



**KIVA #:** \_\_\_\_\_ **Project Name:** \_\_\_\_\_

**Reviewed By:** \_\_\_\_\_ **Phone:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Engineer:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

This project is subject to the Arizona Pollution Discharge Elimination System (AZPDES) requirements for construction sites under the Arizona Department of Environmental Quality (ADEQ) general permit for Arizona. Owners, developers, engineers, and/or contractors are required to prepare all documents required by this regulation, including but not limited to Storm Water Management Plan (SWMP), Notice of Intent (NOI) and Notice of Termination (NOT). Guidance is available online at <http://www.fcd.maricopa.gov/Pub/manuals/erosionControl.aspx> through Maricopa County Flood Control District. The source of the Storm Water Management design policy is City Code Chapter 32C and city of Phoenix Storm Water Policies and Standards.

This checklist serves to minimize redline comments on the check prints and to maintain consistency among plan reviewers on plans for Storm Water Management. Plan approval, issuing permits, and certain grading clearances depend on compliance with the comments made on the check prints and this checklist. The engineer of record shall satisfy themselves of the completeness and accuracy of the design.

A completed checklist must be attached to the Storm Water Management plans when submitted for first review. The following Certification Statement must be signed by the Engineer of record certifying that all applicable requirements on this checklist have been met.

Plan review correction cycles and/or approvals are valid for 180 days. Additional review fees (see Fee Schedule – Phoenix City Code, Chapter 9, Appendix A.2) shall be charged for extensions/reinstatements to update expired plan reviews.

#### CERTIFICATION

**I CERTIFY THAT THE REFERENCED PLANS COMPLY WITH ALL APPLICABLE CITY ORDINANCES AND STANDARDS, INCLUDING FEDERAL, STATE AND COUNTY REQUIREMENTS AND REGULATIONS. IN ADDITION, I CERTIFY THAT THIS CHECKLIST HAS BEEN COMPLETED ENSURING ALL ITEMS LISTED ARE PROPERLY ADDRESSED. I UNDERSTAND THAT IF I FAIL TO ADDRESS ALL APPLICABLE ITEMS IN THIS CHECKLIST, THE PLANS MAY BE IMMEDIATELY RETURNED TO ME WITHOUT ANY FORMAL REVIEW BEING PERFORMED.**

**Engineer's Name:** \_\_\_\_\_

**Engineer's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Please complete and return this checklist and the check prints with each submittal. Discussion of redline comments on plans or this checklist should be directed to the plan reviewer listed above.

Engineer of record (**ENG**) must fill out all boxes in the first column as either  (Addressed) or  (Not Applicable).

Civil plan reviewer (**RVW**) shall check the second column as  (Required) when requirements have not been properly addressed.

**City of Phoenix Planning & Development Department  
Storm Water Management Plan Checklist – Page 2 of 3**

TRT/DOC/00104

**REQUIRED SUBMITTALS**

**ENG RVW**

- Plan sheets shall be 24" X 36"; submit three (3) sets of Storm Water Management plans, one (1) set of Grading and Drainage plans, a Notice of Intent from ADEQ with the AZCON # assigned, an Environmental Responsibility Compliance Form (signed by the owner/authorized agent), and a completed and signed Storm Water Management Plan Checklist.

**Note:** If submitting through the Electronic Plan Review system, multiple copies of submittal documents are not required.

**GENERAL REQUIREMENTS**

- Separate storm water management plans shall be submitted with grading and drainage plan at time of first review.
- A cover sheet is required on plans of more than two sheets.
- Original plan sheets shall be sufficiently clear to allow legible prints to be reproduced from microfilm. The size of lettering and symbols shall be 1/8-inch minimum.
- All sheets shall have the Civil Engineer's Arizona registration seal and original signature prior to plan submittal.
- Show Best Management Practices (BMP) details with on plan sheets. Use the most current BMPs from the Flood Control District at the following website:  
<http://www.fcd.maricopa.gov/Pub/manuals/erosionControl.aspx>

**COVER SHEET REQUIREMENTS**

- Provide a project title block with the name and address of the project.
- Provide the legal description of the project location.
- Provide a project description.
- Provide the net acreage and total disturbed area of the project.
- Provide a vicinity map with a north arrow.
- Provide an index of plan sheets if more than one plan sheet.
- Provide the appropriate processing numbers including: KIVA#, CCPR# or CSPR#, SDEV#, Abandonment, and city Quarter Section Number in lower right corner.
- Provide a legend identifying grade, symbols, lines, etc.
- Provide the Engineer's name, address, and telephone number.
- Provide the Owner's/Developer's name, address, and telephone number.

**NOTES FOR STORM WATER MANAGEMENT PLAN**

**(ALL notes to appear on cover sheet)**

- A copy of the approved grading and drainage plan for this project, together with a copy of the Notice of Intent (NOI) and this Storm Water Management Plan (SWMP), shall be maintained on the site and available for review. Those elements of the grading and drainage plan pertinent to or referenced on the SWMP shall be considered a part of the SWMP.
- Planning & Development Department's Civil/Site Inspection Group shall be notified 48 hours before any on-site and/or off-site construction begins, at (602) 262-7811.
- The operator shall obtain a Dust Control Permit from Maricopa County Health Department and perform measures as required by the permit to prevent excess dust.

**City of Phoenix Planning & Development Department  
Storm Water Management Plan Checklist – Page 3 of 3**

TRT/DOC/00104

**ENG RVW**

- The operator shall perform, at a minimum, a visual inspection of the construction site once every month and within 24 hours of rainfall greater than or equal to a half of an inch or more. The operator shall prepare a report documenting his/her findings on the conditions of the SWMP controls and note any erosion problem areas. The operator's report is to be submitted to the Planning & Development Department Civil/Site Inspector for review and approval. Facilities shall be maintained as necessary to ensure their continued functioning. In addition, all temporary siltation controls shall be maintained in a satisfactory condition until such time that clearing and/or construction is completed, permanent drainage facilities are operational, and the potential for erosion has passed.
- The operator shall amend this plan as necessary during the course of construction to resolve any problem areas, which become evident during the construction and/or during rainfalls.
- The permittee shall file a Notice of Termination (N.O.T.) after completion of construction and placement of final landscape materials. The N.O.T. is to be submitted to the Planning & Development Department Civil/Site Inspector to final the SWMP permit.
- The permittee shall save all records, including the N.O.I., SWMP, N.O.T., and inspection reports, on file for a minimum of three years from the date of filing the N.O.T.
- The implementation of these plans and the construction, maintenance, replacement, and upgrading of these facilities is the responsibility of the permittee/contractor until all construction is approved and the N.O.T. is submitted to the Planning & Development Department Civil/Site Inspector.
- The facilities shown on this plan must be constructed in conjunction with all clearing and grading activities in such a manner as to insure that sediment-laden water does not enter the drainage system or violate applicable water standards, and must be installed and in operation prior to any grading or land clearing. Wherever possible, maintain natural vegetation for silt control.
- Plan approval is valid for 180 days. Prior to plan approval expiration, all associated permits shall be purchased or the plans shall be resubmitted for extension of plan approval. The expiration, extension, and reinstatement of Civil Engineering plans and permits shall follow the same guidelines as those indicated in the Phoenix Building Construction Code Administrative Provisions Section 105.3 for Building permits.

**PLANS FOR REVISION**

- All original plan approvals, signatures, and seals are to remain on the revised plans.
- All plans revised after the original approval shall be resubmitted for review and approval. The nature of the revisions must be called out on the cover sheet and on the sheet(s) which have been revised. The revision number itself shall consist of a numeral within a triangle next to each revision. Δ Changes on each plan sheet shall be highlighted with "clouding".
- All revised sheets, including the cover sheet are to be re-sealed, signed and dated.

**EXTENSIONS**

- All plans submitted for extension require a new signature block and are to be re-signed by the submitting designer. Plan extensions are to be highlighted with "clouding" as specified in the plan revision process above. The plan sealant shall note that this change is a plan extension. A new approval signature block is required to be added to the coversheet for approval of the extension. All plan extensions must have prior approval by completing the Plan Review Extension Application. The Plan Review Extension Application can be found at the following site: <http://phoenix.gov/pdd/development/sitecivil/civil/index.html>. Provide a copy of the approved application with the plan submittal.
- Plan approvals for extension are valid for a period of 180 days from the date of plan approval.



**KIVA #:** \_\_\_\_\_ **Project Name:** \_\_\_\_\_

**Reviewed By:** \_\_\_\_\_ **Phone:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Engineer:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

The purpose of this checklist is to offer comments on plan design for on-site grading and to set the minimum submittal requirements for Grading and Drainage plans. The source of the Grading and Drainage design policy is City Code Chapter 32, 32A, and city of Phoenix Storm Water Policies and Standards.

This checklist serves to minimize redline comments on the check prints and to maintain consistency among plan reviewers on plans for cuts, fill, drainage swales, drainage structures and pipes, and retention areas. Plan approval, issuing permits, and certain grading clearances depend on compliance with the comments made on the check prints and this checklist. Engineer of record shall satisfy themselves of the completeness and accuracy of the design.

Plan review correction cycles and/or approvals are valid for 180 days. Additional review fees (see Fee Schedule – Phoenix City Code, Chapter 9, Appendix A.2) shall be charged for extensions/reinstatements to update expired plan reviews.

A completed checklist must be attached to the Grading and Drainage plans when submitted for first review. The following Certification Statement must be signed by the Engineer of record certifying that all applicable requirements on this checklist have been met.

#### CERTIFICATION

**I CERTIFY THAT THE REFERENCED PLANS COMPLY WITH ALL APPLICABLE CITY ORDINANCES AND STANDARDS, INCLUDING FEDERAL, STATE AND COUNTY REQUIREMENTS AND REGULATIONS. IN ADDITION, I CERTIFY THAT THIS CHECKLIST HAS BEEN COMPLETED ENSURING ALL ITEMS LISTED ARE PROPERLY ADDRESSED. I UNDERSTAND THAT IF I FAIL TO ADDRESS ALL APPLICABLE ITEMS IN THIS CHECKLIST, THE PLANS MAY BE IMMEDIATELY RETURNED TO ME WITHOUT ANY FORMAL REVIEW BEING PERFORMED.**

**Engineer's Name:** \_\_\_\_\_

**Engineer's Signature:** \_\_\_\_\_ **Date:** \_\_\_\_\_

Please complete and return this checklist and the check prints with each submittal. Discussion of redline comments on plans or this checklist should be directed to the plan reviewer listed above.

Engineer of record (**ENG**) must fill out all boxes in the first column as either  (Addressed) or  (Not Applicable).

