Traffic Study

Evaluation of Greene Valley Forest Preserve Access on Greene Road near Kimberwick Lane

Stantec

Prepared for:
Forest preserve District of DuPage County

Date:
January 6, 2026

Prepared by:
Ravi Arora, P.E., PTOE, RSP2I

Stantec Consulting Services Inc.

Table of Contents

List of Tables:

List of Exhibits:

Executive Summary

Stantec conducted a Traffic Study to evaluate the existing access and relocation alternatives for the entrance to the Greene Valley Forest Preserve of the Forest Preserve District of DuPage County (FPDDC), located on east side of Greene Road between Hobson Road and 75th Street. The existing entrance location and relocation alternatives for the study area have been described, analyzed and evaluated with respect to traffic operations, sight distance, and safety. The Traffic Study Summary is presented below:

- The entrance to the Greene Valley Forest Preserve Picnic Area and Off-Leash Dog Area is located approximately 0.25 miles south of Hobson Road and 0.35 miles north of 75th Street and is the only entrance to the park.
- Existing Annual Daily Traffic (ADT) for Greene Road within study area was established using Illinois Department of Transportation (IDOT) – IROADS website - IROADS - Illinois Roadway Analysis Database System
- Traffic Volumes for the entrance were established based on Forest Preserve visitor data.
- Crash Data was reviewed and considered for the last 11 years (2014-2025) from DuPage County Illinois Crashes by Year website.
- DuPage County's 1 foot LiDAR data was used for the existing terrain.
- Peak AM and Peak PM traffic volumes were developed using available information.
- Information received from the Chicago Metropolitan Agency for Planning (CMAP) was used for projecting traffic volumes for 2050.
- Existing conditions, including typical sections, alignment, profiles, and other roadway elements, were documented.
- An Auxiliary Lane Warrant Analysis was conducted, and the results indicate that no additional left-turning lane is warranted for southbound Greene Road, and no additional right-turning lane is warranted for northbound Greene Road.
- An Intersection Design Study (IDS) was prepared for the existing entrance at Greene Road.
- Geometric elements, including horizontal alignment, vertical profile, and sight lines, were evaluated. The analysis indicates that the existing entrance does not provide the minimum required vertical and intersection sight distance.
- A Capacity and Queue Analysis was conducted for the existing intersection under Existing (2025) and No-Build (2050) conditions. The intersection is expected to operate at an acceptable Level of Service (LOS) for both existing and future 2050 traffic volumes.
- Three alternatives were evaluated for relocating the existing entrance.

- Alternative A – Relocation of the existing entrance across from Kimberwick Lane, forming a four-legged intersection with Greene Road (north–south), Kimberwick Lane (west), and the relocated entrance (east).
- Alternative B – Relocation of the existing entrance across from Kimberwick Lane, forming a four-approach mini-roundabout with Greene Road (north–south), Kimberwick Lane (west), and the relocated entrance (east).
- Alternative C – Relocation of the existing entrance to a location north of Kimberwick Lane and south of Oxer Court.
- Intersection Design Studies (IDS) were conducted for each of the three alternatives.
- Capacity and Queue Analyses were performed for all three alternatives for Future Year (2050) traffic volumes. Results indicate that all alternatives operate at an acceptable Level of Service (LOS).
- The geometric and operational advantages of each alternative were evaluated and compared.
- It is recommended that the Forest Preserve entrance be relocated north of Kimberwick Lane and constructed as an offset T-intersection **(Alternative C),** with STOP control provided on the relocated Forest Preserve entrance approach only.

Introduction

Stantec has conducted a Traffic Study to evaluate the existing entrance and relocation alternatives for the Greene Valley Forest Preserve entrance. The existing park entrance is located on the east side of Greene Road between Hobson Road and 75th Street, with STOP control provided on the entrance approach only. The site location is shown in **Exhibit 1**.

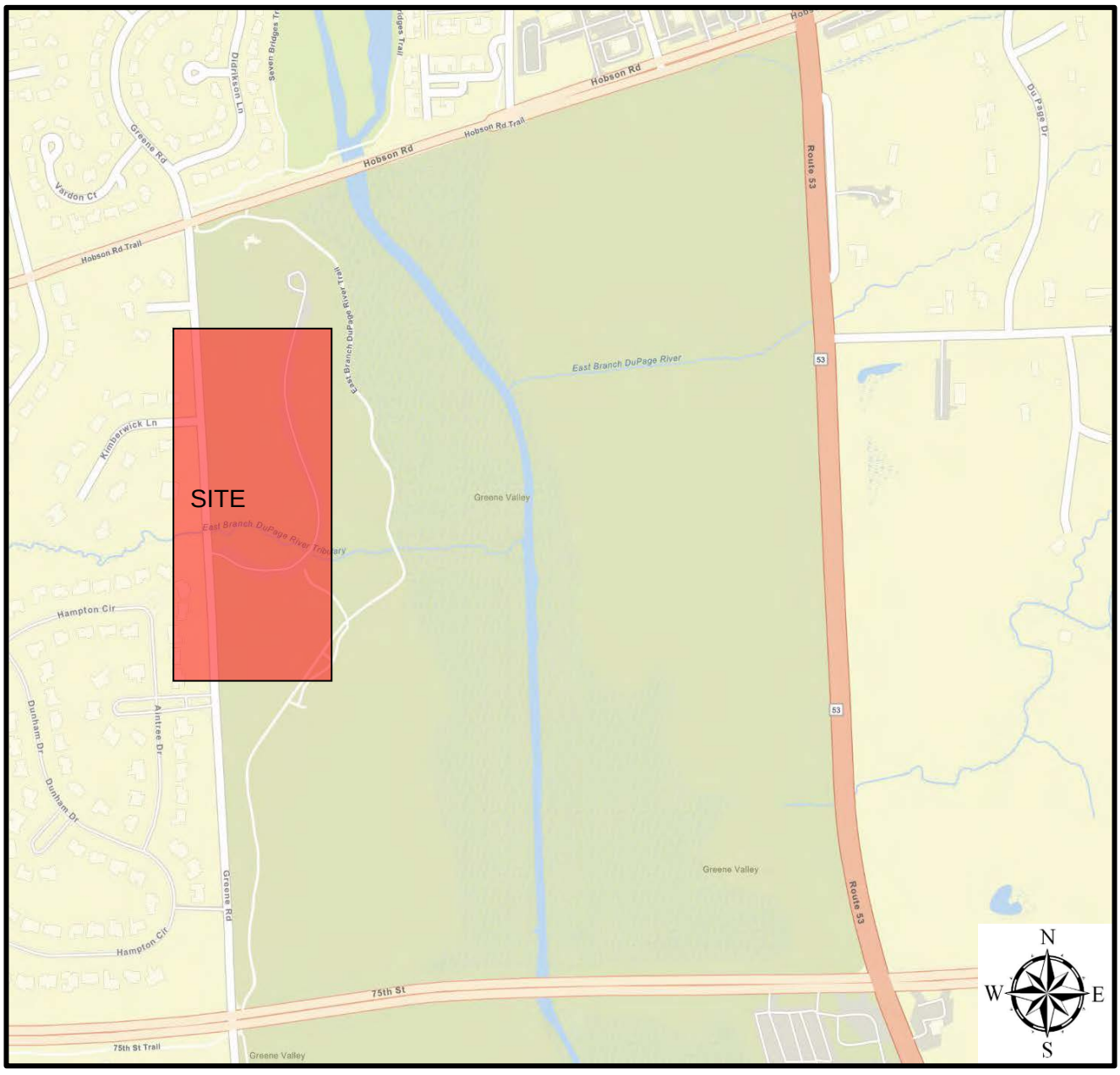
An Intersection Design Study (IDS) was prepared to evaluate traffic operations and intersection performance for the following conditions and alternatives:

- Existing Condition: Analysis of the existing Greene Valley Forest Preserve entrance.
- Alternative A: Relocation of the existing entrance across from Kimberwick Lane, forming a four-legged intersection with Greene Road (north–south), Kimberwick Lane (west), and the relocated entrance (east).
- Alternative B: Relocation of the existing entrance across from Kimberwick Lane, forming a four-approach mini-roundabout with Greene Road (north–south), Kimberwick Lane (west), and the relocated entrance (east).
- Alternative C: Relocation of the existing entrance to a location north of Kimberwick Lane and south of Oxer Court.

The following elements were evaluated as part of all Intersection Design Studies (IDS):

- Horizontal alignment
- Vertical profiles
- Sight lines
- Design detail sheets
- AutoTurn vehicle Movements
- Capacity Analysis

Exhibit 1 - Site Location Map



Existing Conditions

Area Land Use

The Study Area/Site is located on Greene Road, located 0.1 mile south of Hobson Road to 0.3 mile north of 75th Street for an approximate total distance of 0.3 miles. It is bound by single family homes to the west and by Greene Valley Forest Preserve to the east.

Street/Roadway Network

Greene Road

Within the Traffic Study Area, Greene Road is a north-south, major collector roadway under the jurisdiction of Lisle Township Highway Department. On north side of the study limits, Greene Road has a signalized intersection with Hobson Road and on the south side of the limits, Greene Road has a signalized intersection with 75th Street. It generally has a two-lane cross-section, one lane in each direction. All existing base conditions are shown in **Appendix A.**

Lane Width (Typ.) :12'

Posted Speed Limit: 35 Mph

Pedestrian and Bike Facilities: Not Present

5 TON truck weight restriction

Side Roads (From North to South)

1. Oxer Court

Oxer Court is a residential local street located on the west side of Greene Road, approximately 340 feet (0.06 mile) south of Hobson Road.

2. Kimberwick Lane

Kimberwick Lane is a side road located on the west side of Greene Road, approximately 830 feet (0.15 mile) south of Hobson Road. It is a residential street with no outlet and forms a T-intersection with Greene Road. There is no traffic control on either Greene Road or Kimberwick Lane at this location. No pedestrian or bicycle facilities are present along Kimberwick Lane.

3. Greene Valley Preserve Entrance

The Greene Valley Forest Preserve entrance is located on the east side of Greene Road, approximately 0.25 miles south of Hobson Road. The entrance provides access to the off-leash dog area parking lot and has no

additional outlet. The entrance forms a T-intersection with Greene Road and is STOP-controlled on the preserve entrance approach, with no traffic control on Greene Road.

4. Stonehedge Drive

Stonehedge Drive is a side road located on the west side of Greene Road, approximately 0.4 miles south of Hobson Road. It is a residential street and is not within the project study limits.

Existing Terrain

An existing terrain model was developed for the project limits using DuPage County's 1-foot LiDAR data. The existing terrain was used to evaluate existing vertical profiles.

Existing Traffic

Traffic data was obtained from IDOT IROADS to determine ADT, expressed in vehicles per day (vpd), for Greene Road. In addition, visitor data provided by the Forest Preserve for the past five years was used to establish traffic volumes associated with the preserve entrance. The methodologies used to develop existing traffic volumes and peak hours are summarized below.

Methodology for establishing Existing Traffic Volumes for Preserve Entrance:

- The ADT for the Forest Preserve entrance was estimated to be 331 vpd based on five years of visitor data (see Appendix F).
- The AM peak hour was identified as 11:00 AM to 12:00 PM, and the PM peak hour was identified as 5:00 PM to 6:00 PM.
- Peak hour volumes were estimated at 24 vehicles per hour (vph) during the AM peak and 26 vph during the PM peak.
- Traffic volumes exiting the Forest Preserve were assumed to be equal to the volumes entering the preserve during the corresponding peak hours.
- Turning movement volumes were assumed to be evenly split, with 50 percent left-turning and 50 percent right-turning traffic, and no through movements at the existing entrance.

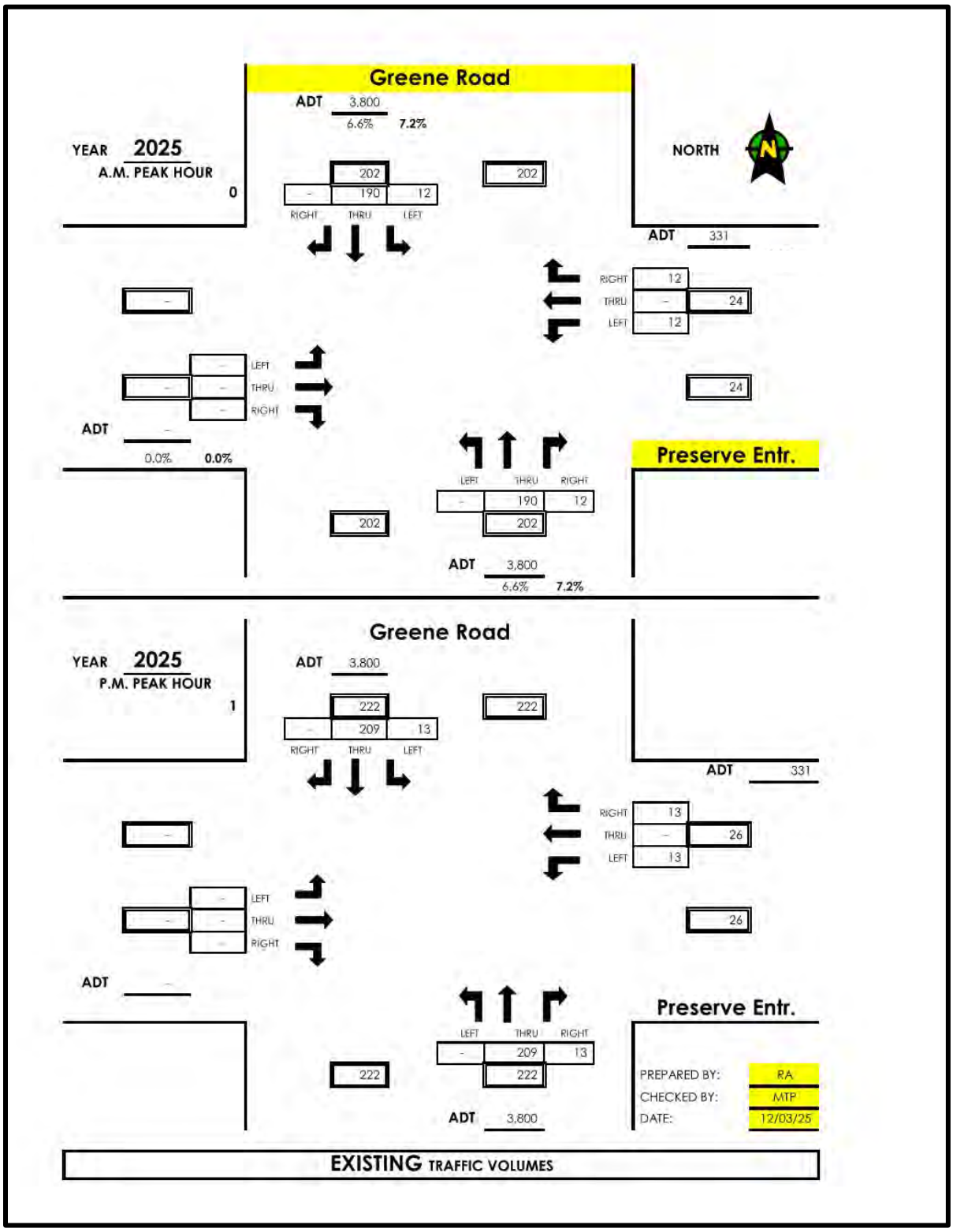
Methodology for Establishing Existing Traffic Volumes on Greene Road:

- The existing Average Daily Traffic (ADT) on Greene Road is 3,800 vpd based on data obtained from IDOT IROADS.
- Traffic volumes were assumed to be evenly distributed by direction, with 50 percent northbound (NB) and 50 percent southbound (SB) traffic, resulting in 1,900 vpd in each direction.

- The AM peak-hour volume was assumed to be 10 percent of ADT. All Greene Road traffic was assumed to be through traffic, resulting in 190 through vph in each direction during the AM peak hour.
- For the PM peak hour, through volumes were increased by the same factor observed in the Forest Preserve entrance data (26/24 ≈ 1.1). Accordingly, PM peak-hour through volumes on Greene Road were estimated to be 209 vph in each direction.
- For the purposes of analysis, all single-unit (SU) and multi-unit (MU) truck traffic was assumed to operate as through traffic for movements on Kimberwick Lane and at the Forest Preserve entrance.
- Forest Preserve entrance data was used to estimate turning movement volumes into the preserve. Turning volumes were assumed to be evenly split directionally, with 50 percent of vehicles arriving from the NB Greene Road approach and 50 percent from the SB Greene Road approach. The AM and PM peak hour volumes were estimated to be 12 vph and 13 vph, respectively (see Appendix F).
- The AM peak hour was identified as 11:00 AM to 12:00 PM, and the PM peak hour was identified as 5:00 PM to 6:00 PM, based on peak hourly visitor activity at the Forest Preserve.

The existing peak-hour traffic volumes are illustrated in **Exhibit 2**.

Exhibit 2 – Existing Year (2025) Traffic Volumes



Crash Analysis

To evaluate potential safety issues within the study area, crash data was obtained from the following sources:

- DuPage County Crash website: DuPage County Illinois Crashes by Year database, used to obtain crash data for the years 2014 through 2024.
- IDOT Division of Transportation Safety: Crash data for the most recent five calendar years (2020–2024).
- Law enforcement reports: Crash reports for the period 2021 through 2025 (through November 22, 2025).

DuPage County crash data was primarily used for the crash analysis, as the crash data provided by IDOT for the years 2020 through 2024 were consistent with the DuPage County crash records. For calendar year 2025 (through November 22), crash data was available only from law enforcement reports.

A summary of the crash data for study area, along Greene Road between Oxer Court and Stonebridge Drive, is provided in **Table 1**. A review of available crash data along Greene Road and at the intersections with the Forest Preserve entrance, Kimberwick Lane, Stonebridge Drive, and Oxer Court identified **eight (8)** reported crashes between 2014 and 2025. All reported crashes resulted in property damage only, with no injuries or fatal crashes recorded.

The documented crash types included front to rear, fixed-object, angle, sideswipe, turning and animal crashes. Reported contributing factors primarily involved failure to yield right-of-way, following too closely, improper lane usage, speeding, and driver condition, where available.

88% of the crashes occurred under dry and clear weather conditions, indicating that adverse weather was not a primary contributing factor. 50% of the crashes were concentrated near the Greene Road and Kimberwick Lane intersection, suggesting localized turning-movement and right-of-way conflicts within the study area. Kimberwick Lane approach at Greene Road operates as an uncontrolled approach, with no STOP or YIELD control provided.

Field observations along Kimberwick Lane at Greene Road indicate the presence of roadside light poles and overhead utility lines near the roadway. These fixed objects contribute to constrained roadside conditions along the Kimberwick Lane approach. In August 2025, a vehicle struck one of the light poles, causing it to fall and contact overhead power lines. While no injuries were reported, the incident caused a power outage for residents along Kimberwick Lane and required utility response.

The presence of light poles and overhead utilities near the roadway increases the potential severity of run-off-road and fixed-object crashes and may adversely affect nighttime visibility and overall intersection safety. These conditions were considered as part of the safety evaluation for the Kimberwick Lane approach.

Table 1: Crash Data Summary Table

Data Source	Date	Nearest Intersection (Latitude/Longitude)	Crash Type – Cause - Damage Type	Conditions
DuPage County	8/6/2014	Forest Preserve Entrance (41.753619/-88.074755)	Rear end - Following too closely - Property Damage Only	Dry and Clear
DuPage County	8/21/2014	Forest Preserve Entrance (41.754903/-88.074816)	Fixed Object – Driver Condition - Property Damage Only	Dry and Clear
DuPage County	5/17/2015	Greene and Stonebridge Intersection (41.752931/-88.074700)	Fixed Object – Speeding - Property Damage Only	Dry and Clear
DuPage County	12/19/2015	Greene and Kimberwick Intersection (41.755980/-88.074900)	Crossing Animal – None - Property Damage Only	Dry and Clear
DuPage County	1/13/2016	Greene and Oxer Intersection (41.757504/-88.075000)	Sideswipe - Improper Lane Usage - Property Damage Only	Dry and Clear
DuPage County	10/28/2017	Greene and Kimberwick Intersection (41.756200/-88.074900)	Angle - (Information Not available) - Property Damage Only	Dry and Clear
Law Enforcement Report	8/27/2022	Greene and Kimberwick Intersection (41.753116/-88.074734)	Turning Traffic - Failure to yield right of way - Property Damage Only	Dry, Clear and Daytime
Law Enforcement Report	8/25/2025	Greene and Kimberwick Intersection (41.756201/-88.074921)	Fixed Object - (Information Not available) - Property Damage Only	Night

Future Conditions

Traffic Growth

Based on the Chicago Metropolitan Agency for Planning (CMAP) 2050 projections (see Appendix G), traffic volumes on Greene Road are expected to increase at an annual compound growth rate of approximately 0.94 percent, resulting in an overall increase of approximately 20 percent over the next 25 years.

Future Traffic Volumes

Methodology for Establishing Future traffic Volumes:

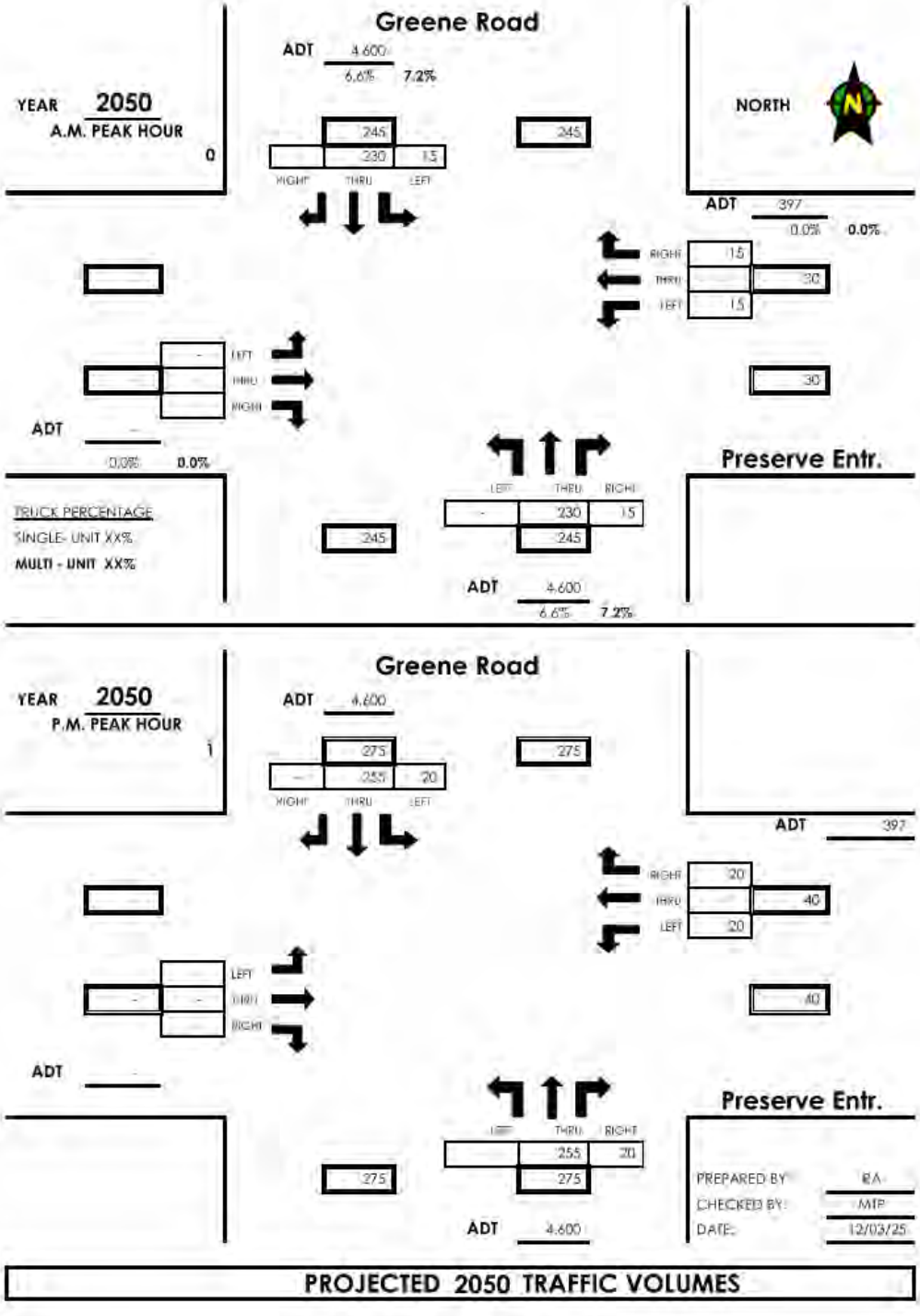
- Year 2050 was selected as the future No-Build design year for the traffic operations analysis.
- Based on CMAP 2050 projections, the future ADT on Greene Road was estimated to be 4,600 vpd.
- Traffic volumes associated with the Forest Preserve entrance were assumed to increase by the same percentage as Greene Road traffic, representing an approximate 20 percent increase over the next 25 years. Accordingly, the future ADT for the Forest Preserve entrance was estimated to be 397 vpd. Turning movements were assumed to be evenly split, with 50 percent left-turning and 50 percent right-turning traffic.
- For the purposes of analysis, all single-unit (SU) and multi-unit (MU) truck traffic was assumed to operate as through traffic for movements on Kimberwick Lane and at the Forest Preserve entrance.
- No traffic growth was assumed for Kimberwick Lane, as no additional development or changes in land use are anticipated along this roadway.
- All future traffic volumes were rounded to the nearest multiple of five for analysis purposes.

The future peak-hour traffic volumes are illustrated in **Exhibit 3.**

Greene Valley Forest Preserve Development Plans

The Forest Preserve District of DuPage County has an approved Master Plan for the Greene Valley Forest Preserve. The framework plans proposed for development of the Greene Valley Forest Preserve between Hobson Road and 75th Street are provided in **Appendix L** for reference.

Exhibit 3 – No-Build (2050) Projected Traffic Volumes



Greene Road and Existing Forest Preserve Entrance Analysis

Traffic Control and Warrant Analysis

Traffic signal and all-way STOP warrant analyses were conducted in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). The data inputs and detailed warrant evaluation results are provided in **Appendix M (Exhibits M1 through M6).** The analyses indicate that **neither traffic signal control or all-way STOP control is warranted** at the study intersection under existing traffic conditions.

Based on the warrant analysis results and engineering judgment, STOP control at the existing entrance remains the most appropriate form of traffic control. This conclusion is supported by traffic volumes and operating speeds along Greene Road, low traffic demand at the existing entrance, adequate gap availability, and the absence of a correctable crash pattern. Maintaining STOP control at the existing entrance provides a clear assignment of right-of-way, minimizes unnecessary delay on Greene Road, and ensures safe and efficient operation for all users.

Auxiliary Lane Warrant Analysis

The IDOT Bureau of Design and Environment (BDE) and Bureau of Local Roads and Streets (BLRS) criteria were used to evaluate the need for auxiliary lanes on Greene Road at the existing Forest Preserve entrance under future (2050) traffic conditions.

Section 36-3 of the IDOT BDE Manual provides guidance for evaluating right-turn and left-turn lane warrants. Based on the design speed of 40 mph for Greene Road and the projected approach traffic volumes, a northbound right-turn lane is **not** warranted at the Forest Preserve entrance.

In addition, Figure 36-3.G of the IDOT BDE Manual was used to evaluate left-turn lane warrants. Based on the projected southbound advancing volumes and northbound opposing volumes, a southbound left-turn lane is **not** warranted at the Forest Preserve entrance. A summary of the application of the turn-lane warrant analysis is provided in **Appendix I.**

Intersection Design Study (IDS)

An Intersection Design Study (IDS) is a graphical representation of existing and proposed intersection configurations and is based on an evaluation of traffic demands and physical conditions at the intersection.

An IDS was prepared for the existing intersection to evaluate geometric elements and operational performance. All IDS exhibits related to the existing intersection are provided in **Appendix B.**

Horizontal Alignment & Vertical Profile Analysis

Horizontal alignments and vertical profiles were developed for Greene Road, the existing Forest Preserve entrance, and Kimberwick Lane using available survey data, aerial imagery, and the existing terrain model.

The Greene Road horizontal alignment was developed for the relevant study limits using existing topographic and aerial data. No horizontal curves are present within the existing alignment; however, a deflection angle of 0° 35′ 51.2″ occurs at Station 32+37.14, which is less than the 1-degree deflection permitted under IDOT BLRS criteria without the use of a horizontal curve. Accordingly, the existing alignment meets IDOT BLRS requirements.

The Greene Road vertical profile was developed using the existing terrain model. No grades exceeding 5 percent were identified within the study limits. Three vertical curves are present: one crest curve north of the existing entrance, one sag curve at the entrance, and one crest curve south of the existing entrance.

The sag vertical curve at the existing entrance provides approximately 225 feet of stopping sight distance (SSD), which is less than the required 305 feet for a 40-mph design speed and therefore does **not** meet IDOT SSD criteria. Refer to **Appendix H (Exhibit H5)** for calculations and supporting documentation.

The horizontal alignment for the existing Forest Preserve entrance was developed for the relevant approach limits. The existing vertical profile was created using the existing terrain model to evaluate grades, which were found to be acceptable and meet IDOT BLRS criteria.

Similarly, the horizontal alignment for Kimberwick Lane was developed for the relevant study limits. The existing vertical profile was created using the existing terrain model to evaluate grades, which were also found to be acceptable and meet IDOT BLRS criteria.

Refer to **Appendix A (Exhibit A5)** for the Kimberwick Lane and existing Forest Preserve entrance profiles. Refer to **Appendix B (Exhibit B4)** for the best-fit profile of Greene Road

Intersection Sight Distance Analysis & Tree Removal

Intersection sight distance is the distance required for a driver without the right-of-way to perceive, react to, and safely avoid conflicts with approaching vehicles. Adequate intersection sight distance is provided through the establishment of sight triangles, which allow drivers to observe and respond to potentially conflicting traffic movements.

Sight triangles were developed for the existing Forest Preserve entrance in accordance with applicable standards and adjusted to reflect a 4 percent roadway grade (see Appendix H, Exhibits H10 through H12). The required intersection sight distance was determined to be approximately 445 feet to the south and 455 feet to the north of the entrance.

Within the required sight triangles, five trees were identified on the south side of the entrance and four trees were identified on the north side (refer to Appendix B, Exhibit B2). Of the nine trees identified within the sight triangles, two trees on the south side have trunk diameters greater than 24 inches, while the remaining trees have small trunk diameters less than 15 inches. Refer to **Appendix B (Exhibit B2)** for the intersection sight triangle exhibit.

Physical Elements of Intersection

The existing entrance to the Greene Valley Forest Preserve is located on the east side of Greene Road (north–south) and forms a T-intersection with Greene Road. There are no existing light poles. The intersection is STOP-controlled on the Forest Preserve entrance approach. Physical elements of the intersection are illustrated in **Appendix B (Exhibit B3).**

Design Vehicle and AutoTurn vehicle Movements

movement exhibits are provided in **Appendix B (Exhibit B5).**

Single Unit (SU) truck was selected as the design vehicle for the intersection in accordance with Figure 34-1G of the IDOT BLRS Manual (see standards in **Appendix H, Exhibit H9).** While a 5-ton weight restriction is posted along this segment of Greene Road, the SU design vehicle was selected for geometric evaluation purposes only to conservatively represent the largest single-unit vehicle reasonably expected to access the Forest Preserve entrance, including maintenance and emergency vehicles that may legally operate under the posted restriction.

AutoTURN analysis was performed to evaluate SU truck turning movements to and from the existing Forest Preserve entrance. The analysis indicates that a SU truck can successfully complete all ingress and egress movements while meeting applicable IDOT BLRS geometric design guidelines.

AutoTURN movement exhibits are provided in **Appendix B (Exhibit B5).**

Capacity and Queue Analysis

A primary result of a capacity analysis is the assignment of Level of Service (LOS) to traffic facilities under varying traffic flow conditions. The capacity analysis methodology is based on the concepts and procedures outlined in the Transportation Research Board's (TRB) Highway Capacity Manual (HCM).

Level of Service (LOS) is defined as a qualitative measure that describes operational conditions within a traffic stream and the perception of those conditions by motorists and/or passengers. LOS provides an index of traffic flow quality based on factors such as speed, travel time, freedom to maneuver, traffic interruptions, comfort, convenience, and safety.

Six levels of service are defined for each type of facility and are designated by letters A through F, with LOS A representing the best operating conditions and LOS F representing the worst. LOS C is typically considered acceptable for design purposes, while LOS D is often regarded as the lower threshold of acceptable operations. Because LOS is dependent on traffic demand, a roadway or intersection may operate at different LOS values depending on the time of day, day of week, or season. A description of the operating conditions under each level of service is provided in **Table 2**.

Capacity and queue analyses were conducted for Existing (2025) and No-Build (2050) Projected traffic volume conditions using the procedures described above. The results of the intersection analyses are discussed in the following sections and are summarized in **Table 3**. Detailed analysis worksheets are provided in **Appendix J**.

Greene Road and Existing Entrance

Under both existing (2025) and future No-Build (2050) traffic conditions, all movements at the unsignalized intersection of Greene Road and the existing Forest Preserve entrance are expected to operate at acceptable levels of service (LOS B or better) during both peak hours analyzed.

Table 2: Level of Service Summary

LOS	Description	Average Control Delay (sec/veh)
		Unsignalized
A	Describes conditions with little to no delay to motorists.	≤10
B	Represents a desirable level with relatively low delays to motorists.	>10 and <15
C	Describes conditions with average delays to motorists.	>15 and ≤25
D	Describes operations where the influence of congestion becomes more noticeable. Delays are still within an acceptable range.	>25 and ≤35
E	Represents operating conditions with high delay values. This level is often considered within urban settings or for minor streets intersecting major arterial roadways to be the limit of acceptable delay.	>35 and ≤50
F	Is considered unacceptable to most drivers with high delay values that often occur when arrival flow rates exceed the capacity of the intersection	>50

Table 3: Level-of-Service and Queue Analysis Summary

Intersection/Peak Hour/Movement	Existing			Projected 2050		
	Delay[1]	LOS[2]	Queue[3]	Delay[1]	LOS[2]	Queue[3]
Weekday AM						
Greene Road SB- Left Turn	0.1	A	-	0.1	A	-
Greene Road SB- Through	7.7	A	0	7.8	A	0
West Approach - Forest Preserve Entrance	10.5	B	2.5	11.1	B	5.0
Weekday PM						
Greene Road SB- Left Turn	0.1	A	-	0.2	A	-
Greene Road SB- Through	7.7	A	0	7.9	A	0
West Approach - Forest Preserve Entrance	10.7	B	2.5	11.7	B	5.0

[1]Average control delay in seconds per vehicle.

[2]Level of service.

[3]95th percentile queue length in feet per lane.

Alternative Forest Preserve Entrance Locations Analysis

Three alternatives were evaluated for relocating the existing entrance. All three alternatives are located along Greene Road, north of the existing entrance location.

- Alternative A: Relocation of the existing entrance across from Kimberwick Lane, forming a four-legged intersection with Greene Road (north–south), Kimberwick Lane (west), and the relocated entrance (east).
- Alternative B: Relocation of the existing entrance across from Kimberwick Lane, forming a four-approach mini-roundabout with Greene Road (north–south), Kimberwick Lane (west), and the relocated entrance (east).
- Alternative C: Relocation of the existing entrance to a location north of Kimberwick Lane and south of Oxer Court.

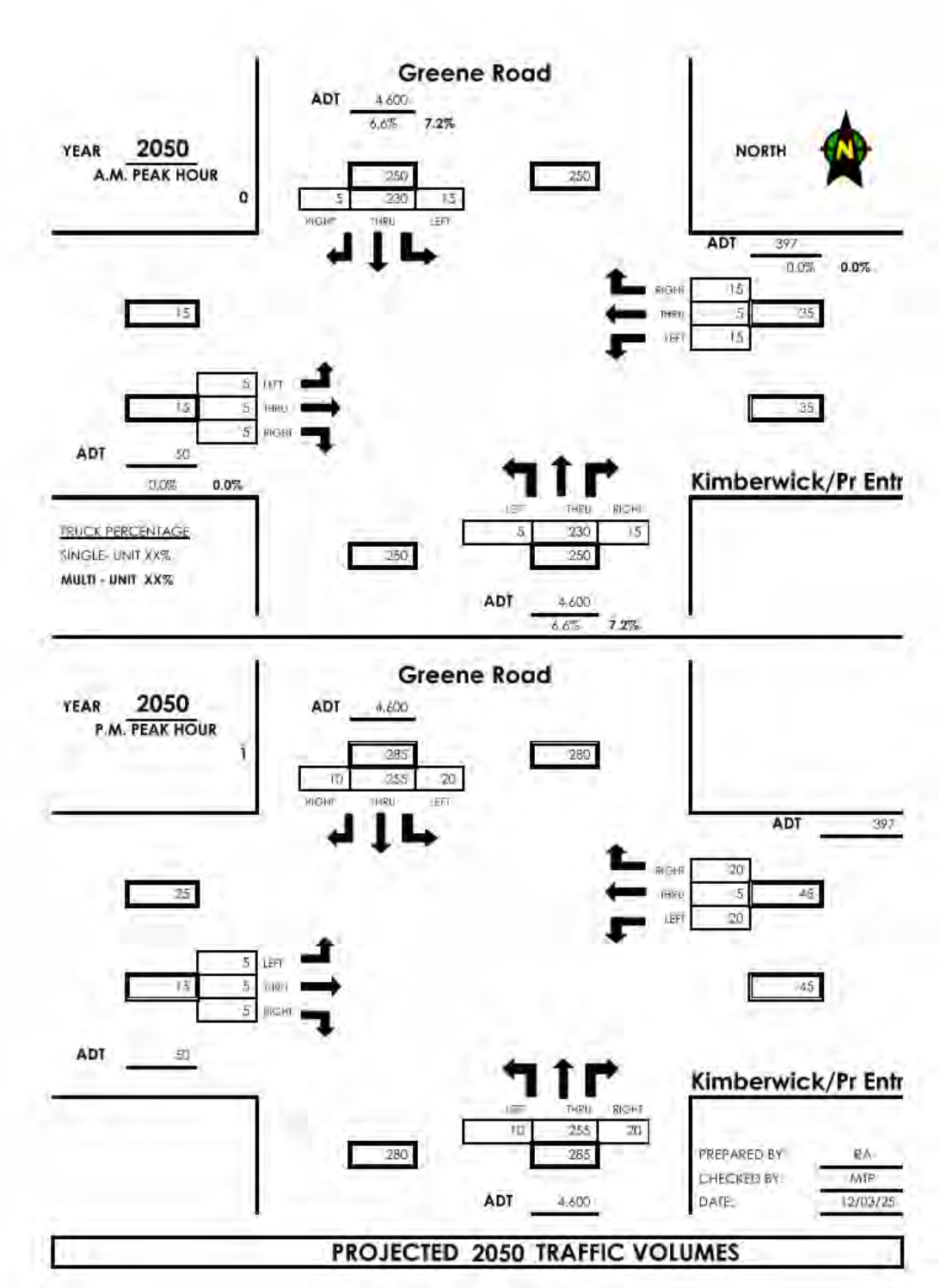
Kimberwick Traffic Volumes

All other assumptions and inputs are documented in the existing and future conditions sections. Traffic volumes for Kimberwick Lane were developed based on land use characteristics, as described below:

- Kimberwick Lane is a low-volume local residential street serving eleven single-family homes and terminating in a cul-de-sac. Traffic on Kimberwick Lane is limited to local residential and service vehicles. Assuming two vehicles per household and accounting for infrequent service and delivery activity, a conservative maximum daily traffic volume of 50 vehicles was assumed to use Kimberwick Lane.
- As noted previously, the AM peak hour was assumed to occur between 11:00 AM and 12:00 PM, and the PM peak hour was assumed to occur between 5:00 PM and 6:00 PM.
- For the AM peak hour, turning movement volumes were assumed at the Kimberwick Lane intersection due to very low residential traffic demand. A total of 15 vehicles were assumed to approach the intersection from Kimberwick Lane, consisting of 5 left-turning vehicles (northbound) onto Greene Road, 5 vehicles continuing through to the relocated Forest Preserve entrance, and 5 right-turning vehicles (southbound) onto Greene Road. Turning volumes entering Kimberwick Lane were assumed to be equal to the volumes exiting Kimberwick Lane.
- For the PM peak hour, traffic exiting Kimberwick Lane was assumed to be the same as the AM peak hour due to very low residential traffic demand. Traffic entering Kimberwick Lane during the PM peak hour was intentionally assumed at conservative, worst-case levels that exceed realistic residential demand and are not expected to occur, reflecting potential return trips from work and school. These conservative assumptions include 10 vehicles entering from the northbound Greene Road approach, 10 vehicles entering from the southbound Greene Road approach, and 5 vehicles entering from the relocated Forest Preserve entrance.

Year 2050 peak-hour traffic volumes are illustrated in **Exhibit 4.**

Exhibit 4 – Future 2050 Traffic Volumes



Alternative A: Four-Legged Intersection

This alternative involves relocating the Forest Preserve entrance to a location across from Kimberwick Lane, forming a conventional four-legged intersection with Greene Road (north–south), Kimberwick Lane (west), and the relocated Forest Preserve entrance (east).

Intersection Design Study (IDS)

An Intersection Design Study (IDS) was prepared for each of the proposed alternative intersections to evaluate the required physical elements and anticipated operational performance. A design speed of 30 mph was assumed for the new entrance approach. All Intersection Design Study (IDS) exhibits related to this proposed alternative are provided in **Appendix C.**

Horizontal Alignment

The horizontal alignment was developed by connecting Greene Road to the Forest Preserve parking lot using two reverse curves that meet IDOT BLRS geometric design criteria. Refer to Appendix H (Exhibits H2 and H3) for applicable design criteria. Horizontal alignment details are provided in **Appendix C (Exhibit C1).**

Vertical Profile

The vertical profile was developed by connecting Greene Road to the Forest Preserve parking lot using a single crest vertical curve with a length of 200 feet and a maximum grade of 4 percent, providing adequate SSD. Refer to **Appendix H (Exhibits H4 and H6)** for applicable design criteria. Vertical profile details are provided in **Appendix C (Exhibit C4).**

Intersection Sight Distance Analysis

Sight triangles were developed for the proposed entrance approach of the four-legged intersection. For the left-side sight triangle (south side of the proposed entrance), the sight triangle was adjusted to account for a 4 percent grade. The sight triangles were found to be free of obstructions. Applicable design standards are provided in **Appendix H (Exhibits H10 through H12**). Sight triangle exhibits are included in **Appendix C (Exhibit C2).**

Physical Elements of Intersection

This alternative includes a relocated entrance to the Greene Valley Forest Preserve on the east side of Greene Road (north–south). The entrance is proposed to operate as a STOP-controlled approach, with STOP control provided for traffic exiting the Forest Preserve to Greene Road and Kimberwick Lane.

A minimum 35-foot return radius is provided at the entrance to accommodate Single Unit (SU) truck ingress and egress movements. Additional physical elements include stop bars and regulatory signage.

