TROON NORTH TRACT V

APN 216-72-648A

Located at

10299 E. WHITE FEATHER LANE

SCOTTSDALE, AZ

REQUEST FOR STORMWATER STORAGE WAIVER

CITY OF SCOTTSDALE TRACKING NO: 878-PA-2015

Request for Stormwater Storage Waiver

[redacted]

The applicant/developer must complete and submit this form to the city for processing and obtain approval of waiver request ***before submitting improvement plans***. Denial of the waiver may require the developer to submit a revised site plan to the Development Review Board.

Date _____ **Project Name** Troon North Tract V

Project Location 10299 East White Feather Lane, Scottsdale, Arizona 85262

Applicant Contact David Letourneau **Company Name** White Feather Lane LLC.

Phone 602-625-6607 Fax _____ E-mail david.l@alairhomes.com

Address 14988 North 78th Way, Scottsdale, Arizona 85260

Waiver Criteria

A project must meet at least one of three criteria listed below for the city to consider waiving some or all required stormwater storage. **However, regardless of the criteria, a waiver will only be granted if the applicant can demonstrate that the effect of a waiver will not increase the potential for flooding on any property.** Check the applicable box and provide a signed engineering report and supporting engineering analysis that demonstrate the project meets the criteria and that the effect of a waiver will not increase the potential for flooding on any property.

If the runoff for the project has been included in a storage facility at another location, the applicant must demonstrate that the stormwater storage facility was specifically designed to accommodate runoff from the subject property and that the runoff will be conveyed to this location through an adequately designed conveyance facility.

☑ 1. The development is adjacent to a conveyance facility that an engineering analysis shows is designed and constructed to handle the additional runoff from the site as a result of development.

☐ 2. The development is on a parcel less than one-half acre in size.

☐ 3. Stormwater storage requirements conflict with requirements of the Environmentally Sensitive Lands Ordinance (ESLO).

For a full storage waiver, a conflict with ESLO is limited to:

- Property located in the hillside landform as defined in the city Zoning Ordinance
- Property in the upper desert landform that has a land slope steeper than 5% as defined in the city Zoning Ordinance
- Property within the ESL zoning overlay district where the only viable location for a stormwater storage basin requires blasting

This full waiver only applies to those portions of property meeting one of these three requirements.

Partial waivers are available for projects or portions of properties within the Environmentally Sensitive Lands Zoning Overlay District, not meeting any of the three full waiver criteria above, if post-development peak discharge rates do not exceed pre-development conditions, based on the 10- and 100-year storm events.

By signing below, I certify that the stated project meets the waiver criteria selected above as demonstrated by the attached documentation.

Ranya P. Khanal

Engineer

4/19/2016

Date

Planning, Neighborhood & Transportation Division
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-2500 • Fax: 480-312-7781

Request for Stormwater Storage Waiver

City of Scottsdale Case Numbers:

878 - PA - 2015 ____ - ZN - ____ ____ - UP - ____ ____ - DR - ____ 10 - PP - 2015 PC# ____

CITY STAFF TO COMPLETE THIS PAGE

Project Name _____

Check Appropriate Boxes:

☐ Meets waiver criteria (specify): ☐ 1 ☐ 2 ☐ 3

☐ Recommend approve waiver.

☐ Recommend deny waiver:
- ☐ None of waiver criteria met.
- ☐ Downstream conditions prohibit waiver of any storage.
- ☐ Other:

Explain: _____

☐ Return waiver request:
- ☐ Insufficient data provided.
- ☐ Other: _____

Explain: _____

Recommended Conditions of Waiver:
- ☐ All storage requirements waived.
- ☐ Post-development peak discharge rates do not exceed pre-development conditions.
- ☐ Other:

Explain: _____

☐ **Waiver approved per above conditions.**

☐ **Waiver denied.**

_____ _____

Floodplain Administrator or Designee Date

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7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-2500 • Fax: 480-312-7781

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In-Lieu Fee and In-Kind Contributions

In-lieu fees are only applicable to projects where post-development peak discharge rates exceed pre-development levels, based on the 10- and 100-year storm events. If the city grants a waiver, the developer is required to calculate and contribute an in-lieu fee based on what it would cost the city to provide a storage basin, sized as described below, including costs such as land acquisition, construction, landscaping, design, construction management, and maintenance over a 75-year design life. The fee for this cost is $1.87 per cubic foot of stormwater storage for a virtual storage basin designed to mitigate the increase in runoff associated with the 100-year/2-hour storm event. The applicant may submit site-specific in-lieu fee calculations subject to the Floodplain Administrator's approval.

