



AUS-SPEC

Infrastructure Specifications

0136 General Requirements (Construction)



0136 GENERAL REQUIREMENTS (CONSTRUCTION)

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 labour, materials, plant and equipment to construct the Works, as documented.

Designer (where applicable in these specifications): must be a professional engineer (as defined below) or Registered Land Surveyor with relevant experience and who is responsible for signing off on the completed design before it is implemented. Submit details of accreditation and qualifications along with the design.

1.2 PRECEDENCE**General**

Worksections and referenced documents:

- The requirements of other worksections of the specification override conflicting requirements of this worksection.
- The requirements of the worksections override conflicting requirements of their referenced documents.
- The requirements of referenced documents are minimum requirements.

1.3 CROSS REFERENCES**General**

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

- *0152 Schedule of rates (Construction)*.
- *0161 Quality management (Construction)*.
- ***0167 Integrated management***.
- *0173 Environmental management (AUS-SPEC)*.
- *1101 Traffic management*.
- *1196 Boundary fencing for road reserves*.

Cross referencing

Within the text:

- Worksection titles are indicated by *Italicised* text.
- Clause titles are indicated by **BOLD** text.

Hold and witness points

General: **SUBMISSIONS** and/or **INSPECTIONS** align with **ANNEXURE - SUMMARY OF HOLD AND WITNESS POINTS**.

1.4 REFERENCED DOCUMENTS**Contractual relationships**

General: Responsibilities and duties of the principal, contractor and superintendent are not altered by requirements in the documents referenced in this specification.

Current editions

General: Use referenced documents (including test methods) which are the editions, with amendments, current 3 months before the closing date for tenders, except where other editions or amendments are required by statutory authorities.

Site copies: **Not used**

1.5 INTERPRETATION**Abbreviations**

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

- AS: Australian Standard.
- BIM: Building Information Modelling.
- CAD: Computer Aided Design.
- CPEng: Chartered Professional Engineer (accreditation by Engineers Australia).
- **DA: Development Approval**
- ESD: Ecologically sustainable development.
- ICSM: Intergovernmental Committee on Surveying and Mapping.
- NATA: National Association of Testing Authorities.
- NZS: New Zealand Standard.
- **REF: Review of Environmental Factors.**
- **RPEng: Registered Professional Engineer (accreditation by Professionals Australia).**
- **RPEQ: Registered Professional Engineer of Queensland**
- TBS: To Be Supplied.
- **TfNSW: Transport for NSW (formerly Roads and Maritime Services or RMS)**
- WHS: Work Health and Safety.

Definitions

General: For the purposes of this contract the definitions given in Austroads AP-C87 and the following apply:

- Approved: Approved, reviewed, directed, rejected, endorsed and similar expressions mean approved (reviewed, directed, rejected, endorsed) in writing by the contract administrator.
- Authorities: Includes service agencies and Road Authorities.
- Documented: Documented, as documented and similar terms mean contained in the contract documents.
- Geotechnical site investigation: The process of evaluating the geotechnical characteristics of the site in the context of existing or proposed construction.
- Give notice: Give notice, submit, advise, inform and similar expressions mean give notice (submit, advise, inform) in writing to the contract administrator.
- Hold point: A mandatory verification position in the contract beyond which work cannot proceed without the designated authorisation.
- Local authority (local council): A body established for the purposes of local government by or under a law applying in a state or territory.
- Manufacturers' and suppliers' recommendations: Recommendations, instructions, requirements, specifications (and similar expressions) provided in written or other form by the manufacturer relating to the suitability, use, installation, storage and/or handing of a product.
- Obtain: Obtain, seek and similar expressions mean obtain (seek) in writing from the contract administrator.

- Permanent marks: Survey control marks that are permanent by nature and are uniquely defined in the state control survey. Also known as State survey marks (SSM) or Bench marks (BM).
- Principal: Principal has the same meaning as owner, client and proprietor and is the party to whom the contractor is legally bound to construct the works. **The primary obligation of the Principal is to make payments to the Contractor. For Council-funded projects, Council is the Principal. For private developments, the Developer is the Principal.**
- Principal Certifier: **Refer to Council's Development Engineering Handbook for definition. Used in relation to projects for which a DA is required. Council is usually appointed as the Principal Certifier, but not always.**
- Professional engineer: A person who is:
 - . If legislation is applicable: A registered professional engineer in the relevant discipline who has appropriate experience and competence in the relevant field.
 - . If legislation is not applicable: **Accredited in the relevant discipline as a CPEng, NER, RPEng, and/or RPEQ**, and has appropriate experience and competence in the relevant field.
- Progressive inspections: Inspections that are required progressively on a component during the course of the project.
- Proprietary: Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
- Provide: Provide and similar expressions mean supply and install and include development of the design beyond that documented.
- Provide: Provide and similar expressions mean supply and install and include development of the design beyond that documented.
- Accredited Testing Laboratory:
 - . An organisation accredited by the National Association of Testing Authorities (NATA) to test in the relevant field; or
 - . An organisation outside of Australia accredited to undertake the relevant tests by an authority recognised by NATA through a mutual recognition agreement; or
 - . An organisation recognised as being an Accredited Testing Laboratory under legislation at the time the test was undertaken.
- Required: Required by the contract documents, the local or statutory authorities.
- If required: A conditional specification term for work which may be shown in the documents or is a legislative requirement.
- **Review of Environmental Factors: An environmental assessment by or on behalf of authorities as a prerequisite to undertaking works under Part 5 of the *Environmental Planning & Assessment Act 1979*.**
- Road authority: As defined by the *Roads Act* in the state where the road is located.
- Statutory authority: A public sector entity created by legislation, that is, a specific law of the Commonwealth, State or Territory.
- Subsurface utility: a utility asset or utility network beneath ground or surface level, including exposed or submerged utilities
- Superintendent: **For Council funded works**, Superintendent has the same meaning as contract administrator or principal's representative unless the contract requires otherwise. **For private development works, the Superintendent is the Developer's authorised representative (e.g. an engineering consultant). However, for private developments certain designated Hold and Witness Points shall require release by both the Superintendent and the Principal Certifier (e.g. Council's Development Engineer) or their delegates.**
- Supply: Supply, furnish and similar expressions mean supply only.
- Survey mark: A survey peg, bench mark, reference mark, signal, alignment, level mark or any other mark used or intended to be used for the purpose of setting out, checking or measuring the work.
- Tests – completion: Tests carried out on completed installations or systems and fully resolved before the date for practical completion, to demonstrate that the installation or system, including components, controls and equipment, operates correctly, safely and efficiently, and meets performance and other requirements. The superintendent may direct that completion tests be carried out after the date for practical completion.

