

VILLAGE OF DOWNERS GROVE
Report for the Village
2/21/2023

SUBJECT:	SUBMITTED BY:
1300-1418 Butterfield Road - Special Use with a parking variation and a Plat of Subdivision with a lot depth exception	Stan Popovich, AICP Director of Community Development

SYNOPSIS

The petitioner is requesting approval for a Special Use to allow a drive-through, a Parking Variation, and a Plat of Subdivision with an exception to the lot depth to allow the construction of a future restaurant building at 1300-1418 Butterfield Road.

STRATEGIC PLAN ALIGNMENT

The goals for 2021-2023 include *Strong and Diverse Local Economy*.

FISCAL IMPACT

N/A

RECOMMENDATION

Approval on the March 7, 2023 Active Agenda per the Plan Commission's unanimous 5:0 positive recommendation. The Plan Commission found that the proposal is an appropriate use in the district, is compatible with the Comprehensive Plan, and complies with the special use approval standards, subdivision exception standards for lot depth and variation standards found respectively, in Sections 20.301, 28.12.050 and 28.12.090.G.

BACKGROUND

Property Information & Zoning Request

The petitioner is proposing to construct a restaurant building at 1330 Butterfield Road. The restaurant space will be located on a new 0.91 acre lot within the 9.28 acre Butterfield Plaza shopping center located at the southwest corner of shopping center. The property is B-3, General Services and Highway Business. The petitioner is requesting:

- A Special Use for the construction of a drive-through;
- A Variation for the overall required shopping center parking; and
- A Plat of Subdivision to create an outlot with an exception to the minimum lot depth

The petitioner is proposing to subdivide the existing 404,278.07 square foot shopping center parcel to create a new outlot for a drive-through restaurant. The outlot is approximately 420 feet east of the intersection of Butterfield Road and Downers Drive, along the north side of Butterfield Road. The new restaurant with a

drive-through lane is approximately 2,400 square feet and will include 15 parking spaces. The drive-through facility will be located on the south and west sides of the building and will provide the required minimum stacking spaces as required by the Village Code. The petitioner is proposing landscaping in conformance with the Village requirements. The proposed landscaping includes a mix of canopy trees and landscape materials such as shrubs and ornamental grasses. The parking lot improvements and site lighting is provided within the proposed development and is compliant with the Village requirements.

The current parking regulations require 410 parking spaces based on the proposed restaurant and the existing shopping center. The overall proposed parking (including the proposed outlot) totals 399 parking spaces. As such, this will necessitate a request for a parking variance for the shopping center. Based on the traffic study provided, the peak occupancy rate of the shopping center will be approximately 52 percent on weekdays and Saturday with a surplus of 185 and 186 parking spaces respectively. Staff concurs with the findings of the petitioner's traffic study.

Comprehensive Plan

The current Comprehensive Plan's Future Land Use Map designates this property as Regional Commercial. Regional Commercial uses are defined by large-scale retail uses that rely on the ability to draw a customer base from the larger region. To remain competitive, reinvestment will be required to attract new retailers and restaurants. The current Comprehensive Plan specifically identifies the Finley Road/Butterfield Road as a "Key Focus Area." Specifically the north side of Butterfield Road is identified as a Butterfield Catalyst Site. The proposed development also meets the Comprehensive Plan's recommendations for a Regional Commercial area:

- Promotes in-line or outlot development to attract new retail developments.
- Focuses on attracting a regional customer base as well as providing services, retail, and entertainment to the substantial daytime population in the area.
- Implements the recommendations of the Economic Development Plan to Enhance the Sales Tax
- Proposes a high level of design
- Utilizes cross access easements
- Proposes no new curb cuts
- Provides a dumpster enclosure and screening

Compliance with the Zoning Ordinance

The property is zoned B-3, General Services and Highway Business. The proposal includes a request for a Special Use to operate a drive-through, which is an available Special Use in the B-3 district. The shopping center requires 410 parking spaces, including the parking required for the proposed use. Upon completion of the project, the shopping center will have 399 parking spaces; as such, a variation for the proposed parking is required. Based on the traffic study provided, the peak occupancy rate of the shopping center will be approximately 52 percent on weekdays and Saturday with a surplus of 185 and 186 parking spaces respectively. Staff concurs with the findings of the petitioner's traffic study. All other Zoning Ordinance requirements are met.

Plat of Subdivision – Lot Exception

The final plat of subdivision is in substantial compliance with the minimum lot dimension requirements as outlined in Section 20.301 of the Village's Subdivision Ordinance. However, Lot 1 (the new outlot) includes an exception to the 140 foot lot depth minimum requirement. The lot depth exception is requested to provide a uniform subdivision that does not bisect exiting parking or landscape islands with property lines. While Lot 1 will not meet the required lot depth minimum, the newly created lot will not create any new nonconformities.

Specifically, the eastern lot line, for the proposed outlot, has been adjusted to ensure that a minimum 25' setback is provided from the lot line to the existing monument sign.

Public Comment

Prior to and during the Plan Commission meeting, staff did not receive any inquiries regarding this proposal.

ATTACHMENTS

Resolution

Ordinance

Aerial Map

Staff Report with attachments dated February 6, 2023

Draft Minutes of the Plan Commission Hearing dated February 6, 2023

Final Plat of Subdivision

ORDINANCE NO. _____**AN ORDINANCE AUTHORIZING A SPECIAL USE FOR
1300-1418 BUTTERFIELD ROAD
TO PERMIT A RESTAURANT WITH DRIVE THROUGH AND
PARKING VARIATION FOR THE BUTTERFIELD ROAD PLAZA**

WHEREAS, the following described property, to wit:

PARCEL 1:

PART OF LOTS 2 AND 3, OAK GROVE CENTRE OF COMMERCE UNIT 1 BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195 IN DUPAGE COUNTY, ILLINOIS BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 2; THENCE NORTH 01 DEGREE 04 MINUTES 56 SECONDS WEST, 457.09 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, 66.00 FEET; THENCE NORTH 01 DEGREE 04 MINUTES 56 SECONDS WEST, 63.42 FEET; THENCE SOUTH 89 DEGREES 10 MINUTES 35 SECONDS EAST, 837.78 FEET; THENCE SOUTH 01 DEGREE 04 MINUTES 56 SECONDS EAST, 381.60 FEET; THENCE SOUTH 81 DEGREES 54 MINUTES 34 SECONDS WEST, 910.12 FEET TO THE POINT OF BEGINNING.

PARCEL 2:

NON-EXCLUSIVE EASEMENT FOR THE BENEFIT OF PARCEL 1 CREATED BY GRANTS CONTAINED IN AN ACCESS ROAD CONSTRUCTION, OPERATION, MAINTENANCE, AND RECIPROCAL EASEMENT AGREEMENT DATED NOVEMBER 27, 1981 AND RECORDED JUNE 10, 1982 AS DOCUMENT R82-23852 MADE BY AND BETWEEN NATIONAL BOULEVARD BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED MARCH 24, 1978 AND KNOWN AS TRUST NUMBER 5994, NATIONAL BOULEVARD BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED DECEMBER 22, 1970 AND KNOWN AS TRUST NUMBER 3632, AND DROVER'S BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED JANUARY 22, 1980 AND KNOWN AS TRUST NUMBER 80012, FOR INGRESS AND EGRESS PURPOSES ON, OVER, THROUGH, UPON AND ACROSS THE FOLLOWING DESCRIBED LAND:

A) THAT PART OF LOT 1 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHEAST CORNER OF SAID LOT 1; THENCE SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG THE EAST LINE OF SAID LOT, A DISTANCE OF 245.61 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG SAID EAST LINE A DISTANCE OF 116.0 FEET; THENCE SOUTH 88 DEGREES 55 MINUTES 04 SECONDS WEST, A DISTANCE OF 8.95 FEET; THENCE NORTH 1 DEGREE 04 MINUTES 56 SECONDS WEST, A DISTANCE OF 116.0 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST A DISTANCE OF 8.95 FEET TO THE POINT OF BEGINNING, IN DUPAGE COUNTY, ILLINOIS.

B) THAT PART OF LOT 1 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTH EAST CORNER OF LOT 1; THENCE SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST, ALONG THE EAST LINE OF SAID LOT, 361.61 FEET TO THE POINT OF BEGINNING; THENCE SOUTH 88 DEGREES 55 MINUTES 04 SECONDS WEST, 415.35 FEET TO A POINT ON THE WEST LINE OF SAID LOT (SAID POINT BEING 375.50 FEET SOUTH OF THE NORTHWEST CORNER OF SAID LOT); THENCE SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG THE WEST LINE OF SAID LOT 35.00 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, 415.35 FEET TO A POINT ON THE EAST LINE OF SAID LOT; THENCE NORTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG SAID EAST LINE OF SAID LOT, 35 FEET TO THE POINT OF BEGINNING, IN DUPAGE COUNTY, ILLINOIS.

PARCEL 3:

NON-EXCLUSIVE EASEMENT FOR THE BENEFIT OF PARCEL 1 CREATED BY A GRANT CONTAINED IN A DEED DATED MAY 24, 1982 AND RECORDED JUNE 17, 1982 AS DOCUMENT R82-25038 FROM NATIONAL BOULEVARD BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED DECEMBER 22, 1970 AND KNOWN AS TRUST NUMBER 3632 TO KATHLEEN M. VYBORNY FOR INGRESS AND EGRESS PURPOSES PURSUANT TO THE TERMS OF AN ACCESS ROAD CONSTRUCTION, OPERATION, MAINTENANCE AND RECIPROCAL EASEMENT AGREEMENT DATED NOVEMBER 27, 1981 AND RECORDED JUNE 10, 1982 AS DOCUMENT R82-23852 OVER, THROUGH, UPON AND ACROSS THE FOLLOWING DESCRIBED LAND:

THE NORTH 180 FEET OF THE FOLLOWING DESCRIBED LAND:

THAT PART OF LOT 2 IN OAK GROVE CENTRE OF COMMERCE, UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID LOT 2; THENCE SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG THE WEST LINE OF SAID LOT, A DISTANCE OF 245.61 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG SAID WEST LINE A DISTANCE OF 116.0 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, A DISTANCE OF 16 FEET; THENCE NORTH 1 DEGREE 04 MINUTES 56 SECONDS WEST, A DISTANCE OF 92.0 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, A DISTANCE OF 74 FEET; THENCE NORTH 1 DEGREE 04 MINUTES 56 SECONDS WEST, A DISTANCE OF 266.62 FEET TO A POINT ON THE NORTHERLY LINE OF SAID LOT 2; THENCE NORTH 89 DEGREES 10 MINUTES 46 SECONDS WEST ALONG THE NORTHERLY LINE OF SAID LOT 2, A DISTANCE OF 24.01 FEET; THENCE SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST A DISTANCE OF 243.42 FEET; THENCE SOUTH 88 DEGREES 55 MINUTES 04 SECONDS WEST A DISTANCE OF 66 FEET TO THE POINT OF BEGINNING, IN DUPAGE COUNTY, ILLINOIS.

