



DRAINAGE MEMORANDUM – CITYGATE II

**NW Corner Westings Avenue & Comfort Drive
Naperville, IL 60563**

Prepared by:

Kimley-Horn and Associates, Inc.

4201 Winfield Rd, Suite 600

Warrenville, IL 60555

Contact: Taylor Eschbach, P.E.

Prepared on: December 19, 2025

TABLE OF CONTENTS

1. PROJECT DESCRIPTION..... 2

2. DRAINAGE DESIGN SUMMARY 3

3. BEST MANAGEMENT PRACTICES..... 4

4. ATTACHMENTS..... 5

- USGS Topographic Map
- FEMA FIRM Panel
- NRCS Soil Map
- Impervious Area Exhibit

1. PROJECT DESCRIPTION

CityGate Centre Ventures II, LLC plans to construct a multi-family residential building with surface parking, a covered parking garage, and associated utilities on a 4.966-acre lot. The proposed parcels are a part of a previously permitted drainage design. The site is bound to the north by Ferry Road; Comfort Drive to the east; to the south by Westings Avenue, and to the west by CityGate Lane.

This Stormwater Memorandum is to supplement the existing approved drainage design for the subject parcels. The existing Master Stormwater Plan prepared by others planned for alternative development of the site for the subject parcel. This memorandum summarizes the calculations demonstrating compliance with the previous design for the site hydrology in conjunction with the final engineering requirements for the site. Additionally, the intent of this memorandum is to demonstrate that the site will accommodate volume control best management practices (VCBMPs) as required by DuPage County via Post Construction Best Management Practices (PCBMPs).

1.1. Pre-Development Conditions

The existing site is partially covered by a surface parking lot and an open field with an existing pickle ball court and bioretention BMP. There is one access point on CityGate Lane currently in use for the surface parking lot and surrounding buildings. In existing conditions the onsite drainage for the surface parking is partially tributary to the existing private storm sewer network in CityGate Lane and to the existing bioretention area that ultimately releases south to the existing storm sewer network in Westings Avenue. It is then conveyed by the private storm sewer system to the regional detention system located on the south side of the overall development adjacent to the Calamos Office Building and Nicor Office Buildings, just north of Interstate-88. The site overland flows into Westings Avenue and ultimately to the same regional detention ponds.

Consistent with the previous approval of the adjacent Domain residential development, it is understood that a master drainage plan has been previously approved by the City. This master drainage plan incorporated the subject property and it is understood that detention has been provided for this property meeting the DuPage County Stormwater Management Ordinance. The provided detention was based on an impervious coverage of 80% after development of the subject property as approved by the City of Naperville.

The site is located in the Naperville Quadrangle, and a USGS Topographic Map has been provided in the attachments of this report. The FEMA FIRM Maps and Flood Insurance Panel Number 17043C0137J enclosed show the site within Zone X which indicates an area outside of the 100-year flood plain.

Per the NRCS soil map, most of the site consists of Orthents, loamy, C rating. A NRCS soil map is included in the attachments of this report.

1.2. Post-Development Conditions

The proposed development will consist of a multi-family residential building. The proposed development is consistent with the impervious area requirements and does not exceed the allowable impervious area that has been master planned for the development (see attached impervious area exhibit). We show the following coverage:

Proposed Impervious Area (ac)	Allowable Impervious Area (ac)
73.99%	80%

Stormwater runoff from the site will be routed through storm inlets to a naturalized bioretention area. This stormwater bioretention BMP will be constructed utilizing a 4" perforated pipe wrapped in fabric and surrounded by stone as indicated on the civil plans and details.

2. DRAINAGE DESIGN SUMMARY

DuPage County BMP Requirements

Per DuPage County Stormwater Ordinance Article VIII 15-63, the development is required to treat stormwater runoff for pollutants of concern and reduce runoff volume for the site via post construction best management practices design criteria (i.e. PCBMPs).

<i>Characteristic</i>	<i>Area</i>
New Impervious Area	3.67 acres
Water Quality Requirement	Native vegetated wetland bottom bioretention area

A Bioretention facility has been designed to treat the runoff prior to discharge. Refer to The Grading Plan and Utility Plan included in the civil engineering plan set included as a part of this submittal for the stormwater routings of these facilities.

Storm Sewer Design

The proposed storm sewer conveyance system was designed to meet the City requirements using Hydraflow Storm Sewer Extensions, Version 10 and Hydraflow Express Extension. The latest updates to Bulletin 75 rainfall were used, a runoff coefficient of 0.90 for paved areas was used and a minimum time of concentration of 10 minutes was assumed for each drainage area.

