City of Sierra Vista

Community Development Planning
Final Plat Review Check List

(This checklist is for internal staff use only. It is provided to the applicant to help with the submittal requirements of the preliminary plat.)

Project Name:_____ Date:_____
Reviewed By:_____

GENERAL ITEMS:	Approved	Pending	N/A
Legend?_____	☐	☐	☐
Date of Plat preparation?_____	☐	☐	☐
North Arrow?_____	☐	☐	☐
Current Zoning shown?_____	☐	☐	☐
Adjacent Zoning with Uses?_____	☐	☐	☐
Location sketch? _____	☐	☐	☐
Legal Description of the site?_____	☐	☐	☐
Scale Shown?_____	☐	☐	☐
Proof of Ownership attached with Title Report? _____	☐	☐	☐
Proof of Agency Letter?_____	☐	☐	☐
Two Soils Reports Attached?_____	☐	☐	☐
Hydrology Report? _____	☐	☐	☐

IDENTIFICATION DATA:

Name of subdivision and location by section, township and range? _____ _____	☐	☐	☐
Name, address, and registration number or seal of the registered land surveyor preparing plat? _____ _____	☐	☐	☐
Note indicating all setbacks on the plat? _____ _____	☐	☐	☐

IDENTIFICATION DATA CONT.	Approved	Pending	N/A
Symbol on the legend identifying the key lots by lot number and a note with the following notation "Building setback exceeds standard side yard setback (see zoning requirements).	☐	☐	☐
Note stating that all perimeter walls require a separate building permit prior to construction?	☐	☐	☐

DESCRIPTIVE DATA

The names, right-of-way limits, lengths, widths, and location of all streets, alleys, and utility easements shown?	☐	☐	☐
Location, width, and names of all existing dedicated street, alleys, utility rights-of-way, easements, public areas, and permanent structures retained on the site?	☐	☐	☐
The radii, points of tangency, and central angles of all curvilinear streets and alleys and rounded street line intersections?	☐	☐	☐
Identification of all drainageways with a note dedicating drainageway to the City?	☐	☐	☐
Location and dimension of all lots?	☐	☐	☐

DESCRIPTIVE DATA CONT.	Approved	Pending	N/A
The lots are numbered consecutively? Except that Tracts can be identified by letter or number?	☐	☐	☐
Subdivision boundary clearly delineated?	☐	☐	☐
Location, dimensions, bearings, radii, arcs, and central angles of all publicly dedicated property and the use specified?	☐	☐	☐
Name, book, and page numbers of abutting recorded subdivision plats? If unrecorded, a note provided?	☐	☐	☐
Note indicating water adequacy form the Arizona Department of Water Resources	☐	☐	☐

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Project Name _____ Date _____

Reviewing Engineer _____

Developer's Certification: I have reviewed and followed this checklist in the preparation of my submittal.

_____Date_____

PLAT Review

Pre-Application Stage

Included ADEQ

Check ☒ items included in plan

✓ **Indicates ADEQ Requirement**

* **Sierra Vista Standards exceed Federal standard.**

- ☐ Location of property by government lot, section, township, range and county, graphic scale, north arrow.
- ☐ Location of property lines, existing easements, burial grounds, railroad rights-of-way, watercourses, location, width and names of existing or platted streets or other public ways within or immediately adjacent to the tract.
- ☐ Approximate topography based on the City of Sierra Vista datum.
- ☐ Location, sizes, elevations, and slopes of existing sewers, water mains, culverts, and other underground structures within the tract and immediately adjacent thereto; existing permanent building and utility poles on or immediately adjacent to the site and utility rights-of-way.
- ☐ The approximate location and widths of proposed streets.
- ☐ Preliminary proposals for connection with existing water supply and sanitary sewage systems, or alternative means of providing water supply and sanitary waste treatment and disposal; preliminary provisions for collecting and discharging surface water drainage.
- ☐ The approximate location, dimensions, and areas of all proposed or existing lots.
- ☐ A vicinity map showing streets and other general development of the surrounding area.