The Floodplain Administrator considers in-kind contributions on a case-by-case basis. An in-kind contribution can serve as part of or instead of the calculated in-lieu fee. In-kind contributions must be stormwater related and must constitute a public benefit. In-lieu fees and in-kind contributions are subject to the approval of the Floodplain Administrator or designee.

Project Name Troon North Tract V

The waived stormwater storage volume is calculated using a simplified approach as follows:

$V = \Delta CRA$; where
V = stormwater storage volume required, in cubic feet,
ΔC = increase in weighted average runoff coefficient over disturbed area ($C_{post} - C_{pre}$),
R = 100-year/2-hour precipitation depth, in feet (DSPM, Appendix 4-1D, page 11), and
A = area of disturbed ground, in square feet

Furthermore,

$V_w = V - V_p$; where
V_w = volume waived,
V = volume required, and
V_p = volume provided

R = 0.224
ΔC = 0.13
A = 30001
V = 3028
V_p = 3886
V_w = 358

☑ An in-lieu fee will be paid, based on the following calculations and supporting documentation:
In-lieu fee ($) = V_w (cu. ft.) x $1.87 per cubic foot = 669

☐ An in-kind contribution will be made, as follows:

☐ No in-lieu fee is required. Reason:

Approved by:

Floodplain Administrator or Designee ____ Date ____

Planning, Neighborhood & Transportation Division
7447 E Indian School Road, Suite 105, Scottsdale, AZ 85251 • Phone: 480-312-2500 • Fax: 480-312-7781

Comments on Grading and Drainage (Cycle #2)
LOT V ON THE GREEN
(City of Scottsdale Plan Check Number: 10-PP-2015)

The Case Drainage Report should be prepared by following the City of Scottsdale (COS) Design Standards & Policies Manual (DS&PM) and in accordance with the City Stormwater Ordinance Chapter 37.

Please address any comments appear in the Case Drainage Report. In addition to that, please address the following drainage comments:

1. Please submit the Case Drainage Report in two (2) copies. Please submit a CD with the Case Drainage Report containing a PDF file of the complete sealed and signed drainage report. Also, this CD must contain all digital HEC-RAS files for both the existing and proposed the conditions. [*Reference: COS DS&PM: Section 4-1.800 & Section 4-1A*] Provide CD in front or back pocket of the drainage report.

2. Please show the existing 1.0 ft. contours in lighter color and overlay the proposed 1.0 ft. contours in darker color on the 24"X36" exhibit in the drainage report namely 'EXHIBIT -5 PROPOSED CONDITIONS' so that the area of real disturbance can be followed and can be verified. [*Reference: COS DS&PM: Section 4-1.900 & Section 4-1B*]

3. This project requires full storage for the 100-year, 2-hour storm event for the total area (graded, paved, and landscaped) which will be disturbed as a part of the improvements. First, the full storage must be calculated using a Runoff Coefficient ('C') value of 0.94 for the residential zoning R-4 using the Equation V = CIA, where A is the total disturbed area. This calculation must be provided in the drainage report. [*Reference: COS DS&PM: Section 4-1.402 & Section 4-1.800*]

4. However, the Engineer may choose to provide partial retention and may apply for partial stormwater storage waiver based on the fact that full storage may not be provided due to the site layout and the site topo. However, if partial retention is provided, then for any depth of water in the retention basin over 6", the Engineer must state in the case drainage report that a percolation test of the subsurface soil will be performed using the dual-ring infiltrometer during the construction to make sure that the basin drains out naturally within 36 hours. It must also be stated in the report that dual-chamber drywells will be installed if it is found that the retention basins do not drain out naturally within 36 hours based on the percolation test. [*Reference: COS DS&PM: Section 4-1.402 & Section 4-1.800*]

5. Also, irrespective of the depth of water in the retention basins (even if it is <6"), Drainage Easements (D.E.) must be provided around the top perimeter of all retention basins and all the D.E.(s) must be shown and be called out on

all 24"X36" exhibits provided in the case drainage report. [*Reference: COS DS&PM: Section 4-1.700 & Section 4-1B*]

6. In the event, the Engineer chooses to apply for partial or full waiver, the Engineer needs to demonstrate no adverse impact by adding the increased flow to the proposed condition HEC-RAS model as a 'flow change location' and see if it increases the 100-year Water Surface Elevation (WSE) by more than 0.09' at any of the HEC-RAS cross-sections (XS). The waiver form must clearly state the requested volume to be waived and calculate the appropriate 'In-lieu' fee. Please note that the ΔC to be used in the volume calculation on the waiver form is strictly 0.49 (0.94 – 0.45) based on the residential zoning (R-4) and natural desert and cannot be based on weighted average 'C' value. [*Reference: COS DS&PM: Section 4-1.402 & Section 4-1.800*]

