number
- (ii) kerbing, channelling, edging and the like
..... linear metre
- (iii) lamp standards, traffic signs, street furniture and the like
..... number

ITEMISATION

8 . Separate items shall be provided for take up or down and set aside or remove to store off site in accordance with Part II paragraph 3 and 4 and the following

Group	Feature
I	1. Take up or down and set aside. 2. Take up or down and remove to store off site.
II	1. Gully gratings and frames and the like. 2. Kerbing, channelling, edging and the like. 3. Lamp standards, traffic signs, street furniture, and the like.
III	1. Different materials.

TAKE UP OR DOWN AND SET ASIDE

9 .The items for take up or down and set aside shall in accordance with the Preambles to Bill of Quantities General Directions include for:

ITEM COVERAGE

- (a) breaking up foundations, separating materials;
- (b) cleaning, stacking, protecting and labelling;
- (c) disconnecting and sealing services;

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- (d) backfilling with suitable material from any source and compaction;
- (e) making good to severed ends of existing walls or fences;
- (f) storage facilities;
- (g) disposal of surplus material;
- (h) replacing items damaged during the foregoing operation;
- (i) transporting to new location.

TAKE UP OR
DOWN AND
REMOVE TO
STORE OFF
SITE

10. The items for take up or down and remove to store off site shall in accordance with the Preambles to Bill of Quantities General Directions include for:

ITEM COVERAGE

- (a) breaking up foundations, separating materials;
- (b) cleaning, protecting and labelling;
- (c) transporting to store off site, nominated by the Engineer;
- (d) unloading and stacking;
- (e) disconnecting and sealing services;
- (f) backfilling with suitable material from any source and compaction;
- (g) making good to severed ends of existing walls or fences;
- (h) disposal of surplus material;
- (i) replacing items damaged during the foregoing operations;
- (j) filling gully pots with concrete.

APPENDIX TO SECTION 5: DRAINAGE AND SERVICE DUCTS

Raising, or Lowering Covers and Gratings on Existing Chambers and Gullies

UNITS

57. The unit of measurement shall be:

- i) raising the level, or lowering the level
.....number.

ITEMISATION

58. Separate items shall be provided for raising or lowering covers and gratings on existing chambers and gullies in accordance with Part 11 paragraphs 3 and 4 and the following:

Group	Feature
I	1 Raising the level 2 Lowering the level
III	1 Different types of cover 2 Different types of grating
IV	1 Different sizes of chamber 2 Different sizes of gully
V	1 Differing construction of chamber 2 Differing construction of gully
VI	1 150 mm or less 2 Exceeding 150 mm but not exceeding 300 mm and so on in stages of 150 mm

RAISING OR LOWERING THE LEVEL

59. The items for raising or lowering the level shall in accordance with the Preambles to Bill of Quantities General Directions include for:

ITEM COVERAGE

- (a) excavation in any material including rock and reinforced concrete and loading into transport, upholding the sides and keeping earthworks free of water;
- (b) taking precautions to avoid damage to sewers and drains;
- (c) take up existing cover and grating including frame and clean and set aside for reuse;
- (d) demolition and preparation to receive new construction;

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- (e) construction of walls, roof and cover slabs and shafts including in situ concrete (as Section 16 paragraph 4) surrounds and corbelling for cover and making good;
- (f) step irons, safety chains, ladders, handholds and other fittings;
- (g) bedding existing cover or grating including frame;
- (h) formwork(as Section 14 paragraph 4);
- (i) reinforcement (as Section 15 paragraph 5);
- (j) backfilling with in situ concrete (as Section 16 paragraph 4) or suitable material from any source and compaction;
- (k) disposal (as Section 6 paragraph 25) of unsuitable material and surplus material.

