

## City of La Quinta Public Works Department - Rough Grading Plan Review Checklist

### SUBMITTAL REQUIREMENTS – SEE PLAN CHECK REQUIREMENT CHECK LIST

- Approved tentative map.
- In check final map showing all drainage easements
- Hydrology/hydraulic calculations (debris estimate and mitigation per Riverside County Manual).
- PM10 & SWPPP plans.
- Conditions of approval (engineer to independently verify conditions of approval have been met).
- Rough grading plan.
- Soils report & update letter.
- Rockfall study and mitigation measures (as applicable).
- Archeo/paleo monitoring contract agreement.
- Letter of approval for offsite improvements when encroaching on other property.

### GENERAL SHEET REQUIREMENTS – ALL SHEETS

- Provide consistent references with respect to parcel & tract numbers and ensure boundary & elevation callouts are consistent with tentative map.

### TITLE SHEET

- Earthwork volumes – show raw volumes and shrinkage, subsidence, bulking, import and over excavation quantities. Shrinkage factors shown.
- Rough graded street typical sections and details (may be shown on separate sheet if room does not permit on title sheet). Show limits of rough grade, depth, and all hinge points.
- FEMA flood zone designation.
- Typical lot grading detail(s).
- Show detail of keying and benching (Meet or exceed CBC Ch 33).
- Soil engineer stamp & signature block – ensure update letter is within 1 year of plan set submittal as applicable plans signed by soil's engineer.
- Community Development Director Signature Block.
- Grading notes identify over excavation depth and liquefaction issues as applicable.
- High sulfate content soil projects shall provide note on title sheet for proper concrete mix usage. Type V or III w/strength recommendations. Include reference geotechnical report.
- Provide dimensioned street sections.
- Provide letter of approval from Fire Department when road sections do not meet current standard width.  
Index Map shows:
  - Catch Basin Locations.
  - Surface Storm Flow Arrows.
  - Q10 and Q100 at inlets and surface overflow routing.
  - Culverts/Channels.
  - Retention Basins.
  - Sheet coverage or show on table of contents section.
- Vicinity Map (show jurisdictional boundary lines).
- Show construction notes with quantities. (Note, include Nuisance systems (Maxwell), walls (separate permit and plan), improved channels/culverts when applicable.)

### PLAN SHEETS

- North arrow (preferred to point up or to the right or left).
- 4 inch bar scale – scale to be a typically used scale, i.e. 1 inch = 20 ft or 1 inch = 40 ft
- Scale 1 inch = 40 ft or larger for housing or commercial development areas.
- Scale not smaller than 1 inch = 100 ft for golf course or large open space areas.
- Show complete boundary information and lot line annotation (PL, R/W, etc.).
- Show all lot numbers, lot dimensions and street names .
- Show right of way and all easements including landscape, drainage, public utility, street centerlines, etc. Also provide same detail in sheet sections.

- Show adjacent record map references. Show existing facilities with screen lines. Show tract boundary & lot lines with solid lines. Show existing streets & storm drains with dashed lines.
- Dimension street and right of way widths – proposed & existing as applicable.
- Existing contours shall be shown in screened back or dashed lines.

#### **GENERAL REQUIREMENTS**

- No stockpiles without City Engineer approval.
- Grading shall meet the minimum requirements of the Uniform Building Code specifically Appendix Chapter 33 and the City of La Quinta Municipal Code Chapter 8.80
- Cut slopes equal to or greater than 5 ft in vertical height shall be planted with an approved ground cover to minimize erosion.
- Fill slopes equal to or greater than 3 ft in vertical height shall be planted with an approved ground cover to minimize erosion.
- Graded slopes exceeding 15 ft in vertical height are to be planted with trees and/or shrubs in addition to the approved ground cover.
- Local air quality management plan per the South Coast Air Quality Management District (SCAMD) has been submitted and approved by the City.
- NPDES and state water resource requirements have been met.
- Plan set and pad elevations and grading concepts are in accordance with the approved tentative map and conditions of approval.
- Drainage shall be conducted to a street, natural watercourse, retention basin or other approved location.
- A notarized letter of permission/acceptance from adjacent property owner(s) required for slope encroachment, acceptance of un-natural drainage or other off site grading or work. Include legal description and assessor's parcel numbers.
- Show existing contours a minimum of 50 ft beyond all property lines or as needed for daylight or to justify the design.
- 1 ft contours in very flat areas.
- 4 ft maximum contour interval.
- 10 ft maximum contour intervals on steep hillside areas.
- Show proposed contours in heavy solid lines. Match contour intervals for required existing contours. Show daylight line limits.
- Show pad elevations to the nearest 0.1 ft. Provide high point elevation per pad. Add swale lines on lots or show example lot grade detail.
- Pad elevation shall be a minimum of 1 ft above Q100 elevation. Pads are set by rough grading and may be established by precise grading plan if no rough grading plan is applicable. No pads may be established during mass grading.
- Elevations shown at B.C.'s, E.C.'s, and grade breaks.
- Call out top of curb at 50 ft intervals or at lot line, whichever is greater detail.
- Provide existing offset elevations outside of project.

#### **DRAINAGE & SLOPES**

- Call out retention basin bottom elevation and WSE100.
- Show grade sections & slopes for tract boundaries, retaining walls, setbacks & other features. Call out grades on all section features.
- Show location of daylight lines (transition lines between cut and fill areas) making them continuous and obvious.
- Show grades and flow direction at gutters and other rough grade flow areas every 200 ft (minimum). Call out street flow direction on all plan views.
- Check drainage paths so that permissible velocity is not exceeded (generally < 2ft/sec if earth lined channel).
- Make a dark line of contour showing the retention basin's WSE100 line.
- Provide CC&R's outlining drainage rights and maintenance responsibilities. No cross lot drainage allowable.
- Swale high point is a minimum 2% below pad elevation. Show standard section for swale as applicable.