- Tests – pre-completion: Tests carried out before completion tests, including:
 - . Production: Tests carried out on a purchased item, before delivery to the site.
 - . Progressive: Tests carried out during installation to demonstrate performance in conformance with this specification.
 - . Site: Tests carried out on site.
 - . Type: Tests carried out on an item identical with a production item, before delivery to the site.
- Tolerance: The permitted difference between the upper limit and the lower limit of dimension, value or quantity.
- Verification: Provision of evidence or proof that a performance requirement has been met or a default exists.
- Witness point: A nominated position, in the different stages of the Contract, where the option of attendance may be exercised by the Superintendent, after notification of the requirement.

1.6 CONTRACT DOCUMENTS

Services diagrammatic layouts

General: Layouts of service lines, plant and equipment shown on the drawings are diagrammatic only, except where figured dimensions are provided or calculable.

Before commencing work:

- Obtain measurements and other necessary information.
- Coordinate the design and installation in conjunction with all trades.

Levels

General: Spot levels take precedence over contour lines and ground profile lines.

1.7 SUBMISSIONS

Requirement

General: Submit the following, as documented:

- Authority approvals: Notes of meetings with authorities whose requirements apply to the work and evidence that notices, fees and permits have been sought and paid, that authority connections are complete and that statutory approvals by the authorities whose requirements apply to the work have been received.
- Certification: Certification of conformance to documented requirements.
- Design: Design data and certification of proposed work, if required and as documented.
- Materials : Products and materials data, including manufacturer's technical specifications and drawing, evidence of conformance to product certification schemes, performance and rating tables and installation and maintenance recommendations.
- Work-as-executed drawings: To EXECUTION, **WORK-AS-EXECUTED DRAWINGS**.
- Samples: Representative of proposed products and materials and including proposals to incorporate samples into the Works, if any to EXECUTION, **SAMPLES**.
- Shop drawings: To EXECUTION, **SHOP DRAWINGS**.
- Substitutions: To MATERIALS, **GENERAL, Substitutions**.
- Tests:
 - . Inspection and testing plan consistent with the construction program including details of test stages and procedures.
 - . Certificates for type tests.
 - . Test reports for testing performed under the contract to EXECUTION, **TESTS**.

Contractor review: Before submissions, review each submission item and check for coordination with other work of the contract and conformance to contract documents.

Submission: To the superintendent.

Execution details

Working area and site facilities:

- Site facilities: Submit a proposal for positioning of all units, services including septic or sewer, rubbish collection, storage areas and security fencing.

- Alternative site facilities: Submit proposal with full details for the use of alternative site facilities in existing buildings.

Adjoining property: Submit one endorsed copy of each record of adjoining property inspection.

Signage: Submit all safety and project signs for approval before sign manufacture or purchase.

Alternative construction: Submit detailed working drawings, design calculations and specifications and certification by a Professional Engineer experienced in the alternative construction design, verifying conformance of the design.

Submission times

Default timing: Make submissions at least 5 (five) working days before ordering products or starting installation of the respective portion of the Works.

~~Submission response times: Allow in the construction program for at least the following times:~~

~~—Shop drawings: [complete/delete]—~~

~~—Samples: [complete/delete]—~~

~~—Manufacturers' or suppliers' recommendations: [complete/delete]—~~

~~—Product and materials data: [complete/delete]—~~

~~—Alternative material/design substitution or modification: [complete/delete]—~~

Identification

Requirement: Identify the project, contractor, subcontractor or supplier, manufacturer, applicable product, model number and options, as appropriate and include relevant contract document references. Include service connection requirements and product certification.

Non-conformance: Identify proposals that do not conform with project requirements, and characteristics which may be detrimental to successful performance of the completed work.

Errors

Errors: If a submission contains errors, make a new or amended submission as appropriate, indicating changes made since the previous submission.