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**APPENDIX TO SECTION 29: ACCOMODATION WORKS AND WORKS
FOR STATUTORY UNDERTAKERS**

ADD THE FOLLOWING NEW PARAGRAPHS

Protection of cable , cable duct or pipe

UNITS	5 . The units of measurement shall be (i) expose existing cable, cable duct or pipe and protectlinear metre.									
MEASUREMENT	6 . Measurement of expose existing cable, cable ducts or pipe shall be the summation of their individual lengths measured along the centre line of the cable, cable duct or pipe.									
ITEMISATION	7 . Separate items shall be provided for expose existing cable, cable duct or pipe in accordance with Part II paragraphs 3 and 4 and the following: ----- <table><tr><th>Group</th><th>Feature</th></tr><tr><td rowspan="2">I</td><td>1. Depth to top of cable, cable duct or pipe 1.0 metres or less.</td></tr><tr><td>2. Depth to top of cable, cable duct or pipe exceeding 1.0 metre.</td></tr><tr><td rowspan="3">II</td><td>1. Concrete mat 600 mm. wide by 150 mm. thick over 100 mm. fine sand.</td></tr><tr><td>2. Split duct</td></tr><tr><td>3. 150 mm. thick concrete surround.</td></tr></table> -----	Group	Feature	I	1. Depth to top of cable, cable duct or pipe 1.0 metres or less.	2. Depth to top of cable, cable duct or pipe exceeding 1.0 metre.	II	1. Concrete mat 600 mm. wide by 150 mm. thick over 100 mm. fine sand.	2. Split duct	3. 150 mm. thick concrete surround.
Group	Feature									
I	1. Depth to top of cable, cable duct or pipe 1.0 metres or less.									
	2. Depth to top of cable, cable duct or pipe exceeding 1.0 metre.									
II	1. Concrete mat 600 mm. wide by 150 mm. thick over 100 mm. fine sand.									
	2. Split duct									
	3. 150 mm. thick concrete surround.									
EXPOSE EXISTING CABLE, CABLE DUCT OR PIPE AND PROTECT	8 . Items for expose existing cable, cable duct or pipe and protect shall in accordance with the Preambles to Bill of Quantities General Directions include for:									
ITEM COVERAGE	(a) careful excavation, using hand tools if so instructed by the Engineer, in any material including existing pavement to locate and expose existing cable,cable duct or pipe with trench 600mm wide; (b) protecting and backfilling.									

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Excavate and backfill trench for statutory undertaker

- UNITS 9 . The units of measurement shall be:
- (i) Excavate and backfill trench
 linear metre.
- MEASUREMENT 10 . The measurement shall be taken as for
 sewers, drains, piped culverts and ducts.
- EXCAVATE 11. The items shall in accordance with the
AND BACKFILL Preambles to Bill of Quantities General
TRENCH Directions include for:
- ITEM COVERAGE (a) excavation of suitable material (as
 Section 6 paragraph 13);
 (b) excavation of unsuitable material (as
 Section 6 paragraph 14);
 (c) providing, laying and compacting pipe
 bedding material to Cl. 503, haunching and
 surround material;
 (d) allowing time for statutory undertaker to
 lay cables, pipes, bends and connections;
 (e) hangers, stools and discrete supports;
 (f) reinstating severed land drains disturbed
 or damaged;
 (g) backfilling with suitable material from
 any source and compaction;
 (h) disposal (as Section 6, paragraph 25) of
 unsuitable material and surplus suitable
 material;
 (i) recording, staking and labelling of
 junctions and terminations laying marker
 tape over the undertaker's plant;
 (j) temporary re-instatement of the road
 pavement to the satisfaction of the
 Engineer.

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Excavate trench, lay duct and backfill for statutory undertaker

UNITS 12. The units of measurement shall be:

- (i) Excavate trench, lay duct and backfill
.....linear metre.

MEASUREMENT 13. The measurement shall be taken as for
sewers, drains, piped culverts and ducts.

EXCAVATE 14. The items shall in accordance with the
AND BACKFILL Preambles to Bill of Quantities General
TRENCH Directions include for:

- ITEM COVERAGE (a) excavation of suitable material (as
Section 6 paragraph 13);
(b) excavation of unsuitable material (as
Section 6 paragraph 14);
(c) cutting, laying, jointing, and bedding pipes
and fittings;
(d) buildings in pipes to headwalls and outfall
works;
(e) providing, laying and compacting pipe
bedding material to Cl. 503, haunching and
surround material;
(f) allowing time and attendance to statutory
undertaker to lay cables, etc;
(g) hangers, stools and discrete supports;
(h) reinstating severed land drains disturbed
or damaged;
(i) backfilling with suitable material from
any source and compaction;
(j) disposal (as Section 6, paragraph 25) of
unsuitable material and surplus suitable
material;
(k) cleaning;
(l) recording, staking and labelling of
junctions and terminations, laying uPVC
marker tape over the position of the duct;
(m) fixing draw ropes, removeable stoppers,
marker blocks and posts;
(n) temporary re-instatement of the road
pavement to the satisfaction of the
Engineer.