- Tops and toes of slopes shall be clearly defined. 2:1 max slope
- Show slope between lots if pad elevation difference >0.1 ft
- Drainage channels shall be constructed with flat bottoms for ease of maintenance.
- No drainage over 2:1 slopes. Terrace and interceptor drains shall conform to Chapter 33 of the UBC/CBC.
- Benches and swales provided when slope H > 30 ft per CBC Chapter 33.
- Velocity reducers are required where drains discharge onto natural ground. If riprap is used, specify class and size according to Riverside County Standard.
- No drainage over retaining walls. Use concrete "v" ditches, area drains, down drains or other approved drainage design. Connect "v" ditch between garden walls to storm drain line & route to retention basin or equal.
- A 12 inch high by 4 ft wide berm is required at the tops of all slopes with a 3 ft neighboring pad elevation difference. Show typical detail.
- Provide a 1 ft wide (minimum) bench at the top of all 2:1 slopes between lots.
- Locations of primary storm drain systems (catch basins, culverts, cross gutters, inlets, retention basins, overflows, dry wells, etc) are shown. Retention basin slopes are identified. City Engineering Bulletins 06-15 and 06-16 for retention basins are followed.
- No flow crossing property line – utilize additional inlet structures or swales.
- No individual lot retention allowed under 1 acre lot size.
- Call out swale lines on lots or provide sample grade detail – ensure pad elevation is 1 ft minimum above 100 year storm.
- Call out slopes of retention basin sides.

#### **MINIMUM GRADES – UNLESS OTHERWISE APPROVED BY CITY ENGINEER**

- Earth or turf swales are 0.50%, minimum.
- Asphalt concrete pavement – 1.0% minimum.
- Portland cement concrete pavement – 1.0% minimum. Flow in PCC gutters – 0.5% minimum, increase gradient to 1.0% in cul-de-sac and curves as possible.
- 5% maximum slope in all general parking areas and paths of pedestrian travel including ribbon gutter crossings. Driveways may be up to 10% if alternate ADA accessible routes are provided. Golf cart paths may be up to 15% maximum slope .
- Handicap stalls are 2% or less in all directions, including ribbon gutters if in the stall.
- 1.0% minimum sheet flow (concrete or AC surfaces) within 10 ft of the building foundation, to a drive aisle or storm drain system.
- 2.0% minimum sheet flow (natural cover or equal surfaces) within 10 ft of the building foundation, to a drive aisle or storm drain system.

#### **MISCELLANEOUS CALLOUTS**

- Join elevations and relationships to surrounding properties are shown.
- Show locations of all existing and proposed structures, buried tanks and wells, etc.
- Supply roadway curve data table
- Include disposition notes for existing facilities. The term "by others" shall not be used but shall identify the other party.
- Include construction notes on each sheet. Do not refer back to construction notes on the title sheet.
- Refer to City Standard Drawing No. if applicable to work. Provide specifications, notes, details or other approved standard drawing no. If different from City Standard.
- Exclude benching detail from slopes unless specified by City.
- Call out street dimension in plan views, underground or overhead utilities and R/W.
- Call out top of curb at all adjacent streets.

#### **GEOTECHNICAL REPORT**

- Check for conformance with soils engineer recommendations.
- Plans signed by soil's engineer.
- Update letter if soils report is more than 1 year old.
- Delineate areas of over excavation and re-compaction – hatch/shade in plan view sheets. Where depth exceeds 12 inches, soils engineer to recommend compaction in the final report.

- Recommendations for shrinkage and subsidence.
- Recommendations for percolation provided for retention basin sizing.
- Delineate on the plans and provide details for rock disposal areas as recommended by the soils engineer.
- Borings drilled to 50 ft for liquefaction areas – on larger project Standard Penetration Test borings confirmed with Cone Penetrometer Test borings. Certified Engineering Geologist signature also required for liquefaction areas.
- Corrosive soil conditions have been investigated and mitigation measures proposed as applicable .
- Geotech recommendations match grading notes on plans. Plans state geotech of record will provide certified letter that engineered fill has been placed according to approved plans.
- Erosion control requirements are specified.
- Borings w/continuous sampling at proposed retention basins. Min depth = 15ft from bottom of retention basin if percolation is assumed.
- Retention basin sampling shall provide information on clay or silt lens locations if found.
- Earthen channel slopes – provide estimated Manning’s n Value.
- Grading plan geotechnical items per City Engineering Bulletin 09-03 are addressed, as applicable.
- Determine presence of rockfall and AP fault zone areas with applicable mitigation measures. AP fault zones are typically determined by trench studies in new undeveloped and unmapped areas.

## **WALLS**

- Locations of block walls & retaining walls and other structures are clearly shown.
- All wall construction is by separate permit. Supply wall elevations, footprint and section w/o structural steel detail. Ensure that no part of wall footing crosses over property line. Provide dirt, gunite swale (erosion conditions) or equal at wall section details as required – no cross lot or off property line drainage. No blocking of drainage by walls. Identify and define flow at perimeter of walls to catch basin.
- At wall inflection points and ends, show FS each side, top of footing & top of wall elevations for all privacy & retaining walls – ensure 1 course of footing cover for masonry walls.