Electronic submissions

Electronic copies file format: Provide both PDF and native electronic formats (e.g. DXF, 12DA, DOC).

Transmission medium: Email or internet file transfer (e.g. cloud service or file transfer protocol) is preferred. If a storage device is provided (e.g. CD, USB) its return may not be guaranteed. Council may also request a hardcopy printout be provided.

Hard copy submissions

Hard copy quantity: Where requested by Council staff.

- Loose documents larger than A3: One transparency on heavyweight plastic film the same size as the standard contract drawings.
- Loose documents up to and including A3: One copy.

Standard contract drawing size: A1 is preferred for site use for civil infrastructure and subdivisions, except for small scale or simple works where A3 may be acceptable.

1.8 INSPECTION

Note: An inspection is not a substitute for the contractor's supervision nor an implication of approval.

Notice

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

- Items to be supplied by the principal: Delivery to site.
- Existing utility services: Discrepancies from documented location.
- Relocation and alterations to existing utility services: Proposed removal, diversion or cutting into existing service.
- Supplied survey setting out information: Transfer of survey marks.

Attendance

General: Provide attendance for documented inspections and tests.

Underground works: If notice of inspection is required for parts of the works that are to be concealed, advise when the inspection can be made before concealment/backfilling.

2 MATERIALS

2.1 GENERAL

Manufacturers' or suppliers' recommendations

General: Provide and select, if no selection is given, transport, deliver, store, handle, protect, finish, adjust and prepare for use the manufactured items in conformance with the recommendations of the manufacturer or supplier.

Proprietary items/systems/assemblies: Assemble, install or fix in conformance with the recommendations of the manufacturer or supplier.

Project modifications: Advise of activities that supplement, or are contrary to the recommendations of the manufacturers or supplier.

Sealed containers

General: If materials or products are supplied by the manufacturer in closed or sealed containers or packages, bring the materials or products to point of use in the original containers or packages.

Sources policy

General: **As required by any DA consent conditions. Procurement of products and services that result in local, regional and/or national industry participation is encouraged.**

Prohibited materials

General: Do not provide the following:

- Materials, exceeding the limits of those listed, in the Safe Work Australia Hazardous Chemical Information System (HCIS).

Guidance: See <http://hcis.safeworkaustralia.gov.au/consolidatedlists> to search for hazardous substances under the Safe Work Australia Hazardous Substances Information System. Prohibited materials include asbestos, mercury and cadmium.

Substitutions

Identified proprietary items: Identification of a proprietary item does not necessarily imply exclusive preference for the identified item, but indicates the necessary properties of the item.

Alternatives: If alternatives to the documented products and materials, methods or systems are proposed, submit sufficient information to permit evaluation of the proposed alternatives, including the following:

Evidence that the performance is equal to or greater than that specified.

- Evidence of conformity to a cited standard.
- Samples.
- Essential technical information, in English.
- Reasons for the proposed substitutions.
- Statement of the extent of revisions to the contract documents.
- Statement of the extent of revisions to the construction program.
- Statement of cost implications including costs outside the contract.
- Statement of consequent alterations to other parts of the Works.

Availability: If the documented products or systems are unavailable within the time constraints of the construction program, submit evidence.

Criteria: If the substitution is for any reason other than unavailability, submit evidence that the substitution:

- Is of net enhanced value to the principal.
- Is consistent with the contract documents and is as effective as the identified item, detail or method.

Costs: Pay the cost of submissions and of evaluations and tests of proposed alternatives, whether subsequently adopted or not. The costs will be calculated at the current charge-out rates of the relevant consultant(s).

2.2 ITEMS TO BE SUPPLIED (TBS) BY THE PRINCIPAL

General

Supply of items: Items listed in the **Items to be supplied by principal schedule** will be supplied free of charge to the contractor for installation in the Works.

Requirement: Unload and take delivery, inspect for defects and take care of the TBS items. Return unused items to the principal.

Time of delivery: Give notice of the required time of delivery for TBS items.

Damaged or defective: Give notice of any TBS item found damaged or defective within 2 days of taking delivery. If the contractor does not report damage or defect it is deemed that the TBS item was free from damage or defect when received and the contractor is responsible for any replacement or making good.

Storage: Store, protect and insure of all TBS Items received.

Pipe culverts supplied by the principal

Time of delivery: Give 30 days' notice of the required time of delivery.

Supplied: Pipe culverts are supplied by the principal at no cost to the contractor for the actual length laid of pipe culvert required under the contract.

Additional pipe culverts: If any pipe culverts are required in addition to those supplied, it is the responsibility of the contractor to supply at no cost to the principal.

3 EXECUTION

3.1 THE SITE

Protection of the environment

General: *As required by any DA consent conditions or REF.*

Environmental assessment and planning: *As required by any DA consent conditions and endorsed management plans.*

Project specific environmental requirements: *As required by any DA consent conditions and endorsed management plans.*

Site access

Contractor's access to site: *As required by any DA consent conditions and endorsed management plans.*

Public access to site: *As required by any DA consent conditions and endorsed management plans.*

Working hours

Working hours: *As required by any DA consent conditions. Where not specified, operational hours of plant, including the entry and/or departure of heavy vehicles, is restricted to 7 am to 6 pm Monday to Friday and 8 am to 1 pm on Saturdays and not permitted on Sundays or Public Holidays. Work outside of these hours is not permitted without approval.*

Working area and site facilities

Designated areas: *As required by any DA consent conditions or endorsed management plans.*

Working areas: Restrict construction working areas and areas for temporary site facilities, including the storing of materials, use of plant and erection of sheds, to areas *entirely within the property boundaries and as* documented on the drawings. Do not work or occupy areas outside of the designated areas.