PARCEL 4:

NON-EXCLUSIVE EASEMENT FOR THE BENEFIT OF PARCEL 1 CREATED BY GRANTS CONTAINED IN A DEED DATED MAY 24, 1982 AND RECORDED JUNE 17, 1982 AS DOCUMENT R82-25038 FROM NATIONAL BOULEVARD BANK OF CHICAGO, AS TRUSTEE

UNDER TRUST AGREEMENT DATED DECEMBER 22, 1970 AND KNOWN AS TRUST NUMBER 3632 TO KATHLEEN M. VYBORNY PURSUANT TO THE TERMS OF A DECLARATION OF SERVICE AND ROAD EASEMENTS DATED NOVEMBER 27, 1982 AND RECORDED JUNE 10, 1982 AS DOCUMENT R82-23851 FOR VEHICULAR ACCESS FOR THE PURPOSE OF PROVIDING INGRESS AND EGRESS, AND FOR THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND USE OF SERVICE ROADS, AND PERPETUAL EASEMENTS IN THE EASEMENT PARCELS FOR THE INSTALLATION, USE, OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, RELOCATION AND REMOVAL OF UNDERGROUND UTILITY FACILITIES, IN AND UPON THE FOLLOWING DESCRIBED LANDS:

A) THAT PART OF LOT 2 IN OAK GROVE CENTRE OF COMMERCE, UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

THE SOUTH 24 FEET OF THE EASTERLY 20 FEET OF LOT 2, AS MEASURED AT RIGHT ANGLES TO THE EASTIERLY LINE THEREOF OF THE NORTHERLY 180 FEET, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEROF, IN DUPAGE COUNTY, ILLINOIS.

B) THAT PART OF LOT 3 IN OAK GROVE CENTRE OF COMMERCE, UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11, EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

THE SOUTH 24 FEET OF THE WESTIERLY 10 FEET OF LOT 3, AS MEASURED AT RIGHT ANGLES TO THE WESTERLY LINE THEREOF, OF THE NORTHERLY 180 FEET PURSUANT TO DOCUMENT R82-25038, 204 FEET PURSUANT TO DOCUMENT R82-23851, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF, OF LOT 3, AFORESAID, IN DUPAGE COUNTY, ILLINOIS.

C) THAT PART OF LOT 3 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

THE SOUTHERLY 24 FEET OF LOT 3 OF THE NORTHERLY 180 FEET, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF (EXCEPT THE WESTERLY 10 FEET, AS MEASURED AT RIGHT ANGLES TO THE WEST LINE THEREOF) OF LOT 3, AFORESAID, IN DUPAGE COUNTY, ILLINOIS.

THIS DESCRIPTION DESCRIBES ALL THE LAND DESCRIBED IN THE TITLE COMMITMENT IDENTIFIED AS CHICAGO TITLE INSURANCE COMPANY COMMITMENT NUMBER 17PSA130131LP BEARING AN EFFECTIVE DATE OF FEBRUARY 24, 2017.

Commonly known as: 1300-1418 Butterfield Road, Downers Grove, IL 60515
PIN: 06-30-404-015

(hereinafter referred to as the "Property") is presently zoned in the "*B-3, General Services and Highway Business District*" under the Comprehensive Zoning Ordinance of the Village of Downers Grove; and

WHEREAS, the owner of the Property has filed with the Plan Commission, a written petition conforming to the requirements of the Zoning Ordinance, requesting that a Special Use per Section 28.12.050 of the Zoning Ordinance be granted to permit a restaurant with a drive-through including the following Variation:

1. Variation per Section 28.7.030, *Parking*, to decrease the required parking spaces from four hundred ten (410) to three hundred ninety-nine (399).

WHEREAS, such petition was referred to the Plan Commission of the Village of Downers Grove, and said Plan Commission has given the required public notice, has conducted a public hearing for the petition on February 6, 2023 and has made its findings and recommendations, all in accordance with the statutes of the State of Illinois and the ordinances of the Village of Downers Grove; and,

WHEREAS, the Plan Commission has recommended approval of the Special Use and Variation, subject to certain conditions; and,

WHEREAS, the Village Council finds that the evidence presented in support of said petition, as stated in the aforesaid findings and recommendations of the Plan Commission, is such as to establish the following:

1. That the proposed use is expressly authorized as a Special Use in the district in which it is to be located;
2. That the proposed use at the proposed location is necessary or desirable to provide a service or a facility that is in the interest of public convenience and will contribute to the general welfare of the neighborhood or community.
3. That the proposed use will not, in the particular case, be detrimental to the health, safety or general welfare of persons residing or working in the vicinity or be injurious to property values or improvements in the vicinity.

WHEREAS, the Village Council finds that the evidence presented in support of said petition, as stated in the aforesaid findings and recommendations of the Plan Commission, is such as to establish the standards for granting a variation per Section 28.12.090.G have been met; and,

1. No variation may be approved unless the variation to be approved is consistent with the spirit and intent of this zoning ordinance and that strict compliance with the subject provisions would result in practical difficulties or particular hardships for the subject property owner.
2. The consideration of whether a variation request has met the standards of practical difficulties or particular hardships must include all of the following findings from the evidence presented:
 - a. the subject property cannot yield a reasonable return if required to comply with the regulations that apply to it;
 - b. the plight of the owner is due to unique circumstances; and
 - c. the variation, if granted, will not alter the essential character of the locality.

3. In addition, the hearing body must also take into consideration the extent to which the following facts, favorable to the property owner, have been established by the evidence presented:
 - a. that the physical surroundings, shape, or topographical conditions of the subject property would result in a particular hardship upon the owner, as distinguished from a mere inconvenience, if the strict letter of the regulations were carried out;
 - b. that the conditions leading to the need of the requested variation are not applicable, generally, to other properties within the same zoning classification;
 - c. that the alleged difficulty or hardship was not created by the current property owner;
 - d. that the proposed variation will not impair an adequate supply of air to adjacent property, or substantially increase the danger of fire, or otherwise endanger the public safety, or substantially diminish or impair property values within the neighborhood;
 - e. that the proposed variation will not alter the essential character of the area; and
 - f. that the granting of the variation will not confer on the subject property owner any special privilege that is not available to other properties or structures in the same district.

NOW, THEREFORE, BE IT ORDAINED by the Council of the Village of Downers Grove, in DuPage County, Illinois, as follows:

SECTION 1. That Special Use of the Property is hereby granted to permit a restaurant with drive-through with a parking variation.

SECTION 2. This approval is subject to the following conditions:

1. The Special Use, Parking Variation and a Plat of Subdivision with an exception to the minimum lot depth standards shall substantially conform to the staff report dated February 6, 2023; and civil drawings prepared by RTM Engineering Consultants submitted on 12/8/22 and updated 1/25/23 and the architectural drawings submitted on 12/8/22 and updated on 1/25/23 except as such plans may be modified to conform to the Village codes and ordinances.
2. A perpetual cross access and parking easement is provided between Lots 1 and Lot 2 and is shown on the Plat of Subdivision.
3. The photometric plan shall conform to the Village Zoning Ordinance.
4. All signage shall be permitted separately and conform to the Village's Sign Ordinance.
5. A final plat of subdivision will be recorded prior to permit issuance.

SECTION 3. The above conditions are hereby made part of the terms under which the Special Use with Variation is granted. Violation of any or all of such conditions shall be deemed a violation of the Village of Downers Grove Zoning Ordinance, the penalty for which may include, but is not limited to, a fine and/or revocation of the Special Use with Variation granted herein.

SECTION 4. It is the Petitioner's obligation to maintain compliance with all applicable Federal, State, County and Village laws, ordinances, regulations, and policies.

SECTION 5. That all ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed.

Mayor

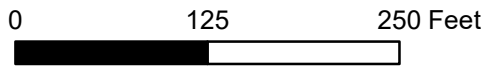
Passed:

Published:



Attest: _____

Village Clerk

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1330 Butterfield Road - Location Map

-  Subject Property
-  Project Location



**VILLAGE OF DOWNERS GROVE
REPORT FOR THE PLAN COMMISSION
FEBRUARY 6, 2023 AGENDA**

SUBJECT:	TYPE:	SUBMITTED BY:
22-PCE-1004 1330 Butterfield Road	Special Use, Parking Variation and Plat of Subdivision with an Exception	Flora P. Leon, AICP Senior Planner

REQUEST

The petitioner is requesting approval for a Special Use to allow a drive-through, a Parking Variation, and a Plat of Subdivision with an exception to the lot depth to allow the construction of a future restaurant building at 1330 Butterfield Road.

NOTICE

The application has been filed in conformance with applicable procedural and public notice requirements.

GENERAL INFORMATION

OWNER: Nare Butterfield, LLC
1613 Colonial Parkway
Inverness, IL 60067

PETITIONER: Nare Group
Core Bruce
27 North Green Street
Chicago, IL 60661

PROPERTY INFORMATION

EXISTING ZONING: B-3, General Services and Highway Business
EXISTING LAND USE: Shopping Center
PROPERTY SIZE: 404, 278.07 square feet (9.2787 acres)
PINS: 06-30-404-015

SURROUNDING ZONING AND LAND USES

	ZONING	FUTURE LAND USE
NORTH:	M-2, Restricted Manufacturing	Regional Commercial
SOUTH:	B-3, General Services and Highway Business	Regional Commercial
EAST:	Village of Lombard: B3PD, Community Shopping District	Village of Lombard
WEST:	B-3, General Services and Highway Business	Regional Commercial

ANALYSIS

SUBMITTALS

This report is based on the following documents, which are on file with the Department of Community Development:

1. Project Narrative
2. Approval Criteria
3. Plat of Survey
4. Site Plan
5. Engineering Plans
6. Landscape Plans
7. Elevations
8. Plat of Subdivision
9. Traffic and Parking Impact Study

PROJECT DESCRIPTION

The petitioner is proposing to construct a restaurant building at 1330 Butterfield Road. The restaurant space will be located on a new 0.91 acre lot within the 9.28 acre Butterfield Plaza shopping center located at the southwest corner of shopping center. The property is B-3, General Services and Highway Business. The petitioner is requesting:

- A Special Use for the construction of a drive-through;
- A Variation for the overall required shopping center parking
- A Plat of Subdivision to create an outlot with an exception to the minimum lot depth

The petitioner is proposing to subdivide a 404,278.07 square foot parcel to build a new restaurant building approximately 420 feet east of the intersection of Butterfield Road and Downers Drive, along the north side of Butterfield Road. The new building is approximately 2,400 square feet and will include a restaurant with a drive-through lane and 15 parking spaces. The current parking regulations requires 410 parking spaces based on the proposed restaurant and the existing shopping center. The overall proposed parking (including the proposed outlot) totals 399 parking spaces. As such, this will necessitate a request for a parking variance for the shopping center.