7. The 24"X36" exhibit in the drainage report namely 'EXHIBIT -6 Before and After Conditions 100-Yr Water Surface Elevations' does not show the existing survey topo (1.0 ft. contours) for HEC-RAS cross-sections 1+00, 1+58, 2+83, 5+04, 5+49, & 6+00, which is not acceptable. Please show the existing 1.0 ft. survey contours on this exhibit so that the floodplain delineations can be verified. [*Reference: COS DS&PM: Section 4-1.900*]

8. Both culvert crossings must be modeled in HEC-RAS using four inter-related cross-sections to accurately simulate flow contraction and flow expansion as outlined in the HEC-RAS User's Manual (please see the below screenshot from the HEC-RAS Manual). [*Reference: COS DS&PM: Section 4-1.800*]

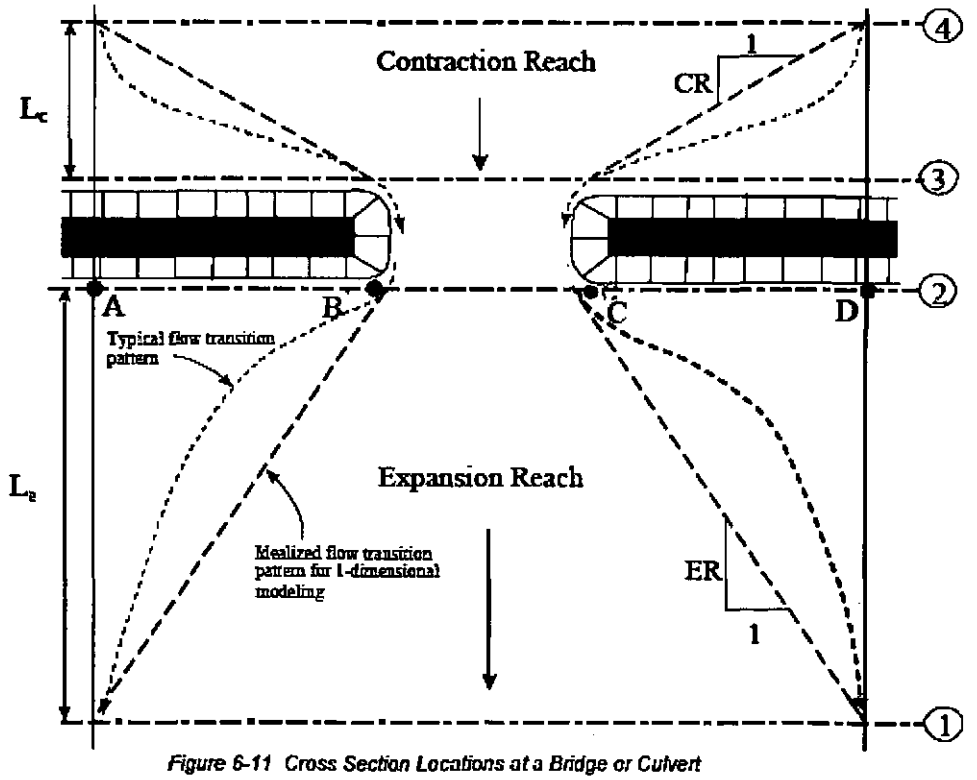

Figure 6-11 Cross Section Locations at a Bridge or Culvert

9. The two cross-sections in HEC-RAS which define the internal sections for the simulation of culvert hydraulics (Section 2 & Section 3 in the above figure in Comment #8), must be laid out along the bottom of the roadway embankment to correctly represent the wash cross-sections. They mustn't be laid out along the pavement or shoulder line of the roadway as appears to be. Please verify. [*Reference: COS DS&PM: Section 4-1.800 & Section 4-1A*]

10. Please show the approximate location of the proposed D.E. on all relevant 24"X36" exhibits as well as on the 24"X36" Preliminary Plat which should completely cover the proposed condition base floodplain. If the proposed condition base floodplain spreads over a lot or two which are being proposed to be created, the proposed D.E. must also follow to encompass that. [*Reference: COS DS&PM: Section 4-1.700 & Section 4-1B*]

Please briefly respond to each of the above comments (or check them with markers) and include the responses in the re-submittals.

Stormwater Review By:
Mohammad Rahman, PE, PH, CFM
Phone 480-312-2563 Fax 480-312-7781
e-mail: mrahman@ScottsdaleAZ.gov
Review Cycle #2 Date 5/23/16