

**CHARLES PENZONE
PENZONE ONE
CITY OF DUBLIN, FRANKLIN COUNTY, OHIO**

**STORM WATER
FEASIBILITY STUDY**

Prepared By:



**ADVANCED
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Site Summary:

This study details the stormwater treatment and control feasibility of the amended development of the Charles Penzone Base One building in the City of Dublin, Ohio. The subject property is located near the northwest corner of the intersection of Village Parkway and Shamrock Blvd. The subject parcel area is approximately 3.52 acres. Stormwater management is provided for the site as required by Dublin’s Stormwater Management Design Manual, dated June, 2013, following the “AMC Theatre Expansion” Record Plans, dated “As Constructed” June, 1991 and the “Dublin Village Center” Record Calculations, dated December 17, 1990.

Existing Conditions:

A review of Franklin County soil maps shows that this site is underlain predominantly by Crosby silt-loam with a small fraction of Kokomo silt-loam. These soils, when drained, are classified within Hydrologic soil group C. Terrain on the site generally slopes from the east to the west, draining into an existing storm water basin on the parcel west of the project site, which ultimately drains to the Scioto River. Runoff from the project site was calculated as tributary to the existing storm water basin to the west, at a developed curve number of 95. The immediate area of work for this project consists of existing landscaping, trees and grass.

Proposed Conditions:

The proposed Charles Penzone Base One project will include the construction of a patio space to the rear of the existing building with associated landscaping, a monument sign, and paver walk connecting to the existing bike path along Village Parkway. A total of 1,920 square feet of new impervious area will be added to the site from addition of the patio and walk. Grading will direct surface runoff into an existing storm sewer system and ultimately to the existing regional stormwater basin.

Storm Event	Additional Flow from Project (cfs)	Additional Volume from Project (af)
1 year	.03 cfs	.001 af
2 year	.04 cfs	.001 af
5 year	.04 cfs	.002 af
10 year	.04 cfs	.002 af
25 year	.05 cfs	.003 af
50 year	.05 cfs	.003 af
100 year	.06 cfs	.003 af

Table 1 – Additional Stormwater Flow and Volume from Project

Storm Water Controls:

The project site was calculated as tributary area for the existing storm water basin to the west of the project site, so the existing storm water basin will be utilized for storm water quantity control as it was designed. The site will release less runoff having a curve number of 89, including the 1,920 additional square feet of impervious area for this project, than the record documents calculated using the curve number 95. With the addition of less than 2,000 square feet of new impervious area, the feasibility of additional stormwater controls shall be considered below.

Additional stormwater controls for the proposed patio area are difficult to incorporate due to site grade and design. Per Table D-2 of Appendix D of the Dublin Stormwater Management Design Manual, this analysis will discuss individual methods for additional stormwater treatment.

1	Disconnection or redirection of rooftop drainage or gutters into infiltration areas or vegetated stormwater control measures.
Reply	Roof drains for the existing building already outlet to landscaped areas of the site. This condition will not change with the proposed changes of this project.
2	Substitution of vegetated stormwater control measures for curb-and-drain systems, or installation of vegetated stormwater control measures where runoff currently drains overland into surface waters, particularly at edges of impervious surfaces such as parking lots, sidewalks, patios, or buildings.
Reply	Updated landscaping is being design for this project around the proposed patio area. This will act as a buffer to slow down the overland surface flows from the new impervious area.
3	Substitution of permeable surfacing for impervious surfacing for parking areas, patios, driveways, or public safety access areas.
Reply	Given the minimal increase in flows from the new impervious area and the overall capacity of the existing regional basin, we do not feel substituting impervious pavers for permeable pavers is warranted.
4	Substitution of engineered and designed vegetated stormwater control measures for existing turfgrass or other landscaped areas that do not function as stormwater treatment areas.
Reply	Given the minimal increase in flows from the new impervious area and the overall capacity of the existing regional basin, we do not feel using engineered or vegetated stormwater controls are warranted.
5	Maximize treatment by routing flows through bioretention swales whenever possible.
Reply	Due to the minimal slope on this site, it would not be possible to outlet a bioswale into the existing storm system without significant costs.
6	Maximize control of runoff from the critical storm and the less frequent storms through the above techniques and through re-design, retrofit and/or expansion of existing detention structures. If there are no existing detention structures or modification is infeasible, this standard is met.
Reply	The above techniques are either already in place, not feasible due to design constraints, or too cost prohibitive to consider for a project of this scale. In addition, the existing stormwater basin utilized by this site is over designed for the area of impervious surfaces draining to it, so no modifications are warranted.

Table 2 – Feasibility Analysis of Additional Stormwater Controls

Conclusion:

It is our opinion that additional stormwater controls beyond what is already existing on the subject parcel and neighboring regional basin are not needed for the addition of a patio space and paver walk to this site.