Civil plan reviewer (**RVW**) shall check the second column as  (Required) when requirements have not been properly addressed.

For more information or for a copy of this publication in an alternate format, contact Planning & Development at (602) 262-7811 voice / (602) 534-5500 TTY.

**City of Phoenix Planning & Development Department**  
**Grading & Drainage Checklist, Subdivision & Commercial – Page 2 of 10**

TRT/DOC/00047

**REQUIRED SUBMITTALS**

**ENG RVW**

- Plan sheets shall be 24" X 36"; submit three (3) sets of Grading and Drainage plans, one (1) copy of the approved preliminary Site plan for major projects **OR** one (1) copy of the first review Site plan mark-up for minor projects, a sealed drainage report (or drainage calculations shown on the cover sheet of plans), a sealed geotechnical report (when one (1) foot or more of fill material is indicated or slopes with cuts or fills steeper than 1½:1), one (1) set of paving plans, if applicable, and a completed and signed Grading and Drainage Plan Checklist.

**Note:** If submitting through the Electronic Plan Review system, multiple copies of submittal documents are not required.

**GENERAL REQUIREMENTS**

- Separate offsite plans with drainage facilities should be submitted with Grading and Drainage plans unless those details are shown on the grading plan.
- Symbols shall be per M.A.G. Specifications and Details.
- Cover sheet is required on plans of more than two sheets.
- All sheets shall have the Civil Engineer's Arizona registration seal and original signature prior to plan submittal.
- Original plan sheets shall be sufficiently clear to allow legible prints to be reproduced from microfilm. The size of lettering and symbols shall be 1/8 inch minimum.
- Cut and fill quantities, exclusive of street quantities. These shall also be placed on the plan cover sheet.
- When the entire parcel is not included in the project description then the limits of construction shall be delineated on the plan.
- Refer to the city of Phoenix Storm Water Policies and Standards for drainage design policy, details, and calculations showing retention volumes to be provided for the required on-site retention. Provide all retention calculations and storm event type on the cover sheet.
- Per Section 6.1.10.1 of the City of Phoenix Storm Water Policies and Standards, for engineered channels and storm water storage facilities/basins with geometric depths greater than three feet deep, access ways to the channel or basin, and ramps into the channel or basin, shall be required (see section 6.1.10.4 for access way ramp requirements). For engineered channels or storm water storage facilities/basins with geometric depths of three feet or shallower with a portion of side slope set at 6:1 or flatter along at least one side to allow for emergency or ordinary maintenance vehicle access, ramps into the channel or basin are not required.
- Per Section 6.8.8 of the City of Phoenix Storm Water Policies and Standards, the maximum depth of ponded water within any parking lot location shall be six inches with the deeper portions confined to remote areas of parking lots, whenever possible. The minimum longitudinal slope permitted within parking lot storage facilities is 0.005 ft/ft, unless concrete valley gutters are provided. With concrete valley gutters, a minimum longitudinal slope of 0.002 ft/ft is permitted.
- A public Drainage Easement is required around the onsite retention area that is to retain the offsite flows when offsite flows are taken onto private property.
- A Drainage Report is required to be submitted for any projects that are impacted by offsite flows. If there are no offsite flows impacting the site a Drainage Statement will be adequate on the cover sheet of the plans. If a Drainage Report is required please include the KIVA# and the CCPR#/CSPR# on the cover sheet of the report.
- Complex Drainage Reports (subdivisions, properties with washes, hillside properties, properties in floodplain, etc.) should include hydrology parameters and assumptions and include methodology for developing quantities. Also include computer runs from HEC-1 or other programs utilized to develop flows from contributing area. Storm water routing through channels should include HEC-2 or other programs used to model the hydraulics including backwater computations. A disk with input data should be furnished with your plan review submittal when a computer program is utilized in the design.

**City of Phoenix Planning & Development Department**  
**Grading & Drainage Checklist, Subdivision & Commercial – Page 3 of 10**

TRT/DOC/00047

**ENG RVW**

- This project is subject to the National Pollution Discharge Elimination System (NPDES) requirements for construction sites under the Environmental Protection Agency (EPA) General Permit for Arizona. Owners, developers, engineers, and/or contractors are required to prepare all documents required by this regulation, including but not limited to: SWMP, NOI, NOT. Guidance is available online at <http://www.fcd.maricopa.gov/Pub/manuals/erosionControl.aspx> through Maricopa County Flood Control District.
- Existing irrigation supply ditches and/or irrigation tail water ditches on this site, or in the right-of-way adjacent to this site, must be replaced with an underground pipeline, or abandoned subject to the approval of the irrigation company and/or downstream users. Limits of construction and scope of work shall be shown on the plan

**Cover Sheet Requirements**

- Provide a Blue Stake notification decal.
- Indicate plan types:
- Grading and Drainage Plan
  - Grading and Drainage Plan with Drainage Facilities (in Right-of-Way or Easement)
  - Grading and Drainage Plan with Offsite Improvements (combination)
  - Grading and Drainage Plan with Hillside (separate Hillside checklist and review required)
- Provide a project title block with name and address of project.
- Provide a project description.
- Provide a vicinity map with north arrow.
- Provide an index of plan sheets if more than one plan sheet.
- Provide a key map if more than one plan sheet.
- Provide the Owner's and Developer's name, address, and telephone number.
- Provide the Engineer's name, address, and telephone number
- Provide the address and legal description of the project.
- Provide the appropriate processing numbers including: KIVA#, CCPR# or CSPR#, SDEV#, Building log, Abandonment, and city Quarter Section Number in lower right corner.
- Provide a legend identifying grades, symbols, lines, etc.
- Provide the offsite quantities if they are part of the Grading and Drainage Plan submittal.
- Provide all retention calculations and storm event type.
- Provide a drainage statement that includes the following:
- Site is in a Special Flood Hazard Area (Y) (N)
  - Offsite flows affect this site (Y) (N)
  - Retention provided is for the \_\_\_\_\_ storm event
  - Extreme storm outfalls the site at \_\_\_\_\_ at the elevation of \_\_\_\_\_
- Provide elevation datum and bench marks (city datum required). Please dial (602) 495-2050, ext. 265 Voice or (602) 534-5500 TTY, to obtain city datum for existing benchmark closest to the project site. Equations cannot be used.
- Provide net acreage and total disturbed area of the site.
- Provide retaining walls unit length.

**City of Phoenix Planning & Development Department**  
**Grading & Drainage Checklist, Subdivision & Commercial – Page 4 of 10**

TRT/DOC/00047

**ENG RVW**

- Provide a retention basin table that includes a column for the volume provided, volume required, and "As-built" volume.
- Provide an As-Built Certification Statement as follows (include on the plans)

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

\_\_\_\_\_  
 REGISTERED ENGINEER/ LAND SURVEYOR

\_\_\_\_\_  
 DATE

\_\_\_\_\_  
 REGISTRATION NUMBER

**NOTES FOR GRADING AND DRAINAGE PLANS****(To appear on cover sheet)****Grading and Drainage Notes (City of Phoenix)**

- A grading permit is required under Chapter 32A of the Phoenix City Code.
- When Haul permits are required, they must be obtained prior to or concurrently with the Grading and Drainage permit.
- Excavating Contractor must give location for wasting excess excavation and a letter from Owner giving permission for dumping prior to starting on-site construction. If excess excavation exceeds 100 cubic yards, the disposal site will also require a Grading and Drainage permit.
- Planning & Development Department Field Inspection Group shall be notified 48 hours before any on-site and/or off-site construction begins, telephone (602) 262-7811.

**Include the note below that is applicable:**

**(Certification of finish floor elevation is mandatory if structure is located in a floodplain or other critical drainage area.)** Use the AS-BUILT CERTIFICATION, plus:

**ENG RVW**

- Staking pad elevations is the responsibility of the Owner and his Engineer. The Owner's Engineer shall submit three sealed copies of this Grading and Drainage Plan designated as "Record Drawing" (bearing an original signature) prior to the request for final inspection.
- Staking finish floor elevations is the responsibility of the Owner and his Engineer. The Owner's Engineer shall submit three sealed copies of this Grading and Drainage Plan designated as "Record Drawing" (bearing an original signature) prior to the request for final inspection.
- A Federal Emergency Management Agency (FEMA) Elevation Certificate based on finished construction must be reviewed and approved by Floodplain Management for each new and substantial improvement structure constructed in a Special Flood Hazard Area (SFHA) prior to issuing a Certificate of Occupancy. A copy of the elevation certificate must be submitted to the General or Structural Inspector.
- Pad certifications will be required on all lots within the subdivision and submitted to the Civil/Site Inspector prior to any concrete constructed in the right-of-way. Pad certification can be submitted to the Civil/Site Inspector by either submitting one approved black-line as-built Grading and Drainage plan or in letter format showing the design and as-built pad elevations as shown on the approved Grading and Drainage plan. It is required that the as-built plan and letter be sealed by a Civil Engineer or Land Surveyor registered in the State of Arizona.

**City of Phoenix Planning & Development Department  
Grading & Drainage Checklist, Subdivision & Commercial – Page 5 of 10**

TRT/DOC/00047

**ENG RVW**

- A separate permit is necessary for any offsite construction.
- An approved Grading and Drainage Plan shall be on the job site at all times. Deviations from the plan must be preceded by an approved plan revision.
- Grading and Drainage Plan approval includes the construction of all surface improvements shown on the approved plan, including, but not limited to, retention areas, sedimentation basins, and/or other drainage facilities, drainage patterns, walls, curbs, asphalt pavement, and building floor elevation.
- Grades shown in retention basins are design finished grades. Should the contractor or any sub-contractor plan to place spoil dirt from footings, utility trenches, landscaping, swimming pools, etc. in the basins, the basins should be sufficiently over-excavated during the rough grading operation to allow for the placement of the fill or landscaping materials.
- Contractor is responsible for locating and confirming depths of all the existing utility lines within proposed retention basin areas. If the basin cannot be constructed per plan because of conflicts, the contractor should discuss modification of basin configuration with the city inspector to determine if a plan revision or a field change is required.
- All drainage protective devices such as swales, interceptor ditches, pipes, protective berms, barrier walls, concrete channels, or other measures designed to protect adjacent buildings or property from storm runoff must be completed prior to building construction.
- Per Section 6.8.7 of the City of Phoenix Storm Water Policies and Standards, side slopes of storm water storage facilities shall be no steeper than 5:1 for irrigated grass areas and 3:1 for landscape areas. Slope stabilization measures are required for all slopes greater than 5:1. The slope stabilization measures must be readily maintainable using common maintenance equipment and be designed with consideration to aesthetics. The slope stabilization measures shall be consistent with commonly used engineering practices. Un-stabilized decomposed granite is not allowed on slopes greater than 5:1.
- Retaining walls 3'4" or less measured from the top of the footing to the top of the retaining wall that support a surcharge are to be reviewed and permitted by the Civil Plan Review staff and inspected by the Civil Inspection Staff. Retaining wall over 3'4" on non-hillside residential zoning districts require a use permit. Walls over 3'4" will be reviewed, permitted, and inspected by the Building Safety Branch of the Planning & Development Department under separate submittal by the applicant.
- All ramps must meet 2010 ADA Standards for Accessible Design and city of Phoenix Supplement to M.A.G. Uniform Standard Specifications and Details; 2% max cross slopes and 12:1 max longitudinal slopes.
- Certificate of Occupancy (C of O) and/or final electrical clearance for any building is denied until all Grading and Drainage improvements are completed.
- Existing or newly damaged and/or displaced concrete curb, gutter, sidewalk, or driveway slab that is within the right-of-way shall be repaired or replaced, as noted by city inspectors, before final acceptance of the work.
- The Engineering Design on these plans is only approved by the city in scope and not in detail. Construction quantities on these plans are not verified by the city. Approval of these plans are for permit purposes only and shall not prevent the city from requiring correction of errors in the plans where such errors are subsequently found to be in violation of any law, ordinance, health, safety, or other design issues.



