MIDCOAST council

AUS-SPEC

Infrastructure Specifications

1196 Boundary Fencing for Road Reserves

1196 BOUNDARY FENCING FOR ROAD RESERVES

IMPORTANT: This document has been adapted from the NATSPEC suite of specification templates for use in the MidCoast Council area by both Council and industry. NATSPEC regularly updates the base templates (currently in April and October each year), and Council may incorporate changes into its version of AUS-SPEC from time to time. To assist in highlighting any changes made by Council to the NATSPEC templates, the following conventions are used.

- See ANNEXURE M at the end of this document which contains (where practical) MidCoast Council customisations (also known as 'office master' text). References to the Annexure are to also be inserted at relevant clauses in the main body of the document.
- Where content is added to the main body of the document, it is to be shown in brown text like this.
- Where content is deleted or excluded from the main body of the document, it is to be shown ~~struck through like this~~. Such clauses are to have no effect.

Where there is a conflict between main body text and MidCoast Council specific clauses, Council's specific clauses shall prevail.

1 GENERAL

1.1 RESPONSIBILITIES

General

Requirement: Provide boundary fencing for road reserves, as documented.

1.2 CROSS REFERENCES

General

Requirement: This worksection is not a self-contained specification. In addition to the requirements of this worksection, conform to the following:

- *0136 General requirements (Construction)*.
- *0152 Schedule of rates (Construction)*.
- *0161 Quality management (Construction)*.
- *1101 Traffic management*.
- *1102 Control of erosion and sedimentation (Construction)*.
- *1111 Clearing and grubbing*.
- *1192 Signposting*.

1.3 STANDARDS

General

Steel wire fencing: To AS 2423.

Security fences and gates: To AS 1725.1.

1.4 INTERPRETATION

Definitions

General: For the purposes of this worksection the following definitions apply:

- Chain link fencing fabric: Diamond-pattern-woven fencing fabric manufactured from wire.
- Intermediate posts: Fence posts positioned at regular, equally spaced intervals between corner and/or end posts, to provide support for the fencing material.
- Post extension: An extension of the fence post above the normal height of chain-link fabric, which may be angled or vertical, to which barbed wire may be attached.
- Strainer posts: Fence posts at significant variations in levels and at intervals, as documented, with either bracing stays or bracing cables to achieve the required tension of support cables and chain-link fabric.

- Wire netting: Hexagonal-pattern-woven mesh manufactured from metallic-coated or uncoated (bare) wire.

1.5 SUBMISSIONS

Authority approvals
Requirement: Submit details of all authority approvals before commencing the works for which the approval is granted, including the following:

- Access to properties: Before starting work.
- Removal of existing tree: Within the clearing zone.

Execution details
Connections to existing fences: Submit details of proposed connection where new fencing intersects with existing fencing.

Post installation method: Submit details of proposed post type and installation method.

Products and materials
Material details: For each type of material, submit details of the source, manufacturer and type. Do not deliver or incorporate into the works until approved.

Tests
Requirement: Submit results, as follows:

- Stock grid compacted bedding index: To AS 1289.5.6.1.

Variations
Intermediate and strainer posts: If alternate sizes are proposed, submit details of proposed dimensions.

Warranties
Manufacturer's warranty: Submit the manufacturer's published product warranties.

1.6 INSPECTIONS

Notice
General: Give notice so that inspection may be made of the following:

- Set-out of fence lines: Completed fence section set-out.
- Small watercourse: Completed installation of erosion control measure.
- Removal of existing fencing for fence replacement: If removal is required, completed removal and disposal of existing fencing and reinstatement of the surrounding material including backfilling.
- Clearing and grubbing: Cleared work area before installation of fencing.
- Erection of fencing/gates:
  . Posts set in earth/rock: After completion of backfilling for posts.
  . Steel posts: Rectification of any damage to posts.
  . Installation: Completed fencing.
- Rectification of ground/pavement: Completed reinstatement of earth, rock or pavement surrounding posts.

2 MATERIALS

2.1 GENERAL

Storage and handling
Steel wire strand and rope: To AS 2759.

2.2 STEEL POSTS

Standards
Cold formed steel hollow sections: To AS/NZS 1163.