The drive-through facility will be located on the south and west sides of the building and will provide the required minimum stacking spaces as required by the Village Code. The petitioner is proposing landscaping in conformance with the Village requirements. The proposed landscaping includes a mix of canopy trees and landscape materials such as shrubs and ornamental grasses. The parking lot improvements and site lighting is provided within the proposed development and is compliant with the Village requirements.

The primary building materials used for the exterior are aluminum siding, aluminum composite panels, and storefront windows. The facades are broken up with a mixture of these building materials, windows, and horizontal accent bands. Variation to the roofline is provided by a metal canopy near the entrance of the building. The proposed signage for the future restaurant and retail space will be in compliance with the sign ordinance.

A Plat of Subdivision is proposed to create a new outlot for the restaurant building. The new lot is located on the west side of the shopping center entrance along Butterfield Road. Further discussed below, the petitioner is requesting an exception to the minimum lot depth requirement for new subdivisions.

COMPLIANCE WITH THE COMPREHENSIVE PLAN

The current Comprehensive Plan’s Future Land Use Map designates this property as Regional Commercial. Regional Commercial uses are defined by large-scale retail uses that rely on the ability to draw a customer base from the larger region. To remain competitive reinvestment will be required to attract new retailers and restaurants. The current Comprehensive Plan specifically identifies the Finley Road/Butterfield Road as a “Key Focus Area.” Specifically the north side of Butterfield Road is identified as a Butterfield Catalyst Site.

The proposed development also meets the Comprehensive Plan’s recommendations for a Regional Commercial area:

- Promotes in-line or outlot development to attract new retail developments.
- Focuses on attracting a regional customer base as well as providing services, retail, and entertainment to the substantial daytime population in the area.
- Implements the recommendations of the Economic Development Plan to Enhance the Sales Tax
- Proposes a high level of design
- Utilizes cross access easements
- Proposes no new curb cuts
- Provides a dumpster enclosure and screening

COMPLIANCE WITH ZONING ORDINANCE

The property is zoned B-3, General Services and Highway Business. The proposal includes a request for a Special Use to operate a drive-through, which is an available Special Use in the B-3 district.

The bulk requirements of the proposed building are summarized in the following table:

Table 1 – Zoning Requirements, Proposed Outlot

1330 Butterfield Road	Required	Proposed
South Setback to building (Street Yard)	25 ft.	40.66 ft.
North Setback to building (Rear Yard)	0 ft.	46.7 ft.
East Setback (Interior Yard)	0 ft.	60.5 ft.
West Setback (Interior Yard)	0 ft.	144.2 ft.
North Setback to parking (Rear Yard)	0 ft.	24 ft.
Landscaped Open Space (minimum)	10%	34%
Floor Area Ratio (maximum)	0.75	0.06
Building Height (maximum)	60 ft.	15.08 ft.
Parking Spaces (minimum)	10	15
Stacking Spaces (minimum)	8	8

Table 2 - Zoning Requirements, Shopping Center

Butterfield Plaza	Required	Proposed
Parking Spaces (minimum)	410	399*
Open Space (minimum)	10%	10.93%
Floor Area Ratio (minimum)	0.75	0.29

* *Variation required*

As noted in Table 2, the shopping center requires 410 parking spaces, including the parking required for the proposed use. Upon completion of the project, the shopping center will have 399 parking spaces; as such, a variation for the proposed parking is required. Based on the traffic study provided, the peak occupancy rate of the shopping center will be approximately 52 percent on weekdays and Saturday with a surplus of 185 and 186 parking spaces respectively. Staff concurs with the findings of the petitioner's traffic study.

COMPLIANCE WITH SUBDIVISION ORDINANCE

The final plat of subdivision is in substantial compliance with the minimum lot dimension requirements as outlined in Section 20.301 of the Village's Subdivision Ordinance. However, Lot 1 (the new outlot) includes an exception to the 140 foot lot depth minimum requirement. While Lot 1 will not meet the required lot depth minimum, the newly created lot will not create any new nonconformities. Specifically, the eastern lot line, for the proposed outlot, has been adjusted to ensure that a minimum 25' setback is provided from the lot line to the existing monument sign. Moreover, the proposed outlot will provide for a uniform subdivision that does not include bisecting exiting parking or landscape islands with property lines.

Table 3 – Subdivision Requirements

Butterfield Plaza	Lot Width (100 ft. minimum)	Lot Depth (140 ft. minimum)	Lot Area (10, 500 square foot minimum)
Lot 1	300.59 feet	132.34 ft.*	39,482.56 sq. ft.
Lot 2	609.02 feet	447.56 ft.	364,795.51 sq. ft.

** Exception required*

The petitioner is providing the required five-foot wide public utility and drainage easement along the east interior lot line, a ten-foot wide public utility and drainage easement along the west interior lot line, and the 24-foot wide access and utility easement along the rear lot lines for Lot 1. The original stormwater detention area depicted in R1983-015527 is being revised to exclude the proposed building footprint on Lot 1. Access will be provided through new cross access easements through the driveways on Butterfield Road and north of the proposed Lot 1.

ENGINEERING/PUBLIC IMPROVEMENTS

The proposed outlot will be located over the existing detention area. As such the existing detention area will be incorporated into the development. The existing detention area storage has been calculated and will be replaced underground in two separate storm trap detentions systems. No additional detention is required for the net new impervious area of 7,227 SF. However, the proposed development will require Post Construction Best Management Practices (PCBMPs).

A new fire and water service will be connected to a private watermain loop just north of the proposed parcel with permission from the existing property owner. Additionally, the sanitary sewer service will be provided off of an 8" sanitary sewer line located directly east of the proposed parcel. The Downers Grove Sanitary District conceptually approved the request for sanitary service to this development.

There will be no changes to the existing access point off of Butterfield Road. The petitioner will be required to meet all Village engineering standards and comply with all applicable codes when formally submitting for a permit.

TRAFFIC

A traffic and parking impact study for the proposed development was completed by the petitioner. Please note for zoning review purposes this portion of the shopping center has been reviewed independently from

the immediately adjacent center to the west, which is under separate ownership. The study examined the existing and future traffic conditions based on the proposed development. The study found that based on the projected parking, the proposed parking supply is sufficient to accommodate the parking demand of the proposed drive-through restaurant. The results of the capacity analysis indicate that the traffic generated by the proposed restaurant space will not have a significant impact on the area roadways and that the volume of traffic estimated to be generated will be reduced due to pass-by trips and internal capture. The access system serving the shopping center will ensure an adequate and flexible access system is provided to accommodate the traffic that will be generated by the proposed restaurant, and the site plan provides for efficient circulation and adequate stacking. As previously noted, the peak occupancy rate will be approximately 52 percent.

PUBLIC SAFETY REQUIREMENTS

The Fire Prevention Division reviewed the proposed development and determined that sufficient access to and around the site is provided for emergency vehicles. The loop around the building provides sufficient access around the property as needed. The building will be required to include a fire alarm and sprinkler system that meet the Village's code requirements.

NEIGHBORHOOD COMMENT

Notice was provided to all property owners 250 feet or less from the property in addition to posting public hearing notice signs and publishing the legal notice in *The Daily Herald*. No public comments were received by staff.

STANDARDS OF APPROVAL

The petitioner is requesting approval of a Special Use to allow a restaurant drive-through, a parking variation, and a Plat of Subdivision with an exception to the minimum lot depth at 1330 Butterfield Road in the Butterfield Plaza shopping center. The petitioner has submitted a narrative that attempts to address all of the standards of approval. The Plan Commission should consider the petitioner's documentation, the staff report, and the discussion at the Plan Commission meeting in determining whether the standards for approval have been met.

Special Use

Section 28.12.050.H Approval Criteria – Special Uses

No special use may be recommended for approval or approved unless the respective review or decision-making body determines that the proposed special use is constituent with and in substantial compliance with all Village Council policies and plans and that the petitioner has presented evidence to support each of the following conclusions:

- 1. That the proposed use is expressly authorized as a Special Use in the district in which it is to be located;*
- 2. That the proposed use at the proposed location is necessary or desirable to provide a service or a facility that is in the interest of public convenience and will contribute to the general welfare of the neighborhood or community.*
- 3. That the proposed use will not, in the particular case, be detrimental to the health, safety or general welfare of persons residing or working in the vicinity or be injurious to property values or improvements in the vicinity.*

Variation

Section 28.12.090.G Standards and Review Criteria

Zoning Variations require evaluation per Section 12.090.G of the Zoning Ordinance, Standards and Review Criteria: "No variation may be approved unless the variation to be approved is consistent with the spirit and intent of this zoning ordinance and that strict compliance with the subject provisions would result in

practical difficulties or particular hardships for the subject property owner. The consideration of whether a variation request has met the standards of practical difficulties or particular hardships must include all of the following findings from the evidence presented:”

1. *The subject property cannot yield a reasonable return if required to comply with the regulations that apply to it.*
2. *The plight of the owner is due to unique circumstances.*
3. *The variation, if granted, will not alter the essential character of the locality.*
4. *That the particular physical surroundings, shape, or topographical conditions of the subject property would result in a particular hardship upon the owner, as distinguished from a mere inconvenience, if the strict letter of the regulations were carried out.*
5. *That the conditions leading to the need of the requested variation are not applicable, generally, to other properties within the same zoning classification.*
6. *That the alleged difficulty or hardship was not created by the current property owner.*
7. *That the proposed variation will not impair an adequate supply of air to adjacent property, or substantially increase the danger of fire, or otherwise endanger the public safety, or substantially diminish or impair property values within the neighborhood.*
8. *That the proposed variation will not alter the essential character of the area.*
9. *That the granting of the variation will not confer on the subject property owner any special privilege that is not available to other properties or structures in the same district.*

Section 20.602(c) Exceptions

An exception shall be recommended by the Plan Commission only if it finds that there are practical difficulties or particular hardships in the way of carrying out the strict letter of the provisions of this subdivision ordinance. In its consideration of the standards of practical difficulties or particular hardships, the Commission may consider, but is not limited to, the following:

1. *The extent to which the proposed exception impacts on the value or reasonable use of surrounding properties.*
2. *Whether the exception is consistent with the trend of development in the area and the surrounding uses.*
3. *The characteristics of the property which support or mitigate against the granting of the exception.*
4. *Whether the exception is in conformance with the general plan and spirit of this Chapter.*
5. *Whether the exception will alter, or be consistent with, the essential character of the locality.*

DRAFT MOTION

Staff will provide a recommendation at the February 6, 2023 meeting. Should the Plan Commission find that the request meets the standards of approval based on the Zoning and Subdivision Ordinances, staff has prepared a draft motion that the Plan Commission may make for the recommended approval of 22-PCE-1004:

Based on the petitioner’s submittal, the staff report, and the testimony presented, I find that the petitioner has met the standards of approval for a Special Use, Parking Variation and a Final Plat of Subdivision with an Exception to the Subdivision Standards as required by the Village of Downers Grove Zoning and Subdivisions Ordinances and is in the public interest and therefore, I move that the Plan Commission recommend to the Village Council approval of 22-PCE-1004, subject to the following conditions:

22-PCE-1004; 1330 Butterfield Road – Downers Grove Plaza
February 6, 2023

Page 7

1. The Special Use, Parking Variation and a Plat of Subdivision with an exception to the minimum lot depth standards shall substantially conform to the staff report; and civil drawings prepared by RTM Engineering Consultants submitted on 12/8/22 and updated 1/25/23 and the architectural drawings submitted on 12/8/22 and updated on 1/25/23 except as such plans may be modified to conform to the Village codes and ordinances.
2. A perpetual cross access and parking easement is provided between Lots 1 and Lot 2 and is shown on the Plat of Subdivision.
3. The photometric plan shall conform to the Village Zoning Ordinance.
4. All signage shall be permitted separately and conform to the Village's Sign Ordinance.
5. A final plat of subdivision will be required prior to permit issuance.