Alternative site facilities: If proposing to use existing buildings adjacent to, or in close proximity to, the Works as alternative site facilities, obtain approval.

Security: Take security measures for the safe-keeping of any plant, equipment, tools, materials or other property. *Council cannot accept responsibility for damage or loss of plant, tools, materials or property.*

Temporary fencing: Provide and maintain temporary fencing and warning signage during the contract to prevent unauthorised entry into the property.

Existing fencing: Reinstate the existing fencing and remove temporary fencing before the date of practical completion.

Possession of the site: *The Developer and their agents are responsible for managing access and safety within private property at all times. For public land, the contractor takes possession from the date of commencement of any access agreement or permit, or the date that any site works commence (including temporary works such as installation of survey set out, fencing, site facilities or the like), whichever occurs first.*

Site restrictions

Special site conditions: **As per any DA consent conditions and endorsed management plans.**

Reports supplied for information only: **As per any DA consent conditions.**

- Status: Reports supplied for information only are not contract documents.

Protection of persons and property

Temporary works: Provide and maintain required hoardings, barricades, guards, fencing, shoring, temporary roadways, footpaths, signs, lighting, watching and traffic control.

Accessways, services: Do not obstruct or damage roadways and footpaths, drains and watercourses and other existing services in use on or adjacent to the site. Determine the location of the services.

Property: Do not interfere with or damage property which is to remain on or adjacent to the site, including adjoining property encroaching onto the site, and trees.

Rectification

Accessways, services: Rectify immediately any obstruction or damage to roadways and footpaths, drains and watercourses and other existing services in use on or adjacent to the site. Provide temporary services whilst repairs are carried out.

Property: Rectify immediately any interference or damage to property which is to remain on or adjacent to the site, including adjoining property encroaching onto the site, and trees.

Adjoining property

Notice: At least 10 working days before commencing work, submit to owners and occupants of adjoining property written notice of intention to commence work and an outline description of the type and extent of work.

Conditions for work on adjoining property: **As required by any DA consent conditions or endorsed management plans.**

Revealed encroachments: If the works reveal unknown encroachments of adjoining property on to the site or of existing site structures on to adjoining property, immediately seek instructions.

Records: For properties described in the **Adjoining properties to be recorded schedule**:

- Inspect the properties with the superintendent and owners and occupants of the properties, before commencement of work.
- Make detailed records of conditions existing within the properties, especially structural defects and other damage or defacement.
- Arrange for at least 2 copies of each record, including drawings, written descriptions, and photographs, to be endorsed by the owners and occupants, or their representatives, as evidence of conditions existing before commencement of work.

Endorsed copies: Submit one endorsed copy of each record. Keep the other endorsed copy on site.

- Purpose of submission: Information only.

Site investigation

Geotechnical and environmental reports: For information only. The geotechnical information, including information on contaminants, provides information on the nature of the ground at each tested part and is not a complete description of conditions existing at or below ground level.

Geotechnical information: **Refer to documentation submitted in support of any DA or Works Certificate application.**

Contractor's responsibility: Examine and assess the following:

- Geotechnical information and the site to determine the impact on the construction of the Works.
- The in situ moisture content likely at the actual time the work is carried out.

3.2 EXISTING UTILITY SERVICES**Existing services**

Subsurface utilities: Define the accuracy of information relating to underground or submerged utilities to the following quality level, to AS 5488.1:

Quality level: **To be determined at the contractor's own risk unless otherwise noted by the consultant (e.g. on Drawings or Specifications).**

Risk assessment: To AS 5488.2 Appendix B for different levels of project complexity.

Location: Before starting earthworks, locate and mark existing services in the areas which will be affected by the earthworks operations including clearing, excavating and trenching.

Subsurface utility location: To the **Subsurface utility location schedule**.

Utility services: Contact DIAL BEFORE YOU DIG to identify location of underground utility services pipes and cables.

Services verification: Contact the persons listed in the **Utility authority contacts schedule** to verify the location of utility services.

Discrepancies: If there is any conflict between the actual location or elevation of any service and the location or elevation of any service shown on the drawings, give notice.

Subsurface utility clash detection: To AS 5488.2 clause 4 and Appendix D.

Sensitivity of utilities: Identify those utilities such as optical fibre cables sensitive to the vibration from heavy duty compaction rollers.

Excavation adjacent to utility services: Use only utility authority approved methods of excavation.

Limitations to work methods: Include in work method procedures, any restrictions required by the relevant authority, such as vibrations in the vicinity of underground and overhead facilities.

Protection of services

Precautions: Secure and protect existing gas, water, drainage pipes, sewers, electric conduits and other existing services both underground and overhead.