Posts for security fencing, pipe rail and post extensions for barbed wire attachment: To AS 1725.1.

Hot-dip galvanized coatings for steel tubes: To AS/NZS 4792.

Hot-dip galvanized coatings for star, strainer and intermediate posts: To AS/NZS 4680.

Steel tubes for strainer and intermediate posts: To AS 1074.

- Grade: Medium.

Steel tubes and posts generally

Steel tube grade to AS/NZS 1163: C250L0.

Pipe grade for chain link fencing posts to AS 1725.1: Medium quality.

Dimensions: As documented.

Splicing: If required, butt weld and set in concrete not less than 150 mm below ground level.

Welding: Clean and paint with a cold galvanizing compound, such as a zinc-rich paint.

Connections: If not welded and subject to movement, prevent connecting members from scratching to protect galvanized coatings.

Top caps: Fit each post with galvanized steel cap to prevent ingress of water.

Star posts (rural fencing)

Type: Star pattern (Y bar section) drilled to suit spacing of wires.

Finish: Black varnish or hot-dip galvanize.

Total weight: 320 posts each 1.65 m long not less than one tonne.

Pipe rail for pipe rail fencing

Dimension: Conform to the following, unless documented otherwise:

- Nominal diameter: 32 mm.

Joints: Only permitted for continuous top rail fencing longer than 6000 mm.

- Type: To AS 1725.1 clause 3.4.

Strainer posts

Minimum diameter: 150 mm.

Holes: Provide a set of 12 mm holes to suit the spacing of wires as documented.

Intermediate posts

Minimum diameter: 100 mm.

2.3 STEEL WIRE FENCING

General

Zinc coating: Uniform, continuous, free from imperfections, thoroughly adherent and applied to the wire before the mesh is woven.

Zinc coating mass: Minimum 290 g/m^2 of wire surface.

PVC coating: Coat in black PVC after galvanizing, if required.

Wire netting

Netting mesh: To AS 2423 Section 4.

Mesh/wire classification (dimensions): Unless documented otherwise, conform to the following:

- General use including rabbit-proof fencing: 105 x 4 x 1.4 (1065 mm wide, 38 mm mesh size, 1.40 mm diameter wire).
- At gullies and creek crossings: 90 x 5 x 1.6 (915 mm wide, 51 mm mesh size, 1.50 mm diameter wire).

Chain link fabric fencing

Chain link fencing fabric: To AS 2423 Section 5.

Product designation and dimensions to AS 2423: 10 m/1800 x 50 x 3.15/W10Z/HG/KK/HD (rolled length, width, pitch, wire diameter, metallic-coating grade, protective coating system code, selvedge type, service duty).

2.4 GATES

General

Material: To match adjoining fence.

Dimensions: Conform to the following:

- Vehicular access: 3.6 m wide x 1.5 m or 1.2 m high, to match height of adjoining fence.
- Pedestrian access: 0.9 x 1.5 m or 1.2 m high, to match height of adjoining fence.

Gate hardware: Substantial hinges, catch, drop bolts and locking chains or as documented.

Joints: Fully welded fillet welds, minimum 6 mm exposed surface width and cleaned.

Gates in rabbit-proof fencing: Minimum 900 mm above ground level with securely supported wire netting.

2.5 PRESTRESSED CONCRETE POSTS

Strainer and intermediate posts

Post loading: Designed to carry ultimate load of 3.5 kN for strainer posts and 7.5 kN for intermediate posts at the centre of the 1.5 m span. Take direction of the load perpendicular to the long axis of the post and parallel to the longer face.

Tendons: Minimum 2 high tensile tendons to AS 4672.1 tensioned as documented.

- Jointing: Do not join tendons.
- Diameter: 5 mm.

Minimum concrete compressive strength at 28 days: 32 MPa.

Minimum concrete cover: 20 mm except at post end faces.

Strainer posts

Grooves for wire: Minimum 5 mm deep and 5 mm wide at post surface, to suit wire spacing, as documented.

Intermediate posts

Grooves for wire, minimum concrete cover and concrete strength: Conform to **Strainer and intermediate posts**.

2.6 TREATED TIMBER POSTS AND BRACES

General

Hardwood: To AS 2082.

Sawn timber: To AS 2858 and Grade F5 to AS 1720.2.

