



**TOWN OF QUEEN CREEK
COMMUNITY DEVELOPMENT DEPARTMENT
ENGINEERING DIVISION**

GRADING AND DRAINAGE PLAN REVIEW CHECKLIST

PROJECT: _____

LOCATION: _____

LEGEND

REVIEW BY

DATE

☐ = Compliance

☑ Non-Compliant

○ N/A = Non Applicable

Reference-Maricopa County & Pinal County Flood Control District Guidelines

<u>ITEM</u>	<u>REQUIREMENT</u>	<u>COMMENTS</u>
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|--------------------------|---|--|
| <input type="checkbox"/> | 1. The improvement plans must be submitted on 24" x 36" sheets. Please resubmit the plan on the correct size sheets. | |
| <input type="checkbox"/> | 2. The name of the proposed development must be shown on the cover sheet. | |
| <input type="checkbox"/> | 3. The developer's name, address, and phone number must be shown on the cover sheet. | |
| <input type="checkbox"/> | 4. The engineer's name, address, and phone number must be shown on the cover sheet. | |
| <input type="checkbox"/> | 5. The following Town standard notes must be shown, or corrected, on the cover sheet:
A) General Notes
B) Grading Notes | |
| <input type="checkbox"/> | 6. All elevations on the plans must be referenced to an approved Maricopa (NAVD 88) benchmark. | |
| <input type="checkbox"/> | 7. Submit a SWPPP in accordance with the Town of Queen Creek, County and State requirements. | |

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ITEM	REQUIREMENT	COMMENTS
<input type="checkbox"/>	8. Please coordinate the plans with all of the appropriate utility companies on the list below. Place a "Utility Coordination Block" on the cover sheet. Show the names of the utility companies and the date plans were submitted to them. Salt River Project (Power) Qwest Communications COX Cable Southwest Gas Queen Creek Irrigation & Others	
<input type="checkbox"/>	9. Provide an index map with the following information: A) Street Names B) Lot, Tract and Parcel Numbers C) Sheet Numbers D) Phase limits and numbers if applicable E) Model Home area.	
<input type="checkbox"/>	10. A legend identifying the symbols used for the following items must be shown on the cover, or detail sheet. A) Existing top-of-curb elevations. B) Existing ground elevations. C) Proposed top-of-curb elevations. D) Proposed ground elevations. E) Proposed finished floor and pad elevations. F) Existing contour lines. G) Proposed contour lines. H) Arrows designating direction of drainage flow. I) Drainage structures. J) Grade breaks.	
<input type="checkbox"/>	11. When temporary retention basins, or storm drainage facilities are present, the following note must be shown on the cover sheet: "The existing retention and drainage facilities within this development will not be removed from service until the permanent retention and drainage facilities are functional."	
<input type="checkbox"/>	12. All portions of the development within the FEMA 100-year flood zones (A, AE, A1-A30,AH,AO,AH,AR,A99,D,V,VE) must be identified. If any such areas exist, submit Plans and Drainage Report to Maricopa/Pinal County Flood Control Districts. MCFCD/PCFCD approval and signature is required.	

FLOOD CONTROL DISTRICT OF _____ DATE _____
MARICOPA COUNTY/PINAL COUNTY

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ITEM	REQUIREMENT	COMMENTS
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|--------------------------|--|--|
| <input type="checkbox"/> | 13. Add the following note to the cover sheet:
“A RETAINING WALL WILL BE REQUIRED IF AT THE COMPLETION OF GRADING THERE EXISTS MORE THAN ONE FOOT OF DIFFERENCE IN ELEVATION AT THE LOT LINES BETWEEN THIS PROPERTY AND ADJACENT PROPERTIES.” | |
| <input type="checkbox"/> | 14. The following certifications are required on the cover sheet:
A) GRADE CERTIFICATION:

This is to certify that this grading plan is in compliance with the grading requirements of the soils report prepared by: _____
DATE: _____.

REGISTERED CIVIL ENGINEER

DATE: _____

B) FINISH GRADE CERTIFICATION:

This is to certify that the finish grades shown or As-Built on this grading plan are in compliance with the Soils Report prepared by: _____
DATE: _____.

