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Stormwater Management Memorandum

Date: June 23, 2026

To: Construction Services, City of Mankato

From: Alec Pietz, P.E. – Land Development Project Manager

Subject: Kohlmeyer Hagen Law Office
BMI Project No.: 26X.144220

I. Project Introduction

The following report provides a summary and analysis of the existing and proposed hydrology for the proposed Kohlmeyer Hagen Law Office on Lot 1 Block 1 of Alexia Subdivision in Mankato, Minnesota. The proposed project consists of a building, parking lot construction, site grading, utilities, and drainage improvements. While the property connects to City storm sewer that drains to an existing R & R stormwater basin, the existing basin was not designed to fully mitigate this property. Therefore, a new stormwater basin is proposed to fully mitigate this development from a peak flow and water quality standpoint. **The proposed design ignores the existence of the downstream R & R Basin and does not utilize any of its capacity or water quality credit.** The SCS TR-20 hydrology method was utilized in Autodesk Storm and Sanitary Analysis (SSA) for the project. NOAA Atlas 14 rainfalls for Blue Earth County, Minnesota and MSE 3 distribution curves were used to develop rainfall events. Although additional storm events were used in the stormwater modeling, the 2-yr (2.87”), 10-yr (4.29”), and 100-yr (7.20”) events are reported for relevant data in this report.

II. Existing Site Hydrology

The site currently consists of a mixture of grass and farmland that ultimately drains to Lot 2 Block 1 of Alexia Subdivision, Victory Drive, and City of Mankato right-of-way. All listed outfall areas ultimately drain to the downstream City storm sewer and stormwater management. A sizable storm sewer is adjacent to the site and will be extended for connection. Lot 2 will also drain to this storm sewer at its time of development. The *Existing Hydrology* figure illustrates the existing drainage areas and yields the following peak flows:

Existing Peak Flows (cfs)			
Location	2-yr	10-yr	100-yr
St. Andrews Drive	0.95	1.69	3.25
Victory Drive / West Lot	1.01	1.99	4.10
Lot 2	0.60	1.13	2.26
Total	**2.56**	**4.81**	**9.61**

The peak flow constraints of this project are to not exceed the overall existing rates. A check against the capacity of downstream storm sewer in a 10-year design will also be required.

III. Proposed Site Hydrology

The *Proposed Hydrology* figure illustrates the proposed improvements, drainage areas, storm sewer routing, and the basin. As previously mentioned, the basin is sized both for peak attenuation and for water quality volume; a basin design fact sheet is also included with this memo. The basin also draws down within 48-hours; a graphic from SSA is provided showing this.

Proposed peak flow rates for the design storms were determined in SSA to be:

Proposed Peak Flows (cfs)			
Location	2-yr	10-yr	100-yr
To City Storm	0.42	1.41	6.11
West Lot	0.12	0.22	0.42
Victory Drive	0.30	0.58	1.19
St. Andrews Drive	0.08	0.15	0.29
Total	**0.92**	**2.36**	**8.01**
Existing Peak Rate	2.56	4.81	9.61

Below is a summary of peak flow observations:

- All storm events have a decrease in peak flow, including to individual discharge locations.
- 10-year peak flow to City storm sewer – 1.41 cfs is reported discharging from the basin. A 24-inch City storm sewer at 0.5% is extended to this site with a 12-inch service to the site. The 24-inch has a design capacity of 16 cfs, far exceeding the peak flow from the site, leaving additional capacity for future connections. Downstream of the project limits, a 24-inch City storm sewer at 0.75% exists followed by a 48-inch pipe.

Please review the additional information, figures, and accompanying civil construction documents and feel free to contact Alec Pietz, P.E. with any questions at Alec.Pietz@bolton-menk.com or 507-766-3283.