Repair to existing: Repair any damage caused to existing gas, water, drainage pipes, sewers, electric conduit and other existing services to the approval of the relevant authority.

Relocation and alterations to existing utility services

Alterations: Give notice and obtain approval, if removal, diversion or cutting into existing utility services is required.

Redesign of works: If vibration of road building equipment is a problem then consider a change to the works design to consider different pavement materials such as reinforced concrete subbase and asphalt base and wearing course.

Liaison with utility authority: Include the following:

- Allowance in the program for coordination.
- Allowances in the program for installation by utility authority contractor during the Works.
- Allowance for adjustments to site plant and equipment.
- Allow utility authority contractor to work on or near the site and do not interfere with the operations.
- Reinstatement and backfilling of service trenches to the requirements of the utility authority.

Restrictions: Obtain approval before proceeding with the following:

- Stop work due to utility authority operations.
- Relocation of utility services due to equipment or methods of operation.

Relocations of services by the contractor: Arrange all relocations or alterations to the

Relocation/alteration to services (by contractor) schedule.

Timing of contractor relocations of services: **As required by any DA consent conditions or endorsed management plan, or if not specified, as directed by the Superintendent.**

Relocations of services by the principal: Relocations and expected program to **Relocation/alteration to services (by principal) schedule**. Do not commence the Works before completion of the relocation/alteration of the services.

Maintenance responsibility: The contractor is not responsible for the maintenance of any facilities or structures installed or constructed by the utility authorities.

Programming and duration of utility alterations and relocations:

- Give notice of the expected date of completion of each part of the Works required to be completed before the utility services listed in this worksection can be relocated.
- Do not proceed with final trimming or subsequent parts of the work until work on the utility services within that area is complete.
- Delays due to work by authorities: If required, allow utility authorities to remove, relocate, or work on their facilities before continuing the Works.
- Allowance for utility adjustments: Program the following utility alterations and relocations: **As required by any DA consent conditions and the Drawings.**

~~Extension of time: The Contractor is entitled to extensions of time if the utilities have not been relocated by these dates and this causes delay to the Contract.~~

3.3 CONSTRUCTION PLANT

Office for superintendent

Requirement: Provide a weather-tight site office for the use of the superintendent and staff before major site operations are started and as follows:

- Pay charges for temporary buildings and services.
- Maintain in good order and in clean condition, with secure access, for duration of the Works.
- Obtain permission for removal.
- Remove on completion.

Office for Superintendent table

Item	Description
Prefabricated building	<ul style="list-style-type: none"> — Minimum inside dimensions: 6 x 3 x 2.4 m high exclusive of toilet facilities — Weatherproof, adequately insulated and well ventilated. — Two opening type windows fitted with insect-proof screens. — External door fitted with a cylinder night lock with two keys. — Floor finish: Vinyl flooring as approved. — Walls and ceiling finish: Painted as approved.
Furniture and fittings	<ul style="list-style-type: none"> — One reference table, minimum size 1.5 ´ 0.9 m. — One desk, with lockable drawers, minimum size 1.5 x 0.9 m. — Three office chairs and one stool, with padded seats, swivel base and adjustable height. — Two x 1.2 m² pin boards fixed to the walls. — One 0.75 kW reverse cycle air conditioner.
Prefabricated toilet facilities	<ul style="list-style-type: none"> — Weatherproof, well ventilated and connected to the temporary sewerage system. — Minimum of one partitioned w.c. cubicle with door and latch. — Separate wash area with minimum of one wash basin connected with hot and cold running water. — Lockable external door with two keys.
Electricity connection	<ul style="list-style-type: none"> — Lighting to the office and toilet facilities. — Two double power points to the office.
Telephone and data service	<ul style="list-style-type: none"> — Two telephone lines connected to the office with one line fitted with a telephone hand set. — Provide a second line for a facsimile machine supplied by the Superintendent. — Provide an internet connection.

Temporary services

Sewer: Make a temporary connection to an existing sewer where one is available. Provide a portable toilet as an alternative. Cap temporary sewer connection at completion.

Water supply: Provide temporary water supply for site facilities. Remove on completion.

Electricity supply: Provide any temporary electricity supply required for site facilities. Remove on completion.

Temporary fencing

Requirement: Provide temporary fencing to site facilities as documented, to the 1196 Boundary fencing for road reserves worksection and as follows:

- (No additional default requirements specified).
- Type: 1.83 m high galvanized chain fabric mesh fence.
- Gate: Galvanized tubular steel vehicular access gate.
- Covering to fencing: Full height hessian or shade cloth screen.

Removal: Remove temporary fencing at practical completion.

Other fencing: [complete/delete]

Advertising signs

Requirement: No advertising is permitted on the site except for the following:

- Approved project signs.
- Manufacturer's name or names of owner on items of construction plant.
- Contractor's mail box.
- Signs which are specifically approved by the DA or meet the exempt development criteria (discuss with a Council planner if required).

Project work signs

Requirement: Provide project-specific work signs and as follows:

- Locate where directed.
- Maintain in good condition for duration of the work.
- Obtain permission for removal.
- Remove on completion.

Project work signs: [complete/delete]

Acceptable sign layouts: [complete/delete]

Timing:

- Installation: No later than one week from receiving the notice of possession of site.
- Removal of signs after Practical Completion: generally no later than 6 weeks after practical completion.

