SNOWY RIVER SHIRE

DEVELOPMENT CONSTRUCTION SPECIFICATION

C265

BOUNDARY FENCING

Amendment Record for this Specification Part

This Specification is Council's edition of the AUS-SPEC generic specification part and includes Council's primary amendments.

Details are provided below outlining the clauses amended from the Council edition of this AUS-SPEC Specification Part. The clause numbering and context of each clause are preserved. New clauses are added towards the rear of the specification part as special requirements clauses. Project specific additional script is shown in the specification as italic font.

The amendment code indicated below is 'A' for additional script 'M' for modification to script and 'O' for omission of script. An additional code 'P' is included when the amendment is project specific.

Amendment Sequence No.	Key Topic addressed in amendment	Clause No.	Amendment Code	Author Initials	Amendment Date
EXAMPLE 1	Provision for acceptance of 2 nonconformance with deduction in Payment		AP	KP	2/6/97

SPECIFICATION C265 - BOUNDARY FENCING

GENERAL

C265.01 SCOPE

1. The work to be executed under this Specification includes setting out, clearing of fence line, supply of material and erection of boundary fencing and gates, in accordance with the Drawings or as directed by the Superintendent.

C265.02 REFERENCE DOCUMENTS

1. Documents referenced in this Specification are listed in full below whilst being cited in the text in the abbreviated form or code indicated.

Documents Standards Test Methods

(a) Council Specifications

C212 - Clearing and Grubbing C271 - Minor Concrete Works

(b) Australian Standards

AS 1289.5.4.1	-	Compaction control test - Dry density ratio, moisture
		variation and moisture ratio
AS 1725	-	Chain-link fabric security fencing and gates
AS 1742.2	-	Traffic control devices for general use
AS 2423	-	Galvanised Wire Fencing Products

MATERIALS

C265.03 GENERAL

1. All materials shall be supplied by the Contractor and shall be of dimensions, manufacture and quality in accordance with the requirements of this Specification and all galvanised wire fencing products shall conform to AS 2423.

2. For each type of material to be supplied, the Contractor shall submit to the Superintendent for approval the source, manufacturer, and also the type if applicable. *Details to be Provided*

3. No materials shall be used until approved by the Superintendent.

C265.04 GALVANISED POSTS AND BRACES

1. All posts and bracing shall be galvanised iron pipe in accordance with AS 1725. *Dimensions* The pipes shall be to the dimensions shown on the Drawings.

2. All pipe joints shall be welded. All welds shall be satisfactorily cleaned and **Welded Joints** painted with a cold galvanising compound to the satisfaction of the Superintendent.

Approved Materials

C265.05 CHAIN WIRE	
1. Galvanised chain wire mesh, 1,450mm wide (1830mm wide for Manproof Fencing) shall be of 3.15mm diameter wire woven to a 50 x 50mm square mesh. The selvedge edges of the chain wire shall be left barbed, and it shall be supplied in lengths of not less than 30m. The zinc coating shall be uniform, continuous, free from imperfections and thoroughly adherent. The coating shall be applied to the wire before the mesh is woven. The weight of the zinc coating shall not be less than 290 g/sq m of wire surface.	Dimensions and Zinc Coating
2. Where specified, the chain wire shall be coated in black PVC after galvanising.	PVC Coating
C265.06 WIRE NETTING	
1. Wire netting shall be standard quality galvanised 1.40mm diameter wire, 40mm mesh, 1.05m wide for normal use and 1.60mm diameter wire, 50mm mesh, 0.90m wide where used in creek crossings.	Dimensions
C265.07 GATES	
1. Gates shall be of galvanised tubular steel construction, 3.6 metres in width by 1.5 metres or 1.2 metres (as specified) in height, and shall be fitted with substantial hinges, catch, drop bolts and locking chains unless otherwise shown on the Drawings or directed by the Superintendent.	Dimensions and Fittings
2. Where required, gates shall have stout and well supported rabbit-proof mesh to a height of at least 900mm above ground level.	Rabbit Proofing
C265.08 REINFORCED CONCRETE POSTS	
(a) Strainer Posts	Dimensions
1. Concrete strainer posts shall be approximately 150 x 150 square in section and lengths as shown on the Drawings. Each post shall be provided with 12mm dia holes to suit the spacing of the wires shown on the Drawings for the particular type(s) of fencing to be erected.	
2. The posts shall be reinforced longitudinally with not less than four reinforcing bars each 12mm diameter. All posts shall have suitable stirrup reinforcement to control diagonal cracking. Longitudinal reinforcement shall have 25mm minimum cover. End cover on reinforcement shall be 25mm.	Reinforcing Steel
3. The concrete shall have a minimum 28 day compressive strength of 20MPa.	Concrete Strength
(b) Intermediate Posts	
1. Intermediate Posts shall generally conform to the requirements for Strainer Posts, except that the longitudinal reinforcing bars may be 9mm dia.	Quality