Preservative treatment:

- Generally: To AS 1604.1 for hazard class H4.
- Timber rails, palings and other above ground items: To AS 1604.1 for hazard class H3.
- Treatment content: Containing no chromium or arsenic.

Strainer posts, intermediate posts and bracing dimensions and configuration: As documented.

2.7 WIRES

Metallic-coating

Requirement: To AS 2423 clause 1.5.3.

Coating class: Minimum W02.

Coating type: Z or ZA.

Single strand wire

Fencing wires: To AS 2423 Section 2.

Tensile strength: Low tensile fencing to AS 2423 Table 2.4.

Diameter: As documented.

Tie wires: 2 mm diameter.

High tensile single strand wire

Fencing wires: To AS 2423 Section 2.

Tensile strength: High tensile fencing to AS 2423 Table 2.4.

Diameter: As documented.

PVC coated wire

Core wire: Conform to **Single strandwire** and **High tensile single strand wire**, as appropriate.

Coating: To AS 2423 clauses 1.5.4.1 to 1.5.4.4.

Barbed wire

Fencing wires: To AS 2423 Section 3.

Type: 2.5 mm diameter, galvanized, drawn annealed steel low tensile barbing wire to AS 2423 Table 2.4.

Alternative wire type: 1.6 mm diameter, high tensile barbed wire to AS 2423 Table 2.4.

Barb spacing: To AS 2423 clause 3.3.3.

Cable wire

Type: Three pairs of 2 x 3.15 mm galvanized steel wire tightly twisted around posts.

Location: As documented.

2.8 MISCELLANEOUS HARDWARE

General

Requirement: Conform to the following:

- Supply of bolts, nuts and washers: To Austroads ATS 5420.
- Bolts and screws: To AS 1111.1 and AS 1111.2.
- Cup head bolts: To AS/NZS 1390.
- Hexagon nuts: To the AS 1112 series.
- Plain washers: To AS 1237.1 and AS 1237.2.
- Hot-dipped galvanized threaded fasteners: To AS/NZS 1214.

Type: Commercial grade bolts, nuts and washers.

2.9 CONCRETE

Concrete and mortar for backfilling of post holes

Minimum concrete compressive strength at 28 days: 20 MPa.

Slump: 60 mm.

3 EXECUTION

3.1 ESTABLISHMENT

Existing underground services

Services locations: Obtain locations of water, sewer, stormwater, gas, electricity and telephone services.

General

Access to properties: Liaise with property owners, Council and other relevant parties to obtain written approvals of access for clearing, fence construction, removal and disposal of materials.

Fencing

Finished fencing: Sound, strong and neat in appearance.

Minor irregularities in the ground levels: Do not vertically align fencing with these irregularities, align fencing to a uniform grade between definite changes in the natural slope of the ground.

Set-out of fence lines

Survey pegs: Make sure survey pegs remain undisturbed during the construction period. If required, adjust the post spacing slightly to avoid pegs.

Fence lines: Locate boundary fences on the boundary line between road reserve and private property.

Stock-proof: Secure fencing against movement of stock at all times, and take necessary precautions to prevent injury to people or stock from fencing activities.

Clearing and grubbing

Clearing zone: Clear one metre wide on either side of the fence line for the full length of the line.

Materials to remove: All logs, boulders, stumps, roots, undergrowth and waste, and dispose to the *1111 Clearing and grubbing* worksection.

Trees within the clearing zone: Do not remove trees without the required approvals (e.g. from Council).

Survey marks: Protect during the clearing operations.

- Before clearing: For work in the vicinity of Permanent or State Survey Marks, obtain protection or relocation requirements from the NSW Surveyor-General who is responsible for survey records.

Trees on fence line to be retained: Provide strainer posts on both sides of each tree. Do not strain wire around or against trees.

Trees and shrubs outside clearing zone: Do not damage.

Removal of existing fencing for fence replacement

Extent: Remove existing fencing as documented.

Existing posts set in rock: Obtain approval to neatly cut off at ground level and remove all traces of netting above and below ground level.

Backfilling of existing holes: Backfill all holes left after removal of existing fence and compact firmly in 150 mm maximum deep layers to the relative compaction of the surrounding ground materials.