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Preliminary Plats

- ☐ Proposed subdivision name, location by section, township and range, referenced by dimension and bearing to a section corner or a ¼ section corner.
- ☐ Scale, north arrow, and date pf preparation including any revision dates.
- ☐ A location map, not necessarily drawn to scale, shall be drawn on the preliminary plat. It shall show the street and tract lines and names and numbers of all existing subdivisions, and the outlines of parcels of land adjacent to the proposed tract.
- ☐ Topography with one foot contours based on City of Sierra Vista survey datum and shown on the same street as the subdivision layout. Contour interval shall be two feet for grades up to five percent, five feet for grades five to ten percent, and ten feet for grades over ten percent.
- ☐ Precise location of water wells, washes, and drainage ditches including direction of flow.
- ☐ Location, widths, and names of all dedicated streets, alleys, utility rights-of-way of public record, public areas, and permanent structures to be retained within or adjacent to the tract.
- ☐ Name, book, and page numbers of recorded plats abutting the tract boundary.
- ☐ Legal description by metes and bounds, boundary dimensions, and acreage of tract.
- ☐ The approximate boundaries of all areas subject to the 100-year flood-prone area and the location, width, and direction of flow of all watercourses.
- ☐ The names of subdivisions that adjoin the proposed subdivision.
- ☐ Proposed street layout including location and width of all streets, alleys, crosswalks, easements and the proposed names of streets.
- ☐ Lot layout, including scale dimension of typical lots; width and depth of all corner lots and lots on street curves; each lot numbered consecutively; total number of lots; key lots/corner lots will be identified by lot number in side legend.
- ☐ Location, width, and proposed use of easements.
- ☐ Location, extent, and proposed use of all land to be dedicated or reserved for public use.
- ☐ Location and boundary of all existing and proposed zoning districts.
- ☐ All lots shall be provided public water supply and sanitary sewage
- ☐ Is a soils engineering report required?
- ☐ Site hydrology report.
- ☐ Transportation impact report if the following:
    a) Any development that proposes to take direct access to any collector or arterial road.

b) Any residential development that proposes to have more than 25 dwelling units.
c) Any use that, according to the Director of Community Development, will generate in excess of either 250 trips per acre per day or 100 trips per day.

Final Plats

- ☐ The final plat conforms closely to the approved preliminary plat.
- ☐ Name of subdivision and location by section, township, range, and county.
- ☐ Name, address, and registration number or seal of the registered land surveyor preparing the plat.
- ☐ Scale, north point, and date of plat preparation.
- ☐ Legend identifying the symbols utilized in the plat preparation; corner lots abutting a key lot will be identified in a legend by number with the following notation: “Building setback exceeds standard size yard setback (see zoning requirements)”.
- ☐ Precise legal description by metes and bounds of tract boundaries.
- ☐ Boundaries of the tract fully balanced and closed, showing true point of beginning and all bearings and distances determined by an accurate survey in the fields; all dimensions expressed in feet and decimals thereof.
- ☐ Any exceptions within the plat boundaries located by bearings and distances measured in feet and decimals thereof determined by an accurate survey.
- ☐ Location and description of cardinal points to which all dimension, angles, bearings, and similar data on the plat are referenced; two corners of the subdivision traverse shall be tied by course and distance to separate section corners or quarter section corners. The directional datum for all bearings shall be indicated by actual survey.
- ☐ Location and description of all physical encroachments upon the boundaries of the tract.
- ☐ Name, right-of-way lines, courses, lengths, widths of all public streets, alleys, crosswalks, and utility easements; radii points of tangency, and central angles of all curvilinear streets and alleys; radii of all rounded street line intersections.
- ☐ Indicate all drainage ways designated as such and to be dedicated to the public.
- ☐ All utility and public service easements including any limitations of easements (construction within such easements shall be limited to utilities, landscaping; and wood, wire, or removable section type fences).
- ☐ Location and dimension of all lots.
- ☐ All lots numbered consecutively throughout the plat; exceptions

and tracts shall be dimensioned and identified by letter or number.

☐ Tract boundary of the subdivision shall be clearly delineated.

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- ☐ Location, dimension, bearings, radii, arcs, and central angles of all sites to be dedicated to the public and the use specified.
- ☐ Location of all adjoining subdivisions with date, book, and page number of recordation noted or, if unrecorded, so marked.

NOTE: *This document is intended for use as an aid for City of Sierra Vista staff in reviewing applications and is provided to developers as a courtesy in order to facilitate their preparation of site development plans. The checklist is not intended to be all-inclusive of the City of Sierra Vista Development Code. Submission of the items in the checklist does not imply acceptability of the contents of specific documents nor of any approval requests.*

A copy of this checklist will be included in the project file.