A Storm Sewer Drainage Area Map and hydraulic analysis has been provided, attached at the back of this memorandum.

3. BEST MANAGEMENT PRACTICES

The following erosion control measures for the site include, but are not limited to:

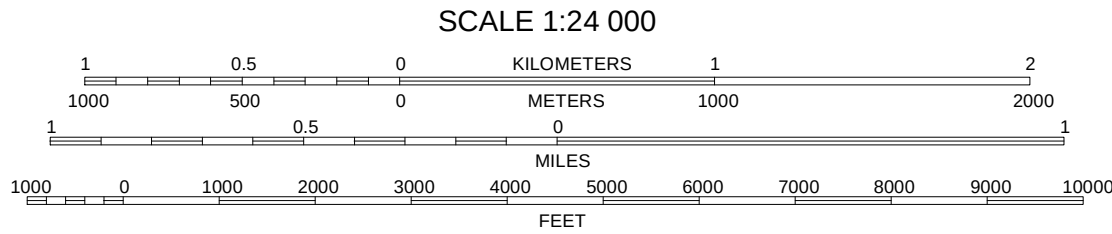
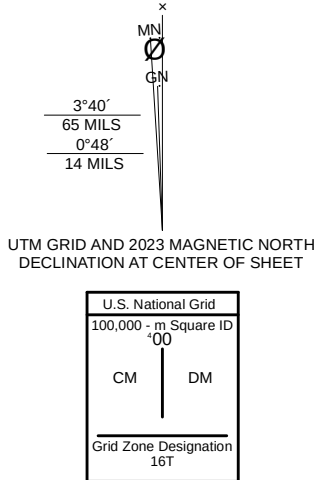
1. Silt Fence – Silt fence is a synthetic permeable mesh fabric typically incorporating wooden support stakes at intervals sufficient to support the fence and water and sediment retained by the fence. Silt fence is also available with a wire mesh backing. The fence is designed to retain sediment-laden water to allow settlement of suspended soils before filtering through the mesh fabric for discharge downstream. Silt fence shall be located to capture overland, low-velocity sheet flow. It shall be installed at the downstream location of all site runoff. Silt fence has the capacity to handle 0.25 acre per 100 feet of silt fence length.
2. Construction Entrance/Exit – All access points from the public street into the construction site shall include a construction entrance/exit composed of coarse stone to the dimensions shown on the Construction Drawings. The rough texture of the stone helps to remove clumps of soil adhering to construction vehicle tires through the action of vibration and jarring over the rough surface and the friction of the stone matrix against soils attached to vehicle tires.
3. Storm Sewer Inlet Protection – Grated inlets are protected from the intrusion of silt and sediment through a variety of measures as shown on the Construction Drawings. The primary mechanism is to place controls in the path of flow sufficient to slow sediment-laden water to allow settlement of suspended soils before discharging into the storm sewer system. Controls typically provide a secondary benefit by means of filtration. Grated inlets typically include a sturdy frame wrapped in silt fence, a prefabricated inlet basket or crushed stone-lined perimeter to slow the flow of water.
4. Concrete Washout Area – A concrete washout area shall be designated to control all concrete materials generated, including the wash water. This area shall be cleaned per local standards when it is 75% full.
5. Stormwater Infiltration Trench – A permanent stormwater infiltration trench will be constructed utilizing a 4" perforated pipe wrapped in fabric and surrounded by stone as indicated in the civil plans and details. The building roof drains will be tributary to this system such that the "first flush" from a rain event will be promoted to infiltrate into the ground providing groundwater recharge and Total Suspended Solids removal.

4. ATTACHMENTS



Produced by the United States Geological Survey
North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84) Projection and
1 000-meter grid/Universal Transverse Mercator, Zone 16T
This map is not a legal document. Boundaries may be
generalized for this map scale. Private lands within government
reservations may not be shown. Obtain permission before
entering private lands.

Imagery.....NAIP, September 2019 - September 2019
Roads.....U.S. Census Bureau, 2017
Names.....GNS, 1980 - 2023
Hydrography.....National Hydrography Dataset, 2002 - 2022
Contours.....National Elevation Dataset, 2024
Boundaries.....Multiple Sources, see metadata file 2021
Public Land Survey System.....BLM, 2020
Wetlands.....FWS National Wetlands Inventory, Not Available



CONTOUR INTERVAL 10 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988
This map was produced to conform with the
National Geospatial Program US Topo Product Standard.