SECTION 1 - PRELIMINARIES

Item	Description of Work	Unit	Quant	Rate	Amount
	<u>Temporary Accommodation</u>				
1.1	Erection of principal offices for the Engineer, supply and maintainance of equipment as appendix to Clause 101.	Item			
1.2	Servicing of principal offices for the Engineer.	Item			
1.3	Dismantling of principal offices for the Engineer.	Item			
1.4	Erection of offices and messes for the Contractor.	Item			
1.5	Servicing of offices and messes for the Contractor.	Item			
1.6	Dismantling of offices and messes for the Contractor.	Item			
1.7	Erection of stores and workshops for the Contractor.	Item			
1.8	Servicing of stores and workshops for the Contractor.	Item			
1.9	Dismantling of stores and workshops for the Contractor.	Item			
	<u>Operatives for the Engineer</u>				
1.10	Chainman for the Engineer (PROVISIONAL)	Day	20		
	<u>Traffic Safety and Control</u>				
1.11	Traffic Safety and Control.	Item			
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SECTION 1 - PRELIMINARIES

Item	Description of Work	Unit	Quant	Rate	Amcunt
	<u>Temporary Diversion of Traffic</u>				
1.12	Taking measures for the construction of temporary diversions of traffic at those locations listed in the schedule to Clause 104 but not measured separately.	Item			
1.13	Maintenance of temporary diversions of traffic at those locations listed in the schedule to Clause 104 but not measured separately.	Item			
1.14	Removal of temporary diversions of traffic at those locations listed in the schedule to Clause 104 but not measured separately.	Item			
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SECTION 2 - SITE CLEARANCE

Item	Description of Work	Unit	Quant	Rate	Amount
	<u>General Site Clearance</u>				
2.1	General Site Clearance	HA	0.35		
	<u>Specific Site Clearance</u>				
2.2	Take up or down and remove to H.R.C. Depot, Brora, all existing gulley gratings and frames.	No	6		
2.3	Take up or down and remove to H.R.C. Depot, Brora, all existing lamp standards, traffic signs, street furniture and the like	No	3		
	<u>Location of Cables, Cable Ducts etc.</u>				
2.4	Hand excavate trial pits to locate existing services and backfill, approx. 0.5m x 0.5m square depth not exceeding 1.0m to Clause 203 PROVISIONAL	No	10		
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SECTION 5 - DRAINAGE

Item	Description of Work	Unit	Quant	Rate	Amount
	<u>Sewers, Drains, Piped Culverts and Ducts</u>				
5.1	Connection of 150mm diameter pipe to existing 300mm sewer or drain	No	4		
5.2	Connection of 150mm diameter pipe to existing 6" sewer or drain	No	2		
5.3	Connection of 150mm diameter pipe to existing manhole or catchpit	No	6		
5.4	150mm diameter clay pipe extra strength in sewer or drain on bed type B depth invert 1.5 metres or less	LM	50		
	<u>Manholes</u>				
5.5	Precast concrete manhole 1050mm diameter, with ductile iron Grade MA-T cover and frame depth to invert 2m or less	No	1		
	<u>Gullies</u>				
5.6	Trapped street gully with ductile iron Grade GAL-450 grating and frame	No	12		
5.7	Raising the level of existing gully by 150mm or less (PROVISIONAL)	No	1		
	<u>Offlets</u>				
5.8	Offlets as SD/D10 2.0m long	No	10		
	<u>Soft Spots and Other Voids</u>				
5.9	Excavation of soft spots and other voids in bottom of trenches, manholes and gullies. (PROVISIONAL)	CM	10		
5.10	Filling of soft spots and other voids in bottom of trenches, manholes and gullies with pipe bedding material. (PROVISIONAL)	CM	10		
	<u>Extra Drainage Works</u>				
5.11	Allow Provisional Sum of £2,000 for extra drainage works as directed by the Engineer.	Sum			2000.00
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SECTION 6 - EARTHWORKS