Revised March 8, 2001

\Engineering\Forms\Development Review Check List, Plat.doc

City of Sierra Vista
Public Works Engineering
Development Review Check List

Project Name _____ Date _____

Reviewing Engineer _____

Streets

General

Included	ADEQ	Check  items included in plan
☐		Where a half street furnishes the sole access to a lot, the street should be at least 26 feet wide.
☐		A subdivision should have at least two street accesses serving each 40-acre tract. Subdivisions consisting of less than 40 acres shall have a minimum of two street accesses.
☐		Where there is access across land not owned by the subdivider, at least 50 feet of right-of-way and a 26-foot-wide roadway will be provided.
☐		Maximum block length shall be 1,500 feet.
☐		Crosswalks, where provided, shall be 10 feet wide, and the striping shall be shown on the plans.
☐		Unless otherwise noted, all right-of-way width measurements are to be property lines and all length measurements are along the centerline of the right-of-way and to the centerline of intersections.
☐		Arterial and collector streets will intersect at a 90˚ angle. Local streets should typically intersect at a 90˚ angle, but in no case less than 75˚.
☐		Local streets intersecting an arterial or collector street shall have a tangent section of centerline at least 150 feet in length (no such tangent is required when the local street curve has a centerline radius greater than 600 feet).
☐		Street jogs with a centerline offset of less than 125 feet will be avoided.
☐		Street intersections with more than four legs and Y-type intersections with legs meeting in acute angles are prohibited.
☐		The approach of an intersection will have a maximum grade of 3% and a minimum grade of 0.75% for a distance required to provide adequate sight distance.
☐		All streets and alleys that convey drainage shall be graded and paved with Asphaltic Concrete or Portland Cement Concrete to approved standards.
☐		1. A minimum of 3 inches of Asphaltic Concrete over 10 inches of aggregate base is required for **arterials and collectors.** 2. A minimum of 2 inches of Asphaltic Concrete over 6 inches of aggregate base or an approved structural section is required for **local roads, frontage roads,** and **alleys**

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- ☐ ABC under public roads will be compacted to 100% maximum dry density.
- ☐ A dead-end street serving four or more lots will provide a temporary cul-de-sac.
- ☐ Dead-end alleys are prohibited.
- ☐ All streets will have Portland Cement curbs and gutters along the pavement edge.
- ☐ A combined 6-inch-high vertical curb and gutter are required on all streets except local streets in residential and industrial areas, which may have 4-inch-high rolled curb and gutter as long as drainage can be contained within the street sections or right-of-way.
- ☐ All street corners shall be constructed of 6-inch-high vertical curb and gutter and depressed for handicapped ramps per MAG 231.
- ☐ Where alleys are designed to convey storm water runoff, they shall include a 4-foot-wide concrete valley gutter.
- ☐ Sidewalks shall be located behind the curb. In cases of obstructions, the sidewalk may be located a maximum of 5 feet behind the curb.
- ☐ Sidewalks shall be a minimum of 4 inches thick and 4 feet wide in residential areas and 5 feet wide in commercial and industrial areas, with a ¼" per foot slope towards the street.
- ☐ All returns shall have handicapped ramps at the corners of the intersections, per MAG 231.
- ☐ ☐ Driveway details need to meet the City's modified version of MAG 250. MAG 250 does not currently meet ADA standards.
- ☐ 3000 psi concrete is used for all improvements.
- ☐ Provide permanent survey monuments, consisting of a brass cap set in concrete, in center of street, at all angle points, at points of curvature, and in intersections.
- ☐ Provide striping and signage for collector and arterial streets and signage for local streets.
- ☐ A 6-foot-high solid masonry wall shall be provided where there is residential zoned property abutting any public street right-of-way designated as an arterial street.
- ☐ A transportation impact report shall be required:
  - (a) If development takes direct access to an arterial or collector,
  - (b) A development includes 25 or more dwelling units, or
  - (c) The development generates more than 250 trips per acre per day or 100 trips per day.
- ☐ All MAG Standard Details shall be included with the plans.
- ☐ A clear vision area is to be maintained at all intersections and shown on the plans.
- ☐ Streetlight plans are provided.
- ☐ Temporary cul-de-sacs are shown where a road is to be continued at a later time.