Stock-proof fencing: Do not remove if there is risk of ingress or egress of stock.

Rabbit-proof fence: Conform to the following:

- If the bottom section of the fence netting to be replaced is buried, remove all traces of the old netting.
- Make sure that at night, weekends or other times when work is not being carried out, the whole of fence is maintained in a rabbit-proof condition.

3.2 ERECTION OF POSTS

General

Post alignment: Erect posts vertically except in unusually steep locations where posts may be erected perpendicular to the surface of the ground.

Concrete for footings and base strips: Crown the top surface at each post to shed water away from the post.

Damaged posts: Remove post if it becomes significantly damaged or cannot be driven vertically.

Post erection: Erect the same post, if undamaged, or a new post into neatly cut holes, backfill to the full depth with earth, if set in earth, or cement mortar or concrete if set in rock.

Posts set in earth: If post is not driven, make sure the diameter of hole is sufficient for compaction of backfill.

Backfilling and compact earthing: In layers of 150 mm deep maximum, for the full depth of the hole, to match the relative compaction of the original undisturbed ground.

Rock hole diameter: Sufficient for tight backfilling with cement mortar or concrete.

Post hole depth table

Type of post	**Depth (mm)**	
	Earth	**Rock**
Strainer posts	900	600
Intermediate posts	600	450
Other steel posts	450	450

Strainer posts

Locations: Provide as follows:

- Ends of fencing.
- Angles along the fence line.
- Abrupt changes in grade.
- Intersections with other fencing and gates.
- Intermediate points.

Distances between strainer posts:

- Generally: 120 m maximum.
- For cattle retention: 90 m maximum.

Bracing in one direction: At the ends of fencing and at gates.

Bracing in two direction: At angles in the fence line, abrupt changes of grade and intermediate points.

Other strainer post arrangements: As documented.

Bracing: Conform to the following:

- Timber posts: Round timber, as documented.
- Other than timber posts: Medium weight galvanized steel tube to documented dimensions.

After placing in position: Backfill to the full depth of the hole with earth, if post is set in earth, or with cement or concrete if post is set in rock.

Prestressed concrete posts

Erection: Erect in neatly cut holes sunk in earth or in rock, if encountered, or drive into the earth, using an appropriate post driver, to hold the post vertically in position during driving.

Protecting top of post during driving: Provide a steel cap with a 12 mm thick minimum plywood cushion.

Cutting concrete posts: Not permitted.

Posts set in rock: Provide posts manufactured in shorter lengths to suit the depth of sinking.

Steel posts

Posts not erected in rock: Drive steel posts with appropriate driving equipment, taking care not to damage the tops of the posts.

Damage to post protective coating: Repair using an organic zinc-rich primer conforming to AS/NZS 3750.9.

Posts erected in rock: Neatly cut holes, place in position and backfill to the full depth of the hole with cement mortar or concrete.

Treated timber posts

Erection: Erect in neatly cut holes sunk in earth or in rock, if encountered, or driven into the earth using a suitable post driver. Do not damage post during driving.

Stiff earth: Drive posts into drilled holes with diameters 50 mm less than the nominal maximum post diameter.

- Strainer posts: Drive small diameter end down.
- Other posts: Erect with butt end down.

3.3 ERECTION OF WIRES

Installation

Placement: Place wires as documented and by fixing them on the property owners' side of the posts.

Fastening and straining: Securely fasten and strain wires to strainer posts to the documented tension, measured using a wire strainer and gauge.

Wire fixing to posts: Fix wire as documented and to the following:

- Single strand and barbed wire to strainer posts: Wrap wire minimum 4 times around the tension side of the line, as documented.
- Barbed wire to prestressed concrete intermediate posts and steel posts: Tie top strand in position at the top of the posts.
- Single strand and barbed wire to timber intermediate posts: Fix each wire to the top of the post using a minimum 40 mm long galvanized staple.
- Single strand and barbed wire to steel intermediate posts: As documented or using proprietary galvanized fastening clips.
- Tie wire fixing to prestressed concrete intermediate posts: Tie wires securely so that they sit firmly in the grooves on the side of the posts.
- Fixing single strand and barbed wire to posts with tie wire: Stretch tie wire tight, fitted snugly against the side of the post to prevent wire movement. Wrap ends at least twice around the line wire and neatly cut off. Form all wire joints in figure-of-eight knots as documented.