Physical elements of the proposed intersection are illustrated in **Appendix C (Exhibit C3).**

Traffic Control and Warrant Analysis

A traffic control evaluation, including traffic signal and all-way STOP warrant analyses, was conducted for the proposed relocated Forest Preserve entrance at Kimberwick Lane for future 2050 traffic volumes, in accordance with the Manual on Uniform Traffic Control Devices (MUTCD). Traffic volumes, warrant worksheets, and supporting exhibits are provided in **Appendix N (Exhibits N1 through N6).**

The warrant analysis results indicate that **neither traffic signal control or all-way STOP control is warranted** at the relocated intersection for future (2050) traffic conditions. However, a review of the historical crash experience at Kimberwick Lane, as discussed in crash analysis section, indicates that crashes in the vicinity have primarily been related to right-of-way, turning, and angle movements. Based on the warrant analysis results, observed crash patterns, and engineering judgment, STOP control on both approaches at the relocated Forest Preserve entrance is recommended as the most appropriate form of traffic control. This configuration provides a clear assignment of right-of-way and is expected to reduce the potential for right-of-way-related crashes, including angle and turning conflicts, while maintaining safe and efficient operations for all users.

Design Vehicle and AutoTurn Movements

Single Unit (SU) truck was selected as the design vehicle for the proposed intersection in accordance with Figure 34-1G of the IDOT BLRS Manual. AutoTURN analyses were performed to evaluate SU truck turning movements to and from the proposed entrance location. The analyses indicate that a SU truck can successfully complete all ingress and egress movements while meeting IDOT BLRS design guidelines. Refer to **Appendix H (Exhibit H9)** for applicable design criteria. AutoTURN movement exhibits are provided in **Appendix C (Exhibit C5).**

Capacity and Queue Analysis

Capacity and queue analyses were conducted for projected (2050) traffic volume conditions using the procedures described previously. Projected 2050 traffic volumes are shown in Exhibit 4.

Under projected 2050 traffic conditions, all movements at the two-way STOP-controlled intersection of Greene Road and the proposed entrance (Alternative A)/Kimberwick Lane are expected to operate at Level of Service (LOS) B or better during both the AM and PM peak hours analyzed. This level of operation meets the IDOT BLRS guideline of LOS D or better. Refer to **Appendix H (Exhibit H14)** for applicable design criteria.

The results of the four-legged intersection analysis, along with the results for the other two alternatives, are compared in **Table 4.** Detailed analysis worksheets are provided in **Appendix J.**

Tree Removal

This alternative will require the removal of a minimum of five trees based on the proposed alignment and vertical profile **(see Appendix C, Exhibit C2).**

Alternative B: Mini-Roundabout

This alternative involves relocation of the existing entrance across from Kimberwick Lane, forming a four-approach mini-roundabout with Greene Road (north–south), Kimberwick Lane (west), and the relocated entrance (east).

Intersection Design Study (IDS)

IDS was prepared to evaluate the required physical elements and anticipated operational performance of the proposed mini-roundabout (Alternative B). A design speed of 30 mph was assumed for the relocated entrance approach, and a design speed of 20 mph was assumed for the roundabout.

All IDS exhibits related to the proposed mini-roundabout are provided in **Appendix D.**

Horizontal Alignment

The horizontal alignment for Alternative B is the same as Alternative A. The alignment was developed by connecting Greene Road to the Forest Preserve parking lot using two reverse curves with a radius of 250 feet, which meet IDOT BLRS geometric design criteria.

Refer to **Appendix D (Exhibit D1)** for horizontal alignment details.

Vertical Profile

The vertical profile for Alternative B is also the same as Alternative A. The profile was developed by connecting Greene Road to the Forest Preserve parking lot using a single crest vertical curve with a length of 200 feet and a maximum grade of 4 percent, providing adequate SSD. Applicable design criteria are provided in **Appendix H (Exhibits H2 and H3).**

Vertical profile details are provided in **Appendix D (Exhibit D4).**

Intersection Sight Distance Analysis

Section 36-10.04(p) of the IDOT Bureau of Design and Environment (BDE) Manual defines intersection sight distance as the distance required for a driver without the right-of-way to perceive, react to, and safely avoid conflicts with other vehicles. Intersection sight distance is achieved through the establishment of sight triangles. For roundabouts, the only locations requiring evaluation of intersection sight distance are the entry approaches.

The sight triangle is bounded by roadway segments defining limits away from the intersection on each conflicting approach and by a line connecting those limits. For roundabouts, sight distance legs follow the curvature of the roadway, and distances are measured along the vehicular path, not as straight-line distances.

Vehicles approaching a roundabout entry face conflicting traffic within the circulating roadway and on upstream entries. In most cases, it is desirable to provide no more than the minimum required intersection sight distance, as excessive sight distance can lead to higher vehicle speeds and reduced safety for all users. Applicable IDOT BDE roundabout sight-distance guidelines are provided in Appendix H (Exhibit H13).

Sight triangles were developed for the proposed roundabout layout and are shown in **Appendix D (Exhibit D2).** Roundabouts require significantly less intersection sight distance compared to conventional intersection alternatives.

Physical Elements of Roundabout

IDOT graphical representations of roundabout design elements are provided in **Appendix H (Exhibit H8).** The proposed roundabout will operate under YIELD control for all entering traffic from Greene Road, Kimberwick Lane, and the relocated Forest Preserve entrance.

Key geometric features of the proposed roundabout include:

Return radius: 50 feet

Inscribed circle diameter: 70 feet

Central island diameter: 40 feet (traversable)

Circulatory roadway width: 15 feet

The design intent is to allow passenger vehicles and school buses to circulate without traversing the central island, while Single Unit (SU) trucks may traverse the island as needed.

Recommended physical elements of the roundabout are illustrated in Appendix D (Exhibit D3).

Design Vehicle and AutoTurn Movements

School bus and a Single Unit (SU) truck were selected as design vehicles for Kimberwick Lane and the relocated Forest Preserve entrance, respectively, in accordance with Figure 34-1G of the IDOT BLRS Manual.

AutoTURN analyses were performed to evaluate turning movements for:

- School buses entering and exiting Kimberwick Lane, and
- SU trucks entering and exiting the relocated Forest Preserve entrance.

The analyses indicate that school buses can complete turning movements while traversing the central island, and SU trucks can complete turning movements. All simulated movements meet IDOT BLRS design guidelines.

AutoTURN movement exhibits are provided in Appendix D (Exhibit D5 & D6).

Capacity and Queue Analysis

Capacity and queue analyses were conducted for projected (2050) traffic volume conditions using the procedures described previously. Projected 2050 traffic volumes are shown in **Exhibit 4.**

Under projected 2050 traffic conditions, all approaches of the roundabout at Greene Road and the proposed entrance (Alternative B)/Kimberwick Lane are expected to operate at Level of Service (LOS) A during both the AM and PM peak hours analyzed. This level of operation meets the IDOT BLRS guideline of LOS D or better **(see Appendix H – Exhibit H14).**

The results of the capacity and queue analysis for Alternative B, along with the other two alternatives, are compared in **Table 4.** Detailed analysis worksheets are provided in **Appendix J.**

Tree Removal

This alternative will require removal of a minimum of six trees to accommodate the proposed alignment and vertical profile. While the alignment is same as Alternative A, the larger footprint of this alternative results in increased tree impacts (see Appendix D, Exhibit D3).

Alternative C: Offset Intersection

This alternative involves relocation of the existing entrance to a location north of Kimberwick Lane and south of Oxer Court.

Intersection Design Study (IDS)

An Intersection Design Study (IDS) was prepared for Alternative C to evaluate the required physical elements and anticipated operational performance of the proposed offset intersection. A design speed of 30 mph was assumed for the relocated entrance approach.

All IDS exhibits related to Alternative C are provided in **Appendix E.**

Horizontal Alignment

The horizontal alignment for Alternative C was developed by connecting Greene Road to the Forest Preserve parking lot using one horizontal curve with a radius of 700 feet and a curve length of 140 feet, which meets IDOT BLRS geometric design criteria.

Horizontal alignment details are provided in **Appendix E (Exhibit E1).**

Vertical Profile

The vertical profile for Alternative C was developed by connecting Greene Road to the Forest Preserve parking lot using a single crest vertical curve with a length of 200 feet and a maximum grade of 5 percent, which provides adequate SSD. Applicable design criteria are provided in **Appendix H (Exhibits H4 and H6).**

Vertical profile details are provided in **Appendix E (Exhibit E4).**

Intersection Sight Distance Analysis

Sight triangles were developed for the proposed Forest Preserve entrance approach at the offset T-intersection. The sight triangles were found to be free of obstructions.

Applicable intersection sight-distance standards are provided in **Appendix H (Exhibit H10 through H12).** Sight-distance exhibits are included in **Appendix E (Exhibit E2).**

Physical Elements of Intersection

The proposed entrance to the Greene Valley Forest Preserve is located on the east side of Greene Road (north–south) and will operate as a STOP-controlled approach, with STOP control provided for traffic exiting the Forest Preserve to Greene Road.

A minimum 35-foot return radius is provided to accommodate Single Unit (SU) truck turning movements. Additional physical elements include stop bars and regulatory signage, as required.

Physical elements of the proposed intersection are illustrated in **Appendix E (Exhibit E3).**

Design Vehicle and AutoTurn Movements

Single Unit (SU) truck was selected as the design vehicle for Alternative C in accordance with Figure 34-1G of the IDOT BLRS Manual. AutoTURN analyses were performed to evaluate SU truck ingress and egress movements at the proposed entrance.

The analyses indicate that a SU truck can successfully complete all turning movements while meeting IDOT BLRS design guidelines.

AutoTurn movement exhibits are provided in **Appendix E (Exhibit E5).**

Capacity and Queue Analysis

Capacity and queue analyses were conducted for projected (2050) traffic volume conditions using the procedures described previously. Projected 2050 traffic volumes are shown in Exhibit 4.

Under projected 2050 traffic conditions, all movements at the STOP-controlled intersection of Greene Road and the proposed Forest Preserve entrance (Alternative C) are expected to operate at Level of Service (LOS) B or better during both the AM and PM peak hours analyzed. This level of operation meets the IDOT BLRS guideline of LOS D or better. Refer to Appendix **H (Exhibit H14)** for applicable design criteria

The results of the four-legged intersection analysis, along with the results for the other two alternatives, are compared in **Table 4.** Detailed analysis worksheets are provided in **Appendix J.**

Tree Removal

This alternative will require the removal of a minimum of three trees (<15”) and some shrubs to accommodate the proposed alignment and vertical profile **(see Appendix E, Exhibit E3).**

Comparison of Existing Conditions Versus Alternatives

Traffic Operations

Capacity and queue analyses were conducted for all three alternatives under projected (2050) traffic conditions for both the AM and PM peak hours. All three alternatives are expected to operate at Level of Service (LOS) B or better during both peak periods.

The mini-roundabout alternative provides the lowest overall control delay and offers natural traffic-calming characteristics, including reduced operating speeds and limited traffic platooning on the Greene Road approaches; however, it also results in longer queues on the northbound and southbound Greene Road approaches, which is consistent with typical roundabout operating characteristics.

The existing condition and the offset intersection alternative show similar operational performance, as the offset alternative largely reflects a relocation of the existing entrance. The conventional four-legged intersection results in slightly higher delay and longer queues; however, the differences are minor and not operationally significant.

The results of the intersection analyses are summarized in **Table 4**.

Table 4: Alternatives - LOS, Delay & Queue Analysis Summary

Intersection/Peak Hour/Movement	Project AM Peak 2050			Projected PM 2050		
	Delay[1]	LOS[2]	Queue[3]	Delay[1]	LOS[2]	Queue[3]
Existing						
Forest Preserve Entrance -WB	11.1	B	5.0	11.7	B	5.0
Greene Road -NB	-	-	-	-	-	-
Greene Road -SB	0.6	A	0	0.7	A	0
Alternative A – Four-legged Intersection						
Kimberwick Lane EB	12.3	B	2.5	13.1	B	2.5
Forest Preserve Entrance -WB	12.1	B	5.0	13.1	B	7.5
Greene Road -NB	0.2	A	0.0	0.3	A	0.0
Greene Road -SB	0.6	A	0.0	0.7	A	0.0
Alternative B – Mini roundabout						
Kimberwick Lane EB	3.7	A	0.0	3.9	A	0
Forest Preserve Entrance -WB	3.8	A	2.5	4.0	A	2.5
Greene Road -NB	5.0	A	22.1	5.3	A	27.5
Greene Road -SB	5.0	A	22.1	5.4	A	27.5

Alternative C – Offset Intersection						
Forest Preserve Entrance -WB	11.1	B	5.0	11.7	B	5.0
Greene Road -NB	-	-	-	-	-	-
Greene Road -SB	0.6	A	0	0.7	A	0

[1]Average control delay in seconds per vehicle.

[2]Level of service. [3]95th percentile queue length in feet per lane.

Geometric and Safety Considerations

The existing intersection configuration does not meet current vertical stopping sight distance (SSD) and intersection sight distance criteria. Under existing conditions, the Forest Preserve entrance/Greene Road and Kimberwick Lane/Greene Road intersections function as two isolated T-intersections that are widely spaced and operate independently, with each exhibiting the conflict points typical of a T-intersection.

All three alternatives meet IDOT Bureau of Design and Environment (BDE) and Bureau of Local Roads and Streets (BLRS) geometric design criteria, including requirements for horizontal and vertical alignment, intersection sight distance, and design vehicle accommodation.

The conventional four-legged intersection introduces the greatest number of conflict points and the highest potential conflict severity; however, it maintains a conventional geometric layout that is familiar to drivers.

The mini-roundabout significantly reduces both the number and severity of conflict points, eliminates crossing conflicts, and requires less intersection sight distance compared to conventional intersections.

The offset intersection alternative, consisting of two closely spaced T-intersections, reduces the number and severity of conflict points compared to a conventional four-legged intersection while maintaining a familiar and intuitive intersection form for drivers. Although the intersections are closely spaced, adequate sight distance can be achieved, and the offset configuration offers a balanced approach by improving safety performance relative to a conventional intersection without introducing the operational or geometric changes associated with a mini-roundabout. Vehicle conflict points associated with the conventional four-legged intersection, the two closely spaced T-intersections, and the mini-roundabout are illustrated in **Exhibit 5** and summarized in **Table 5**.

Exhibit 5 – Vehicle Conflict Point Diagram

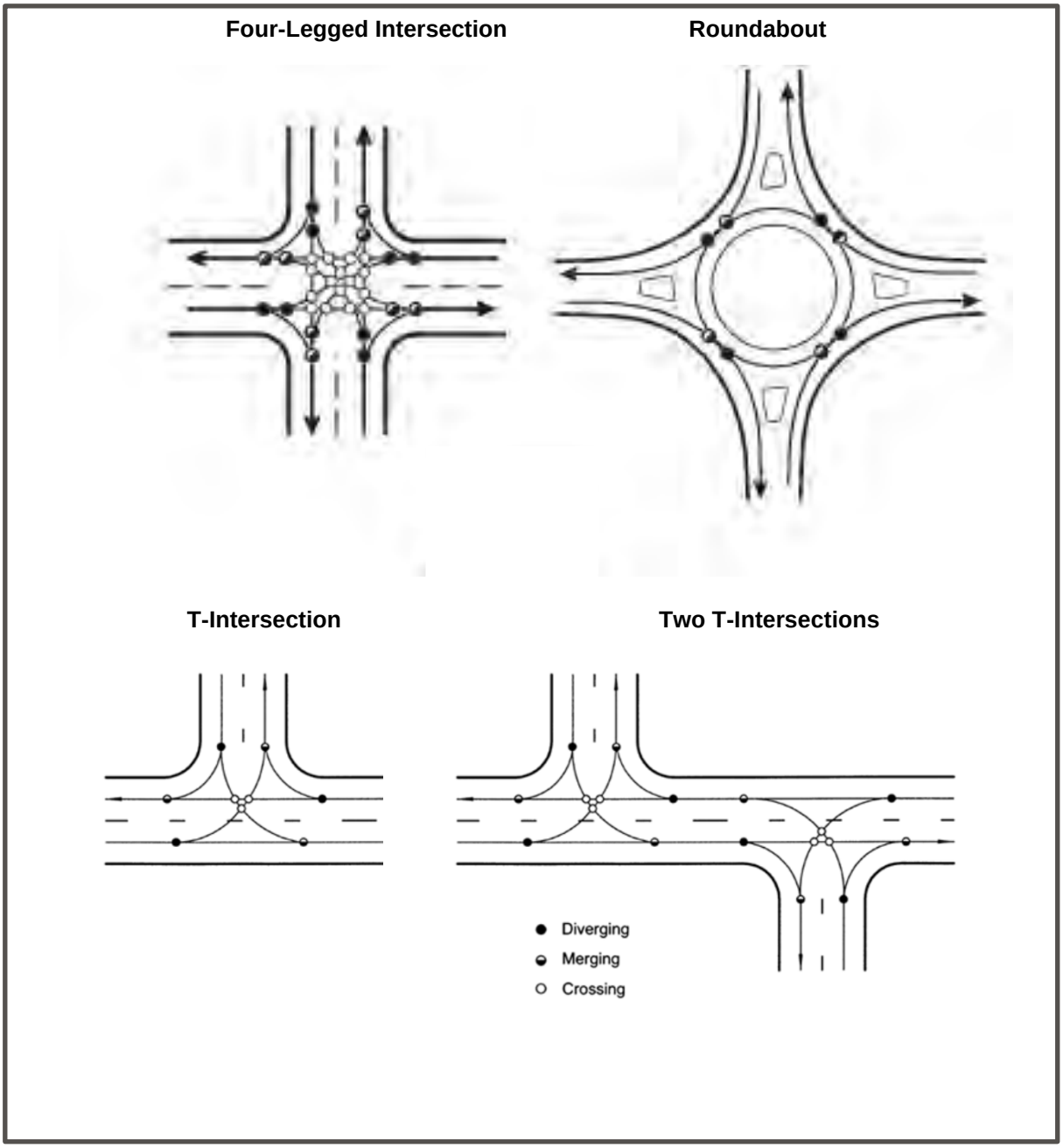


Table 5: Comparison of Intersection Conflict Points

Type of Conflict Point	Existing Existing Entrance + Kimberwick Lane	Alternative A Four-Legged Intersection	Alternative B Mini - Roundabout	Alternative C Offset Intersection
Diverging Conflicts	3+3	8	4	6
Merging Conflicts	3+3	8	4	6
Crossing Conflicts	3+3	16	0	6
TOTAL CONFLICTS	**18**	**32**	**8**	**18**

Constructability and Maintenance Considerations

The offset intersection and four-legged intersection alternatives present similar challenges. Both alternatives involve conventional roadway construction techniques, require moderate geometric modifications, and can be implemented within the existing corridor. Long-term maintenance activities, including pavement resurfacing, snow removal, drainage upkeep, and signage maintenance, are expected to be comparable for both alternatives.

The mini-roundabout alternative involves the most complex construction, requiring precise geometric layout, central island construction, splitter islands, and additional pavement markings and signage. While operationally effective, the roundabout introduces higher long-term maintenance considerations, including upkeep of channelization features, pavement markings, signage, and snow removal operations around the central island.

Cost Considerations

A preliminary, planning-level cost estimate was prepared for each alternative and is summarized in **Table 6**. The estimates are based on preliminary quantities, assumed pavement sections, and typical unit prices. A contingency allowance of 30 percent was applied to account for uncertainties associated with preliminary design, assumed quantities, potential utility coordination, maintenance of traffic requirements, and other factors typical of early project development. Cost differences among the alternatives are driven primarily by the longer roadway length associated with Alternative C and the increased construction footprint required for the roundabout in Alternative B.

Table 6: Preliminary Cost estimate of Alternatives (in $1,000)

Cost Category	Alternative A Four-Legged Intersection	Alternative B Mini - Roundabout	Alternative C Offset Intersection
Earth Excavation	35	36	37
Subgrade Improvement	13	14	14
Base Course	19	19	20
HMA Surface	17	30	17
HMA Binder	17	30	17
Aggregate Shoulders	0	5	0
Curb and Gutter	0	38	0
Pavement Removal	10	40	10
Subtotal	111	212	115
Contingency (30%)	33	64	35
TOTAL	**144**	**276**	**150**

Note: Costs are shown in thousands of dollars and rounded to the nearest $1,000; contingency is calculated as 30% of subtotal (rounded).

Pedestrian and Bike facilities Considerations

No pedestrian or bicycle facilities currently exist within the study area. All three alternatives are expected to have similar and minimal impacts on pedestrians and bicyclists, with no significant changes to existing non-motorized conditions.

Site-Specific Considerations – Terrain, Geometry & Tree Impact

Terrain and vertical roadway geometry were key site-specific considerations in evaluating the existing condition and the proposed alternatives. Under existing conditions, deficiencies in vertical stopping sight distance and intersection sight distance would require reconstruction of the vertical curve on Greene Road, regarding the Forest Preserve parking lot, and removal of mature trees to fully meet current design criteria. Overall, the existing condition would require removal of approximately nine (9) trees, representing the greatest tree removal among the alternatives evaluated.

The conventional four-legged intersection alternative is located near an existing crest vertical curve on Greene Road. Analyses confirm that adequate stopping sight distance and intersection sight distance can be achieved in accordance with IDOT BLRS criteria. The entrance approach can be constructed without extensive geometric modifications to Greene Road. Compared to the offset intersection alternative, this option requires less earthwork and is located in more favorable terrain, while offering a simpler construction layout than the mini-roundabout alternative. The conventional four-legged intersection is estimated to impact approximately five (5) trees, which is greater than the offset intersection alternative but less than the mini-roundabout alternative.

The mini-roundabout alternative utilizes the same general alignment and vertical profile as the conventional entrance approach; however, the splitter island is located on or near the crest vertical curve on Greene Road. While sight-distance requirements are met, placement of the splitter island on the crest curve introduces additional geometric and constructability considerations, including grading transitions, visibility of channelization features, and maintenance operations. Among the build alternatives, the mini-roundabout would require the greatest degree of reconstruction to Greene Road due to the need for a fully reconstructed intersection geometry, including the central island and splitter islands. This alternative is estimated to impact approximately six (6) trees, representing the highest tree impact among the alternatives evaluated.

The offset intersection alternative is proposed in the area north of Kimberwick Lane and exhibits greater terrain variation, which would require additional earthwork and grading to achieve acceptable vertical geometry. However, these grading adjustments can be accommodated within the roadway corridor and would not result in significant impacts to Greene Road. The offset intersection alternative is estimated to impact approximately three (3) trees, representing the lowest tree impact among the alternatives evaluated.

Table 7: Summary of Existing Conditions and Proposed Alternatives Evaluation

Evaluation Criteria	Existing Entrance	Alternative A Four-Legged Intersection	Alternative B Mini - Roundabout	Alternative C Offset Intersection
Vertical Stopping Sight Distance along Greene Road near entrance location	Does not fully meet criteria	Meets criteria	Meets criteria	Meets criteria
Intersection Sight Distance	Does not fully meet criteria	Meets criteria	Meets criteria	Meets criteria
Vertical Geometry Modifications of Greene Road	Major reconstruction required	No Impact	No Impact	No Impact
Extent of Greene Road Reconstruction	High (vertical curve reconstruction required)	Low	High (full intersection reconstruction required)	Low
Traffic Operations (Future Year)	Acceptable (only with improvements)	Acceptable	Acceptable	Acceptable
Earthwork and Grading Requirements	Low to Moderate	Moderate	Moderate	Moderate to high
Estimated Tree Impacts (Number of Trees)	High (9)	Moderate (5)	Moderate (6)	Low (3)

Constructability	Moderate	Moderate	Most complex	Moderate
Safety (Number of Conflict Points)	Moderate (18)	Low (32)	High (8)	Moderate (18)
Long-Term Maintenance Considerations	Moderate	Moderate	High	Moderate
Relative Construction Cost	Moderate to high	Moderate	High	Moderate

Conclusion and Recommendations

Summary of Existing Conditions and Proposed Alternatives Evaluation is provided in **Table 7.**

Conclusion

- The existing entrance does not fully meet current IDOT BLRS vertical stopping sight distance and intersection sight distance criteria and would require substantial reconstruction of Greene Road, including vertical curve reconstruction and removal of the greatest number of mature trees, to achieve compliance.
- All three proposed alternatives meet applicable IDOT BLRS design criteria and provide acceptable future traffic operations.
- The four-legged intersection alternative provides acceptable traffic operations and constructability; however, it results in moderate tree impacts and has the highest number of vehicular conflict points among the proposed alternatives.
- The mini-roundabout alternative reduces the number of vehicular conflict points; however, it requires the greatest degree of reconstruction to Greene Road, introduces the highest constructability and long-term maintenance demands, and results in the greatest tree impacts among the proposed alternatives.
- **The offset intersection alternative (Alternative C) provides the most balanced solution among the proposed alternatives by minimizing impacts to Greene Road and adjacent facilities, reducing vehicular conflict points relative to the four-legged intersection, and resulting in the lowest number of tree impacts, while maintaining acceptable traffic operations and constructability.**

Recommended Alternative

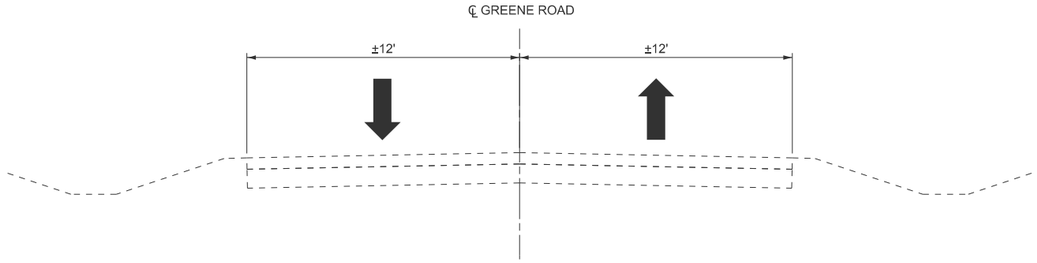
Based on a comparative evaluation of safety, capacity, operations, and cost, **it is recommended that the Forest Preserve entrance be relocated north of Kimberwick Lane and constructed as an offset T-intersection (Alternative C), with STOP control provided on the relocated Forest Preserve entrance approach only.**

Alternative C meets applicable IDOT BLRS design criteria and provides acceptable future traffic operations. This alternative results in fewer vehicular conflict points than the four-legged intersection alternative, requires less long-term maintenance than the mini-roundabout alternative, and has similar overall construction cost like Alternative A. As summarized in Table 7, Alternative C represents a balanced and practical solution for the project site. As the layout and functionality of the Greene Valley Forest Preserve evolve under the Master Plan, the proposed offset entrance provides an appropriate level of safety while maintaining adequate capacity and efficient traffic operations.

As a secondary option, the four-legged intersection alternative (Alternative A) may also be considered. Alternative A meets applicable design criteria and provides acceptable traffic operations, offers a lower overall construction cost, and benefits from driver familiarity with conventional four-legged intersections; however, it results in greater tree impacts and a higher number of vehicular conflict points compared to Alternative C.

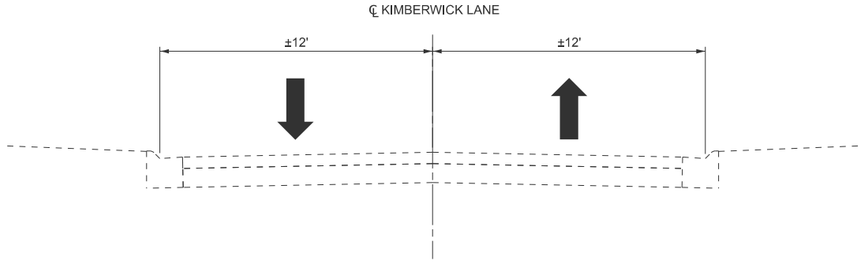
The mini-roundabout alternative (**Alternative B**) reduces vehicular conflict points but requires the greatest degree of reconstruction to Greene Road, introduces increased constructability and long-term maintenance considerations, and results in greater environmental impacts. Therefore, Alternative B is not recommended.

Appendix A Base Map Exhibits



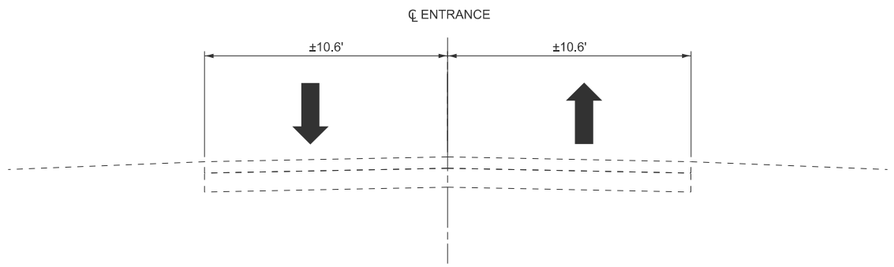
GREENE ROAD TYPICAL SECTION

(LOOKING NORTH) (NOT TO SCALE)



KIMBERWICK LANE TYPICAL SECTION

(LOOKING EAST) (NOT TO SCALE)



FOREST PRESERVE ENTRANCE TYPICAL SECTION

(LOOKING EAST) (NOT TO SCALE)

MODEL: Default
FILE NAME: c:\pw_working\infra01\raarora\d0243934\D12345-Border.dgn

Stantec

USER NAME = raarora	DESIGNED - RA	REVISED -
	DRAWN - MM	REVISED -
	CHECKED - MP	REVISED -
PLOT DATE = 12/11/2025	DATE - 12/15/2025	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXHIBIT A1 - EXISTING TYPICAL SECTIONS

SCALE: NOT TO SCALE | SHEET 1 OF 1 SHEETS | STA. XX | TO STA. XX

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
XX	XX	DUPAGE	5	1
		CONTRACT NO. XX		
	ILLINOIS	FED. AID PROJECT		

MODEL: Default
FILE NAME: c:\pw_working\infra01\raarora\d0243934\D12345-Border.dgn

Stantec	USER NAME = raarora	DESIGNED - RA	REVISED -
		DRAWN - MM	REVISED -
		CHECKED - MP	REVISED -
	PLOT DATE = 12/11/2025	DATE - 12/15/2025	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXHIBIT A2 - GREENE VALLEY FOREST PRESERVE SITE OVERVIEW

SCALE: 1" = 50' | SHEET 1 OF 2 SHEETS | STA. 21+00 | TO STA. 36+50

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
XX	XX	DUPAGE	5	2
		CONTRACT NO. XX		
	ILLINOIS	FED. AID PROJECT		

A3

MATCHLINE STA 36+50

HOUSE (TYP.)

OXER COURT

22.5'

48.6'

POT STA 42+26.43

HOBSON ROAD

VARDON COURT

GREENE ROAD

33'

DIDRIKSON LANE

DIDRIKSON LANE

TRUCK WEIGHT LIMIT SIGN

SPEED LIMIT SIGN "35 MPH" AND STREET NAME SIGN

EX ROW (TYP)

UTILITIES BASED ON SURVEY (TYP.)

N04°04'56.5"W

37 38 39 40+00 41 42

BARN

SILO

PRESERVE BOUNDARY LIMITS (TYP.)

GREENE COTTAGE

GREENE VALLEY FOREST PRESERVE

SHRUBS (TYP.)

GREENE TRAIL

41.5'

ROW (TYP.)

PRESERVE BOUNDARY LIMITS (TYP.)

N

0 50 100

SCALE IN FEET

MODEL: Default
FILE NAME: c:\pw_working\infra01\raarora\d0243934\D12345-Border.dgn

Stantec

USER NAME = raarora	DESIGNED - RA	REVISED -
	DRAWN - MM	REVISED -
	CHECKED - MP	REVISED -
PLOT DATE = 12/11/2025	DATE - 12/15/2025	REVISED -

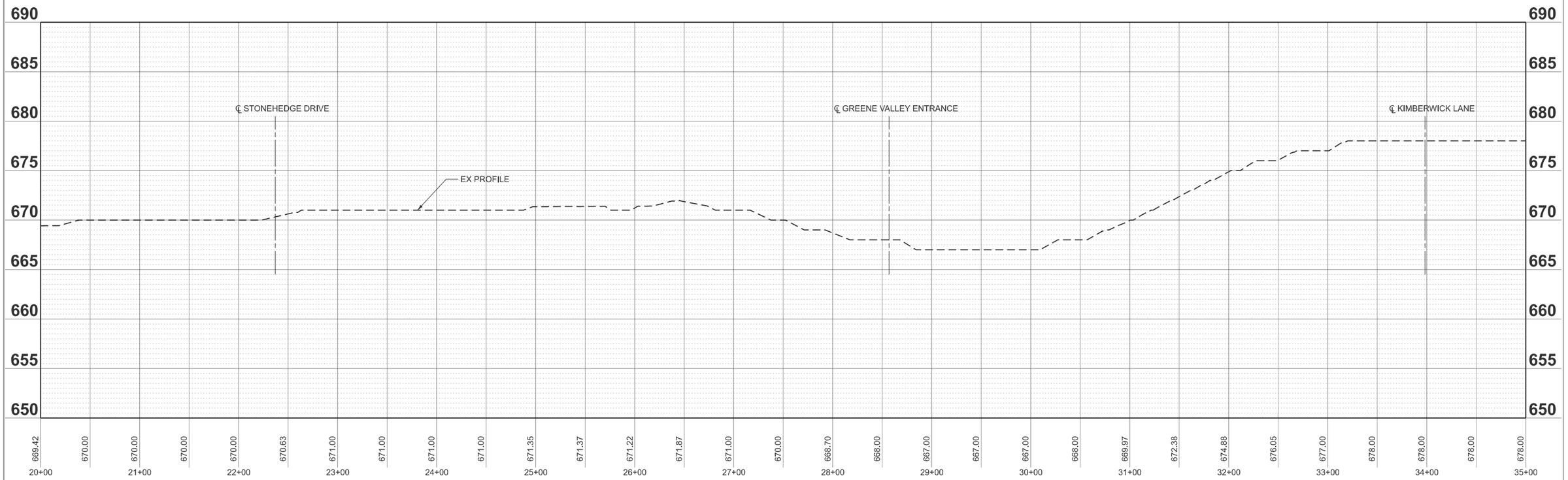
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

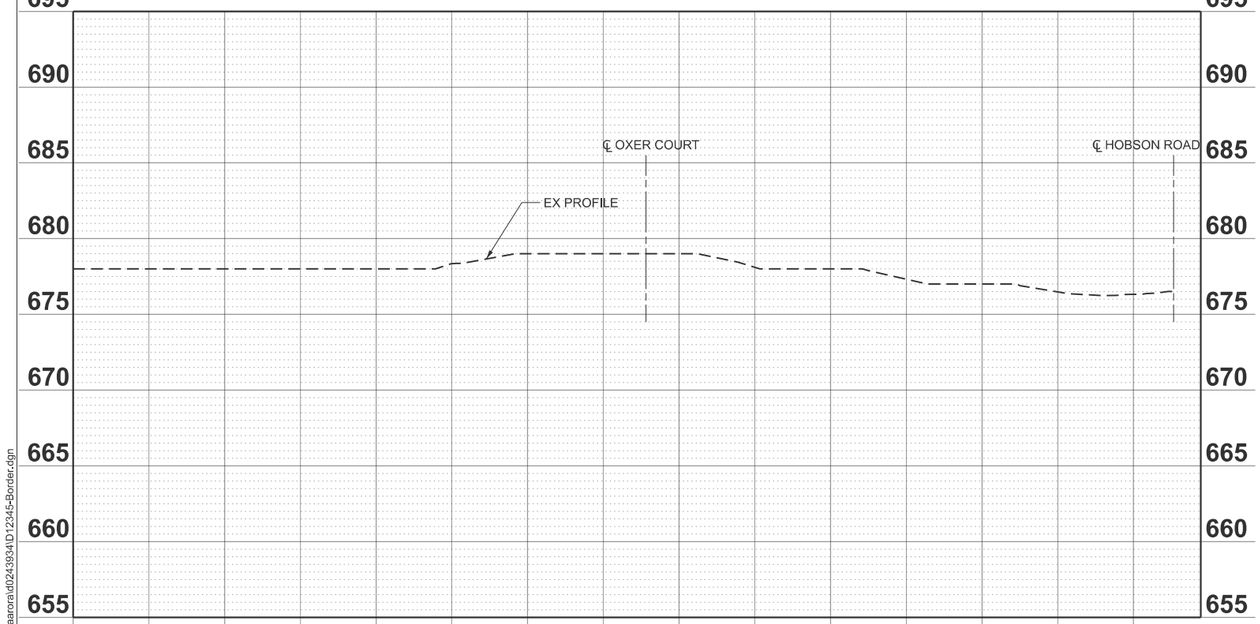
EXHIBIT A3 - GREENE VALLEY FOREST PRESERVE SITE OVERVIEW

SCALE: 1" = 50' | SHEET 2 OF 2 SHEETS | STA. 36+50 | TO STA. 42+27

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
XX	XX	DUPAGE	5	3
		CONTRACT NO. XX		
	ILLINOIS	FED. AID PROJECT		

A4





PROFILE : EXISTING GREENE ROAD

NOTE:
1. EXISTING PROFILES HAVE BEEN CREATED USING THE 1 FEET LIDAR DATA OF DUPAGE COUNTY.

MODEL: Default
FILE NAME: c:\pw_workinginfra01\raarora\d0243934\D12345-Border.dgn

Stantec

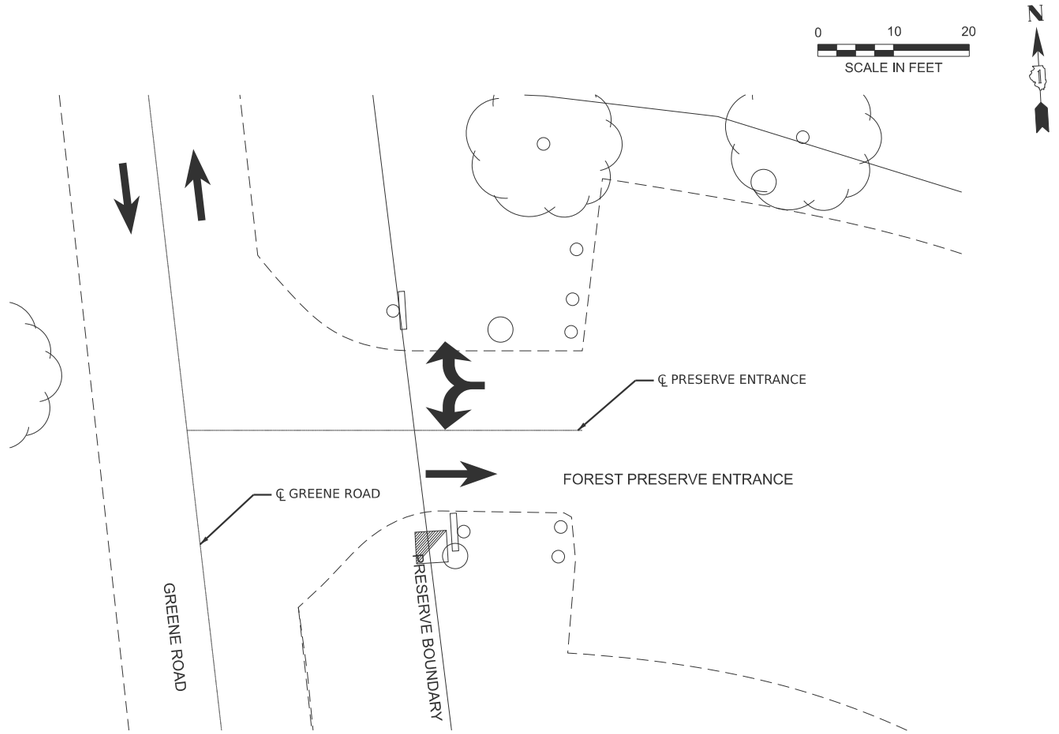
USER NAME = raarora	DESIGNED - RA	REVISED -
	DRAWN - MM	REVISED -
	CHECKED - MP	REVISED -
PLOT DATE = 12/11/2025	DATE - 12/15/2025	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

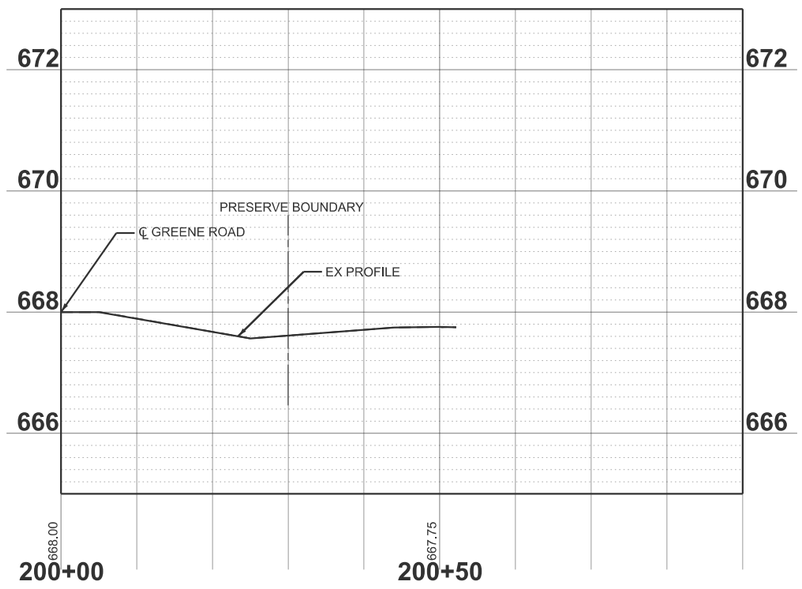
EXHIBIT A4 - EXISTING GREENE ROAD PROFILE

SCALE: 1"=50' | SHEET 1 OF 1 SHEETS | STA. 20+00.00 | TO STA. 42+50.00

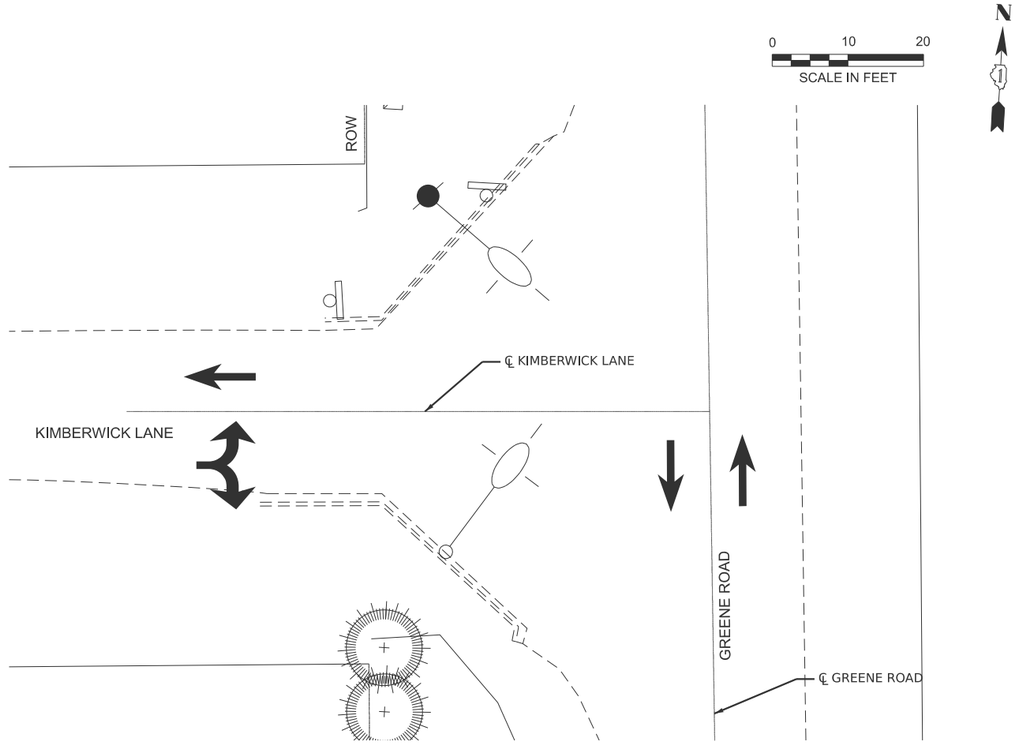
F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
XX	XX	DUPAGE	5	4
		CONTRACT NO. XX		
	ILLINOIS FED. AID PROJECT			



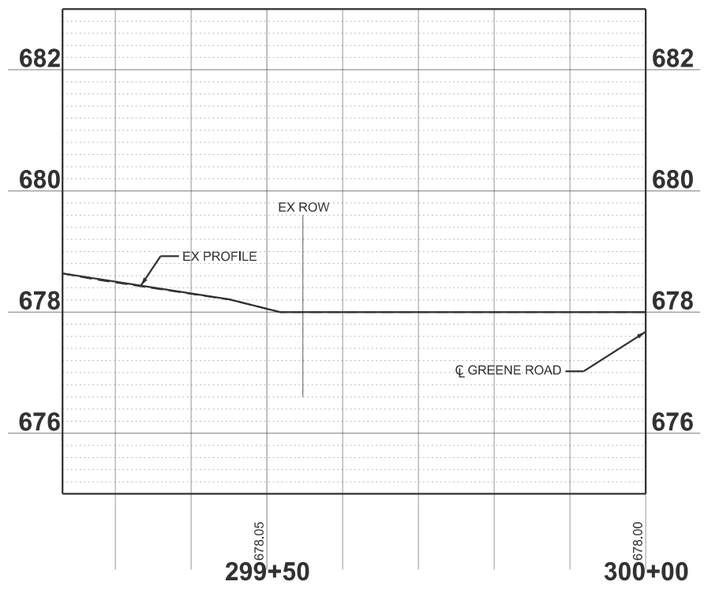
PLAN : EXISTING GREENE VALLEY ENTRANCE



PROFILE : EXISTING GREENE VALLEY ENTRANCE



PLAN : EXISTING KIMBERWICK LANE



PROFILE : EXISTING KIMBERWICK LANE

NOTE:
1. EXISTING PROFILES HAVE BEEN CREATED USING THE 1 FEET LIDAR DATA OF DUPAGE COUNTY.