Item	Description of Work	Unit	Quant	Rate	Amount
	<u>Excavation</u>				
	NOTE: For the purposes of measurement all excavated material, other than the scheme topsoil requirement, shall be deemed to be unsuitable.				
6.1	Excavate topsoil.(Topsoil in excess of this quantity shall be measured as unsuitable)	CM	20		
6.2	Excavate unsuitable material in cuttings and excavation in bulk in the open.	CM	1050		
	<u>Disposal of Material</u>				
6.3	Disposal of unsuitable material in tips off site.	CM	1050		
	<u>Imported Fill</u>				
6.4	Imported suitable material fill deposited in embankments and other areas of fill other than adjacent to structures.	CM	250		
6.5	Imported suitable material fill deposited on sub-base material under verges, central reserves and side slopes.	CM	25		
	<u>Compaction of Fill</u>				
6.6	Compaction of fill material deposited in embankments and other areas of fill other than adjacent to structures.	CM	250		
6.7	Compaction of fill material deposited on sub base material under verges.	CM	25		
	<u>Soft Spots and Other Voids</u>				
6.8	Excavation of soft spots below cuttings or under embankments. PROVISIONAL.	CM	50		
6.9	Filling of soft spots or other voids below cuttings or under embankments with suitable material fill PROVISIONAL.	CM	50		
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SECTION 6 - EARTHWORKS

[illegible]

SECTION 8 SUB-BASE AND ROAD BASE (Revised)

Item	Description of Work	Unit	Quant	Rate	Amount
8.1	Group A sub-base.	CM	415		
8.2	Type 1 sub-base	CM	50		
8.3	Dense bitumen macadam roadbase 100mm thick in carriageway	SM	1600		
8.4	20mm nominal size Dense Bitumen Macadam regulating course. (Conversion factor 0.413 m ³ /tonne).	t	20		
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SECTION 9 FLEXIBLE SURFACING

Item	Description of Work	Unit	Quant	Rate	Amount
9.1	Dense Bitumen Macadam 28mm aggregate basecourse 65mm thick in carriageway.	SM	1625		
9.2	Dense Bitumen Macadam 14mm aggregate wearing course 35mm thick in carriageway.	SM	1725		
9.3	Dense Bitumen Macadam 14mm aggregate wearing course 35mm thick in temporary traffic island	SM	60		
9.4	Dense Bitumen Macadam 14mm aggregate wearing course 40mm thick in private accesses.	SM	50		
9.5	10mm Nominal size Dense Bitumen Macadam regulating course (conversion factor 0.413 m ³ /tonne.)	t	10		
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SECTION 11 KERBS AND FOOTWAYS

Item	Description of Work	Unit	Quant	Rate	Amount
	<u>Kerbing</u>				
11.1	Precast concrete kerbing Type BK laid straight or curved over 12m radius.	LM	180		
11.2	Precast concrete kerbing Type BK laid to curves of 12m radius or less.	LM	5		
11.3	Precast concrete kerbing Type DK laid straight or curved over 12m radius.	LM	60		
11.4	Precast concrete kerbing Type LTK (BK) laid straight or curved over 12m radius.	LM	8		
11.5	Precast concrete kerbing Type RTK (BK) laid straight or curved over 12m radius or less.	LM	8		
	<u>Footways</u>				
11.6	Flexible paved footway permitted alternative materials 150mm thick in total as Drawing No 301/5.	SM	375		
	<u>Interlocking Traffic Blocks</u>				
11.7	Black and grey interlocking precast concrete traffic blocks as SD/C22	LM	26		
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SECTION 29 ACCOMMODATION WORKS AND WORKS FOR STATUTORY UNDERTAKERS

Item	Description of Work	Unit	Quant	Rate	Amount
	<p>ALL SERVICE TRENCHES SHALL BE EXCAVATED BY HAND</p> <p><u>North of Scotland Hydro Electric Board</u></p> <p><u>Note:</u></p> <p>Cable and yellow uPVC marker tape shall be provided by the North of Scotland Hydro Electric Board. All ducts to be provided by the Contractor. Contractors rates to include for bedding material.</p>				
29.1	Excavate and backfill trench by hand 525mm digging below footpath level for NOSHEB LV cable.	LM	25		
29.2	Excavate trench 900mm deep below carriageway level, lay 100mm dia uPVC duct for NOSHEB LV cable and backfill. (PROVISIONAL)	LM	8		
	<p><u>Highland Regional Council, Water and Sewerage Department</u></p> <p><u>Note</u></p> <p>The following works are to be carried out under the supervision of and to the complete satisfaction of H.R.C. Water and Sewerage Dept, who will supply and lay pipes, connections and fittings. Contractors rates to include for bedding material.</p>				
29.3	Expose existing 300mm foul sewer and protect with 150mm class 22.5/20 concrete surround. (PROVISIONAL)	IM	90		
29.4	Transfer existing cast iron water toby from carriageway to new footpath. (PROVISIONAL)	No	4		
29.5	Lowering the level of water toby and frame by 150mm or less.	No	1		
29.6	Raising the level of water toby and frame by 150mm or less.	No	9		
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SECTION 29 ACCOMMODATION WORKS AND WORKS FOR STATUTORY UNDERTAKERS