Wire tensions table

Wire diameter (mm)	Type	Tension (kN)
4.0	Single strand wire	1.8
2.5	High tensile single strand wire	1.3
2.5	Barbed wire – Low tensile	1.3
1.6	Barbed wire – High tensile	1.3

3.4 ERECTION OF WIRE FENCING

Wire netting

Wire netting position: Erect on the same side of the fence as the line wire.

Type: As documented.

Fastening: Attach to the fence with tie wire or fixing clips. Twist each tie wire twice around the fence wire and neatly cut off the ends.

Straining netting: Loosely tie the netting to the fence wires then carefully strain without distorting or breaking the mesh, and immediately tie to the wires on each side of every post at 1.0 m maximum intervals.

Chain link fabric fencing

Location and extent: As documented.

Mesh position: Erect on the outside of the post, on the same side as the line wire.

Fastening: With two turns of the wire to each cable wire on both sides of each post and at 900 mm maximum intervals between posts and to each post midway between cable wires.

Rabbit-proof fencing

Erection: Conform to **Wire netting**.

Netting position: Erect netting on the side of the fence remote from the roadway.

Fixing of netting: With tie wire or fixing clips.

Straining and tying: Loosely tie netting to fence wires then carefully strain without disturbing or breaking the mesh, and immediately tie to the wires on each side of the post and at 1 m maximum intervals.

Bottom section of netting: Bury or lay flat on the ground, as documented and as follows:

- If existing net is buried: Excavate trench before running the netting.
- Replacing existing buried netting: Remove all traces of existing netting and replace with matching netting on the same alignment.
- Trenching: If required, place and compact with backfill material of similar properties to the surrounding material.

Lapping/trench: Erect the netting so there is a 200 mm lap laid on the ground surface or trenched 215 mm into the ground, as documented for the type of fencing erected.

At strainer post strut: Attach additional netting to the fence adjacent to the strainer post to the level of the top wire and 450 mm wide from the post, as documented.

3.5 GATES

Erection

Swing: Erect gates so that they swing away from the road.

Gate opening: Single gates.

Ground surface at gates: Make sure finished ground surface is levelled and horizontal for the full area of the gate opening arc.

Hanging: Hang gates and provide connections and fittings, as documented.

Rabbit-proof fencing: Install gates with maximum 25 mm gap underneath on each side.

Security gates: To AS 1725.1.

3.6 FLOOD GATES

General

At watercourses: Make appropriate provisions for the passage of flood waters through the fence.

Flood gate type: As documented.

Flood debris: Prevent accumulation of flood debris, while remaining stock-proof or rabbit-proof.

Small watercourses

Type: Provide flap gate and support frame as documented and as follows:

- In rural fencing: Provide gates which include netting or fabric.
- In rabbit-proof fencing: With maximum 25 mm gaps.

Opening of each gate: Provide waterway area at least twice that of the culvert opposite to which it is placed.

Width: Maximum 2.4 m.

Flap gate and frame:

- Provide a flap of hardwood frame with lapped corner joints, each secured by two M6 galvanized bolts.
- Cover the frame with a 1 mm galvanized sheet, secured to the frame by 25 x 2.8 mm galvanized clouts at 100 mm maximum centres.
- Swing the flap from a hardwood rail, connected to the strainer posts, located on each edge of the gully or creek with M12 galvanized cup head bolts.

Erosion control: Protect the lower edge of the opening from the effects of creek bed erosion by installing hardwood sheeting to a minimum depth of 300 mm below the existing ground level, as documented.

Gullies and creeks

Location: As documented.

Gate construction:

- Suspend a 9 mm galvanized steel wire rope over the gully in one span, thread through a strainer post on each edge of the gully and tie back to an anchor set in the footing of each adjacent intermediate post.
- End connections: Incorporate a thimble and wire rope grips.
- Turnbuckles: Provide at each end to tension the wire rope so that it lays horizontally. Suspend netting from the wire rope, fixed at 200 mm intervals, overlap and tie securely.
- Netting: Fix with sufficient length to lie on the ground for a distance of not less than 1.0 m on the downstream side.
  . Adjacent widths of netting: Overlap and securely tie together.

