MAJOR GRADING PLAN CHECKLIST

PUBLIC WORKS DEPARTMENT / ENGINEERING DIVISION
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Grading plans shall address both rough grading and precise grading activities. The precise grading plan may be incorporated into rough grading plan or may be submitted by separate grading plan(s) as may suit the individual project, subject to the discretion of the City Engineer. Grading plans shall be of the following types: Engineered, General and Minor, as defined in La Mesa Municipal Code Section 14.05. "Precise" items appear throughout. Use Remarks column to indicate that it is known that an item will come in separate precise grading plan.

The following check list is to be used when reviewing plans in conformance with the La Mesa Municipal Code. This checklist should be used as a general guide for plan checking purposes. Any discrepancies are subject to the City Engineer's interpretation of the La Mesa Municipal Code on a case specific basis. ***"Any parcel that is not established by a parcel map or subdivision map after 3/4/72 shall be referred to a planner for processing a certificate of correction."***

			1st Check	2nd Check	3rd Check	Final Mylar	Remarks
	General:						
	Plans must be folded into **9" x 11"**. ENGINEER OF WORK'S ASSESSMENT OF LEVEL OF COMPLETENESS must be at 65% or better for 1st submittal.						
1.	**1st submittal package should include:**						
	a.	Refer to **"Major Grading Submittal Requirements"** handout.					
	Note: Retaining walls are constructed by separate building permit but must be shown on gradng plans.						
2.	**Verify the following items:**						
	a.	Review project against the conditions of approval. Check if specific grading conditions are listed which should be incorporated into the grading plans					
	b.	Verify if conclusions in soils report are incorporated into grading plans; walls, slope retaining systems, etc.					
	c.	Review hydrology and hydrologic calculations and drainage map against the grading plans to verify conformance					
	d.	Verify if interdepartmental signatures or other agency signatures are required prior to sign off					
	e.	Verify if public or private easements are required as part of this project and show					
	f.	If there is a TM, verify that the grading plans are in conformance with the "conceptual grading" shown on the TM					
	g.	All sheets contain a signed statement by the engineer of work					
3.	**Drafting Format:**						
	a.	Prepared on 24"x 36" D-sheets with City title block and notes					

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	b.	All lettering size min. 0.1"					
	c.	Sheets are numbered consecutively					
	d.	Subdivision boundary line is dark, thick, bold line-type					
	e.	Right-of-way line is dark, bold, solid, bold line-type					
	f.	Proposed easement line is bold, dashed line-type					
	g.	Existing easement line is light, dashed line-type					
	h.	Proposed topo line is bold, solid line-type (with elevation no.)					
	i.	Existing topo line is light, dashed line-type (with elevation no.)					
	j.	Topo lines are smooth and continuous to at least 50-feet beyond project limits					
	k.	All structures within 100 feet of project boundary are shown					
	l.	Slope arrow indicators should point down-slope					
	m.	Revision block on all sheets					
4.	**Cover Sheet:**						
	a.	Title block per City of La Mesa standard					
	b.	Title block indicates: (Rough or Precise) Grading, Drainage, and Erosion & Sedimentation Control Plans for: Project Name & Address					
	c.	Topographic data - date flown & company					
	d.	Basis of Bearings					
	e.	Dig Alert notice					
	f.	Name of subdivision or project in title block with street address					
	g.	Verify current standard grading notes (general, sewer, water, erosion control, etc.)					
	h.	Vicinity map showing site location, Township / Range, Thomas Bros Pg./Grid, north arrow, and scale					
	i.	Key map (showing overall grading, sheet coverage, subdivision boundary, scale, lot lines, key map legend, short legal descriptions, offsite work, existing and proposed building footprints, existing underground facilities, north arrow, and any other pertinent information)					
	j.	Sheet index					
	k.	Street names					
	l.	Engineer's certificate with signature and stamp					
	m.	Soils engineer's certificate with signature and stamp					
	n.	Title, and date of Soils Report or Geotechnical Report should be listed indicating all grading operations to be performed in accordance with said report					
	o.	Complete legend detailing the existing /proposed work (legend items should refer to SDRSD where applicable, or to LMSD). Legend should show "DESCRIPTION" "STANDARD", "SYMBOL", and "QUANTITY" (check units and values):					

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		(1)	Subdivision/property boundary with bearings and distances					
		(2)	Right-of-way lines (existing and proposed)					
		(3)	Lot lines (existing and proposed)					
		(4)	Existing topo lines					
		(5)	Existing spot elevations					
		(6)	Existing water, sewer, storm drain, reclaimed water lines, etc.					
		(7)	Existing cleanouts, inlets, headwalls, vaults or other sub-structures					
		(8)	Proposed topo lines					
		(9)	Proposed limits of grading					
		(10)	Proposed slopes (2:1 maximum)					
		(11)	Proposed storm drains or yard drains, if any					
		(12)	Proposed cleanouts, inlets, headwalls, if any					
		(13)	Proposed concrete or vegetated swales					
		(14)	Paving and hardscape					
		(15)	Retaining walls					
		(16)	Fence types; cedar, wrought iron, perimeter block wall					
		(17)	Sewer laterals w/ cleanouts, backflows, utility box					
		(18)	Fill quantity					
	p.		Required Letters Of Permission if offsite grading is proposed (original and one copy)					
	q.		City of La Mesa approved benchmark is provided and complete					
	r.		Legal description and APN(s)					
	s.		Owner and or applicant name, address, phone, and signature					
5.	**Detail Sheets:**							
	a.		Typical lot drainage					
	b.		Typical street sections with dimensions					
	c.		Typical street undercut sections					
	d.		Erosion control notes and details					
	e.		Gravel bag details					
	f.		Desilt basin details					
6.	**Grading Sheets (to be filled out for each grading sheet):**							
	General							
	a.		North arrow and scale					
	b.		Signature block					
	e.		Job title					
	f.		Street dimensions					
	g.		Stationing					
	h.		Curve Data					
	i.		Cul-de-sac radius and dimensions					
	j.		Match line and station					
	k.		References to existing structures or utilities by drawing					