Item	Description of Work	Unit	Quant	Rate	Amount
29.7	Lowering the level of fire hydrant cover and frame by 150mm or less.	No	1		
29.8	Lowering the level of 0.5m x 0.5m foul sewer manhole cover and frame on 0.5m x 0.5m brick chamber by 150mm or less.	No	3		
29.9	Raising the level of 0.5m x 0.5m foul sewer manhole cover and frame on 0.5m x 0.5m brick chamber by 150mm or less.	No	1		
	<u>British Telecom</u>				
	Note: The following works shall be carried out in accordance with British Telecom Specification IN139 and under the supervision of and to the complete satisfaction of British Telecom.				
	Ducts, covers and frames for joint boxes shall be provided by British Telecom.				
29.10	Expose existing cable, cable duct or pipe depth to top of cable, cable duct or pipe 1.0 metres or less and protect with concrete mat 300mm wide by 150mm thick over 100mm fine sand. (PROVISIONAL)	IM	100		
29.11	Excavate trench by hand digging, lay 89mm dia uPVC duct 450mm below footpath level for British Telecom cable and backfill.	IM	25		
29.12	Jointing chamber JRC 11	No	2		
29.13	Jointing chamber Jrc 12	No	1		
29.14	Connection of single way 90mm diameter uPVC duct to existing joint box.	No	1		
29.15	Lowering the level of existing JRC 1 jointing chamber cover and frame on reinforced concrete chamber by 150mm or less.	No	2		
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SECTION 29 ACCOMMODATION WORKS AND WORKS FOR STATUTORY UNDERTAKERS

Item	Description of Work	Unit	Quant	Rate	Amount
	<u>Highland Regional Council, Street Lighting Department</u> Note: Cable, yellow marker tape, columns, and PVC ducting to be provided by the Highland Regional Council, Department of Roads and Transport Street Lighting Section.				
29.16	Uplift from Lighting Section store at Brora, excavate for and erect 6m steel lighting column complete with bracket, including setting base in concrete class 22.5/37.5 backfilling and disposal of all surplus material.	No	10		
29.17	Uplift from Lighting Section store at Brora, excavate for and erect steel lighting column for illuminated traffic sign including setting base in concrete class 22.5/37.5 backfilling and disposal of all surplus material.	No	3		
29.18	Uplift from Lighting Section store at Brora, excavate for and lay 6 mm PVC SWA PVC 2m core 600/100 Volt grade street lighting cable in track by hand digging 450mm deep below footpath level including bedding and surrounding cable with 76.2mm layer of sand, backfilling and laying yellow PVC marker tape over the position of the cable and just under the surface of the verge and footpath also disposal of all surplus material. Allow for looping cable in and out of column leaving sufficient cable to reach the top of the column door.	No	50		
29.19	Uplift from Lighting Section store at Brora, excavate for and lay 76.2mm PVC duct in track 825mm deep below carriageway level including threading cable through duct, backfilling and laying yellow PVC marker tape over the position of the duct including disposal of all surplus material.	No	35		
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SECTION 29 ACCOMMODATION WORKS AND WORKS FOR STATUTORY UNDERTAKERS

Item	Description of Work	Unit	Quant	Rate	Amount
29.20	<u>Combined Services Trench</u> Excavate combined services trench by hand digging 525mm deep below finished footpath level for NOSHEB LV cable, Street Lighting cable and 89mm British Telecom duct and backfill all as SD/SL3.	LM	250		
29.21	Allow the Provisional Sum of £1000 for provision of all plant and labour necessary for assisting the Public Utilities as directed by the Engineer.	Sum			1000.00
29.22	<u>Protection of Services</u> Class 30/20 Concrete mat protection 100mm thick by 500mm wide to existing or proposed services. PROVISIONAL.	IM	25		
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SECTION 1 - PRELIMINARIES