C265.09 PRESTRESSED CONCRETE POSTS

(a) **Strainer Posts**

0005					
C265.					
(a)	Strainer Posts				
stress	At least four longitudinal high carbon deformed alent) of 5mm diameter, shall be provided. The str of 800MPa minimum prior to placing concrete. Cross shall be as shown on the Drawings.	ands shall be tensioned to a	Tendons		
2.	Concrete shall have a minimum compressive streng	gth of 32MPa at 24 hours.	Concrete		
	In lieu of holes for wires, grooves may be provid shown on the appropriate Drawings for the partie d. The grooves shall be at least 5mm deep and 5r	cular types of fencing to be	Grooves for Wire		
(b)	Intermediate Posts				
1. for Str be req	Intermediate posts and strainer stays shall generall rainer Posts except that two only high tensile, high c juired.		Quality		
2.	Cross sectional dimensions shall be as shown on the	ne Drawings.	Dimensions		
C265.	10 STEEL POSTS (RURAL FENCING)				
1. the wi	Steel posts shall be "STAR" pattern. Posts shall b res shown on the Drawing(s), and shall be black varn		Туре		
2.	The total weight of 300 posts each 1.65m long shal	l be at least one (1) tonne.	Weight		
C265.	C265.11 GALVANISED PIPE POSTS (RURAL FENCING)				
	Galvanised pipe posts shall be used where shown be of the dimensions shown on the Drawings and sh dance with AS 1725.		Dimensions and Quality		
C265.	12 WIRES				
(a)	Plain Wire				
1. showr	Plain wire shall be standard galvanised drawn anr on the Drawings.	nealed steel wire of diameters	Туре		
(b)	High Tensile Plain Wire				
1.	High Tensile wire shall be galvanised and of diame	ters shown on the Drawings.	Туре		
(c)	Barbed Wire				
barbeo	Barbed wire including barbs shall be 2.5mm led steel wire, with clusters of four barbs spaced at 9 d wire may be of 1.6mm diameter high tensile stee d at 90mm maximum.	00mm maximum. Alternatively	Type and Dimensions		

Type and Dimensions

(d) Cable Wire

1. Cable wire shall consist of three pairs of 2 x 3.15mm galvanised iron wire tightly **Type and** twisted around posts and located as shown in the Drawings. **Dimensions**

(e) Tie Wire

1. The wire shall be 2mm diameter galvanised wire.

C265.13 CONCRETE BACKFILLING

1. All concrete backfilling of post holes specified on the Drawings shall be of minimum 20MPa 28 day compressive strength and shall conform to the requirements of the Specification for MINOR CONCRETE WORKS.