MODEL: Default
FILE NAME: c:\pw_workinginfra01\raarora\d0243934\D12345-Border.dgn

Stantec

USER NAME = raarora	DESIGNED - RA	REVISED -
	DRAWN - MM	REVISED -
	CHECKED - MP	REVISED -
PLOT DATE = 12/11/2025	DATE - 12/15/2025	REVISED -

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

EXHIBIT A5 - EXISTING GREENE VALLEY ENTRANCE AND KIMBERWICK LANE PLAN AND PROFILE

SCALE: 1"=10' | SHEET 1 OF 1 SHEETS | STA. NA | TO STA. NA

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
XX	XX	DUPAGE	5	5
		CONTRACT NO. XX		
	ILLINOIS	FED. AID PROJECT		

Appendix B Existing Intersection IDS

TWO-WAY STOP-CONTROLLED CAPACITY DESIGN ANALYSIS

PROGRAM USED: HCS 2026 VERSION: 8.5 PEAK HOUR FACTOR: 0.95
SIGNALIZED INTERSECTION(S) WITHIN 0.25 MILES OF INTERSECTION ALONG MAJOR ROUTE? YES
FLARED APPROACH FOR MINOR STREET RIGHT-TURNING VEHICLE? (YES/NO): YES ON THE EAST APPROACH, N/A ON THE WEST APPROACH.
SINGLE OR TWO-STAGE GAP ACCEPTANCE? SINGLE

APPROACH		EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND		
MAJOR OR MINOR LEG?		MINOR			MINOR			MAJOR			MAJOR		
LANE GROUP		L	T	R	L	T	R	L	T	R	L	T	R
NUMBER OF LANES					0	1	0		1	0	0	1	
2050 30TH MAX. HOUR TRAFFIC (V) (veh/h)	A.M.				15		15		230	15	15	230	
	P.M.				20		20		255	20	20	255	
PEDESTRIANS/HOUR (ped/h) COUNT OR ESTIMATE?	A.M.				0		0				0	0	
	P.M.				0		0				0	0	
CAPACITY $c_{p,x}$ OR) $_t$ (veh/h)	A.M.					621					1319		
	P.M.					578					1284		
v/c RATIO $(v/c_{p,x}$	A.M.					0.05					0.01		
	P.M.					0.07					0.02		
STORAGE QUEUE (NO. OF VEHICLES)	A.M.					0.2					0.0		
	P.M.					0.2					0.0		
CONTROL DELAY (SECONDS)	A.M.					11.1					7.8	0.1	
	P.M.					11.7					7.9	0.2	
LANE GROUP LEVEL OF SERVICE	A.M.					B					A	A	
	P.M.					B					A	A	
APPROACH DELAY, d (SEC)	A.M.				11.1						0.5		
	P.M.				11.7						0.5		
APPROACH LEVEL OF SERVICE	A.M.				B						A		
	P.M.				B						A		

ELEMENTS CONTROLLING DESIGN

PREFERRED ROUTE (NORTH-SOUTH LEG):

F.A. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: N/A.
STREET NAME: GREENE ROAD. SRA ROUTE? NO.
FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR. OSOW DESIGN? NO.
EXISTING ADT: 3800 VPD. DESIGN YEAR ADT: 4600 VPD.
PROPOSED DESIGN SPEED: 40 MPH. PROPOSED POSTED SPEED: 35 MPH.

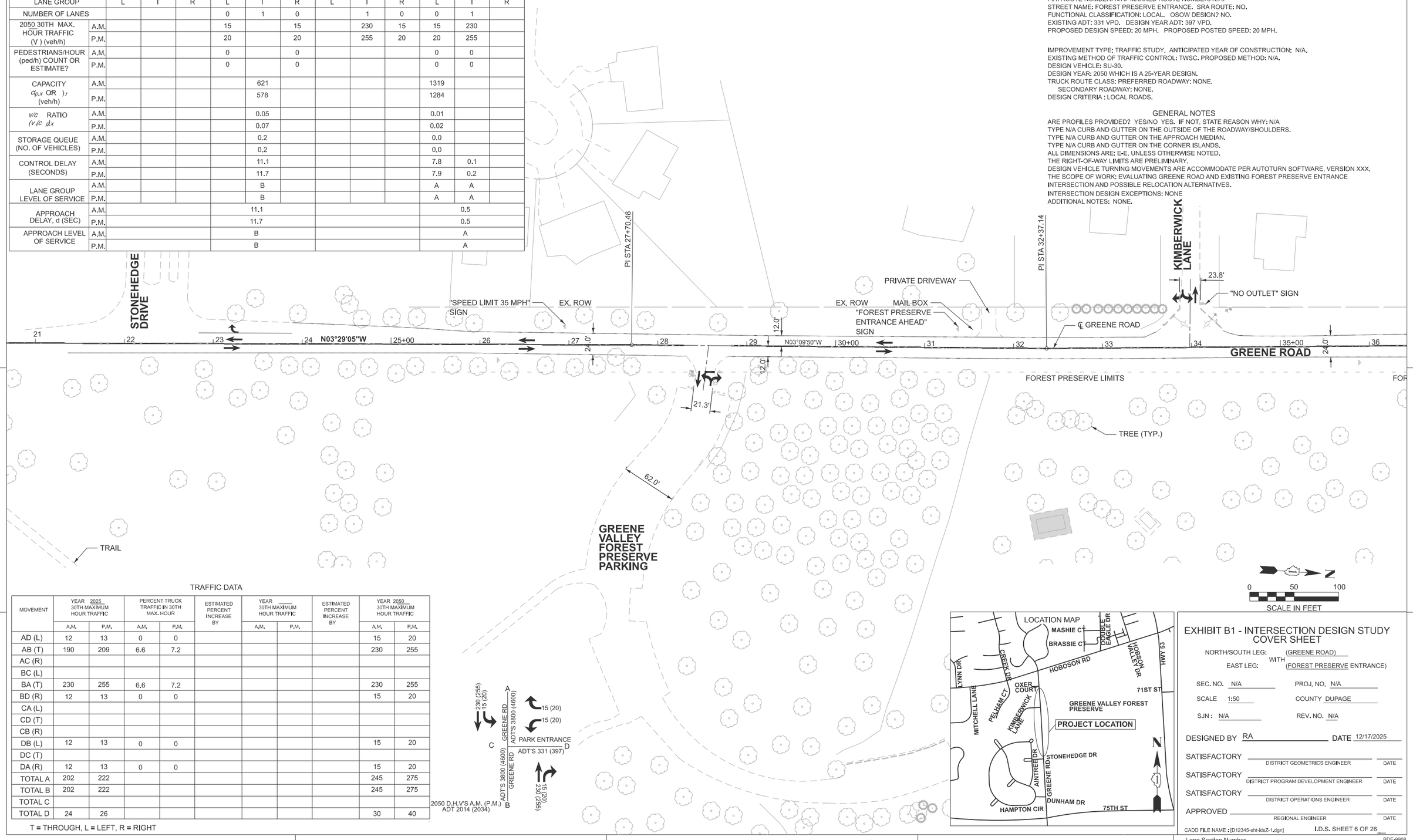
SECONDARY ROUTE (EAST LEG):

F.A. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: N/A.
STREET NAME: FOREST PRESERVE ENTRANCE. SRA ROUTE: NO.
FUNCTIONAL CLASSIFICATION: LOCAL. OSOW DESIGN? NO.
EXISTING ADT: 331 VPD. DESIGN YEAR ADT: 397 VPD.
PROPOSED DESIGN SPEED: 20 MPH. PROPOSED POSTED SPEED: 20 MPH.

IMPROVEMENT TYPE: TRAFFIC STUDY, ANTICIPATED YEAR OF CONSTRUCTION: N/A.
EXISTING METHOD OF TRAFFIC CONTROL: TWSC. PROPOSED METHOD: N/A.
DESIGN VEHICLE: SU-30.
DESIGN YEAR: 2050 WHICH IS A 25-YEAR DESIGN.
TRUCK ROUTE CLASS: PREFERRED ROADWAY: NONE.
SECONDARY ROADWAY: NONE.
DESIGN CRITERIA : LOCAL ROADS.

GENERAL NOTES

ARE PROFILES PROVIDED? YES/NO YES. IF NOT, STATE REASON WHY: N/A
TYPE N/A CURB AND GUTTER ON THE OUTSIDE OF THE ROADWAY/SHOULDERS.
TYPE N/A CURB AND GUTTER ON THE APPROACH MEDIAN.
TYPE N/A CURB AND GUTTER ON THE CORNER ISLANDS.
ALL DIMENSIONS ARE: E-E, UNLESS OTHERWISE NOTED.
THE RIGHT-OF-WAY LIMITS ARE PRELIMINARY.
DESIGN VEHICLE TURNING MOVEMENTS ARE ACCOMMODATE PER AUTOTURN SOFTWARE, VERSION XXX.
THE SCOPE OF WORK: EVALUATING GREENE ROAD AND EXISTING FOREST PRESERVE ENTRANCE INTERSECTION AND POSSIBLE RELOCATION ALTERNATIVES.
INTERSECTION DESIGN EXCEPTIONS: NONE
ADDITIONAL NOTES: NONE.



TRAFFIC DATA

MOVEMENT	YEAR 2025 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30TH MAX. HOUR		ESTIMATED PERCENT INCREASE BY	YEAR ____ 30TH MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE BY	YEAR 2050 30TH MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.		A.M.	P.M.
AD (L)	12	13	0	0					15	20
AB (T)	190	209	6.6	7.2					230	255
AC (R)										
BC (L)										
BA (T)	230	255	6.6	7.2					230	255
BD (R)	12	13	0	0					15	20
CA (L)										
CD (T)										
CB (R)										
DB (L)	12	13	0	0					15	20
DC (T)										
DA (R)	12	13	0	0					15	20
TOTAL A	202	222							245	275
TOTAL B	202	222							245	275
TOTAL C										
TOTAL D	24	26							30	40

T = THROUGH, L = LEFT, R = RIGHT

EXHIBIT B1 - INTERSECTION DESIGN STUDY COVER SHEET

NORTH/SOUTH LEG: (GREENE ROAD)
EAST LEG: WITH (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A PROJ. NO. N/A
SCALE 1:50 COUNTY DUPAGE
SJN : N/A REV. NO. N/A

DESIGNED BY RA DATE 12/17/2025

SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT OPERATIONS ENGINEER _____ DATE
APPROVED _____ REGIONAL ENGINEER _____ DATE

CADD FILE NAME : [D12345-sht-idsZ-1.dgn] I.D.S. SHEET 6 OF 26

Long Section Number
Multiple County Names

B2

BDE-9908

PLOT DATE = 12/17/2025
FILE NAME = pw:\\\\lamtec-sc-pw.bentley.com:lamtec-sc-pw-02\Documents\173809200\CADData\CADsheets\D12345-sht-idsZ-1.dgn
PLOT SCALE = $SCALES
USER NAME = mmansour

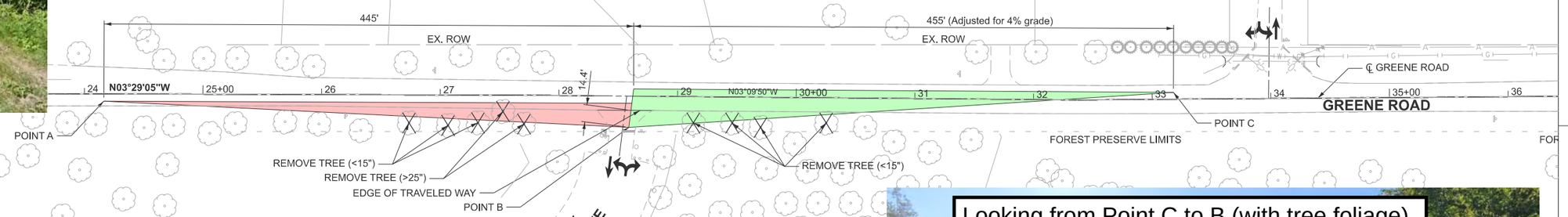
Looking from Point A to B

Looking from Point B to A

Looking from Point B to C

Looking from Point C to B

Looking from Point A to B (with tree foliage)



Looking from Point C to B (with tree foliage)

Looking from Point B to C (with tree foliage)

Looking from Point B to A (with tree foliage)

GREENE VALLEY FOREST PRESERVE

N

0 50 100

SCALE IN FEET

LEGEND

- LEFT SIGHT TRIANGLE
- RIGHT SIGHT TRIANGLE

EXHIBIT B2 - IDS
STOPPING SIGHT DISTANCE ANALYSIS

NORTH/SOUTH LEG: (GREENE ROAD)
EAST LEG: WITH (FOREST PRESERVE ENTRANCE)

SEC. NO. NA
SCALE 1:50
COUNTY DUPAGE
SJN : NA
PROJ. NO. NA
I.D.S. SHEET 7 OF 26

Long Section Number
Multiple County Names

BDE-9908

B3

PLOT DATE = 12/17/2025
FILE NAME = pw:\\lamtec-sc-pw.bentley.com:lamtec-sc-pw-02\Documents\173699200\CADData\CADsheets\D12345-sht4sc2-2.dgn
PLOT SCALE = $SCALE$
USER NAME = mmansour

"SPEED LIMIT 35 MPH" SIGN

PI STA 27+70.48

"FOREST PRESERVE ENTRANCE AHEAD" SIGN

26 27 28 29 30+00 31

24.0'

N03°09'50.1"W

12.0'

12.0'

MANHOLE

WELCOME AND PRESERVE HOURS SIGNS

WOOD POSTS

R 15'

"FOREST PRESERVE ENTRANCE AHEAD" SIGN

21.3'

COUNTER

STOP

62.0'

0 20 40
SCALE IN FEET

EXHIBIT B3- IDS DETAIL SHEET

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:20 COUNTY DUPAGE

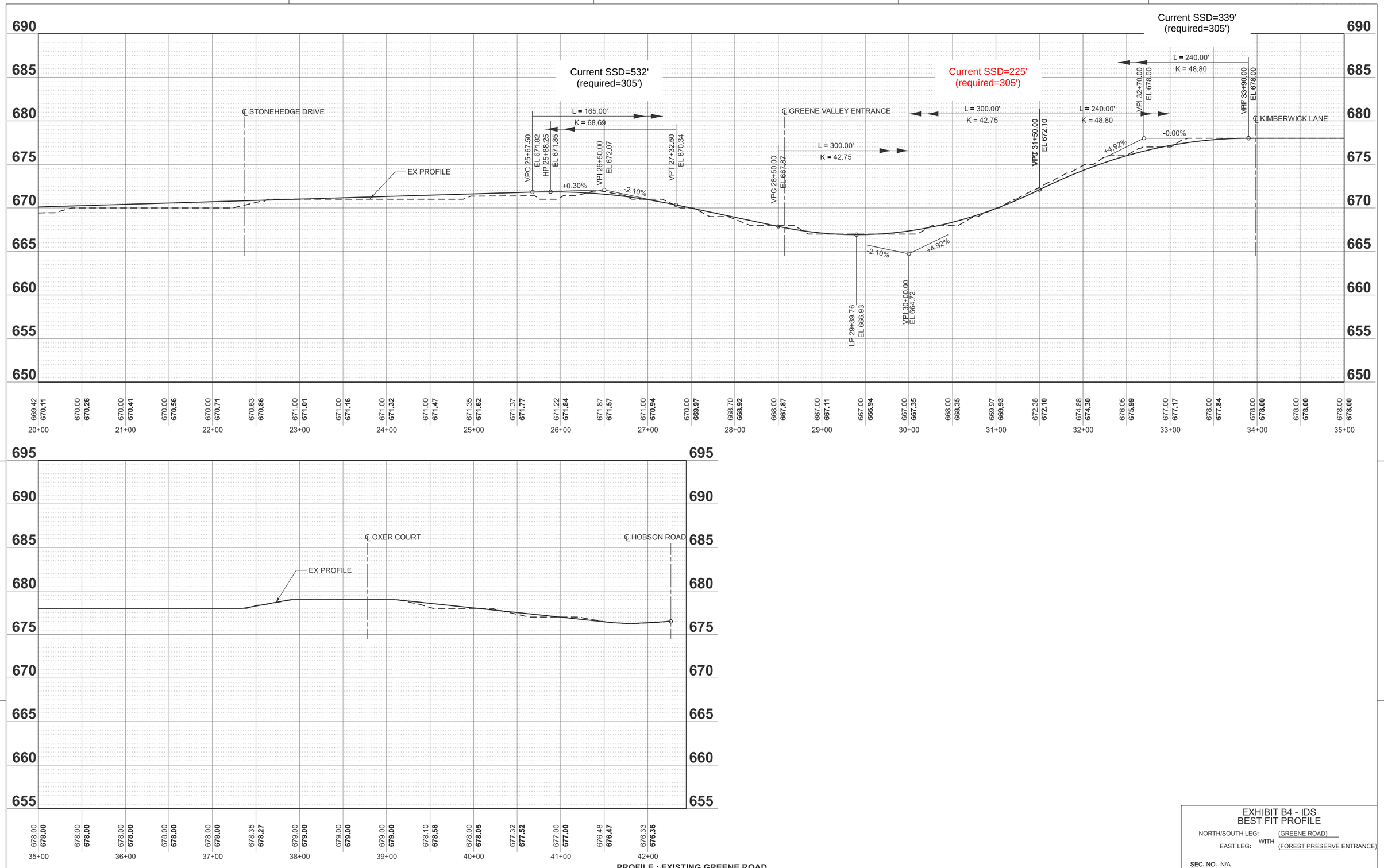
SJN : N/A **PROJ. NO.** N/A

I.D.S. SHEET 8 OF 26

Long Section Number
Multiple County Names

BDE-9908

B4



PROFILE : EXISTING GREENE ROAD

NOTE:
1. EXISTING PROFILES HAVE BEEN CREATED USING THE 1 FEET LIDAR DATA OF DUPAGE COUNTY.

EXHIBIT B4 - IDS
BEST FIT PROFILE

NORTH/SOUTH LEG: (GREENE ROAD)
EAST LEG: WITH (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:20 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

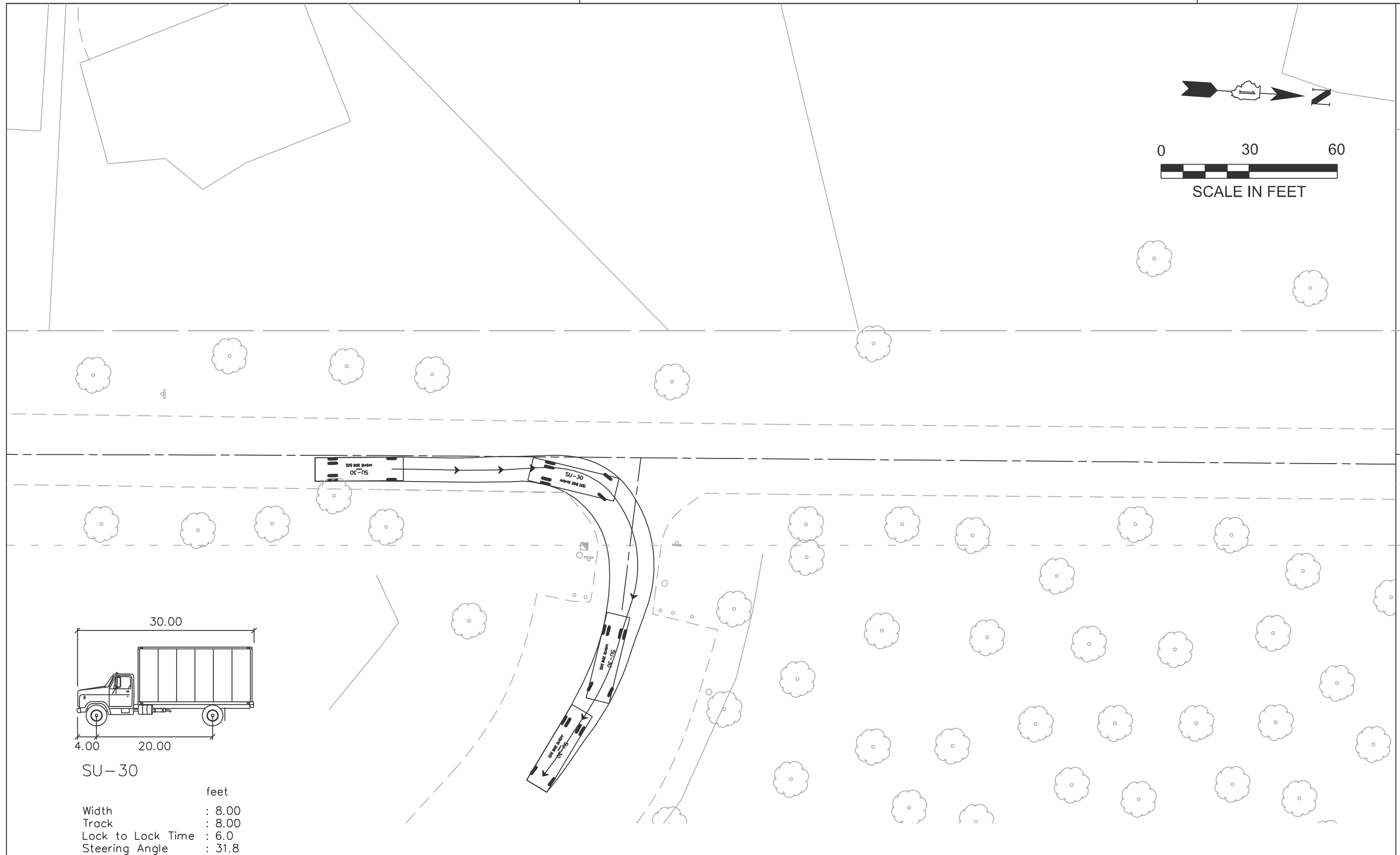
I.D.S. SHEET 9 OF 26

Long Section Number
Multiple County Names

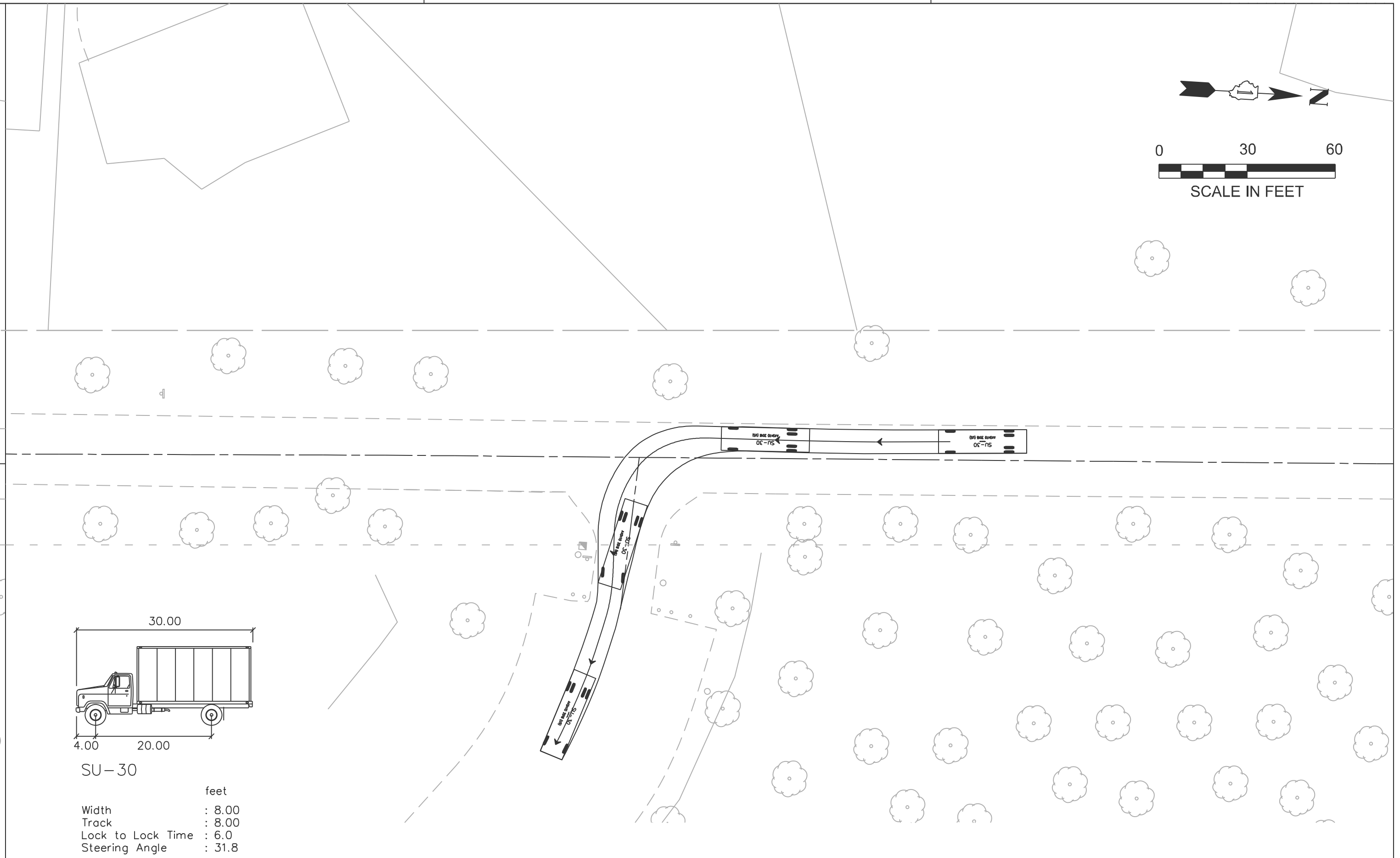
B5

BDE-9908

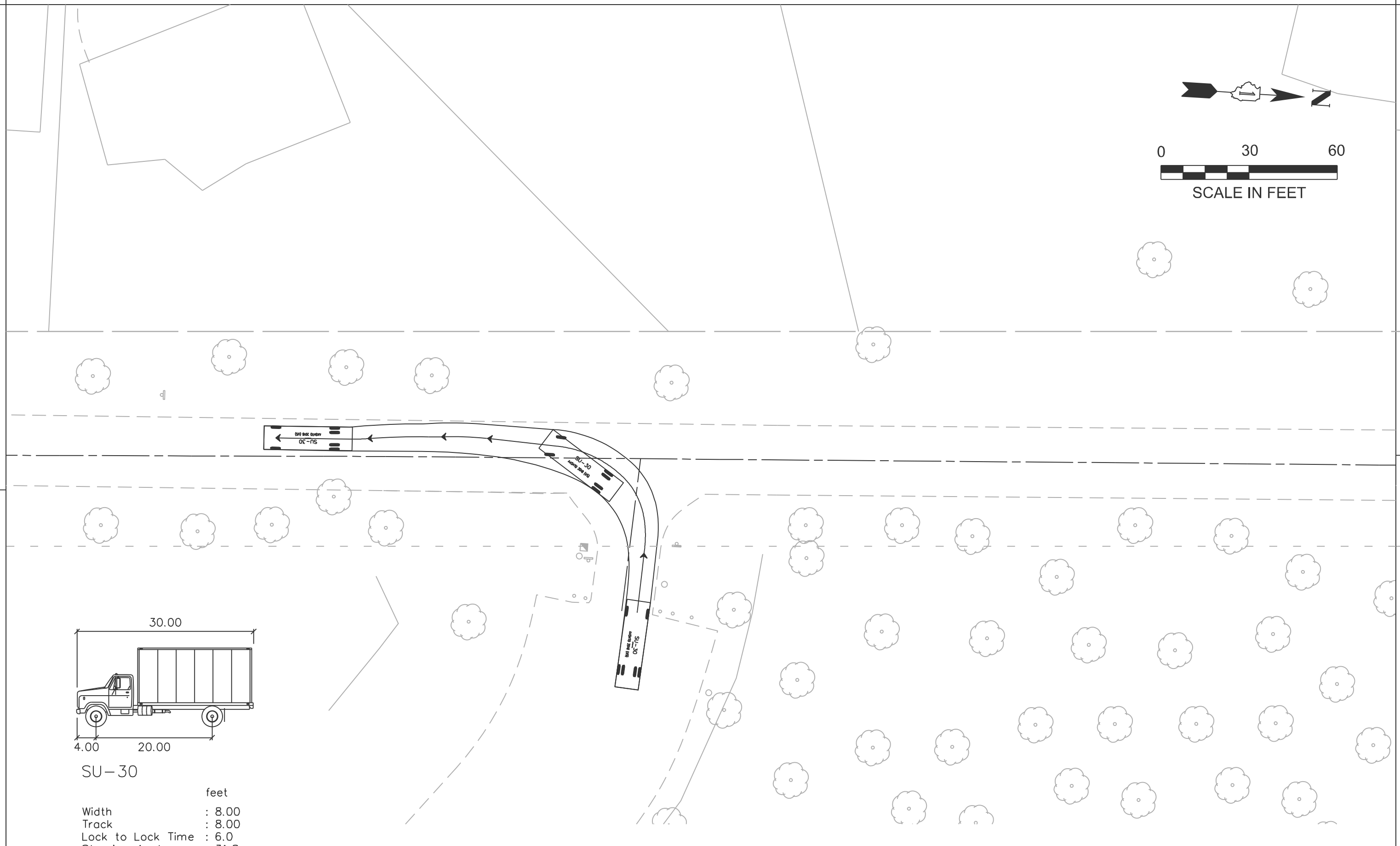
PLOT DATE = 12/17/2025
FILE NAME = pw://stantec-sc-pw.bentley.com:stantec-sc-pw-02/Documents/173609200/CADData/CADsheets/D12345-sht-idsZ-4.dgn
PLOT SCALE = $SCALE$
USER NAME = mmansour



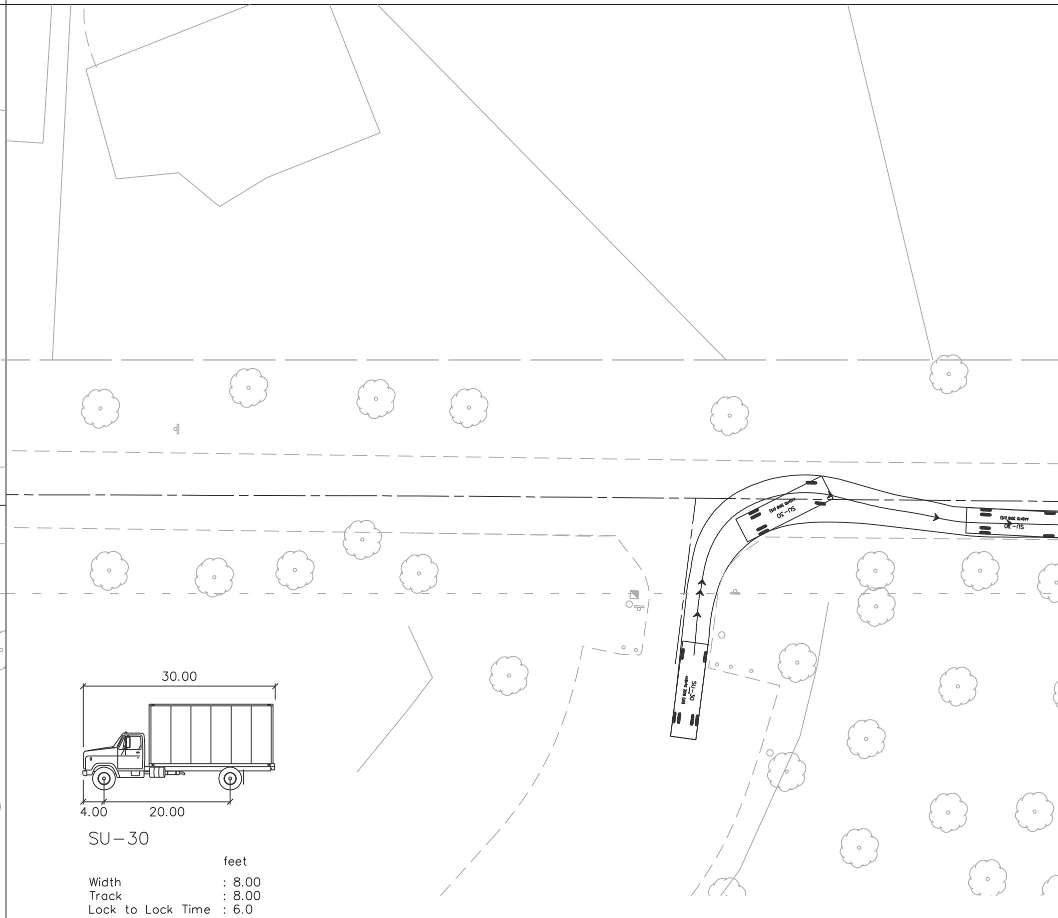
NORTHBOUND GREENE RD TRAFFIC TURNING RIGHT TO FOREST PRESERVE



SOUTHBOUND GREENE RD TRAFFIC TURNING LEFT TO FOREST PRESERVE



WESTBOUND FOREST PRESERVE TRAFFIC TURNING LEFT TO GREENE RD



WESTBOUND FOREST PRESERVE TRAFFIC TURNING RIGHT TO GREENE RD

EXHIBIT B5 - IDS
AUTOTURN ANALYSIS

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:30 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

I.D.S. SHEET 10 OF 26

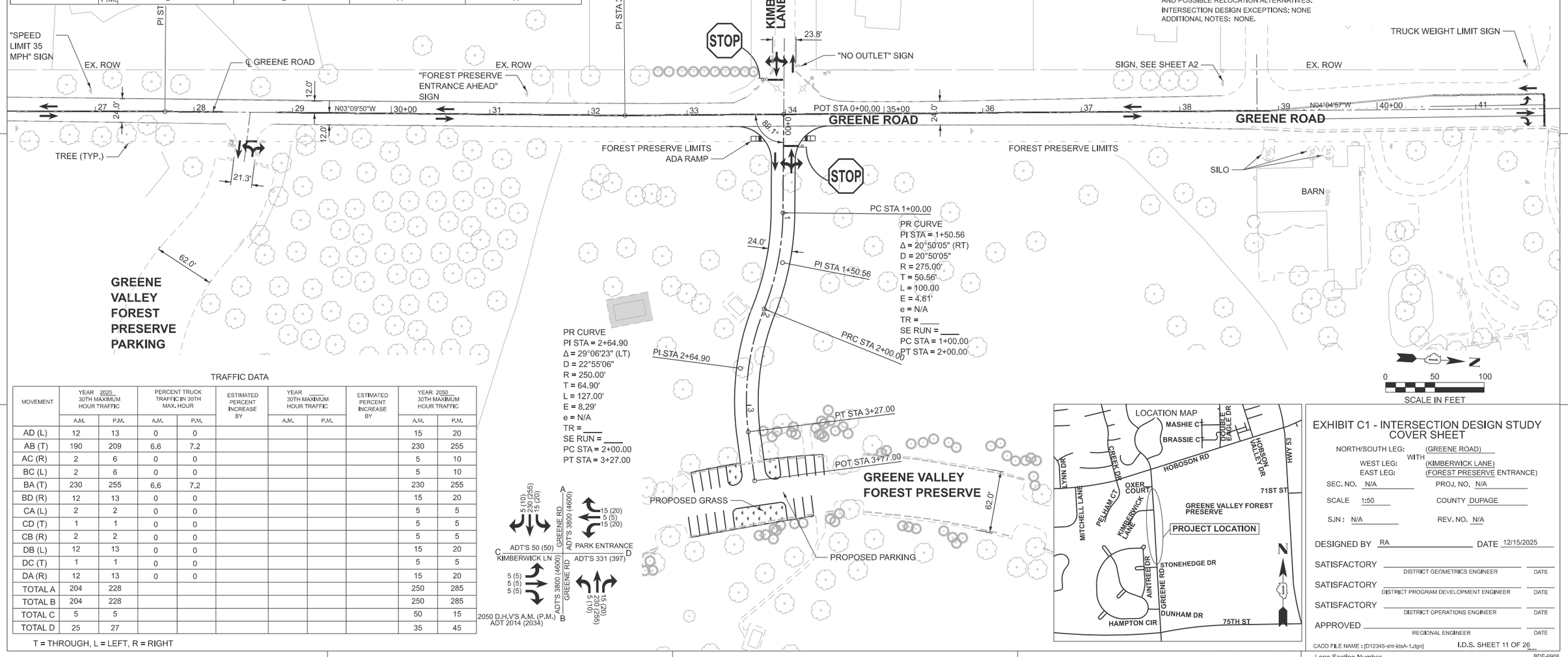
Appendix C Alternative A IDS

PLOT DATE = 12/17/2025
FILE NAME = pw:\\slantec-c-pw.bentley.com:slantec-c-pw-02\Documents\173699200\CADData\CADsheets\D12345-sht-idsA-1.dgn
PLOT SCALE = $SCALE$
USER NAME = mmansour

TWO-WAY STOP-CONTROLLED CAPACITY DESIGN ANALYSIS

PROGRAM USED: HCS 2026 VERSION: 8.5 PEAK HOUR FACTOR: 0.95
SIGNALIZED INTERSECTION(S) WITHIN 0.25 MILES OF INTERSECTION ALONG MAJOR ROUTE? YES
FLARED APPROACH FOR MINOR STREET RIGHT-TURNING VEHICLE? (YES/NO): YES ON THE EAST APPROACH, YES ON THE WEST APPROACH.
SINGLE OR TWO-STAGE GAP ACCEPTANCE? SINGLE

APPROACH		EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND		
MAJOR OR MINOR LEG?		MINOR			MINOR			MAJOR			MAJOR		
LANE GROUP		L	T	R	L	T	R	L	T	R	L	T	R
NUMBER OF LANES		0	1	0	0	1	0	0	1	0	0	1	0
2050 30TH MAX. HOUR TRAFFIC (V) (veh/h)	A.M.	5	5	5	15	5	15	5	230	15	15	230	5
	P.M.	5	5	5	20	5	20	10	255	20	20	255	10
PEDESTRIANS/HOUR (ped/h) COUNT OR ESTIMATE?	A.M.	0	0	0	0	0	0	0	0	0	0	0	0
	P.M.	0	0	0	0	0	0	0	0	0	0	0	0
CAPACITY $c_{p,x}$ OR ( ) $_t$ (veh/h)	A.M.		512			543			1330			1319	
	P.M.		458			494			1295			1284	
v/c RATIO $(v/c)_{p,x}$	A.M.		0.03			0.07			0.00			0.01	
	P.M.		0.03			0.10			0.01			0.02	
STORAGE QUEUE (NO. OF VEHICLES)	A.M.		0.1			0.2			0.0			0.0	
	P.M.		0.1			0.3			0.0			0.0	
CONTROL DELAY (SECONDS)	A.M.		12.3			12.1		7.7	0.0	0.0	7.8	0.1	0.1
	P.M.		13.1			13.1		7.8	0.1	0.1	7.9	0.2	0.2
LANE GROUP LEVEL OF SERVICE	A.M.		B			B		A	A	A	A	A	A
	P.M.		B			B		A	A	A	A	A	A
APPROACH DELAY, d (SEC)	A.M.	12.3			12.1			0.2			0.6		
	P.M.	13.1			13.1			0.3			0.7		
APPROACH LEVEL OF SERVICE	A.M.	B			B			A			A		
	P.M.	B			B			A			A		



TRAFFIC DATA

MOVEMENT	YEAR 2025 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30TH MAX. HOUR		ESTIMATED PERCENT INCREASE BY	YEAR ____ 30TH MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE BY	YEAR 2050 30TH MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.		A.M.	P.M.
AD (L)	12	13	0	0					15	20
AB (T)	190	209	6.6	7.2					230	255
AC (R)	2	6	0	0					5	10
BC (L)	2	6	0	0					5	10
BA (T)	230	255	6.6	7.2					230	255
BD (R)	12	13	0	0					15	20
CA (L)	2	2	0	0					5	5
CD (T)	1	1	0	0					5	5
CB (R)	2	2	0	0					5	5
DB (L)	12	13	0	0					15	20
DC (T)	1	1	0	0					5	5
DA (R)	12	13	0	0					15	20
TOTAL A	204	228							250	285
TOTAL B	204	228							250	285
TOTAL C	5	5							50	15
TOTAL D	25	27							35	45

T = THROUGH, L = LEFT, R = RIGHT

ELEMENTS CONTROLLING DESIGN

PREFERRED ROUTE (NORTH-SOUTH LEG):

F.A. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: N/A.
STREET NAME: GREENE ROAD. SRA ROUTE? NO.
FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR. OSOW DESIGN? NO.
EXISTING ADT: 3800 VPD. DESIGN YEAR ADT: 4600 VPD.
PROPOSED DESIGN SPEED: 40 MPH. PROPOSED POSTED SPEED: 35 MPH.

