

CAPRICORN MUNICIPAL DEVELOPMENT GUIDELINES

SITE REGRADING

D6

DESIGN GUIDELINES

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Keeping the Capricorn Municipal Development Guidelines up-to-date

The Capricorn Municipal Development Guidelines are living documents which reflect progress of municipal works in the Capricorn Region. To maintain a high level of currency that reflects the current municipal environment, all guidelines are periodically reviewed with new editions published and the possibility of some editions to be removed. Between the publishing of these editions, amendments may be issued. It is important that readers assure themselves they are using the current guideline, which should include any amendments which may have been published since the guideline was printed. A guideline will be deemed current at the date of development approval for construction works.

GENERAL

D6.01 SCOPE

1. This Design Guideline sets out requirements for the site regrading involved in land development and subdivision. Conceptual requirements are presented as necessary considerations when preparing designs for site regrading.

2. The scope of this Guideline assumes that the Designer is familiar with requirements cited in the various construction specifications, specifically those related to earthworks, clearing and grubbing, erosion and sedimentation. Additionally the Designer needs to make reference to the associated design guidelines related to stormwater drainage design, geometric road design and erosion control and stormwater management.

Familiarity with other Specifications Required

D6.02 OBJECTIVES

1. This Guideline aims to assist the Designer in achieving:

Efficient

- efficient and economical design
- enhancement of the environmental character of the site whilst maintaining the natural features of the site
- provision of safe conditions for construction commensurate with the proposed purpose of the development
- equality of building conditions for residential development
- a minimal impact on adjoining properties and developments.

Environmentally Sound

Safe for Construction

Impact on Adjoining Properties

D6.03 REFERENCE AND SOURCE DOCUMENTS

(a) Council Specifications

Construction Specifications

- C211 - Control of Erosion and Sedimentation
- C212 - Clearing and Grubbing
- C213 - Earthworks

Design Specifications

- D1 - Geometric Road Design
- D5 - Stormwater Drainage Design
- D7 - Erosion Control and Stormwater Management

(b) Australian Standards

- AS 3798 - Guidelines on earthworks for commercial and residential developments
- AS 2870.1 - Residential slabs and footings - Construction.

D6.04 SITE REGRADING CONCEPT

1. Areas of a site proposed for building or recreational purposes may not be suitable in their natural state for their intended function without improvement works to:

- (a) Alleviate flooding of low-lying ground
- (b) Fill gullies or create emergency flowpaths after underground stormwater piping has been installed
- (c) Allow improved runoff from flat ground
- (d) Regrade excessively steep slopes that would preclude economical construction of dwelling foundations
- (e) Allow effective recreational use or give reasonable access

The Consultant shall review the natural surface contours and where necessary shall design finished surface levels that ensure the land is suitably prepared

2. Where practical, areas should be regraded to minimise the necessity for underground drainage systems with surface inlet pits, and allow surface water to flow naturally to roads or drainage reserves without excessive concentration.

Drainage

3. The Consultant shall consider the implications of site regrading in relation to the existing natural environment. Generally site regrading shall be minimised in heavily treed areas.

Natural Environment

4. Care shall be taken to provide depressions for overland flow from low points and over major drainage lines, to direct stormwater for storms up to a 100 year average recurrence interval.

Overland Flow

5. The design of site regrading areas in conjunction with the design of roadworks shall be considered with the objective of balancing cut to fill and achieving both an economical development and minimising haulage of imported fill or spoil to and from the development site. Bulk haulage should always be considered an adverse effect on adjacent development, and infrastructure.

Minimal Road Haulage**D6.05 SPECIAL TREATMENT OF PARTICULAR AREAS**

1. Areas abutting flooding or nuisance drainage sites shall be site regraded to a minimum level of 0.5 metres above the 1% AEP Flood levels. The site shall be identified on the design plans with appropriate notation of site specific requirements.

Flooding

2. In the event that an area is known to be affected by or inundated by local stormwater flows, the Designer shall investigate the existing conditions as they relate to the proposed development and advise the Developer in the preliminary design report on all data obtained in the investigation and recommend appropriate contour adjustments. The report should normally be accompanied by sketch plans to clarify recommendations.

Inundation Areas

3. The finished surface of filled areas shall be designed to levels allowing an adequate cover depth over the pipeline (if piped) and permitting surface stormwater flow to be guided to inlet pits if depressions are retained in the finished surface contouring.

