

SC6.1.4 Construction phase

SC6.1.4.1 Preliminary

- (1) This section states the Council's construction standards for infrastructure works.
- (2) The Council has adopted the AUS-SPEC, Queensland Department of Transport and Main Roads (TMR) and Water Services Association of Australia (WSA) specifications, standard drawings and codes for application within the Council area.
- (3) If no appropriate AUS-SPEC, TMR or WSA specifications, standard drawings or codes are available, specifications pertinent to such works shall be prepared and submitted for Council approval.

SC6.1.4.2 Specifications

- (1) Council's specifications applicable for works within its local government area are:
 - (a) for earthworks, drainage, roadworks and associated works – the AUS-SPEC;
 - (b) for flexible pavements and bitumen sealing – the TMR Specifications and Technical Standards; and
 - (c) for water supply, sewerage, and sewage pumping stations – the WSA codes.
 - (d) Council will not accept re-used or repaired pipelines. When new or existing pipelines are damaged during construction, the complete length of pipeline (manhole to manhole for sewers, fitting to fitting for water, pit to pit for stormwater) is to be taken up and re-laid with the damaged section replaced with new pipe.

SC6.1.4.3 Standard Drawings

- (1) The current Council Standard Drawings are to be adhered to. For other works not shown on its own standard drawings, the following shall be adopted.
 - (a) the Institute of Public Works Engineering Australia, Queensland Division Inc. (IPWEAQ) for earthworks, drainage, roadworks and associated works
 - (b) Queensland Department of Main Roads (TMR) where applicable
 - (c) IPWEAQ and WSA drawings for water supply, sewerage and sewage pumping stations with the WSA drawings given precedence.

SC6.1.4.4 Responsibilities & Communications

- (1) Prior to commencement of construction, the applicant shall appoint a consulting engineer who is a Registered Professional Engineer of Queensland (RPEQ) to be responsible for managing the construction of the infrastructure works on behalf of the applicant. The RPEQ responsible for construction must be independent of the construction contractor. The RPEQ must be Superintendent in a formal contract between the applicant and the construction contractor or be allocated the powers of such a Superintendent by the applicant through a formal letter of appointment.
- (2) During the construction phase, all communications with Council's Engineer shall be through the RPEQ Consulting Engineer.

SC6.1.4.5 Inspections

SC6.1.4.5.1 General

During construction, Council's Engineer reserves the right to conduct audit inspections of any or all of the works without prior notification.

The major inspections and their coverage are listed in the Guidelines below. These listings are not intended to be exhaustive and the Engineer may require inspection and testing of other items.

SC6.1.4.5.2 Inspection and Testing Plans (ITP)

The Consultant Engineer should either confirm adoption of Council's current standard Inspection and Test Plan (ITP) (refer SC6.1.8) or submit for approval an ITP including:

1. dissection of the development works into sections, nominating the proposed inspections and testing to be undertaken for each, by the Consultant and the Engineer;
2. nature and type of test;
3. standard of test;
4. frequency of test; and
5. aspects to be inspected by the Consultant.

Once an Inspection and Testing Plan is approved, the Consultant must follow the plan, unless variations are approved by Council's Engineer, and submit certification that the plan has been followed with the "As Constructed" documentation.

Council's Engineer may, on a random basis, call upon the Consultant to provide evidence of their conformance with the approved ITP in the form of diary records, site visit reports etc.

SC6.1.4.5.3 Prestart Meeting

This meeting will not take place unless the following has been accepted by Council:

1. Full detailed schedule of the cost of the works as contracted.
2. Operational Works Approval.
3. Full Project Management Plan.
4. Site clearance of noxious plants.
5. Inspection fees and bonds paid in full
6. Evidence of insurances (Public Liability, Workcover and Portable Long Service Leave Levee where applicable)

At least five (5) business days prior to the Prestart Meeting, the Consultant shall submit for Council acceptance, the Project Management Plan. The Project Management Plan shall contain as a minimum:

1. Quality Management Plan including critical path works programme.
2. ITPs.
3. Safety Management Plan.
4. Environmental Management Plan.
5. Erosion and Sediment Control Plan (ESCP), to be in accordance with the International Erosion control Association manual and include calculations, assumptions, responsibilities and any other information relevant to the proposed works.
6. Cultural Heritage Management Plan.

The RPEQ consultant engineer is to attend the pre-start meeting,

SC6.1.4.5.4 Major Inspections

At least two (2) working days prior to the major inspections, the Consultant shall submit to Council the relevant test results and reduced levels.

When an inspection involves the checking of levels, analysis shall include a comparison of design levels and as constructed levels together with the deviation from design at all design points. These levels shall be to AHD.

All testing of water and sewerage infrastructure is to be witnessed and certified by the Consultant Engineer.