3.4 BUILDING THE WORKS**Program of work**

Construction program: Show the following:

- Sequence of work.
- Critical paths of activities related to the work.
- Allowance for holidays.
- Allowance for relocation of utility services alterations and relocation.
- Activity inter-relationships.
- External dependencies including provision of access, document approvals and work by others.
- Periods within which various stages or parts of the work are to be executed.

Time scale: Working days.

Updated program: Identify changes since the previous issue, and show the estimated percentage of completion for each item of work.

Program chart: Display in the contractor's site office an up-to-date bar chart and network diagram based on the construction program.

Site meetings

General: Attend site meetings throughout the contract and arrange attendance of appropriate subcontractors.

Meeting agenda: Include performance measures, coordination of program and work under the contract and resolution of any questions regarding the intent or interpretation of the documents.

Meeting time: [complete/delete]

Minutes: Site meetings will be chaired and minuted by the superintendent. Copies of the minutes will be issued to all present at the meeting and others concerned with the matters discussed.

Work by others

Requirement: Coordinate the Works with simultaneous and/or adjacent work by others and liaise with other contractors and authorities to avoid disruption, delays and possible conflict.

Access: If required, allow free access for completion of any work by others.

Work by others: **As required by any DA consent conditions or otherwise as directed by the Superintendent.**

Alternative construction

Requirement: If the use of alternative materials, design or methods of construction is permitted, prepare detailed working drawings, design calculations and specifications for the alternative.

Documentation: Provide ~~2 sets~~ of CAD working drawings and any supporting calculations.

Revisions: Attend to any required revisions to drawings or calculations and resubmit ~~2 sets~~ of the revised drawings and calculations.

Certification: Provide certification by a Professional Engineer experienced in the alternative construction design, verifying conformance of the design.

Submission timing: At least four weeks before construction of the relevant part of the work is scheduled to commence.

Approval to proceed: Do not commence the Works until an endorsed set of working drawings has been returned.

3.5 SURVEY CONTROL

General

Road construction survey: To ICSM QA Specification G71.

Permanent survey marks

Permanent and cadastral survey marks: Provide verification by a registered surveyor that a search has been carried out before starting the Works and all permanent and cadastral survey marks have been identified and recovered, if required.

Transfer of marks: Transfer permanent survey marks clear of the operations before any of the survey marks on base lines or various control lines are affected by the Works.

Preservation of survey infrastructure: Protect all items of survey infrastructure including permanent and cadastral reference marks. Engage a registered surveyor to investigate the works area and identify the survey infrastructure that needs to be preserved.

Supplied survey setting out information

Certification: Before starting the Works, check the digital design model provided for discrepancies between the model and the drawings.

Provision of marks: The superintendent will provide permanent marks shown on the drawings and establish bench marks related to the level datum.

Relocation of survey control: Obtain approval for the relocation of survey control, establishment of recovery pegs, or setting out or levelling.

Protection: Protect all supplied survey marks. If survey marks are damaged or destroyed, re-establish the survey marks.

Set out pegs

Recovery pegs: Provide and fix adequate recovery pegs in suitable locations adjacent to the elements of work.

Removal: Remove all pegs and profiles at practical completion.

Survey equipment

Requirement: Use electronic total stations and ancillary equipment for survey tasks in conformance with the following:

- Electromagnetic distance measuring device (EDM): Standard deviation for error < 5 mm + 5 ppm.
- Horizontal and vertical circles: Angular measurement standard deviation for error < 3 seconds of arc.
- One second of arc minimum count.
- Diametrical vertical circle reading and automatic tilt compensator.

- Capability to electronically record and store field data such as horizontal and vertical angles, distances, point notation, target and instrument heights.
- The calibration procedure and calibrated at all times.
- Calibrated immediately after any repairs.

Laser and global positioning construction control systems

Horizontal and longitudinal alignment control requirements:

- Offset pegs 500 mm from the surface design edge of subgrade.
- Clearly mark chainages on the pegs.
- Spacing between pegs:
 - . < 50 m on the straights.
 - . < 20 m on curves including all curve tangent points.
- Place pegs vertically.
- Tolerance: ± 25 mm to the exact horizontal location.
- Protect from disturbance.

Removal: Remove all pegs at practical completion.

3.6 SAMPLES

General

Incorporation of samples: Only incorporate samples in the Works which have been endorsed for inclusion. Do not incorporate other samples.

Retention of samples: Keep endorsed samples in good condition on site, until the date of practical completion.

Unincorporated samples: Remove on completion.

3.7 SHOP DRAWINGS

General

Documentation: Include dimensioned drawings showing details of the fabrication and installation of structural elements, building components, services and equipment, including relationship to building structure and other services, cable type and size, and marking details.

Diagrammatic layouts: Coordinate work shown diagrammatically in the contract documents, and prepare dimensioned set-out drawings.

Record drawings: Amend all documented shop drawings to include changes made during the progress of the work and up to the end of the defects liability period.

3.8 WARRANTIES

General

Requirement: Name the principal as warrantee. Register with manufacturers as necessary. Retain copies delivered with components and equipment.

Warranty period: Start warranty periods at acceptance of installation.