1	2	3
4	5	6
7	8	9

ADJOINING QUADRANGLES

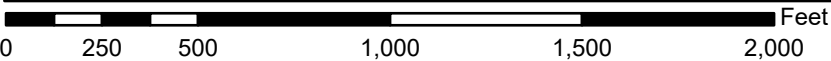
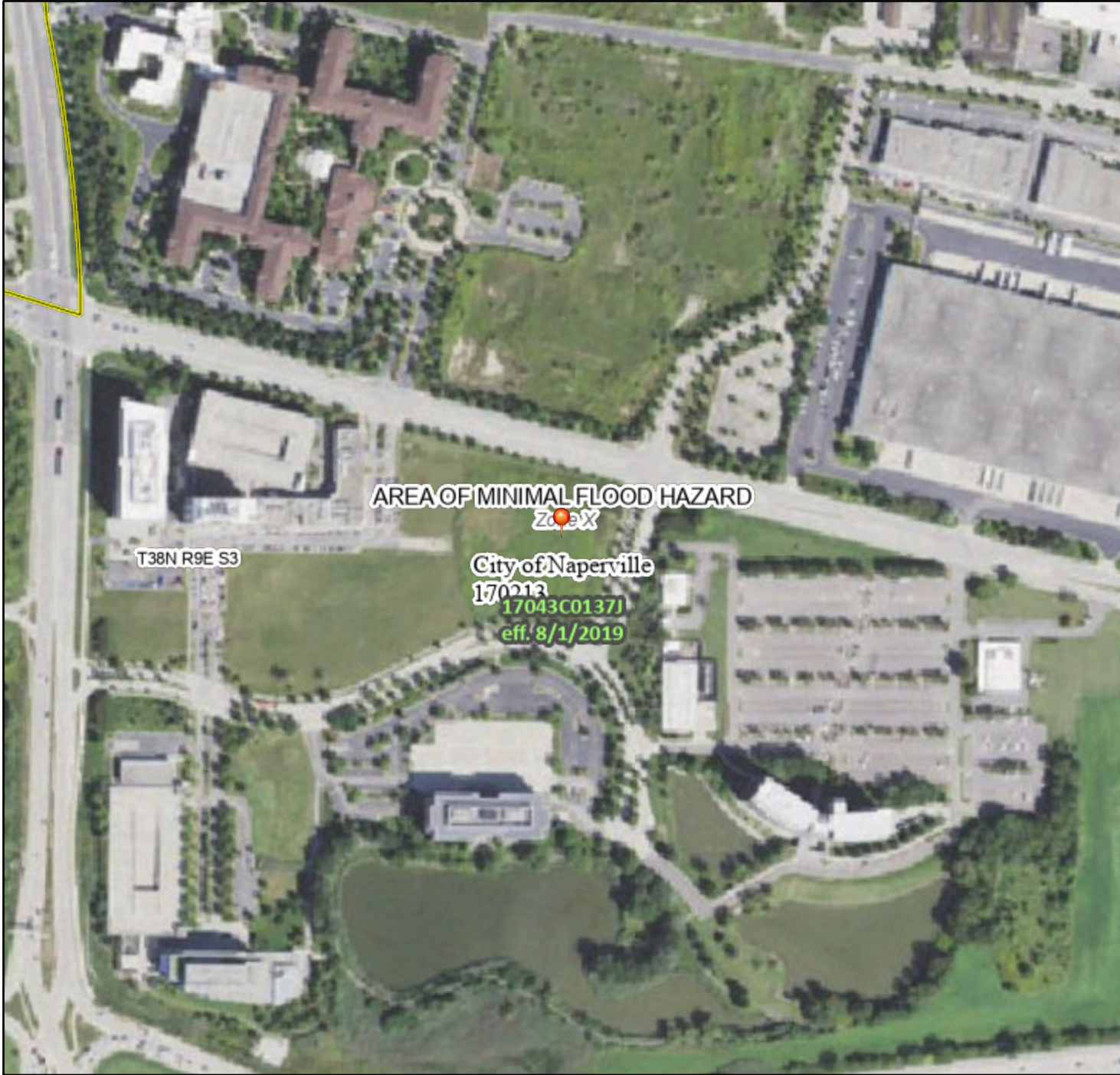
1 Geneva
2 West Chicago
3 Lombard
4 Aurora North
5 Wheaton
6 Aurora South
7 Normaltown
8 Romeoville