CONSTRUCTION

C265.14 GENERAL

1. Boundary fencing shall be erected prior to the commencement of other work on a particular section of the work, unless directed otherwise by the Superintendent.	a Construction Priority
2. All fencing shall be erected in a workmanlike manner, and when completed sha be sound, strong and of neat appearance.	II Quality
3. For a clear width of one metre on either side of the fence line, and for the fullength of the line, all logs, boulders, stumps, roots, undergrowth and rubbish shall be removed and disposed of by the contractor in accordance with the Specification for CLEARING AND GRUBBING. Trees within this area shall be removed only as directed by the Superintendent and approved by Council.	e vr
4. If trees on or adjacent to the fence line are to be retained the arrangement of the fencing at the trees shall be as directed by the Superintendent.	e Trees Retained
5. Wire shall not be strained around or against any trees to be left in the fence line and strainer posts are to be provided on both sides of each tree.	e, Trees on Fence Line
6. Where minor irregularities occur in the ground the vertical alignment of the fence shall not follow these irregularities, but shall be aligned to a uniform grade between definite changes in the natural slope of the ground.	
7. All survey pegs shall be left undisturbed and the post spacing shall be altered slightly where necessary to avoid pegs.	d Survey Pegs
8. The Contractor shall maintain the fencing at all times in a condition secure against the ingress or egress of stock, and shall take such precautions as are necessary to prevent people or stock from stepping into holes excavated for the construction of fencing.	у
9. Where old fencing is to be replaced by new fencing, all holes left after removal of the old fencing shall be backfilled and rammed firmly in layers of maximum depth 150mm.	
10. The Contractor shall be held responsible for any loss, damage, or injury to buildings, goods, crops, livestock, property of any kind or persons due to negligence or the Contractor's part.	

Weather Caps

C265.15 CHAIN LINK FENCING

(a) Erection of Posts

1. All posts shall be erected vertically and set in concrete blocks approximately 250mm diameter and 600mm deep except for end, corner, strainer and gate posts which shall be set in concrete blocks approximately 250mm diameter and 900mm deep unless otherwise shown on the Drawings. Concrete shall have a minimum compressive strength of 20MPa at 28 days and shall conform to the requirements of the Specification for MINOR CONCRETE WORKS.

2. Galvanised weather caps shall be fitted to all galvanised posts.

3. Strainer posts shall be used at ends of fencing, angles, intersections with other fencing, gates and at intermediate points. Distances between strainer posts shall not exceed 120 metres.

(b) Erection of Wire

1. All wire shall be spaced as shown in the Drawings. Wire shall be securely *Fasten and* fastened and strained to an even tension between strainer posts. *Strain*

2. Where specified, or shown on the Drawings, chain wire mesh shall be erected on the outside of the posts and fastened with two turns of the wire to each cable wire on both sides of each post and at intervals of not more than 900mm between posts and to each post midway between cable wires.

C265.16 STOCK-PROOF FENCING

(a) Erection of Posts

All posts shall be erected vertically. Reinforced concrete posts shall be erected 1. Method in neatly cut holes sunk in earth, or in rock where this is encountered. Steel posts, except where placed in rock, shall be driven with suitable driving equipment, care being taken not to damage the tops of the posts during driving. Where prestressed posts are proposed to be used, they shall be either erected 2. Drivina as for reinforced concrete posts or shall be driven. Where driven, the Contractor shall Prestressed use a suitable post driver which shall be equipped with two (2) sets of guiding rollers, to Posts hold the post vertical and in position during driving. 3. A steel cap with a plywood cushion shall be used to protect the top of the post **Protection Cap** during driving.

4. If the post cannot be driven for the full depth specified, or if it becomes significantly damaged, or cannot be driven vertically, it shall be removed. The same post *Posts* if undamaged, or a new post, shall be erected as described for reinforced concrete posts.