Guideline: Inspections

Pre-start meeting

This meeting, on-site, will generally follow the Agenda:

1. *introduction of Engineer (or representative), Consultant(s), Contractor(s) and any other attendees;*
2. *review relevant conditions of development approval for operational works ;*
3. *Council construction requirements;*
4. *identification environmentally significant areas and/or trees for preservation;*
5. *contractor's / consulting engineer's proposed sediment and erosion control measures;*
6. *job construction staging and program;*
7. *Workplace Health and Safety;*
8. *treatment of noxious plants and weeds; and*
9. *traffic management plan as applicable;*
10. *any other relevant matters.*

Subgrade inspection

This inspection will generally include:

1. *checking service conduit location, and if kerb and channel is in place – against markers;*
2. *determination of the location of mitre and side drains;*
3. *proof rolling bottom of box for compaction;*
4. *checking of subgrade reduced level and crossfall;*

5. *checking all related civil works:*
 - a. *certified pavement thickness design and subgrade compaction test results;*
 - b. *stormwater drainage pipes for line and level; and*
 - c. *compaction test results for backfill to trenches are to be available for the inspection.*
6. *confirm locations and layouts for all stormwater drainage easements.*

Pre-seal inspection

This inspection will generally include:

1. *base course gravel after compaction. Compaction test results and gravel quality test results of the base, sub-base and select fill courses are to be available for the inspection;*
2. *proof rolling of the finished pavement for compaction;*
3. *checking of final pavement reduced level and crossfall;*
4. *pre-prime inspection of the pavement surface to ensure profile is correct and surface is suitable for priming, in accordance with the relevant specifications.*
(Note: Before priming, the following requirements are to be suitable:-
 - a. *side drains and mitre drains checked and tested;*
 - b. *check conduit markers against service conduits;*
 - c. *surfacing design:*
 - i. *spray seal – proposed application rates of prime and binder and spread rates of pre-coated aggregate are to have been approved prior to the inspection;*
 - ii. *asphaltic concrete – proposed application rates of prime and results of mix acceptance tests all have been approved prior to the inspection;*
5. *stormwater drainage works affecting the roadworks completed;*
6. *all pipe and services crossings of the roadworks completed, and certified correctly located by the Consultant;*
7. *kerb and channel line and reduced levels checked and certified within tolerances by Consultant;*
8. *check intersection contouring;*
9. *check overland flow path contouring away from roadways; and*
10. *suitable minimum period between prime / seal / asphalt as per specifications and satisfactory inspection.*

On maintenance inspections

Council will not attend the 'On Maintenance' inspection unless;

- *all as constructed information has been received by Council.*
- *all bonding required by Council has been receipted by Council.*

As constructed information is to be submitted to Council at least 5 working days prior to the proposed inspection date

'On Maintenance' inspections will generally include, but are not limited to, inspection of the following:

Roadworks:

1. *grades and profiles to road and footpaths;*
2. *topsoiling and seeding to prescribed areas;*
3. *AC surfacing for texture and finish;*
4. *street signs and linemarking (in place or paid for);*
5. *RP pegs in place;*
6. *subsoil drains cleanout points and outlets;*
7. *check conduit markers against RP pegs;*
8. *house numbers allocated and in place.*

Stormwater Drainage:

1. *roads, pipes, structures, flowpaths clear of silt and debris;*
2. *no ponding on roads, in pipes, structures, kerbs and flow paths;*
3. *turfing to prescribed areas;*
4. *pipes laid straight to grade and line;*
5. *no damaged pipes or structures;*
6. *no reinforcing steel exposed to cut off pipes;*
7. *pipe penetrations to manholes finished off;*
8. *quality of concrete work;*
9. *check for unsound render work;*

10. converter slabs mortar bedded;
11. manhole lids to specification requirements;
12. correct drops through manholes;
13. gullies and grates to specification;
14. overland flow paths to profile;
15. inter-allotment drainage kerb outlets;
16. inter-allotment drainage pipes and manholes clean and dry;
17. inter-allotment drainage pipes laid true to grade;
18. correct manhole sizes, lids, locations;
19. manhole lids finished to match finished surface levels and slopes per specification;
20. stormwater drainage easements surveyed and pegged satisfactorily;
21. CCTV inspection results presented 5 days prior to on-maintenance inspection;

Water Supply and Sewerage:

1. water supply and sewer connection estimate obtained and paid;
2. conduit markers;
3. water main pressure test and water quality test results presented;
4. hydrant and valve marker posts (when required) and pavement markings;
5. sewer and manholes clean and dry (free of infiltration);
6. sewer air test results presented;
7. sewers laid true to line and grade;
8. manhole locations;
9. manholes to specification;
10. manhole water test results presented;
11. quality of concrete work/benching;
12. manhole lids correct;
13. manhole lids finished to match finished surface level and slope per specification;
14. CCTV inspection results presented 5 days prior to inspection;
15. water meter numbers and readings submitted for each lot;
16. hydrant clearance below lid within specified tolerance;

Landscaping:

1. plantings are as approved;
2. no conflicts with underground services;
3. visibility sight lines unimpeded by mature plants;
4. tree guards and root barriers in place;

General:

1. site is clean, tidy, free of rubbish, rocks, sticks, unauthorised stockpiles, etc.;
2. allotment earthworks to be free draining and generally in accordance with the approved design;
3. allotment embankment compaction test results submitted;
4. water quality control measures in place and effective;
5. integrity of environmentally significant areas including removal of noxious weeds;
6. maintenance security deposit lodged; and
7. all 'As Constructed' information lodged with Council.

The Consultant is responsible for ensuring that the approved works have been completed and the above listed items are in accordance with the approved drawings, Council's technical specifications and accepted engineering and landscaping practice prior to requesting an "On Maintenance" inspection:

Failure to do so may result in cancellation of the inspection and/or the charging of a re-inspection fee.

Notwithstanding the above, the works will not be formally accepted 'On Maintenance' until the maintenance security deposit has been lodged, and 'As Constructed' drawings and Asset data capture documentation submitted and accepted.