3.9 WORK-AS-EXECUTED

Recording, format and submission

Data Standard for road management: To Austroads AP-R597.

Progress recording: Keep one set of drawings, CAD or BIM files on site at all times, expressly for the purpose of marking changes made during the progress of the Works.

Drawing layout: Use the same borders and title block as the contract drawings.

Quantity and format: Conform to **SUBMISSIONS**.

Endorsement: Certify and date all record drawings.

Accuracy: If errors in, or omissions from, the record drawings are found, amend the drawings and re-issue in the quantity and format documented for **SUBMISSIONS**.

Date for submission:

~~—Draft submission: 2 weeks before the date for practical completion.~~

- Final submission: Before issue of final certificate.

Defects Liability Period: Changes made after the date for practical completion will require a re-issue of the drawings in conformance with the preceding requirements.

CAD base drawings: To be provided by Superintendent to the contractor.

Roadworks: Certify all changes to the contract drawings and actual values of all levels, endorsed by a registered surveyor.

Public utilities

Public utilities: Record as required by the worksections.

Surface utilities: Record information on background or submerged utilities to the documented quality level, conforming to AS 5488.1.

Subsurface utilities recording quality level: **Level A (absolute 3-dimensional positioning) unless approved otherwise by the owner of the land (e.g. Council).**

3.10 OPERATION AND MAINTENANCE MANUALS

General

Authors and compilers: Personnel experienced in the maintenance and operation of equipment and systems installed, and with editorial ability.

Referenced documents: If referenced documents or worksections require that manuals be submitted, include corresponding material in the operation and maintenance manuals.

Contents

Requirement: Include the following:

- Table of contents: For each volume. Title to match cover.
- Directory: Names and contact details of principal consultant, subconsultants, contractor, subcontractors and name of main contact.
- Work-as-executed drawings: Complete set of record drawings, full size.
- Drawings and technical data: As necessary for the efficient operation and maintenance of the Works.
- Project description: General description of the Works.
- Product descriptions:
 - . Name and contact details of the manufacturer and supplier of products installed.
 - . Schedules of products, stating locations, and dates of manufacture. Provide a unique code number cross-referenced to the record and diagrammatic drawings and schedules for each product installed.
 - . Manufacturers' technical literature for products installed, assembled specifically for the project, excluding irrelevant matter. Mark each product data sheet to clearly identify specific products used in the Works.
- Certificates:
 - . Certificates from authorities.
 - . Copies of manufacturers' warranties.
 - . Product certification.
 - . Test certificates for each service installation and all equipment.
 - . Test reports.
 - . Commissioning reports.
- Operation procedures.
- Maintenance procedures:
 - . Detailed recommendations for periodic maintenance and procedures, including schedule of maintenance work including frequency and recommended tests.
 - . Emergency procedures, including telephone numbers for emergency services, and procedures for fault finding.
 - . Safety data sheets (SDS).

Format – electronic copies

Printing: Except for drawings required in the **WORK-AS-EXECUTED DRAWINGS** clause, provide material that can be legibly printed on A4 size paper.

Scope: Provide the same material as documented for hardcopy in electronic formats (native and PDF copies).

Quantity and format: Conform to **SUBMISSIONS – electronic copies**.

Format – hard copy

General: A4 size loose leaf, in commercial quality, 4 ring binders with hard covers, each indexed, divided and titled. Include the following features:

- Cover: Identify each binder with typed or printed title *OPERATION AND MAINTENANCE MANUAL*, to spine. Identify title of project, volume number, volume subject matter, and date of issue.
- Dividers: Durable divider for each separate element, with typed description of system and major equipment components. Clearly print short titles under laminated plastic tabs.
- Drawings: Fold drawings to A4 size with title visible, insert in plastic sleeves (one per drawing) and accommodate them in the binders.
- Pagination: Number pages.
- Ring size: 50 mm maximum, with compressor bars.
- Text: Manufacturers' printed data, including associated diagrams, or typewritten, single-sided on bond paper, in clear concise English.

~~Number of copies: 3.~~

Date for submission

Draft submission: 2 weeks before the date for practical completion.

Final submission: Before issue of final certificate.

3.11 TESTING

Attendance

General: Provide attendance on tests.

Testing authorities

General: Except for site tests, have tests carried out by a Registered testing authority.

Test instruments: Use instruments calibrated by a Registered testing authority.

Test reports

General: Indicate observations and results of tests and conformance or non-conformance with requirements.

Notice

Inspection: Give sufficient notice for inspection to be made of the testing as documented.

Controls

General: Calibrate, set and adjust control instruments, control systems and safety controls.

Certification

General: On satisfactory completion of the installation and before the date of practical completion, certify that each installation is operating correctly.

3.12 COMPLETION

Reinstatement

General: Before the date for practical completion, clean and repair damage caused by installation or use of temporary work and restore existing facilities used during construction to original condition.

Adjoining property

Evaluation: At practical completion, for properties described in the **Adjoining properties to be recorded schedule** inspect the properties with the superintendent and owners and occupants of the properties, recording any damage that has occurred since the pre-commencement inspection.

4 MEASUREMENT AND PAYMENT

4.1 PAYMENTS

General

~~Payments items for the Works: To 0152 Schedule of rates (Construction).~~

4.2 MEASUREMENT

Methodology

Method of measurement for civil engineering work: To ANZSMM.