STORMWATER BASIN
KOHLMEYER HAGEN LAW OFFICE
MANKATO, MINNESOTA
BMI Project No. 26X.144220

PROPOSED FILTRATION BASIN

Drainage Area (Lot 1)

Drainage Area:	1.14	Acres
Impervious Area:	0.80	Acres

Impervious area includes the temporary road outside of the lot

Water Quality Volume

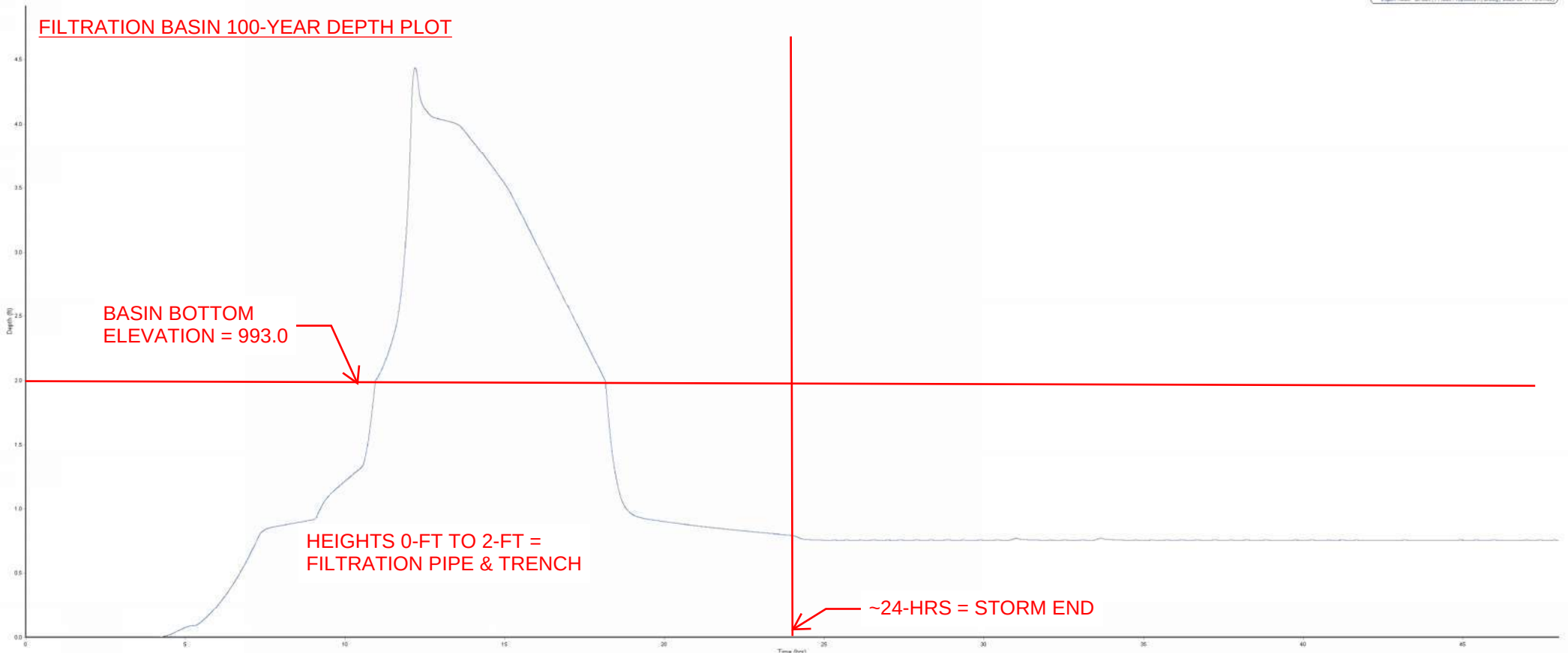
(1.1 inches of runoff from impervious surfaces)

Volume (Proposed Impervious):	3,194	cubic feet =	0.073	acre-feet

Proposed Basin				
Elevation (ft)	**Area (sf)**	**Volume (cf)**	**Volume (ac-ft)**	
993	1425	0	0.00	
994	1970	1700	0.039	
995 (WQV)	**2590**	**3980**	**0.091**	**Meets Req'm**
996	3285	6915	0.159	
997	4055	10585	0.243	
998	4875	15050	0.346	
999	5745	20360	0.467	

Basin High Water Levels	
Event	**Elevation (ft)**
2-yr	994.4
10-yr	995.1
100-yr	995.4