Netting ballast: 150 mm diameter treated timber securely fixed to the netting with 40 mm galvanized staples at the downstream end of the netting.

Trim: Trim the sides of the gully, as necessary, so that flood gate is stock-proof or rabbit-proof.

Flow of flood water: Make sure the suspended portion of the gate can move sufficiently under the flow of flood waters to prevent damage to the fence and the accumulation of debris against it.

Stay each strainer post: In three directions.

3.7 STOCK GRIDS

General

Location and extent: As documented.

Bedding: Evenly bed the grid base on a continuous layer of 50 mm thick compacted sand or other granular material with maximum particle size of 5 mm.

- Compact bedding material: To achieve density index of 90% minimum tested to RMS T166.

Raised abutments: Install grids on raised abutments with approach ramps.

- Alternative: Place grid over an excavated pit with adequate drainage.

Transition: Make a smooth transition from grid to ground.

Dispose: Dispose of any excavated material.

Single lane grids: No crossfall on grillage.

Two lane grids: Make sure each half of the grillage has a crossfall matching that of the approach road.

Advance signposting: To AS 1742.2 and the *1192 Signposting* worksection on each approach to the cattle grid.

3.8 COMPLETION

Rectification of ground/pavement

Requirement: Reinstate constructed ground surface layer material and associated foundation removed or damaged due to removal of existing fencing or installation of new fencing.

Removal and disposal of surplus material and waste

Requirement: Recycle, re-use or dispose of all surplus material, including off-cuts, timber logs, boulders, stumps, roots, undergrowth, waste and other debris from clearing and fencing erection.

Preservative-treated timber: Do not burn. Dispose to the treatment manufacturer's recommendations.

4 ANNEXURES

4.1 ANNEXURE – SUMMARY OF HOLD AND WITNESS POINTS

For private developments, certain Hold and Witness Points where specifically noted below require representatives of both the Superintendent and the Principal Certifier (e.g. Council) to authorise release.

Clause and description	Type*	Submission/Inspection details	Submission/Notice times	Process held
SUBMISSIONS, Authority approvals	H	Authority approvals of property access for the Works and removal of	5 days before commencement	Commencement

Clause and description	Type*	Submission/Inspection details	Submission/Notice times	Process held
Requirement		existing trees.		
SUBMISSIONS, Execution details Post installation method	H	Details of post type and installation method.	5 days before erecting posts	Erection of posts
SUBMISSIONS, Products and materials Material details	H	Details for each type of material.	5 days before ordering of material	Material ordering and delivery
SUBMISSIONS, Variations Intermediate and strainer posts	H	Details of alternate sizes.	5 days before ordering of material	Material ordering and delivery/ erection of posts
INSPECTIONS, Notice Set-out of fence lines	H	Completed fence section set-out.	5 days before clearing	Clearing/removal of existing fencing
INSPECTIONS, Notice Small watercourses	H	Completed installation of erosion control measure.	5 days before erecting posts	Subsoil drainage
INSPECTIONS, Notice Removal of existing fencing for replacement	H	Completed removal and disposal of existing fencing and reinstatement of surrounding materials.	5 days before erecting posts	Erection of replacement fencing
INSPECTIONS, Notice Clearing and grubbing	W	Cleared work area for installation.	5 days before erecting posts	Erection of fencing
INSPECTIONS, Notice Erection of fences/gates	W	Completed backfill.	3 days before inspection	Erection of chain wire mesh, netting or gate.
INSPECTIONS, Notice Erection of fences/gates	W	Completed rectification of damage to steel posts.	3 days before inspection	Erection of chain wire mesh, netting or gate.
INSPECTIONS, Notice Erection of fences/gates	W – Superintendent and Principal Certifier	Completed fencing.	3 days before inspection	-
INSPECTIONS, Notice	W	Completed reinstatement of earth/rock/pavement	1 day after completing reinstatement	-

Clause and description	Type*	Submission/Inspection details	Submission/Notice times	Process held
Rectification of ground/pavement		surrounding posts.		
*H = Hold Point, W = Witness Point				

4.2 ANNEXURE – PAY ITEMS

This Annexure applies to Council projects. For private development works use of this schedule is optional, at the Superintendent's discretion.