**City of Phoenix Planning & Development Department  
Grading & Drainage Checklist, Subdivision & Commercial – Page 6 of 10**

TRT/DOC/00047

**ENG RVW**

- The city of Phoenix Police Department enforces laws regulating the operation of commercial vehicles. This includes enforcement of federal, state, county and local laws and ordinances. Questions regarding Commercial Vehicle Enforcement may be directed to the Commercial Vehicle Enforcement Supervisor at (602) 495-7813 (Traffic Bureau South) or (602) 495-6784 (Traffic Bureau North)
- Plan approval is valid for 180 days. Prior to plan approval expiration, all associated permits shall be purchased or the plans shall be resubmitted for extension of plan approval. The expiration, extension, and reinstatement of Civil Engineering plans and permits shall follow the same guidelines as those indicated in the Phoenix Building Construction Code Administrative Provisions Section 105.3 for Building permits.

**The following notes shall be shown on the cover sheet of combination Grading and Drainage and Offsite Improvement Plans:**

- Construction within the right-of-way shall conform to the latest applicable Maricopa Association of Governments (MAG) Uniform Standard Specifications and Details and the latest city of Phoenix Supplement to the MAG Uniform Standard Specifications and Details.
- Compaction shall comply with M.A.G. Section 601.
- Obstructions to proposed improvements in the right-of-way shall be removed or relocated before beginning construction of the proposed improvements.
- The actual point of pavement matching and/or termination shall be determined in the field by the city of Phoenix, Planning & Development Department field inspector.
- Pavement replacement thickness and type are to be per M.A.G. Section 336 and C.O.P. Detail P1200 - Type B. Curb and gutter replacement shall be a minimum of one (1) full section, per M.A.G. Standard Detail 220. Sidewalk replacement shall be a minimum of one (1) full panel per C.O.P. Detail P1230.
- Trees and shrubbery in the right-of-way that conflict with proposed improvements shall not be removed without approval of the city Landscape Architect or his assignees. The permittee shall be responsible for obtaining authorization to remove and/or relocate said trees or shrubbery by calling the Parks and Recreation Department at (602) 262-6501.
- A pavement cut surcharge shall be assessed on this project for any trenching or potholing in new asphalt pavement that is less than 30 months old. Surcharge fees assessed are in addition to the regular permit fees and are over and above any special backfill, compaction, and pavement replacement stipulations that may be imposed as a condition of permitting. Pavement cut surcharge fees are assessed in accordance with Section 31-38 of the Phoenix City Code.

**Optional Note, Channel Diversion:**

- Construction must be phased so the newly aligned channel is fully operational before the existing drainage channel is filled. Flood water conveyance must be maintained at all times during construction.

**Additional Notes (required when using HDPE Pipe within right-of-way or a drainage easement):**

- All HDPE storm drain pipe shall be manufactured, designed and installed in accordance with AASHTO M252, AASHTO M294, MAG and city of Phoenix Supplements to MAG and these special provisions.
- All HDPE storm drain pipe shall be Type `S' corrugated, with watertight joints. HDPE pipe shall not be allowed within a minimum of twenty-four (24) linear feet of an open outfall. The outfall section of storm drain pipe shall be concrete or concrete-lined as shown on the plans.

**City of Phoenix Planning & Development Department**  
**Grading & Drainage Checklist, Subdivision & Commercial – Page 7 of 10**

TRT/DOC/00047

**ENG RVW**

- At a minimum, all HDPE storm drain pipe joints shall meet the ASTM D-3212 watertight requirement of 10.8 psi (25 column feet of water head).
- The contractor shall provide a copy of an accepted independent 3rd party lab certification that all the pipe and joints to be used on the project meet the ASTM D-3212 watertight standard.
- All HDPE pipe connections to manholes shall meet ASTM C-923 requirements.

**The following notes are required on Grading & Drainage plans when special preservation or hillside issues are involved:**

- Before grading in areas containing native desert vegetation, the Contractor must obtain a permit from Arizona Department of Agriculture. For information, phone (602) 364-0935.
- If property is adjacent to the Phoenix Mountain Preserve, no disturbance of preserve property for access, grading, or other construction purposes will be allowed. The contractor is required to delineate the Mountain Preserve boundary with a temporary fence or other acceptable methods.
- If site has special preservation or hillside issues, the grading plan must show all landscape preservation easements, construction fencing locations, and appropriate areas labeled. Prior to any clearing, grubbing, or grading operations, construction fencing shall be shown on approved plans, permitted and inspected and salvage operations permitted, inspected, and completed.

**Plan Sheet Requirements**

- Provide the Civil Engineer's Arizona seal and original signature (on each sheet).
- Scale selected for each sheet. One inch equals 40 feet (maximum) for all projects.
- Existing contours or spot elevations, drainage arrows and grade breaks to indicate drainage patterns. Also indicate all 100-year flows from contributing offsite drainage areas.
- Show existing and proposed top of curb, gutter, and sidewalk elevations (both sides) and pavement crown elevations along project frontage at extension of lot lines or every 100' (whichever is less).
- Show and label low curb and high curb elevations.
- Provide spot elevations every 100' on adjacent properties sufficient to depict existing conditions affecting drainage of property to be filled. Usually 50 feet beyond property line will be sufficient.
- Provide cross-sections along all property lines.
- All existing utilities and drainage facilities, including private or S.R.V.W.U.A. irrigation, within and adjacent to the property boundaries shall be shown. Any work on Salt River Project irrigation system requires an SRP permit and approved plans. All utilities shall be dimensioned from street monument lines.
- Show details at property lines, fences, berms, etc. Also show improvements and finish floor elevations on adjacent property to the proposed development.
- Show all existing and proposed easements, dedications, right-of-way, streets, and alleys with dimensions and offsets. Streets shall be identified by name. Streets, alleys, and easements shall be dimensioned at least once and at all breaks. Monument line of streets shall be shown.
- All abutting lots shall be identified by lot #, tract, and subdivision or shown un-subdivided.
- Dimension all property boundaries, both perimeter and interior lines.

**City of Phoenix Planning & Development Department**  
**Grading & Drainage Checklist, Subdivision & Commercial – Page 8 of 10**

TRT/DOC/00047

**ENG RVW**

- All proposed and existing structures, paving and other topographic features affected by construction shall be shown.
- The proposed grading should be designed with slopes and topographic features which match the natural grade and boundary area to minimize erosion and sediment transport on to city streets or neighboring properties.
- Phased developments shall indicate interim slopes and grades to match proposed work to existing conditions.
- Grading Plans showing existing natural washes shall also show existing conditions including line and grade of the wash flow line at 50 ft. intervals. Show distances between banks and elevations at 50 ft. intervals.
- Show the extreme storm outfall and label it with an elevation.
- Show side slopes, bottom elevation, high water elevation, outfall elevation, location and direction, volume provided, and volume required for all retention/detention basins.
- Show all proposed retaining walls. Include the length, height, top of retaining wall elevation, and top of footing elevation for each section of retaining wall. The design and structural calculations for all retaining walls equal to or less than 3'4" that support a surcharge shall be reviewed, approved, and permitted based on the Grading and Drainage plans; and inspected by the Civil Inspections Staff. The design and structural calculations for all retaining walls greater than 3'4" shall be reviewed, approved, permitted, and inspected by the Building Safety Branch of the Planning & Development Department. Refer to Section 703 of the Zoning Ordinance and Section 32-32 of the Subdivision Ordinance for specific wall height requirements. Use permit for over-height walls must be obtained prior to approval of the Grading and Drainage Plan.
- Show parking spaces for disabled. Provide grade arrows to verify that the slope in the parking lot accommodates disabled access requirements. Do not exceed 2% in any direction in those areas. Show on-site ramps to the building with slope arrows showing the area near disabled parking or on ramps to building.

**Other Requirements When Applicable:**

- Proper consideration must be given to protection of underground parking, basements, and loading docks.
- A Pavement Cut Surcharge will be assessed on this project for trenching in new asphalt pavement. This fee will be assessed in addition to the regular permit fees and is over and above any special backfill, compaction, and pavement replacement stipulations that may be imposed as a condition of permitting. Surcharge affects streets newly paved and newly overlaid within the past 30 months.
- Show the limits of any designated floodplain, including the "Selected Floodway" as established on the official Federal Insurance Rate Maps (FIRM). Include all applicable 100-year water surface elevation lines which traverse the project site.
- Hauls greater than 10,000 cubic yards require a permit and approved haul route prior to issuance of Grading and Drainage permit. Haul route to be approved by Street Transportation Department. Permit to be created by Planning & Development Department Civil reviewer.

**New Dry Well Installation Checklist**

- Dry wells are not required to be shown on the plan set for retention basins with geometric depths of less than one foot (basin outfall elevation – bottom elevation).