- ☐ Signs and locations are per MUTCD.
- ☐ Street sign plans and details are included. Street name signs are on the same post as stop signs.
- ☐ Valley gutters and spandrels are specified at all intersections, with reference to MAG Standard Detail 240. Valley gutters to be a minimum of 4 feet wide with a ½" depression.
- ☐ Approval signature blocks are on all drawings.
- ☐ Phasing plan provided if subdivision is to be completed in phases.
- ☐ Traffic signal improvements needed?
- ☐ Standard City notes are attached.
- ☐ Verify landscape requirements per Section 151.15.

Principal Arterial

Included	ADEQ	Check ☒ items included in plan
☐		Right-of-way must be at least 150 feet, extending to 200 feet if an optional frontage road is provided.
☐		Street cross-section is shown.
☐		Constructed street pavement width should be 88-92 feet.
☐		Direct access to residential uses shall be prohibited. No street shall intersect a principal arterial except another arterial or collector.
☐		Maximum degree of curvature shall not exceed 5 degrees (R≥1146 feet) with a maximum super elevation rate of 8%.
☐		A vertical curve is needed at all grade changes where the difference between adjoining grades is ½% or more. Minimum length should be 350 feet plus 50 feet for each ½% algebraic difference in grade over 1%.
☐		Length of tangent between reverse curves is a minimum of 500 feet.
☐		Street grades shall be a maximum of 4% and a minimum of 0.75%.
☐		Bicycle lanes/paths shall be provided in accordance with the TCP.
☐		Sidewalks should be on the private property side of the frontage road at or near the back of the curb line. Sidewalks in residential areas shall be 4 feet wide, 5 feet in commercial areas. Sidewalks shall have a minimum thickness of 4 inches except at driveways, where they shall be at least 5 inches thick.
☐		Thermoplastic striping, raised pavement markers, and signs are provided.

Minor Arterial

Included	ADEQ	Check ☒ items included in plan
☐		Right-of-way must be at least 100 feet, extending to 150 feet if an optional frontage road is provided.
☐		Street cross-section is shown.
☐		Constructed street pavement width should be 64-68 feet.
☐		Direct access to residential areas shall be prohibited.
☐		Maximum degree of curvature shall not exceed 8 degrees (R≥717 feet) with a maximum super elevation rate of 8%.
☐		A vertical curve is needed at all grade changes where the difference between adjoining grades is 1% or more. Minimum length should be 300 feet plus 50 feet for each 1% algebraic difference in grade over 1%.
☐		Length of tangent between reverse curves is a minimum of 300 feet.
☐		Street grades shall be a maximum of 5% and a minimum of 0.75%.
☐		Bicycle lanes/paths shall be provided in accordance with the TCP.
☐		Sidewalks should be separated from the street with a 5-foot buffer strip when possible.
☐		Sidewalks in residential areas shall be 4 feet wide, 5 feet in commercial areas. Sidewalks shall have a minimum thickness of 4 inches except at driveways, where they shall be at least 5 inches thick.
☐		Thermoplastic striping, raised pavement markers, and signs are provided.

Collector Streets

Included	ADEQ	Check ☒ items included in plan
☐		Right-of-way is 80 feet for a residential collector, 100 feet for commercial/industrial collector.
☐		Street cross-section is shown.
☐		Constructed street pavement width shall be 48-52 feet for a residential collector, 64-68 feet for a commercial/industrial collector.
☐		Maximum degree of curvature shall not exceed 12 degrees (R≥478 feet) with a maximum super elevation rate of 8%.
☐		A vertical curve is needed at all grade changes where the difference between adjoining grades is 1% or more. Minimum length should be 200 feet plus 50 feet for each 1% algebraic difference in grade over 1%.

- ☐ Length of tangent between reverse curves is a minimum of 100 feet.
- ☐ Street grades shall be a maximum of 7% and a minimum of 0.75%.
- ☐ Bicycle lanes/paths shall be provided in accordance with the TCP.
- ☐ Sidewalks shall be located at the back of the curb on each side of the street for residential collectors. They shall be separated from the street with a minimum of a 5-foot planting strip on commercial/industrial collectors.
- ☐ Sidewalks in residential areas shall be 4 feet wide, 5 feet in commercial areas. Sidewalks shall have a minimum thickness of 4 inches except at driveways, where they shall be at least 5 inches thick.
- ☐ Thermoplastic striping, raised pavement markers, and signs are provided