Temporary Accommodation

- | | | |
|-----|---|------|
| 1.1 | Erection of principal offices for the Engineer, supply and maintainance of equipment as appendix to Clause 101. | Item |
| 1.2 | Servicing of principal offices for the Engineer. | Item |
| 1.3 | Dismantling of principal offices for the Engineer. | Item |
| 1.4 | Erection of offices and messes for the Contractor. | Item |
| 1.5 | Servicing of offices and messes for the Contractor. | Item |
| 1.6 | Dismantling of offices and messes for the Contractor. | Item |
| 1.7 | Erection of stores and workshops for the Contractor. | Item |
| 1.8 | Servicing of stores and workshops for the Contractor. | Item |
| 1.9 | Dismantling of stores and workshops for the Contractor. | Item |

Operatives for the Engineer

- | | | | |
|------|--|-----|----|
| 1.10 | Chainman for the Engineer
(PROVISIONAL) | Day | 20 |
|------|--|-----|----|

Traffic Safety and Control

- | | | |
|------|-----------------------------|------|
| 1.11 | Traffic Safety and Control. | Item |
|------|-----------------------------|------|

SECTION 1 - PRELIMINARIES

Temporary Diversion of Traffic

- | | | |
|------|--|------|
| 1.12 | Taking measures for the construction of temporary diversions of traffic at those locations listed in the schedule to Clause 104 but not measured separately. | Item |
| 1.13 | Maintenance of temporary diversions of traffic at those locations listed in the schedule to Clause 104 but not measured separately. | Item |
| 1.14 | Removal of temporary diversions of traffic at those locations listed in the schedule to Clause 104 but not measured separately. | Item |

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SECTION 2 - SITE CLEARANCE

General Site Clearance

2.1	General Site Clearance	HA	0.35
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Specific Site Clearance

2.2	Take up or down and remove to H.R.C. Depot, Brora, all existing gulley gratings and frames.	No	6
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2.3	Take up or down and remove to H.R.C. Depot, Brora, all existing lamp standards, traffic signs, street furniture and the like	No	3
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Location of Cables, Cable Ducts etc.

2.4	Hand excavate trial pits to locate existing services and backfill, approx. 0.5m x 0.5m square depth not exceeding 1.0m to Clause 203 PROVISIONAL	No	10
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SECTION 5 - DRAINAGE

Sewers, Drains, Piped Culverts and Ducts

5.1	Connection of 150mm diameter pipe to existing 300mm sewer or drain	No	4
5.2	Connection of 150mm diameter pipe to existing 6" sewer or drain	No	2
5.3	Connection of 150mm diameter pipe to existing manhole or catchpit	No	6
5.4	150mm diameter clay pipe extra strength in sewer or drain on bed type B depth invert 1.5 metres or less	IM	50

Manholes

5.5	Precast concrete manhole 1050mm diameter with ductile iron Grade MA-T cover and frame depth to invert 2m or less	No	1
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Gullies

5.6	Trapped street gully with ductile iron Grade GA1-450 grating and frame	No	12
5.7	Raising the level of existing gully by 150mm or less (PROVISIONAL)	No	1

Offlets

5.8	Offlets as SD/D10 2.0m long	No	10
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Soft Spots and Other Voids

5.9	Excavation of soft spots and other voids in bottom of trenches, manholes and gullies. (PROVISIONAL)	CM	10
5.10	Filling of soft spots and other voids in bottom of trenches, manholes and gullies with pipe bedding material. (PROVISIONAL)	CM	10

Extra Drainage Works

5.11	Allow Provisional Sum of £2,000 for extra drainage works as directed by the Engineer.	Sum	2000.00
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Excavation

NOTE: For the purposes of measurement all excavated material, other than the scheme topsoil requirement, shall be deemed to be unsuitable.