FILTRATION BASIN 100-YEAR DEPTH PLOT



Kohlmeyer Hagen Law Office
Mankato, Minnesota

Existing Hydrology
June 2026

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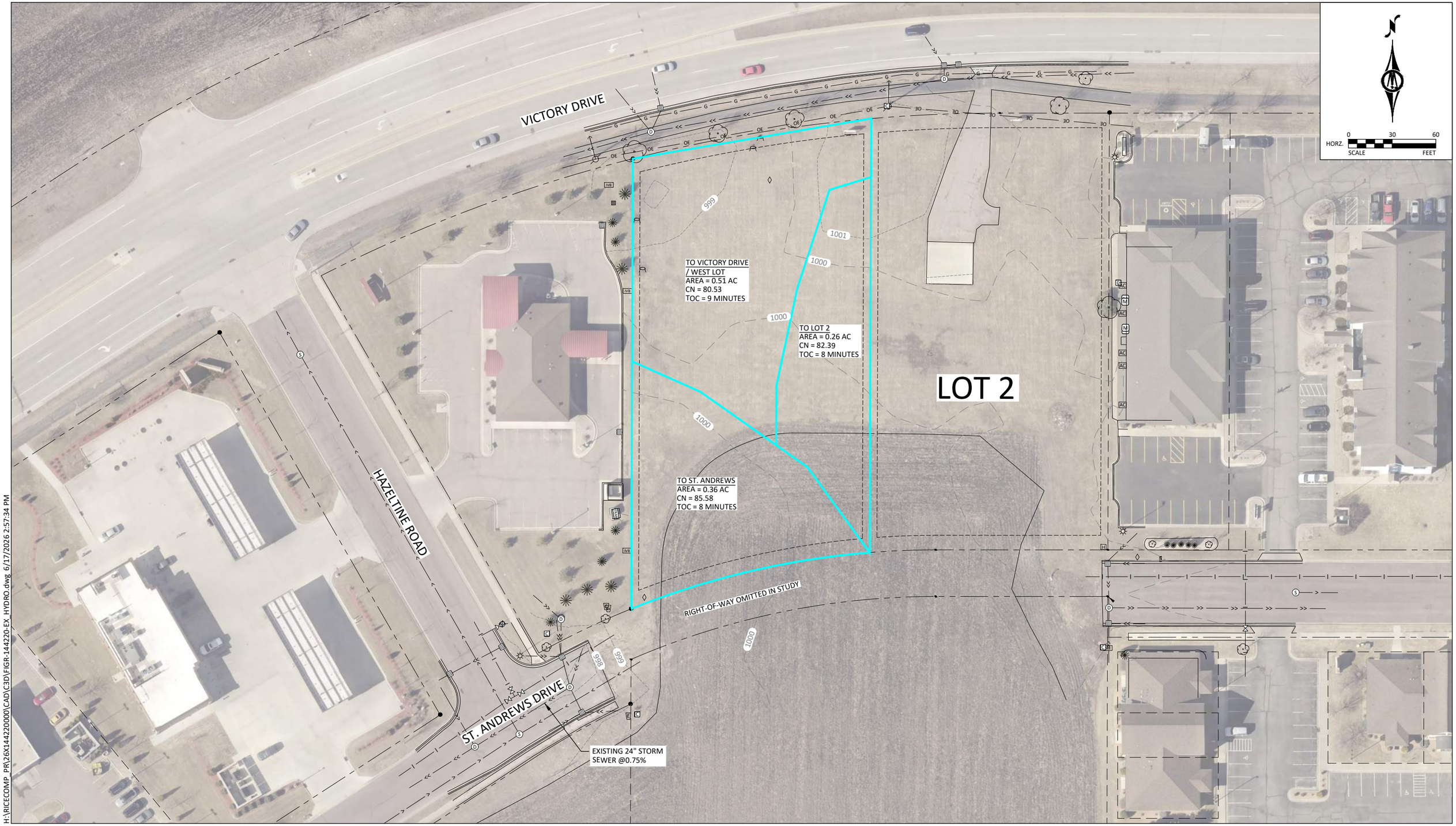