Non-conforming work: For non-conforming work apply the nominated deductions to the rates given to pay items for that work in *0152 Schedule of rates (Construction)*.

5 ANNEXURE

Each of the below schedules should be completed with project-specific details, either by Council for its own projects, or in the case of private developments by the developer's representative with reference to relevant DA consent conditions and the requirements of this standard.

5.1 SELECTIONS

Adjoining properties to be recorded schedule

Title	Owner	Description

Items to be supplied by the principal schedule

Purpose in works	Material type	Location	Approx. quantity available	Cost as a rate excl. GST	When available	Worksection clause

Subsurface utility location schedule

Description	A	B	C
Utility type			
Capacity - pressure			
Capacity - voltage			
Communication asset feature type			
Source of information			
Depth location			
Electricity asset feature type			
Fire asset feature type			
Gas asset feature type			
ITS asset feature type			
Lighting asset feature type			
Water asset feature type			
Locating method			
Petroleum asset feature type			

Description	A	B	C
Quality level type			
Stormwater asset feature type			
Wastewater asset feature type			
Sewer asset feature type			
Status of asset			

Notes to schedule above:

A, B, C: These designate each instance or type or location of the item scheduled. Edit codes in the Schedule to match those on drawings.

Utility Type: To AS 5488.2 Table A.3 and Utility subtype selection to Table A.4.

Capacity - Pressure: To AS 5488.2 Table A.4.1

Capacity - Voltage: To AS 5488.2 Table A.4.2

Communication asset feature type: To AS 5488.2 Table A.4.3

Source of information: To AS 5488.2 Table A.4.4

Depth location: To AS 5488.2 Table A.4.5.

Electricity asset feature type: To AS 5488.2 Table A.4.6

Fire asset feature type: To AS 5488.2 Table A.4.7

Gas asset feature type: To AS 5488.2 Table A.4.8

ITS asset feature type: To AS 5488.2 Table A.4.9

Lighting asset feature type: To AS 5488.2 Table A.4.10

Water asset feature type: To AS 5488.2 Table A.4.11

Locating method: To AS 5488.2 Table A.4.12

Petroleum asset feature type: To AS 5488.2 Table A.4.13

Quality level type: To AS 5488.2 Table A.4.14

Stormwater asset feature type: To AS 5488.2 Table A.4.15

Wastewater asset feature type: To AS 5488.2 Table A.4.16

Sewer asset feature type: To AS 5488.2 Table A.4.17

Status of asset: To AS 5488.2 Table A.4.18.

Relocation/alteration to services (by the contractor) schedule

Type of utility or service	Owner	Location	Requirement

Relocation/alteration to services (by the Principal) schedule

Type of utility or service	Owner	Location	Requirement	Timing

Utility authority contacts schedule

Authority	Name	Position	Phone number	Fax number
Water and sewerage				
Electricity				
Gas				
Telephone				
Telstra				
Optus				

5.2 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 Execution details Working area and site facilities	H	Positioning of all units and services for site facilities	1 week before installation	Installation of site facilities
SUBMISSIONS Execution details Working area and site facilities	H	Alternative site facilities in existing buildings	2 weeks before installation	Installation of site facilities
INSPECTIONS, Notice Items to be supplied by the principal	W	Delivery to site	2 days	-
INSPECTIONS, Notice Existing utility services	W	Discrepancies from documented location	1 week	-
INSPECTIONS, Notice Relocation and alterations to existing utility services	W	Relocation and alterations to existing utility services	1 week	-
INSPECTIONS, Notice Supplied survey setting out information	W	Transfer of survey marks	2 days	-

*H = Hold Point, W = Witness Point

5.3 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 scope
0136.1 Site establishment	Lump sum.	All costs associated with site establishment, including all documented facilities, site security, fencing, signage, etc.
0136. 2 Office for superintendent	Lump sum.	All costs associated with the provision of the documented facilities.
0136.3 Items from principal	Each. Calculate for each type and quantity of each type of item/material.	All costs associated with receiving, storing and handling items to be supplied from principal.
Traffic management	Lump sum.	To the 1101 Traffic management worksection.

5.4 ANNEXURE - REFERENCED DOCUMENTS

The following documents are incorporated into this worksection by reference:

AS 5488		Classification of Subsurface Utility Information (SUI)
AS 5488.1	2019	Subsurface utility information
AS 5488	2019	Subsurface utility engineering
ANZSMM	2018	Australian and New Zealand standard method of measurement of building works
Austrroads AP-C87	2015	Austrroads glossary of terms
Austrroads AP-R597	2019	Data Standard for Road Management and Investment in Australia and New Zealand Version 3.0
ICSM QA Specification G71	2018	Intergovernmental Committee on surveying and mapping - Road construction surveys
MidCoast Council	2019	Development Engineering Handbook
Safe Work Australia		Hazardous chemical information system

6 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 <i>Development Engineering Handbook</i> . Acceptance is to be obtained in writing from: <ul style="list-style-type: none"> 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 <i>Development Engineering Handbook</i> for final inspection, works-as-executed and handover requirements.	Completion

7 AMENDMENT HISTORY

0	14/12/2020	First Published
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