DEVELOPMENT DESIGN SPECIFICATION

D6

SITE REGRADING

Amendment Record for this Specification Part

This Specification is Council's edition of the AUS-SPEC generic specification part and includes Council's primary amendments.

Details are provided below outlining the clauses amended from the Council edition of this AUS-SPEC Specification Part. The clause numbering and context of each clause are preserved. New clauses are added towards the rear of the specification part as special requirement clauses. Project specific additional script is shown in the specification as italic font.

The amendment code indicated below is 'A' for additional script 'M' for modification to script and 'O' for omission of script. An additional code 'P' is included when the amendment is project specific.

Amendment Sequence No.	Key Topic addressed in amendment	Clause No.	Amendment Code	Author Initials	Amendment Date
1	IPWEA Mid North Coast Working Party Review of D2 15/9/2000	D06	AMO	HC	16/1/01

DEVELOPMENT DESIGN SPECIFICATION D6 - SITE REGRADING

GENERAL

D6.01 SCOPE

1. This design specification 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 specification 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 specifications related to drainage design, geometric road design and stormwater management and erosion design.

Familiarity with other Specifications Required

D6.02 OBJECTIVES

1. This specification 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

Environmentally Sound

- provision of safe conditions for construction commensurate with the proposed purpose of the development

Safe for Construction

- equality of building conditions for residential development
- a minimal impact on adjoining properties and developments.

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 Drain Design
D7	-	Stormwater Management and Erosion Design

(b) Australian Standards

AS 3798	-	Guidelines on earthworks for commercial and residential developments
AS 2870.1	-	Residential slabs and footings - Construction.
As 1289	-	Methods of testing soils for engineering purposes

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

Drainage

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.

Natural Environment

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 and shall conform to all development approvals/licences issued under relevant Acts.

Overland Flow

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.

Minimal Road Haulage

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.

Topsoil

6. The existing natural topsoil of an area to be regraded shall be removed and stockpiled for replacement as the surface layer in accordance with the terms of the specification.

D6.05 SPECIAL TREATMENT OF PARTICULAR AREAS

Flooding

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

Where filling of lots is required (in whole or part) to raise the level of such lots above flood level, or so that such lots may be satisfactorily drained, the filling must have adequate strength and low compressibility if it is to be used for the support of road pavements and/or buildings.

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. Site constraints either natural or otherwise may be required to be identified as a burden on developed property. It is recommended that the designer take this into account when preparing the design. The property may ultimately be affected by a "restriction as to user", which may be controlled by a legal 88B Instrument placed on title to the land and/or by a Section 149(2) message advising prospective purchasers of any restrictions affecting the land.

Restrictions on Land Use

4. 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

5. 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

6. 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. Any filling or regrading shall be designed not to impound or concentrate surface water on adjoining property.

Flat Ground

7. Building areas containing natural ground slopes of an excessively steep nature, ie greater than 15% shall be brought to the attention of a Geotechnical Engineer for investigation of compatibility with dwelling types proposed. Specific requirements shall be noted on the design plans.

Steep Slopes

8. All sites are to be assessed against the Acid Sulfate Soil Risk Maps prepared by the Soil Conservation Service of NSW (June 1995)

Acid Sulfate Soils

A management plan for acid sulfate soils must be prepared for all developments likely to disturb acid sulfate soils. A full description of the management procedures to be applied must provide a framework for the ongoing management and monitoring of the impacts of acid soil material throughout the construction and after completion of any development

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 Council are approaching the end of their functional life or are dangerous or will be hazardous to normal use of the development. Such requirements shall be shown on the design plan.

Clearing

2. All timber and other materials cleared from urban lots shall be removed from the site. In rural areas limited burning permitted in accordance with Council regulations. All roots, loose timber, etc which may contribute to drain blockage shall be removed. Such

Disposal

requirements shall be shown on the design plan.

3. In areas to be filled over butts of trees, allowance is to be made for clearing of all trees and replanting with a minimum of six (6) advanced suitable species to each lot; planting to be clear of probable future building location, and not to be commenced until filling has been completed and graded, with provision for watering and maintenance for duration of the contract. These specific requirements shall be shown on the design plans. ***Overfilling Area of Trees***

4. 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. The Tree Preservation Officer shall be consulted for advice and all specific requirements noted on the design plans. ***Preservation of Trees***

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."

2. All filling works shall be carried out under the supervision and to the satisfaction of a qualified Geotechnical Engineer or Engineering Geologist. At the completion of works a report prepared by the Geotechnical Engineer or Engineering Geologist shall be submitted to Council determining the suitability of each allotment for residential development.

3. Fill comprising natural sands or industrial wastes or by-products will be accepted by Council 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 the Principal Certifier's approval may lead to an order for removal of any material considered by the Principal Certifier 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 soil is to be spread to a depth of not less than 100 mm. ***Top Dressing***

D6.08 TEMPORARY DIVERSION DRAINS

1. Where temporary drains are required to divert surface flows away from the site regrading area, the location and silt/erosion control treatment shall be clearly identified on the engineering plans. The scale of such works shall reflect the volume of water to be diverted. ***Erosion***

The objective will be to ensure minimal soil disturbances and material loss off the site.

Control measures will include, but not be limited to:

(a) Provision of trench stops every 30m along a trench, with provision for overtopping to be directed to the kerb.

(b) Placement of "blue metal" bags along kerb and gutter at maximum 30m spacings.

(c) Placement of "blue metal" bags around downstream drainage pits.

The requirements identified in Council's Specification D7 – Erosion Control and Stormwater Management should be addressed for any additional requirements.

D6.09 CONCURRENCE WITH THE ENVIRONMENTAL PROTECTION AUTHORITY (EPA)

1. The Consultant is recommended to refer to the EPA 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 EPA and subsequently obtain the Principal Certifier's approval to proposed measures.

EPA

D6.10 WORK-AS-EXECUTED PLANS

1. The Consultant shall annotate on the site regrading plan, the site specific detail to be shown on the Work-as-Executed 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 specifications.

D6.11 CARTAGE OF SOIL

1. The Consultant shall refer to Council 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 Council 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 the Principal Certifier 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."

D6.12 PERMIT TO ENTER TO DISCHARGE STORMWATER/CONSTRUCT

1. Where it is proposed to divert, direct or intensify the flow of stormwater into adjoining property, a "permit to discharge stormwater shall be sought and submitted to the Principal Certifier prior to the approval of Engineering design plans." The above shall apply unless otherwise specified by the Principal Certifier. A permit shall also be sought to carry out construction work on adjoining property and such permit also presented to the Principal Certifier.

Permit Required

SPECIAL REQUIREMENTS

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