City of Sierra Vista
Public Works Engineering
Site Plan Review Check List

Project Name _____ Date _____

Community Development Site Plan No. _____

Reviewing Engineer _____

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

_____Date_____

Site Plan

Check ☒ items included in plan

N/A	Included	Deficient	
☐	☐	☐	Plans must be stamped and signed by a registered civil engineer
☐	☐	☐	Proposed improvements must be shown in heavy, darker line-work. Existing features must be shown in lighter, screened line-work.
☐	☐	☐	Location sketch with adjacent zoning and land uses (151.18.006.A.2.d)
☐	☐	☐	Topography; contour lines for existing and proposed elevations at one-foot intervals (151.18.006.A.2.e(2)).
☐	☐	☐	Natural drainage and proposed drainage flow by directional arrows. If applicable, show that the finished floor elevation is above 100-year flood area (151.18.006.A.2.e(3) and e(4).
☐	☐	☐	Legal description of the site to include total area of the site (151.18.006.A.2.f)
☐	☐	☐	Spot elevations of existing/proposed key drainage points
☐	☐	☐	Percentage of the site covered by any and all structures (151.18.006.A.2.j)
☐	☐	☐	Right-of-way dimensions of all abutting streets, whether public or private, and all access points to the site (151.18.006.A.2.m)
☐	☐	☐	Locations, dimensions, and description of all existing or proposed easements (151.18.006.A.2.q)
☐	☐	☐	Location of any non-vehicular access strips (151.18.006.A.2.p)
☐	☐	☐	Service areas for uses such as trash disposal (151.18.006.A.2.u).
☐	☐	☐	Adequate dumpster detail (151.18.004.A.2.u)
☐	☐	☐	All existing and proposed utility locations (151.18.006.A.2.v)
			The location of the nearest fire hydrant (151.18.006.A.2.w)

☐	☐	☐	Street or alley rights-of-way to be dedicated and/or improved pursuant to the requirements (or 151.18.006.A.2.x)
☐	☐	☐	Curb cuts, new and existing per ADA
☐	☐	☐	Driveway entrances need to meet the City's modified version for MAG 250. MAG 250 does not currently meet ADA standards.
☐	☐	☐	Abutting land uses
☐	☐	☐	Grading, drainage, surfacing, and sub-grading details
☐	☐	☐	Geotechnical report, if required (151.18.006.A.5)
☐	☐	☐	Are traffic control signals or signs required?
☐	☐	☐	The effect of the site development on traffic conditions on abutting streets
☐	☐	☐	One access per property
☐	☐	☐	Does the City have the ability to provide sewer service to the site? Are the sewer main lines public?
☐	☐	☐	Proper legend
☐	☐	☐	Show the closest street light and calculate light levels along the road access point to see if any additional streetlights are required (151.18.006.A.2.ff) SEE ARCHITECTURAL DRAWINGS
☐	☐	☐	Avoid disparity in grade caused by fill between this site and adjacent sites. A slope easement or retaining walls may be required.
☐	☐	☐	Curb, gutter, scupper, and handicapped curb return ramp details included on the plans (if applicable to the site) REF. MAG STANDARD
☐	☐	☐	ADOT contacted for their approval of access and improvements in their right-of-way, if applicable
☐	☐	☐	Existing brick manholes are to be replaced when top needs to be adjusted to grade or new line enters manhole.
☐	☐	☐	Make sure that all manholes are accessible to City maintenance trucks and are located in the public right-of-way or an easement. Check turning radii in easement, where applicable.
☐	☐	☐	If access to sewer easement MUST be restricted, gates should be used in place of bollards.
☐	☐	☐	Gates will: • Be in accordance with City standard detail • Latch and lock in the middle. • If a gate is to be incorporated with railing, the gate is to match railing design. • Guidelines for gates may be adjusted to fit criteria of the area • Gate posts are to be set in 3 feet of concrete • Gates will swing open in both directions
☐	☐	☐	Laterals connecting to a new sewer main line shall be per MAG Detail 440 as modified by the City. Taps into an existing main line shall be per the old Type "B" detail. PROPOSING TO CUT IN MANHOLE DUE TO DEPTH.

Drainage Report

N/A	Included	Deficient	
☐	☐	☐	To be submitted with Site Plan
☐	☐	☐	Design storms to be 10-year, 1-hour storm and 100-year, 1-hour

storm.