5. Posts shall be sunk to the depths shown in Table C265.1.

	Type of Post		De	Depth		
			Earth	Rock		
	Concrete Corn	er Posts & Strain Posts	900	*600		
	Concrete Interr	nediate Posts	600	*450		
	Steel Posts		450	450		
	Note*	Permitted only in cases where provided (see below), otherwise same as for earth.				
		Table C265.1 - Post Dep	th in Ground			
the lesser de manufactured posts shall be	epth of sinking in lengths to se sunk in drill ho	osts will not be permitted, and ir permitted in rock, it will be uit the depth of sinking. Where oles of sufficient diameter to pe ne part of cement to two parts o	e necessary to e rock is encounte rmit them to be re	use posts ered, steel	Variations to Post Length	
150mm for the	e full depth of th	led around intermediate posts i ne hole and up to ground level. not less than that of the original	The relative com	paction of	Backfilling at Intermediate Posts	
tightly filled w		s are placed in rock, the space ar consisting of one part of cem le.			Mortar Backfill	
	and at interme	be used at ends of fencing, ang diate points. These posts shall			Strainer Posts	
using steel int (for which on	termediate posts	trainer posts shall not exceed 1 s, and 90m in the case of fencir ts are permitted). Junctions wi	ng for the retention	n of cattle	Spacing of Posts	
(b) Erect	ion of Wires					
fastened and strainer. Wh intermediate	strained to an e ere barbed wire posts, and whe	ced as shown on the Drawings even tension between strainer p e is to be used, it shall be tie ere additional barbed wires ar sts as shown on the Drawings.	oosts with an appled in position at	roved wire the top of	Fastening and Straining	
		s are used and the barbed wire tie wire, the tie wire shall be			Barbed Wire	

3. Where prestressed posts are used, wires shall be securely tied so that they seat Prestressed firmly in the grooves. Posts

4. All joints in wires shall be as shown on the Drawings.

snugly against the sides of the posts to prevent movement of the barbed wire.

Wire Joints

C265.17 RABBIT-PROOF FENCING

(a) General

1. Wire netting shall be erected on the side of the fence remote from the roadway in the case of road reserve boundary fences. In other cases netting shall be erected on the side of which the Superintendent shall direct.

2. The netting shall be erected so that there is a 200mm lap laid on the ground **Lap/Trench** surface, or trenched 215mm into the ground as shown on the Drawings for the type of fence to be erected.

3. Netting shall be tied with tie wire or fixing clips approved by the Superintendent. *Fixing of Netting*

4. The netting shall be loosely tied to fence wires then carefully strained without disturbing or breaking the mesh, and shall then be tied to the wires immediately on each side of the post and at intervals not exceeding 1m.

5. At each strainer post strut, additional netting shall be attached to the fence **Additional** adjacent to the strainer post, to a height of 450mm above the strut. **Additional Netting**

C265.18 CROSSING OF WATERCOURSES AND DEPRESSIONS

1. The crossing of all watercourses and depressions, shall be made secure by longer posts, suitably strutted as directed by the Superintendent. Additional cable wire and chain wire/wire netting shall be provided as necessary to make the fence stock proof.	Marsupial Proof
2. The fence shall allow the passage of floodwater without the accumulation of debris. If directed by the Superintendent, flood gates shall be provided in accordance with Clause C265.20.	Floodwater

C265.19 CONNECTIONS TO EXISTING FENCES

1. Existing cross fences shall be connected to the new fence using a strainer post with braces in each direction of strain (including cross fence) and the wires in both fences properly fastened to the post.

C265.20 FLOOD GATES

(a) General

1. Suitable provision for the passage of flood waters past the fence shall be made at all watercourses. In all cases flood gates shall be of the type indicated on the Drawings, or as directed by the Superintendent, and shall be erected so as to prevent the accumulation of flood debris, while remaining stock-proof or rabbit-proof.

(b) Small Watercourses

1. Flood gates, in accordance with the Drawings, shall be provided in small gullies **Waterway Area** at the locations indicated on the Drawings or as directed by the Superintendent. The opening of each flood gate shall provide a waterway area at least twice that of the culvert opposite to which it is placed, or as otherwise directed by the Superintendent.