REGISTERED CIVIL ENGINEER
(OR REGISTERED LAND SURVEYOR)

DATE: _____ | |
| | 15. Each sheet of the improvement plans must be sealed, with date and signature, by the engineer preparing the plans. | |
| <input type="checkbox"/> | 16. The minimum height of all text and lettering shall be 0.1” (one tenth of one inch). | |
| | 17. A vicinity or site location map is needed on the cover sheet. | |
| <input type="checkbox"/> | 18. The grading and drainage plans must encompass the entire development. The plans must also include 100ft outside the development boundary. All lots, tracts, and parcels must be shown in their entirety. | |
| <input type="checkbox"/> | 19. Show the limits of the model home area, including parking areas, on the plans. | |
| <input type="checkbox"/> | 20. Provide a quantity tabulation on the cover sheet, see the Certificate of Quantities list for the required items. | |
| <input type="checkbox"/> | | |

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ITEM	REQUIREMENT	COMMENTS
<input type="checkbox"/>	21. North arrow must be shown on each sheet.	
<input type="checkbox"/>	22. Phase limits and numbers must be shown on each applicable sheet.	
<input type="checkbox"/>	23. The scale must be shown on the plans.	
<input type="checkbox"/>	24. The existing topography must be shown by contours. Spot elevations and/or contours are required when the subdivision's topography cannot be clearly defined by contours. Spot elevations are required immediately off-site adjacent to the subdivision boundary sufficient to permit analysis of grade differentials and drainage.	
<input type="checkbox"/>	25. Existing and proposed storm drainage facilities such as retention basins, catch basins, scuppers, and storm drain pipes must be shown and identified by type on plans.	
<input type="checkbox"/>	26. Existing buildings and other significant structures must be shown. The removal of these items must be noted if appropriate.	
<input type="checkbox"/>	27. Existing trees within the Town's Right-of-Way are to be protected in place or replaced in kind.	
<input type="checkbox"/>	28. All wells, streams, canals, irrigation laterals and ditches, lakes and other water features must be shown. Any modifications must also be noted.	
<input type="checkbox"/>	29. Existing spot elevations must be shown for all existing curb and gutter adjacent to the development. Elevations must be shown adjacent to each property corner, at all grade breaks, and at all scuppers/catch basins.	
<input type="checkbox"/>	30. A typical lot grading detail must be shown on the detail sheet. The requirements that this detail must satisfy are as follows: A) The building's finished floor elevation must be shown to be at least 14" above the lot's low outfall elevation. B) The lot grading must be shown to be sufficiently sloped to prevent storm water from ponding on the lot (exclusive of lots greater than 35,000 sf). C) The maximum allowable elevation difference between adjacent yard elevations must be shown to be less than, or equal to, one foot. D) Typical swale location, cross section detail, design calculations, and % slope.	
<input type="checkbox"/>	31. Cross-sections must be shown across the development's property line boundaries. The maximum allowable elevation difference between adjacent properties is one foot.	
<input type="checkbox"/>	32. Cross-sections must be shown for all retention basins. The maximum allowable side slope requirements are 6:1.	
<input type="checkbox"/>		

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ITEM	REQUIREMENT	COMMENTS
<input type="checkbox"/>	33. The depth of ponding due to the 100 year 2 hour design storm for retention facilities must be shown on the retention basin cross-sections and the HW contour line must be shown on the plans. The maximum allowable retention basin depth is 4 ft as measured to the nearest top of bank elevation.	
<input type="checkbox"/>	34. Construction details, plan and profile view, must be shown for all proposed drainage facilities such as: A) Storm drains B) Scuppers and catch basins C) Hydraulic profile must be shown D) Scupper and chute elevations are required E) Access barrier with hinges on bottom required at all open ends of pipe more than 12" in diameter.	
<input type="checkbox"/>	35. The following information must be shown for each lot: A) Proposed elevations at front lot corners, typically top-of-curb elevations. B) Proposed elevations at rear lot corners. C) Proposed finished pad elevations D) Proposed finished floor elevations E) Top and bottom elevations on retaining walls F) All existing and proposed block walls on subdivision boundaries and retention basin perimeters must be shown, with top of wall elevations. G) Basement homes with window wells; show type and location of window well protector.	
<input type="checkbox"/>	36. Water lines, sewer lines, fire lines and water service lines are not allowed to pass under retention basins. This does not apply to irrigation lines downstream of the backflow preventor.	
<input type="checkbox"/>	37. Submit a completed Certificate of Quantities form, signed and sealed by the Civil Engineer.	
<input type="checkbox"/>	38. All proposed drywells must be registered with the Arizona Department of Environmental Quality (ADEQ) and a copy of the application submitted to the Town for inclusion in the file. The following requirements also apply: A) The drywell detail must be shown on the plans B) All drywells receiving storm runoff directly from paved areas must have a separate interceptor chamber installed on them. The drywell design drainage rate cannot exceed 0.1 cfs until percolation tests are performed on drywell. C) Large retention basins typically large enough for a soccer field, must have all drywells installed along the perimeter.	
<input type="checkbox"/>	39. A drainage report shall be required and shall comply with the Town of Queen Creek "Final Drainage Report Checklist", and MCFCD or PCFCD Guidelines.	
<input type="checkbox"/>	40. Structural design calculations are required for storm drains and/or equalizing pipes subject to wheel loading.	
<input type="checkbox"/>		