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		number						
	l.	Centerline data						
	o.	Elevations and stations at property lines						
	q.	Surrounding property information; APNs						
	r.	Erosion control facilities						
	s.	Boundary lines shown with horizontal control coordinates (city boundaries, subdivision boundaries, right-of-way, proposed lot lines (dimensioned), existing adjacent lot lines, existing and proposed private and public easement lines, etc.)						
	t.	Contour lines extend at least 50 feet beyond limits of project, buildings shown within 100 feet of project						
	u.	Depict existing and proposed grade contours per legend symbols						
	v.	Lots are numbered (per proposed final map or existing legal description)						
	w.	Building pad and proposed finish floor elevations are provided						
	x.	Limits of grading and cut/fill lines per legend symbol						
	y.	Top and toe of slopes are visible or called out and at least 10 feet from structures and at least 3 feet from PLs						
	z.	Driveway grades shown? Max 14% (20% w/ Fire approval), >12% must be PCC, PCC allowed in ROW only if tied into existing PCC curb and gutter						
	i.	Variable slopes called out (2:1 max), steeper only by permission and as supported by geotechnical report						
	ii.	Slope ratios are listed on steep slopes (2:1 max), percentage called out on mild						
		slopes (5H(min):1V)						
	iii.	Verify whether private easements are required which encompass the proposed facilities						
		(see "**Easement Documents Checklist"**)						
	iv.	Existing/proposed public/private easement lines (with appropriate recording information)						
	v.	Call out removal of existing structures (including walls), facilities, trees, etc.						
	vi.	Caution notes should be added when grading is performed around existing gas lines, low overhead utilities, or other facilities which should be protected areas. If inside, floodplain, encroachment permit application is required						
	vii.	Retaining walls (separately permitted) may be required for grading concept						
	viii.	Depict location of proposed retaining walls:						
		1.	At all key points call out top and bottom of wall elevations (both sides)					
		2.	If they use SDRSD type walls verify that the max. height is not exceeded					

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		3.	A concrete swale should be provided behind retaining wall to collect concentrated flows of large slopes. Piping and discharge location should be shown on the plans. Piping should connect to near storm drain if feasible					
		4.	Sections or details may be required					
	ix.	Verify there are no slopes which conflict with sight visibility around curved streets						
	x.	Require sight visibility easement if necessary. This allows City to cut any trees or bushes that grow on slopes which may interfere with traffic safety						
	xi.	Check paving and hardscape slopes, cross slopes, and widths (ADA satisfied?)						
	xii.	City of La Mesa approved benchmark is provided and complete						
	xiii.	Check basis of bearings, horizontal coordinates, control (northings, eastings)						
7.	**Drainage**							
	a.	If grading plans propose new storm drains, only **private** should be shown on grading plans, public on improvement plans. For existing and proposed:						
		1.	Call out type of inlets, cleanouts, headwalls and other sub-structures					
		2.	Depict pipe alignments, offset dimension, manhole station & offset					
		3.	Call out pipe size, type, length, strength, slope, etc.					
		4.	Verify no horizontal or vertical conflicts with existing or proposed public or private facilities					
		5.	Provide profiles where pipes cross existing facilities. Profiles should depict top and bottom of pipe, inlet locations, inlet capacity, cleanouts, headwalls, length, size, hydraulic grade line (HGL), invert elevation in and out of structures and at other key points					
		6.	Check capacities against Hydrology Study					
		7.	Verify that HGL is not shown above inlet or ground surface (danger)					
	b.	Brow ditch size and type						
	c.	Drainage ditches may need to be paved						
	d.	Sufficient spot elevations or topo to verify lot and project drainage						
	e.	Check daylight grading around perimeter of site; does it create sump/blockage of flow?						
	f.	Depict limits of 100-year inundation levels (per FEMA maps or hydraulic calculations), if near a river, creek, sump, headwall inlet, etc.						
	g.	Verify that proposed buildings are located outside 100-year inundation line						

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	h.	Show ponding areas with max. HGL, any depths over 8"?					
	i.	Cross lot drainage only by permission and with easements and agreements					
	j.	Depict pipe alignments and call out size, type, length, and slope, of existing storm drain facilities inlets, cleanouts, headwalls on plan view					
	k.	Verify 2% min. pad grade and 1% min. swale grade for adequate drainage					
	l.	Check pipe depth (and pipe D-load requirements) Be cautious on pipes less than 2-feet and pipes deeper that 12-feet					
	m.	Ensure that pipes are not under pressure. If it cannot be avoided, then water-tight joints should be called out on the profile and a detail added					
	n.	Provide water-tight joints when slopes exceed 20% or whenever HGL over crown					
	o.	Ensure no pipe diameters decrease downstream					
	p.	Check discharge velocity onto rip-rap and check rip-rap design					
	q.	Are BMPs installed onsite where practicable? Covered by maintenance agreements?					
	r.	Question any proposed driveway discharge in excess of 0.5 cfs.					

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