SECONDARY ROUTE (WEST LEG):

F.A. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: N/A.
STREET NAME: KIMBERWICK LANE. SRA ROUTE NO.
FUNCTIONAL CLASSIFICATION: LOCAL. OSOW DESIGN? NO.
EXISTING ADT: 50 VPD. DESIGN YEAR ADT: 50 VPD.
PROPOSED DESIGN SPEED: 20 MPH. PROPOSED POSTED SPEED: 20 MPH.

SECONDARY ROUTE (EAST LEG):

F.A. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: N/A.
STREET NAME: FOREST PRESERVE ENTRANCE. SRA ROUTE: NO.
FUNCTIONAL CLASSIFICATION: LOCAL. OSOW DESIGN? NO.
EXISTING ADT: 331 VPD. DESIGN YEAR ADT: 397 VPD.
PROPOSED DESIGN SPEED: 20 MPH. PROPOSED POSTED SPEED: 20 MPH.

IMPROVEMENT TYPE: TRAFFIC STUDY. ANTICIPATED YEAR OF CONSTRUCTION: N/A.
EXISTING METHOD OF TRAFFIC CONTROL: UNCONTROLLED. PROPOSED METHOD: TWSC.
DESIGN VEHICLE: SU-30.
DESIGN YEAR: 2050 WHICH IS A 25-YEAR DESIGN.
TRUCK ROUTE CLASS: PREFERRED ROADWAY: NONE.
SECONDARY ROADWAY: NONE.
DESIGN CRITERIA : LOCAL ROADS.

GENERAL NOTES

ARE PROFILES PROVIDED? YES/NO YES. IF NOT, STATE REASON WHY: N/A
TYPE N/A CURB AND GUTTER ON THE OUTSIDE OF THE ROADWAY/SHOULDERS.
TYPE N/A CURB AND GUTTER ON THE APPROACH MEDIAN.
TYPE N/A CURB AND GUTTER ON THE CORNER ISLANDS.
ALL DIMENSIONS ARE: E-E. UNLESS OTHERWISE NOTED.
THE RIGHT-OF-WAY LIMITS ARE PRELIMINARY.
DESIGN VEHICLE TURNING MOVEMENTS ARE ACCOMMODATE PER AUTOTURN SOFTWARE, VERSION XXX.
THE SCOPE OF WORK: EVALUATING GREENE ROAD AND EXISTING FOREST PRESERVE ENTRANCE AND POSSIBLE RELOCATION ALTERNATIVES.
INTERSECTION DESIGN EXCEPTIONS: NONE
ADDITIONAL NOTES: NONE.

EXHIBIT C1 - INTERSECTION DESIGN STUDY COVER SHEET

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)
SEC. NO. N/A PROJ. NO. N/A
SCALE 1:50 COUNTY DUPAGE
SJN : N/A REV. NO. N/A

DESIGNED BY RA DATE 12/15/2025

SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT OPERATIONS ENGINEER _____ DATE
APPROVED _____ REGIONAL ENGINEER _____ DATE

CADD FILE NAME : [D12345-sht-idsA-1.dgn] I.D.S. SHEET 11 OF 26

Long Section Number
Multiple County Names

BDE-9908

C2

Greene Road and Kimberwick Lane intersection, (Looking East)

Trees on east side of Greene Road at proposed entrance

N

0 50 100

SCALE IN FEET

PLOT DATE = 12/17/2025
FILE NAME = pw:\\lamtec-sc-pw.bentley.com:lamtec-sc-pw-02\Documents\173609200\CADData\CADsheets\D12345-sht48sA-5.dgn
PLOT SCALE = $SCALE$
USER NAME = mmansour

PI STA 32+37.14

KIMBERWICK LANE

23.8'

22.5'

OXER COURT

TRUCK WEIGHT LIMIT SIGN

EX. ROW

EX. ROW

EX. ROW

POINT A

455'

445'

27 24.0' 28 29 N03°09'50"W 30+00 31 32 33 34 35+00 36 37 38 39 N04°04'57"W 40+00 41

GREENE ROAD

POINT C

FOREST PRESERVE LIMITS

FOREST PRESERVE LIMITS

14.4'

POINT B

21.3'

REMOVE TREE (<15")

REMOVE TREE (<15")

SILO

SILO

SILO

BARN

BARN

62.0'

GREENE VALLEY FOREST PRESERVE PARKING

GREENE VALLEY FOREST PRESERVE

62.0'

GREENE COTTAGE

LEGEND

LEFT SIGHT TRIANGLE

RIGHT SIGHT TRIANGLE

EXHIBIT C2 - IDS
STOPPING SIGHT DISTANCE ANALYSIS

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:50 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

I.D.S. SHEET 12 OF 26

Long Section Number
Multiple County Names

C3

BDE-0908

PLOT DATE = 12/17/2025
FILE NAME = pw:\\slantec-c-pw.bentley.com:slantec-c-pw02\Documents\173699200\CADData\CADsheets\D12345sht14sA-2.dgn
PLOT SCALE = $$SCALE$$
USER NAME = mmansour

STOP

KIMBERWICK LANE

23.8'

"NO OUTLET" SIGN

LIGHT POLE

PRIVATE DIRECTIVEWAY

MAILBOX

"FOREST PRESERVE ENTRANCE AHEAD" SIGN

PI STA 32+37.14

EX. ROW

EX. ROW

31 32 33 34 35+00 36 37

12.0'

12.0'

24.0'

89.1°

20.0'

R 35.00'

FOREST PRESERVE LIMITS

ADA RAMP

FOREST PRESERVE LIMITS

STOP

24.0'

℄ PROPOSED PRESERVE ENTRANCE

12.0' 12.0'

N

0 20 40

SCALE IN FEET

EXHIBIT C3 - IDS
DETAIL SHEET

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:20 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

I.D.S. SHEET 13 OF 26

Long Section Number
Multiple County Names

C4

BDE-9908

PLOT DATE = 12/17/2025
FILE NAME = pw:\\slantec-sc-pw.bentley.com:slantec-sc-pw-02\Documents\173699200\CADData\CADsheets\D12345-sht14sA-3.dgn
PLOT SCALE = $$SCALE$$
USER NAME = mmansour

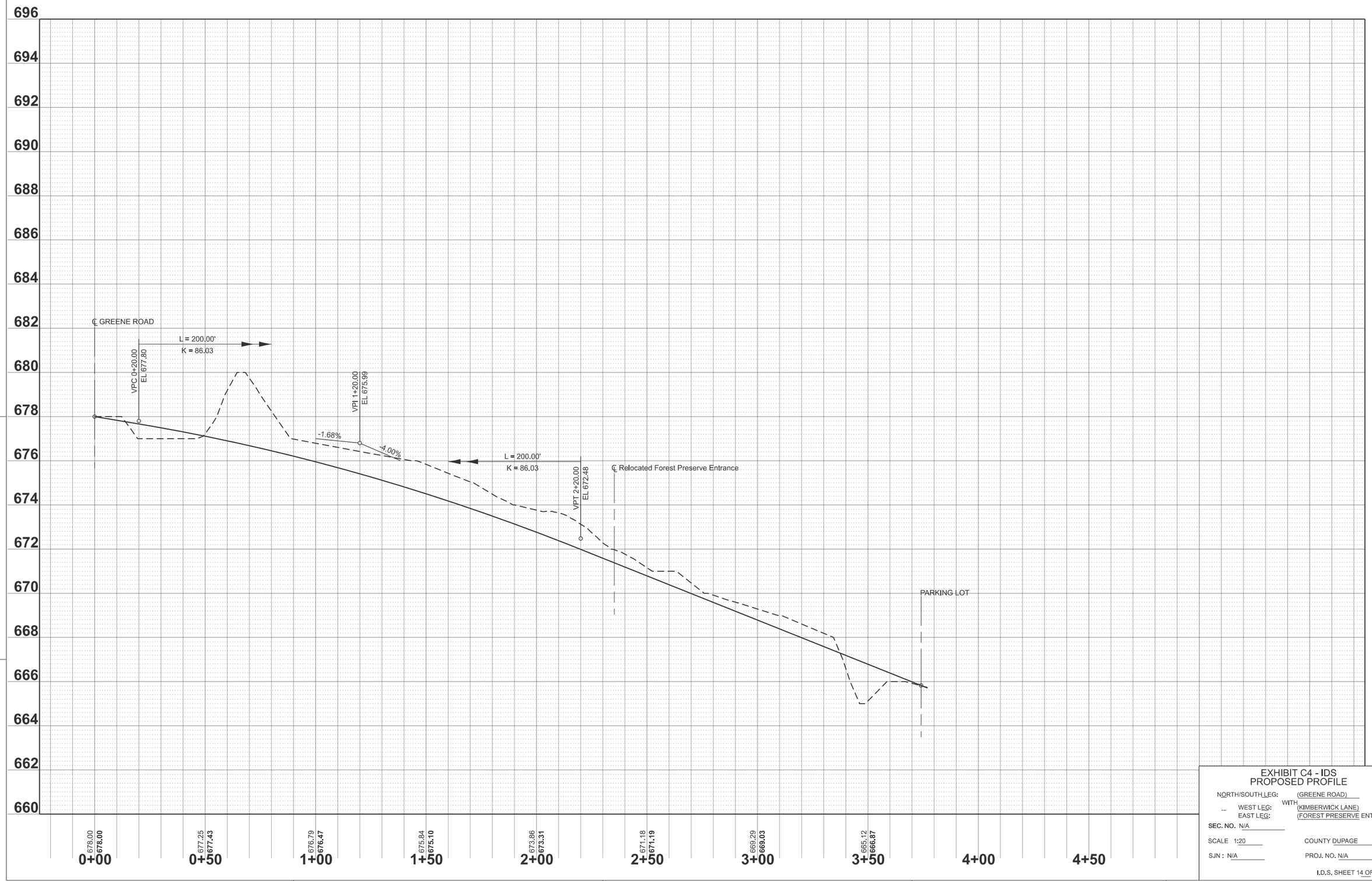


EXHIBIT C4 - IDS
PROPOSED PROFILE

NORTH/SOUTH LEG: (GREENE ROAD)
WEST LEG: WITH (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:20 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

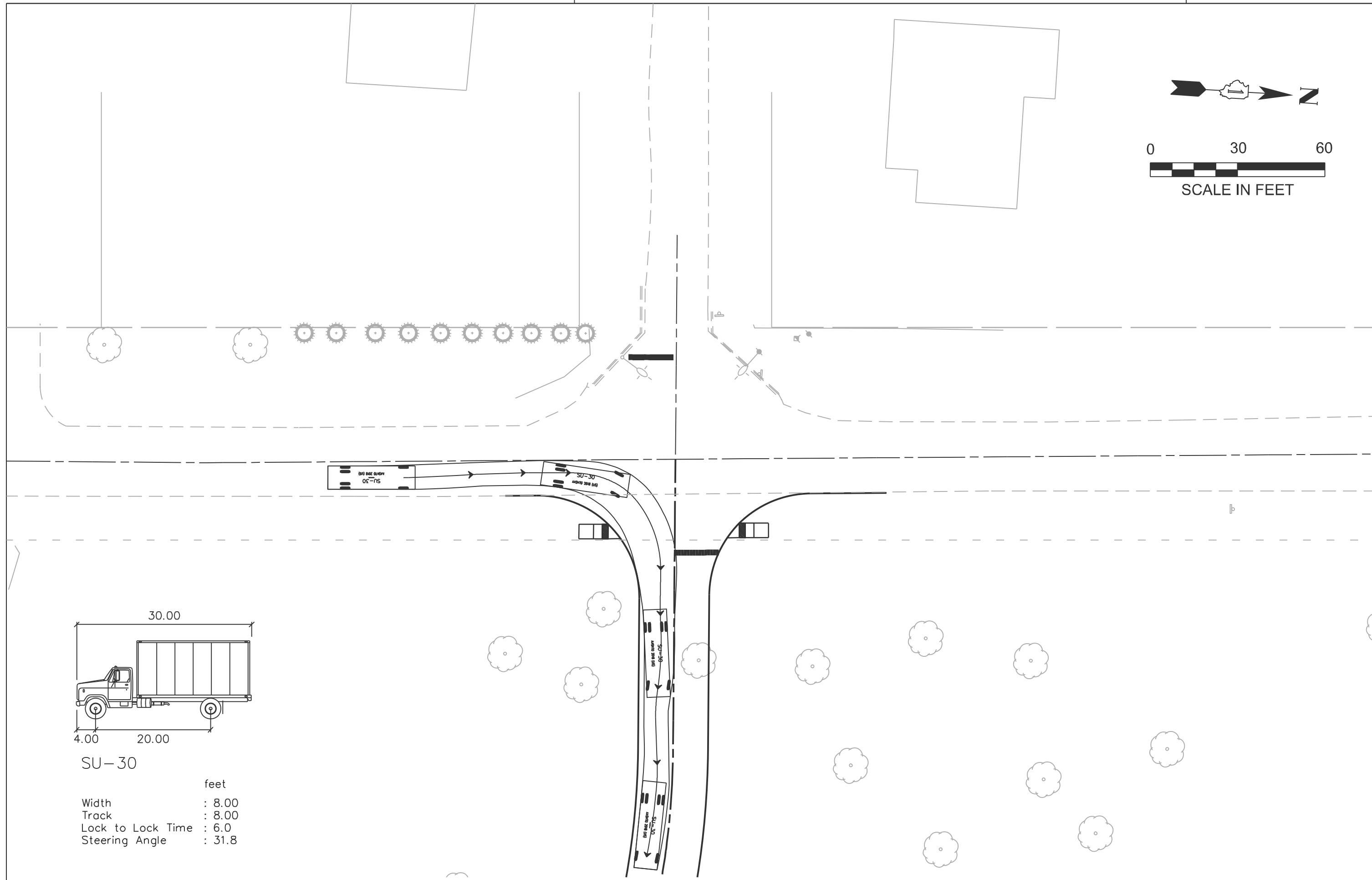
I.D.S. SHEET 14 OF 26

Long Section Number
Multiple County Names

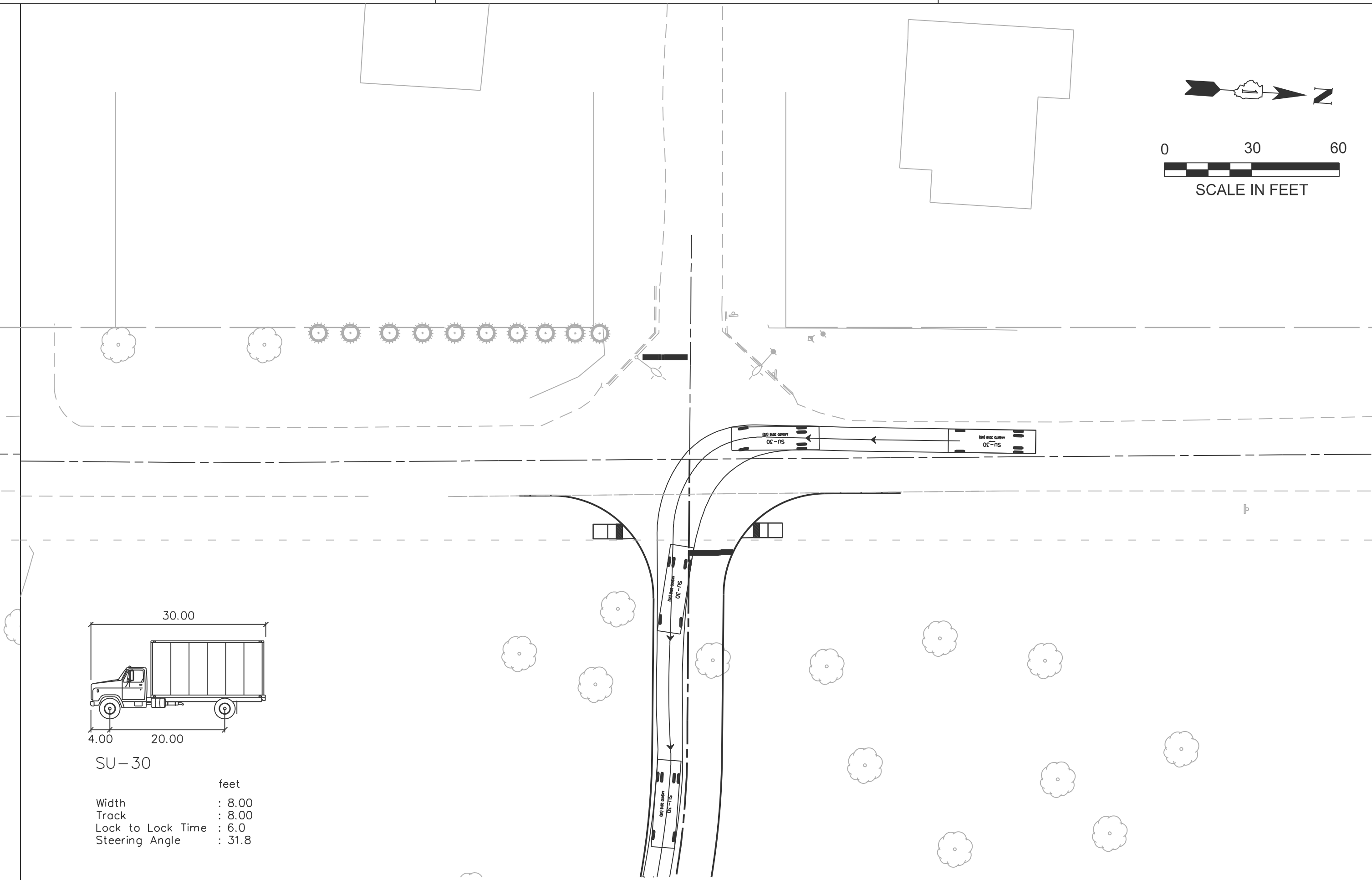
BDE-9908

C5

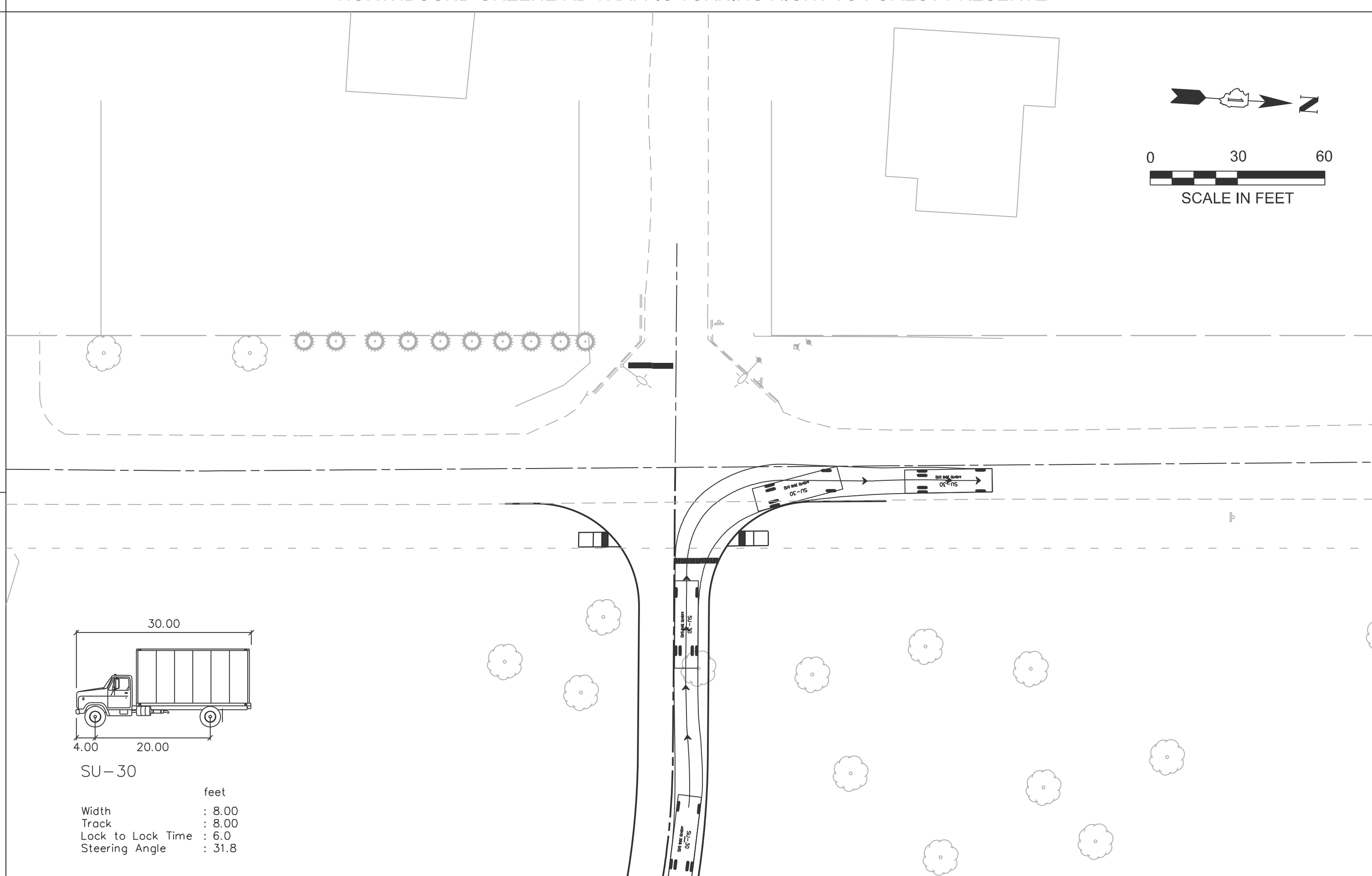
PLOT DATE = 12/17/2025
FILE NAME = pw://stantec-sc-pw.bentley.com:stantec-sc-pw-02/Documents/173609200/CADData/CADsheets/D12345-sht-idsA-4.dgn
PLOT SCALE = $SCALE$
USER NAME = mmansour



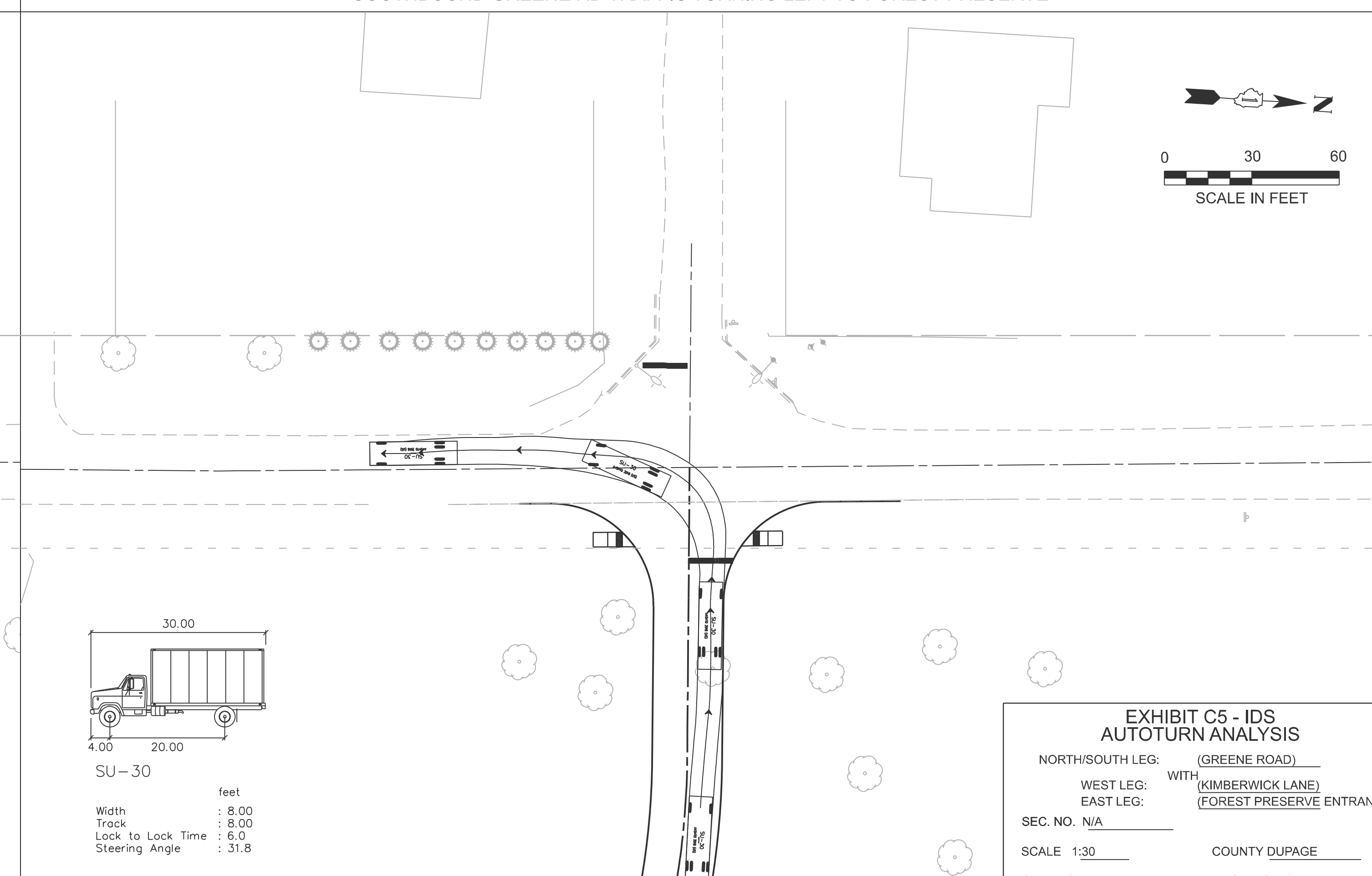
NORTHBOUND GREENE RD TRAFFIC TURNING RIGHT TO FOREST PRESERVE



SOUTHBOUND GREENE RD TRAFFIC TURNING LEFT TO FOREST PRESERVE



WESTBOUND FOREST PRESERVE TRAFFIC TURNING LEFT TO GREENE RD



WESTBOUND FOREST PRESERVE TRAFFIC TURNING RIGHT TO GREENE RD

EXHIBIT C5 - IDS
AUTOTURN ANALYSIS

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:30 — COUNTY DUPAGE

SJN : N/A — PROJ. NO. N/A

I.D.S. SHEET 15 OF 26

Appendix D Alternative B IDS

ROUNDABOUT CAPACITY DESIGN STUDY

PROGRAM USED: HCS 2026 VERSION: 8.5 AREA: N/A PEAK HOUR FACTOR: 0.95
INTERSECTION CONTROL DELAY A.M. : 4.9 SECONDS P.M. : 5.2 SECONDS
INTERSECTION LEVEL OF SERVICE A.M. : A P.M. : A

APPROACH		EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND		
LANE GROUP		L	T	R	L	T	R	L	T	R	L	T	R
2050 30TH MAX. HOUR TRAFFIC	A.M.	5	5	5	15	5	15	5	230	15	15	230	5
	P.M.	5	5	5	20	5	20	10	255	20	20	255	10
ENTRY FLOW RATE i,ybce (pc/h)	A.M.	5	5	5	16	5	16	5	276	16	16	276	5
	P.M.	5	5	5	21	5	21	11	306	21	21	306	11
PED/HOUR CROSSING THE APPROACH	A.M.	0	0	0	0	0	0	0	0	0	0	0	0
	P.M.	0	0	0	0	0	0	0	0	0	0	0	0
LANE MOVEMENTS		LEFT	RIGHT	BYPASS	LEFT	RIGHT	BYPASS	LEFT	RIGHT	BYPASS	LEFT	RIGHT	BYPASS
ENTRY FLOW RATE y (vph)	A.M.		15			37			263			263	
	P.M.		15			47			300			300	
LANE CAPACITY c (vph)	A.M.		1008			1031			1191			1191	
	P.M.		968			994			1188			1181	
x i (y /c i RATIO)	A.M.		0.01			0.04			0.22			0.22	
	P.M.		0.02			0.05			0.25			0.25	
STORAGE QUEUE LENGTH (FEET)	A.M.		0.0			2.5			22.1			22.1	
	P.M.		0.0			2.5			27.5			27.5	
LANE DELAY, d (SEC)	A.M.		3.7			3.8			5.0			5.0	
	P.M.		3.9			4.0			5.3			5.4	
LANE LEVEL OF SERVICE	A.M.		A			A			A			A	
	P.M.		A			A			A			A	
APPROACH CONTROL DELAY, d (SEC)	A.M.	3.7			3.8			5.0			5.0		
	P.M.	3.9			4.0			5.3			5.4		
APPROACH LEVEL OF SERVICE	A.M.	A			A			A			A		
	P.M.	A			A			A			A		

ELEMENTS CONTROLLING DESIGN

PREFERRED ROUTE:

F.A. ROUTE NUMBER: . MARKED ROUTE NUMBER: .
STREET NAME: . SRA ROUTE? Y/N .
FUNCTIONAL CLASSIFICATION: . OSOW DESIGN? Y/N
EXISTING ADT: VPD. DESIGN YEAR ADT: VPD.
PROPOSED DESIGN SPEED: MPH. PROPOSED POSTED SPEED: MPH.

SECONDARY ROUTE:

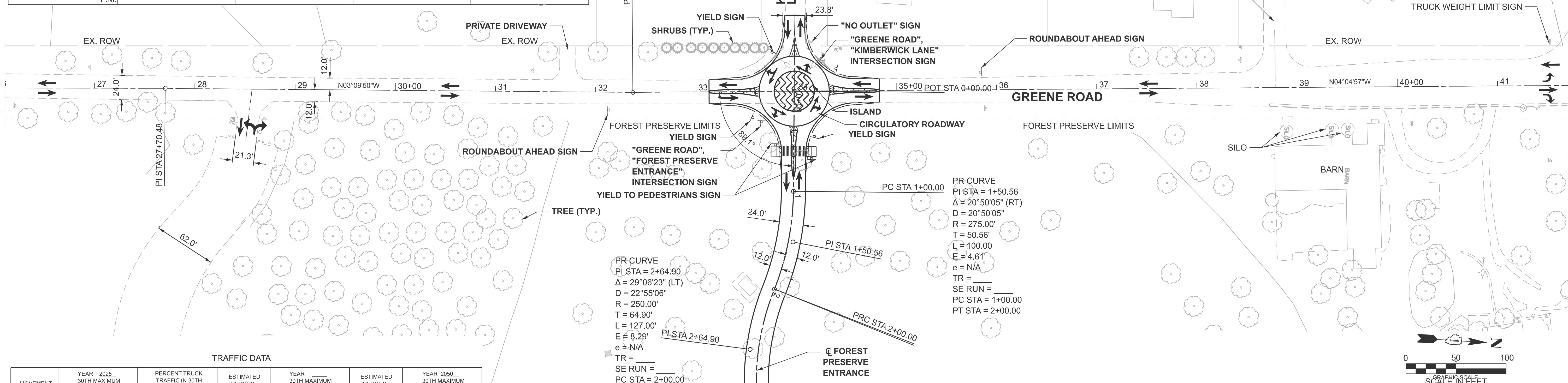
F.A. ROUTE NUMBER: . MARKED ROUTE NUMBER: .
STREET NAME: . SRA ROUTE ? Y/N .
FUNCTIONAL CLASSIFICATION: . OSOW DESIGN? Y/N
EXISTING ADT: VPD. DESIGN YEAR ADT: VPD.
PROPOSED DESIGN SPEED: MPH. PROPOSED POSTED SPEED: MPH.

IMPROVEMENT TYPE: . ANTICIPATED YEAR OF CONSTRUCTION: .
EXISTING METHOD OF TRAFFIC CONTROL: . PROPOSED METHOD: .
DESIGN VEHICLE: .
DESIGN YEAR: 20XX WHICH IS A XX YEAR DESIGN.
TRUCK ROUTE CLASS: PREFERRED ROADWAY: .
SECONDARY ROADWAY: .
DESIGN CRITERIA .

GENERAL NOTES

ARE PROFILES PROVIDED? YES/NO. IF NOT, STATE REASON WHY:
TYPE CURB AND GUTTER ON THE OUTSIDE OF THE ROADWAY/SHOULDERS.
TYPE CURB AND GUTTER ON THE APPROACH MEDIAN.
TYPE CURB AND GUTTER ON THE CORNER ISLANDS.
ALL DIMENSIONS ARE (E-E, E-F, OR F-F) , UNLESS OTHERWISE NOTED.
THE RIGHT-OF-WAY LIMITS ARE PRELIMINARY.
DESIGN VEHICLE TURNING MOVEMENTS ARE ACCOMMODATE PER SOFTWARE, VERSION .
THE SCOPE OF WORK: .
INTERSECTION DESIGN EXCEPTIONS:

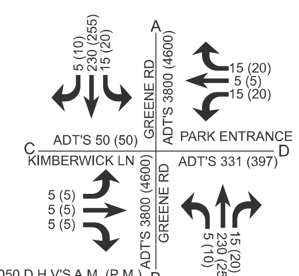
ADDITIONAL NOTES: .



TRAFFIC DATA

MOVEMENT	YEAR 2025 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30TH MAX. HOUR		ESTIMATED PERCENT INCREASE BY	YEAR ____ 30TH MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE BY	YEAR 2050 30TH MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.		A.M.	P.M.
AD (L)	12	13	0	0					15	20
AB (T)	190	209	6.6	7.2					230	255
AC (R)	2	6	0	0					5	10
BC (L)	2	6	0	0					5	10
BA (T)	230	255	6.6	7.2					230	255
BD (R)	12	13	0	0					15	20
CA (L)	2	2	0	0					5	5
CD (T)	1	1	0	0					5	5
CB (R)	2	2	0	0					5	5
DB (L)	12	13	0	0					15	20
DC (T)	1	1	0	0					5	5
DA (R)	12	13	0	0					15	20
TOTAL A	204	228							250	285
TOTAL B	204	228							250	285
TOTAL C	5	5							50	15
TOTAL D	25	27							35	45

T = THROUGH, L = LEFT, R = RIGHT



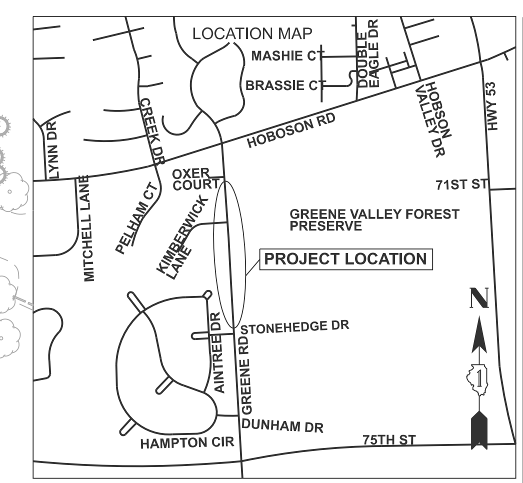


EXHIBIT D1 - INTERSECTION DESIGN STUDY COVER SHEET

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A PROJ. NO. N/A
SCALE 1:50 COUNTY DUPAGE
SJN : N/A REV. NO. N/A

DESIGNED BY RA DATE 12/15/2025

SATISFACTORY ____________ DISTRICT GEOMETRICS ENGINEER ____ DATE

SATISFACTORY ____________ DISTRICT PROGRAM DEVELOPMENT ENGINEER ____ DATE

SATISFACTORY ____________ DISTRICT OPERATIONS ENGINEER ____ DATE

APPROVED ____________ REGIONAL ENGINEER ____ DATE

CADD FILE NAME : [D12345-sht-idsB-1.dgn] I.D.S. SHEET 16 OF 26

PLOT DATE = 12/17/2025
FILE NAME = pw://stantec-sc-pw.bentley.com:stantec-sc-pw-02/Documents/173609200/CADData/CADsheets/D12345-sht-idsB-5.dgn
PLOT SCALE = $SCALE$
USER NAME = raarora

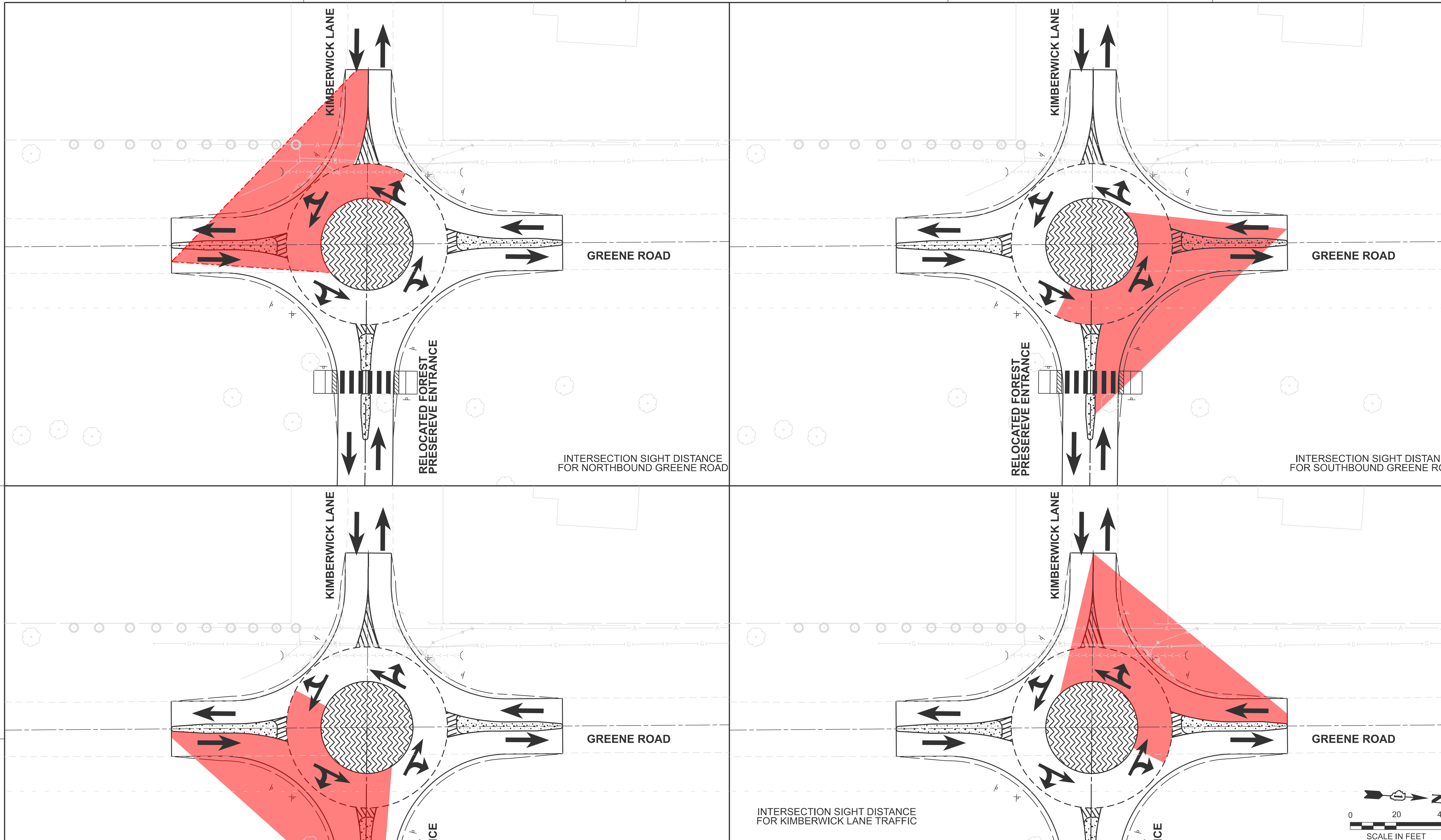


EXHIBIT D2 - IDS
STOPPING SIGHT DISTANCE ANALYSIS

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:20 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

I.D.S. SHEET 17 OF 26

PLOT DATE = 12/17/2025
FILE NAME = pw://stantec-sc-pw.bentley.com:stantec-sc-pw-02/Documents/173609200/CADData/CADsheets/D12345-sht-idsB-2.dgn
PLOT SCALE = $SCALE$
USER NAME = raarora

Greene Road and Kimberwick Lane intersection, (Looking East)

Trees on east side of Greene Road at proposed entrance

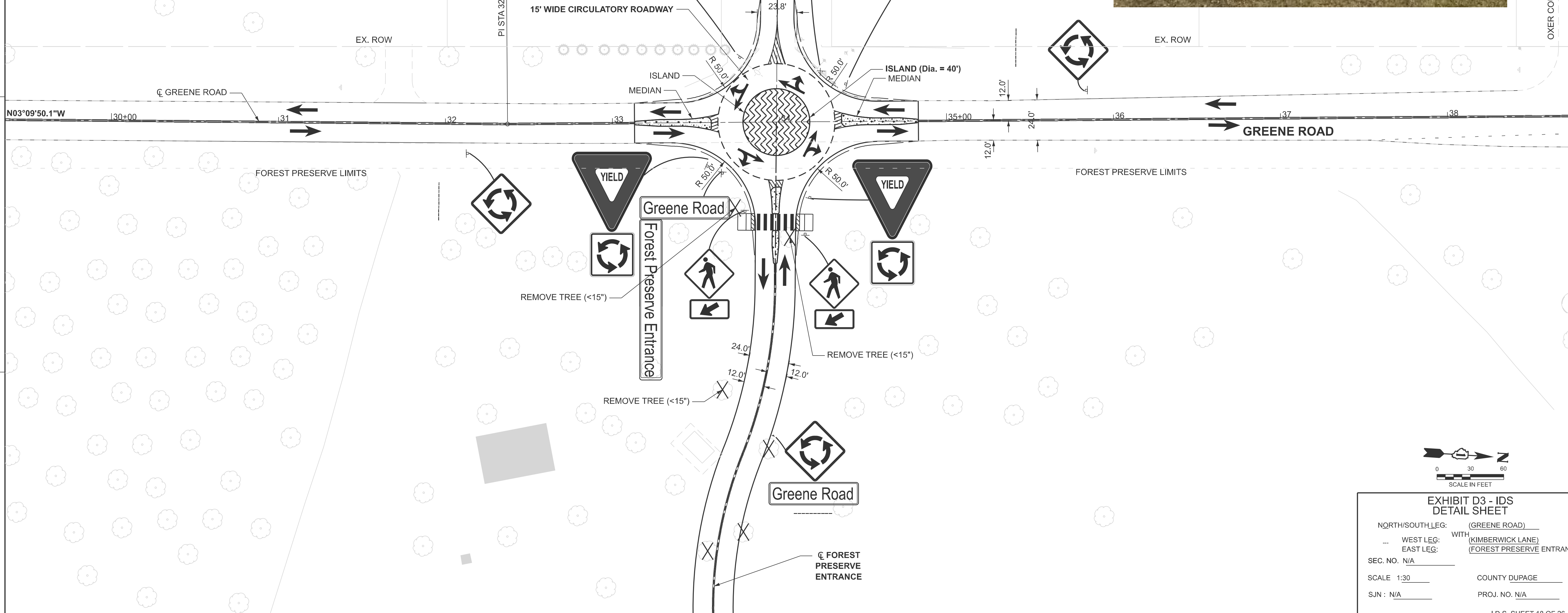


EXHIBIT D3 - IDS
DETAIL SHEET

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:30 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