Staff Report Approved By:



Stanley J. Popovich, AICP
Director of Community Development

SP: fl
-att



PD 59
ORD 5646

BROOK DR

PD 17
ORD 2080

DOWNERS DR



BUTTERFIELD RD

PD 22
ORD 2436



0 125 250 Feet

1330 Butterfield Road - Location Map

-  Subject Property
-  Project Location



January 9, 2023

Village of Downers Grove
Community Development: Attn. Flora Leon
801 Burlington Avenue
Downers Grove, IL 60515

Re: Wendy's Downers Grove
1330 Butterfield Rd
Downers Grove, IL

Dear Flora,

Nare Butterfield LLC is proposing the construction on a new Wendy's with drive thru located at the southwest corner of 1330 Butterfield Road. The existing lot is being subdivided in to Lot 1 and Lot 2. Lot 1 is for the proposed Wendy's and is 0.91 acres with a minimum lot depth of 132.34', an exception is needed from the normal 140' minimum lot depth. A special use is needed for the drive thru. Additionally, a variance is needed for the parking on site. The existing parking is being reduced from 424 to 399. The 399 stalls does not meet the 4 stalls per 1000 SF and a variance is required. Although the 399 stalls does not meet the zoning code, a traffic analysis has been provided to show that there is adequate parking in the proposed conditions. Lot 1 is the location of an existing detention pond. The existing detention will be moved underground and located on Lot 1. A new sanitary service and water service will be required for the Wendy's. A traffic study has been provided to show that adequate parking has been provided for the existing commercial buildings and proposed Wendy's. IDOT drainage and building setbacks have been maintained and the frontage has been coordinated with IDOT. Landscape will be provided per Downers Grove ordinances.

Respectfully yours,

RTM Engineering Consultants, LLC

A handwritten signature in black ink, appearing to read 'Scott DiGilio'.

Scott DiGilio, P.E.
Principal



Review and Approval Criteria SPECIAL USES

Plan Commission Number & Title: _____

A DETAILED RESPONSE TO ALL OF THE STANDARDS SHALL BE PROVIDED, SPECIFYING HOW EACH STANDARD IS OR IS NOT MET.

Section 28.12.050.H Approval Criteria (Special Uses)

No special use may be recommended for approval or approved unless the respective review or decision-making body determines that the proposed special use is constituent with and in substantial compliance with all Village Council policies and plans and that the applicant has presented evidence to support each of the following conclusions:

- 1. That the proposed use is expressly authorized as a Special Use in the district in which it is to be located.*

- 2. That the proposed use at the proposed location is necessary or desirable to provide a service or a facility that is in the interest of public convenience and will contribute to the general welfare of the neighborhood or community.*

- 3. That the proposed use will not, in the particular case, be detrimental to the health, safety or general welfare of persons residing or working in the vicinity or be injurious to property values or improvements in the vicinity.*



Review and Approval Criteria VARIATIONS (page 1 of 2)

Plan Commission Number & Title: _____

A DETAILED RESPONSE TO ALL OF THE STANDARDS SHALL BE PROVIDED, SPECIFYING HOW EACH STANDARD IS OR IS NOT MET.

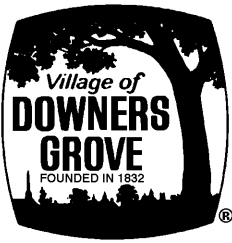
Section 28.12.090.G Approval Criteria (Variations)

Variations require evaluation per Section 28.12.090 of the Municipal Code, *Standards and Review Criteria*: “No variation may be approved unless the variation to be approved is consistent with the spirit and intent of this zoning ordinance and that strict compliance with the subject provisions would result in practical difficulties or particular hardships for the subject property owner. The consideration of whether a variation request has met the standards of practical difficulties or particular hardships must include all of the following findings from the evidence presented:”

(1) The subject property cannot yield a reasonable return if required to comply with the regulations that apply to it.

(2) The plight of the owner is due to unique circumstances.

(3) The variation, if granted, will not alter the essential character of the locality.



Review and Approval Criteria VARIATIONS (page 2 of 2)

Plan Commission Number & Title: _____

“In addition, the hearing body must also take into consideration the extent to which the following facts, favorable to the property owner, have been established by the evidence:”

- (1) *That the particular physical surroundings, shape, or topographical conditions of the subject property would result in a particular hardship upon the owner, as distinguished from a mere inconvenience, if the strict letter of the regulations were carried out.*

Butterfield Plaza was originally constructed prior to the current parking regulations and did not contemplate outlot development, a feature of the villages comprehensive plan. It is not possible to bring the center up to the current parking regulations due to lot size constraints and lack of available space, and the original center not having outlot development in mind.

- (2) *That the conditions leading to the need of the requested variation are not applicable, generally, to other properties within the same zoning classification.*

Butterfield Plaza is a unique case as it was constructed prior to the current parking regulations and did not contemplate outlot development with its layout, a feature of modern shopping centers. Only a small portion of the property is being redeveloped, making meeting the parking regulations not possible.

- (3) *That the alleged difficulty or hardship was not created by the current property owner.*

The difficulty and hardship was not created by the current owner and management as the shopping center was constructed prior to their acquisition of the center

- (4) *That the proposed variation will not impair an adequate supply of air to adjacent property, or substantially increase the danger of fire, or otherwise endanger the public safety, or substantially diminish or impair property values within the neighborhood.*

The proposed variation will not impair air, increase fire risk, endanger public safety, or diminish property values. Additionally, it will not negatively impact traffic flows as shown in the traffic study provided.

- (5) *That the proposed variation will not alter the essential character of the area.*

The subject and surrounding properties are commercial uses (retail/restaurant), the same as the proposed restaurant.

- (6) *That the granting of the variation will not confer on the subject property owner any special privilege that is not available to other properties or structures in the same district.*

The variation will not grant the property special privilege. The age of the original center and revised parking regulations create a unique case that requires this variance. There was not an expectation of outlot development at large shopping centers at the time of original design, but it has become a feature of all modern shopping centers..



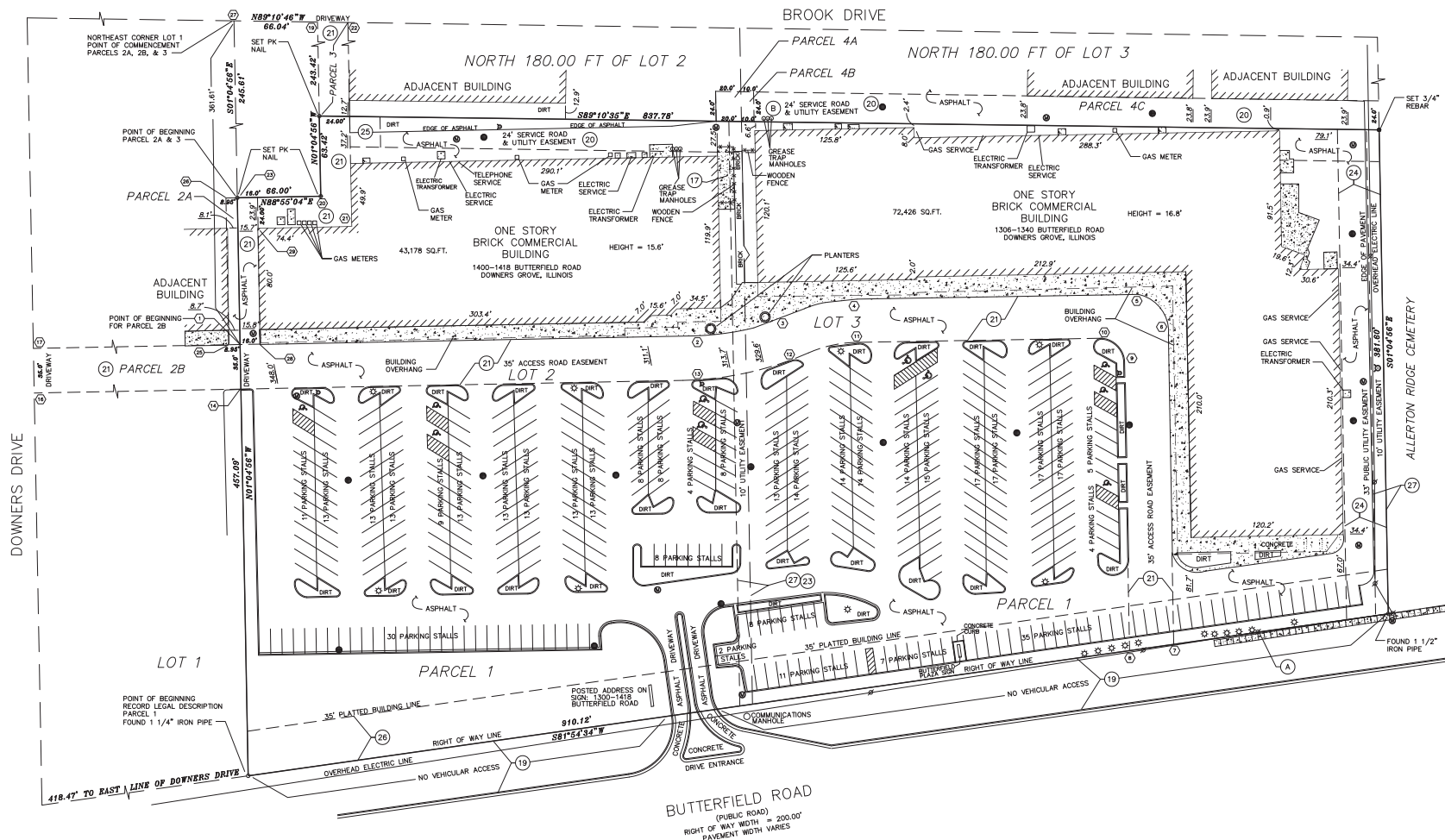
Reasons for Granting Exception on Lot Depth