(c) Large Gullies and Creeks Flood gates, in accordance with the Drawings, shall be provided in gullies and Location 1. creeks at the locations indicated on the Drawings, or as directed by the Superintendent. A 9mm galvanised wire rope shall be carried over the gully in one span, threaded 2. Construction through a strainer post and tied back to an anchor at an adjacent concrete intermediate Detail post. Turnbuckles are to be provided at each end to tension the wire rope. Netting shall be suspended from the wire rope and shall be overlapped and securely tied. The netting shall be of sufficient length to lie on the ground for a distance of not less than 1.0m on the downstream side. 3. Ballast, of sound timber securely tied to the netting, shall be provided at the **Netting Ballast** downstream end of the netting. The sides of the gully shall be trimmed, as necessary, to ensure that the flood 4. Construction gate shall be stock-proof or rabbit-proof. The flood gate shall have sufficient movement Requirements of the suspended portion under the flow of flood waters to prevent damage to the fence and the accumulation of debris against it. Each strainer post shall be stayed in three directions, as shown on the Drawings. C265.21 **ERECTION OF GATES** Where gates are specified or shown on the Drawings, they shall be erected so 1. Swing Away that they swing away from the road. Double gates shall be supplied if directed by the From Road Superintendent, otherwise a single gate only shall be supplied. At the location of gates the surface shall be levelled and shall be nearly 2. Level Surface horizontal. The area where the gates swing shall be similarly levelled. 3. The gates shall be hung as indicated in the Drawings. Hanging C265.22 **REMOVAL OF EXISTING FENCING** 1. Where required, existing fencing is to be removed as shown on the Drawings. Location No fencing is to be removed if there is a risk of egress or ingress of stock. If the Contractor's 2. existing fence is a rabbit-proof fence, then the contractor shall ensure that at night and Responsibility weekends and other such times when work is not in hand that the whole of the fence is maintained in a rabbit-proof condition, even if temporary fencing is required. No extra payment will be made for this requirement. All material removed in demolishing existing fencing shall be disposed by the Old Material Contractor as provided by Clause C265.23. C265.23 REMOVAL AND DISPOSAL OF SURPLUS MATERIAL AND RUBBISH All surplus material, offcuts, timber, roots and other debris resulting from the 1. Contractor's fencing contract shall be removed or otherwise disposed of to the satisfaction of the Responsibility Superintendent. The Contractor shall be responsible for any damage which may result from the 2. Fire Damage lighting of fires associated with the work. C265.24 **CATTLE GRIDS**

1. Where shown on the Drawings, or as directed by the Superintendent, cattle grids **Standard** shall be erected in accordance with the Drawings.

2. The cattle grid shall be evenly bedded on a continuous layer of compacted sand or other granular material approved by the Superintendent. The bedding material shall be compacted so that the relative compaction as determined by AS 1289.5.4.1 is not less than 95 per cent.	Bedding
3. Cattle grids shall be installed on raised abutments with approach ramps where possible. Alternatively, a cattle grid may be placed over an excavated pit, in which case adequate drainage shall be provided.	Raised Abutments
4. Crossfall for single lane cattle grids shall be level and for two lane cattle grids each section shall have a crossfall conforming to the crossfall of the approach road.	Crossfall
5. The cattle grid construction shall include all activities associated with the cattle grid including any adjustments to the fencing as shown on the Drawings.	Extent of Work
6. Advance signposting, in accordance with AS 1742.2, shall be provided on each approach to the cattle grid in accordance with the Specification for SIGNPOSTING.	
SPECIAL REQUIREMENTS	

- C265.25 RESERVED
- C265.26 RESERVED
- C265.27 RESERVED
- C265.28 RESERVED
- C265.29 RESERVED
- C265.30 RESERVED

C265-9

MEASUREMENT AND PAYMENT

C265.31 PAY ITEMS

1. Payment shall be made for all the activities associated with completing the work detailed in this Specification on a schedule of rates basis in accordance with Pay items C265(a) to C265(d) inclusive.

2. If any item for which a quantity of work is listed in the Schedule of Rates has not been priced by the Contractor, it shall be understood that due allowance has been made in the prices of other items for the cost of the activity which has not been priced.