I.D.S. SHEET 18 OF 26

PLOT DATE = 12/17/2025
FILE NAME = pw://stantec-sc-pw.bentley.com:stantec-sc-pw-02/Documents/173609200/CADData/CADsheets/D12345-sht-idsB-3.dgn
PLOT SCALE = $SCALE$
USER NAME = raarora

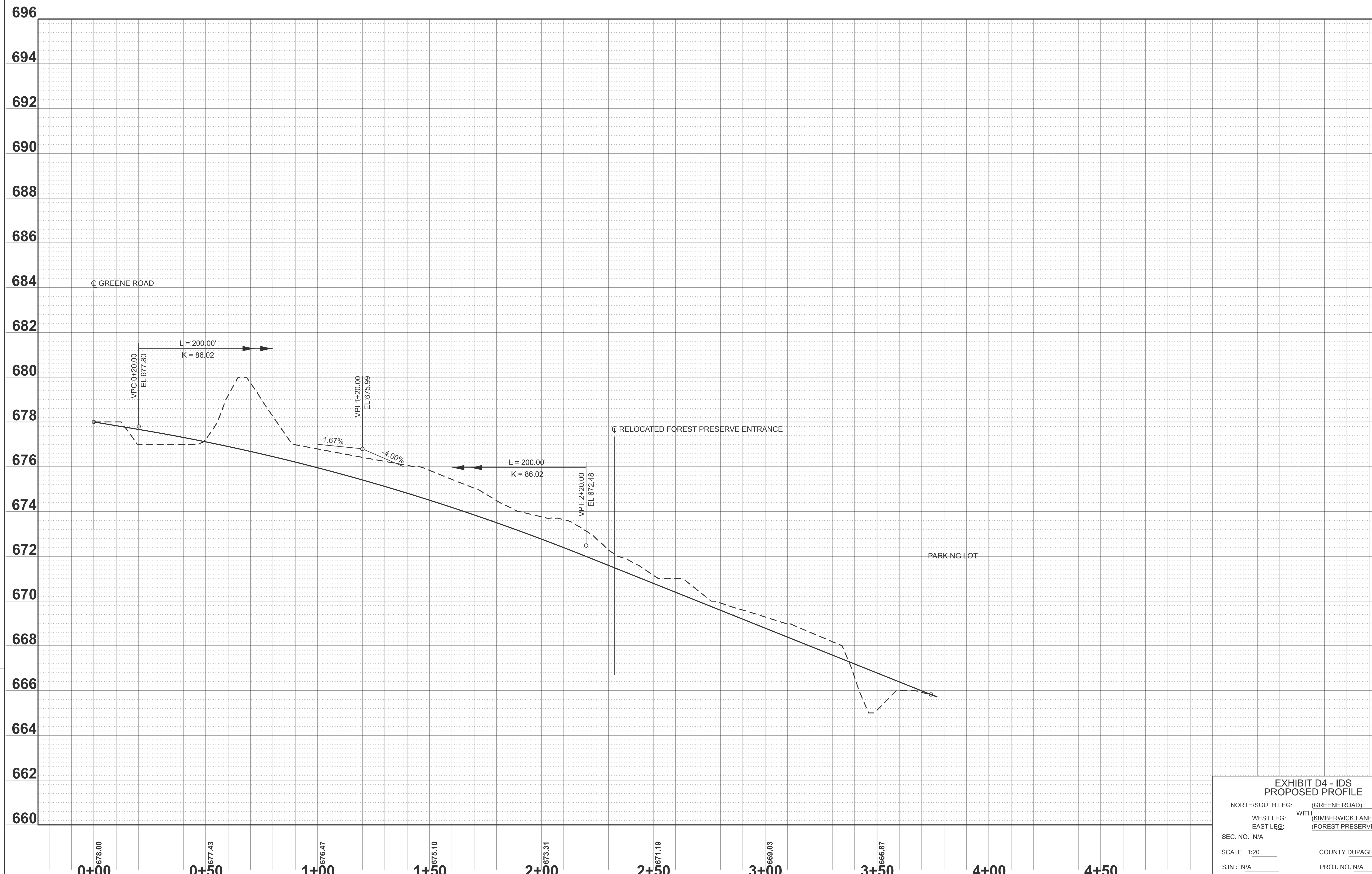


EXHIBIT D4 - IDS
PROPOSED PROFILE

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

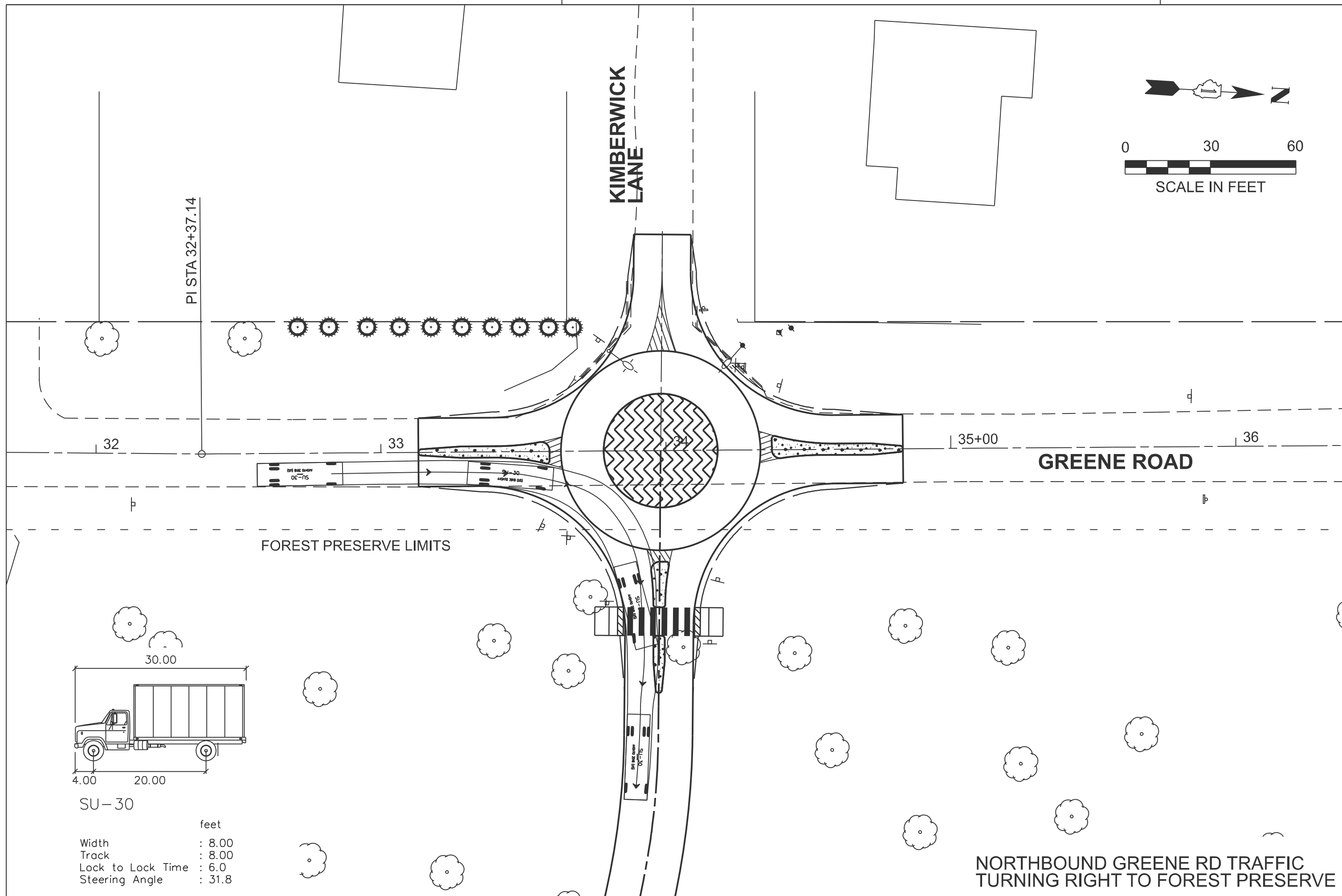
SEC. NO. N/A

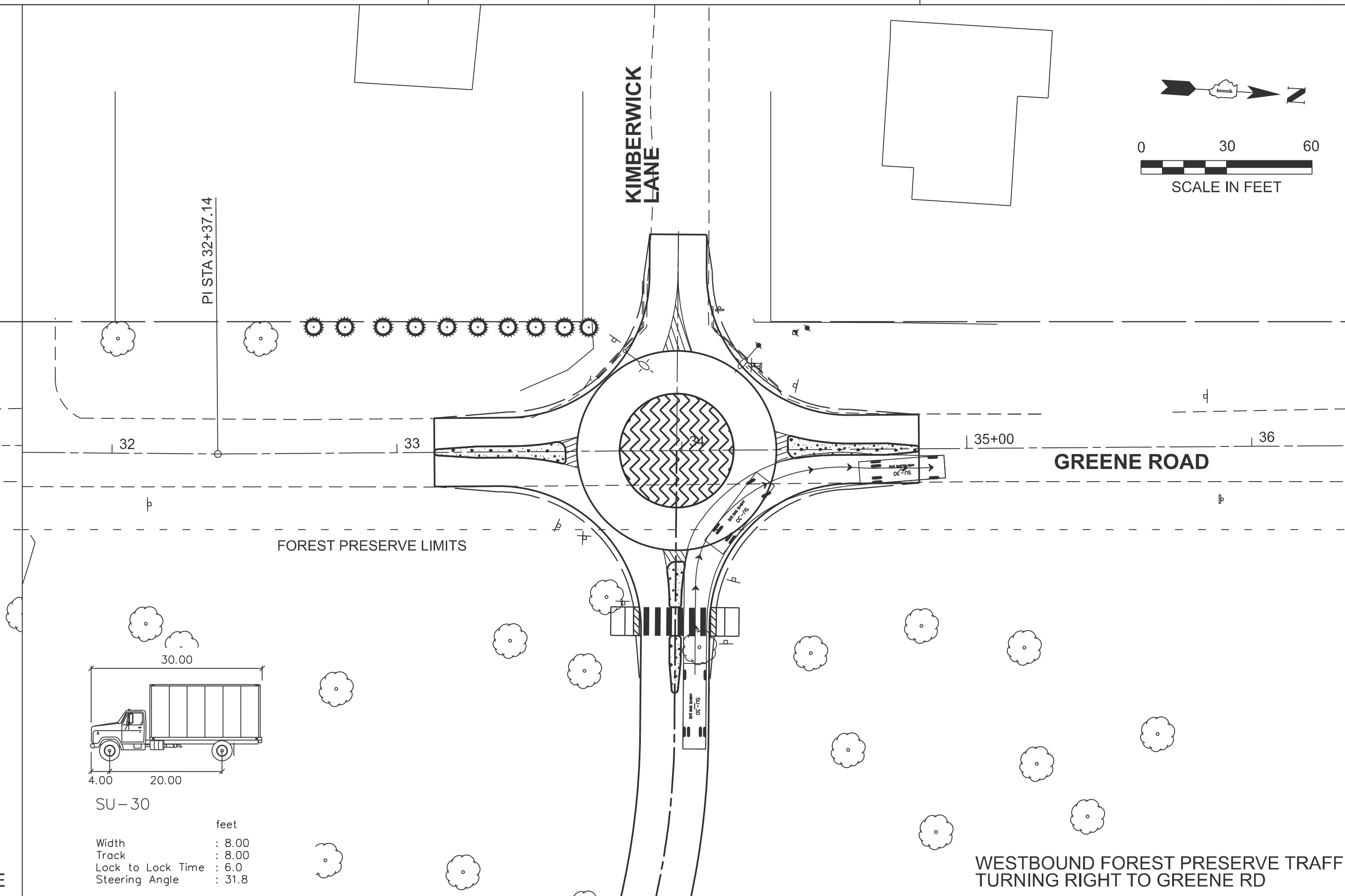
SCALE 1:20 COUNTY DUPAGE

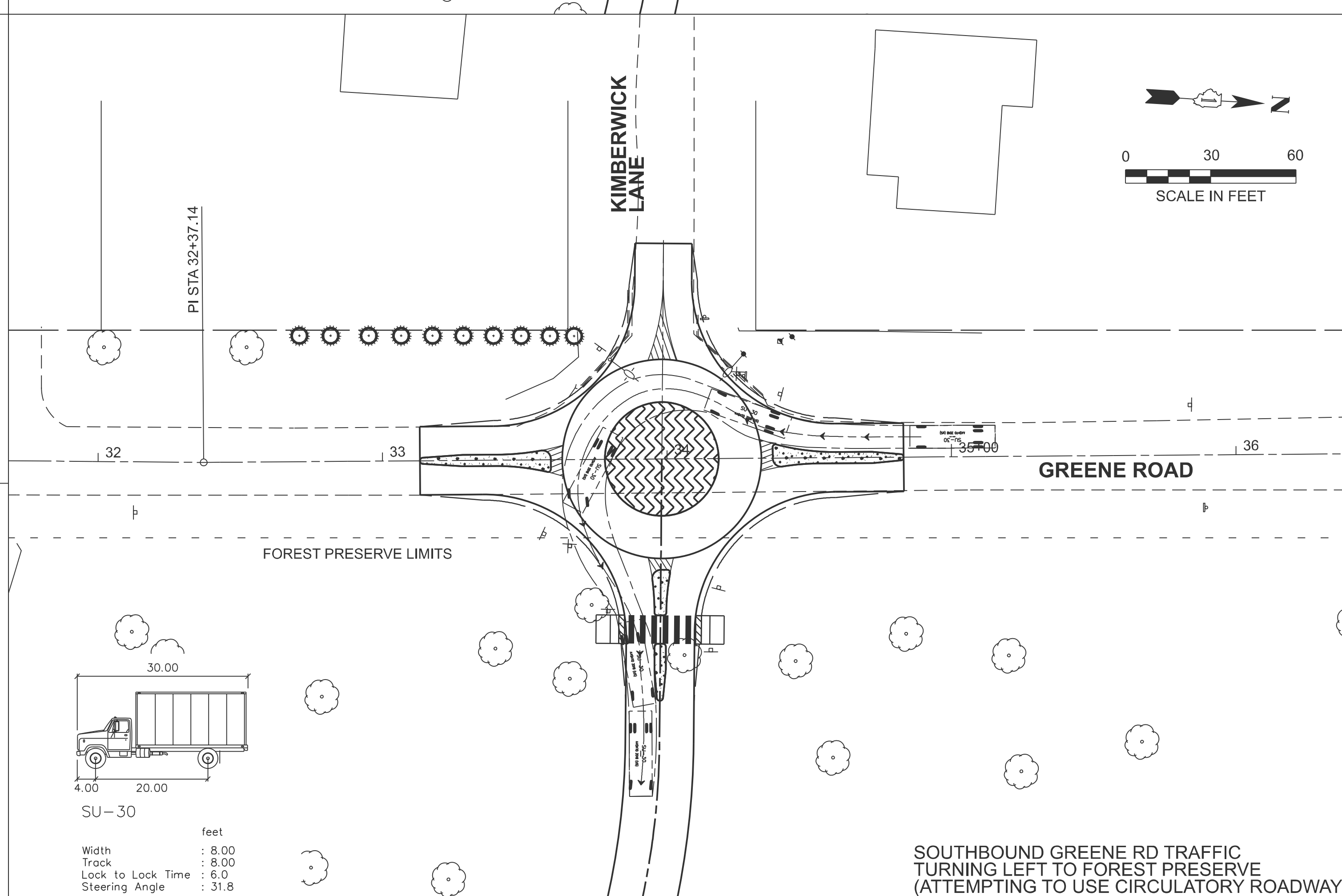
SJN : N/A PROJ. NO. N/A

I.D.S. SHEET 19 OF 26

PLOT DATE = 12/17/2025
FILE NAME = pw://stantec-sc-pw.bentley.com:stantec-sc-pw-02/Documents/173609200/CADData/CADsheets/D12345-sht-idsB-4_1.dgn
PLOT SCALE = $SCALE$
USER NAME = raarora







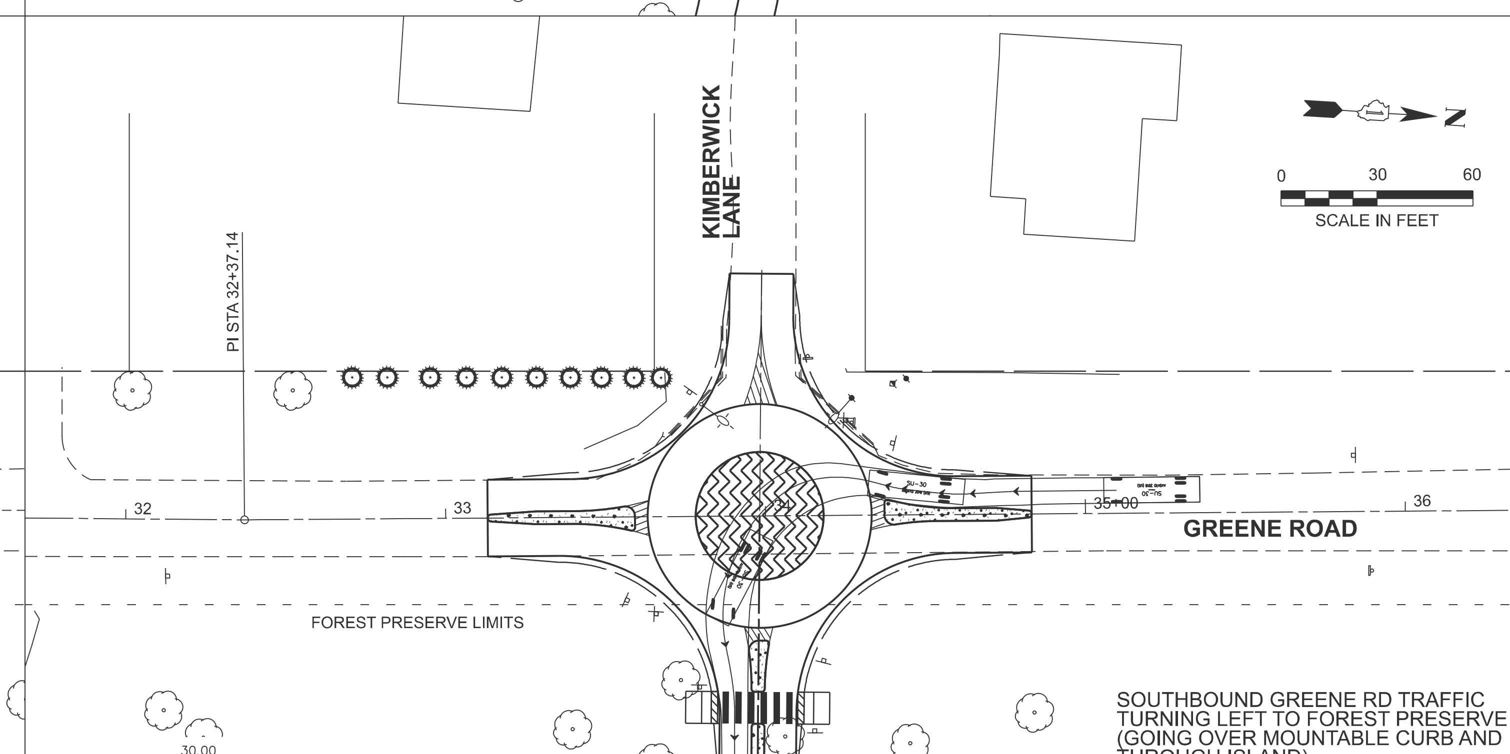


EXHIBIT D5 - IDS AUTOTURN ANALYSIS

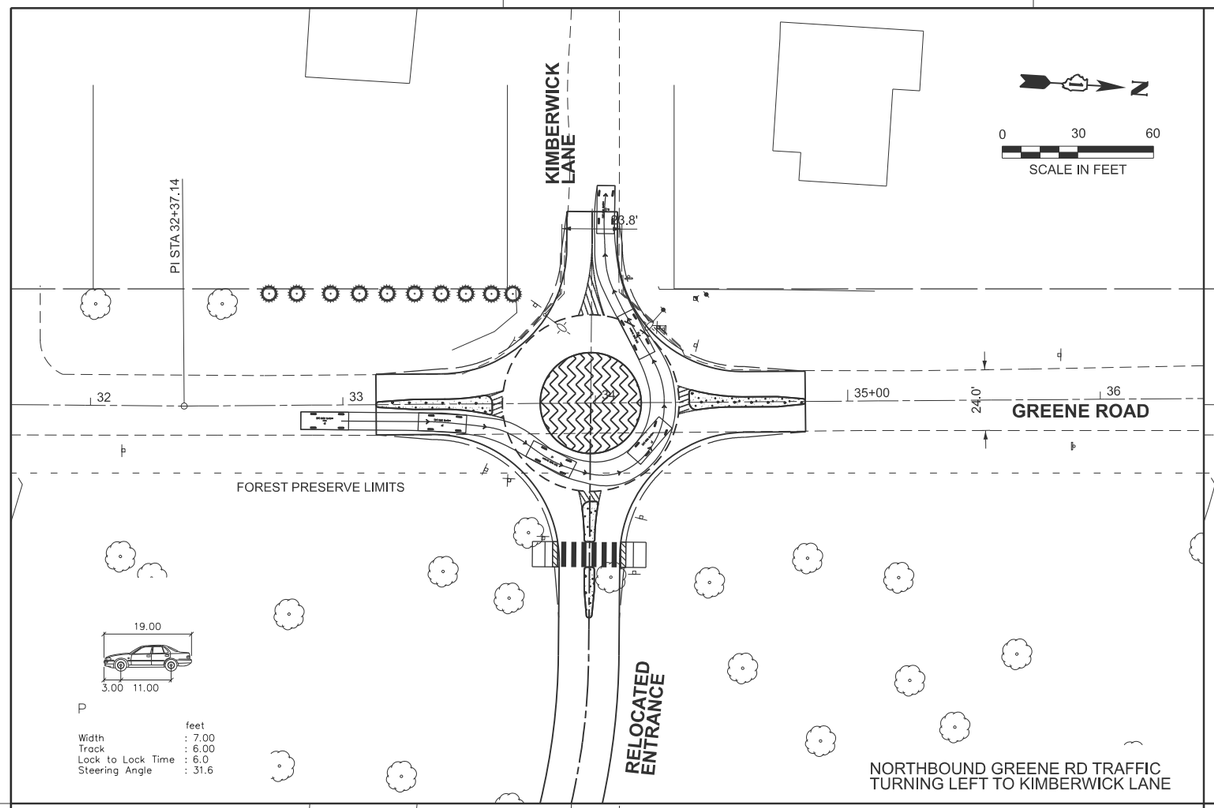
NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

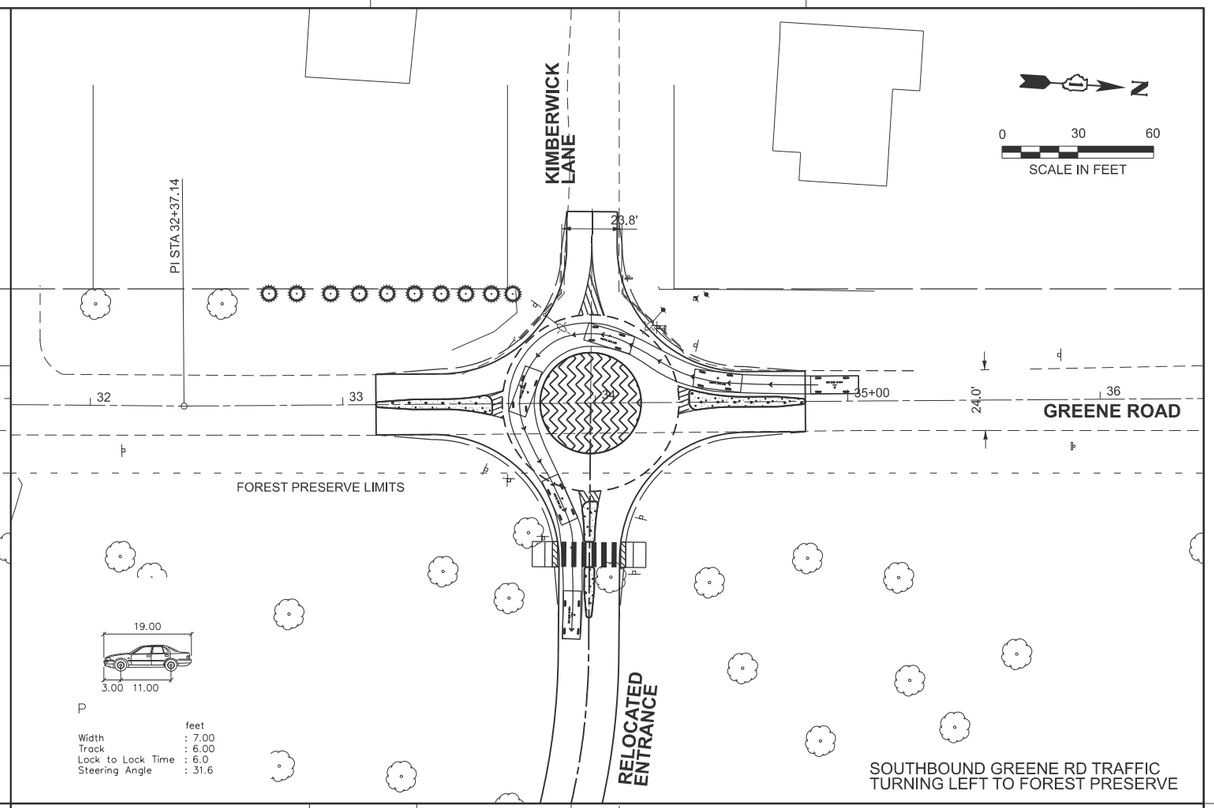
SCALE 1:30 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

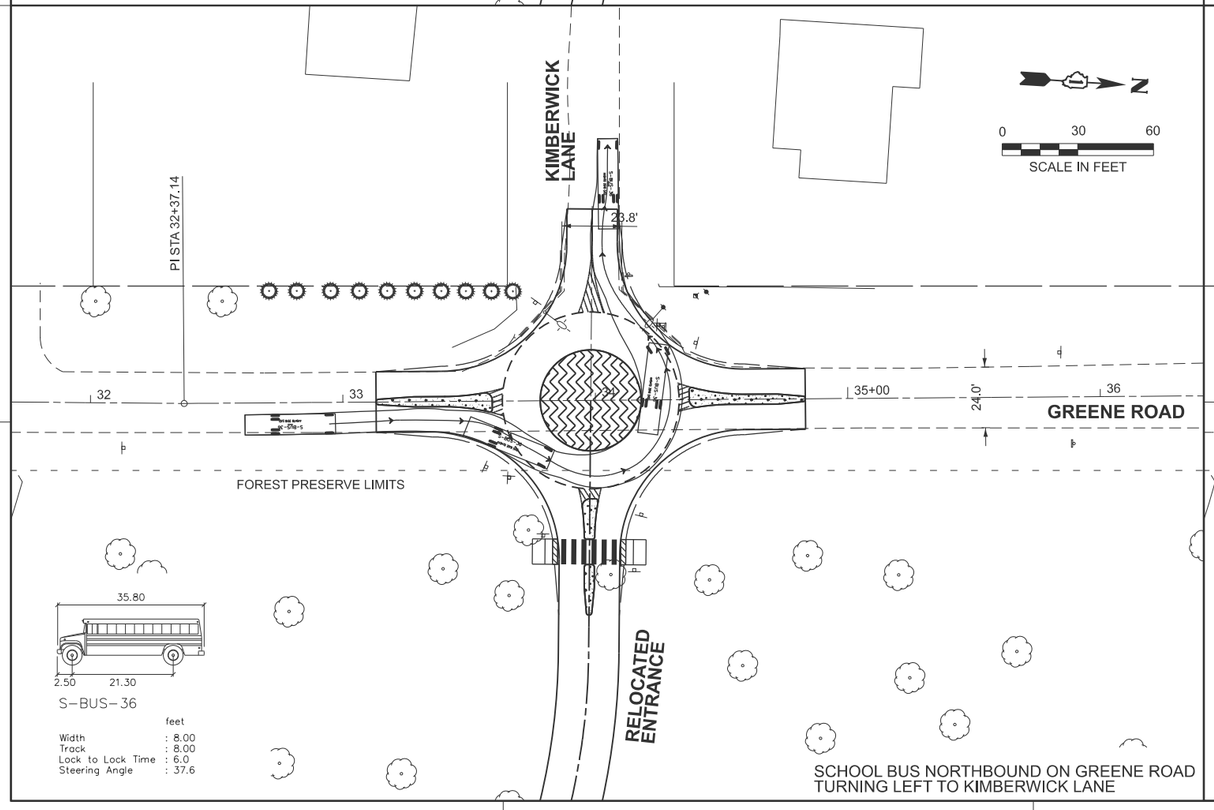
I.D.S. SHEET 20 OF 26



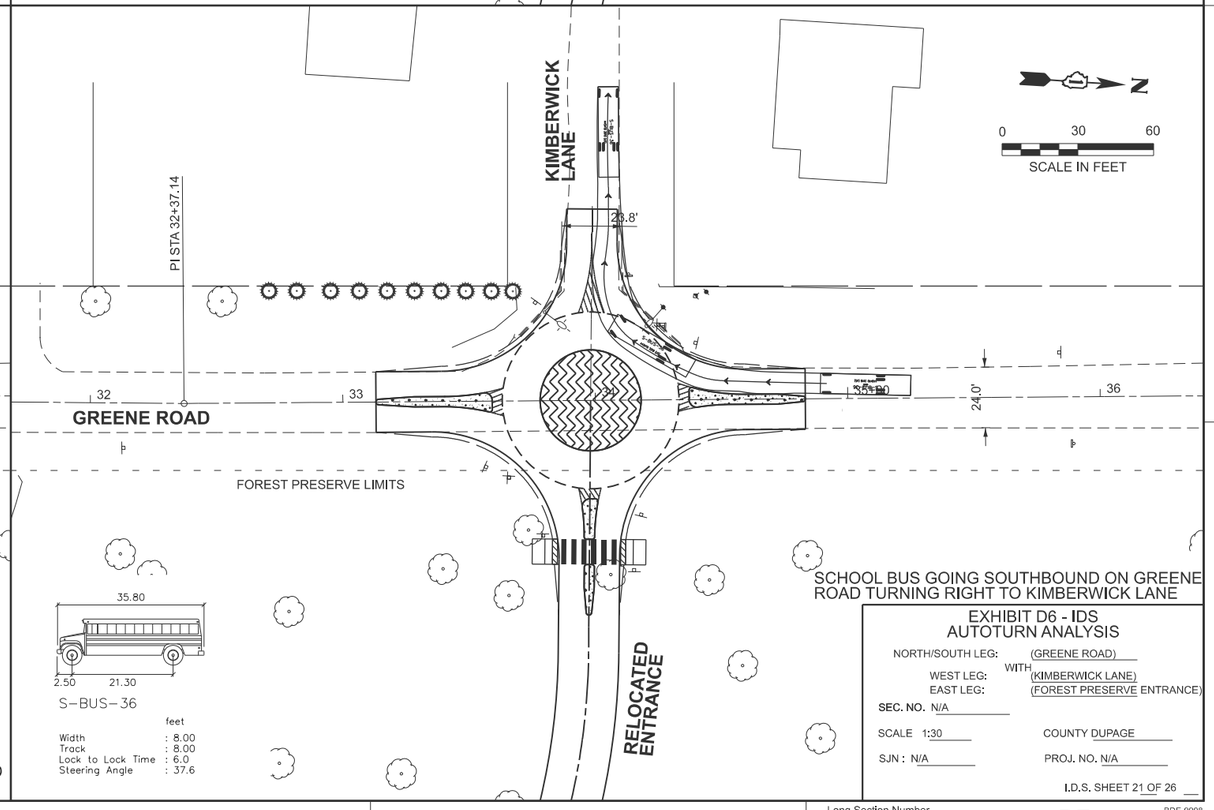
NORTHBOUND GREENE RD TRAFFIC TURNING LEFT TO KIMBERWICK LANE



SOUTHBOUND GREENE RD TRAFFIC TURNING LEFT TO FOREST PRESERVE



SCHOOL BUS NORTHBOUND ON GREENE ROAD TURNING LEFT TO KIMBERWICK LANE



SCHOOL BUS GOING SOUTHBOUND ON GREENE ROAD TURNING RIGHT TO KIMBERWICK LANE

EXHIBIT D6 - IDS
AUTOTURN ANALYSIS

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
WEST LEG: (KIMBERWICK LANE)
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:30 COUNTY DUPAGE

SJN : N/A PROJ. NO. N/A

I.D.S. SHEET 21 OF 26

Long Section Number
Multiple County Names

D7

BDE-9908

Appendix E Alternative C IDS

PLOT DATE = 12/17/2025
FILE NAME = pw:\\dantec-c-pw.bentley.com:dantec-c-pw-02\Documents\173699200\CADData\CADsheets\D12345-sht-idsC-1.dgn
PLOT SCALE = $SCALES
USER NAME = mmansour

TWO-WAY STOP-CONTROLLED CAPACITY DESIGN ANALYSIS

PROGRAM USED: HCS 2026 VERSION: 8.5 PEAK HOUR FACTOR: 0.95
SIGNALIZED INTERSECTION(S) WITHIN 0.25 MILES OF INTERSECTION ALONG MAJOR ROUTE? YES
FLARED APPROACH FOR MINOR STREET RIGHT-TURNING VEHICLE? (YES/NO): YES ON THE EAST APPROACH, N/A ON THE WEST APPROACH.
SINGLE OR TWO-STAGE GAP ACCEPTANCE? SINGLE

APPROACH		EASTBOUND			WESTBOUND			NORTHBOUND			SOUTHBOUND		
MAJOR OR MINOR LEG?		MINOR			MINOR			MAJOR			MAJOR		
LANE GROUP		L	T	R	L	T	R	L	T	R	L	T	R
NUMBER OF LANES					0	1	0		1	0	0	1	
2050 30TH MAX. HOUR TRAFFIC (V) (veh/h)	A.M.				15		15		230	15	15	230	
	P.M.				20		20		255	20	20	255	
PEDESTRIANS/HOUR (ped/h) COUNT OR ESTIMATE?	A.M.				0		0				0	0	
	P.M.				0		0				0	0	
CAPACITY $c_{p,x}$ OR ( ) $_t$ (veh/h)	A.M.					621					1319		
	P.M.					578					1284		
v/c RATIO ($v/c_{p,x}$)	A.M.					0.05					0.01		
	P.M.					0.07					0.02		
STORAGE QUEUE (NO. OF VEHICLES)	A.M.					0.2					0.0		
	P.M.					0.2					0.0		
CONTROL DELAY (SECONDS)	A.M.					11.1					7.8	0.1	
	P.M.					11.7					7.9	0.2	
LANE GROUP LEVEL OF SERVICE	A.M.					B					A	A	
	P.M.					B					A	A	
APPROACH DELAY, d (SEC)	A.M.					11.1						0.5	
	P.M.					11.7						0.5	
APPROACH LEVEL OF SERVICE	A.M.					B						A	
	P.M.					B						A	

ELEMENTS CONTROLLING DESIGN

PREFERRED ROUTE (NORTH-SOUTH LEG):

F.A. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: N/A.
STREET NAME: GREENE ROAD. SRA ROUTE? NO.
FUNCTIONAL CLASSIFICATION: MAJOR COLLECTOR. OSOW DESIGN? NO.
EXISTING ADT: 3800 VPD. DESIGN YEAR ADT: 4600 VPD.
PROPOSED DESIGN SPEED: 40 MPH. PROPOSED POSTED SPEED: 35 MPH.

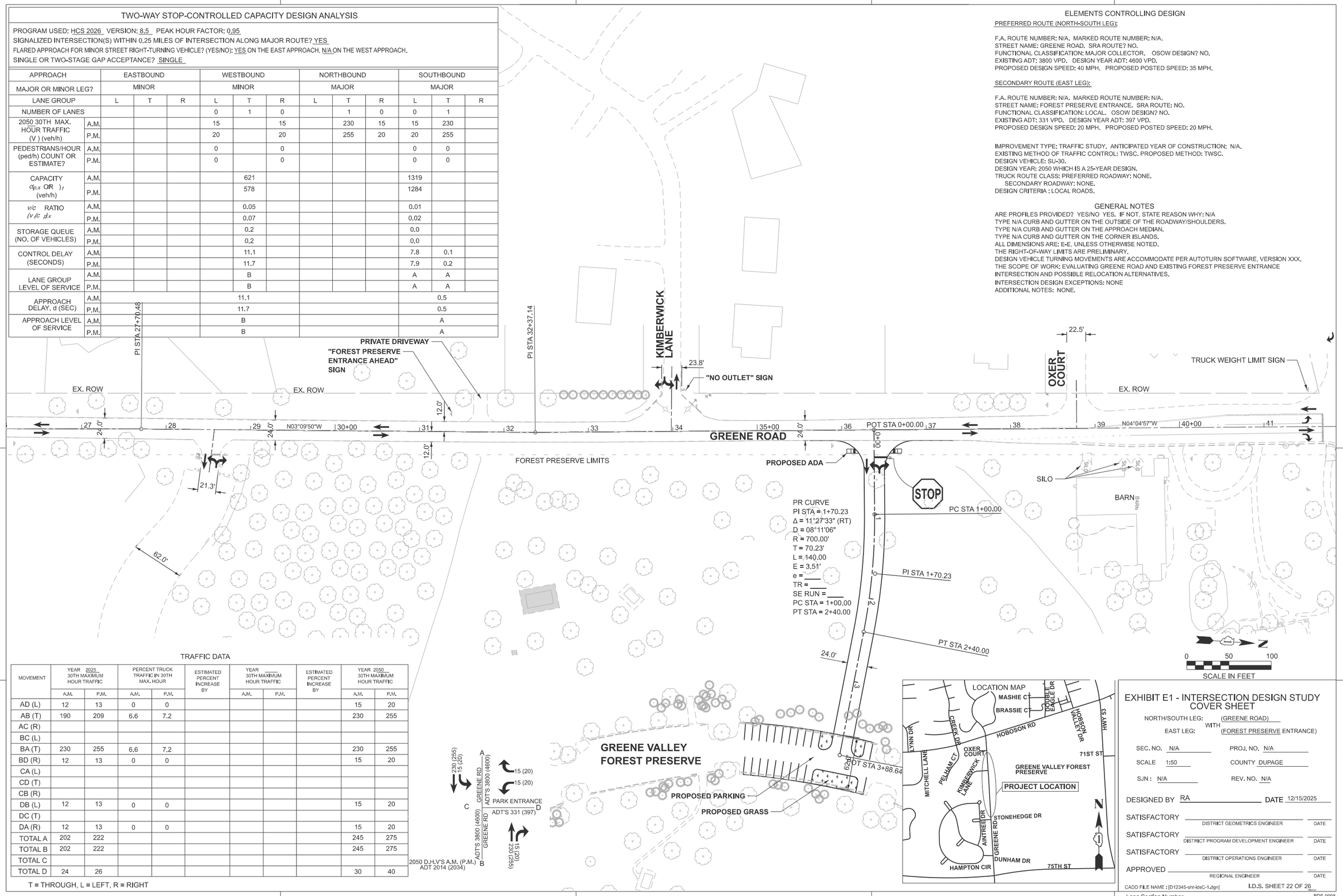
SECONDARY ROUTE (EAST LEG):

F.A. ROUTE NUMBER: N/A. MARKED ROUTE NUMBER: N/A.
STREET NAME: FOREST PRESERVE ENTRANCE. SRA ROUTE: NO.
FUNCTIONAL CLASSIFICATION: LOCAL. OSOW DESIGN? NO.
EXISTING ADT: 331 VPD. DESIGN YEAR ADT: 397 VPD.
PROPOSED DESIGN SPEED: 20 MPH. PROPOSED POSTED SPEED: 20 MPH.

IMPROVEMENT TYPE: TRAFFIC STUDY, ANTICIPATED YEAR OF CONSTRUCTION: N/A.
EXISTING METHOD OF TRAFFIC CONTROL: TWSC. PROPOSED METHOD: TWSC.
DESIGN VEHICLE: SU-30.
DESIGN YEAR: 2050 WHICH IS A 25-YEAR DESIGN.
TRUCK ROUTE CLASS: PREFERRED ROADWAY: NONE.
SECONDARY ROADWAY: NONE.
DESIGN CRITERIA : LOCAL ROADS.

GENERAL NOTES

ARE PROFILES PROVIDED? YES/NO YES. IF NOT, STATE REASON WHY: N/A
TYPE N/A CURB AND GUTTER ON THE OUTSIDE OF THE ROADWAY/SHOULDERS.
TYPE N/A CURB AND GUTTER ON THE APPROACH MEDIAN.
TYPE N/A CURB AND GUTTER ON THE CORNER ISLANDS.
ALL DIMENSIONS ARE: E-E, UNLESS OTHERWISE NOTED.
THE RIGHT-OF-WAY LIMITS ARE PRELIMINARY.
DESIGN VEHICLE TURNING MOVEMENTS ARE ACCOMMODATE PER AUTOTURN SOFTWARE, VERSION XXX.
THE SCOPE OF WORK: EVALUATING GREENE ROAD AND EXISTING FOREST PRESERVE ENTRANCE INTERSECTION AND POSSIBLE RELOCATION ALTERNATIVES.
INTERSECTION DESIGN EXCEPTIONS: NONE
ADDITIONAL NOTES: NONE.