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ITEM	REQUIREMENT	COMMENTS
<input type="checkbox"/>	<p>41. The following statement shall be a standard Engineering Stipulation for projects abutting to an SRP site:</p> <p>Should the project abut with an SRP site, the applicant shall be required to participate with SRP in providing aesthetic block fencing for the SRP substation site. The decorative screening walls for the areas are to be coordinated with staff and match design elements of the overall development. Details shall be coordinated by the applicant with SRP, and reviewed and considered by staff for approval as part of the final plat process. Applicant may apply for aesthetic funds from the Town of Queen Creek for funding of the wall, if that has been the precedent set.</p>	
<input type="checkbox"/>	<p>42. When underground storage tanks/underground retention pipes are to be constructed within a close proximity to a building foundation, the geotechnical report shall include recommendations for minimum horizontal and vertical spacing between the building foundation and the underground storage tanks/underground retention pipes. These recommendations shall include measures to adequately assure the structural integrity of both the building foundation and underground tanks & pipes.</p>	
<input type="checkbox"/>	<p>43. All projects 1 acre or greater in size shall submit to the Town an <u>AZPDES - NOTICE OF INTENT (NOI) CERTIFICATE</u> prior to obtaining a Grading Permit.</p>	
<input type="checkbox"/>	<p>44. At the time of construction document plan approval, all projects shall submit to the Town the CAD files of the approved plans. All files submitted shall be per the Town's CAD Data Submission Standards.</p>	



**PLANNING AND DEVELOPMENT DEPARTMENT
DEVELOPMENT SERVICE DIVISION**

GRADING & DRAINAGE NOTES

1. A GRADING PERMIT SHALL BE REQUIRED.
2. CONTRACTOR SHALL PROVIDE GRADING FOR POSITIVE DRAINAGE IN ALL RETENTION BASINS AT ELEVATIONS AS SHOWN ON THE PLANS. BOTTOM OF BASIN SHALL BE GRADED TO DRAIN TOWARD DRYWELLS (WHEN USED). MAXIMUM SIDE SLOPES SHALL BE 6:1
 - DRYWELLS INLET GRATE SHALL BE AT FINISH GRADE AT BOTTOM OF THE RETENTION BASIN.
 - DRILLING LOGS FOR DRYWELLS WILL BE FURNISHED TO THE TOWN INSPECTOR PRIOR TO FINAL ACCEPTANCE.
 - A PERCOLATION TEST WILL BE REQUIRED OF COMPLETED DRYWELLS PRIOR TO ACCEPTANCE. SHOULD EXISTING SOIL CONDITIONS BE ENCOUNTERED WHICH LACK SUFFICIENT PERCOLATION RATES, ADDITIONAL DRYWELLS OR AN ALTERNATIVE METHOD OF STORM WATER RUN-OFF DISPOSAL WILL BE REQUIRED.
 - DRYWELL CONSTRUCTION SHALL BE DONE ONLY BY CONTRACTORS LICENSED BY THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY.
 - ALL DRYWELLS ARE REQUIRED TO BE REGISTERED WITH THE ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY.
 - THE APPROVED DRYWELL REGISTRATION SHALL BE SUBMITTED TO THE TOWN BY THE DEVELOPER OR HIS ENGINEER AT THE TIME AS-BUILTS ARE SUBMITTED.
 - A PRIVATE MAINTENANCE PLAN SHALL BE PREPARED THAT PROVIDES FOR ROUTINE INSPECTION AND MAINTENANCE TO THE APPROVAL OF THE TOWN ENGINEERING MANAGER.
3. CERTIFICATION OF FINISH FLOORS OR BUILDING PADS IS THE RESPONSIBILITY OF THE DEVELOPER/BUILDER, ENGINEERS, OR OWNER AND SHALL BE SUBMITTED PRIOR TO PLACING CONCRETE FLOORS.
4. AN APPROVED GRADING AND DRAINAGE PLAN SHALL BE ON THE JOB SITE AT ALL TIMES. DEVIATIONS FROM THE PLAN MUST BE PRECEDED BY A TOWN OF QUEEN CREEK APPROVED PLAN REVISION.
5. ALL DRAINAGE PROTECTIVE DEVICES SUCH AS SWALES, PIPES, OR OTHER MEASURES DESIGNED TO PROTECT BUILDINGS OR PROPERTY FROM STORM RUNOFF MUST BE COMPLETED PRIOR TO ANY STRUCTURE BEING BUILT.

