



CEMCON, Ltd.

CONSULTING ENGINEERS, LAND SURVEYORS & PLANNERS

Via email: hynes@naperville.il.us

April 14, 2021

Mr. Andy Hynes
Deputy City Engineer/TED
City of Naperville
400 S. Eagle Street
Naperville, IL 60540

Re: Iron Gate Motor Condos
Phase 2B Stormwater Variances
829.007, Task 00400

Dear Andy,

I am transmitting to you herewith PDFs of the Drainage and Grading Plan Sheets 10 and 11 of 16 for IGMC Phase 2B, which depict the location of cross-sections taken at high points along the flood route through the parking lot and driveways from Ferry Rd. to the northerly SWMF. Also attached is the formal "Request for Major Change to the PUD and Use Deviations – IGMC Phase 2B" which, along with the above Plans, are posted to OwnCloud for the PZC meeting on 5/5/21. On pages 6 & 7 of the "Request", we cite the specific deviations (variances) from the "City of Naperville Design Manual for Public Improvements" from which relief is being requested along with an explanation of the hardships that would ensue to achieve full compliance thereto.

Specifically, that relief and the hardships we foresee are as follows:

1. Section 2.5.4.2 of the Manual reads:

2.5.4.2 Basins

A detention basin is a facility that normally drains completely between runoff events. The maximum side-slopes of a detention basin adjacent to a residential area, including multi-family developments, shall be 6 to 1 (6:1, or 6 feet horizontally for every 1-foot drop in elevation). The maximum side-slopes of a detention basin adjacent to a commercial area shall be 4 to 1. The maximum depth of stormwater storage in a detention basin shall be 6 feet. This depth is measured from the lowest point in the basin (located at the invert of the outlet pipe or at the rim elevation of an inlet grate) to the design high water elevation as illustrated below.

The northerly detention basin serving Phase 2B was designed and constructed to the I-Industrial District Standards several years ago with 4:1 side slopes for which record drawings were submitted to and approved by the City. The basin is separated from the nearby Glencoe buildings by a 5± foot high concrete retaining wall atop which wall there will be an elevated walkway with railings. Phase 2B will remain zoned in the I Industrial District. The lower level of the Glencoe units adjacent to the northerly detention basin will be devoted to garage and workspaces and there will be no basement. Residential living quarters will be on the second and third levels. The change to 6:1 side slopes would entail a complete reconstruction of the facility, impacting adjacent wetlands which would likely not be permitted, and would most assuredly present a financial hardship without any attendant benefit to stormwater management. It is Petitioner's understanding that staff is supportive of this relief.

2. Section 2.5.2.2 of the Manual provides that, for residential developments, there shall be no less than 1.5 feet of freeboard between the high water level of an overland flood route and the adjacent top of foundation. In this case, the lower level of the slab on grade buildings in the I Industrial District will be devoted to garage and workspaces (see Floor Plans in Exhibit C). Residential uses will occupy the upper levels. The critical duration 100-year storm overflow from Ferry Road was previously determined to be 35± cfs (see Report Narrative) which could have been conveyed along and through the Phase 2B driveways with a flow depth of 4-6 inches providing a freeboard to the proposed lower level garages of 6 inches which is not unusual for garages which are typically 6-12 inches below the top of foundation elevation.

It is Petitioner's understanding, however, that staff is not supportive of the extent of this relief but is supportive of a 1.0 foot freeboard. Accordingly, the finished floor elevation of the Wilmette and Kenilworth buildings were raised and parking lot / driveway gradients revised to achieve a minimum 1.0 foot of freeboard to the interior garages which is in accordance with the relief supported by City staff and is the customary freeboard provided for garage floors in residential developments. The imposition of a freeboard of 1.5 feet to these garages would impact grading of ADA spaces in front of the Wilmette units and significantly alter the earthwork balance on a site that has already been pre-graded.

Further note that on Sections C-C, D-D, E-E, F-F, G-G and H-H, taken along the overland flood route, the conveyance capacity at each Section is in excess, and in some cases well in excess, of the critical duration 100-year rate of overland flow with flow depths of 12 inches or less along the gutter line so the freeboard to the finished garage floors will be at least 1.0 foot or greater for these residential use buildings in Phase 2B. Also, you may recall from the Stormwater Management Analysis and Report for the Northerly SWMF (see attached narrative), the primary storm sewer system draining both Ferry Road as well as the rather extensive upstream watershed was constructed by DuPage County DOT many years ago along with several detention basins to the west of IGMC Phase 2B. For most of the 100-year storm events, there is no back-up to the sag point on Ferry Road in front of IGMC Phase 2B. But in the 24-hour duration 100-year storm event the County detention basin surcharges creating a tailwater effect in the County storm sewer system which backs up at the sag point. The existing 36-inch storm sewer through IGMC Phase 2B is already capable of intercepting and conveying that 35.0± cfs of surface overflow from Ferry Road R.O.W. and, with the adjustment in grading and the overland conveyance as computed in the above cross-sections taken through the overland flood route, there will be ample flood protection and freeboard for the proposed buildings in Phase 2B. For these reasons, we do not believe further retrofits to the surface or subsurface drainage systems are warranted.

Based on the revised grading shown on Sheets 10 and 11 and the computations of overland flow capacity along with the sub-surface conveyance in the existing storm sewer system, we request your support and recommendation for the relief being requested from the Design Manual.

Sincerely,
CEMCON, Ltd.

Randall W. Bus, P.E.
CEO

RWB/jb
Enc.

cc: Ying Liu – City of Naperville
Tom Burgess & Becky Colbert – IGMC

