



December 5, 2024

City of Manor
Attention: Pauline Gray & Michael Burrell
416 Gregg Street,
Manor Texas 78653

RE: Boyce Street Mixed-Use Development (2024-P-1645-SP)
101, 104, 107 & 108 West Boyce Street, Manor, TX 78653
Detention Waiver Request Letter
SWE Project No. 1168-001-24

Dear Ms. Gray & Mr. Burrell,

This Detention Waiver Request Letter is being submitted in support of the Site Plan application for the Boyce Street Mixed-Use Development (2024-P-1645-SP). Please refer to the attached sheets for additional information and detailed calculations.

PROJECT SUMMARY

The property consists of four tracts that together equal 0.96 acres. In existing conditions, there are four (4) existing one-story residences with associated driveways that are to be demolished. The proposed mixed-use development consists of three (3) three-story buildings with associated parking and drives totaling approximately 49,304 square feet of impervious cover. The site is located at 101, 104, 107 & 108 W Boyce Street, Manor, Texas 78653.

DRAINAGE ANALYSIS

Drainage area maps depicting stormwater runoff flow patterns were created using topographic information provided by on-the-ground survey, as well as Geographic Information Systems (GIS). The project site is defined by one (1) major existing drainage area which drains primarily from northeast to southwest across the property toward a roadside channel in the Right-of-Way (ROW) of N. Caldwell Street. In proposed conditions, runoff will continue to drain northeast to southwest across the property, with grading and drainage facilities proposed for conveyance of runoff into the roadside channel.

The Existing and Proposed Drainage Area Maps (Sheets 7 and 8 from the site development plan set) show the existing and proposed runoff patterns for the site as well

as drainage summary tables quantifying peak runoff flow rates taken at two (2) points of analysis (POA).

The Existing and Proposed Conveyance Drainage Area Maps (Sheets 9 and 10 from the site development plan set), show the existing and proposed runoff patterns for an area upstream of the site contributing to the roadside channel within the ROW of N. Caldwell Street.

The Urban Hydrology for Small Watersheds Technical Release 55 was used to determine the Curve Number (CN) and Time of Concentration (Tc) values for each drainage area. CN values used for existing and proposed conditions were based on the hydrologic soil group rating from the SCS Soils Conservation Survey for Williamson County, Texas and existing and proposed impervious cover.

Drainage analysis was conducted using NOAA Atlas 14 Precipitation Data to determine the peak runoff flow rates in both existing and proposed conditions at the various points of analysis for each of the 2-, 10-, 25-, and 100-YR storm events. As can be seen on the HEC-HMS Software (Version 4.11) was used to model the drainage analysis and obtain hydrologic summary calculations.

Our drainage analyses determined that the portion of existing roadside channel adjacent to the proposed Boyce Street Mixed Use Development receives stormwater runoff from approximately 13.5 acres upstream of the property, in addition to the area that includes the proposed development. POA C1 quantifies flows in the roadside channel immediately upstream of the proposed development, and POA C2 quantifies flows at a point in the channel immediately downstream of the proposed development. As shown in the Channel Report Cross Sections provided on The Existing and Proposed Conveyance Drainage Area Maps (Sheets 9 and 10), the slight increase in peak runoff flow rates caused by the proposed development is contained within the existing roadside channel and has no adverse impact on the existing drainage infrastructure. The tables below summarize parameters and flows for existing and proposed conditions.

**EXISTING CONVEYANCE DRAINAGE SUMMARY TABLE
(NRCS METHOD)**

AREA NAME	OS-C	POA C1	C	OS-C1	OS-C2	POA C2
Drainage Area (ac.)	13.50	-	1.66	0.21	0.25	-
CN #	80	-	80	80	80	-
% Impervious	95%	-	29%	77%	88%	-
Tc (hrs)	0.529	-	0.083	0.083	0.083	-
2 year Discharge (cfs)	37.4	37.4	6.4	1.0	1.3	39.9
10 year Discharge (cfs)	56.6	56.6	11.2	1.6	2.0	60.8
25 year Discharge (cfs)	69.8	69.8	14.4	2.0	2.4	75.0
100 year Discharge (cfs)	91.9	91.9	19.8	2.6	3.2	99.1

**PROPOSED CONVEYANCE DRAINAGE SUMMARY TABLE
(NRCS METHOD)**

AREA NAME	OS-C	POA C1	C	OS-C1	OS-C2	POA C2
Drainage Area (ac.)	13.50	-	1.66	0.21	0.25	-
CN #	80	-	80	80	80	-
% Impervious	95%	-	87%	77%	88%	-
Tc (hrs)	0.529	-	0.083	0.083	0.083	-
2 year Discharge (cfs)	37.4	37.4	8.4	1.0	1.3	40.3
10 year Discharge (cfs)	56.6	56.6	12.9	1.6	2	61.1
25 year Discharge (cfs)	69.8	69.8	15.9	2.0	2.4	75.3
100 year Discharge (cfs)	91.9	91.9	21.0	2.6	3.2	99.3

If you have any questions or require additional information, please don't hesitate to contact me at (512) 222-4964.

Respectfully submitted,



Campbell Key, P.E.
Round Rock Branch Manager