TRAFFIC DATA

MOVEMENT	YEAR 2025 30TH MAXIMUM HOUR TRAFFIC		PERCENT TRUCK TRAFFIC IN 30TH MAX. HOUR		ESTIMATED PERCENT INCREASE BY	YEAR ____ 30TH MAXIMUM HOUR TRAFFIC		ESTIMATED PERCENT INCREASE BY	YEAR 2050 30TH MAXIMUM HOUR TRAFFIC	
	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.		A.M.	P.M.
AD (L)	12	13	0	0					15	20
AB (T)	190	209	6.6	7.2					230	255
AC (R)										
BC (L)										
BA (T)	230	255	6.6	7.2					230	255
BD (R)	12	13	0	0					15	20
CA (L)										
CD (T)										
CB (R)										
DB (L)	12	13	0	0					15	20
DC (T)										
DA (R)	12	13	0	0					15	20
TOTAL A	202	222							245	275
TOTAL B	202	222							245	275
TOTAL C										
TOTAL D	24	26							30	40

T = THROUGH, L = LEFT, R = RIGHT

EXHIBIT E1 - INTERSECTION DESIGN STUDY COVER SHEET

NORTH/SOUTH LEG: (GREENE ROAD)
EAST LEG: WITH (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A PROJ. NO. N/A
SCALE 1:50 COUNTY DUPAGE
SJN : N/A REV. NO. N/A

DESIGNED BY RA DATE 12/15/2025

SATISFACTORY _____ DISTRICT GEOMETRICS ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT PROGRAM DEVELOPMENT ENGINEER _____ DATE
SATISFACTORY _____ DISTRICT OPERATIONS ENGINEER _____ DATE
APPROVED _____ REGIONAL ENGINEER _____ DATE

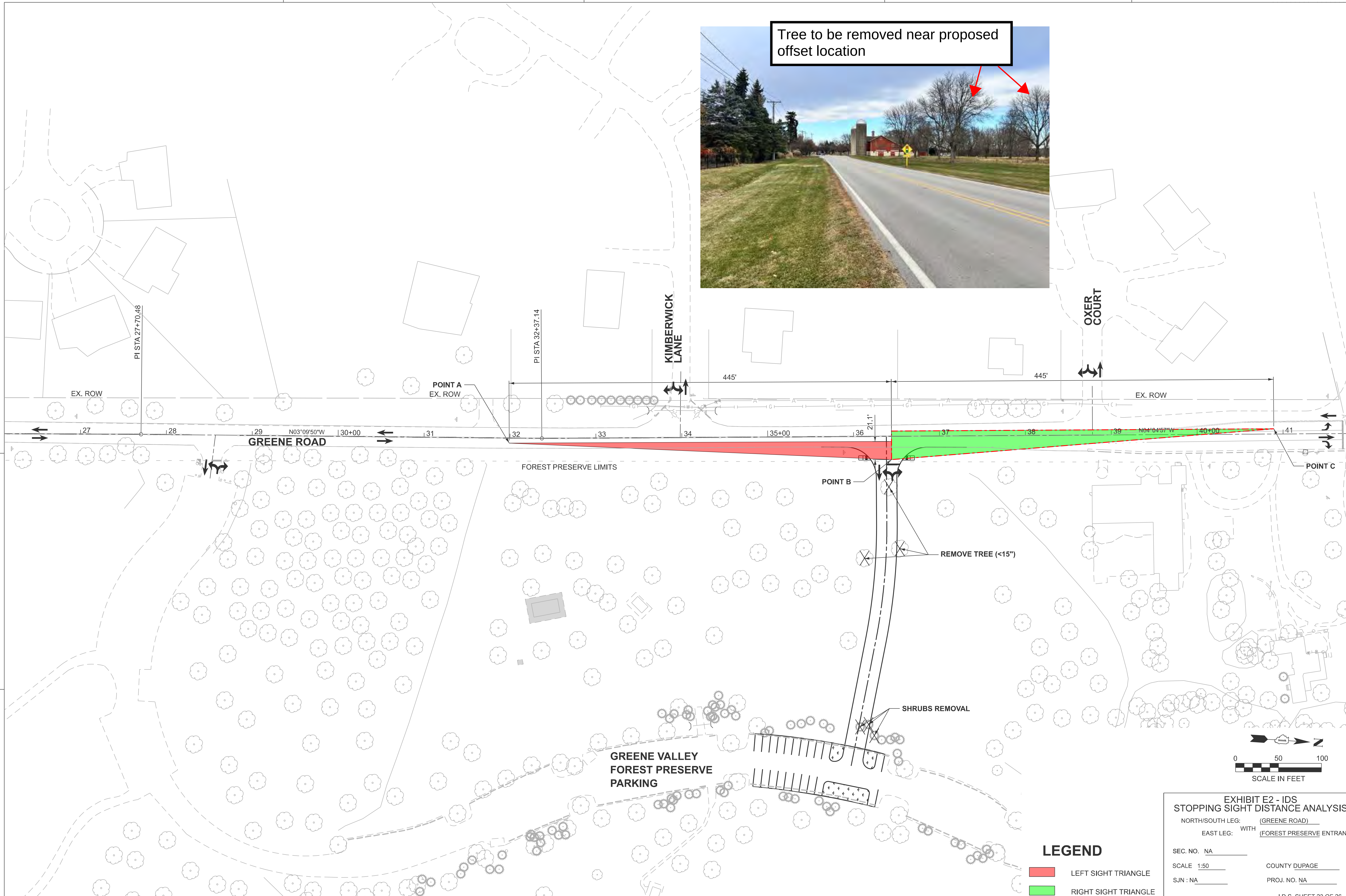
CADD FILE NAME : [D12345-sht-idsC-1.dgn] I.D.S. SHEET 22 OF 26

Long Section Number
Multiple County Names

BDE-9908

E2

PLOT DATE = 12/17/2025
FILE NAME = pw://stantec-sc-pw.bentley.com:stantec-sc-pw-02/Documents/173609200/CADData/CADsheets/D12345-sht-idsC-5.dgn
PLOT SCALE = $SCALE$
USER NAME = mmansour



PI STA 27+70.48
PI STA 32+37.14
KIMBERWICK LANE
OXER COURT
POINT A
EX. ROW
EX. ROW
EX. ROW
445'
445'
21.1'
27
28
29
N03°09'50"W
30+00
31
32
33
34
35+00
36
37
38
39
N04°04'57"W
40+00
41
GREENE ROAD
FOREST PRESERVE LIMITS
POINT B
POINT C
REMOVE TREE (<15")
SHRUBS REMOVAL
GREENE VALLEY FOREST PRESERVE PARKING
N
0
50
100
SCALE IN FEET
LEGEND
LEFT SIGHT TRIANGLE
RIGHT SIGHT TRIANGLE
Tree to be removed near proposed offset location

EXHIBIT E2 - IDS
STOPPING SIGHT DISTANCE ANALYSIS

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. NA

SCALE 1:50 COUNTY DUPAGE

SJN : NA PROJ. NO. NA

I.D.S. SHEET 23 OF 26

PLOT DATE = 12/17/2025
FILE NAME = pw://stantec-sc-pw.bentley.com:stantec-sc-pw-02/Documents/173609200/CADData/CADsheets/D12345-sht-idsC-2.dgn
PLOT SCALE = $SCALE$
USER NAME = mmansour

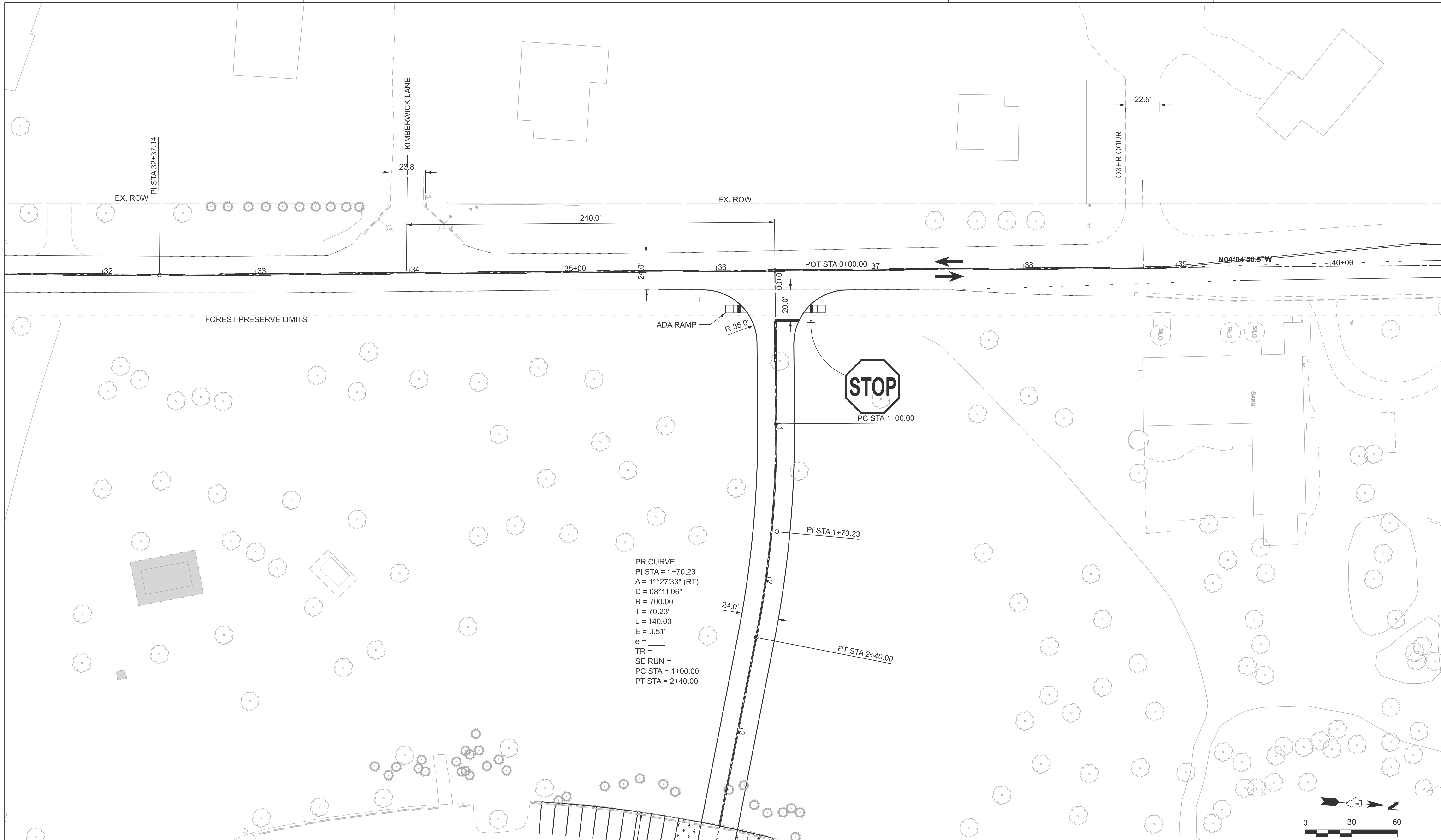


EXHIBIT E3 - IDS
DETAIL SHEET

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A
SCALE 1:30
COUNTY DUPAGE
SJN : N/A
PROJ. NO. N/A

I.D.S. SHEET 24 OF 26

Long Section Number
Multiple County Names
BDE-9908
E4

PLOT DATE = 12/17/2025
FILE NAME = pw:\\slantec-sc-pw.bentley.com:slantec-sc-pw-02\Documents\173699200\CADData\CADsheets\D12345-sht-Hist-C-3.dgn
PLOT SCALE = $$SCALE$$
USER NAME = mmansour

696
694
692
690
688
686
684
682
680
678
676
674
672
670
668
666
664
662
660

℄ GREENE ROAD

L = 200.00'
K = 50.00

VPC 1+00.00
EL 677.00

VPI 2+00.00
EL 676.00

-1.00%

-5.00%

L = 200.00'
K = 50.00

℄ RELOCATED FOREST PRESERVE ENTRANCE

VPT 3+00.00
EL 671.00

PARKING LOT

678.00 **678.00** 0+00
677.00 **677.50** 0+50
677.00 **677.00** 1+00
677.46 **676.25** 1+50
676.98 **675.00** 2+00
675.59 **673.25** 2+50
672.12 **671.00** 3+00
667.72 **668.50** 3+50
4+00
4+50
5+

EXHIBIT E4 - IDS
PROPOSED PROFILE

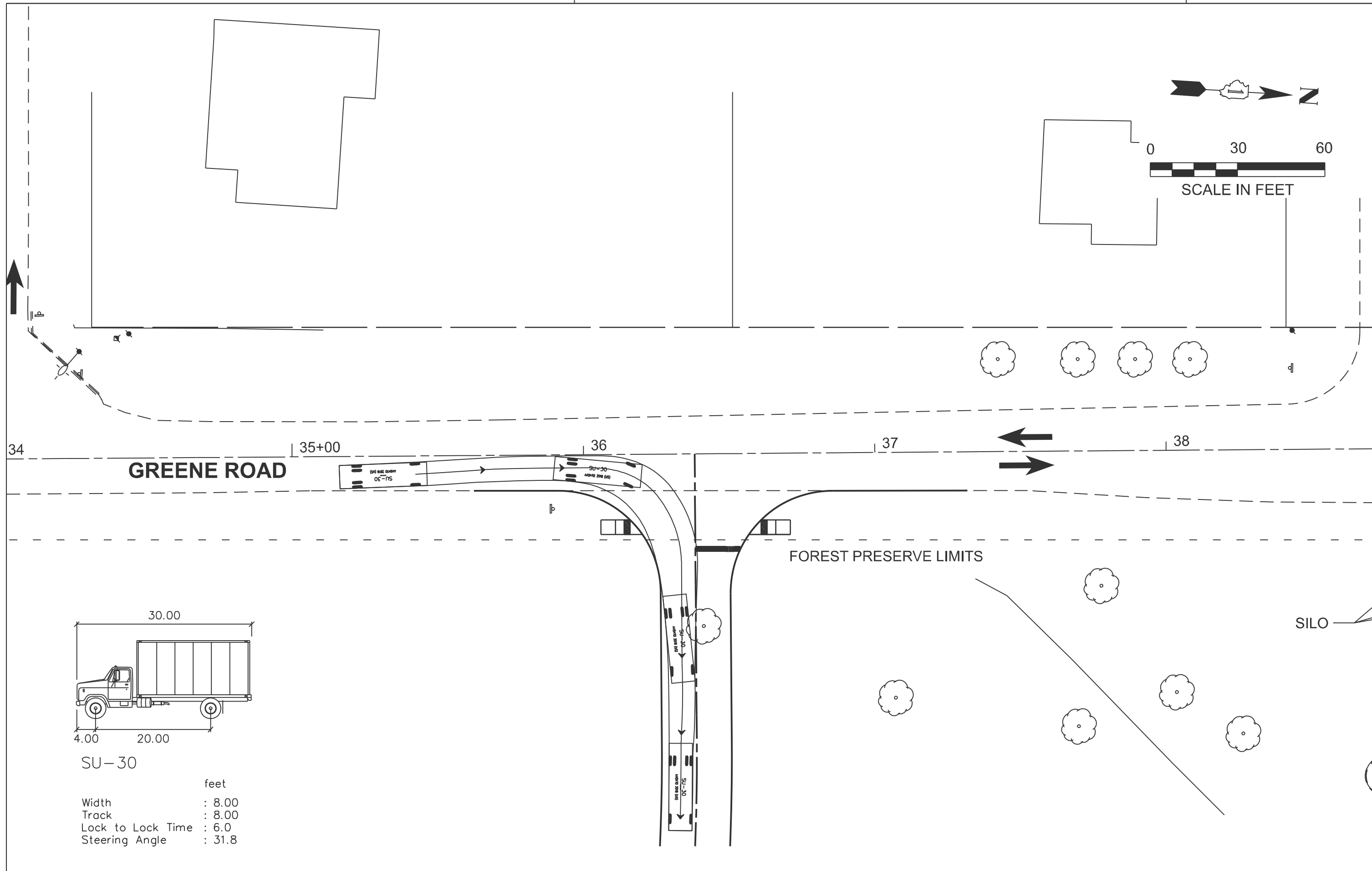
NORTH/SOUTH LEG: (GREENE ROAD)
EAST LEG: WITH (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A
SCALE 1:20 COUNTY DUPAGE
SJN : N/A PROJ. NO. N/A
I.D.S. SHEET 25 OF 26

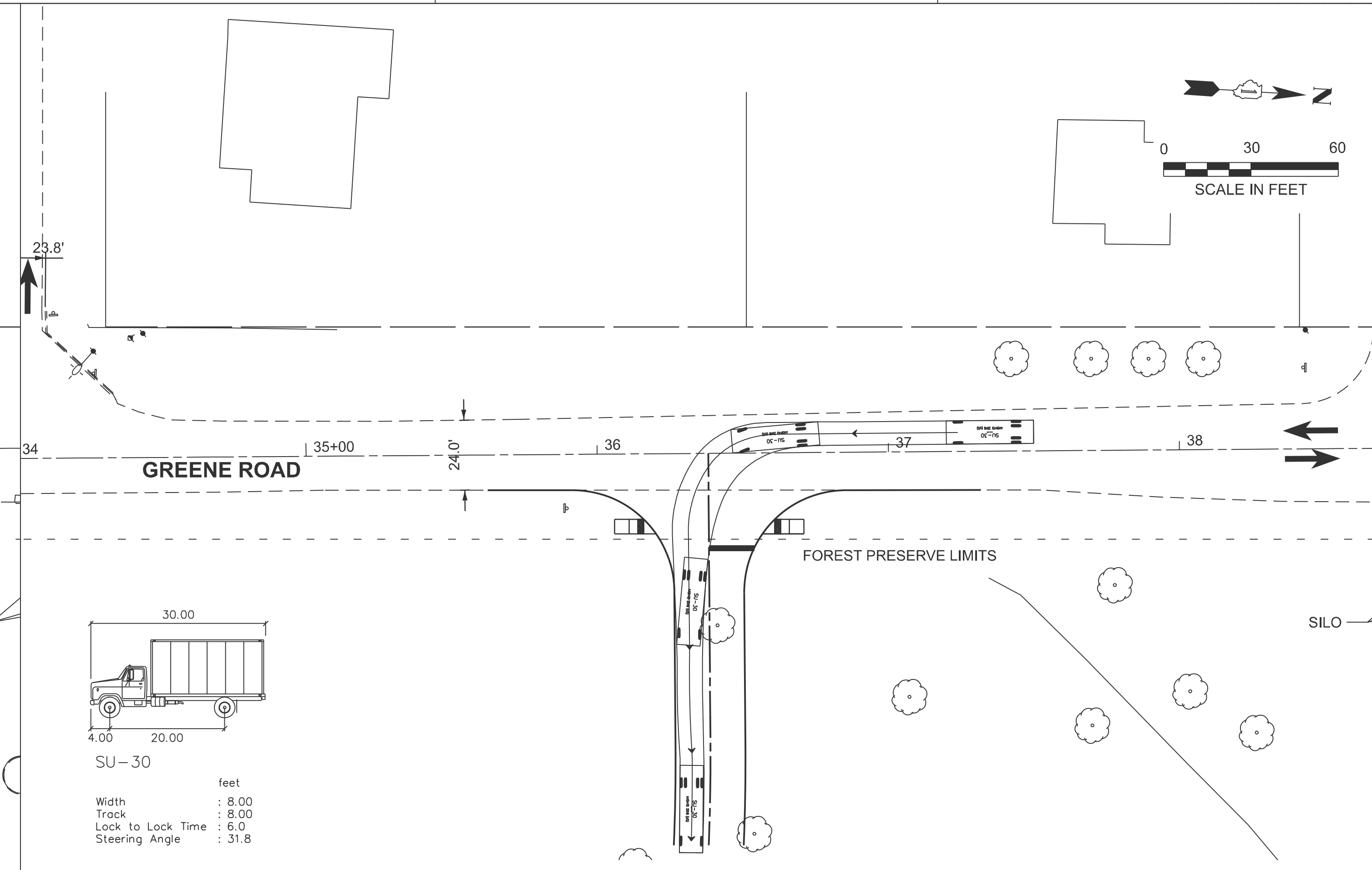
Long Section Number
Multiple County Names

BDE-9908

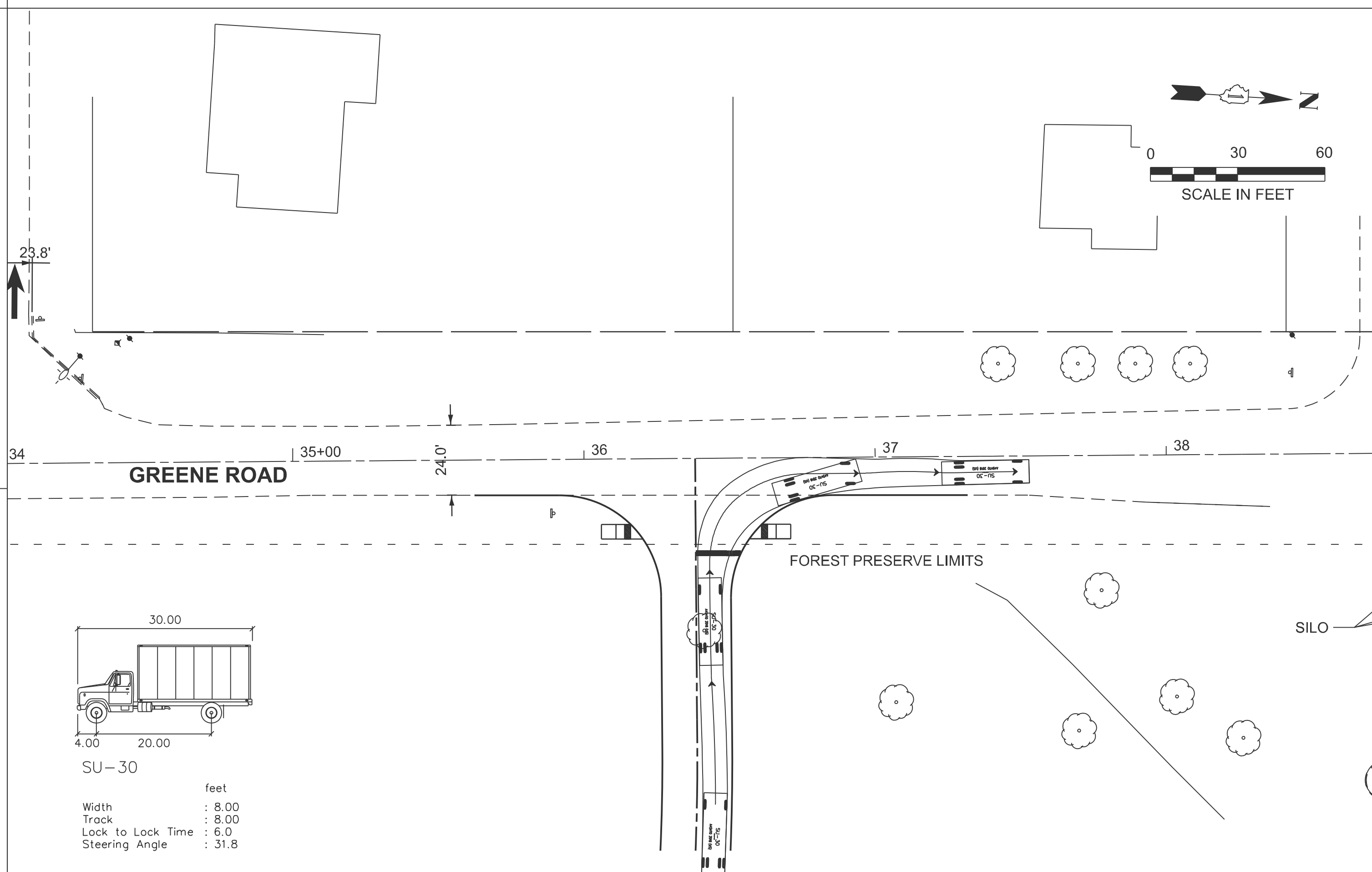
E5



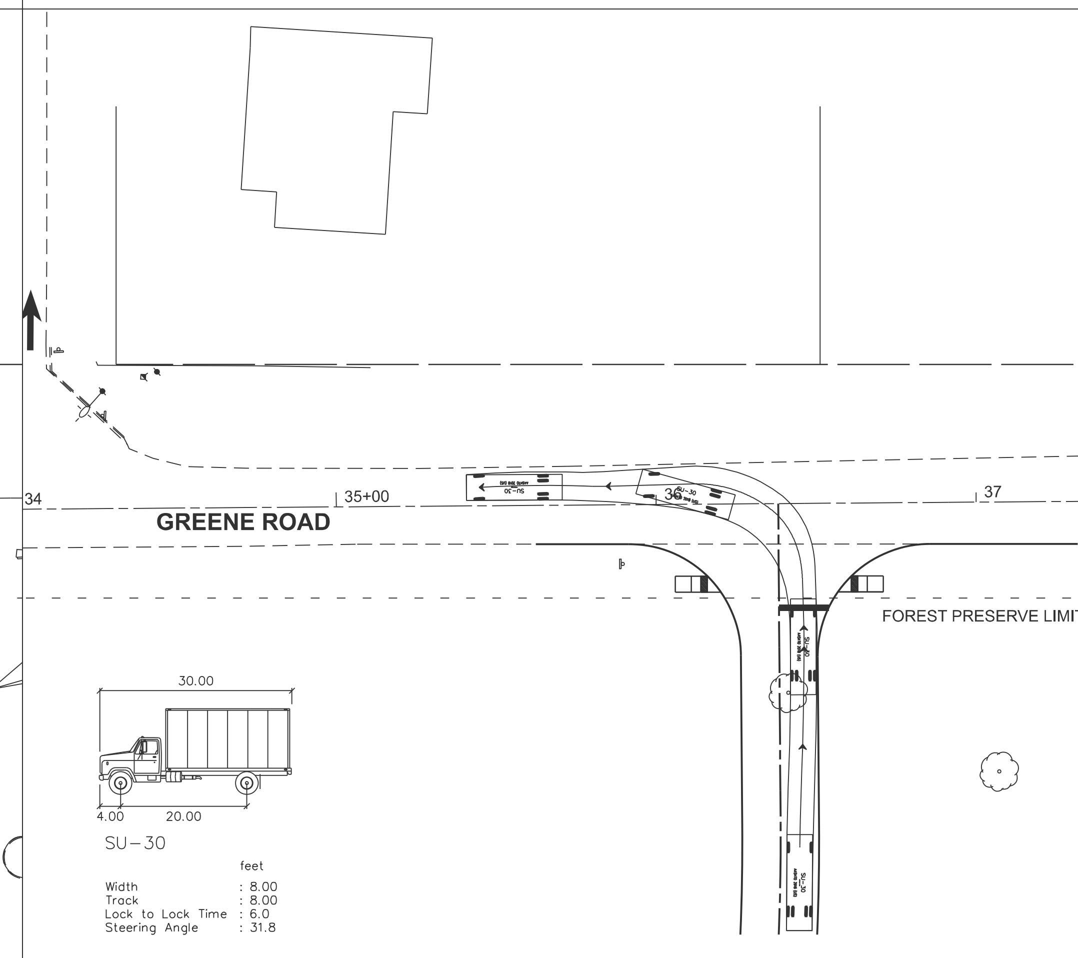
NORTHBOUND GREENE RD TRAFFIC TURNING RIGHT TO FOREST PRESERVE



SOUTHBOUND GREENE RD TRAFFIC TURNING LEFT TO FOREST PRESERVE



WESTBOUND FOREST PRESERVE TRAFFIC TURNING LEFT TO GREENE RD



WESTBOUND FOREST PRESERVE TRAFFIC TURNING RIGHT TO GREENE RD

EXHIBIT E5 - IDS
AUTOTURN ANALYSIS

NORTH/SOUTH LEG: (GREENE ROAD)
WITH
EAST LEG: (FOREST PRESERVE ENTRANCE)

SEC. NO. N/A

SCALE 1:30 | COUNTY DUPAGE

SJN : N/A | PROJ. NO. N/A

I.D.S. SHEET 26 OF 26

Long Section Number
Multiple County Names

BDE-9908

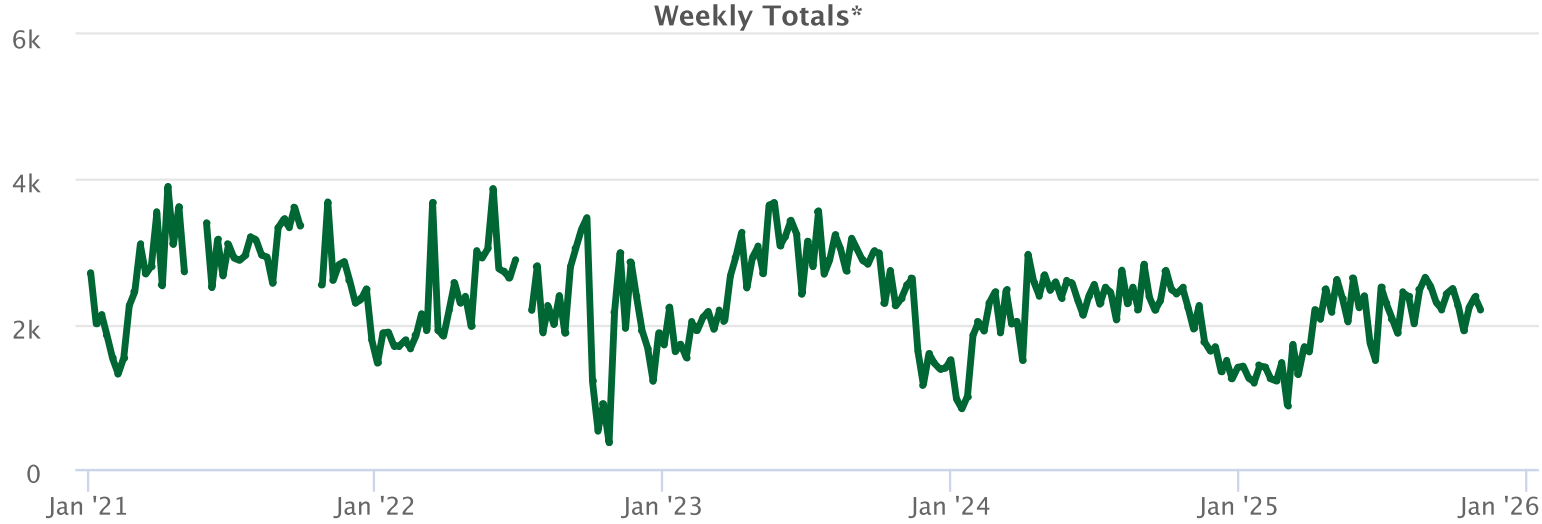
E6

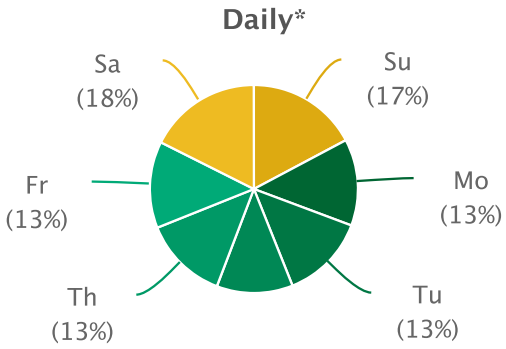
PLOT DATE = 12/17/2025
PLOT SCALE = $SCALE$
USER NAME = mmansour

Appendix F Forest Preserve Visitor Data

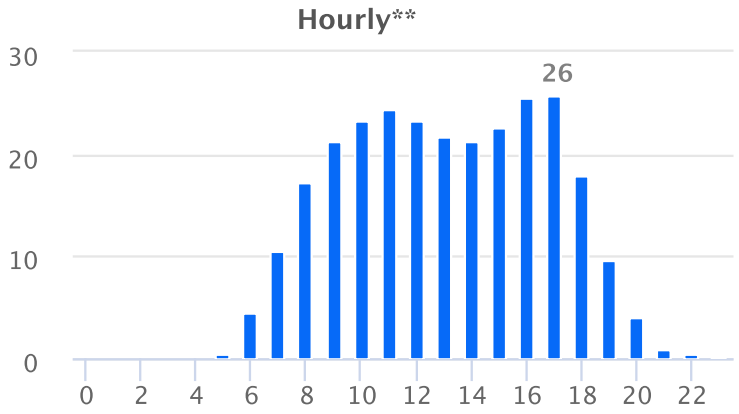
East - Greene Valley North

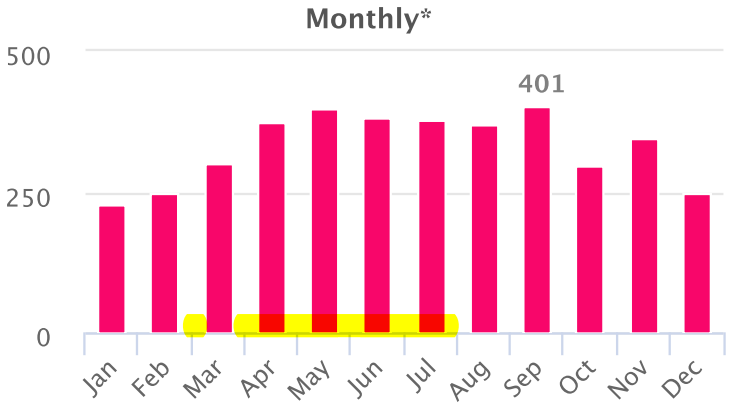
Site report: from 2021-01-01 to 2026-01-01
Made by: eastintern@dupageforest.org on 2025-11-12
Made with: TRAFx DataNet (www.trafx.net)
Divide 2 (Yes)

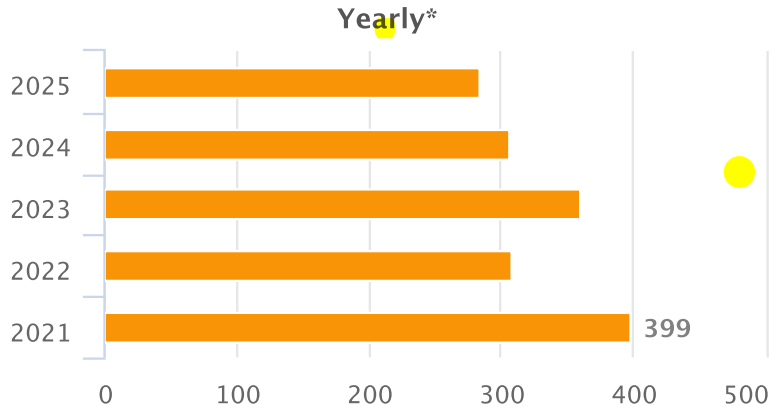




Avg. daily traffic: 330.7







* Weekly and Daily are calculated from Average Daily Traffic (ADT); Monthly and Yearly show ADT values.
** Based on last year of data only.

Appendix G CMAP Traffic Projections

Chicago Metropolitan Agency for Planning

433 West Van Buren Street, Suite 450
Chicago, IL 60607
cmap.illinois.gov | 312-454-0400

November 7, 2025

Kevin Horsfall
Director of Planning and Development
Forest Preserve District of DuPage County
3 S 580 Naperville Road
Wheaton, IL 60189

Subject: Greene Road between Hobson Road and 75th Street
Forest Preserve District of DuPage County

Dear Mr. Horsfall:

In response to a request made on your behalf and dated November 6, 2025, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
Greene Rd b/w 75th St and Hobson Rd, all vehicle	3,800	4,600
Greene Rd b/w 75th St and Hobson Rd, MU truck	275	333
Greene Rd b/w 75th St and Hobson Rd, SU truck	250	303

Traffic projections are developed using existing ADT data provided in the request letter and the results from the June 2025 CMAP Travel Demand Analysis. The regional travel model uses CMAP 2050 socioeconomic projections and assumes the implementation of the ON TO 2050 Comprehensive Regional Plan for the Northeastern Illinois area. The provision of this data in support of your request does not constitute a CMAP endorsement of the proposed development or any subsequent developments.

If you have any questions, please call me at (312) 386-8806 or email me at jrodriguez@cmap.illinois.gov

Jose Rodriguez, PTP, AICP
Senior Planner, Research & Analysis

cc: Arora, Phan, Pieniazek (Stantec); Arnt (FPD DuPage Co)
\2025_trafficForecasts\Woodridge\du-53-25\du-53-25.docx

TRAFFIC FORECAST RECORD

Record Number: du-53-25
Type of Report: Projection
Year Sought: 2050
Analyst: JAR
Organization Requestion Forecast: Stantec
Contact: Ravi Arora, PE, PTOE, RSP2I
Email or Phone: Ravi.Arora@stantec.com
Sponsor: Forest Preserve District of DuPage County
Date request was received: 11/6/2025
Date that response was emailed: 11/7/2025
Facility Location: Greene Road between Hobson Road and 75th Street
Municipality: Woodridge

Appendix H Design Criteria and Design Calculations

Design Criteria and Design Calculations

Exhibit H1 – Horizontal Alignment Maximum Deflection without Curve Guideline (IDOT BLRS)

BUREAU OF LOCAL ROADS & STREETS

29-2-2 HORIZONTAL ALIGNMENT August 2016

29-2.02 Basic Curve Equation

The point-mass formula is used to define vehicular operation around a curve. Where the curve is expressed using its radius, the basic equation for a simple curve is:

$$R = \frac{V^2}{15\,(e+f)}$$ (US Customary) Equation 29-2.1

$$R = \frac{V^2}{127(e+f)}$$ (Metric) Equation 29-2.1

where:

R = radius of curve, ft (m)

V = design speed, mph (km/h)

e = superelevation rate, decimal

f = side friction factor (constant based on design speed)

29-2.03 Minimum Radii

Figures 29-2A (e_{max} = 8.0%), 29-2B (e_{max} = 6.0%), and 29-2C (e_{max} = 4.0%) present the minimum radii for open-roadway conditions. See Section 29-3.01 for the selection of e_{max}. In most cases, the designer should avoid the use of minimum radii because this results in the use of maximum superelevation rates. These rates should be avoided because the facility must often accommodate vehicles traveling over a wide range of speeds. This is particularly true in Illinois where the entire State is subject to ice and snow. Where vehicular speeds are slow or stopped and the rate of superelevation is high, vehicles could slide down the cross slope when the pavement is icy.

29-2.04 Side Friction Factor

The side friction factor (f) represents the contribution of the roadway/tire interface to counterbalance the centrifugal force of a vehicle traversing the curve. This factor varies according to design speed and open-roadway or low-speed urban street conditions. It is important to recognize that the side friction factor represents a threshold of driver discomfort and not the point of impending skid. Figure 29-2D presents the side friction factors used in Equation 29-2.1 for open-roadway conditions.

29-2.05 Maximum Deflection Without Curve

It may be appropriate to omit a horizontal curve where very small deflection angles are present. As a guide, the designer may retain deflection angles of approximately 1° or less (urban) and 0°15′ (rural) on local agency facilities without providing a horizontal curve. For these angles, the absence of a horizontal curve should not affect operations or aesthetics.

Exhibit H2 – Horizontal Alignment Minium Radius Guideline (IDOT BLRS)

BUREAU OF LOCAL ROADS & STREETS

29-2-4 HORIZONTAL ALIGNMENT August 2016

US Customary		Metric	
Design Speed (mph)	Minimum Radii R_{min} (ft) *	Design Speed (km/h)	Minimum Radii R_{min} (m) *
20	86	30	22
25	154	40	47
30	250	50	86
35	371	60	135
40	533	70	203
45	711	80	280
50	926	90	---
55	---	100	---
60	---		

MINIMUM RADII
(e_{max} = 4.0%, Open-Roadway Conditions)

Figure 29-2C

Exhibit H3 – Minium Horizontal Curve Length Guideline (IDOT BLRS)

29-2.06 Minimum Length of Curve

The radius is used to calculate the length of curve by using the following equation:

$$L = \frac{2\pi R\Delta}{360}$$ Equation 29-2.2

where:

L = length of curve, ft (m)

Δ = deflection angle, degrees

R = radius of curve, ft (m)

A longer than calculated length of curve may be necessary depending on the design speed. Figure 29-2E provides design values for the minimum length of curve based on design speed.

For small deflection angles, horizontal curves should be sufficiently long to avoid the appearance of a kink. With a deflection angle of 5°, the minimum length of curve should be 350 ft (120 m) for a design speed of 55 mph (100 km/h). Where the deflection angle is 5° or less, the minimum length of curve in Figure 29-2E should be adjusted by the factor in Figure 29-2F.

US Customary			Metric		
Design Speed V (mph)	Minimum Length of Curve, L (ft)	Curve Radius, R* (ft)	Design Speed, V (km/h)	Minimum Length of Curve, L (m)	Curve Radius, R* (m)
20	100	1145	30	30	344
25	100	1145	40	30	344
30	100	1145	50	30	344
35	150	1720	60	50	573
40	200	2290	70	70	802
45	250	2865	80	90	1031
50	300	3440	90	110	1260
55	350	4010	100	130	1490
60	400	4585			

* $R = 360L / 2\pi\Delta$

MINIMUM LENGTHS OF CURVE
(Δ = 5°)

Figure 29-2E

Exhibit H4 – K-Value for Crest Curve Guideline (IDOT BLRS)

BUREAU OF LOCAL ROADS & STREETS

30-2-2 VERTICAL ALIGNMENT August 2016

US Customary				Metric			
Design Speed (mph)	SSD[1] (ft)	Rate of Vertical Curvature, K[2][3] (ft/%)	Minimum Curve Length (ft)	Design Speed (km/h)	SSD[1] (m)	Rate of Vertical Curvature, K[2][4] (m/%)	Minimum Curve Length (m)
20	115	7	60	30	35	2	18
25	155	12	75	40	50	4	24
30	200	19	90	50	65	7	30
35	250	29	105	60	85	11	36
40	305	44	120	70	105	17	42
45	360	61	135	80	130	26	48
50	425	84	150	90	160	39	54
55	495	114	165	100	185	52	60
60	570	151	180				

Notes:

1. *SSD values are from Figure 28-1A.*
2. *Maximum K-value for drainage on curbed roadways and bridges is 167 (51).*
3. $K = \frac{SSD^2}{2158}$, *where* : $h_1 = 3.5$ *ft*, $h_2 = 2$ *ft*
4. $K = \frac{SSD^2}{658}$, *where* : $h_1 = 1.080$ *m*, $h_2 = 600$ *mm*

K-VALUES FOR CREST VERTICAL CURVES — STOPPING SIGHT DISTANCES (Passenger Cars)

Figure 30-2A

Exhibit H5 – K-Value for Sag Curve Guideline (IDOT BLRS)

BUREAU OF LOCAL ROADS & STREETS

August 2016 VERTICAL ALIGNMENT 30-2-7

US Customary				Metric			
Design Speed (mph)	SSD[1] (ft)	Rate of Vertical Curvature, K[2][3] (ft/%)	Minimum Curve Length (ft)	Design Speed (km/h)	SSD[1] (m)	Rate of Vertical Curvature, K[2][4] (m/%)	Minimum Curve Length (m)
20	115	17	60	30	35	6	18
25	155	26	75	40	50	9	24
30	200	37	90	50	65	13	30
35	250	49	105	60	85	18	36
40	305	64	120	70	105	23	42
45	360	79	135	80	130	30	48
50	425	96	150	90	160	38	54
55	495	115	165	100	185	45	60
60	570	136	180				

Notes:

1. *SSD values are from Figure 28-1A*
2. *Maximum K-value for drainage on curbed roadways and bridges is 167 (51).*
3. $K = \frac{SSD^2}{400 + 3.5\,SSD}$, *where* $h_1 = 2$ *ft*
4. $K = \frac{SSD^2}{120 + 3.5\,SSD}$, *where* $h_1 = 600$ *mm*

K-VALUES FOR SAG VERTICAL CURVES — STOPPING SIGHT DISTANCES (Passenger Cars)

Figure 30-2D

For Sag Curve in front of existing entrance, K = 42.75

Using note 3 equation

Existing Stopping Sight Distance (SSD) for sag curve = 225 feet.

For design speed of 40 mph, SSD needed = 305 feet.

Sag curve in front of existing entrance does not meet the SSD criteria.