**City of Phoenix Planning & Development Department**  
**Grading & Drainage Checklist, Subdivision & Commercial – Page 9 of 10**

TRT/DOC/00047

**ENG RVW**

- Dry well is to be set at least 100 feet from any surrounding water production well, underground storage tank, or fuel loading area.
- Dry well is not to be constructed in any area where hazardous or toxic materials are stored or handled.
- Dry well is not to be located in any area where an accidental spill of hazardous or toxic liquid would drain into the dry well.
- Dry well is not to be located at a loading dock where hazardous substances are handled.
- Dry well is not to be located within any groundwater saturated zones.
- Dry well shall dispose of Storm water run-off only.
- The following notes are required on Grading & Drainage (Grading and Drainage) plans when a dry well is to be installed:
- A. The owner/developer shall be responsible for registering the dry wells shown on the Grading and Drainage plan with the Arizona Department of Environmental Quality (A.D.E.Q.). For information about specific requirements, contact the Water Permits Unit at (602) 771-4686.
  - B. Dry wells must be drilled a minimum of 10 feet into permeable porous strata or percolation tests will be required. The Grading and Drainage inspector must be present before backfill or well pipes are placed within any dry wells.
  - C. The owner/developer is responsible for installing drywell(s) should the retention basins fail to drain within 36 hours.
- Dry well detail and specifications need to be shown on Grading and Drainage plans.
- Grate elevation for the dry well needs to be shown on Grading and Drainage plan at minimum of 0.3 feet above bottom of retention basin (allows for silting). For bleed-off to city storm drain system the grate needs to be 0.75 feet above bottom of basin.

**AT-RISK GRADING AND DRAINAGE PLANS**

A first review of the Grading and Drainage plan for the project is required to be completed prior to any consideration of an At-Risk Grading and Drainage plan being accepted for review (all major comments on the Grading and Drainage plan must be addressed prior to the At-Risk Grading and Drainage plan being accepted). An At-Risk Grading and Drainage Plan may be approved as a convenience to the developer. The city is not obligated to approve an At-Risk Rough Grading Plan. The permit may be revoked if timely progress is not made toward final Grading and Drainage plan approval.

At-Risk Grading and Drainage plans are approved to allow rough grading only. Trenching, digging dry wells or fine grading is not allowed as part of the At-Risk Grading and Drainage plan approval.

The Engineer of record shall work earnestly toward completing the full Grading and Drainage plan approval while the At-Risk Grading and Drainage plans are in use or the At-Risk Grading and Drainage permit may be revoked.

At-Risk Grading and Drainage permit fees are the same fees as the full Grading and Drainage permit fees in the city of Phoenix Fee Schedule.

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**PLANS FOR REVISION****ENG RVW**

- All original plan approvals, signatures, and seals are to remain on the revised plans.
- All plans revised after the original approval shall be resubmitted for review and approval. The nature of the revisions must be called out on the cover sheet and on the sheet(s) which have been revised. The revision number itself shall consist of a numeral within a triangle next to each revision. Δ Changes on each plan sheet shall be highlighted with "clouding".
- All revised sheets, including the cover sheet are to be re-sealed, signed and dated.

**EXTENSIONS**

- All plans submitted for extension require a new signature block and are to be re-signed by the submitting designer. Plan extensions are to be highlighted with "clouding" as specified in the plan revision process above. The plan sealant shall note that this change is a plan extension. A new approval signature block is required to be added to the coversheet for approval of the extension. All plan extensions must have prior approval by completing the Plan Review Extension Application. The Plan Review Extension Application can be found at the following site: <http://www.phoenix.gov/development/siteandcivil/civil/>. Provide a copy of the approved application with the plan submittal.
- Plan approvals for extension are valid for a period of 180 days from the date of plan approval.



**KIVA #:** \_\_\_\_\_ **Project Name:** \_\_\_\_\_

**Reviewed By:** \_\_\_\_\_ **Phone:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Engineer:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

The purpose of this checklist is to offer comments on plan design for on-site grading. The source of the Grading and Drainage design policy is City Code Chapter 32 and City of Phoenix Storm Drain Design Manual.

This checklist serves to minimize redline comments on the check prints and to maintain consistency among plan reviewers on plans for cuts, fill, drainage swales, drainage structures and pipes, and retention areas. Plan approval, issuing permits, and certain grading clearances depend on compliance with the comments made on the check prints and this checklist. Engineers of record shall satisfy themselves of the completeness and accuracy of the design.

A completed checklist must be attached to the Grading and Drainage plans when submitted for first review. The following Certification Statement must be signed by the Engineer of record certifying that all applicable requirements on this checklist have been met.

Plan review correction cycles and/or approvals are valid for 180 days. Additional review fees (see Fee Schedule – Phoenix City Code, Chapter 9, Appendix A.2) shall be charged for extensions/reinstatements to update expired plan reviews.

#### CERTIFICATION

**I CERTIFY THAT THE REFERENCED PLANS COMPLY WITH ALL APPLICABLE CITY ORDINANCES AND STANDARDS, INCLUDING FEDERAL, STATE AND COUNTY REQUIREMENTS AND REGULATIONS. IN ADDITION, I CERTIFY THAT THIS CHECKLIST HAS BEEN COMPLETED ENSURING ALL ITEMS LISTED ARE PROPERLY ADDRESSED. I UNDERSTAND THAT IF I FAIL TO ADDRESS ALL APPLICABLE ITEMS IN THIS CHECKLIST, THE PLANS MAY BE IMMEDIATELY RETURNED TO ME WITHOUT ANY FORMAL REVIEW BEING PERFORMED.**

Engineer's Name: \_\_\_\_\_

Engineer's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Please return this checklist and the check prints with your next submittal. Discussion of redline comments on plans or this checklist should be directed to the plan reviewer listed above.

Engineer of record must fill out all boxes in the first column as either  (Addressed) or  (Not

Applicable). Civil plan reviewer shall check the second column as  (Required) when requirements have not been properly addressed.

**The following two conditions must be met in order to submit a Plot Plan:**

1. Vacant lot in a previously approved subdivision and infill lots (vacant lots in which the proposed site is surrounded by existing homes).
2. A permanent excavation of less than two feet in depth, a filling of earth of less than one foot in depth, or a filling of earth of less than 100 cubic yards.

**If this lot is located within a Floodplain, is greater than 0.5 acres, is a custom home site, is a hillside lot with grading limitations, is a lot that will require retaining walls, a lot that contains a natural wash, drainage way, or protected by drainage easements, a full Grading and Drainage Plan will be required.**

### **REQUIRED SUBMITTALS**

#### **ENG RVW**

- Plan sheets shall be 24" X 36"; submit three (3) sets of Grading and Drainage Residential Single Lot plans, a sealed drainage report or a drainage statement may be substituted for projects with no offsite flows, a sealed geotechnical report (when one (1) foot or more of fill material is indicated or slopes with cuts or fills steeper than 1½:1), and a completed and signed Grading and Drainage Residential Single Lot Checklist.

**Note:** If submitting through the Electronic Plan Review system, multiple copies of submittal documents are not required.

### **GENERAL REQUIREMENTS**

- Separate offsite plans with drainage facilities should be submitted with grading and drainage plans unless those details are shown on the grading plan.
- Symbols shall be per M.A.G. Specifications and Details.
- A cover sheet is required on plans of more than two (2) sheets.
- All sheets shall have the Civil Engineer's Arizona registration seal and original signature prior to plan submittal.
- Original plan sheets shall be sufficiently clear to allow legible prints to be reproduced from microfilm. The size of lettering and symbols shall be 1/8 inch minimum.
- Cut and fill quantities, exclusive of street quantities. These shall be noted on the plan cover sheet.
- Refer to the City of Phoenix Storm Drain Design Manual for drainage design policy, details, and calculations showing retention volumes to be provided for the required on-site retention. Provide all retention calculations and storm event type on the cover sheet. The City of Phoenix storm water retention requirement is for the 100 year/2 hour storm event unless otherwise authorized by the Planning & Development Department.
- Per Section 6.1.10.1 of the City of Phoenix Storm Water Policies and Standards, for engineered channels and storm water storage facilities/basins with geometric depths greater than three feet deep, access ways to the channel or basin, and ramps into the channel or basin, shall be required (see section 6.1.10.4 for access way ramp requirements). For engineered channels or storm water storage facilities/basins with geometric depths of three feet or shallower with a portion of side slope set at 6:1 or flatter along at least one side to allow for emergency or ordinary maintenance vehicle access, ramps into the channel or basin are not required.
- Per Section 6.8.8 of the City of Phoenix Storm Water Policies and Standards, the maximum depth of ponded water within any parking lot location shall be six inches with the deeper portions confined to remote areas of parking lots, whenever possible. The minimum longitudinal slope permitted within parking lot storage facilities is 0.005 ft/ft, unless concrete valley gutters are provided. With concrete valley gutters, a minimum longitudinal slope of 0.002 ft/ft is permitted.
- A public Drainage Easement is required around the onsite retention area that is to retain the offsite flows when offsite flows are taken onto private property.
- A Drainage Report is required to be submitted for any projects that are impacted by offsite flows. If there are no offsite flows impacting the site a Drainage Statement will be adequate on the cover sheet of the plans. If a Drainage Report is required please include the KIVA# and the CCPR#/CSPR# on the cover sheet of the report.

**City of Phoenix Planning & Development Department**  
**Grading and Drainage, Residential Single Lot Checklist – Page 3 of 9**

TRT/DOC/00494

**ENG RVW**

- Complex Drainage Reports (subdivisions, properties with washes, hillside properties, properties in floodplain, etc.) should include hydrology parameters and assumptions and include methodology for developing quantities. Also include computer runs from HEC-1 or other programs utilized to develop flows from contributing area. Storm water routing through channels should include HEC-2 or other programs used to model the hydraulics including backwater computations. A disk with input data should be furnished with your plan review submittal when a computer program is utilized in the design.
- This project is subject to the National Pollution Discharge Elimination System (NPDES) requirements for construction sites under the Environmental Protection Agency (EPA) General Permit for Arizona. Owners, developers, engineers, and/or contractors are required to prepare all documents required by this regulation, including but not limited to: SWMP, NOI, NOT. Copies of all requirements, forms, and guidance are available in the "Drainage Design Manual for Maricopa County Volume III Erosion Control" available at the Flood Control District, 2801 West Durango, Phoenix, AZ 85009, (602) 506 1501.
- Existing irrigation supply ditches and/or irrigation tail water ditches on this site, or in the right-of-way adjacent to this site, must be replaced with an underground pipeline, or abandoned subject to the approval of the irrigation company and/or downstream users. Limits of construction and scope of work shall be shown on the plan

**COVER SHEET REQUIREMENTS**

- Provide a Blue Stake notification decal.
- Indicate plan types:
- Grading and Drainage Plan
  - Grading and Drainage Plan with Offsite Improvements (combination)
  - Grading and Drainage Plan with Hillside (separate Hillside checklist and review required)
  - Grading and Drainage Plan with Preservation (separate Preservation checklist and review)
- Provide a project title block with name and address of project.
- Provide a project description.
- Provide a vicinity map with a north arrow.
- Provide an index of plan sheets if more than one plan sheet is included.
- Provide the Owner and Developer's name, address, and telephone number.
- Provide the Engineer's name, address, and telephone number
- Provide the address and legal description of project location.
- Provide the appropriate processing numbers including: KIVA#, SDEV#, SPAD# CRPR#, RPRC#, PRDV#, abandonment, and City quarter section number in lower right corner.
- Provide a legend identifying grades, symbols, lines, etc.
- Provide retaining walls unit length.
- Provide the offsite quantities if they are part of the Grading and Drainage Plan submittal.



