

Bridgewater Church B-PUD Preliminary Drainage Report

Project #
180075.000

TO: Chuck Goins

CC:

FROM: Steve R. Korte, PE

DATE: February 13, 2020

RE: Bridgewater Church Preliminary PUD – Drainage Report

This preliminary drainage report is being provided for the proposed B-PUD Rezone area along with the existing Bridgewater Church. Detailed calculations will be provided at a future time, but we first would like to confirm our proposed strategy is acceptable.

The pre-developed drainage area incorporates most of the proposed rezone area which is largely pervious. This area also incorporates the existing Bridgewater Church. This drainage area totals 20.37 Acres with a CN value of 79. This area drains to the northwest and sheet flows off the property.

The post-developed drainage area incorporates the proposed Casey's development, the Bridgewater Church Masterplan and an assumed impervious/pervious split of 80/20 for the remaining developable area of the proposed B-PUD Rezone. We understand that there are drainage concerns on the downstream property to the north, so a large stormwater management basin is proposed on the northwest corner of the property. Per Butler County stormwater requirements, this preliminary drainage report is based on the Critical Year Storm method. Based on this, and the criteria above, the percent increase in runoff was found to be $\pm 47\%$ resulting in a 5 Year Critical Storm. A preliminary drainage analysis was run using this large basin, an assumed outlet structure utilizing a water quality orifice and two series of windows. The results showing the proposed release rates and compliance to the Critical Year Storm criteria is below.

Storm Event	Pre-Developed Peak Flows (cfs)	Post-Developed Peak Flow (cfs)	Peak Flow Reduction (%)
1-Year	18.70	2.51	86.6
2-Year	25.22	5.75	77.2
5-Year	37.38	10.68	71.4
10-Year	46.46	13.29	71.4
25-Year	57.63	23.28	59.6
50-Year	67.10	32.57	51.5
100-Year	74.75	36.30	51.4

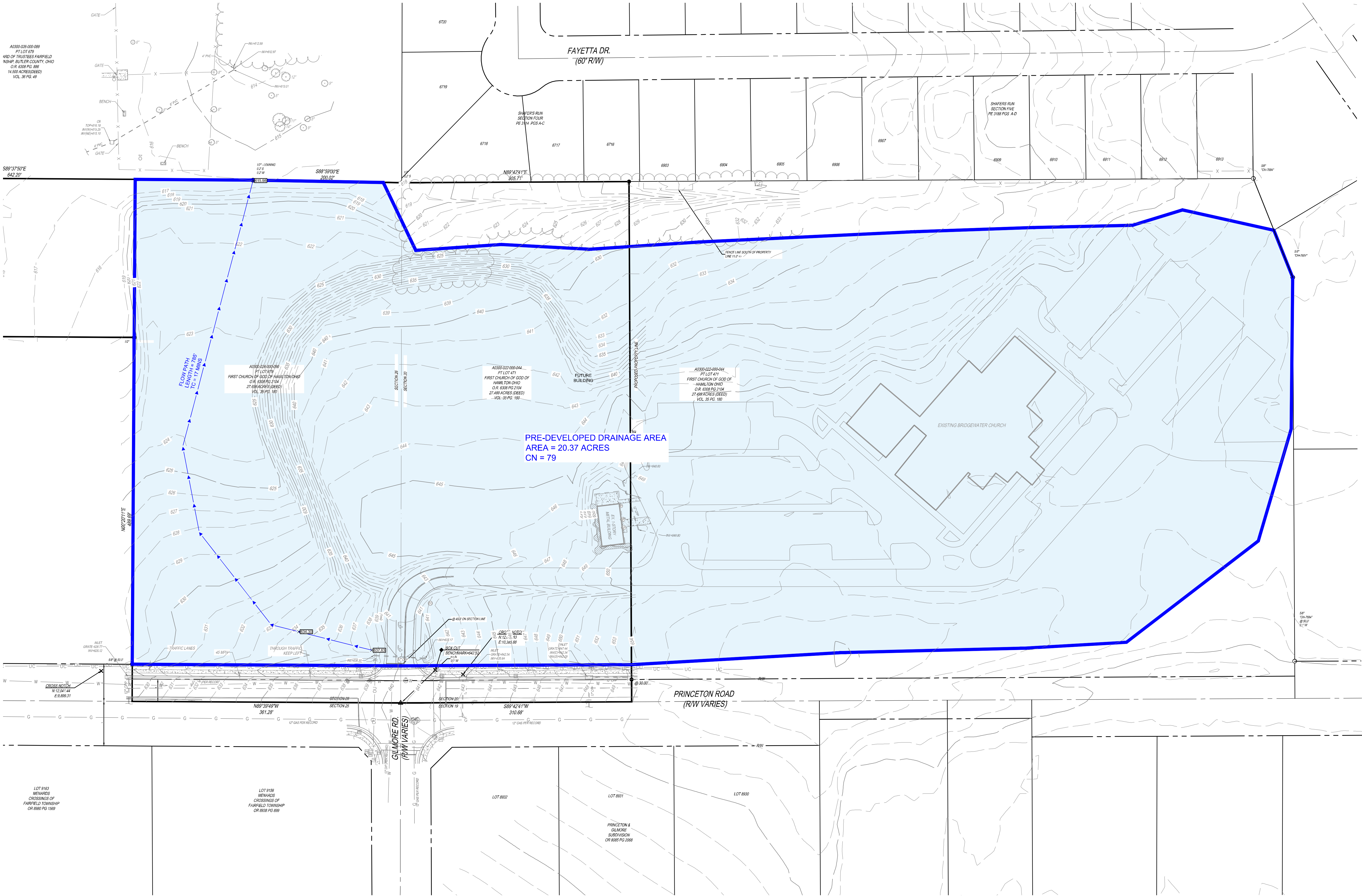
The Peak Flow Reduction indicated above is substantial and far exceeds Butler County requirements for stormwater management. Please don't hesitate to reach out with any questions at (513) 779-7851 or steve.korte@kleingers.com.