1. An exception shall be recommended by the Plan Commission only if it finds that there are practical difficulties or particular hardships in the way of carrying out the strict letter of the provisions of this subdivision ordinance. In its consideration of the standards of practical difficulties or particular hardships, the Commission may consider, but is not limited to, the following:
 1. The extent to which the proposed exception impacts on the value or reasonable use of surrounding properties; **The exception with positively impact surrounding properties by aligning lot depth with the drive aisle.**
 2. Whether the exception is consistent with the trend of development in the area and the surrounding uses; **The exception to lot depth allows the lot to function similarly to the Starbucks, Portillo's, and Burger King located nearby to the site along Butterfield Road.**
 3. The characteristics of the property which support or mitigate against the granting of the exception; **The existing site will benefit from the lot depth exception so as to not have a lot line splitting a parking lot island or parking space, and instead align with a drive aisle.**
 4. Whether the exception is in conformance with the general plan and spirit of this subdivision ordinance; **It is our belief that the exception is in conformance with the general plan and spirit of this subdivision ordinance.**
 5. Whether the exception will alter, or be consistent with, the essential character of the locality. **It is our belief that the exception will be consistent with the essential character of the locality.**

Respectfully yours,

RTM Engineering Consultants, LLC

Scott DiGilio, Principal



SURVEY INFORMATION
Sarko Engineering Inc.
 ILLINOIS AND MISSOURI
 Professional Land Surveyors
 847 County Highway 45
 Mt. Hope, IL 63572
 Phone: (636) 832-8428
 Fax: (636) 848-3859
 E-mail: sarko@sarko.net

AS PER BASIS OF BEARINGS

0 20 40 80
 SCALE: 1" = 40'

LEGEND

- SET PK NAIL
- FOUND IRON PIPE
- SET 3/4" REBAR
- PROPERTY LINE
- PARCEL DESCRIPTION LINE
- ⊕ LIGHT POLE
- ⊕ POWER POLE
- ⊕ FIRE HYDRANT
- ⊕ SANITARY MANHOLE
- ⊕ STORM SEWER INLET
- SIGN POST
- SIGN
- FENCE (TYPE NOTED)
- - - EASEMENT LINE
- - - SET BACK LIMITS
- 6" CONCRETE CURB
- 6" CONCRETE CURB & GUTTER
- CONCRETE
- (X)(X)(X) "RECORDED AS" DATA
- BUILDING CORNER DISTANCE TO PROPERTY LINE
- ♿ HANDICAPPED PARKING STALL
- SQ.FT. SQUARE FEET
- N NORTH
- S SOUTH
- E EAST
- W WEST
- ① EASEMENT DESCRIPTION POINT

PREPARED FOR:
VIKING PARTNERS
 4901 HUNT ROAD, SUITE 102
 CINCINNATI, OH 45242

PREPARED BY:
Sarko Engineering Inc.
 ILLINOIS AND MISSOURI
 PROFESSIONAL LAND SURVEYORS
 847 COUNTY HIGHWAY 45
 MT. HOPE, IL 63572
 PHONE: (636) 832-8428
 FAX: (636) 848-3859
 E-MAIL: SARKO@SARKO.NET

DRAWN BY: VPS REVISION 1:
 APPROVED BY: RFS
 FIELD DATE: 3-27-17 REVISION 2:
 SCALE 1"=40'

PROJECT ADDRESS: 1300-1418 Butterfield Rd
 PROJECT LOCATION: Downers Grove, IL
 PROJECT NAME: BUTTERFIELD PLAZA PROJECT
 JOB NUMBER: 42879

ALTA/NSPS LAND TITLE SURVEY

SURVEYOR INFORMATION
Sarko Engineering Inc.
LICENSED AND REGISTERED
Professional Land Surveyors
847 County Liberty Dr.
Mt. Hope, IL 62572
Phone: (608) 832-8428
Fax: (608) 848-3859
E-mail: rsarko@sbll.net

ALTA/NSPS LAND TITLE SURVEY

RECORD LEGAL DESCRIPTION

PARCEL 1:
PART OF LOTS 2 AND 3, OAK GROVE CENTRE OF COMMERCE UNIT 1 BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195 IN DUPAGE COUNTY, ILLINOIS BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 2, THENCE NORTH 01 DEGREE 04 MINUTES 56 SECONDS WEST, 457.09 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, 65.00 FEET; THENCE NORTH 01 DEGREE 04 MINUTES 56 SECONDS WEST, 63.42 FEET; THENCE SOUTH 89 DEGREES 10 MINUTES 39 SECONDS EAST, 837.78 FEET; THENCE SOUTH 01 DEGREE 04 MINUTES 56 SECONDS EAST, 381.60 FEET; THENCE SOUTH 81 DEGREE 54 MINUTES 34 SECONDS WEST, 910.12 FEET TO THE POINT OF BEGINNING.

PARCEL 2:
NON-EXCLUSIVE EASEMENT FOR THE BENEFIT OF PARCEL 1 CREATED BY GRANTS CONTAINED IN AN ACCESS ROAD, CONSTRUCTION, OPERATION, MAINTENANCE, AND RECIPROCAL EASEMENT AGREEMENT DATED NOVEMBER 27, 1981 AND RECORDED JUNE 10, 1982 AS DOCUMENT R82-23852 MADE BY AND BETWEEN NATIONAL BOULEVARD BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED MARCH 24, 1979 AND KNOWN AS TRUST NUMBER 5994, NATIONAL BOULEVARD BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED DECEMBER 22, 1970 AND KNOWN AS TRUST NUMBER 3832, AND DRYVER'S BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED JANUARY 22, 1980 AND KNOWN AS TRUST NUMBER 8002, FOR INGRESS AND EGRESS PURPOSES ON, OVER, THROUGH, UPON AND ACROSS THE FOLLOWING DESCRIBED LAND:

A) THAT PART OF LOT 1 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTHEAST CORNER OF SAID LOT 1; THENCE SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG THE EAST LINE OF SAID LOT 1, A DISTANCE OF 245.61 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST, 116.0 FEET; THENCE SOUTH 88 DEGREES 55 MINUTES 04 SECONDS WEST, 4.85 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, A DISTANCE OF 116.0 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, A DISTANCE OF 8.95 FEET TO THE POINT OF BEGINNING, IN DUPAGE COUNTY, ILLINOIS.

B) THAT PART OF LOT 1 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTH EAST CORNER OF LOT 1; THENCE SOUTH 88 DEGREES 55 MINUTES 04 SECONDS WEST, 415.35 FEET TO A POINT ON THE WEST LINE OF SAID LOT 1 (SAID POINT BEING 375.00 FEET SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG THE WEST LINE OF SAID LOT 35.00 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, 415.35 FEET TO A POINT ON THE EAST LINE OF SAID LOT; THENCE NORTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG SAID EAST LINE OF SAID LOT, 35 FEET TO THE POINT OF BEGINNING, IN DUPAGE COUNTY, ILLINOIS.

C) THAT PART OF LOT 3 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

THE SOUTHERLY 24 FEET OF LOT 3 OF THE NORTHERLY 180 FEET, AS MEASURED AT RIGHT ANGLES TO THE WESTERLY LINE THEREOF, OF THE NORTHERLY 180 FEET PURSUANT TO DOCUMENT R82-25038, 204 FEET PURSUANT TO DOCUMENT R82-23851, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF, OF LOT 3, AFORSAID, IN DUPAGE COUNTY, ILLINOIS.

THE SOUTHERLY 24 FEET OF THE WESTERLY 20 FEET OF LOT 2, AS MEASURED AT RIGHT ANGLES TO THE EASTERLY LINE THEREOF, OF THE NORTHERLY 180 FEET PURSUANT TO DOCUMENT R82-25038, 204 FEET PURSUANT TO DOCUMENT R82-23851, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF, OF LOT 2, AFORSAID, IN DUPAGE COUNTY, ILLINOIS.

THE SOUTHERLY 24 FEET OF LOT 3 OF THE NORTHERLY 180 FEET, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF (EXCEPT THE WESTERLY 10 FEET, AS MEASURED AT RIGHT ANGLES TO THE WEST LINE THEREOF) OF LOT 3, AFORSAID, IN DUPAGE COUNTY, ILLINOIS.

THE SOUTHERLY 24 FEET OF LOT 3 OF THE NORTHERLY 180 FEET, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF (EXCEPT THE WESTERLY 10 FEET, AS MEASURED AT RIGHT ANGLES TO THE WEST LINE THEREOF) OF LOT 3, AFORSAID, IN DUPAGE COUNTY, ILLINOIS.

This description describes all the land described in the title commitment identified as Chicago Title Insurance Company Commitment Number 17P5A1301LP, bearing an effective date of February 24, 2017.

PARCEL 3:
NON-EXCLUSIVE EASEMENT FOR THE BENEFIT OF PARCEL 1, CREATED BY A GRANT CONTAINED IN A DEED DATED MAY 24, 1982 AND RECORDED JUNE 17, 1982 AS DOCUMENT R82-25038 FROM NATIONAL BOULEVARD BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED DECEMBER 22, 1970 AND KNOWN AS TRUST NUMBER 3832 TO KATHLEEN M. VIBORNY FOR INGRESS AND EGRESS PURPOSES PURSUANT TO THE TERMS OF AN ACCESS ROAD CONSTRUCTION, OPERATION, MAINTENANCE AND RECIPROCAL EASEMENT AGREEMENT DATED NOVEMBER 27, 1981 AND RECORDED JUNE 10, 1982 AS DOCUMENT R82-23852 OVER, THROUGH, UPON AND ACROSS THE FOLLOWING DESCRIBED LAND:
THE NORTH 180 FEET OF THE FOLLOWING DESCRIBED LAND:

THAT PART OF LOT 2 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID LOT 2; THENCE SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG THE WEST LINE OF SAID LOT, A DISTANCE OF 245.61 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST ALONG SAID WEST LINE A DISTANCE OF 116.0 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, A DISTANCE OF 16 FEET; THENCE NORTH 1 DEGREE 04 MINUTES 56 SECONDS WEST, A DISTANCE OF 92.0 FEET; THENCE NORTH 88 DEGREES 55 MINUTES 04 SECONDS EAST, A DISTANCE OF 74 FEET; THENCE NORTH 1 DEGREE 04 MINUTES 56 SECONDS WEST, A DISTANCE OF 286.62 FEET TO A POINT ON THE NORTHERLY LINE OF SAID LOT 2; THENCE NORTH 89 DEGREES 10 MINUTES 46 SECONDS WEST ALONG THE NORTHERLY LINE OF SAID LOT 2, A DISTANCE OF 24.01 FEET; THENCE SOUTH 1 DEGREE 04 MINUTES 56 SECONDS EAST, A DISTANCE OF 243.42 FEET; THENCE SOUTH 88 DEGREES 55 MINUTES 04 SECONDS WEST, A DISTANCE OF 48 FEET TO THE POINT OF BEGINNING, IN DUPAGE COUNTY, ILLINOIS.