- ☐ ☐ ☐ All hydrology calculations to be complete. Peak flows shown in to be considered final.
- ☐ ☐ ☐ Provide detailed drainage exhibit. Exhibit to show watershed boundaries, concentration points, flow arrows, 10-year peak flows, 100-year peak flows, flow combinations, locations of drainageways, washes, proposed streets, detention basin, overland overflow route from detention basin, etc.
- ☐ ☐ ☐ 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
- ☐ ☐ ☐ Use City IDF curves. Available electronically from Engineering Division.
- ☐ ☐ ☐ Use C=0.35 for Rational Method calculations to determine pre-development runoff.
- ☐ ☐ ☐ Uses City of Tucson methodology (Section 4.5) for developing hydrographs based on Rational Method data.
- ☐ ☐ ☐ Detention (preferred) or retention of drainage runoff to match pre-development conditions (check 10-yr and 100-yr peak flows)
- ☐ ☐ ☐ Adequate detention basin size- show hydrograph routing
- ☐ ☐ ☐ Detention basins have bleed off pipes or other means of positive drainage
- ☐ ☐ ☐ All stormwater basins to have overland overflow path (no possibility of clogging) that allows excess flow to discharge without causing damage.
- ☐ ☐ ☐ No drywells in detention basins serving residential subdivisions
- ☐ ☐ ☐ Accommodates upstream drainage runoff from undeveloped land.
- ☐ ☐ ☐ Flow won't damage land or change the flow characteristics of the natural drainage.
- ☐ ☐ ☐ All drainage is discharged to improved public right-of-way, easement, or drainage way.
- ☐ ☐ ☐ No cross lot drainage.
- ☐ ☐ ☐ No encroachment of private land by water from public facility.
- ☐ ☐ ☐ Report to discuss drainage considerations due to phasing of construction.
- ☐ Summarize all findings in text of report
- ☐ ☐ ☐ Drainage in adjacent washes addressed in preliminary report, including:
    - ☐ ☐ ☐ Wash designation from Surface Water Plan (NDMC or FECC)
    - ☐ ☐ ☐ Wash hydrology to match FIS or Surface Water Plan
    - ☐ ☐ ☐ Discussion of proposed improvements to wash
    - ☐ ☐ ☐ Discussion of delineated FEMA floodplains. Show limits of floodplain on drainage exhibit.
    - ☐ ☐ ☐ Discussion of any special considerations for the wash
- ☐ ☐ ☐ Natural Drainage Maintenance Corridors should be platted 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).

☐ ☐ ☐ Drainage Report describes collection and conveyance in text section of report. Calculations to support all aspects of collection and conveyance included in report.

☐ ☐ ☐ Report contains complete hydraulic calculations for catch basin interception in accordance with HEC-22. Use clogging factors as follows:

- Grates in sump- 50%
- Grates on grade- 40%
- Curb openings in a sump- 20%
- Curb openings on grade- 20%
- Combination curb opening/grate in sump- 35%
- Combination curb opening/grate on grade- apply above factors separately
- Slotted drain to be analyzed in same manner as curb openings
- Clearly show bypass flows to next catch basin

☐ Hydraulic calculations for channel conveyance, including streets

☐ Depth of flow in public street does not exceed 0.6 feet during 100-year storm. Provide accurate hydraulic calculations for bends and areas where large flows come together.

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

☐ ☐ ☐ Verify that all minor losses have been taken into account at channel entrances, and that headwater in street does not exceed 0.6 feet.

☐ ☐ ☐ Model depressed sidewalks as broad-crested weirs. Use C=2.7

☐ ☐ ☐ Hydraulic calculations for any necessary energy dissipators

☐ ☐ ☐ Hydraulic analysis for improvements required in adjacent washes including:

- Local scour calculations
- Equilibrium slope calculations
- Grade control structures are of appropriate depth, width, and spacing
- Appropriate channel armor based on expected flow velocities
- Additional erosion set-back limits in areas with sharp bends

☐ ☐ ☐ Report contains complete hydraulic calculations for storm drain systems. Analysis must include:

- Elevation of hydraulic grade line through entire system
- Peak flow in each section of pipe
- Pipe slopes

- Pipe roughness coefficients
- Elevations of all manhole rims and catch basin grates
- Detailed headloss coefficients for all bends, junctions, expansions, contractions, etc
- Headloss due to momentum changes
- Culvert calculations

☐ ☐ ☐ All hydraulic channels and detention basins to have at least 1-foot of freeboard

☐ ☐ ☐ Drainage does not discharge into a wastewater sewerage system.

☐ ☐ ☐ 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

☐ ☐ ☐ Plans agree with drainage report. Check channel cross-sections, pipe sizes, detention basin sizes, catch basin sizes, etc.

☐ ☐ ☐ Dedication of drainageway to be used for conveyance of public runoff

☐ ☐ ☐ Sufficient access for channel maintenance (public channels).

☐ ☐ ☐ Provide minimum 20-foot right-of-way for dedicated drainageways.

☐ ☐ ☐ Channels in public right-of-way are trapezoidal in shape with no greater than 4:1 side slopes (more if adequate bank protection is provided).

☐ ☐ ☐ No depressed sidewalk (to be used as a weir) on arterials or collectors- OK on local streets.

☐ ☐ ☐ Channels or pipes discharging to a wash must be stable and protected from erosion due to flow in the main channel.

☐ ☐ ☐ Concrete and rip rap pads to have turned down edges.

☐ ☐ ☐ Show FHWA or ADOT rip rap gradations on plans if dumped rip rap is to be used.

☐ ☐ ☐ Hard channel linings to have turned down edges.

☐ ☐ ☐ CMP storm drains in public right-of-way are lined and coated per MAG Standard Detail 510 or Type II aluminum

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

☐ ☐ ☐ Make sure storm drain manholes in public right-of-way meet MAG 520, 521, and/or 522

☐ ☐ ☐ Steel scuppers in public right-of-way to 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.

☐ ☐ ☐ All pipes in public right-of-way to have at least 3 feet of cover or be RGRCP

☐ ☐ ☐ Show spacing between pipes if culvert has multiple pipes. See ADOT Standard Detail B-11.14 for large pipes and MAG Standard Detail 501-2 for small pipes.

☐ ☐ ☐ Culvert headwalls in public right-of-way to be formed concrete,

			not block (as shown in MAG Standard Detail 501.
☐	☐	☐	Lots to drain toward street (preferred) or have individual rear-lot drains.
☐	☐	☐	All catch basins in public right-of-way to have a grate for maintenance access

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 4/29/2022