Local Streets

Included ADEQ

Check ☒ items included in plan

- ☐ Right-of-way is 56 feet for a residential local, 70 feet for a commercial/ industrial local.
- ☐ Constructed street width shall be 34 feet for a residential local, 40 feet for a commercial/industrial local.
- ☐ Maximum degree of curvature shall not exceed 22 degrees (R≥260 feet) with a maximum super elevation rate of 8%.
- ☐ A vertical curve is needed at all grade changes where the difference between adjoining grades is 1% or more. Minimum length should be 100 feet plus 50 feet for each 1% algebraic difference in grade over 1%.
- ☐ Length of tangent between reverse curves is a minimum of 100 feet.
- ☐ Street grades shall be a maximum of 10% and a minimum of 0.75%.
- ☐ Bicycle lanes/paths shall be provided in accordance with the TCP.
- ☐ Sidewalks in residential areas shall be 4 feet wide, 5 feet in commercial areas. Sidewalks shall have a minimum thickness of 4 inches except at driveways, where they shall be at least 5 inches thick.

Frontage Road

Included ADEQ

Check ☒ items included in plan

- ☐ Right-of-way is 50 feet.
- ☐ Constructed street width is 22 feet.
- ☐ Maximum degree of curvature shall not exceed 22 degrees (R≥260 feet) with a maximum super elevation rate of 8%.
- ☐ A vertical curve is needed at all grade changes where the difference between adjoining grades is 1% or more. Minimum length should be 200 feet plus 50 feet for each 1% algebraic difference in grade over 1%.
- ☐ Length of tangent between reverse curves is a minimum of 100 feet.
- ☐ Street grades shall be a maximum of 7% and a minimum of 0.75%.
- ☐ Bicycle lanes/paths shall be provided in accordance with the TCP.
- ☐ Sidewalks in residential areas shall be 4 feet wide, 5 feet in commercial areas. Sidewalks shall have a minimum thickness of 4 inches except at driveways, where they shall be at least 5 inches thick.

Cul-De-Sac

Included ADEQ

Check ☒ items included in plan

- ☐ No cul-de-sac will be longer than 650 feet in length.
- ☐ Right-of-way for a residential cul-de-sac shall be a 110-foot-diameter circle, a 130-foot-diameter circle for a commercial/industrial cul-de-sac.
- ☐ Constructed street width for a residential cul-de-sac shall be an 86-foot bulb pavement diameter, 34-foot pavement width in tangent sections; a commercial/industrial cul-de-sac shall have a 106-foot bulb pavement diameter, 40-foot pavement width in tangent sections.
- ☐ Horizontal curves shall be 300 feet.
- ☐ A vertical curve is needed at all grade changes where the difference between adjoining grades is 1% or more. Minimum length should be 100 feet plus 50 feet for each 1% algebraic difference in grade over 1%.
- ☐ Street grades shall be a maximum of 7% and a minimum of 0.75%.
- ☐ Sidewalks in residential areas shall be 4 feet wide, 5 feet in commercial areas. Sidewalks shall have a minimum thickness of 4 inches except at driveways, where they shall be at least 5 inches thick.

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Alleys

Included	ADEQ	Check  items included in plan
☐		Right-of-way is a minimum of 20 feet.
☐		Constructed alley width is 20 feet.
☐		Horizontal curves shall have a 300-foot minimum radius.
☐		A vertical curve is needed at all grade changes where the difference between adjoining grades is 1% or more. Minimum length should be 100 feet plus 50 feet for each 1% algebraic difference in grade over 1%.
☐		Length of tangent between reverse curves is a minimum of 100 feet.
☐		Alley grades shall be a maximum of 6% and a minimum of 0.75%.

Streets Located in a PAD

Included	ADEQ	Check  items included in plan
☐		All collectors or arterials must be public streets.
☐		All private local streets shall be designed to prevent their use by through traffic.
☐		Private streets are permitted only where a satisfactory means of providing for their control and maintenance is demonstrated.
☐		A sign should be placed at the entrance of each private street designating it as such.
☐		Where necessary, an easement should be granted over the private street for public purposes.
☐		Streets are wide enough to provide emergency vehicle access.

Utilities

Included	ADEQ	Check  items included in plan
☐		Lighting?