Exhibit H6 – Minimum vertical curve length Guideline (IDOT BLRS)

3. Minimum Length. Vertical curve lengths should also meet the criteria in the following equations:

$L_{min} = 3\,V$ (US Customary) Equation 30-2.3

$L_{min} = 0.6\,V$ (Metric) Equation 30-2.3

Where:

L_{min} = minimum length of vertical curve, ft (m)

V = design speed, mph (km/h)

Designs with vertical curve lengths of less than 90 ft (27 m) should be avoided, since these are difficult to construct.

4. Passing Sight Distance (PSD). At some locations, it may be desirable to provide PSD in the design of crest vertical curves. Section 28-2 discusses the application and design values for PSD on two-lane, two-way highways. These "PSD" values are used in the basic equation for crest vertical curves (Equation 30-2.1). The height of eye (h_1) is 3.5 ft (1.080 m) and the height of object (h_2) is 3.5 ft (1.080 m). Figure 30-2C presents the K-values for passenger cars using the PSD presented in Section 28-2.

5. Drainage. Proper drainage should be considered in the design of crest vertical curves where curbed sections are used. Typically, drainage problems should not be experienced if the vertical curvature is sharp enough so that a minimum longitudinal grade of at least 0.3% is reached at a point about 50 ft (15 m) from either side of the apex. To ensure that this objective is achieved, determine the length of the crest vertical curve assuming a K-value of 167 (51) or less. For crest vertical curves on a curbed section where this K-value is exceeded, carefully evaluate the drainage design near the apex.

6. Alignment Coordination. On rural facilities where crest vertical curves and horizontal curves occur at the same location, use the K-values in Figure 30-2A to ensure that the horizontal curve is visible as drivers approach the vertical curve.

Exhibit H7 – Stopping Sight Distance Guideline (IDOT BLRS)

BUREAU OF LOCAL ROADS & STREETS

28-1-2 SIGHT DISTANCE August 2016

US Customary				Metric			
Design Speed (mph)	Brake[1] Reaction Distance (ft)	Braking[2] Distance On Level (ft)	Design SSD (ft)	Design Speed (km/h)	Brake[1] Reaction Distance (m)	Braking[2] Distance On Level (m)	Design SSD (m)
20	73.5	38.4	115	30	20.9	10.3	35
25	91.9	60.0	155	40	27.8	18.4	50
30	110.3	86.4	200	50	34.8	28.7	65
35	128.6	117.6	250	60	41.7	41.3	85
40	147.0	153.6	305	70	48.7	56.2	105
45	165.4	194.4	360	80	55.6	73.4	130
50	183.8	240.0	425	90	62.6	92.9	160
55	202.1	290.3	495	100	69.5	114.7	185
60	220.5	345.5	570				

Notes:

1. *Brake reaction distance based on a time of 2.5 s.*
2. *Driver deceleration based on a rate of 11.2 ft/s² (3.4 m/s²).*

STOPPING SIGHT DISTANCE ON LEVEL ROADWAYS

Figure 28-1A

US Customary							Metric						
Design Speed (mph)	Design SSD (ft)						Design Speed (km/h)	Design SSD (m)					
	Downgrades			Upgrades				Downgrades			Upgrades		
	3%	6%	9%	3%	6%	9%		3%	6%	9%	3%	6%	9%
20	116	120	126	109	107	104	30	32	35	35	31	30	29
25	158	165	173	147	143	140	40	50	50	53	45	44	43
30	205	215	227	200	184	179	50	66	70	74	61	59	58
35	257	271	287	237	229	222	60	87	92	97	80	77	75
40	315	333	354	289	278	269	70	110	116	124	100	97	93
45	378	400	427	344	331	320	80	136	144	154	123	118	114
50	446	474	507	405	388	375	90	164	174	187	148	141	136
55	520	553	593	469	450	433	100	194	207	223	174	167	160
60	598	638	686	538	515	495							

STOPPING SIGHT DISTANCE ON GRADES

Figure 28-1B

Exhibit H8 – Roundabout Elements (IDOT BDE)

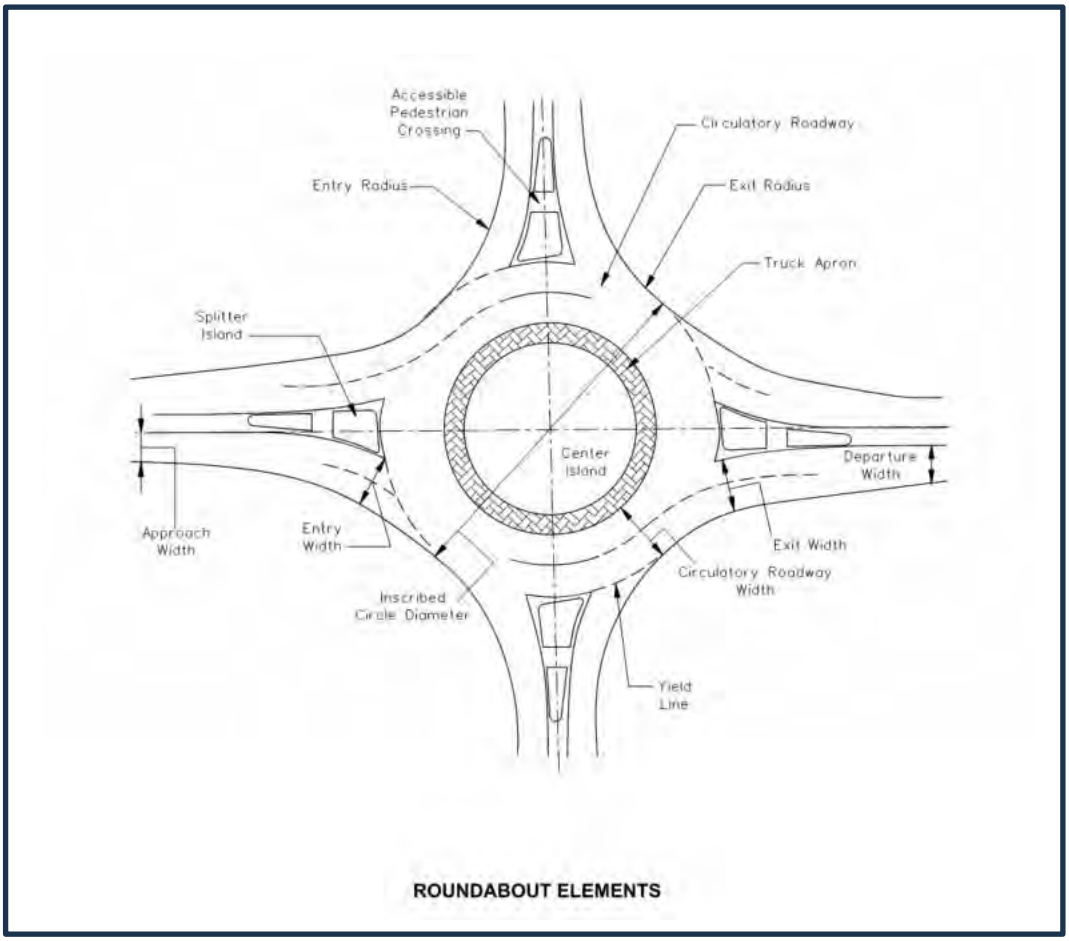


Exhibit H9 – Selection of Design Vehicle for Intersection Design guideline (IDOT BLRS)

BUREAU OF LOCAL ROADS & STREETS

Aug 2007 INTERSECTIONS 34-1(15)

recreational area. Under some circumstances the passenger car with a trailer (P/T) may be the appropriate design vehicle (e.g., campground areas, boat launches).

For Turn Made		Design Vehicle (1)(2)(3)(4)(5)
From	Onto	
Freeway Ramp	Other Facilities	WB-65 (WB-20)
Other Facilities	Freeway Ramp	WB-65 (WB-20)
Arterial	Arterial	WB-65 (WB-20)
	Collector	WB-55 (WB-17)
	Local	WB-50 (WB-15)
	Local (Residential)	SU*
Collector	Arterial	WB-55 (WB-17)
	Collector	WB-55 (WB-17)
	Local	WB-50 (WB-15)
	Local (Residential)	SU*
Local	Arterial	WB-50 (WB-15)
	Collector	WB-50 (WB-15)
	Local	SU*
	Local (Residential)	SU**
Local (Residential)	Arterial	SU*
	Collector	SU*
	Local	SU**
	Local (Residential)	SU**

**With encroachment, a WB-50 (WB-15) vehicle should physically be able to make the turn.*
***With encroachment, the selected design vehicle should physically be able to make the turn.*

Notes:

0. *Use this Figure for new construction and reconstruction projects.*
1. *A smaller design vehicle may be considered after an investigation of conditions. Justification must be submitted for intersections with State highways.*
2. *For 3R projects, the design vehicle will be site specific. See Chapter 33.*
3. *A larger design vehicle may be required for intersections of two 80,000 lb (36,000 kg) truck routes.*

SELECTION OF DESIGN VEHICLE AT INTERSECTIONS
(Functional Classification)

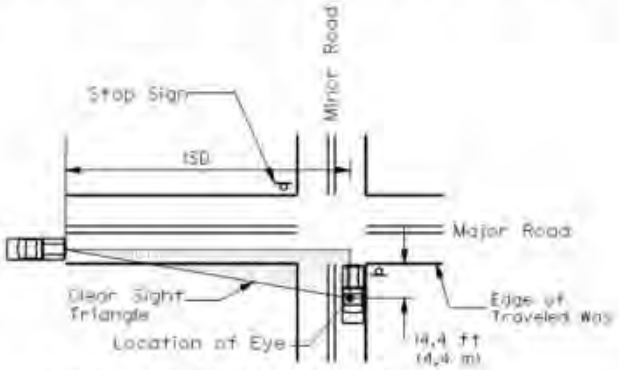
Figure 34-1G

Exhibit H10 – Intersection Sight Distance Guideline (IDOT BLRS) (1 of 3)

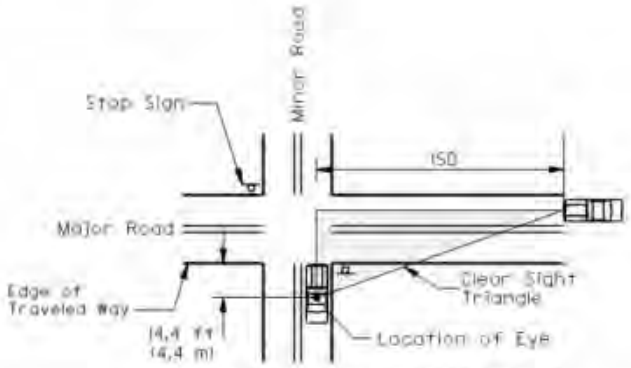
28-3.03 Case B – Intersections with Stop Control on the Minor Road

Where traffic on the minor road of an intersection is controlled by stop signs, the driver of the vehicle on the minor road must have sufficient sight distance for a safe departure from the stopped position assuming that the approaching vehicle comes into view as the stopped vehicle begins its departure.

The ISD is obtained by providing clear sight triangles both to the right and left as shown in Figure 28-3D. The length of legs of these sight triangles is determined as follows:



CLEAR SIGHT TRIANGLE FOR VIEWING TRAFFIC APPROACHING FROM THE LEFT



CLEAR SIGHT TRIANGLE FOR VIEWING TRAFFIC APPROACHING FROM THE RIGHT

CLEAR SIGHT TRIANGLES
(Case B – Stop-Controlled on the Minor Road)

Figure 28-3D

Exhibit H11 – Intersection Sight Distance Guideline (IDOT BLRS) (2 of 3)

BUREAU OF LOCAL ROADS & STREETS

28-3-6 SIGHT DISTANCE August 2016

1. Minor Road. The length of leg along the minor road is based on two parts. The first is the location of the driver's eye on the minor road. This is typically assumed to be 15 ft (4.5 m) from the edge of traveled way for the major road and in the center of the lane on the minor road. The second part is based on the distance to the center of the vehicle on the major road. For right-turning vehicles, this is assumed to be the center of the closest travel lane from the left. For left-turning vehicles, this is assumed to be the center of the closest travel lane for vehicles approaching from the right. See Figure 28-3E.

2. Major Road. The length of the sight triangle leg or ISD along the major road is determined using the following equation:

$ISD = 1.47\ V_{major}\ t_g$ (US Customary) Equation 28-3.1

$ISD = 0.278\ V_{major}\ t_g$ (Metric) Equation 28-3.1

Where:

ISD = length of sight triangle leg along major road, ft (m)

V_{major} = design speed of major road, mph (km/h)

t_g = time gap for minor road to enter the major road, sec

The critical time gap (t_g) varies according to the design vehicle, the maneuver type, the grade on the minor road approach, the number of lanes on the major roadway, the type of operation, and the intersection skew.

3. Design Vehicles. For local roads and streets, assume a passenger car as the design vehicle (i.e., t_g = 7.5 seconds).

4. Grades. If the approach grade on the minor road is on an upgrade that exceeds 3%, add 0.2 sec for each percent grade to t_g.

5. ISD Values. Figure 28-3E provides the ISD criteria for a passenger car turning left or right or crossing a two-lane major road. For other types of facilities (e.g., four-lanes, medians) or where trucks may control the design, see Section 36-6 of the *BDE Manual*.

At a minimum, provide Case B sight distance at all intersections for reconstruction and new construction projects. Also, provide Case B sight distance on projects where the vertical alignment is changed.

Exhibit H12 – Intersection Sight Distance Guideline (IDOT BLRS)(3 of 3)

BUREAU OF LOCAL ROADS & STREETS

August 2016 SIGHT DISTANCE 28-3-7

US Customary		Metric	
Design Speed (V_{major}) (mph)	ISD (ft) (1)(2)	Design Speed (V_{major}) (km/h)	ISD (m) (1)(2)
20	225	30	65
25	280	40	85
30	335	50	105
35	390	60	130
40	445	70	150
45	500	80	170
50	555	90	190
55	610	100	210
60	665		

Notes:

1. *These ISD values assume crossing or left or right turns onto a two-lane facility without a median for a passenger car. For other types of facilities (e.g., four-lanes, medians) or where trucks may control the design, see Section 36-6 of the BDE Manual.*
2. *Where the approach grade on the minor road is on an upgrade that exceeds 3%, add 0.2 sec for each percent grade to t_g.*

INTERSECTION SIGHT DISTANCES
(Two-Lane Facilities)
(Case B – Stop Control on the Minor Road)

Figure 28-3E

Intersection Sight Distance was calculated for 4% grade as:

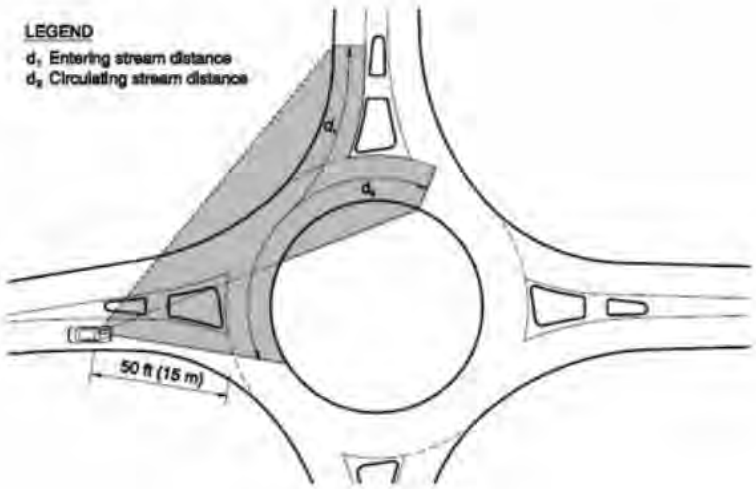
ISD = 1.47* V_{Major}*t_g (Using Equation 28-3-1 from Exhibit L7)

V_{major} (For Greene Road) = 40 mph

t_g = 7.5 (s) + 0.2 (s) = 7.7 s (adjusted for 4% grade)

ISD = 1.47*40*7.7 = 452.7≈ **455 feet**

Exhibit H13 – Roundabout Sight Distance Triangle Guideline (IDOT BDE)



INTERSECTION SIGHT DISTANCE

Figure 36-10.N

1. Approach Leg of Sight Triangle. The length of the approach leg of the sight triangle should be limited to 50 ft (15 m). This value is intended to require vehicles to slow down prior to entering the roundabout, which supports the need to slow down and yield at the roundabout entry and allows drivers to focus on the pedestrian crossing prior to entry.

2. Conflicting Leg of Sight Triangle. A vehicle approaching an entry to a roundabout faces conflicting vehicles within the circulating roadways and on the immediate upstream entry. In most cases it is best to provide no more than the minimum required intersection sight distance on each approach. Excessive intersection sight distance can lead to higher vehicle speeds that reduce the safety of the intersection for all road users.

Section 6.7.3.2 of *NCHRP Report 672, Roundabouts: An Informational Guide*, defines the limits of the intersection sight triangle and the methodology of calculating the lengths of each leg.

Exhibit H14 – Level Of Service Guideline (IDOT BDLS)

27-6.04 Level of Service (LOS)

LOS describes a quantitative stratification of a performance measure or measures that represents quality of service, measured on an A to F scale. A designated LOS is described in terms of service measures such as speed, density, delay, or percent time-spent-following.

Because drivers will accept different driving operational conditions, including lower travel speeds on different facilities, it is not practical to establish one LOS for application to every type of highway. Therefore, various levels of service have been established for the different types of highways facilities, location (i.e., rural or urban) and the scope of the improvement.

The *HCM* has established service measures used to define LOS for transportation system elements on various types of facilities. These are presented in Figure 27-6A for those elements on local roads and streets. For each service measure, the *HCM* provides the analytical tools to calculate the numerical value. Note that highway capacity service measures may be segregated into two broad categories: (1) uninterrupted flow, or open highway conditions, and (2) interrupted flow, as at stop-controlled or signalized intersections. Uninterrupted flow occurs on facilities where the influence of intersections and abutting property development is not significant, and the design volume can be determined by an hourly rate of flow.

Type of Facility	Service Measures
Vehicular	
Interrupted Flow	
Urban Street Segments	Travel Speed, Base of Free Flow Speed
Signalized Intersection	Delay
Two-way Stop Intersection	Delay
All-way Stop Intersection	Delay
Roundabouts	Delay
Uninterrupted Flow	
Two-lane Highway	Percent Time-Spent-Following, Average Travel Speed, Percent of Free Flow Speed
Multilane Highway	Density
Other Highway Users	
Pedestrian	Space, Delay, LOS Score
Bicycle	LOS Score
Transit	LOS Score
Off-Street Pedestrian or Bicycle Facility	
Pedestrian	Space, Events
Bicycle	LOS Score

SERVICE MEASURES FOR LOS

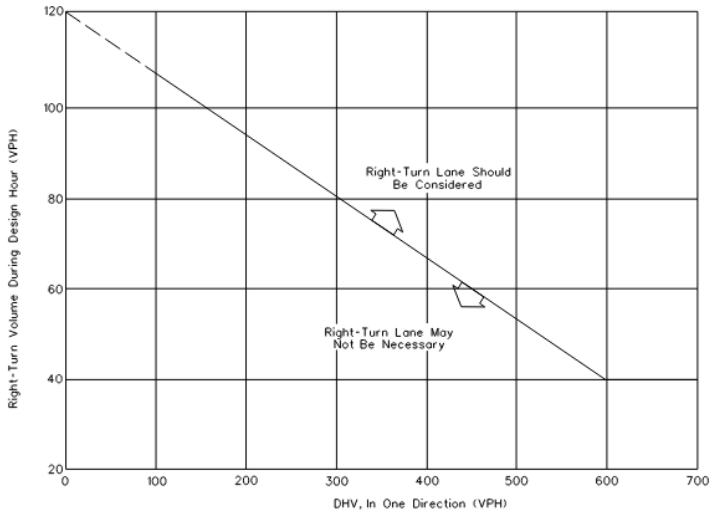
Figure 27-6A

Appendix I Auxiliary Lane Warrant Analysis

Auxiliary Lane Warrant Analysis

Exhibit I1 – Right-Turn Lane Warrant (for NB Greene Road) and Guidelines from IDOT BDE

Illinois INTERSECTIONS May 2025



Note: For highways with a design speed below 50 mph (80 km/hr), with a DHV in one direction of less than 300, and where right turns are greater than 40, an adjustment should be used. To read the vertical axis of the chart, subtract 20 from the actual number of right turns.

Example

Given:	Design Speed	=	35 mph (60 km/hr)
	DHV (in one direction)	=	250 vph
	Right Turns	=	100 vph

Problem: Determine if a right-turn lane is warranted.

Solution: To read the vertical axis, use 100 - 20 = 80 vph. The figure indicates that right-turn lane is not necessary, unless other factors (e.g., high crash rate) indicate a lane is needed.

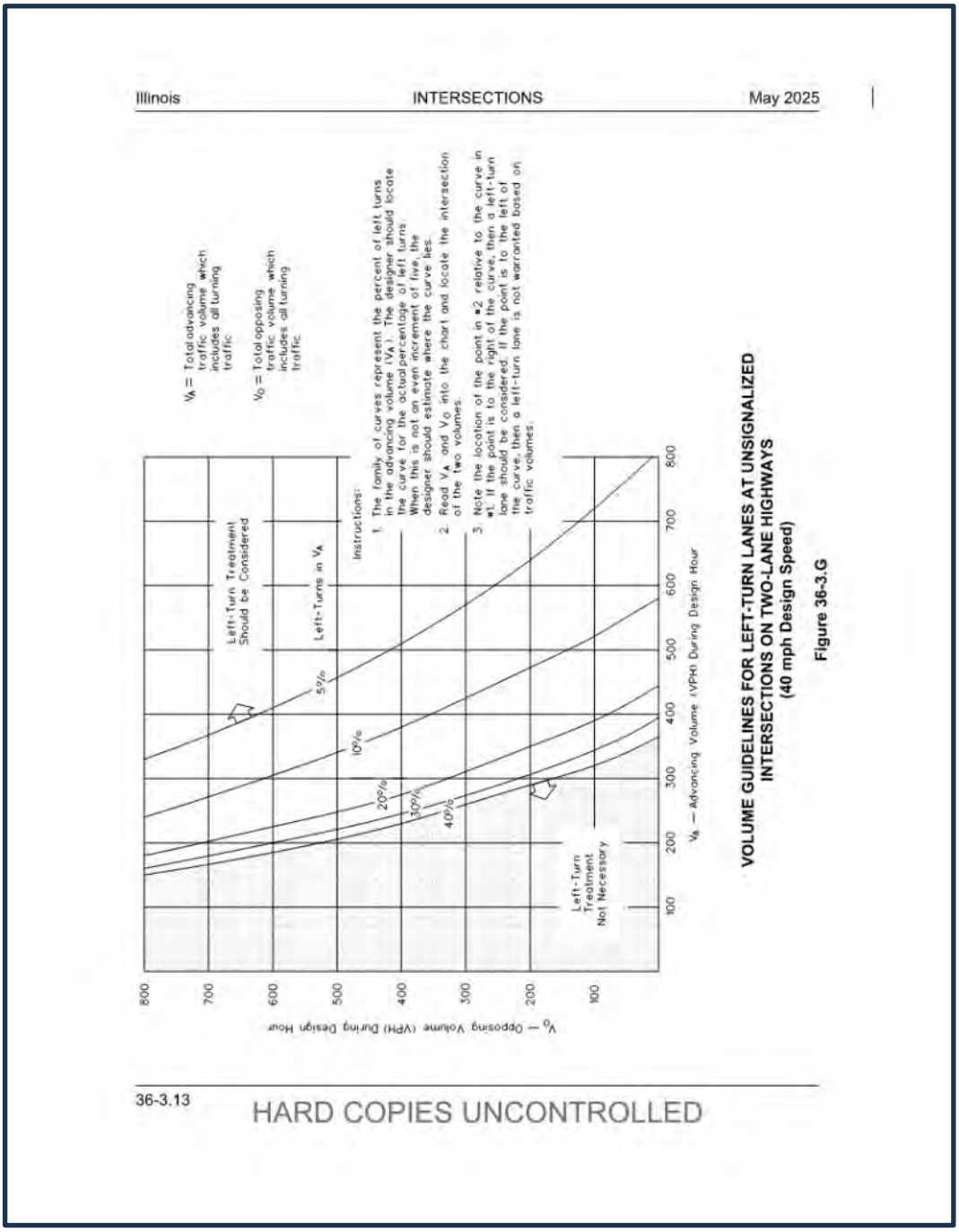
GUIDELINES FOR RIGHT-TURN LANES AT UNSIGNALIZED INTERSECTIONS ON TWO-LANE HIGHWAYS

Figure 36-3.A

36-3.2 HARD COPIES UNCONTROLLED

Timeframe	Design Speed	Peak Volume	Right Turning Traffic	Criteria Meet
No-Build 2050 Traffic				
AM Peak	40	245	15	No
PM Peak		275	20	No

Exhibit I2 – Left - Turn Lane Warrant (for SB Greene Road) and Guidelines from IDOT BDE



Timeframe	Design Speed	Advancing Peak Volume	Opposing Peak Volume	Left Turning Traffic	Percentage of Left Turning Traffic	Criteria Meet
No-Build 2050 Traffic						
AM Peak	40	245	245	15	6.2%	No
PM Peak		275	275	20	7.3%	No

Appendix J Capacity Analysis Worksheets

HCS Two-Way Stop-Control Report

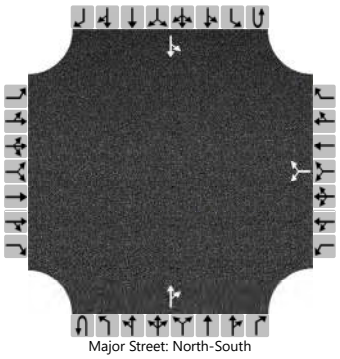
General Information

Analyst	MP
Agency/Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2025
Time Analyzed	Existing AM Peak
Intersection Orientation	North-South
Project Description	Existing Forest Preserve Entrance

Site Information

Intersection	Greene Rd at Greene Valley Forest Preserve e...
Jurisdiction	Lisle Twp
East/West Street	Greene Valley Forest Preserve entrance
North/South Street	Greene Rd
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						12		12			190	12		12	190	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							25							13		
Capacity, c (veh/h)							685							1370		
v/c Ratio							0.04							0.01		
95% Queue Length, Q_{95} (veh)							0.1							0.0		
95% Queue Length, Q_{95} (ft)							2.5							0.0		
Control Delay (s/veh)							10.5							7.7	0.1	
Level of Service (LOS)							B							A	A	
Approach Delay (s/veh)						10.5								0.5		
Approach LOS						B								A		

HCS Two-Way Stop-Control Report

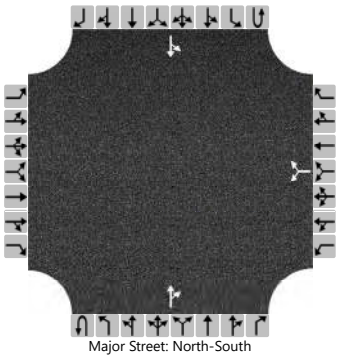
General Information

Analyst	MP
Agency/Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2025
Time Analyzed	Existing PM Peak
Intersection Orientation	North-South
Project Description	Existing Forest Preserve Entrance

Site Information

Intersection	Greene Rd at Greene Valley Forest Preserve e...
Jurisdiction	Lisle Twp
East/West Street	Greene Valley Forest Preserve entrance
North/South Street	Greene Rd
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						13		13			209	13		13	209	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							27							14		
Capacity, c (veh/h)							655							1346		
v/c Ratio							0.04							0.01		
95% Queue Length, Q_{95} (veh)							0.1							0.0		
95% Queue Length, Q_{95} (ft)							2.5							0.0		
Control Delay (s/veh)							10.7							7.7	0.1	
Level of Service (LOS)							B							A	A	
Approach Delay (s/veh)						10.7								0.5		
Approach LOS						B								A		

HCS Two-Way Stop-Control Report

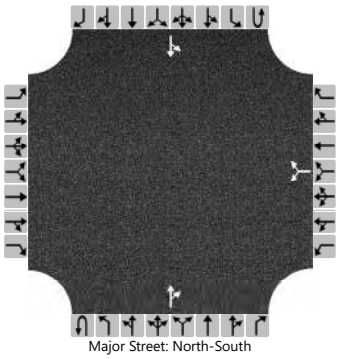
General Information

Analyst	MP
Agency/Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2050
Time Analyzed	No-Build AM Peak
Intersection Orientation	North-South
Project Description	No-Build – Existing Forest Preserve Entrance

Site Information

Intersection	Greene Rd at Greene Valley Forest Preserve e...
Jurisdiction	Lisle Twp
East/West Street	Greene Valley Forest Preserve entrance
North/South Street	Greene Rd
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						15		15			230	15		15	230	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							32							16		
Capacity, c (veh/h)							621							1319		
v/c Ratio							0.05							0.01		
95% Queue Length, Q_{95} (veh)							0.2							0.0		
95% Queue Length, Q_{95} (ft)							5.0							0.0		
Control Delay (s/veh)							11.1							7.8	0.1	
Level of Service (LOS)							B							A	A	
Approach Delay (s/veh)						11.1								0.6		
Approach LOS						B								A		

HCS Two-Way Stop-Control Report

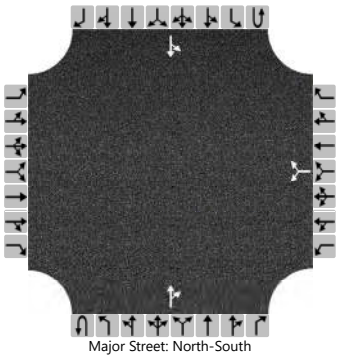
General Information

Analyst	MP
Agency/Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2050
Time Analyzed	No-Build PM Peak
Intersection Orientation	North-South
Project Description	No-Build – Existing Forest Preserve Entrance

Site Information

Intersection	Greene Rd at Greene Valley Forest Preserve e...
Jurisdiction	Lisle Twp
East/West Street	Greene Valley Forest Preserve entrance
North/South Street	Greene Rd
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						20		20			255	20		20	255	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							42							21		
Capacity, c (veh/h)							578							1284		
v/c Ratio							0.07							0.02		
95% Queue Length, Q_{95} (veh)							0.2							0.0		
95% Queue Length, Q_{95} (ft)							5.0							0.0		
Control Delay (s/veh)							11.7							7.9	0.2	
Level of Service (LOS)							B							A	A	
Approach Delay (s/veh)						11.7								0.7		
Approach LOS						B								A		

HCS Two-Way Stop-Control Report

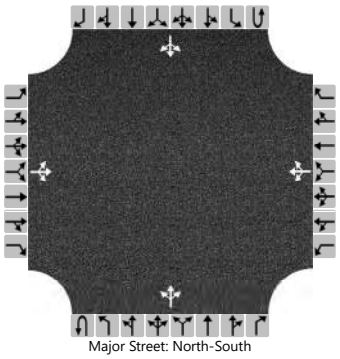
General Information

Analyst	MP
Agency/Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2050
Time Analyzed	Proposed AM Peak
Intersection Orientation	North-South
Project Description	Alternate A – Relocated Forest Preserve Entrance to Kimberwick with Four-Legged Intersection

Site Information

Intersection	Greene Rd at Kimberwick/Greene Valley Fore...
Jurisdiction	Lisle Twp
East/West Street	Kimberwick Ln/Greene Valley Forest Preserve...
North/South Street	Greene Rd
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	5	5		15	5	15		5	230	15		15	230	5
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16				37			5				16		
Capacity, c (veh/h)			512				543			1330				1319		
v/c Ratio			0.03				0.07			0.00				0.01		
95% Queue Length, Q_{95} (veh)			0.1				0.2			0.0				0.0		
95% Queue Length, Q_{95} (ft)			2.5				5.0			0.0				0.0		
Control Delay (s/veh)			12.3				12.1			7.7	0.0	0.0		7.8	0.1	0.1
Level of Service (LOS)			B				B			A	A	A		A	A	A
Approach Delay (s/veh)		12.3				12.1				0.2				0.6		
Approach LOS		B				B				A				A		

HCS Two-Way Stop-Control Report

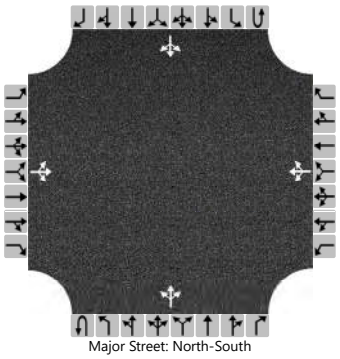
General Information

Analyst	MP
Agency/Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2050
Time Analyzed	Proposed PM Peak
Intersection Orientation	North-South
Project Description	Alternate A – Relocated Forest Preserve Entrance to Kimberwick with Four-Legged Intersection

Site Information

Intersection	Greene Rd at Kimberwick/Greene Valley Fore...
Jurisdiction	Lisle Twp
East/West Street	Kimberwick Ln/Greene Valley Forest Preserve...
North/South Street	Greene Rd
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	1	0		0	1	0	0	0	1	0	0	0	1	0
Configuration			LTR				LTR				LTR				LTR	
Volume (veh/h)		5	5	5		20	5	20		10	255	20		20	255	10
Percent Heavy Vehicles (%)		0	0	0		0	0	0		0				0		
Proportion Time Blocked																
Percent Grade (%)		0				0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)		7.1	6.5	6.2		7.1	6.5	6.2		4.1				4.1		
Critical Headway (sec)		7.10	6.50	6.20		7.10	6.50	6.20		4.10				4.10		
Base Follow-Up Headway (sec)		3.5	4.0	3.3		3.5	4.0	3.3		2.2				2.2		
Follow-Up Headway (sec)		3.50	4.00	3.30		3.50	4.00	3.30		2.20				2.20		

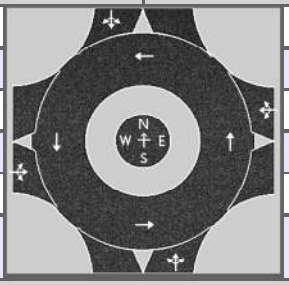
Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)			16				47			11				21		
Capacity, c (veh/h)			458				494			1295				1284		
v/c Ratio			0.03				0.10			0.01				0.02		
95% Queue Length, Q_{95} (veh)			0.1				0.3			0.0				0.0		
95% Queue Length, Q_{95} (ft)			2.5				7.5			0.0				0.0		
Control Delay (s/veh)			13.1				13.1			7.8	0.1	0.1		7.9	0.2	0.2
Level of Service (LOS)			B				B			A	A	A		A	A	A
Approach Delay (s/veh)	13.1				13.1				0.3				0.7			
Approach LOS	B				B				A				A			

HCS Roundabouts Report

General Information

Analyst	MP
Agency or Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2025
Time Analyzed	Proposed AM Peak
Project Description	Alternate B – Relocated Forest Preserve Entrance to Kimberwick with Roundabout



Site Information

Intersection	Greene Rd at Kimberwick/Gr...
E/W Street Name	Kimberwick Ln/Greene Valle...
N/S Street Name	Greene Rd
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.95
Jurisdiction	Lisle Twp

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	5	5	5	0	15	5	15	0	5	230	15	0	15	230	5
Percent Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0
Flow Rate (v_{PCE}), pc/h	0	5	5	5	0	16	5	16	0	5	276	16	0	16	276	5
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		15			37			297			297	
Entry Volume, veh/h		15			37			263			263	
Circulating Flow (v_c), pc/h	308			286			26			26		
Exiting Flow (v_{ex}), pc/h	37			15			297			297		
Capacity (c_{pce}), pc/h		1008			1031			1344			1344	
Capacity (c), veh/h		1008			1031			1191			1191	
v/c Ratio (x)		0.01			0.04			0.22			0.22	

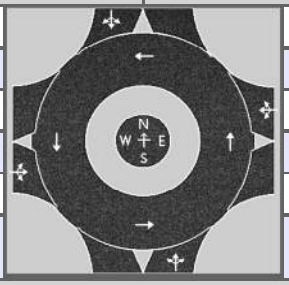
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		3.7			3.8			5.0			5.0	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		0.0			0.1			0.8			0.8	
95% Queue Length, Q_{95} (ft)		0.0			2.5			22.1			22.1	
Approach Delay, s/veh | LOS	3.7	A		3.8	A		5.0	A		5.0	A	
Intersection Delay, s/veh | LOS	4.9						A					

HCS Roundabouts Report

General Information

Analyst	MP
Agency or Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2025
Time Analyzed	Proposed PM Peak
Project Description	Alternate B – Relocated Forest Preserve Entrance to Kimberwick with Roundabout



Site Information

Intersection	Greene Rd at Kimberwick/Gr...
E/W Street Name	Kimberwick Ln/Greene Valle...
N/S Street Name	Greene Rd
Analysis Time Period, hrs	0.25
Peak Hour Factor	0.95
Jurisdiction	Lisle Twp

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	5	5	5	0	20	5	20	0	10	255	20	0	20	255	10
Percent Heavy Vehicles, %	0	0	0	0	0	0	0	0	0	0	14	0	0	0	14	0
Flow Rate (v_{PCE}), pc/h	0	5	5	5	0	21	5	21	0	11	306	21	0	21	306	11
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				0				0				0			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		15			47			338			338	
Entry Volume, veh/h		15			47			300			300	
Circulating Flow (v_c), pc/h	348			322			31			37		
Exiting Flow (v_{ex}), pc/h	47			27			332			332		
Capacity (c_{pce}), pc/h		968			994			1337			1329	
Capacity (c), veh/h		968			994			1188			1181	
v/c Ratio (x)		0.02			0.05			0.25			0.25	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		3.9			4.0			5.3			5.4	
Lane LOS		A			A			A			A	
95% Queue Length, Q_{95} (veh)		0.0			0.1			1.0			1.0	
95% Queue Length, Q_{95} (ft)		0.0			2.5			27.5			27.5	
Approach Delay, s/veh | LOS	3.9	A		4.0	A		5.3	A		5.4	A	
Intersection Delay, s/veh | LOS	5.2						A					

HCS Two-Way Stop-Control Report

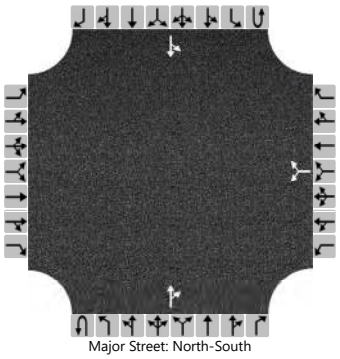
General Information

Analyst	MP
Agency/Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2050
Time Analyzed	No-Build AM Peak
Intersection Orientation	North-South
Project Description	Alternate C - Relocated Entrance at Offset from Kimberwick

Site Information

Intersection	Greene Rd at Greene Valley Forest Preserve e...
Jurisdiction	Lisle Twp
East/West Street	Greene Valley Forest Preserve entrance
North/South Street	Greene Rd
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						15		15			230	15		15	230	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage						Undivided										

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							32							16		
Capacity, c (veh/h)							621							1319		
v/c Ratio							0.05							0.01		
95% Queue Length, Q_{95} (veh)							0.2							0.0		
95% Queue Length, Q_{95} (ft)							5.0							0.0		
Control Delay (s/veh)							11.1							7.8	0.1	
Level of Service (LOS)							B							A	A	
Approach Delay (s/veh)						11.1								0.6		
Approach LOS						B								A		

HCS Two-Way Stop-Control Report

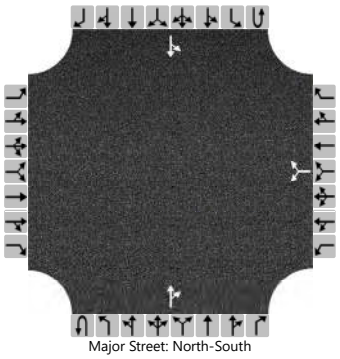
General Information

Analyst	MP
Agency/Co.	Stantec Consulting
Date Performed	12/3/2025
Analysis Year	2050
Time Analyzed	No-Build PM Peak
Intersection Orientation	North-South
Project Description	Alternate C - Relocated Entrance at Offset from Kimberwick

Site Information

Intersection	Greene Rd at Greene Valley Forest Preserve e...
Jurisdiction	Lisle Twp
East/West Street	Greene Valley Forest Preserve entrance
North/South Street	Greene Rd
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: North-South

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority		10	11	12		7	8	9	1U	1	2	3	4U	4	5	6
Number of Lanes		0	0	0		0	1	0	0	0	1	0	0	0	1	0
Configuration							LR					TR		LT		
Volume (veh/h)						20		20			255	20		20	255	
Percent Heavy Vehicles (%)						0		0						0		
Proportion Time Blocked																
Percent Grade (%)						0										
Right Turn Channelized																
Median Type | Storage		Undivided														

Critical and Follow-up Headways

Base Critical Headway (sec)						7.1		6.2						4.1		
Critical Headway (sec)						6.40		6.20						4.10		
Base Follow-Up Headway (sec)						3.5		3.3						2.2		
Follow-Up Headway (sec)						3.50		3.30						2.20		

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)							42							21		
Capacity, c (veh/h)							578							1284		
v/c Ratio							0.07							0.02		
95% Queue Length, Q_{95} (veh)							0.2							0.0		
95% Queue Length, Q_{95} (ft)							5.0							0.0		
Control Delay (s/veh)							11.7							7.9	0.2	
Level of Service (LOS)							B							A	A	
Approach Delay (s/veh)						11.7								0.7		
Approach LOS						B								A		

Appendix K Site Visit Photo Log

Table of Content

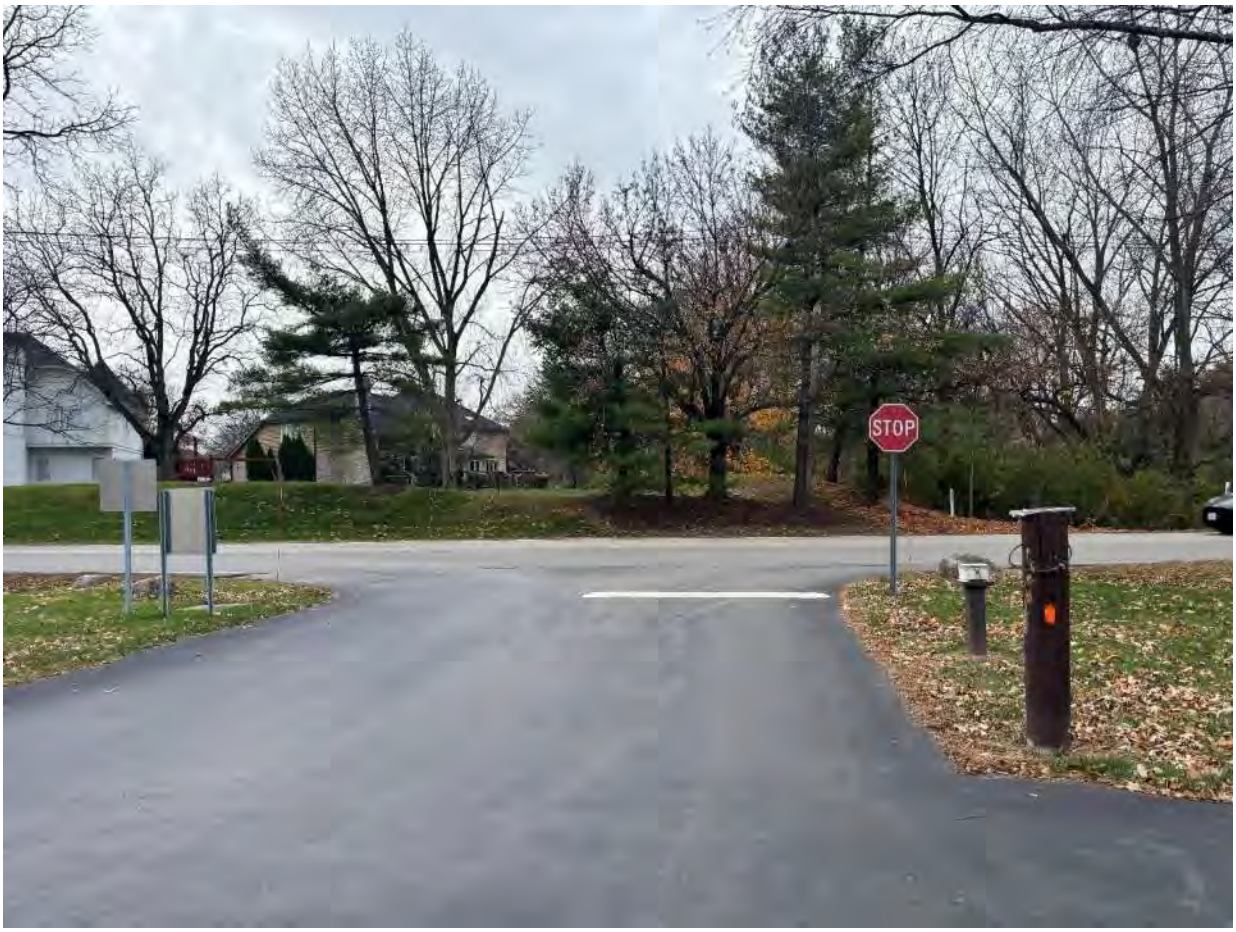


Photo 1. Greene Valley Forest Preserve Entrance/Exit. (Looking West)

Photo 2. Greene Road from Preserve entrance (Looking North).