ROAD CLASSIFICATION		
Expressway	Local Connector	
Secondary Hwy	Local Road	
Ramp	4WD	
Interstate Route	US Route	State Route

National Flood Hazard Layer FIRMMette



88°12'15"W 41°48'43"N



1:6,000

88°11'37"W 41°48'16"N

Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Zone AE, AO, AH, VE, AR
		Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		NO SCREEN Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
		Coastal Transect Baseline
		Profile Baseline
		Hydrographic Feature
		Digital Data Available
MAP PANELS		No Digital Data Available
		Unmapped



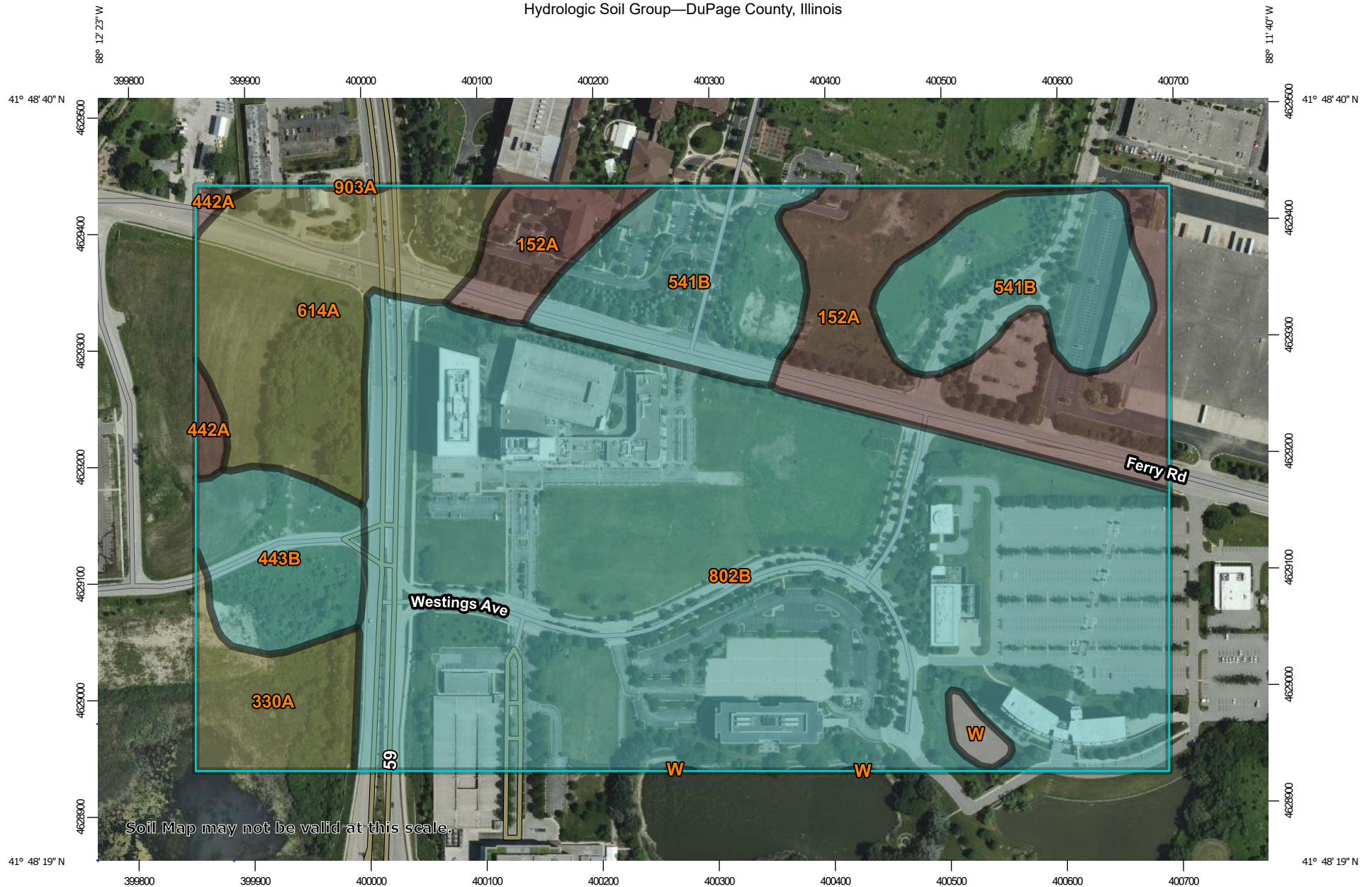
The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **10/16/2025 at 7:03 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Hydrologic Soil Group—DuPage County, Illinois



Soil Map may not be valid at this scale.