**City of Phoenix Planning & Development Department**  
**Grading and Drainage, Residential Single Lot Checklist – Page 4 of 9**

TRT/DOC/00494

**ENG RVW**

- Provide all retention calculations and storm event type.
- Provide a drainage statement that includes the following:
- Site is in a Special Flood Hazard Area:  Y  N
  - Offsite flows affect this site:  Y  N
  - Retention provided is for the \_\_\_\_\_ storm event.
  - Extreme storm outfalls the site at the elevation of \_\_\_\_\_.
- Provide elevation datum and benchmarks (City datum required). Please dial (602) 495-2050 ext. 265 Voice or (602) 534-5500 TTY for existing benchmark closest to the project site. Equations are not acceptable.
- Provide net acreage of the site.
- Provide an As-Built Certification Statement as follows (include on the plans):

AS-BUILT CERTIFICATION

I HEREBY CERTIFY THAT THE "RECORD DRAWING" MEASUREMENTS AS SHOWN HEREON WERE MADE UNDER MY SUPERVISION OR AS NOTED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

\_\_\_\_\_  
 REGISTERED ENGINEER/ LAND SURVEYOR

\_\_\_\_\_  
 DATE

\_\_\_\_\_  
 REGISTRATION NUMBER

**NOTES FOR GRADING AND DRAINAGE PLANS****(To appear on cover sheet)****Grading and Drainage Notes (City of Phoenix)**

- A grading permit is required under Chapter 32A of the Phoenix City Code.
- When Haul permits are required, they must be obtained prior to or concurrently with the grading and drainage permit.
- Excavating Contractor must give location for wasting excess excavation and a letter from Owner giving permission for dumping prior to starting on-site construction. If excess excavation exceeds 100 cubic yards, the disposal site will also require a grading and drainage permit.
- Planning & Development Department Field Inspection Group shall be notified 48 hours before any on-site and/or off-site construction begins, telephone (602) 262-7811.
- Staking finish floor elevations is the responsibility of the Owner and his Engineer. The Owner's Engineer shall submit three sealed copies of this Grading and Drainage Plan designated as "Record Drawing" (bearing an original signature) prior to the request for final inspection.

**Include the note below if it is applicable:**

(Certification of finish floor elevation is mandatory if structure is located in a floodplain or other critical drainage area.) Use the AS-BUILT CERTIFICATION, plus

A Federal Emergency Management Agency (FEMA) "Elevation Certificate" must be completed for each structure constructed in a Special Flood Hazard Area (SFHA) prior to an Electrical Clearance for that structure. One copy of the "Elevation Certificate" is to be submitted to the General Building Safety Inspector on site and one copy is to be submitted to the City of Phoenix Flood Plain Manager.

In addition, specify the name, address, and telephone number of the Arizona Registered Engineer or Land Surveyor responsible for providing certification.

**City of Phoenix Planning & Development Department  
Grading and Drainage, Residential Single Lot Checklist – Page 5 of 9**

TRT/DOC/00494

**ENG RVW**

- A separate permit is necessary for any offsite construction.
- An approved Grading and Drainage Plan shall be on the job site at all times. Deviations from the plan must be preceded by an approved plan revision.
- Grading and Drainage Plan approval includes the construction of all surface improvements shown on the approved plan, including, but not limited to, retention areas, sedimentation basins, and/or other drainage facilities, drainage patterns, walls, curbs, asphalt pavement, and building floor elevation.
- Grades shown in retention basins are design finished grades. Should the contractor or any sub-contractor plan to place spoil dirt from footings, utility trenches, landscaping, swimming pools, etc. in the basins, the basins should be sufficiently over-excavated during the rough grading operation to allow for the placement of the fill or landscaping materials.
- Contractor is responsible for locating and confirming depths of all the existing utility lines within proposed retention basin areas. If the basin cannot be constructed per plan because of conflicts, the contractor should discuss modification of basin configuration with the City Inspector to determine if a plan revision or a field change is required.
- All drainage protective devices such as swales, interceptor ditches, pipes, protective berms, barrier walls, concrete channels, or other measures designed to protect adjacent buildings or property from storm runoff must be completed prior to building construction.
- Per Section 6.8.7 of the Storm Water Policies and Standards, side slopes of storm water storage facilities shall be no steeper than 5:1 for irrigated grass areas and 3:1 for landscape areas. Slope stabilization measures are required for all slopes greater than 5:1. The slope stabilization measures must be readily maintainable using common maintenance equipment and be designed with consideration to aesthetics. The slope stabilization measures shall be consistent with commonly used engineering practices. Un-stabilized decomposed granite is not allowed on slopes greater than 5:1.
- Retaining walls 3'4" or less measured from the top of the footing to the top of the retaining wall that support a surcharge are to be reviewed and permitted by the Civil Plan Review staff and inspected by the Residential Inspection Staff. Retaining wall over 3'4" on non-hillside residential zoning districts require a use permit. Walls over 3'4" will be reviewed, permitted, and inspected by the Residential Section of the Planning & Development Department under separate submittal by the applicant.
- All ramps must meet 2010 ADA Standards for Accessible Design and city of Phoenix Supplement to M.A.G. Uniform Standard Specifications and Details; 2% max cross slopes and 12:1 max longitudinal slopes.
- Certificate of Occupancy (C of O) and/or final electrical clearance for any building is denied until all grading and drainage improvements are completed.
- Existing or newly damaged and/or displaced concrete curb, gutter, sidewalk, or driveway slab that is within the right-of-way shall be repaired or replaced, as noted by City inspectors, before final acceptance of the work.
- The Engineering Design on these plans is only approved by the City in scope and not in detail. Construction quantities on these plans are not verified by the City. Approval of these plans are for permit purposes only and shall not prevent the City from requiring correction of errors in the plans where such errors are subsequently found to be in violation of any law, ordinance, health, safety, or other design issues.

**City of Phoenix Planning & Development Department**  
**Grading and Drainage, Residential Single Lot Checklist – Page 6 of 9**

TRT/DOC/00494

**ENG RVW**

- The City of Phoenix Police Department enforces laws regulating the operation of commercial vehicles. This includes enforcement of federal, state, county and local laws and ordinances. Questions regarding Commercial Vehicle Enforcement may be directed to the Commercial Vehicle Enforcement Supervisor at (602) 495-7813 (Traffic Bureau South) or (602) 495-6784 (Traffic Bureau North).
- Plan approval is valid for 180 days. Prior to plan approval expiration, all associated permits shall be purchased or the plans shall be resubmitted for extension of plan approval. The expiration, extension, and reinstatement of Civil Engineering plans and permits shall follow the same guidelines as those indicated in the Phoenix Building Construction Code Administrative Provisions Section 105.3 for Building permits.

**The following notes shall be shown on the cover sheet of combination Grading and Drainage and Offsite Improvement Plans:**

- Construction within the right-of-way shall conform to the latest applicable Maricopa Association of Governments (MAG) Uniform Standard Specifications and Details and the latest City of Phoenix Supplement to the MAG Uniform Standard Specifications and Details.
- Compaction shall comply with M.A.G. Section 601.
- Obstructions to proposed improvements in the right-of-way shall be removed or relocated before beginning construction of the proposed improvements.
- The actual point of pavement matching and/or termination shall be determined in the field by the City of Phoenix, Planning & Development Department field inspector.
- Pavement replacement thickness and type are to be per M.A.G. Section 336 and C.O.P. Detail P1200 - Type B. Curb and gutter replacement shall be a minimum of one (1) full section, per M.A.G. Standard Detail 220. Sidewalk replacement shall be a minimum of one (1) full panel per C.O.P. Detail P1230.
- Trees and shrubbery in the right-of-way that conflict with proposed improvements shall not be removed without approval of the City Landscape Architect or his assignees. The permittee shall be responsible for obtaining authorization to remove and/or relocate said trees or shrubbery by calling the Parks and Recreation Department at (602) 262-6501.
- A pavement cut surcharge shall be assessed on this project for any trenching or potholing in new asphalt pavement that is less than 30 months old. Surcharge fees assessed are in addition to the regular permit fees and are over and above any special backfill, compaction, and pavement replacement stipulations that may be imposed as a condition of permitting. Pavement cut surcharge fees is assessed in accordance with Section 31-38 of the Phoenix City Code.

**Optional Note, Channel Diversion:**

- Construction must be phased so the newly aligned channel is fully operational before the existing drainage channel is filled. Flood water conveyance must be maintained at all times during construction.

**Additional Notes (required when using HDPE Pipe in right-of-way):**

- All HDPE storm drain pipe shall be manufactured, designed and installed in accordance with AASHTO M252, AASHTO M294, MAG and City of Phoenix Supplements to MAG and these special provisions.
- All HDPE storm drain pipe shall be Type 'S' corrugated, with watertight joints. HDPE pipe shall not be allowed within a minimum of twenty-four (24) linear feet of an open outfall or public right-of-way. The outfall section of storm drain pipe shall be concrete or concrete-lined as shown on the plans.
- At a minimum, all HDPE storm drain pipe joints shall meet the ASTM D-3212 watertight requirement of 10.8 p.s.i. (25 column feet of water head).

**City of Phoenix Planning & Development Department**  
**Grading and Drainage, Residential Single Lot Checklist – Page 7 of 9**

TRT/DOC/00494

**ENG RVW**

- The contractor shall provide a copy of an accepted independent 3rd party lab certification that all the pipe and joints to be used on the project meet the ASTM D-3212 watertight standard.
- All HDPE pipe connections to manholes shall meet ASTM C-923 requirements.

**The following notes are required on Grading & Drainage (G&D) plans when special preservation or hillside issues are involved:**

- Before grading in areas containing native desert vegetation, the Contractor must obtain a permit from Arizona Department of Agriculture. For information, phone (602) 364-0935.
- If property is adjacent to the Phoenix Mountain Preserve, no disturbance of preserve property for access, grading, or other construction purposes will be allowed. The contractor is required to delineate the Mountain Preserve boundary with a temporary fence or other acceptable methods.
- If site has special preservation or hillside issues the grading plan must show all landscape preservation easements, construction fencing locations, and appropriate areas labeled. Prior to any clearing, grubbing, or grading operations, construction fencing shall be shown on approved plans, permitted and inspected and salvage operations permitted, inspected, and completed.