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Sewer & Water

Sewer

Included	ADEQ	Check ☒ items included in plan

✓ **Indicates ADEQ Requirement**
*** Sierra Vista Standards exceed State and Federal standard.**

☐	✓	Wastewater system exemptions from plan review requirements: a) Additions having a project cost of less than $12,500, and, b) Projects with a flow of less than 50,00 gpd.
☐	✓	Approval to Construct application
☐	✓	Sewer Service Agreement (when applicable).
☐	✓	Compliance of Sewer Master Plan.
☐	✓	Design Report
☐	✓ *	All sewers 8 inches or larger except dia. Min 6” at Lmax=400’ or cleanout Lmax=200’.
☐	✓ *	Minimum slope Vmin=4fps when N=0.013 8” 0.44-8.34% Max slope Vmax-10fps (unless ductile is used)
☐	✓ *	Alignment of sewer lines is straight
☐	✓	Manhole minimum diameter 48 inches 8”-15’ 500’ maximum spacing 18”- 30” 600’ maximum spacing
☐	✓	Manhole shall be located at change of grade; change of size; or change of alignment, intersections (cleanout at end of line is OK).
☐	✓	Include manhole detail (foundation, structure, channel, steps, etc.)
☐	✓ *	Drop manholes are not acceptable.
☐	✓	Depth of sewer cover is a minimum of 3 feet.
☐	✓	Sewer-water main separation (AACR 18-9-811, latest revision).
☐	✓	Water tightness testing of manholes (leakage limit).
☐	✓	Water tightness testing of sewer lines (leakage limit) (20% of system).
☐	✓	Deflections testing of PVC sewer lines (20% of system) include detail of Pig.
☐	✓	Include MAG bedding details for pipe (show backfilling profile).
☐	✓	Show plan and profile view of all sewer lines.
☐	✓	PVC sewer lines shall be installed according to ASTM Standard Spec D2321 (latest revision).
☐	✓	Additional flow will not cause flow or effluent quality limits of the wastewater facility to be exceeded.
☐	✓	Operation and maintenance plan in place if flows exceed 10,000 gallons per day.

- ☐ Check sewer lines that cross washes-extra protection may be required to protect them from erosion.
- ☐ Make sure that all manholes are accessible to our city maintenance truck and are located in the public right-of-way.
- ☐ Inflow and outflow invert elevations in manholes shall have at least a 0.1-foot difference for a change in slope or direction and a 0.2-foot difference where there is a change in both slope and direction.
- ☐ Locate sewer manholes to the centerline of the street out of the wheel path.
- ☐ Bearings and distances shown on plan views for all sewer lines.
- ☐ Entry angles into manholes do not cause flow problems.
- ☐ House connections do not lead directly into manholes.
- ☐ Show a trench detail.
- ☐ Provide a note to the trench backfill detail to indicate that backfill requirements shall be per the City's Development Code Section 151.08.009.
- ☐ All phases of sewer construction are terminated at manholes.
- ☐ Standard City notes are attached.
- ☐ Lateral services connected to the main sewer line, not to a manhole.
- ☐ No house connection laterals into the back of a cleanout. Connections to a cleanout must be from the side.
- ☐ Is project within an existing sewer reimbursement or augmentation district?
- ☐ Is the sewer discharge point in compliance with the sewer master plan?
- ☐ Laterals connecting to a new sewer main line shall be per MAG Detail 440 Type "A". Taps into an existing main line shall be per the old Type "B" detail.

Water Distribution

Included	ADEQ	Check ☒ items included in plan
		✓ **Indicates ADEQ Requirement**
		*** Sierra Vista Standards exceed Federal standard.**
☐	✓	Water system exemptions from ADEQ plan review requirements:
		(a) The project costs less than $12,500, or
		(b) The project is for a subdivision not requiring plat approval, and
		1) Project's cost is more than $12,500 but less than $50,000,
		2) Has been designed and sealed by a P.E., and

3) Construction has been reviewed with conformance to design by a P.E.