- | | | |
|-----|---|---------|
| 6.1 | Excavate topsoil.(Topsoil in excess of this quantity shall be measured as unsuitable) | CM 20 |
| 6.2 | Excavate unsuitable material in cuttings and excavation in bulk in the open. | CM 1050 |

Disposal of Material

- | | | |
|-----|---|---------|
| 6.3 | Disposal of unsuitable material in tips off site. | CM 1050 |
|-----|---|---------|

Imported Fill

- | | | |
|-----|---|--------|
| 6.4 | Imported suitable material fill deposited in embankments and other areas of fill other than adjacent to structures. | CM 250 |
| 6.5 | Imported suitable material fill deposited on sub-base material under verges, central reserves and side slopes. | CM 25 |

Compaction of Fill

- | | | |
|-----|---|--------|
| 6.6 | Compaction of fill material deposited in embankments and other areas of fill other than adjacent to structures. | CM 250 |
| 6.7 | Compaction of fill material deposited on sub base material under verges. | CM 25 |

Soft Spots and Other Voids

- | | | |
|-----|--|-------|
| 6.8 | Excavation of soft spots below cuttings or under embankments.
PROVISIONAL. | CM 50 |
| 6.9 | Filling of soft spots or other voids below cuttings or under embankments with suitable material fill
PROVISIONAL. | CM 50 |

SECTION 6 - EARTHWORKS

Soiling

- | | | | |
|------|---|----|-----|
| 6.10 | Soiling 100mm thick to surfaces
sloping at 10° or less to
the horizontal. (PROVISIONAL) | SM | 200 |
|------|---|----|-----|

Grassing

- | | | | |
|------|--|----|-----|
| 6.11 | Turfing 300mm wide to surfaces
sloping at 10° or less to the
horizontal. (PROVISIONAL) | SM | 30 |
| 6.12 | Grass seeding to surfaces
sloping at 10° or less to
the horizontal. (PROVISIONAL) | SM | 200 |

Completion of Formation

- | | | | |
|------|---------------------------------|----|------|
| 6.13 | Formation of suitable material. | SM | 2000 |
|------|---------------------------------|----|------|

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SECTION 6 - EARTHWORKS

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SECTION 8 SUB-BASE AND ROAD BASE (Revised)

8.1	Group A sub-base.	CM	415
8.2	Type 1 sub-base in temporary traffic island	CM	
8.3	Dense bitumen macadam roadbase 100mm thick in carriageway	SM	1600
8.4	20mm nominal size Dense Bitumen Macadam regulating course. (Conversion factor 0.413 m ³ /tonne).	t	20

SECTION 9 FLEXIBLE SURFACING

9.1	Dense Bitumen Macadam 28mm aggregate basecourse 65mm thick in carriageway.	SM	1625
9.2	Dense Bitumen Macadam 14mm aggregate wearing course 35mm thick in carriageway.	SM	1725
9.3	Dense Bitumen Macadam 14mm aggregate wearing course 35mm thick in temporary traffic island	SM	
9.4	Dense Bitumen Macadam 14mm aggregate wearing course 40mm thick in private accesses.	SM	50
9.5	10mm Nominal size Dense Bitumen Macadam regulating course (conversion factor 0.413 m ³ /tonne.)	t	10

Kerbing

11.1	Precast concrete kerbing Type BK laid straight or curved over 12m radius.	LM	180
11.2	Precast concrete kerbing Type BK laid to curves of 12m radius or less.	LM	5
11.3	Precast concrete kerbing Type DK laid straight or curved over 12m radius.	LM	60
11.4	Precast concrete kerbing Type LTK (BK) laid straight or curved over 12m radius.	LM	8
11.5	Precast concrete kerbing Type RTK (BK) laid straight or curved over 12m radius or less.	LM	8

Footways

11.6	Flexible paved footway permitted alternative materials 150mm thick in total as Drawing No 301/5.	SM	375
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Interlocking Traffic Blocks

11.7	Black and grey interlocking precast concrete traffic blocks as SD/C22	LM	26
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**ALL SERVICE TRENCHES SHALL BE
EXCAVATED BY HAND**North of Scotland Hydro Electric
BoardNote:

Cable and yellow uPVC marker tape shall be provided by the North of Scotland Hydro Electric Board. All ducts to be provided by the Contractor. Contractors rates to include for bedding material.

- | | | | |
|------|---|----|----|
| 29.1 | Excavate and backfill trench by hand 525mm digging below footpath level for NOSHEB LV cable. | IM | 25 |
| 29.2 | Excavate trench 900mm deep below carriageway level, lay 100mm dia uPVC duct for NOSHEB LV cable and backfill. (PROVISIONAL) | IM | 8 |

Highland Regional Council, Water
and Sewerage DepartmentNote

The following works are to be carried out under the supervision of and to the complete satisfaction of H.R.C. Water and Sewerage Dept, who will supply and lay pipes, connections and fittings. Contractors rates to include for bedding material.