PARCEL 4:
NON-EXCLUSIVE EASEMENT FOR THE BENEFIT OF PARCEL 1, CREATED BY GRANTS CONTAINED IN A DEED DATED MAY 24, 1982 AND RECORDED JUNE 17, 1982 AS DOCUMENT R82-25038 FROM NATIONAL BOULEVARD BANK OF CHICAGO, AS TRUSTEE UNDER TRUST AGREEMENT DATED DECEMBER 22, 1970 AND KNOWN AS TRUST NUMBER 3832 TO KATHLEEN M. VIBORNY PURSUANT TO THE TERMS OF A DECLARATION OF SERVICE AND ROAD EASEMENTS DATED NOVEMBER 27, 1980 AND RECORDED JUNE 10, 1982 AS DOCUMENT R82-23851 FOR VEHICULAR ACCESS FOR THE PURPOSE OF PROVIDING INGRESS AND EGRESS, AND FOR THE CONSTRUCTION, MAINTENANCE, REPLACEMENT AND USE OF SERVICE ROADS, AND PERPETUAL EASEMENTS IN THE EASEMENT PARCELS FOR THE INSTALLATION, USE, OPERATION, MAINTENANCE, REPAIR, REPLACEMENT, RELOCATION AND REMOVAL OF UNDERGROUND UTILITY FACILITIES, IN AND UPON THE FOLLOWING DESCRIBED LANDS:

A) THAT PART OF LOT 2 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

THE SOUTH 24 FEET OF THE EASTERLY 20 FEET OF LOT 2, AS MEASURED AT RIGHT ANGLES TO THE EASTERLY LINE THEREOF, OF THE NORTHERLY 180 FEET, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF, IN DUPAGE COUNTY, ILLINOIS.

B) THAT PART OF LOT 3 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

THE SOUTH 24 FEET OF THE WESTERLY 20 FEET OF LOT 3, AS MEASURED AT RIGHT ANGLES TO THE WESTERLY LINE THEREOF, OF THE NORTHERLY 180 FEET PURSUANT TO DOCUMENT R82-25038, 204 FEET PURSUANT TO DOCUMENT R82-23851, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF, OF LOT 3, AFORSAID, IN DUPAGE COUNTY, ILLINOIS.

C) THAT PART OF LOT 3 IN OAK GROVE CENTRE OF COMMERCE UNIT 1, BEING A SUBDIVISION OF PART OF THE EAST 1/2 OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11 EAST OF THE THIRD PRINCIPAL MERIDIAN, ACCORDING TO THE PLAT THEREOF RECORDED FEBRUARY 7, 1972 AS DOCUMENT R72-6195, DESCRIBED AS FOLLOWS:

THE SOUTHERLY 24 FEET OF LOT 3 OF THE NORTHERLY 180 FEET, AS MEASURED AT RIGHT ANGLES TO THE NORTHERLY LINE THEREOF (EXCEPT THE WESTERLY 10 FEET, AS MEASURED AT RIGHT ANGLES TO THE WEST LINE THEREOF) OF LOT 3, AFORSAID, IN DUPAGE COUNTY, ILLINOIS.

This description describes all the land described in the title commitment identified as Chicago Title Insurance Company Commitment Number 17P5A1301LP, bearing an effective date of February 24, 2017.

SURVEYOR'S CERTIFICATE

To: NARE Investments, LLC, an Illinois limited liability company and Chicago Title Insurance Company and each of their respective successors and/or assigns:

This is to certify that this map or plot and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/ACSM Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes items 1, 2, 3, 4, 6(c), 7(c), 7(b)(1), 7(c), 8, 9 and 16 of Table A thereof. The field work was completed on March 27, 2017.

Roland F. Sarko

Roland F. Sarko
Licensed Illinois Professional Land Surveyor
License Number 035-020401
License Expires: 11-30-2018
Date of Survey: 3-27-2017
Date of Last Revision: 3-29-2017



NOTES CORRESPONDING TO SCHEDULE "B"

- 17 - An Encroachment License Agreement recorded July 20, 1995 as Document Number R85-091926. This item is plotted hereon and does affect the subject property.
- 18 - An Order Establishing a Freeway recorded January 2, 1969 as Document Number R69-87 and as disclosed in Deeds recorded June 17, 1992 as Document Numbers R85-25038 and R82-25039. This item is plotted hereon and does affect the subject property.
- 20 - Service Road Grant and Declaration of Service Road and Utilities Easements recorded June 10, 1982 as Document Number R82-23851 and entered by Partial Release of Easement recorded October 23, 1985 as Document Number R85-91756. This item is plotted hereon and does affect the subject property.
- 21 - Access Road Construction, Operation, Maintenance and Reciprocal Easement Agreement recorded June 10, 1982 as Document Number R82-23852. This item is plotted hereon and does affect the subject property.
- 22 - Covenant and Grant of Easement for Maintenance of Storm Water Detention Area recorded March 22, 1983 as Document Number R83-15527. This item is not plotted hereon as the copy of plot marked "Exhibit A" attached to the subject document provided to this office, which shows the location of said easement, is illegible. Therefore, we are unable to determine the exact location of this item. This item does affect the subject property.
- 23 - A 10.00 foot wide Sewer and Water Easement recorded July 2, 1968 as Document Number R68-28304. This item is plotted hereon and does affect the subject property.
- 24 - An Easement recorded August 27, 1982 as Document Number R82-38876. This item is plotted hereon and does affect the subject property.
- 25 - A 24.00 foot wide Public Utility Easement recorded October 14, 1982 as Document Number R82-47337. This item is plotted hereon and does affect the subject property.
- 26 - A 35.00 foot Building Setback Line recorded February 7, 1972 as Document Number R72-6195. This item is plotted hereon and does affect the subject property.
- 27 - A 10.00 foot wide Utility Easement recorded February 7, 1972 as Document Number R72-6195. This item is plotted hereon and does affect the subject property.

STATEMENT OF APPARENT ENCROACHMENTS

- A - An Overhead Electric Power Pole encroaches by 1.25 feet North of the South property line onto the subject property with no apparent easement.
- B - Three grass trap manholes encroach from 1.5 to 3.8 feet North of the North property onto the adjacent property to the North.

GENERAL NOTES:

- 1. All measured and recorded dimensions are the same unless noted otherwise.
- 2. There is no visible evidence of cemeteries or burial grounds on the subject property. However, a cemetery is located adjacent to the East property line.
- 3. There was no observable evidence of earth moving work, building construction or building additions within recent months. However, the new Butterfield Plaza sign and new curb surrounding said sign, along the South side of the parking lot, have been recently installed.
- 4. There were no changes in street right of way lines either completed or proposed, and available from the controlling jurisdiction.
- 5. There was no observable evidence of recent street or sidewalk construction or repairs.
- 6. There was no observable evidence of site use as a solid waste dump, dump or sanitary landfill.
- 7. The utility locations shown hereon were determined by observable above ground evidence only. The surveyor was not provided with underground plans or above ground markings to determine any subsurface locations.

CALL OUTS FOR EASEMENT DESCRIPTIONS

POINTS	DISTANCES	BEARINGS
1-2	359.78'	N88°55'04"E
4-5	207.75'	N88°55'04"E
6-7	247.90'	S01°04'56"E
7-8	35.26'	S81°54'34"W
8-9	227.21'	N01°04'56"W
10-11	182.75'	S88°55'04"W
13-14	359.78'	S88°55'04"W
14-16	415.35'	S88°55'04"W
16-17	35.00'	N01°04'56"W
17-1	415.35'	N88°55'04"E
19-20	243.42'	S01°04'56"E
21-22	266.62'	N01°04'56"W
22-19	24.01'	N89°10'46"W
23-1	116.00'	S01°04'56"E
1-25	8.95'	S88°55'04"W
25-26	116.00'	N01°04'56"W
26-23	8.95'	N88°55'04"E
27-1	361.61'	S01°04'56"E
01-28	16.00'	N88°55'04"E
28-29	92.00'	N01°04'56"W
29-21	74.00'	N88°55'04"E

CURVES:

POINTS	ARC LENGTH	RADIUS	CHORD LENGTH	CHORD BEARING
2-3	69.77'	178.01'	69.33'	N77°41'20"E
3-4	69.77'	178.01'	69.33'	N77°41'20"E
5-6	41.21'	30.00'	42.43'	S46°04'56"E
9-10	31.42'	20.00'	28.28'	N46°04'56"W
11-12	56.05'	143.01'	55.70'	S77°41'20"W
12-13	63.49'	213.01'	62.96'	S77°41'20"W

FLOOD NOTE:

By graphic plotting only, this property is in Zone X of the Flood Insurance Rate Map, Community Flood No. 17043C, 0607 H, which bears an effective date of 12-16-2004 and is not a special flood hazard area.

ZONING REQUIREMENTS

This office has not been provided with the applicable zoning information for the subject property, by the insurer, pursuant to Table A Items (c) and (d).