Photo 3. Greene Road from Preserve entrance (Looking South).

Photo 4. “35 MPH” Posted Speed Limit Sign on SB Greene Road (Looking South).

Photo 5. “Forest Preserve Entrance Ahead” sign for Northbound Greene Road traffic, south of Preserve entrance (Looking North).

Photo 6. Greene Road and Forest Preserve entrance from Northbound Greene Road (Looking North).

Photo 7. Southbound traffic on Greene Road from driver's perspective exiting the forest preserve (Looking North)

Photo 8. Northbound traffic on Greene Road from driver’s perspective exiting the forest preserve (Looking South)

Photo 9. Northbound Car on Greene Road turning right through Preserve entrance.

Photo 10. Southbound Car on Greene Road turning left through Preserve entrance.

Photo 11. Greene road and Kimberwick Lane (Looking North-East).

Photo 12. Greene Road and Kimberwick Lane intersection, looking at the preserve (Looking East).

Photo 13. Greene Road north of Kimberwick Lane (Looking North).

Photo 14. Greene Road south of Kimberwick lane (Looking south towards the existing Preserve entrance).

Photo 15. Greene Road / Kimberwick Lane intersection (Looking West towards Kimberwick Lane).

Photo 16. Potential location for entrance relocation across from Kimberwick Lane (Looking East).

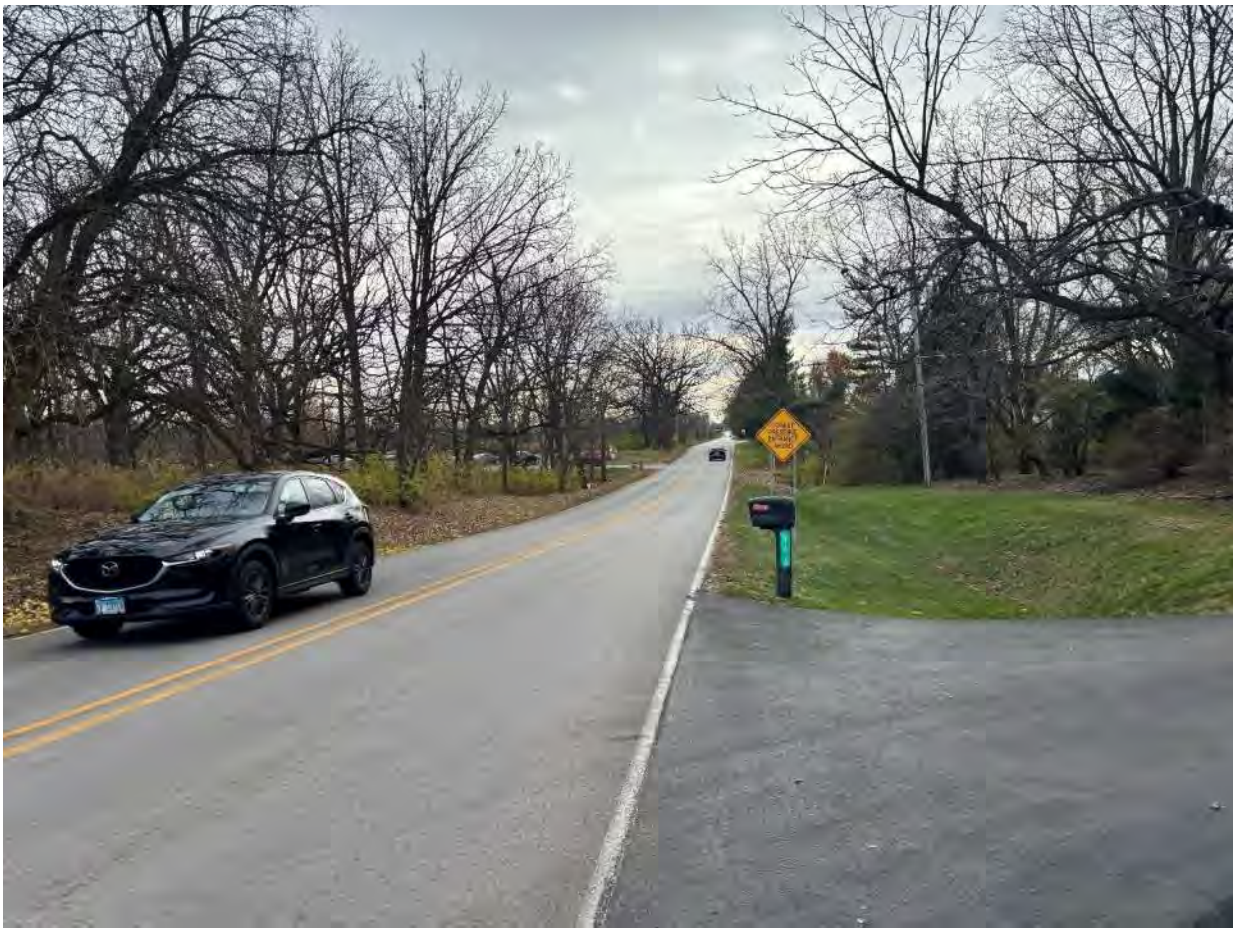


Photo 17. Greene Road just north of Preserve entrance (Looking South)

Photo 18. “35 MPH” Speed Limit Sign on South-West corner of Greene Road and Oxer Court intersection (Looking South)

Photo 19. Truck Weight Limit Sign on South-West corner of Greene Road and Hobson Road intersection (Looking South)

Appendix L Greene Valley Master Plan

FRAMEWORK PLANS
FOCUS AREAS

1 Greene Farm Barn, Oak Cottage, Shelters, Off Leash Dog Area

0 400 Feet

N

PROJECTS AND RECOMMENDATIONS

Oak Cottage

1. Perform a study on the Oak Cottage to document the structure's history and condition.
2. Determine a defined time-frame (3 years or less) for a third-party partner to identify a purpose and a means to utilize and maintain the existing Oak Cottage. Issue a request for third-party statements of interest. If a third-party partner does not establish a viable mission-aligned plan for use and maintenance within the defined time-frame, then remove the structure and interpret the history of the Greene Homestead.

Greene Farm Barn Trail Connection Improvements

14. Add trail connection from north parking lot to Greene Farm Barn.

Greene Farm Barn Outdoor Patio

3. Install outdoor patio space southeast of barn and shade pavilion.

Greene Farm Exterior Maintenance

4. Preserve the structural integrity of Greene Farm Barn.

North Parking Lot Entrance Realignment

5. Construct new vehicular entrance.
6. Close existing entrance and move north for better visibility. Relocate existing license plate reader to new entrance.

North Area Flush Restrooms

7. Upgrade latrines to flush restroom facilities.

North Shelter Reconfigurations and Improvement

8. Expand concrete paving around existing pavilion pads.
15. Reconfigure trails for better accessibility.
16. Relocate shelter west of parking lot to east side of the parking lot.

Off Leash Dog Area Parking Lot

9. Expand the parking lot.

Off Leash Dog Area Amenity Improvements

10. Plant additional trees and add benches in dog area.
11. Upgrade fencing.

Canoe and Kayak Launch

12. Provide river access with kayak and canoe launch.

Southern Dupage Regional Trail Realignment at East Branch of Dupage River

13. Planned East Branch of the DuPage River Restoration Project.*

RESTORATION RECOMMENDATIONS

1. East Branch DuPage River

**Projects being completed by others.*

Appendix M Existing - Traffic Signal and All-Way STOP Warrant Analysis

SUMMARY OF TRAFFIC SURVEY

INTERSECTION: **Greene Road & Forest Preserve**
MUNICIPALITY: **Lisle Township**
COUNTY: **DuPage**

	TRAFFIC FROM NORTH				TRAFFIC FROM SOUTH					TRAFFIC FROM EAST				TRAFFIC FROM WEST					
ROUTE :	Greene Road ☐ SRA				Greene Road ☐ SRA					Forest Preserve ☐ SRA				Forest Preserve ☐ SRA					
	N. OF : Forest Preserve GOING				S. OF : Forest Preserve GOING					E. OF : Greene Road GOING				W. OF : Greene Road GOING					
START HOUR	EAST ↳	SOUTH ↓	WEST ↲	TOTAL	WEST ↰	NORTH ↑	EAST ↱	TOTAL	TOTAL NORTH AND SOUTH	SOUTH ↓	WEST ←	NORTH ↰	TOTAL	NORTH ↑	EAST →	SOUTH ↘	TOTAL	TOTAL EAST AND WEST	GRAND TOTAL
6:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
7:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
8:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
9:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
10:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
11:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
12:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
13:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
14:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
15:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
16:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
17:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
18:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
19:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
20:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**
21:00	20	255	0	**275**	0	255	20	**275**	550	20	0	20	**40**	0	0	0	**0**	40	**590**

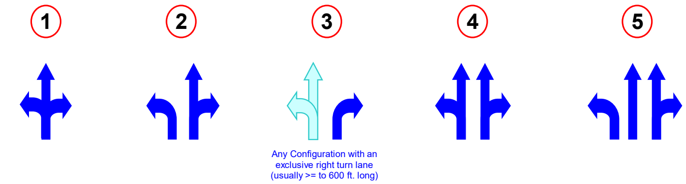
EXHIBIT M2

RIGHT TURN FACTORIZATION SHEET

INTERSECTION: **Greene Road & Forest Preserve**

MUNICIPALITY: **Lisle Township** COUNTY: **DuPage**

Lane Configurations



DIR	HOUR BEGIN	MINOR STREET STREET NAME: Forest Preserv CONFIG. #: 1 VOLUMES L LEFT	T THROUGH	R RIGHT	A TOTAL	CRITICAL MAINLINE APPROACH VOLUME PER LANE	BASE RIGHT TURN REDUCTION %	MAINLINE CONGESTION FACTOR %	ADJUSTED RIGHT TURN REDUCTION %	ADJUSTED RIGHT TURNS	ADJUSTED MINOR STREET VOLUMES
W.B.	6:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	7:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	8:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	9:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	10:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	11:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	12:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	13:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	14:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	15:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	16:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	17:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	18:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	19:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	20:00	20	0	20	**40**	275	40	0	40	12	**32**
W.B.	21:00	20	0	20	**40**	275	40	0	40	12	**32**

LEFT	THROUGH	RIGHT	TOTAL (A)	.7A	.35A	3T	T/3	(T+L)	(T+R)	3R	3L	T/2	T/4	BASE REDUCTION
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20	0	20	40	28	14	0	0	20	20	60	60	0	0	40
20		20	40	28	14	0	0	20	20	60	60	0	0	40
20		20	40	28	14	0	0	20	20	60	60	0	0	40
20		20	40	28	14	0	0	20	20	60	60	0	0	40

MAINLINE CONGESTION FACTORS	
VOLUMES	FACTOR (%)
0-399	0
400-499	5
500-599	10
600-699	15
700-799	20
800-899	25
900-999	30
1000-1099	35
1100-1199	40
1200-1299	45
1300-1399	50
1400-1499	55

EXHIBIT M3

Project: Greene Road & Forest Preserve

Town: Lisle Township

County: DuPage

5% Intersection		
2011	2012	2015
Y/N	Y/N	Y/N

5% Segment		
2011	2012	2015
Y/N	Y/N	Y/N

unhide

YEAR	Rear End			Angle			SSSD			SSOD			Turning Left			Turning Right			Fixed Object			Over-turned			Head On			Pedestrian			Other Object			Animal			Bicyclist			Other Non-Collision			TOTAL	
	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	**Crash Count**	**Injury Count**
2020																																										0	
2021																																										0	
2022																0			1																							1	
2023																																										0	
2024																																										0	
2025 (partial)																			0																							0	
TOTAL	**0**			**0**			**0**			**0**			**0**			**0**			**1**			**0**			**0**			**0**			**0**			**0**			**0**			**1**	
%	**0.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**			**100.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**					

YEAR	INJURY TYPE					CRASH CONDITIONS						TOTAL
	K	A	B	C	PDO	Wet	Wet %	Snow/Ice	Snow/Ice %	Night	Night %	
2020						0	-	0	-	0	-	0
2021						0	-	0	-	0	-	0
2022					1	0	0%	0	0%	0	0%	1
2023						0	-	0	-	0	-	0
2024						0	-	0	-	0	-	0
2025 (partial)					0	0	-	0	-	0	-	0
TOTAL	**0**	**0**	**0**	**0**	**1**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**1**

* Note that the law regarding the crash reporting threshold for Property Damage Only crashes was amended effective January 1, 2009, to the following: When all drivers involved in a crash are insured, the amount of damage to the property of any one person that must be reported increased from $500 to $1,500. If any driver does not have insurance, the threshold remains at $500. (This change in law precludes comparison of 2009 and later Property Damage Only crashes and Total crashes with such crashes for previous years. The change did NOT affect the reporting of injury or fatal crashes.)

EXHIBIT M4

MULTI-WAY STOP WARRANT

SRA : _____

YES / NO

INTERSECTION : **Greene Road & Forest Preserve**

MUNICPALITY / TOWNSHIP: **Lisle Township** COUNTY : **DuPage**

SPEED LIMIT OF MAJOR ROUTE : **35 mph**

PROPOSED 3-WAY OR 4-WAY: **4-WAY**

NUMBER OF LANES ON MAJOR APPROACH : **1**

NUMBER OF LANES ON MINOR APPROACH : **1**

TRAFFIC VOLUMES				CHECK ANY HOURS WHICH MEET THE FOLLOWING REQUIREMENTS:		
	MAJOR STREET	MINOR STREET				
HOUR BEGIN	VEHICLES ENTERING (BOTH APPROACHES)	VEHICLES ENTERING (BOTH APPROACHES)	PEDS OR BIKES (BOTH APPROACHES)	HOURS MET		COMBINATION OF WARRANTS
			N/C = NOT COUNTED	100%		80%
6:00	550	40	N/C			
7:00	550	40	N/C			
8:00	550	40	N/C			
9:00	550	40	N/C			
10:00	550	40	N/C			
11:00	550	40	N/C			
12:00	550	40	N/C			
13:00	550	40	N/C			
14:00	550	40	N/C			
15:00	550	40	N/C			
16:00	550	40	N/C			
17:00	550	40	N/C			
18:00	550	40	N/C			
19:00	550	40	N/C			
20:00	550	40	N/C			
21:00	550	40	N/C			

Hours Met:		0 hours	0 hours
VOLUME REQUIREMENTS:	MAJOR ENTERING:	300	240
	MINOR ENTERING: INCLUDING ANY PEDS	200	160

ACCIDENT DATA

ACCIDENT EXPERIENCE	2020	2021	2022	2023	2024
TOTAL NUMBER OF ACCIDENTS	0	0	1	0	0
NUMBER CORRECTABLE ACCIDENTS	0	0	0	0	0

(INCLUDING LEFT- *AND* RIGHT-TURN AS WELL AS RIGHT-ANGLE COLLISIONS)

ACCIDENT WARRANT

5 Correctable Accidents Within A 12-month Period?

(No Volume Requirement) YES NO

VOLUME WARRANT

Are Volume Requirements Met For 8 Hours?

YES 0 hours NO

COMBINATION OF WARRANTS *(REDUCED TO 80%)*

4 Correctable Accidents Within A 12-month Period?

YES NO

Are Volume Requirements Met For 8 Hours?

YES 0 hours NO

ARE BOTH CRITERIA MET?

YES NO

IS A MULTI-WAY STOP WARRANTED?

YES **NO**

EXHIBIT M5

SIGNAL WARRANT REVIEW SHEET

SRA : _____

Yes (No)

Intersection: **Greene Road & Forest Preserve** County: **DuPage**

Municipality: **Lisle Township**

Speed Limit of Major Route **35 mph**

Number of Lanes on Major approach **1**

Isolated Community with Population < 10,000 **N**

Number of Lanes on Minor approach **1**

HOUR BEGIN	Major Street Volume *(both approaches)*	Adj. Minor Street Volume *(higher volume approach)*	CHECK ANY HOURS WHICH MEET THE FOLLOWING WARRANTS: WARRANT 1 A 100%	WARRANT 1 B 100%	WARRANT 7: 8 hrs of one of the Following: WARRANT 1 A/B: 8hrs of BOTH: 80% of A	80% of B	80% of Warr #4
6:00	550	32					
7:00	550	32					
8:00	550	32					
9:00	550	32					
10:00	550	32					
11:00	550	32					
12:00	550	32					
13:00	550	32					
14:00	550	32					
15:00	550	32					
16:00	550	32					
17:00	550	32					
18:00	550	32					
19:00	550	32					
20:00	550	32					
21:00	550	32					
Hours Met :			0 hours	0 hours	0 hours	0 hours	0 hours
Volume Requirements:	MAJOR:		500	750	400	600	
	MINOR:		150	75	120	60	

WARRANT 1 Yes (No)

Warrant 1 is met if any of the following Conditions are met:

- Condition A — MINIMUM VEHICULAR VOLUME — 0 hours — Yes (No)
- Condition B — INTERRUPTION OF CONTINUOUS TRAFFIC — 0 hours — Yes (No)
- Condition A/B — COMBINATION OF WARRANTS — 0 hours — Yes (No)

WARRANT 2 FOUR-HOUR VOLUME — Yes (No) — 0 hours

WARRANT 3 PEAK-HOUR VOLUME — Yes (No) — 0 hours

WARRANT 4 PEDESTRIAN VOLUME — Yes (No) — 0 hours

WARRANT 5 SCHOOL CROSSING — Yes (No)

WARRANT 6 COORDINATED SIGNAL SYSTEM — Yes (No)

WARRANT 7 ACCIDENT EXPERIENCE — Yes (No) — 0 hours

	2020	2021	2022	2023	2024
TOTAL NUMBER OF ACCIDENTS:	0	0	1	0	0
NUMBER CORRECTABLE ACCIDENTS:	0	0	0	0	0
TRIED LESS RESTRICTIVE METHODS?					
ARE VOLUME REQUIREMENTS MET?					

WARRANT 8 ROADWAY NETWORK — Yes (No)

WARRANT 9 Intersection Near a Grade Crossing — Yes (No)

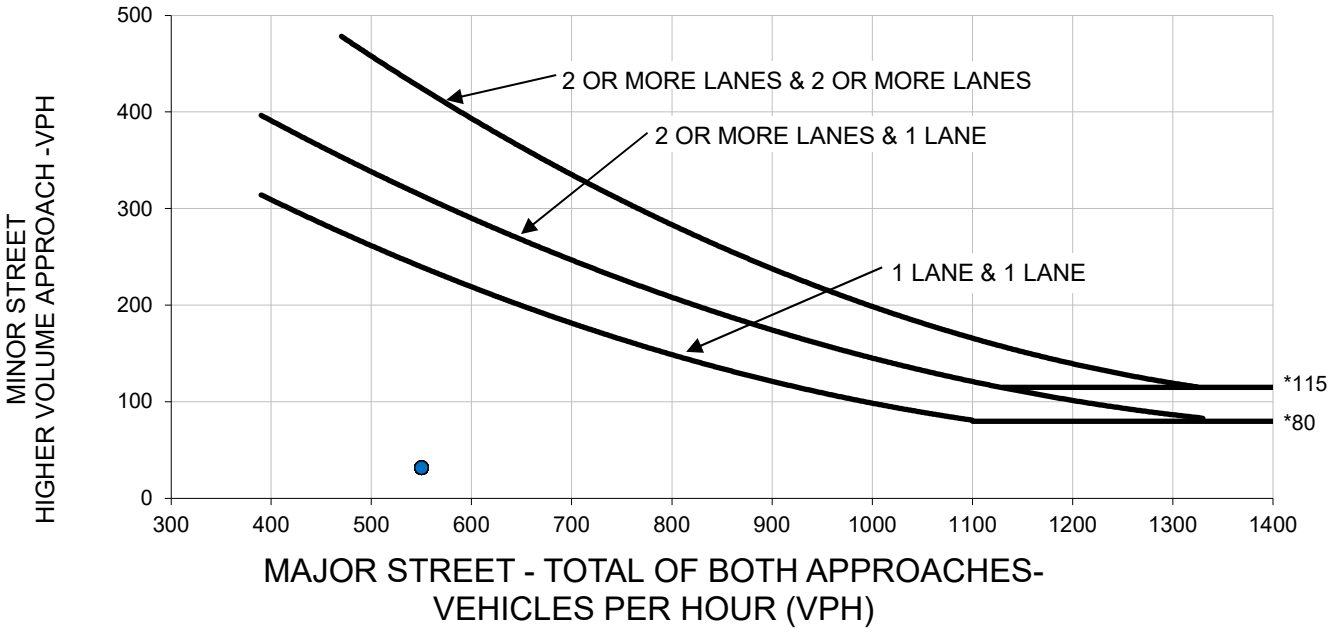
STOP OR YIELD CONTROLLED LEG WITH GRADE CROSSING: NORTH

D (clear storage distance) =

	#	%	Adj. Factor
RAIL TRAFFIC PER DAY =		-	1.00
HIGH OCCUPANCY BUSSES PER HOUR =		0%	1.00
TRUCKS PER HOUR =		0.0%	0.50
OVERALL ADJUSTMENT FACTOR =		0.50	

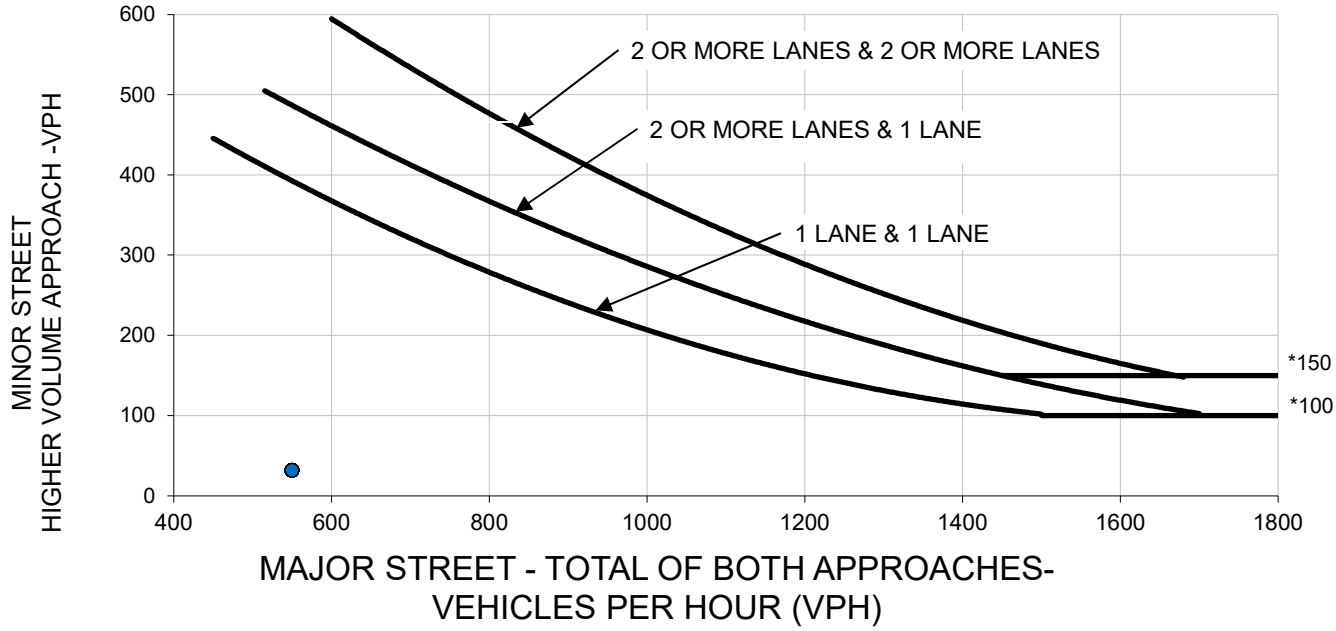
EXHIBIT M6

Figure 4C-1. Warrant 2, Four Hour Vehicular Volume



* Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-3 Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Appendix N Proposed - Traffic Signal and All-Way STOP Warrant Analysis

SUMMARY OF TRAFFIC SURVEY

INTERSECTION: **Greene Road & Forest Preserve/Kimberwick Lane**
MUNICIPALITY: **Lisle Township**
COUNTY: **DuPage**

	TRAFFIC FROM NORTH				TRAFFIC FROM SOUTH					TRAFFIC FROM EAST				TRAFFIC FROM WEST					
ROUTE :	Greene Road ☐ SRA				Greene Road ☐ SRA					Forest Preserve ☐ SRA				Kimberwick Lane ☐ SRA					
	N. OF : Forest Preserve/Kimberwick GOING				S. OF : Forest Preserve/Kimberwi GOING				TOTAL NORTH AND SOUTH	E. OF : Greene Road GOING				W. OF : Greene Road GOING				TOTAL EAST AND WEST	GRAND TOTAL
START HOUR	EAST ↳	SOUTH ↓	WEST ↲	TOTAL	WEST ↰	NORTH ↑	EAST ↱	TOTAL		SOUTH ↓	WEST ←	NORTH ↖	TOTAL	NORTH ↑	EAST →	SOUTH ↘	TOTAL		
6:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
7:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
8:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
9:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
10:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
11:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
12:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
13:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
14:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
15:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
16:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
17:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
18:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
19:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
20:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**
21:00	20	255	10	**285**	10	255	20	**285**	570	20	5	20	**45**	5	5	5	**15**	60	**630**

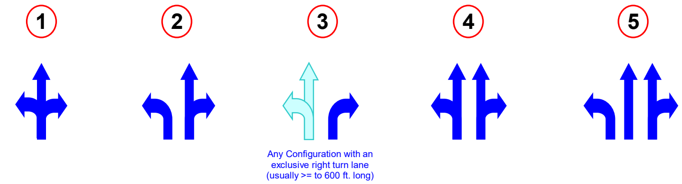
EXHIBIT N2

RIGHT TURN FACTORIZATION SHEET

INTERSECTION: **Greene Road & Forest Preserve/Kimberwick Lane**

MUNICIPALITY: **Lisle Township** COUNTY: **DuPage**

Lane Configurations



DIR	HOUR BEGIN	MINOR STREET STREET NAME: Forest Preserv CONFIG. #: 1 VOLUMES L LEFT	T THROUGH	R RIGHT	A TOTAL	CRITICAL MAINLINE APPROACH VOLUME PER LANE	BASE RIGHT TURN REDUCTION %	MAINLINE CONGESTION FACTOR %	ADJUSTED RIGHT TURN REDUCTION %	ADJUSTED RIGHT TURNS	ADJUSTED MINOR STREET VOLUMES
W.B.	6:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	7:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	8:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	9:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	10:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	11:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	12:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	13:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	14:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	15:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	16:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	17:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	18:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	19:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	20:00	20	5	20	**45**	275	40	0	40	12	**37**
W.B.	21:00	20	5	20	**45**	275	40	0	40	12	**37**

HOUR BEGIN	LEFT	THROUGH	RIGHT	TOTAL (A)	.7A	.35A	3T	T/3	(T+L)	(T+R)	3R	3L	T/2	T/4	BASE REDUCTION
6:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
7:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
8:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
9:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
10:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
11:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
12:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
13:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
14:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
15:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
16:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
17:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
18:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
19:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
20:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40
21:00	20	5	20	45	31.5	15.8	15	1.67	25	25	60	60	2.5	1.25	40

MAINLINE CONGESTION FACTORS	
VOLUMES	FACTOR (%)
0-399	0
400-499	5
500-599	10
600-699	15
700-799	20
800-899	25
900-999	30
1000-1099	35
1100-1199	40
1200-1299	45
1300-1399	50
1400-1499	55

EXHIBIT N3

Project: Greene Road & Forest Preserve/Kimberwick Lane

Town: Lisle Township

County: DuPage

5% Intersection		
2011	2012	2015
Y/N	Y/N	Y/N

5% Segment		
2011	2012	2015
Y/N	Y/N	Y/N

unhide

YEAR	Rear End			Angle			SSSD			SSOD			Turning Left			Turning Right			Fixed Object			Over-turned			Head On			Pedestrian			Other Object			Animal			Bicyclist			Other Non-Collision			TOTAL	
	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	Crash Count	Injury Type	Injury Count	**Crash Count**	**Injury Count**
2020																																										0	
2021																																										0	
2022																0			1																							1	
2023																																										0	
2024																																										0	
2025 (partial)																			1																							1	
TOTAL	**0**			**0**			**0**			**0**			**0**			**0**			**2**			**0**			**0**			**0**			**0**			**0**			**0**			**2**	
%	**0.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**			**100.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**			**0.0%**				

YEAR	INJURY TYPE					CRASH CONDITIONS						TOTAL
	K	A	B	C	PDO	Wet	Wet %	Snow/Ice	Snow/Ice %	Night	Night %	
2020						0	-	0	-	0	-	0
2021						0	-	0	-	0	-	0
2022					1	0	0%	0	0%	0	0%	1
2023						0	-	0	-	0	-	0
2024						0	-	0	-	0	-	0
2025 (partial)					1	0	0%	0	0%	1	100%	1
TOTAL	**0**	**0**	**0**	**0**	**2**	**0**	**0.0%**	**0**	**0.0%**	**1**	**50.0%**	**2**

* Note that the law regarding the crash reporting threshold for Property Damage Only crashes was amended effective January 1, 2009, to the following: When all drivers involved in a crash are insured, the amount of damage to the property of any one person that must be reported increased from $500 to $1,500. If any driver does not have insurance, the threshold remains at $500. (This change in law precludes comparison of 2009 and later Property Damage Only crashes and Total crashes with such crashes for previous years. The change did NOT affect the reporting of injury or fatal crashes.)

EXHIBIT N4

MULTI-WAY STOP WARRANT

SRA : _____

INTERSECTION : **Greene Road & Forest Preserve/Kimberwick Lane** YES / (NO)

MUNICPALITY / TOWNSHIP: **Lisle Township** COUNTY : **DuPage**

SPEED LIMIT OF MAJOR ROUTE : **35 mph** PROPOSED 3-WAY OR 4-WAY: **4-WAY**

NUMBER OF LANES ON MAJOR APPROACH : **1** NUMBER OF LANES ON MINOR APPROACH : **1**

TRAFFIC VOLUMES				CHECK ANY HOURS WHICH MEET THE FOLLOWING REQUIREMENTS:		
	MAJOR STREET	MINOR STREET				
HOUR BEGIN	VEHICLES ENTERING (BOTH APPROACHES)	VEHICLES ENTERING (BOTH APPROACHES)	PEDS OR BIKES (BOTH APPROACHES)	HOURS MET		COMBINATION OF WARRANTS
			N/C = NOT COUNTED	100%		80%
6:00	570	60	N/C			
7:00	570	60	N/C			
8:00	570	60	N/C			
9:00	570	60	N/C			
10:00	570	60	N/C			
11:00	570	60	N/C			
12:00	570	60	N/C			
13:00	570	60	N/C			
14:00	570	60	N/C			
15:00	570	60	N/C			
16:00	570	60	N/C			
17:00	570	60	N/C			
18:00	570	60	N/C			
19:00	570	60	N/C			
20:00	570	60	N/C			
21:00	570	60	N/C			

Hours Met:		0 hours	0 hours
VOLUME REQUIREMENTS:	MAJOR ENTERING:	300	240
	MINOR ENTERING: INCLUDING ANY PEDS	200	160

ACCIDENT DATA

ACCIDENT EXPERIENCE	2020	2021	2022	2023	2024
TOTAL NUMBER OF ACCIDENTS	0	0	1	0	0
NUMBER CORRECTABLE ACCIDENTS	0	0	0	0	0

(INCLUDING LEFT- *AND* RIGHT-TURN AS WELL AS RIGHT-ANGLE COLLISIONS)

ACCIDENT WARRANT

5 Correctable Accidents Within A 12-month Period?

(No Volume Requirement) YES (NO)

VOLUME WARRANT

Are Volume Requirements Met For 8 Hours?

YES 0 hours (NO)

COMBINATION OF WARRANTS *(REDUCED TO 80%)*

4 Correctable Accidents Within A 12-month Period?

YES (NO)

Are Volume Requirements Met For 8 Hours?

YES 0 hours (NO)

ARE BOTH CRITERIA MET?

YES (NO)

IS A MULTI-WAY STOP WARRANTED?

YES **(NO)**

EXHIBIT N5

SIGNAL WARRANT REVIEW SHEET

SRA : _____

Yes (No)

Intersection: **Greene Road & Forest Preserve/Kimberwick Lane** County: **DuPage**

Municipality: **Lisle Township**

Speed Limit of Major Route **35 mph**

Number of Lanes on Major approach **1**

Isolated Community with Population < 10,000 **N**

Number of Lanes on Minor approach **1**

HOUR BEGIN	Major Street Volume *(both approaches)*	Adj. Minor Street Volume *(higher volume approach)*	CHECK ANY HOURS WHICH MEET THE FOLLOWING WARRANTS: WARRANT 1 A 100%	WARRANT 1 B 100%	WARRANT 7: 8 hrs of one of the Following: WARRANT 1 A/B: 8hrs of BOTH: 80% of A	80% of B	80% of Warr #4
6:00	570	37					
7:00	570	37					
8:00	570	37					
9:00	570	37					
10:00	570	37					
11:00	570	37					
12:00	570	37					
13:00	570	37					
14:00	570	37					
15:00	570	37					
16:00	570	37					
17:00	570	37					
18:00	570	37					
19:00	570	37					
20:00	570	37					
21:00	570	37					
Hours Met :			0 hours	0 hours	0 hours	0 hours	0 hours
Volume Requirements:	MAJOR:		500	750	400	600	
	MINOR:		150	75	120	60	

WARRANT 1 Yes (No)

Warrant 1 is met if any of the following Conditions are met:

- Condition A — MINIMUM VEHICULAR VOLUME — 0 hours — Yes (No)
- Condition B — INTERRUPTION OF CONTINUOUS TRAFFIC — 0 hours — Yes (No)
- Condition A/B — COMBINATION OF WARRANTS — 0 hours — Yes (No)

WARRANT 2 — FOUR-HOUR VOLUME — Yes 0 hours (No)

WARRANT 3 — PEAK-HOUR VOLUME — Yes 0 hours (No)

WARRANT 4 — PEDESTRIAN VOLUME — Yes 0 hours (No)

WARRANT 5 — SCHOOL CROSSING — Yes (No)

WARRANT 6 — COORDINATED SIGNAL SYSTEM — Yes (No)

WARRANT 7 — ACCIDENT EXPERIENCE — Yes 0 hours (No)

	2020	2021	2022	2023	2024
TOTAL NUMBER OF ACCIDENTS:	0	0	1	0	0
NUMBER CORRECTABLE ACCIDENTS:	0	0	0	0	0
TRIED LESS RESTRICTIVE METHODS?					
ARE VOLUME REQUIREMENTS MET?					

WARRANT 8 — ROADWAY NETWORK — Yes (No)

WARRANT 9 — Intersection Near a Grade Crossing — Yes (No)

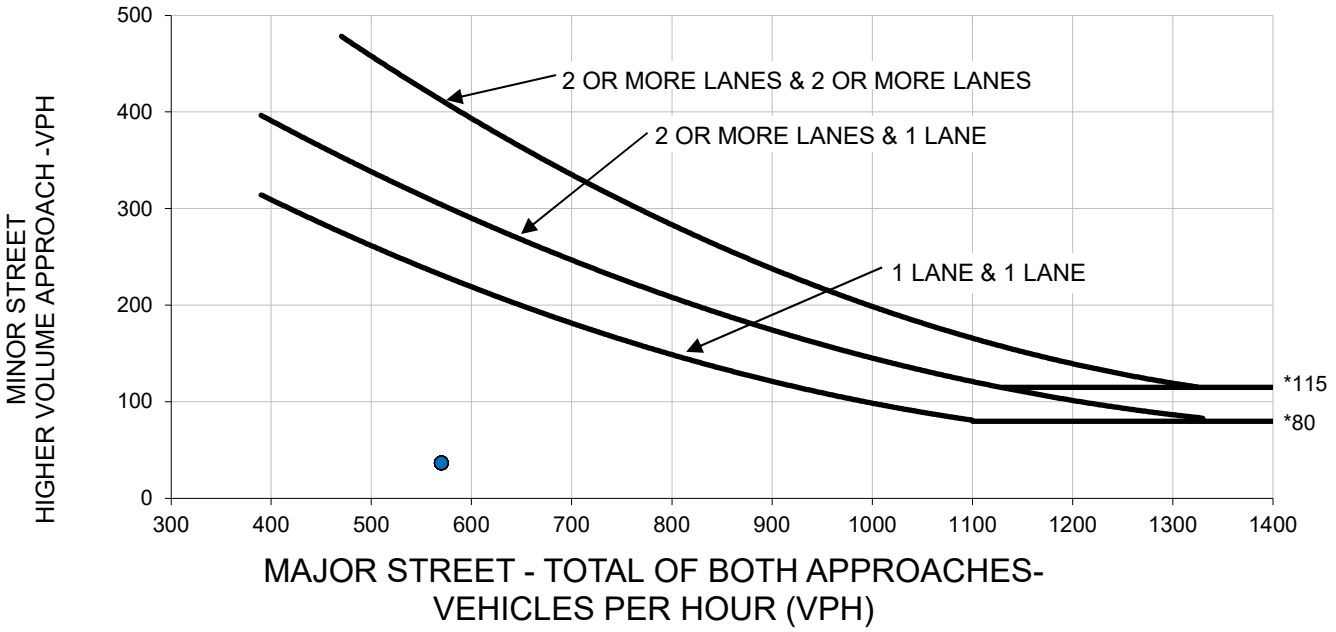
STOP OR YIELD CONTROLLED LEG WITH GRADE CROSSING: NORTH

D (clear storage distance) =

	#	%	Adj. Factor
RAIL TRAFFIC PER DAY =		-	1.00
HIGH OCCUPANCY BUSSES PER HOUR =		0%	1.00
TRUCKS PER HOUR =		0.0%	0.50

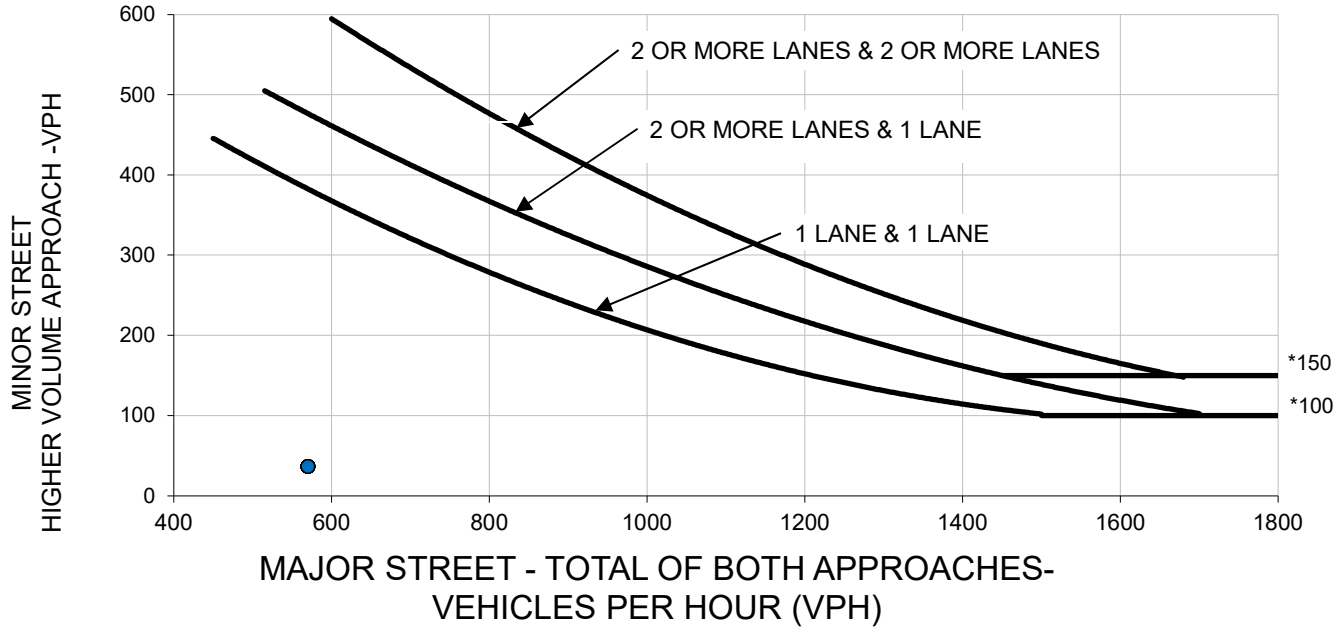
OVERALL ADJUSTMENT FACTOR = 0.50

Figure 4C-1. Warrant 2, Four Hour Vehicular Volume



* Note: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-3 Warrant 3, Peak Hour



* Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

With every community, we redefine what's possible.

Stantec is a global leader in sustainable engineering, architecture, and environmental consulting. The diverse perspectives of our partners and interested parties drive us to think beyond what's previously been done on critical issues like climate change, digital transformation, and future-proofing our cities and infrastructure. We innovate at the intersection of community, creativity, and client relationships to advance communities everywhere, so that together we can redefine what's possible.

Stantec Consulting Services Inc.
350 North Orleans Street, Suite 8000N
Chicago IL 60654-1610
stantec.com