3. A lump sum price for any of these items shall not be accepted.

4. Clearing and grubbing is measured and paid in accordance with this Specification and not in the Specification for CLEARING AND GRUBBING.

5. Concrete backfilling and blocks are measured and paid in accordance with this Specification and not in the Specification for MINOR CONCRETE WORKS.

6. Cattle grid signposting is measured and paid in accordance with this Specification and not in the Specification for SIGNPOSTING.

Pay Item C265(a) - SUPPLY AND ERECTION OF BOUNDARY FENCING

1. The unit of measurement shall be the linear metre of fencing, chain link, stock-proof or rabbit-proof, measured on site.

2. Separate pay items shall be shown for each type of fence specified.

3. The schedule rate under this Pay Item shall include the supply of all materials, the clearing of site, and all activities associated with the erection of the fence, including the levelling of mounds (if required), concreting, the provision of crossings for watercourses and depressions as necessary, flood gates as necessary and the connection of the new fence to existing fence where required. The schedule rate shall also cover all types of excavation material encountered during construction work, both earth and rock and the removal and disposal of surplus material and rubbish.

Pay item C265(b) - SUPPLY & ERECTION OF BOUNDARY FENCE GATES

1. The unit of measurement shall be "each" gate erected.

2. The schedule rate shall include the supply of all material and all activities associated with the erection of each gate.

Pay item C265(c) - SUPPLY & INSTALLATION OF CATTLE GRID

1. The unit of measurement shall be "each" cattle grid installed.

2. The schedule rate shall include the supply of the cattle grid together with all activities associated with the construction of the cattle grid including bedding, approach ramps, wings, drainage, adjustment to fencing and the provision of signs.

Pay item C265(d) - REMOVAL OF EXISTING FENCE

1. The unit of measurement shall be the linear metre of fencing removed as measured on site.

2. The schedule rate shall include all activities associated with the demolition and disposal of the existing fence.

SPECIFICATION C265 - BOUNDARY FENCING

CLAUSE	CONTENTS			θE
GENERA	L			.1
C265.01	SCOPE			.1
C265.02	REFERENCE DOCUMENTS			.1
	ALS			1
				•
C265.03	GENERAL			.1
C265.04	GALVANISED POSTS AND BRACES			
C265.05	CHAIN WIRE			.2
C265.06	WIRE NETTING			.2
C265.07	GATES			.2
C265.08	REINFORCED CONCRETE POSTS			.2
C265.09	PRESTRESSED CONCRETE POSTS			.3
C265.10	STEEL POSTS (RURAL FENCING)			.3
C265.11	GALVANISED PIPE POSTS (RURAL FENCING).			.3
C265.12	WIRES			.3
C265.13	CONCRETE BACKFILLING			.4
CONSTR	UCTION			.4
C265.14	GENERAL			
C265.15	CHAIN LINK FENCING			
C265.16	STOCK-PROOF FENCING			.5
C265.17	RABBIT-PROOF FENCING			.7
C265.18	CROSSING OF WATERCOURSES AND DEPRES	SSIONS		.7
C265.19	CONNECTIONS TO EXISTING FENCES			.7
C265.20	FLOOD GATES			.7
C265.21	ERECTION OF GATES			.8
C265.22	REMOVAL OF EXISTING FENCING			.8

Contract	No.
001111001	

BOUNDARY FENCI	NG
----------------	----

C265.23	REMOVAL AND DISPOSAL OF SURPLUS MATERIAL AND RUBBISH	8
C265.24	CATTLE GRIDS	8
SPECIAL	REQUIREMENTS	9
C265.25	RESERVED	9
C265.26	RESERVED	9
C265.27	RESERVED	9
C265.28	RESERVED	9
C265.29	RESERVED	9
C265.30	RESERVED	9
MEASUR	EMENT AND PAYMENT	10
C265.31	PAY ITEMS	10