**PLAN SHEET REQUIREMENTS**

- Provide the Civil Engineer's Arizona seal and original signature (on each sheet).
- Scale selected for each sheet. One inch equals 40 feet (maximum) for all projects.
- Existing contours or spot elevations, drainage arrows and grade breaks to indicate drainage patterns. Also indicate all 100-year flows from contributing offsite drainage areas.
- Show existing and proposed top of curb, gutter, and sidewalk elevations (both sides) and pavement crown elevations along project frontage at extension of lot lines or every 100' (whichever is less).
- Show and label low curb and high curb elevations.
- Provide spot elevations every 100' on adjacent properties sufficient to depict existing conditions affecting drainage of property to be filled. Usually 50 feet beyond property line will be sufficient.
- Provide cross-sections along all property lines.
- All existing utilities and drainage facilities, including private or S.R.V.W.U.A. irrigation within and adjacent to the property boundaries shall be shown. Any work on Salt River Project irrigation system requires SRP permit and approved plans. All utilities shall be dimensioned from street monument lines.
- Show details at property lines, fences, berms, etc. Also show improvements and finish floor elevations on adjacent property to the proposed development.
- Show all existing and proposed easements, dedications, right-of-way, streets, and alleys with dimensions and offsets. Streets shall be identified by name. Streets, alleys, and easements shall be dimensioned at least once and at all breaks. Monument line of streets shall be shown.
- All abutting lots shall be identified by lot #, tract, and subdivision or shown un-subdivided.
- Dimension all property boundaries, both perimeter and interior lines.
- All proposed and existing utilities, structures, paving and other topographic features affected by construction shall be shown and dimensioned from monument line.

**City of Phoenix Planning & Development Department**  
**Grading and Drainage, Residential Single Lot Checklist – Page 8 of 9**

TRT/DOC/00494

**ENG RVW**

- The proposed grading should be designed with slopes and topographic features which match the natural grade and boundary area to minimize erosion and sediment migration on to City streets or neighboring properties.
- Grading Plans showing existing natural washes shall also show existing conditions including line and grade of the wash flow line at 50 ft. intervals. Show distances between banks and elevations at 50 ft. intervals.
- Show the Extreme Storm Outfall and label it with an elevation.
- Show side slopes, bottom elevation, high water elevation, outfall elevation, location and direction, volume provided, and volume required for all retention/detention basins.
- Show all proposed retaining walls. Include the length, height, top of retaining wall elevation, and top of footing elevation for each section of retaining wall. The design and structural calculations for all retaining walls equal to or less than 3'4" that support a surcharge shall be reviewed, approved, and permitted based on the Grading and Drainage plans; and inspected by the Residential Inspections staff. The design and structural calculations for all retaining walls greater than 3'4" shall be reviewed, approved, permitted, and inspected by the Residential Section of the Planning & Development Department. Refer to Section 703 of the Zoning Ordinance and Section 32-32 of the Subdivision Ordinance for specific wall height requirements. Use permit for over-height walls must be obtained prior to approval of the Grading and Drainage Plan.

**OTHER REQUIREMENTS WHEN APPLICABLE**

- A pavement cut surcharge will be assessed on this project for trenching in new asphalt pavement. This fee will be assessed in addition to the regular permit fees and is over and above any special backfill, compaction, and pavement replacement stipulations that may be imposed as a condition of permitting. Surcharge affects streets newly paved and newly overlaid within the past 30 months.
- Delineate the limits of any 100-year designated floodplain and include applicable 100-year water surface elevation lines which traverse the project site.
- Hauls greater than 10,000 cubic yards require a permit and approved haul route prior to issuance of Grading and Drainage permit.
- When located within a Special Floodplain Hazard Area (SFHA) it is the responsibility of the applicant to coordinate their permit application with the Floodplain Management Department. The SFHA submittal must include Grading and Drainage plans sealed by a civil engineer licensed by the State of Arizona, a completed Floodplain Clearance Form, the base flood elevation (BFE), finish floor elevation of the existing structure and proposed structure(s) and total project valuation. The total project valuation must be based on the full replacement cost.

**New Dry Well Installation Checklist**

- Dry wells are not required to be shown on the plan set for retention basins with geometric depths of less than one foot (basin outfall elevation – bottom elevation).
- Dry well is to be set at least 100 feet from any surrounding water production well, underground storage tank, or fuel loading area.
- Dry well is not to be constructed in any area where hazardous or toxic materials are stored or handled.
- Dry well is not to be located in any area where an accidental spill of hazardous or toxic liquid would drain into the dry well.

**City of Phoenix Planning & Development Department**  
**Grading and Drainage, Residential Single Lot Checklist – Page 9 of 9**

TRT/DOC/00494

**ENG RVW**

- Dry well is not to be located at a loading dock where hazardous substances are handled.
- Dry well is not to be located within any groundwater saturated zones.
- Dry well shall dispose of Storm water run-off only.
- The following notes are required on Grading & Drainage (Grading and Drainage) plans when a dry well is to be installed:
  - A. The owner/developer shall be responsible for registering the dry wells shown on the Grading and Drainage plan with the Arizona Department of Environmental Quality (A.D.E.Q.). For information about specific requirements, contact the Water Permits Unit at (602) 771-4686.
  - B. Dry wells must be drilled a minimum of 10 feet into permeable porous strata or percolation tests will be required. The Grading and Drainage inspector must be present before backfill or well pipes are placed within any dry wells.
  - C. The owner/developer is responsible for installing drywell(s) should the retention basins fail to drain within 36 hours.
- Dry well detail and specifications need to be shown on Grading and Drainage plans.
- Grate elevation for the dry well needs to be shown on Grading and Drainage plan at minimum of 0.3 feet above bottom of retention basin (allows for silting). For bleed-off to City storm drain system the grate needs to be 0.75 feet above bottom of basin.

**PLANS FOR REVISION**

- All original plan approvals, signatures, and seals are to remain on the revised plans.
- All plans revised after the original approval shall be resubmitted for review and approval. The nature of the revisions must be called out on the cover sheet and on the sheet(s) which have been revised. The revision number itself shall consist of a numeral within a triangle next to each revision.  $\Delta$  Changes on each plan sheet shall be highlighted with "clouding".
- All revised sheets, including the cover sheet are to be re-sealed, signed and dated.

**EXTENSIONS**

- All plans submitted for extension require a new signature block and are to be re-signed by the submitting designer. Plan extensions are to be highlighted with "clouding" as specified in the plan revision process above. The plan sealant shall note that this change is a plan extension. A new approval signature block is required to be added to the coversheet for approval of the extension. All plan extensions must have prior approval by completing the Plan Review Extension Application. The Plan Review Extension Application can be found at the following site: <http://www.phoenix.gov/development/siteandcivil/civil/>. Provide a copy of the approved application with the plan submittal.
- Plan approvals for extension are valid for a period of 180 days from the date of plan approval.



**Grading & Drainage Plot Plan  
Residential Single Lot Checklist**

**KIVA #:** \_\_\_\_\_ **Project Name:** \_\_\_\_\_

**Reviewed By:** \_\_\_\_\_ **Phone:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Engineer:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

The purpose of this checklist is to offer comments on plan design for on-site grading. The source of the Grading and Drainage design policy is City Code Chapter 32 and City of Phoenix Storm Drain Design Manual.

This checklist serves to minimize redline comments on the check prints and to maintain consistency among plan reviewers on plans for cuts, fill, drainage swales, drainage structures and pipes, and retention areas. Plan approval, issuing permits, and certain grading clearances depend on compliance with the comments made on the check prints and this checklist. The Arizona registrant of record shall satisfy themselves of the completeness and accuracy of the design.

A completed checklist must be attached to the plot plans when submitted for first review. The following Certification Statement must be signed by the Arizona Registrant of record certifying that all applicable requirements on this checklist have been met.

Plan review correction cycles and/or approvals are valid for 180 days. Additional review fees (see Fee Schedule – Phoenix City Code, Chapter 9, Appendix A.2) shall be charged for extensions/reinstatements to update expired plan reviews.

**CERTIFICATION**

**I CERTIFY THAT THE REFERENCED PLANS COMPLY WITH ALL APPLICABLE CITY ORDINANCES AND STANDARDS, INCLUDING FEDERAL, STATE AND COUNTY REQUIREMENTS AND REGULATIONS. IN ADDITION, I CERTIFY THAT THIS CHECKLIST HAS BEEN COMPLETED ENSURING ALL ITEMS LISTED ARE PROPERLY ADDRESSED. I UNDERSTAND THAT IF I FAIL TO ADDRESS ALL APPLICABLE ITEMS IN THIS CHECKLIST, THE PLANS MAY BE IMMEDIATELY RETURNED TO ME WITHOUT ANY FORMAL REVIEW BEING PERFORMED.**

Arizona Registrant (Civil or Architect): \_\_\_\_\_

Arizona Registrant's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Please return this checklist and the check prints with your next submittal. Discussion of redline comments on plans or this checklist should be directed to the plan reviewer listed above.

An Arizona Registrant (REG) must fill out all boxes in the first column as either  (Addressed) or  (Not Applicable).

Civil plan reviewer (**RVW**) shall check the second column as  (Required) when requirements have not been properly addressed.

**The following two conditions must be met in order to submit a Plot Plan:**

1. Vacant lot in a previously approved subdivision and infill lots (vacant lots in which the proposed site is surrounded by existing homes).
2. A permanent excavation of less than two feet in depth, a filling of earth of less than one foot in depth, or a filling of earth of less than 100 cubic yards.

For more information or for a copy of this publication in an alternate format, contact Planning & Development at (602) 262-7811 voice / (602) 534-5500 TTY.

If this lot is located within a Floodplain, is greater than 0.5 acres, is a custom home site, is a hillside lot with grading limitations, is a lot that will require retaining walls, a lot that contains a natural wash, drainage way, or protected by drainage easements, a full Grading and Drainage Plan will be required.

### REQUIRED SUBMITTALS

#### REG RVW

- Plan sheets shall be 24" X 36" or 8 ½" X 11"; submit three (3) sets of the Grading and Drainage Plot plan, a sealed drainage report or a drainage statement may be substituted for projects with no offsite flows, and a completed and signed Grading and Drainage Plot Plan Checklist.

**Note:** If submitting through the Electronic Plan Review system, multiple copies of submittal documents are not required.