- ☐ ✓ Compliance of water system (when applicable).
- ☐ ✓ Design report (not needed for minor ext.; 3 minor ext. = major ext.)
- ☐ ✓ Pipe, fittings, valves, fire hydrants, etc., shall conform to AWWA, ASTM, etc., Standards.
- ☐ ✓ PVC pipes (if used) must be NSF approved for potable water use (NSF-pw seal).
- ☐ ✓ Water mains serving fire hydrants must be 6 inches minimum diameter.
- ☐ ✓ The minimum diameter (no fire hydrants) is 4 inches unless: a) temporary service, b) secondary parallel main, or c) short mains.
- ☐ ✓ Depth of pipes: 3-feet minimum cover (unless justified); where frost depths >3 feet, frost depths override.
- ☐ ✓ Dead ends must have blow-off valves (minimum diameter 2 inches).
- ☐ ✓ Thrust blocking details (1.5 SF at max. pressure loading).
- ☐ ✓ Valving (shutoff valves): a) 500-foot spacing in commercial districts, or b) 800 feet (1 block), whichever smaller, or c) all mains branching from feeder mains.
- ☐ ✓ Air and vacuum relief valves at high points (change of slope).
- ☐ ✓ Pressure reducing valves for pressure>100 psi.
- ☐ ✓ Sewer water main separation must meet R18-9-811 (latest revision).
- ☐ ✓ When potential for cross connection can occur, provide backflow prevention by air gaps, vacuum breakers, and double check valves.
- ☐ ✓ All water lines must be disinfected, per bulletin 8 or AWWA C651-86.
- ☐ ✓ All water mains should be designed for working pressure of 150 psi, plus allowance for water hammer.
- ☐ ✓ Pressure testing of water lines (i.e., AWWA C600 or MAG 610-14).
- ☐ ✓ Bedding details shall be per MAG Standards.
- ☐ ✓ For water pipe (when using PVC pipe and MAG specs) must specify AWWA or ASTM standards or manufacturer recommendations, plus strength classification.
- ☐ Abandon existing inferior parallel mains.
- ☐ Looped system.
- ☐ Limited dead-ends.
- ☐ Existing valves to be closed, located, and dimensioned.
- ☐ Static pressure zone.
- ☐ Fire Flow Indemnification Agreement.
- ☐ Extend main to end of property.
- ☐ Meters located at property to be served.
- ☐ Protected mains.

- ☐ Signature block for water company official with the appropriate signature.
- ☐ Standard City notes attached.
- ☐ Fire hydrants spacing shall be a maximum of 500 feet.
- ☐ Paint fire hydrants chrome yellow
- ☐ Show a trench detail.
- ☐ Provide a note to the trench backfill detail to indicate that backfill requirements shall be per the City's Development Code Section 151.08.009.

Drainage, Flood Hazard & Grading

Drainage

Included ADEQ

Check ☒ items included in plan

✓ **Indicates ADEQ Requirement**
*** Sierra Vista Standards exceed Federal standard.**

- ☐ Drainage does not discharge into a wastewater sewerage system.
- ☐ Provide minimum 20-foot right-of-way for access and maintenance of drainage improvements.
- ☐ Drainage report (if needed).
- ☐ Correct hydrology method used based on land area:
    1. Rational Method: < 0.5 square miles
    2. Pima County Method: 0.5 square miles - 5 square miles
    3. HEC-1: > 5 square miles
- ☐ Flow will not damage improvements or cause a nuisance.
- ☐ Flow won't damage land or change the flow characteristics of the natural drainage.
- ☐ Accommodates upstream drainage runoff from undeveloped land.
- ☐ Retains or detains drainage runoff on site if a new commercial, industrial, or multi-family development.
- ☐ Adequate drainage way (if needed).
- ☐ Adequate detention basin size (if needed).
- ☐ Drainage determined by a 100-year storm.
- ☐ Sufficient 1-foot freeboard and setbacks for channels.
- ☐ Channels are trapezoidal in shape with no greater than 4:1 side slopes (more if adequate bank protection is provided).
- ☐ Bank protection provided in the case of intermediate or excessive velocities:

1. Excessive >6 fps for 100 year flow
2. Intermediate 4-6 fps for 100 year flow

☐ Improvements per surface water plan (attach applicable surface water plan documentation).

☐ Grade control structures spaced to provide accessibility.

☐ Grade control structures are of appropriate depth, width, and spacing. Calculations for the equilibrium bed slope and scour depths are included.

☐ Natural Drainage Maintenance Corridors should be constructed to the most restrictive of the following:

1. The 100-year floodway;
2. The limits of the riparian vegetation zone:
    a) 50' setback from each bank of the low flow channel for watersheds < 1.5 square miles;
    b) 100' setback from each bank of the low flow channel for watershed > 1.5 square miles.

☐ Up to a 100' wide drainage way centered within any Flood and Erosion Control Corridor (FECC).

☐ Street depth of flow does not exceed 0.6 feet during 100-year storm.

☐ All arterial streets should pass the 100-year drainage under the roadway.