GRADING & DRAINAGE NOTES

6. PREPARATION OF GROUND: THE AREA OVER WHICH FILLS ARE TO BE MADE SHALL BE CLEARED OF ALL TRASH, TREES, STUMPS, DEBRIS OR OTHER MATERIAL NOT SUITABLE AS A FOUNDATION FOR FILL.
7. LOCATION OF ALL UTILITIES SHOWN ON THIS PLAN ARE BASED ON INFORMATION SUPPLIED TO THE ENGINEER BY THE APPROPRIATE UTILITY COMPANIES, NO GUARANTEE ON LOCATIONS OR ACCURACY IS IMPLIED OR GIVEN. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT BLUE STAKE (602)263-1100 AND ANY OTHER INVOLVED AGENCIES TO LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION.
8. DISTURBED AREAS SHALL BE (RE)VEGETATED WITH TOWN APPROVED DESERT PLANTS OR DROUGHT RESISTANT PLANS. EXISTING VEGETATION SHALL BE RELOCATED IF DISTURBED BY CONSTRUCTION.
9. SWALES SHALL BE LINED WITH 6" MINIMUM DIAMETER ROCK SIZE AND THE DEPTH SHALL MATCH THE APPROVED SWALE DETAIL.
10. CONTRACTOR/BUILDER SHALL NOTIFY THE ENGINEER OF ANY VARIANCES BETWEEN THESE PLANS NOTIFY THE ENGINEER OF ANY VARIANCES BETWEEN THESE PLANS AND ON-SITE CONDITIONS.
11. ALL DRAINAGE SWALES SHALL BE FREE OF TRASH, DELETRIOUS MATERIAL, SILT, VEGETATION, AND DEBRIS. MAINTAINENCE SHALL BE BY THE HOMEOWNERS ASSOCIATION.
12. DROPS IN GRADE OF 30" OR MORE IN OR ADJACENT TO TRAILS, SIDEWALKS ETC. SHALL BE PROTECTED BY SAFETY RAIL THAT IS OSHA COMPLIANT.
13. CONTRACTOR SHALL VERIFY PROPERTY LINE LOCATIONS PRIOR TO PROCEEDING WITH WORK.
14. FINISHED GRADE SHALL SLOPE AWAY FROM RESIDENCE AT 5% FOR A MINIMUM DISTANCE OF 5' TO AN APPROVED WATER DISPOSAL AREA.
15. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CURRENT MAG SPECIFICATIONS AND/OR TOWN OF QUEEN CREEK STANDARD DETAILS .
16. CONTRACTORS SHALL OBTAIN ALL REQUIRED PERMITS PRIOR TO STARTING CONSTRUCTION.
17. CONTRACTOR SHALL UNCOVER ALL UTILITIES BEING TIED INTO TO VERIFY THEIR LOCATION PRIOR TO STARTING NEW LINES.
18. CONTRACTOR SHALL ADHERE TO THE REQUIREMENTS OF THE APPROVED PROJECT SOIL INVESTIGATION REPORT.