

Village of Point Venture Drainage Study Criteria
Required Technical Information to be Submitted for Review

All plans must be prepared under the supervision of a registered professional engineer licensed to practice in the State of Texas. The engineer shall affix his seal and signature to each plan sheet and any reports or calculations submitted to support his plans. Appropriate hydrologic design calculations and data to be submitted for city review include, at a minimum:

- A. A vicinity map indicating a north arrow, boundary lines of the site, and other information necessary to locate the project site.
- B. A drainage area map with scale and north arrow shown, and including the following:
 1. Existing and proposed topography of the site at two-foot minimum interval contours (for delineating large off-site contributing areas, a separate drainage map with USGS contours is acceptable).
 2. Physical improvements on the site, including existing structures and proposed development.
 3. Existing and proposed subbasin areas labeled with acreage and identification.
 4. Time of concentration flow paths for existing and proposed conditions.
- C. If the Rational Method is used, one drainage table for existing conditions and one for proposed conditions, showing the following for each subbasin:
 1. Drainage area number or identification.
 2. Drainage area.
 3. Times of concentration.
 4. Rainfall intensities for the 2, 10, 25, and 100-year frequency storms.
 5. Runoff "C" values.
 6. Peak flow rates for the 2, 10, 25, and 100-year storm eventsBackup calculations must be provided for the times of concentration and runoff "C" values used in the tables.
- D. If the Soil Conservation Service (SCS) methods are used, one drainage table for existing conditions and one for proposed conditions, showing the following for each subbasin:
 1. Drainage area
 2. Times of concentration
 3. Runoff curve numbers
 4. Peak flow rates for the 2, 10, 25, and 100-year frequency storm events
 5. Existing and proposed drainage easements
 6. If detention and/or other stormwater control facilities are existing or planned, their location must be shown and stage/storage and stage/discharge tables must be included.Backup calculations must be provided for the times of concentration and runoff curve numbers used in the tables.
- E. A drainage report, including the following sections as required:
 1. Project Overview
 2. Existing Hydrologic Condition Analysis
 3. Proposed Hydrologic Conditions Analysis
 4. Detention Analysis and Design
 5. Conveyance Systems Analysis and Design

The engineering report should be a comprehensive supplemental report containing all technical information and analysis necessary for the proposed project. This report should contain all of the calculations, conceptual design analysis, reports and other information used in the design of the project.

Section 1. Project Overview

The project overview should provide a general description of the existing conditions on the site, the proposed development, the area of the site, the size of the improvements, and a summary of the pre-developed and post-developed drainage conditions of the site.

Section 2. Existing Site Hydrology

This section should include a discussion of assumptions and site parameters used in analyzing the existing site hydrology. Each subbasin acreage, C values or runoff curve numbers, and times of concentration used to determine existing flow characteristics, along with basin maps, graphics and exhibits for each subbasin affected by the development should be included.

Each subbasin contained within, or flowing through, the site should be individually labeled. The subbasin labels must match the labels used in the hydrologic computations (if the subbasin is "A", the calculation set must be labeled subbasin "A").

Section 3. Developed Site Hydrology

This section should include a brief narrative, mathematical and graphical presentation of parameters selected and values used for the developed site conditions, including subbasin acreage, C values or curve numbers, and times of concentration.

Section 4. Detention Analysis and Design (if required)

This section should include all assumptions, calculations, equations, references, storage/volume tables, stage/discharge tables, graphs and any other aids necessary to clearly show results and methodology used to determine the storage facility volumes. A clear sequence of how the storage facility size was determined should be provided. The location of the detention facility with contours necessary to calculate the storage volumes available from zero to the maximum head, and location and sizes of all outlet structures must be shown on a topographic map.

Section 5. Conveyance System Analysis and Design

This section should present the detailed analysis of any existing conveyance systems and the analysis and design of the proposed stormwater collection and conveyance system for the development. This information should be presented in a clear, concise manner that can be easily followed, checked and verified. All pipes, culverts, inlets, channels, swales, and other stormwater conveyance appurtenances must be clearly labeled and correspond to the engineering plans. The minimum information should include street, inlet and pipe flow tables.

Verification of capacity and performance should be provided for each element of the conveyance system. Show design velocities and flows for all drainage facilities within the development as well as those off-site areas affected by the development.

Notes: Local engineering standard of care documentation which should be required for a proper drainage study of any multifamily or commercial development proposed within the Village of Point Venture's jurisdiction.

This material is based on the City of Austin's Drainage Criteria Manual and is similar to what is done throughout Williamson and Travis Counties. Also, the drainage study shall use NOAA Atlas 14 Storm Event Rates for the local area.