☐ Collector and local streets should pass discharge under the roadway when 500 cfs or more; when the discharge is less than 500 cfs, it may be passed under the roadway in culverts or a combination over and under the roadway provided that the following two conditions are met:

1. All discharge is conveyed in dip section;
2. Depth of flow over the roadway does not exceed 0.7'.

☐ Wet crossing area (if applicable).

☐ Intersection depth of flow for a collector or arterial street < 0.1' during a 10-year storm.

☐ No cross lot drainage.

☐ All drainage is to public right-of-way, easement, or drainage way.

☐ Drainage ways constructed so as to assure flows do not enter site from public right-of-way.

☐ Spillways are turned downstream at a 45 degree angle.

☐ Replace portions of concrete channels that are on the slope of a wash with grouted rip rap.

☐ Concrete and rip rap pads have turned down edges.

☐ CMP storm drains are lined and coated per MAG Standard Detail 510.

☐ No fill materials are placed within the 100-year flood zone. Provide erosion protection in areas where fill is encroaching into the flood zone.

☐ Bevel cuts on drainage pipes entering spillways are not excessively long.

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- [ ] If discharge onto private property, discharge must be beyond the sidewalk line and a flowage easement must be obtained from the owner of the property receiving water.
- [ ] No weep holes are permitted.
- [ ] Private drainage ways shall be paved.
- [ ] Make sure storm drain manholes meet MAG 520, 521, and/or 522

- ☐ Steel scuppers have spans of 12” or less. Larger scuppers are concrete only.
- ☐ Check that interim drainage in future development areas will not cause problems, particularly within the right of way.
- ☐ Verify that all minor losses have been taken into account at channel entrances, and that headwater in street does not exceed 0.6 feet.

Flood Hazard District

Included ADEQ

Check ☒ items included in plan

✓ **Indicates ADEQ Requirement**

- ☐ Use does not divert, retard, or obstruct flow causing a hazard to life or property.
- ☐ Area of Special Flood Hazard Permit obtained (except in cases where the value of labor and materials for repair or alterations does not exceed $500).
- ☐ If watercourse is to be altered or relocated, adjacent properties have been notified.
- ☐ Flood proofing measures in place?
- ☐ Structures constructed in a way that will minimize flood damage.
- ☐ Structures anchored to prevent flotation, collapse, or lateral movement.
- ☐ Service facilities constructed at or above the Regulatory Base Flood Elevation and constructed of flood resistant materials.
- ☐ The lowest floor, including basement, of any structure is 1’ above Regulatory Base Flood Elevation.
- ☐ Structure is in Zone A0?
- ☐ Fill used to elevate structures is sufficient.
- ☐ Non-residential construction is in compliance with Section 151.22.029,N,2,d or 151.22.029,n,2,e or:
  1. Structure is watertight below the regulatory flood level; and
  2. Has components which resist hydrostatic and hydrodynamic loads and buoyancy; and
  3. Has been certified by a registered professional engineer or architect.
- ☐ Utilities minimize the infiltration of floodwaters.
- ☐ Sanitary waste disposal systems located to avoid impairment or contamination.
- ☐ Waste disposal systems not installed in a floodway.
- ☐ Appropriate subdivision proposal and plan submitted.
- ☐ Drainage basin employed is a “balanced basin”? “Critical basin”?

Grading

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Included	ADEQ	Check items included in plan
☐		Positive drainage to an improved public right-of-way, drainage easement, or dedicated drainage way is assured.
☐		Finish floor elevations constructed a minimum of 1' above the base flood elevation.
☐		Fill slopes shall not exceed a 3:1 ratio.
☐		Fill slopes protected when adjacent to drainage ways.
☐		In floodplain areas, building line located at least 25 feet landward from edge of fill.
☐		Fill does not divert, retard, or obstruct the flow of water.
☐		Slope/grade from back lots to roadway should be prevented.
☐		Cut slopes shall not exceed a 2:1 ratio unless recommended by a soils engineer.
☐		Grade difference between lots should be kept to a minimum.
☐		Check lot heights of adjacent subdivisions.
☐		Soils report provided.

NOTE: *This document is intended for use as an aid for City of Sierra Vista staff in reviewing applications and is provided to developers as a courtesy in order to facilitate their preparation of site development plans. The checklist is not intended to be all-inclusive of the City of Sierra Vista Development Code. Submission of the items in the checklist does not imply acceptability of the contents of specific documents nor of any approval requests.*

A copy of this checklist will be included in the project file.

Revised October 3, 2003

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