Piped Gullies or Depressions

SUBSURFACE DRAINAGE

4. The location of such features shall be clearly defined on the site regrading plans and defined by distance to corner boundaries, monuments, etc for purposes of relocation at the geotechnical testing stage for work as executed plans. A geotechnical report specifying the site specific preparation and compaction requirements will be required to be incorporated with the site regrading plan. A description of the minimum acceptable quality of the fill shall also be specified on the plans, supported by geotechnical recommendations. All documentation necessary from various authorities to support the filling of dams and watercourses shall be supplied with the design plans.

Dams and Water Courses

5. The finished level of any building area shall be designed to ensure a desirable surface grading of 1.5% (1% minimum) oriented in the direction of the drainage system designed to cater for its catchment.

Flat Ground

6. Building areas containing natural ground slopes of an excessively steep nature, ie greater than 15% shall require a report from a Geotechnical Engineer on slope stability and construction issues. Specific requirements shall be noted on the design plans.

Steep Slopes

D6.06 GENERAL STANDARD OF LOT PREPARATION

1. Special requirements will apply where necessary but generally lots are to be cleared of low scrub, fallen timber, debris, stumps, large rocks and any trees which in the opinion of Local Government are approaching the end of their functional life or are dangerous or will be hazardous to normal use of the development. Prior consultation with Local Government is necessary. Such requirements shall be shown on the design plan.

Clearing

2. All timber and other materials cleared from lots shall be removed from the site. All roots, loose timber, etc which may contribute to drain blockage shall be removed. Such requirements shall be shown on the design plan.

Disposal

3. Selected trees shall be preserved by approved means to prevent destruction normally caused by placement of conventional filling or other action within the tree drip zone. Local Government shall be consulted for advice and all specific requirements noted on the design plans.

Preservation of Trees

4. Certification by qualified persons in accordance with AS3798 Level 1 is to be provided where filling depths exceed 400mm.

Certification of Filling

D6.07 STANDARD OF FILL FOR LOTS

1. The following notations are to be incorporated in the design plans. "Filling is to be of sound clean material, reasonable standard and free from large rock, stumps, organic matter and other debris." "Placing of filling on the prepared areas shall not commence until the authority to do so has been obtained from the Local Government".

2. All work shall be in accordance with AS 3798 Level 1.

Fill Quality

3. Fill comprising natural sands or industrial wastes or by-products will be accepted by Local Government only in approved locations and will be subject to specific requirements determined by prevailing conditions.

Restricted Fill

4. It is essential that prior advice be given of intended use of such materials. It should be noted that failure to obtain Local Government's approval may lead to an order for removal of any material considered by Local Government or other relevant authorities as unsuitable or in any way unfit for filling.

Prior Approval

5. All areas where filling has been placed are to be dressed with clean arable topsoil, fertilised and sown with suitable grasses.

Top Dressing

D6.08 CONCURRENCE WITH THE ENVIRONMENT PROTECTION AGENCY

1. The Consultant is recommended to refer to the Environmental Protection Agency with regard to any items requiring specific consideration when preparing a site regrading plan. Such plans may need to incorporate sediment/siltation/erosion control devices with specific reference to the stage at which these are to be provided. The responsibility shall rest with the consultant/ developer to make enquiries with the Environmental Protection Agency and subsequently obtain Local Government approval to proposed measures.

Specific Considerations

D6.09 AS CONSTRUCTED PLANS

1. The Consultant shall annotate on the site regrading plan, the site specific detail to be shown on the As-Constructed plans. Such detail shall include geotechnical report certifying the works to be suitable for the intended purpose and any other certifications, testing and survey data, as required in this specification.

D6.10 CARTAGE OF SOIL

1. The Consultant shall refer to Local Government for acceptable haul roads with applicable load limits. This detail shall be required to be shown on the site regrading plan. The payment of a Bond may be required by the developer/contractor where Local Government has some concern about the ability of a haul road to sustain the loads without undue damage or maintenance requirements.

Possible Bond Requirement

2. Unless specific application is made to Local Government and approval obtained, the plans will be annotated as follows:

Topsoil

"All topsoil shall be retained on the development site and utilised effectively to encourage appropriate revegetation."

D6.11 PERMIT TO ENTER TO DISCHARGE STORMWATER/CONSTRUCT

1. Where it is proposed to divert, direct or intensify the flow of stormwater into adjoining property, an agreement in writing shall be obtained from the downstream landowner and submitted to Local Government prior to the approval of the relevant application. The above shall apply unless otherwise specified by Local Government. A written agreement shall also be required to carry out construction work on adjoining property and such agreement also presented to Local Government.

Permit Required

2. A drainage easement shall be obtained over affected properties prior to endorsement of the survey plan.

Drainage Easement required