### GENERAL REQUIREMENTS

- Original plan sheets shall be sufficiently clear to allow legible prints to be reproduced from microfilm. The size of lettering and symbols shall be 1/8 inch minimum.
- If required, refer to the City of Phoenix Storm Drain Design Manual for drainage design policy, details, and calculations showing retention volumes to be provided for the required on-site retention. Provide all retention calculations and storm event type on the plot plan. Show maximum side slopes, top and bottom elevations, high water elevation, and the volume of each retention basin. The City of Phoenix storm water retention requirement is for the 100 year/2 hour storm event unless otherwise authorized by the Planning & Development Department.
- Drainage reports should include hydrology parameters and assumptions and include methodology for developing quantities. Also include computer runs from HEC-1 or other programs utilized to develop flows from contributing area. Storm water routing through channels should include HEC-2 or other programs used to model the hydraulics including backwater computations. A disk with input data should be furnished with your plan review submittal when a computer program is utilized in the design.

A drainage statement may be used in lieu of a complete drainage study provided the professional has determined there is no off site flow impacting the site and the property does not lie within a floodplain. The drainage statement must include the extreme outfall location and elevation. State the storm event retention that is being provided.

- Provide a drainage statement that includes the following:
- Site is in a Special Flood Hazard Area:  Y  N
  - Offsite flows affect this site:  Y  N
  - Retention provided is for the \_\_\_\_\_ storm event.
  - Extreme storm outfalls the site at the elevation of \_\_\_\_\_.
- If the property is flood irrigated:
- A. Show the location of all existing and proposed berms.
  - B. Provide the elevations at the high berm and along the berm at regular intervals (minimum finish floor elevation is 6" above top of high berm).
  - C. The suggested slope for berms is 1 ½:1.
- Sidewalks are required when:
- A. 50% of the lots on the same block on the same side of the street have existing sidewalks.
  - B. The lot on either side the property has an existing sidewalk.
  - C. The lot is located adjacent to an intersection.
- Provide the address and legal description of the site.
- Provide a project description.



**REG RVW**

- Provide the total lot area.
- Provide the year the existing house was built. If the lot is vacant, list the year the plat was recorded.
- Provide the total building area under roof.
- Provide the patio area in square feet. Show allowed/provided percentage.
- Provide the total lot coverage. Show the allowed/provided percentage.

**PLOT PLAN REQUIREMENTS**

- Indicate plan types:
  - Plot Plan
- Provide the standard plan number, if applicable.
- Provide the appropriate processing numbers including: KIVA#, SDEV#, SPAD# CRPR#, RPRC#, PRDV#, and City quarter section number in lower right corner.
- Provide a north arrow and scale, 1" = 20', for the plot plan, unless it makes you unable to fit on an 8 1/2" X 11" paper.
- Provide all retention calculations and storm event type. Show the location of all existing or required retention basins.
- Provide elevation datum and benchmarks (City datum required). Please dial (602) 495-2050 extension 265 Voice or (602) 534-5500 TTY for existing benchmark closest to the project site. Equations are not acceptable.
- Finish floor elevation is to be noted on the plan and sealed by a licensed Arizona registrant (Civil Engineer or Architect). Finish floor elevation is required to be referenced to a City of Phoenix benchmark.
- Provide existing and proposed elevations at all lot corners.
- Provide the type of curb along the property frontage. (6" vertical curb, roll curb, etc.)
- Provide the low and high top of curb elevations and pavement crown elevations along the lot frontage. (Minimum finish floor elevation shall be 14" above the top of the low curb and 6" above the top of the high curb elevation or pavement crown)
- Provide the elevation and location of the extreme storm outfall. Provide directional arrows that display the storm water has an unobstructed path to the outfall location.
- Provide the property boundary dimensions.
- Provide the screen fence type, height, and location.
- Provide all building and zoning setback lines.
- Show garage setback (18' minimum for roll-up; 20' for panel garage door to the back of sidewalk).
- Provide eave setback and roof overhangs (show overhang with dashed line).

**REG RVW**

- Show all existing and proposed easements, dedications, right-of-way, streets, visibility triangles and alleys with dimensions and offsets. Streets shall be identified by name. Streets, alleys, and easements shall be dimensioned at least once and at all breaks. Monument line of streets shall be shown.
- All existing utilities and drainage facilities, including private or S.R.V.W.U.A. irrigation within and adjacent to the property boundaries shall be shown. Any work on Salt River Project irrigation system requires SRP permit and approved plans. All utilities shall be dimensioned from street monument lines.
- Show the location and size of the electrical service.
- Provide a footprint of all accessory structures including swimming pools and equipment.

**NOTES FOR PLOT PLAN**  
**(To appear on cover sheet)**

- A finish floor elevation certificate shall be provided by the registrant, to the field inspector, prior to the rough frame inspection.
- The minimum finish floor elevation shown is safe from a 100 year flood of the minimum specified in the City of Phoenix Storm Water Policies and Standards Manual.
- A separate permit is required for any work in the City of Phoenix right-of-way.

**PLANS FOR REVISION**

- All original plan approvals, signatures, and seals are to remain on the revised plans.
- All plans revised after the original approval shall be resubmitted for review and approval. The nature of the revisions must be called out on the cover sheet and on the sheet(s) which have been revised. The revision number itself shall consist of a numeral within a triangle next to each revision.  $\Delta$  Changes on each plan sheet shall be highlighted with "clouding".
- All revised sheets, including the cover sheet are to be re-sealed, signed and dated.

**EXTENSIONS**

- All plans submitted for extension require a new signature block and are to be re-signed by the submitting designer. Plan extensions are to be highlighted with "clouding" as specified in the plan revision process above. The plan sealant shall note that this change is a plan extension. A new approval signature block is required to be added to the coversheet for approval of the extension. All plan extensions must have prior approval by completing the Plan Review Extension Application. The Plan Review Extension Application can be found at the following site: <http://www.phoenix.gov/development/siteandcivil/civil/>. Provide a copy of the approved application with the plan submittal.
- Plan approvals for extension are valid for a period of 180 days from the date of plan approval.



Project Name: \_\_\_\_\_ Project No.: \_\_\_\_\_

Project Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Quarter Section: \_\_\_\_\_ APN: \_\_\_\_\_ Acreage: \_\_\_\_\_

Project Description: \_\_\_\_\_

Property Owner Name: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ St.: \_\_\_\_\_ Zip Code: \_\_\_\_\_

Architect/Engineer of Record Name: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ St.: \_\_\_\_\_ Zip Code: \_\_\_\_\_

License # (if applicable): \_\_\_\_\_

General Contractor Name: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Mailing Address: \_\_\_\_\_ City: \_\_\_\_\_ St.: \_\_\_\_\_ Zip Code: \_\_\_\_\_

License #: \_\_\_\_\_

**Environmental Responsibility Acknowledgement and Certification**

As the property owner, or an agent authorized by the property owner, I acknowledge and understand that this project and the activities related to this project may be subject to county, state, tribal and Federal environmental, natural and cultural resource rules and laws including, but not limited to, those regarding:

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>Air Quality / Dust Control</li> <li>Archaeological / Cultural /</li> <li>Historic Resources</li> <li>Asbestos / Lead Abatement Act</li> <li>Endangered Species</li> <li>Hazardous Substances</li> </ul> | <ul style="list-style-type: none"> <li>Clean Water Act (NPDES, Section 404, Water Quality</li> <li>Comprehensive Environmental Response Compensation and Liability</li> <li>Act (CERCLA, superfund)</li> <li>County Environmental health (Septic Systems, Wells, Water /</li> <li>Wastewater, Vector Control)</li> <li>Resource Conservation and Recovery Act (Hazardous Waste)</li> </ul> |
|--|--|

In addition, as the property owner, or as an agent authorized by the property owner, I hereby certify that all County, State, Tribal and Federal permits applicable to this project will be obtained, and all requirements or conditions of such permits and all environmental laws will be complied with to the best of my knowledge. **NOTE: This certification must be completed, notarized, and submitted to the city of Phoenix Planning and Development Department before plans or permits may be approved for any part of this project. Use or occupancy of any part of this project without final approval from the city of Phoenix is a violation of the Phoenix City Code.**

Owner /  Authorized Agent \_\_\_\_\_  
Name (printed)

Signature \_\_\_\_\_ Date \_\_\_\_\_

Acknowledged before me this \_\_\_\_ Day of \_\_\_\_\_, 20\_\_

My Commission Expires: \_\_\_\_\_ Notary Public: \_\_\_\_\_

This publication can be made available in alternate formats (Braille, large print or digital media) upon request. Contact Planning & Development at (602) 262-7811 voice or (602) 534-5500 TTY.

# City of Phoenix Infill Housing Area

LITCHFIELD  
DYSART R  
EL MIRAGE  
115TH AV  
107TH AV  
103RD AV  
99TH AV  
95TH AV  
91ST AV  
87TH AV  
83RD AV  
79TH AV  
75TH AV  
71ST AV  
67TH AV  
63RD AV  
59TH AV  
55TH AV  
51ST AV  
47TH AV  
43RD AV  
39TH AV  
35TH AV  
31ST AV  
27TH AV  
23RD AV  
19TH AV  
15TH AV  
7TH AV  
CENTRAL /  
7TH ST  
12TH ST  
16TH ST  
20TH ST  
24TH ST  
28TH ST  
32ND ST  
36TH ST  
40TH ST  
44TH ST  
48TH ST  
52ND ST  
56TH ST  
60TH ST  
64TH ST  
68TH ST  
SCOTTSD

(44,200N) CIRCLE MOUNTAIN RD  
(42,600N) ANTHEM WY  
(41,000N) ROCKAWAY HILLS RD  
(39,400N) DESERT HILLS DR  
(37,800N) JOY RANCH RD  
(37,000N) MADDOCK RD  
(36,200N) CLOUD RD  
(35,400N) GALVIN ST  
(34,600N) CAREFREE HWY  
(33,800N) WESTLAND RD  
(33,000N) DOVE VALLEY RD  
(31,400N) ASHLER HILLS RD  
(31,400N) LONE MOUNTAIN RD  
(30,600N) MONTGOMERY RD  
(29,800N) DIXILETA DR  
(29,000N) PEAK VIEW RD  
(28,200N) DYNAMITE BLVD  
(27,400N) PINNACLE VISTA RD  
(26,600N) JOMAX RD  
(25,800N) YEARLING RD  
(25,000N) HAPPY VALLEY RD  
(24,200N) ALAMEDA RD  
(23,400N) PINNACLE PEAK RD