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Kohlmeyer Hagen Law Office
Mankato, Minnesota

Proposed Hydrology
June 2026

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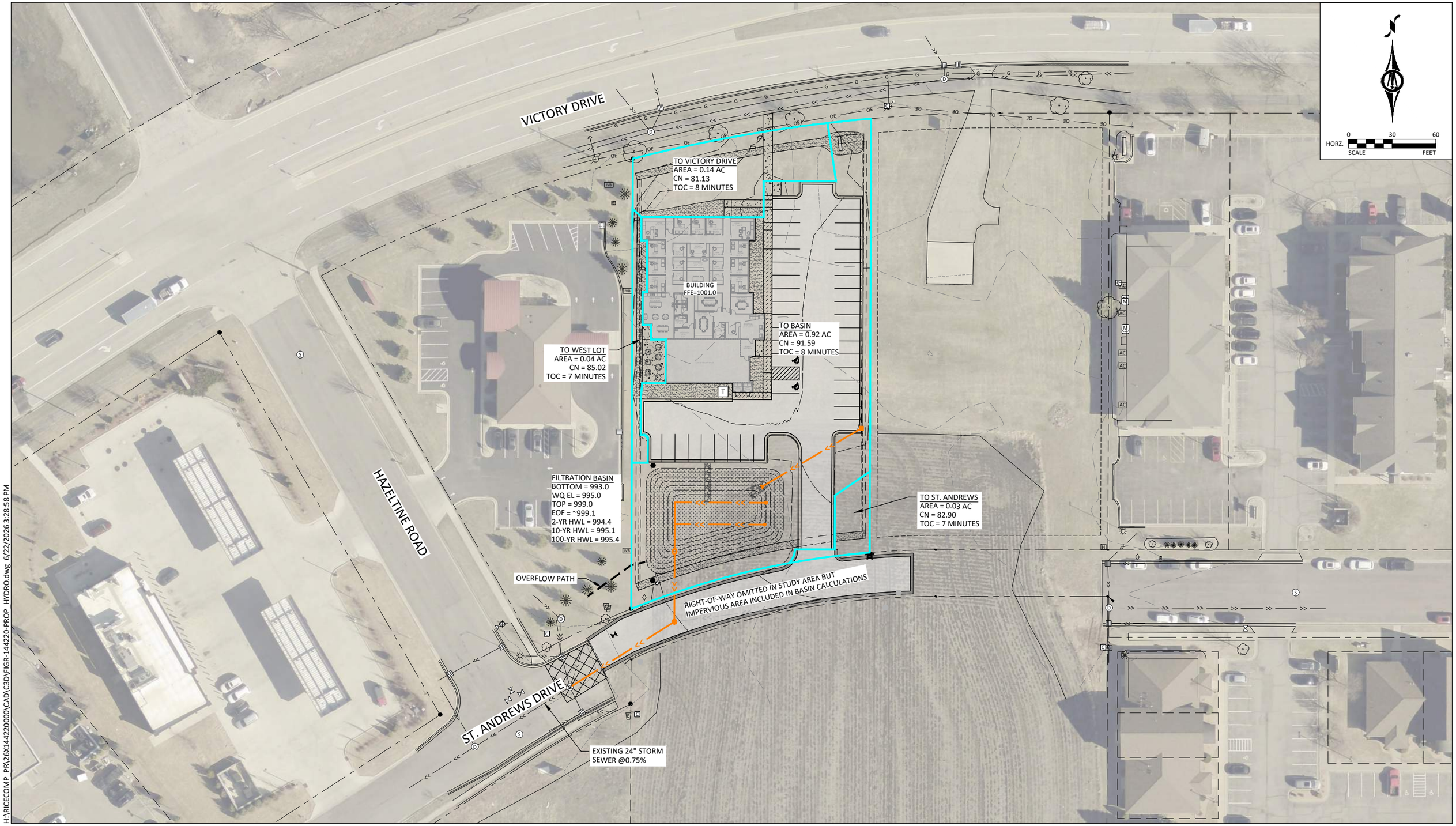

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