LAND AREA

404,180 SQ.FT.
9,2787 ACRES

PARKING STALLS

414 STANDARD STALLS
10 HANDICAP STALLS

PREPARED FOR:
VIKING PARTNERS
4901 HUNT ROAD, SUITE 102
CINCINNATI, OH 45242

PREPARED BY:
Sarko Engineering Inc.
847 COUNTY LIBERTY DR.
MT. HOPE, IL 62572
PHONE: (608) 832-8428 FAX: (608) 848-3859
WWW.SARKOENGINEERING.COM

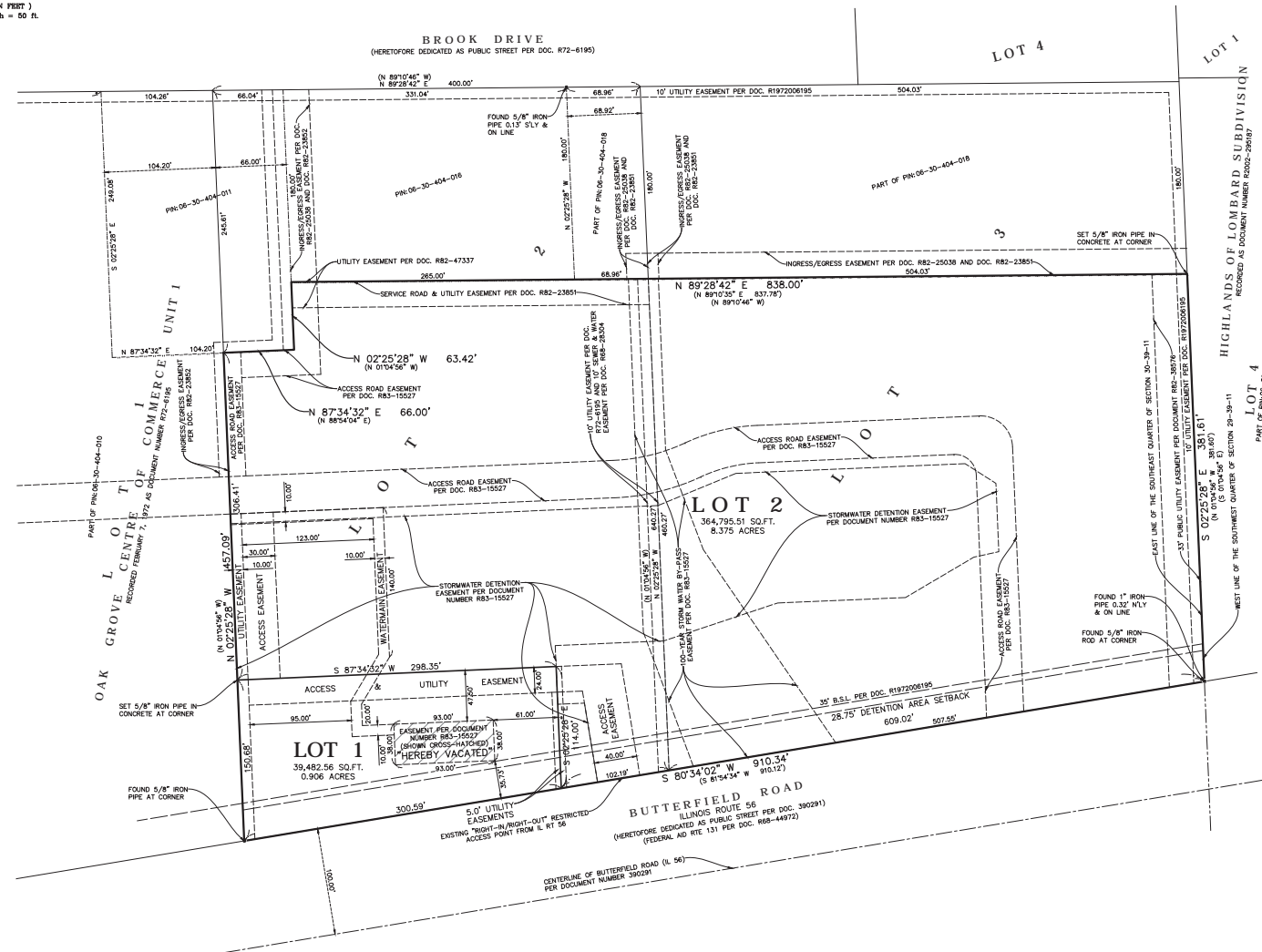
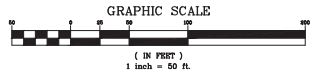
DRAWN BY: VPS REVISION 1:
APPROVED BY: RFS
FIELD DATE: 3-27-17 REVISION 2:
SCALE 1"=40'
PROJECT ADDRESS: 1300-1418 Butterfield Pl
PROJECT LOCATION: Downers Grove, IL
PROJECT NAME: BUTTERFIELD PLAZA PROJECT
JOB NUMBER: 42879

FINAL PLAT OF N.A.R.E. DOWNERS GROVE SUBDIVISION

BEING A SUBDIVISION IN THE SOUTHEAST QUARTER OF SECTION 30, TOWNSHIP 39 NORTH, RANGE 11, EAST OF THE THIRD PRINCIPAL MERIDIAN, DUPAGE COUNTY, ILLINOIS.

P.I.N. NUMBER
06-30-404-015
PROPERTY AREA

404,278.07 SQUARE FEET (9.281 ACRES), MORE OR LESS



EASEMENT VACATION KEY MAP AND APPROVAL STATEMENT
THE APPROVING AUTHORITIES HEREBY AUTHORIZE THE VACATION, TERMINATION, AND ABROGATION OF THAT PART OF STORM WATER DETENTION AREA EASEMENT AS STATED BELOW

THAT PART OF STORMWATER DETENTION AREA EASEMENT PER DOCUMENT NUMBER R83-15527 SHOWN CROSS-HATCHED "HEREBY VACATED"	AREA NOT VACATED
SEE DETAIL ON PLAT	

SURVEYOR'S NOTES
1. DISTANCES ARE MARKED IN U.S. SURVEY FEET. NO DIMENSION SHALL BE ASSUMED BY SCALE MEASUREMENT HEREON. DISTANCES AND/OR BEARINGS SHOWN IN PARENTHESES (458.87) ARE RECORD OR REED VALUES, NOT FIELD MEASUREMENTS.
2. BEARINGS ARE QUOTED, BASED ON FOUND MONUMENTATION LOCATED AND MEASURED USING TRIMBLE'S VIRTUAL REFERENCE SYSTEM (NAD 83, ILLINOIS STATE PLANE, EAST ZONE) AND THE FINAL PLAT OF OAK GROVE CENTER OF COMMERCE UNIT ONE.
3. COMPARE THIS PLAT, LEGAL DESCRIPTION AND ALL SURVEY MONUMENTS BEFORE BUILDING, AND IMMEDIATELY REPORT ANY DISCREPANCIES TO THE SURVEYOR.
4. TITLE DOCUMENTS IN SCHEDULE B OF CHICAGO TITLE INSURANCE COMPANY COMMITMENT NUMBER 1793A130119 WERE REVIEWED IN PREPARATION OF THIS SURVEY.
5. THE SUBDIVIDED PROPERTY IS SUBJECT TO TERMS, CONDITIONS AND PROVISIONS CONTAINED IN TITLE DOCUMENTS REFERENCED HEREON ON IN COMMITMENT ABOVE AND ALSO CONTAINED IN DECLARATION OF COVENANTS RECORDED AS DOCUMENT NUMBER _____.

AFTER RECORDING RETURN TO
SIGHT ON SOLUTIONS, INC.
557 CAPITAL DRIVE
LAKE ZURICH, IL 60047
(847) 356-7539

DATE	BY	REVISION

"WE GET CORNERS OTHER PEOPLE CUT"
LAND SURVEYING, TOPOGRAPHIC MAPPING, SITE STAKING, SITE PLANS, GRADING PLANS, FEMA CERTIFICATES AND MORE
SIGHT ON SOLUTIONS, INC.
557 CAPITAL DRIVE, LAKE ZURICH, ILLINOIS 60047
PHONE: 847.356.7539 FAX: 815.578.9847 www.sightonsolutions.com
Surveyor's email: mhk@lighton.solutions.com

FINAL PLAT OF SUBDIVISION
N.A.R.E. DOWNERS GROVE SUBDIVISION
DOWNERS GROVE, ILLINOIS

SHEET
07
2

5087: 17360

SYMBOL AND LINE LEGEND

⊗	⊗	— W — W —	WATERMAIN PIPE
●	●	— S — S —	STORM SEWER PIPE
■	■	— U — U —	STORM UNDERDRAIN
⊗	⊗	— S — S —	SANITARY SEWER PIPE
⊗	⊗	— IRR — IRR —	IRRIGATION SLEEVE/PIPING
⊗	⊗	— E — E —	ELECTRICAL DUCT BANK
⊗	⊗	— G — G —	NATURAL GAS LINE
⊗	⊗	— COM — COM —	COMMUNICATIONS LINE
⊗	⊗	— CWS — CWS —	CHILLED WATER SUPPLY
⊗	⊗	— CWR — CWR —	CHILLED WATER RETURN
⊗	⊗	— TV — TV —	TELEVISION CABLE
⊗	⊗	— UGW — UGW —	UNDERGROUND WIRE
⊗	⊗	— T — T —	TELEPHONE CABLE
⊗	⊗	— FO — FO —	FIBER OPTIC CABLE
⊗	⊗	— A — A —	AERIAL WIRES
⊗	⊗	---	CONSTRUCTION LINES
⊗	⊗	---	PROPERTY LINE
⊗	⊗	---	EASEMENT LINE
⊗	⊗	---	VENT LINE
⊗	⊗	— HWL — HWL —	HIGH WATER LINE
⊗	⊗	— NWL — NWL —	NORMAL WATER LINE
⊗	⊗	— C — C —	CHAIN LINK FENCE
⊗	⊗	— X — X —	BARBED-WIRE FENCE
⊗	⊗	— W — W —	WOODEN FENCE
⊗	⊗	— // — // —	SILT FENCE
⊗	⊗	⊗	DECIDUOUS TREE
⊗	⊗	⊗	SHRUB OR BUSH
⊗	⊗	⊗	EVERGREEN TREE

PRELIMINARY ENGINEERING PLANS

WENDY'S DOWNERS GROVE 1422 BUTTERFIELD RD, DOWNERS GROVE IL

OWNER INFORMATION

NAME: NARE BUTTERFIELD LLC
 EMAIL: COREY@NAREGROUP.COM
 PHONE: 847-882-0471
 ADDRESS: 1613 COLONIAL PKWY INVERNESS, IL 60067

NOTES

1. SITE ACCESS CONTROL INCLUDING SAFETY FENCES AND TRAFFIC CONTROL, ALL CONSTRUCTION MEANS AND METHODS, AND SITE SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
2. THE CONTRACTORS SHALL NOTIFY ALL UTILITY COMPANIES FOR FIELD LOCATIONS OF THEIR FACILITIES PRIOR TO BEGINNING CONSTRUCTION. THE CONTRACTOR WILL BE RESPONSIBLE FOR THE MAINTENANCE AND PRESERVATION OF THESE FACILITIES. ALL UTILITIES SHOWN IN THE PLANS ARE FROM RECORDS OR FIELD OBSERVABLE IN FORMATION LOCATED BY SURVEYOR. ANY UTILITY LOCATIONS SHOWN SHALL BE VERIFIED BY THE CONTRACTOR IN THE FIELD.