(22,600N) WILLIAMS DR  
(21,800N) DEER VALLEY RD  
(21,000N) ROSE GARDEN LN  
(20,200N) BEARDSLEY RD  
(19,400N) YORKSHIRE DR  
(18,600N) UNION HILLS DR  
(19,400N) GROVERS AV  
(17,000N) BELL RD  
(16,200N) PARADISE LN  
(15,400N) GREENWAY RD  
(14,600N) ACOMA DR  
(13,800N) THUNDERBIRD RD  
(13,000N) SWEETWATER AV  
(12,200N) CACTUS RD  
(11,400N) CHOLLA ST  
(10,600N) PEORIA AV  
(9,800N) MOUNTAIN VIEW RD  
(9,000N) DUNLAP AV  
(8,500N) BUTLER DR  
(8,000N) NORTHERN AV  
(7,500N) ORANGEWOOD AV  
(7,000N) GLENDALE AV  
(6,500N) MARYLAND AV  
(6,000N) BETHANY HOME RD

(6,500N) MISSOURI AV  
(5,000N) CAMELBACK RD  
(5,000N) CAMPBELL AV  
(4,100N) INDIAN SCHOOL RD  
(4,500N) OSBORN RD  
(2,900N) THOMAS RD  
(2,300N) ENCANTO BLVD  
(1,600N) MCDOWELL RD  
(1,000N) ROOSEVELT ST  
(300N) VAN BUREN ST  
(400S) HARRISON ST  
(1,200S) BUCKEYE RD  
(2,000S) DURANGO ST  
(2,800S) LOWER BUCKEYE RD  
(2,800S) ELWOOD ST  
(4,400S) BROADWAY RD  
(5,200S) ROESER RD  
(6,000S) SOUTHERN AV  
(6,800S) VINEYARD RD  
(7,600S) BASELINE RD

(8,400S) SOUTH MOUNTAIN AV  
(9,200S) DOBBINS RD  
(10,000S) OLNEY DR  
(10,800S) ELLIOT RD  
(11,700S) CARVER RD

(14,000S) RAY RD  
(14,800S) GALVESTON ST  
(15,600S) CHANDLER BLVD  
(16,400S) FRYE RD  
(17,200S) PECOS RD

DOVE VALLEY RD (33,000N)  
ASHLER HILLS RD (32,200N)  
LONE MOUNTAIN RD (31,400N)  
MONTGOMERY RD (30,600N)  
DIXILETA DR (29,800N)  
PEAK VIEW RD (29,000N)  
DYNAMITE BLVD (28,200N)  
PINNACLE VISTA RD (27,400N)  
JOMAX RD (26,600N)  
YEARLING RD (25,800N)  
HAPPY VALLEY RD (25,000N)  
ALAMEDA RD (24,200N)  
PINNACLE PEAK RD (23,400N)  
WILLIAMS DR (22,600N)  
DEER VALLEY RD (21,800N)  
ROSE GARDEN LN (21,000N)  
BEARDSLEY RD (20,200N)  
UTOPIA RD (19,400N)  
UNION HILLS DR (18,600N)  
GROVERS AV (17,800N)  
BELL RD (17,000N)  
PARADISE LN (15,400N)  
GREENWAY RD (15,400N)  
ACOMA DR (14,600N)  
THUNDERBIRD RD (13,800N)  
SWEETWATER AV (13,000N)  
CACTUS RD (12,200N)  
CHOLLA ST (11,400N)  
SHEA BLVD (10,600N)  
MOUNTAIN VIEW RD (9,800N)  
DOUBLE TREE RD (9,000N)  
BUTLER DR (8,500N)  
NORTHERN AV (8,000N)  
CHENY DR (7,500N)  
INDIAN BEND RD (7,000N)  
LINCOLN DR (6,500N)  
MCDONALD DR (6,000N)  
STANFORD DR (5,500N)  
CAMELBACK RD (5,000N)  
CAMPBELL AV (4,500N)  
INDIAN SCHOOL RD (4,100N)  
OSBORN RD (3,400N)  
THOMAS RD (2,900N)  
OAK ST (2,300N)  
MCDOWELL RD (1,600N)  
ROOSEVELT ST (1,000N)  
VAN BUREN ST (300N)  
HARRISON ST (400S)

BUCKEYE RD (1,200S)  
DURANGO ST (2,000S)  
UNIVERSITY DR (2,800S)  
ELWOOD ST (3,600S)  
BROADWAY RD (4,400S)  
ROESER RD (5,200S)  
SOUTHERN AV (6,000S)  
VINEYARD RD (6,800S)  
BASELINE RD (7,600S)  
SOUTH MOUNTAIN AV (8,400S)  
GUADALUPE RD (9,200S)  
MINERAL RD (10,000S)  
ELLIOT RD (10,800S)  
CARVER RD (11,700S)  
WARNER RD (12,400S)  
KNOX RD (11,700S)  
RAY RD (14,000S)  
CHANDLER BLVD (15,600S)  
FRYE RD (16,400S)  
PECOS RD (17,200S)

LITCHFIELD RD  
DYSART RD  
EL MIRAGE RD  
115TH AV  
107TH AV  
103RD AV  
99TH AV  
95TH AV  
91ST AV  
87TH AV  
83RD AV  
79TH AV  
75TH AV  
71ST AV  
67TH AV  
63RD AV  
59TH AV  
55TH AV  
51ST AV  
47TH AV  
43RD AV  
39TH AV  
35TH AV  
31ST AV  
27TH AV  
23RD AV  
19TH AV  
15TH AV  
7TH AV  
CENTRAL AV  
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32ND ST  
36TH ST  
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52ND ST

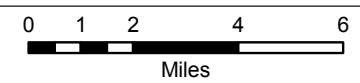
**Legend**

- City Limits
- Major Streets
- Freeways
- Infill Area



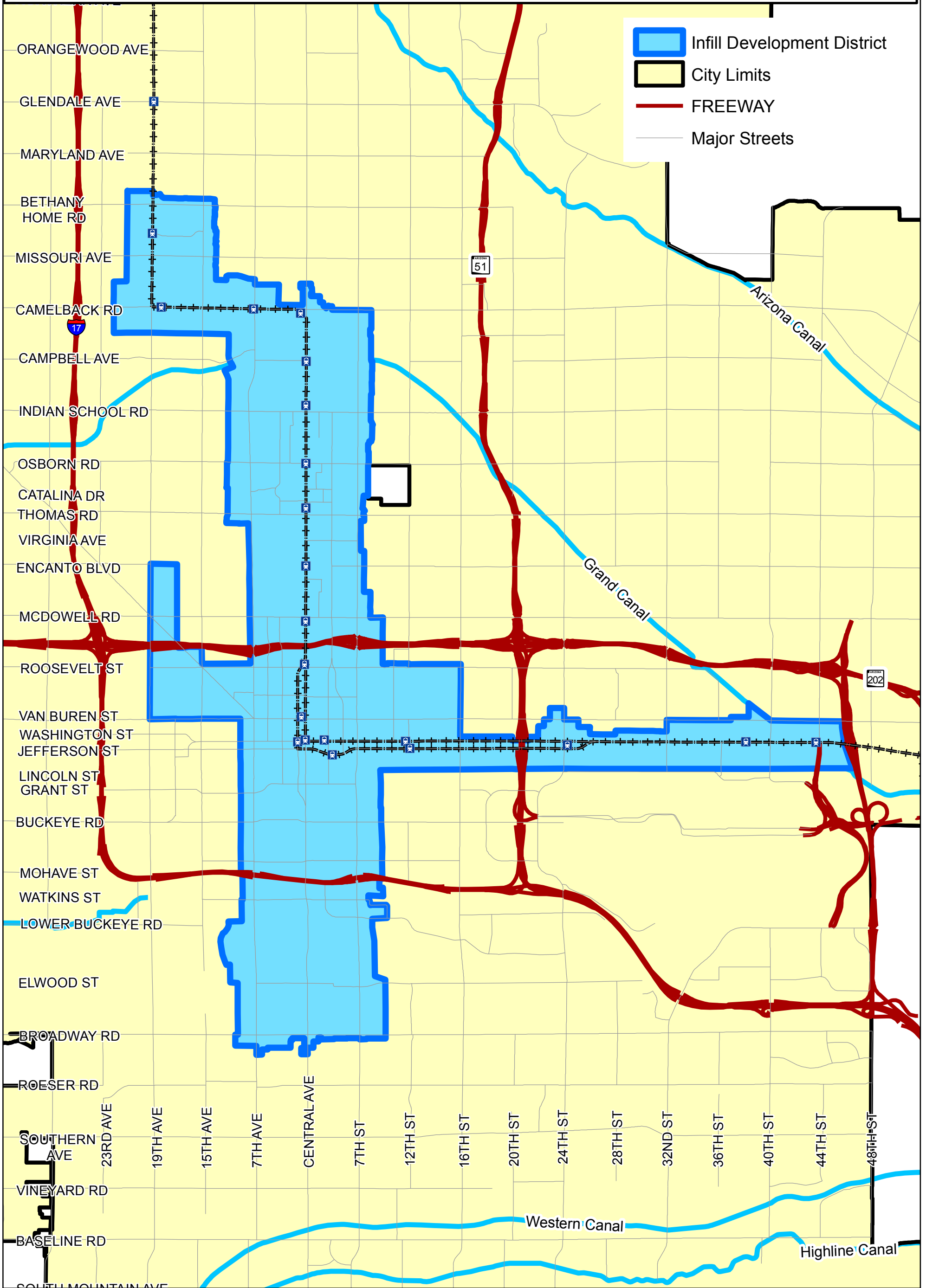
## Development Services

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Printed: 10-11-2006

# City of Phoenix Infill Development District



Planning and Development  
Department



**City of Phoenix**  
PLANNING AND DEVELOPMENT DEPARTMENT



<b>Issue Date:</b>	December 9, 2004
<b>Code/Section:</b>	Storm Water Policies and Standards, Section 6.8
<b>Developed By:</b>	Andy Granger, PE, Civil Engineering Supervisor

The purpose of this memo is to provide clarification to interpretation of the new city of Phoenix Storm Water Policies and Standards Section 6.8 which states -

“Side slopes of storm water storage facilities shall be no steeper than 5:1 for irrigated grass areas and 3:1 for landscaped areas. The drainage plans must provide slope stabilization measures for all slopes steeper than 5:1. The slope stabilization measures must be readily maintainable using common maintenance equipment and be designed with consideration to aesthetics. The slope stabilization measures shall be consistent with commonly used engineering practices. Unstabilized decomposed granite is not allowed on slopes greater than 5:1.”

For ALL retention basins to be maintained by the city AND retention basins greater than 1 acre (bottom surface area) to be maintained by a HOA, the above policy shall be followed.

For retention basins less than 1 acre not to be maintained by the city, side slopes may be 4:1 (grass or desert landscape) without additional slope stabilization measures. Steeper slopes up to 3:1 must follow the guidelines above for slope stabilization.

Any deviation from this policy must be approved by the Civil Engineering Supervisor.