Pay items	Unit of measurement	Schedule rate inclusions
1196.1 Supply and erection of boundary fencing	Linear metre of fencing, chain-link, stock-proof or rabbit-proof, measured on site.	Show separate pay for each type of fence required. All costs associated with the supply of materials; clearing of site, and all activities associated with the erection of fencing, including the levelling of mounds, if required, concreting; the provision of crossings for watercourses and depressions; flood gates and the connection of the new fencing to existing fencing removal and disposal of excavation material encountered (earth and rock), surplus material and rubbish.
1196.2 Supply and erection of boundary fence gates	Each gate erected.	All costs associated with the supply of materials and erection of each gate.
1196.3 Supply and installation of stock grid	Each cattle grid installed.	All costs associated with the supply and construction of the stock grid including excavation, bedding, approach ramps, wings, drainage, adjustment to fencing and the provision of signs.
1196.4 Removal of existing fence	Linear metre of fencing removed as measured on site.	All costs associated with the demolition and disposal of existing fencing.
Traffic management		To *1101 Traffic management*.
Clearing and grubbing		To *1111 Clearing and grubbing*.
Signposting		To *1192 Signposting*, except for stock grid signage.

4.3 ANNEXURE - REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 1074	1989	Steel tubes and tubulars for ordinary service
AS 1111		ISO metric hexagon bolts and screws - Product grade C
AS 1111.1	2015	Bolts
AS 1111.2	2015	Screws
AS 1112		ISO metric hexagon nuts
AS/NZS 1163	2016	Cold-formed structural steel hollow sections
AS/NZS 1214	2016	Hot-dip galvanized coatings on threaded fasteners (ISO metric coarse thread series) (ISO 10684:2004, MOD)
AS 1237		Plain washers for metric bolts, screws and nuts for general purposes

AS 1237.1	2002	General plan
AS 1237.2	2016	Tolerances for fasteners - Product grades A, C and F
AS 1289		Methods of testing soils for engineering purposes
AS 1289.5.6.1	1998	Soil compaction and density tests - Compaction control test - Density index method for a cohesionless material
AS/NZS 1390	1997	Cup head bolts with ISO metric coarse pitch threads
AS 1604		Specification for preservative treatment
AS 1604.1	2012	Sawn and round timber
AS 1720		Timber structures
AS 1720.2	2006	Timber properties
AS 1725		Chain-link fabric fencing
AS 1725.1	2010	Security fences and gates - General requirements
AS 1742		Manual of uniform traffic control devices
AS 1742.2	2009	Traffic control devices for general use
AS 2082	2007	Timber - Hardwood - Visually stress-graded for structural purposes
AS 2423	2002	Coated steel wire fencing products for terrestrial, aquatic and general use
AS 2759	2004	Steel wire rope - Use, operation and maintenance
AS 2858	2008	Timber - Softwood - Visually stress-graded for structural purposes
AS/NZS 3750		Paints for steel structures
AS/NZS 3750.9	2009	Organic zinc-rich primer
AS 4672		Steel prestressing materials
AS 4672.1	2007	General requirements
AS/NZS 4680	2006	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
AS/NZS 4792	2006	Hot-dip galvanized (zinc) coatings on ferrous hollow sections, applied by a continuous or a specialized process
Austroads ATS 5420	2020	Supply of bolts, nuts and washers.
RMS T166	2012	Relative compaction of road construction materials

5 ANNEXURE M – MIDCOAST COUNCIL SPECIFIC CLAUSES

M1.	Variations to or non-conformances with Council's AUS-SPEC are to be evaluated with reference to the procedure in Council's *Development Engineering Handbook*. Acceptance is to be obtained in writing from: a) an authorised representative of Council's Director of Infrastructure and Engineering Services, or b) an accredited certifier where they are the Principal Certifier and hold the relevant accreditation category for the type of work.	**Variation procedure**
M2.	This specification applies in addition to any development consent (DA) conditions. If there is any inconsistency, the conditions of consent shall prevail.	**DA conditions**
M3.	Refer to the MidCoast Council *Development Engineering Handbook* for final inspection, works-as-executed and handover requirements.	**Completion**

6 AMENDMENT HISTORY

0	14/12/2020	First Published