Map Scale: 1:4,610 if printed on A landscape (11" x 8.5") sheet.

0 50 100 200 300 Meters

0 200 400 800 1200 Feet

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84



**Natural Resources
Conservation Service**

Web Soil Survey
National Cooperative Soil Survey

10/16/2025
Page 1 of 4

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

Soil Rating Polygons

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Lines

 A
 A/D
 B
 B/D
 C
 C/D
 D
 Not rated or not available

Soil Rating Points

 A
 A/D
 B
 B/D

 C
 C/D
 D
 Not rated or not available

Water Features

 Streams and Canals

Transportation

 Rails
 Interstate Highways
 US Routes
 Major Roads
 Local Roads

Background

 Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL:
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DuPage County, Illinois
 Survey Area Data: Version 21, Aug 31, 2025

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 13, 2020—Jul 6, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
152A	Drummer silty clay loam, 0 to 2 percent slopes	B/D	13.5	12.9%
330A	Peotone silty clay loam, 0 to 2 percent slopes	C/D	4.0	3.8%
442A	Mundelein silt loam, 0 to 2 percent slopes	B/D	0.7	0.7%
443B	Barrington silt loam, 2 to 4 percent slopes	C	4.8	4.6%
541B	Graymont silt loam, 2 to 5 percent slopes	C	13.9	13.3%
614A	Chenoa silty clay loam, 0 to 2 percent slopes	C/D	10.8	10.3%
802B	Orthents, loamy, 1 to 6 percent slopes	C	56.3	53.8%
903A	Muskego and Houghton mucks, 0 to 2 percent slopes	C/D	0.0	0.0%
W	Water		0.5	0.5%
Totals for Area of Interest			104.6	100.0%

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

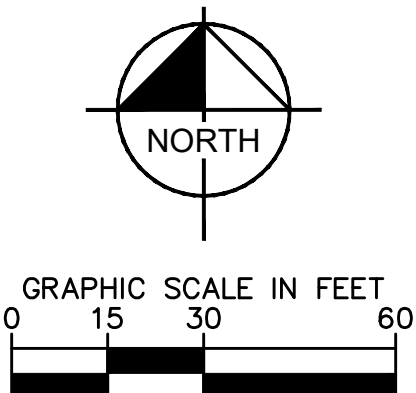
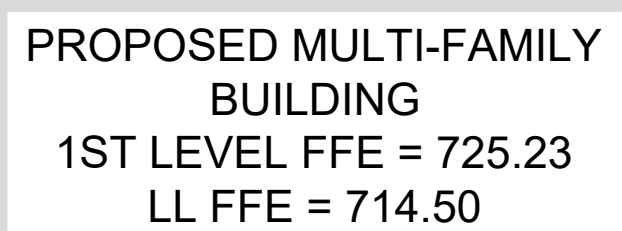
Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

no reliance on this document without written authorization and indemnation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.



The diagram illustrates the layout of a site plan. It features a legend with three categories: PERVIOUS AREA (represented by a box with plus signs), PROPERTY LINE (represented by a dashed line), and IMPERVIOUS AREA (represented by a solid gray box). Below the legend is a summary table with three rows: TOTAL SITE AREA, PERVIOUS AREA, and IMPERVIOUS AREA. The table shows the following values: TOTAL SITE AREA is 4.96 AC, PERVIOUS AREA is 1.29 AC, and IMPERVIOUS AREA is 3.67 AC.

SUMMARY		
TOTAL SITE AREA	=	4.96 AC
PERVIOUS AREA	=	1.29 AC
IMPERVIOUS AREA	=	3.67 AC

EX. SHEET NUMBER	ORIGINAL ISSUE: 12/19/2025 KHA PROJECT NO. 268930001	CITYGATE II NW CORNER WESTINGS AVENUE AND COMFORT DRIVE	IMPERVIOUS AREA EXHIBIT		SCALE: AS NOTED DESIGNED BY: OIL DRAWN BY: ARG CHECKED BY: TRE	Kimley»Horn © 2024 KIMLEY-HORN AND ASSOCIATES, INC. 10000 KIMLEY-HORN DRIVE, SUITE 600 WASHERVILLE, IA 52585 (515) 253-7600 WWW.KIMLEY-HORN.COM	No. REVISIONS DATE BY
---------------------------------------	--	---	---	---	--	--	---