Sincerely,

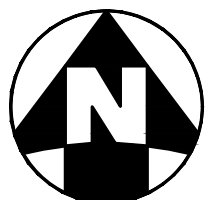
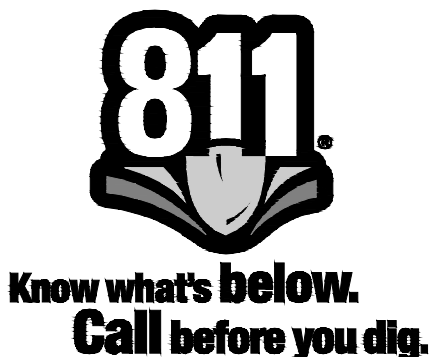
THE KLEINGERS GROUP



Steven R. Korte, PE
Principal



NOTE:
UNDERGROUND UTILITIES ARE PLOTTED FROM A
COMPILATION OF AVAILABLE RECORD INFORMATION, GIS AND
SURFACE INDICATIONS OF UNDERGROUND STRUCTURES
AND MAY NOT BE INCLUSIVE. PRECISE LOCATIONS AND THE
EXISTENCE OR NON EXISTENCE OF UNDERGROUND UTILITIES
CANNOT BE VERIFIED. PLEASE NOTIFY THE KENTUCKY
UTILITY PROTECTION SERVICE AT 1-800-752-6007 BEFORE
ANY PERIOD OF EXCAVATION OR CONSTRUCTION ACTIVITY.



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513.779.7851

BRIDGEWATER CHURCH
PRELIMINARY PUD
FAIRFIELD TOWNSHIP
BUTLER COUNTY, OHIO

SEAL:

NO.	DATE	DESCRIPTION
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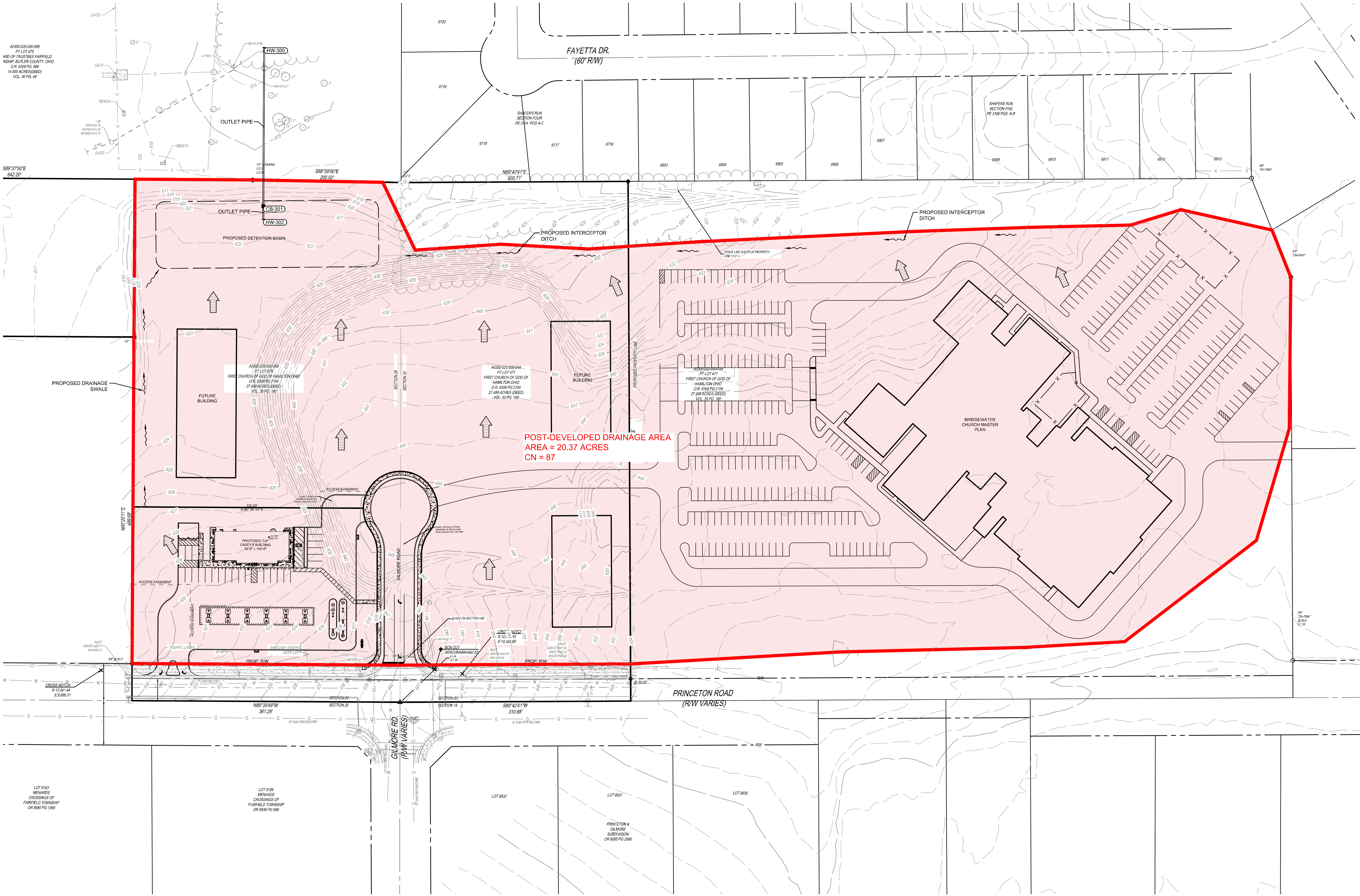
PROJECT NO:	180075.000
DATE:	2/11/2020
SCALE:	

SHEET NAME:

PRE-DEVELOPED DRAINAGE MAP

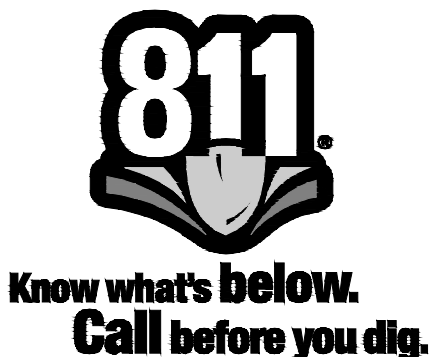
SHEET NO.

1 OF 2



LEGEND
[Symbol] PROPOSED FLOW DIRECTION

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PROJECT NO.	180075.000
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SHEET NAME:	POST-DEVELOPED DRAINAGE MAP
SHEET NO.	2 OF 2