- | | | | |
|------|--|----|----|
| 29.3 | Expose existing 300mm foul sewer and protect with 150mm class 22.5/20 concrete surround. (PROVISIONAL) | IM | 90 |
| 29.4 | Transfer existing cast iron water toby from carriageway to new footpath. (PROVISIONAL) | No | 4 |
| 29.5 | Lowering the level of water toby and frame by 150mm or less. | No | 1 |
| 29.6 | Raising the level of water toby and frame by 150mm or less. | No | 9 |

29.7	Lowering the level of fire hydrant cover and frame by 150mm or less.	No	1
29.8	Lowering the level of 0.5m x 0.5m foul sewer manhole cover and frame on 0.5m x 0.5m brick chamber by 150mm or less.	No	3
29.9	Raising the level of 0.5m x 0.5m foul sewer manhole cover and frame on 0.5m x 0.5m brick chamber by 150mm or less.	No	1

British Telecom

Note: The following works shall be carried out in accordance with British Telecom Specification IN139 and under the supervision of and to the complete satisfaction of British Telecom.

Ducts, covers and frames for joint boxes shall be provided by British Telecom.

29.10	Expose existing cable, cable duct or pipe depth to top of cable, cable duct or pipe 1.0 metres or less and protect with concrete mat 300mm wide by 150mm thick over 100mm fine sand. (PROVISIONAL)	IM	100
29.11	Excavate trench by hand digging, lay 89mm dia uPVC duct 450mm below footpath level for British Telecom cable and backfill.	IM	25
29.12	Jointing chamber JRC 11	No	2
29.13	Jointing chamber Jrc 12	No	1
29.14	Connection of single way 90mm diameter uPVC duct to existing joint box.	No	1
29.15	Lowering the level of existing JRC 1 jointing chamber cover and frame on reinforced concrete chamber by 150mm or less.	No	2

Highland Regional Council, Street
Lighting DepartmentNote:

Cable, yellow marker tape, columns, and PVC ducting to be provided by the Highland Regional Council, Department of Roads and Transport Street Lighting Section.

- | | | | |
|-------|---|----|----|
| 29.16 | Uplift from Lighting Section store at Brora, excavate for and erect 6m steel lighting column complete with bracket, including setting base in concrete class 22.5/37.5 backfilling and disposal of all surplus material. | No | 10 |
| 29.17 | Uplift from Lighting Section store at Brora, excavate for and erect steel lighting column for illuminated traffic sign including setting base in concrete class 22.5/37.5 backfilling and disposal of all surplus material. | No | 3 |
| 29.18 | Uplift from Lighting Section store at Brora, excavate for and lay 6 mm PVC SWA PVC 2m core 600/100 Volt grade street lighting cable in track by hand digging 450mm deep below footpath level including bedding and surrounding cable with 76.2mm layer of sand, backfilling and laying yellow PVC marker tape over the position of the cable and just under the surface of the verge and footpath also disposal of all surplus material. Allow for looping cable in and out of column leaving sufficient cable to reach the top of the column door. | No | 50 |
| 29.19 | Uplift from Lighting Section store at Brora, excavate for and lay 76.2mm PVC duct in track 825mm deep below carriageway level including threading cable through duct, backfilling and laying yellow PVC marker tape over the position of the duct including disposal of all surplus material. | No | 35 |

Combined Services Trench

- | | | | | |
|-------|---|-----|-----|---------|
| 29.20 | Excavate combined services trench by hand digging 525mm deep below finished footpath level for NOSHEB LV cable, Street Lighting cable and 89mm British Telecom duct and backfill all as SD/SL3. | IM | 250 | |
| 29.21 | Allow the Provisional Sum of £1000 for provision of all plant and labour necessary for assisting the Public Utilities as directed by the Engineer. | Sum | | 1000.00 |

Protection of Services

- | | | | | |
|-------|---|----|----|--|
| 29.22 | Class 30/20 Concrete mat protection 100mm thick by 500mm wide to existing or proposed services. | | | |
| | PROVISIONAL. | IM | 25 | |

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