



Design and Drafting Guidelines

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1.0 Civil Construction and Associated Drainage

1.1 General

Dimensions are to be shown to two (2) decimal places.

Levels are to be shown to 2 decimal places.

Depiction of existing conditions to be shown in fine line form to that of new design.

1.2 Schedule of drawings

The set of drawings are to include (if applicable):

- face page
- design overall plan
- horizontal alignment and construction details
- intersection treatment
- longitudinal section
- cross sections
- drainage longitudinal section
- typical sections and details
- pit schedule
- driveway profiles
- notes and
- set out details.

1.3 Face page

To include contents index and a locality plan indicating the site of works in relation to surrounding streets.

1.4 Design overall plan

The scale of the layout plan is to be no smaller than 1:500.

The overall plan should clearly indicate extent of works and any stages of work if relevant. An outline of the drawing sheets and their numbers indicated.

1.5 Design horizontal alignment and set out plans

The scale of construction details is generally 1:200.

The orientation of the plan is to be such that the north direction is within the first or fourth quadrants.

The plan is to include all existing features with all service authorities' assets and survey control marks. Other details to be shown are to include:

- tunnel boring machines
- design back or lip of kerb including bearing and distance
- chainage along traverse lines and property lines
- tangent point chainages and offsets
- cross section chainages
- construction details including levels, offsets, and chainages
- street names
- abutting title boundaries and house numbers (clearly dimensioning any land to be acquired if applicable)

- north arrow
- scale
- traverse or reference points
- full setting out details (if necessary a separate plan for setting-out may be used)
- drainage alignment, including pipe sizes and types
- centreline offset form traverse line
- pit centreline chainages and offsets, and pit numbers
- saw cut lines
- vehicle crossings
- footpaths and nature strips
- limit of breakout
- limit of works and full depth reconstruction where applicable
- location of services
- house drain connections and types
- perambulator crossings
- linemarking and signage in accordance to AS 1743 including location and description and
- general notes.

1.6 Intersection treatment plan

For intersection treatments, the scale is to be 1:200 or 1:100 as dictated by clarity. Existing pavement contours and proposed pavement contours with a maximum interval of 200mm to be shown.

1.7 Road longitudinal section

A longitudinal section shall be normally prepared at the scale of 1:500 horizontally and 1:50 vertically or as the size of the job dictates.

Detail to be shown on the longitudinal section is to include:

- existing and design property line levels / batter levels as necessary
- design back of kerb levels
- existing and design centreline
- chainage
- full vertical curve detail including intersection point chainage, high and low points and grade lines
- datum reduced level
- chainage of vehicle crossings and tangent points and
- underground services within close proximity of proposed works.

1.8 Cross sections plans

The scale of all cross sections is to generally be 1:100 horizontally and 1:50 vertically. Fully dimensioned roadworks cross sections shall be prepared generally at 20m intervals maximum or as appropriate.

Detail to be shown is to include:

- existing surface levels
- design levels including property line, edge of path, and back of kerb levels and centreline
- distances or offsets from centre line to face of kerb, crown and building line
- design crossfall on road pavements and footpaths
- datum reduced level
- design profile of kerb and channel and new pavement boxing is to be shown
- critical services are to be shown and
- all existing levels as specified in the requirement for levels are to be shown.

1.9 Drainage longitudinal section

The minimum scales are to be 1:500 horizontally and 1:50 vertically, or as specified for individual projects.

Detail to be shown on the drainage section is to include:

- chainages of all pits
- design inlet and outlet levels
- existing invert levels
- design finished levels
- pipe grades and sizes
- pipe capacity, velocity, types and class
- design flow
- backfill material
- pit number
- hydraulic grade lines and
- underground services within close proximity of proposed works including sewer H.B. connection.

Design storm recurrence interval to be determined for each project.

Council design guidelines will apply for all drainage design projects.

1.10 Pit schedule

A pit schedule is to be included on the drawings where drainage works are required.

The pit schedule is to include:

- pit number – pits are to be numbered sequentially with the lowest number at the outlet
- size
- type
- inlet and outlet levels
- inlet and outlet pipe sizes
- finished top of pit level
- depth of pit (to outlet)
- pit cover details and
- other relevant information.

1.11 Typical section

A typical section to a scale of at least 1:100 (desirable 1:50) is to be provided.

The section is to show full construction details including:

- kerb and channel and footpath type, material, offset, width, height, etc.
- services
- existing and proposed drains
- type of backfill for drains
- pavement reconstruction details and
- pavement composition.

1.12 Driveway profiles

Where existing or potential vehicle scraping or “bottoming” is evident, cross sections are to be prepared to allow design of the new access. The design of the crossing is to be based on the Australian Standard 85 per cent vehicle detailed in AS 2890.1 Off-Street Car Parking.

2.0 Design for Drainage Works Not Associated Directly with Road Works

2.1 General

A full catchment analysis is to be carried out.

The design is to include:

- layout plan
- longitudinal section
- typical section of the pipe and trench
- pit schedule and
- pit design where applicable.

2.2 Layout plan

The scale is to be 1:200 or larger.

Detail to be shown is to include:

- all existing features within 5.0 metres of the proposed works
- other features beyond 5.0 metres if possibly relevant to the works
- all above and below ground services public and private: if necessary these services are to be exposed to establish their exact location and depth)
- all title boundaries and easements
- sprinkler systems
- outdoor lighting including underground cabling
- plotted diameter of tree trunks
- material and types of adjoining fences and structures
- north arrow
- scale
- street names
- house number
- existing stormwater pipes
- proposed stormwater pipes
- all pipe sizes
- all construction detail
- pit numbers
- proposed offsets
- tunnel boring machines and
- any other information relevant to the design or construction.

2.3 Longitudinal section

The scales are to normally be 1:500 horizontally and 1:50 vertically or as dictated by clarity.

Detail to be shown is to include:

- chainages
- existing surface levels
- design and existing pipe invert levels
- depth to pipe invert
- sizes and grades of pipes
- pit numbers
- hydraulic grade lines
- pip flow velocity
- pipe capacity

- design flow
- intersecting or adjacent services in the vicinity of the works and
- horizontal and longitudinal scales.

2.4 Typical section

A typical section is required and is to show:

- bedding
- standard house drain connection (if applicable)
- backfill
- surface pavement reinstatement profile and
- any other relevant information.

2.5 Pit schedule

Details of pits to include:

- pit number
- size
- type, including cover type
- outlet and inlet pipe size
- outlet and inlet reduced levels
- depth and
- relevant remarks.

2.6 Pit Design

All non-standard pits or connections are to be shown in detail on the plan.