DUTY TO INDEMNIFY

THE CONTRACTOR SHALL DEFEND, INDEMNIFY, KEEP AND SAVE HARMLESS THE MUNICIPALITY, OWNER, AND ENGINEER, AND THEIR RESPECTIVE BOARD MEMBERS, REPRESENTATIVES, AGENTS AND EMPLOYEES, IN BOTH INDIVIDUAL AND OFFICIAL CAPACITIES, AGAINST ALL SUITS, CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING ATTORNEY'S FEES, CAUSED BY, GROWING OUT OF, OR INCIDENTAL TO, THE PERFORMANCE OF THE WORK UNDER THE CONTRACT BY THE CONTRACTOR OR ITS SUBCONTRACTORS TO THE FULL EXTENT AS ALLOWED BY THE LAWS OF THE STATE OF ILLINOIS AND NOT BEYOND ANY EXTENT WHICH WOULD RENDER THESE PROVISIONS VOID OR UNENFORCEABLE. THIS OBLIGATION INCLUDES BUT IS NOT LIMITED TO, THE ILLINOIS LAWS REGARDING STRUCTURAL WORK (IL REV. STAT. CH. 48, PAR.60 AT SEQ.) AND REGARDING THE PROTECTION OF ADJACENT LANDOWNERS (IL REV. STAT. CH.17 1/2 PAR.51 ET. SEQ.), IN THE EVENT OF ANY SUCH INJURY (INCLUDING DEATH) OR LOSS OR DAMAGE, OR CLAIMS THEREFORE, THE CONTRACTOR SHALL GIVE PROMPT NOTICE TO THE OWNER.

Sheet List Table	
Sheet Number	Sheet Title
C0.0	COVER SHEET
C1.0	DEMOLITION PLAN
C2.0	TIE PLAN
C3.0	GRADE PLAN
C4.0	UTILITY PLAN

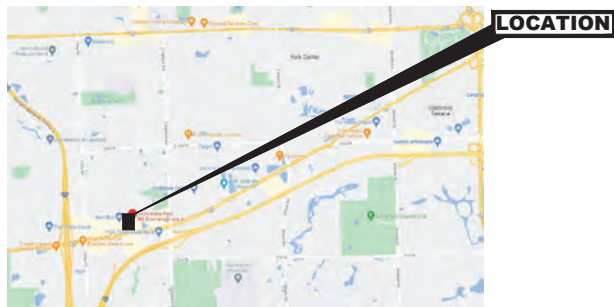
No.	DATE	DESCRIPTION
1	12/17/23	PRELIMINARY

636 E. Algonquin Road
 Suite 200
 Downers Grove, IL 60130
 Telephone: (630) 756-1486
 www.rtm.com
 IL Design Firm: 06060776-0002



COVER SHEET

LOCATION MAP



BENCHMARKS: (NAVD88)

SOURCE BENCH MARK:
 NGS MONUMENT WITH PID DK3214 BEING A BRASS DISK ON BRIDGE WALL.
 (SEE NGS DATA SHEET FOR A MORE DETAILED DESCRIPTION)

SITE BENCH MARK:
 SQUARE CUT ON LIGHT POLE BASE LOCATED 49.7' N'LY OF THE SOUTH CURB LINE OF PARKING LOT AND 59.4' W'LY OF THE WEST CURB LINE OF WEST ENTRANCE DRIVE LANE.
 ELEVATION=771.01
 ELEVATION=734.69



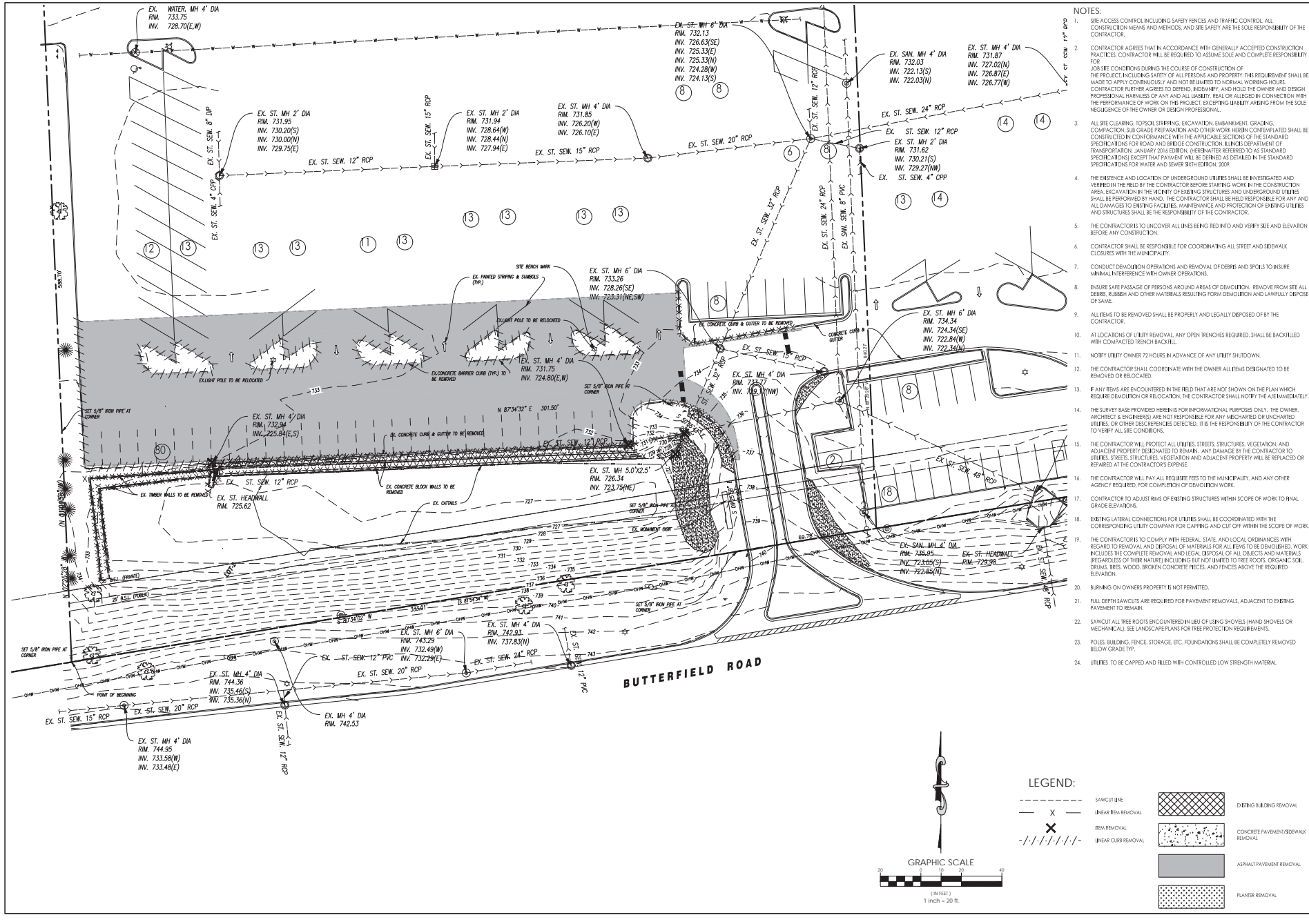
Know what's below.
 Call before you dig.

CALL 48 HOURS BEFORE YOU DIG WITH THE FOLLOWING INFORMATION:
 COUNTY NAME: DUPage
 TOWNSHIP RANGE: 38N11E
 SECTION NUMBER: 30

PROJECT NAME
WENDY'S DOWNERS GROVE
 1422 BUTTERFIELD RD
 DOWNERS GROVE IL

PROJECT No.
21.NARE.C04
 SHEET No.
C0.0
 OF 5 SHEETS

User: kochalka; File: J:\2023\ORD 2023-9846\Downers Grove\DWG\ORD 2023-9846 - C04 COVER SHEET.dwg; Date: 12/17/2023 10:31:10 AM



- NOTES:**
1. SEE ACCESS CONTROL INCLUDING SAFETY FENCES AND TRAFFIC CONTROL. ALL CONSTRUCTION MEANS AND METHODS, AND SITE SAFETY ARE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
 2. CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY, AND HOLD THE OWNER AND DESIGN PROFESSIONAL HARMLESS OF ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR DESIGN PROFESSIONAL.
 3. ALL SITE CLEARING, TOPSOIL STRIPPING, EXCAVATION, EMBANKMENT, GRADING, COMPACTION, SUB GRADE PREPARATION AND OTHER WORK HEREIN CONTEMPLATED SHALL BE CONSTRUCTED IN CONFORMANCE WITH THE APPLICABLE SECTIONS OF THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, ILLINOIS DEPARTMENT OF TRANSPORTATION, JANUARY 2016 EDITION, HEREINAFTER REFERRED TO AS STANDARD SPECIFICATIONS EXCEPT THAT PAYMENTS WILL BE DETERMINED AS DETAILED IN THE STANDARD SPECIFICATIONS FOR WATER AND SEWER SIXTH EDITION, 2009.
 4. THE EXISTENCE AND LOCATION OF UNDERGROUND UTILITIES SHALL BE INVESTIGATED AND VERIFIED IN THE FIELD BY THE CONTRACTOR BEFORE STARTING WORK IN THE CONSTRUCTION AREA. EXCAVATION IN THE VICINITY OF EXISTING STRUCTURES AND UNDERGROUND UTILITIES SHALL BE PERFORMED BY HAND. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY AND ALL DAMAGES TO EXISTING FACILITIES, MAINTENANCE AND PROTECTION OF EXISTING UTILITIES AND STRUCTURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
 5. THE CONTRACTOR IS TO UNCOVER ALL LINES BEING TIED IN AND VERIFY SIZE AND ELEVATION BEFORE ANY CONSTRUCTION.
 6. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL STREET AND SIDEWALK CLOSURES WITH THE MUNICIPALITY.
 7. CONDUCT DEMOLITION OPERATIONS AND REMOVAL OF DEBRIS AND SPILLS TO INSURE MINIMAL INTERFERENCE WITH OWNER OPERATIONS.
 8. ENSURE SAFE PASSAGE OF PERSONS AROUND AREAS OF DEMOLITION. REMOVE FROM SITE ALL DEBRIS, RUBBISH AND OTHER MATERIALS RESULTING FROM DEMOLITION AND LAWFULLY DEPOSE OF SAME.
 9. ALL ITEMS TO BE REMOVED SHALL BE PROPERLY AND LEGALLY DISPOSED OF BY THE CONTRACTOR.
 10. AT LOCATIONS OF UTILITY REMOVAL, ANY OPEN TRENCHES REQUIRED, SHALL BE BACKFILLED WITH COMPACTED TRENCH BACKFILL.
 11. NOTIFY UTILITY OWNER 72 HOURS IN ADVANCE OF ANY UTILITY SHUTDOWN.
 12. THE CONTRACTOR SHALL COORDINATE WITH THE OWNER ALL ITEMS DESIGNATED TO BE REMOVED OR RELOCATED.
 13. IF ANY ITEMS ARE ENCOUNTERED IN THE FIELD THAT ARE NOT SHOWN ON THE PLAN WHICH REQUIRE DEMOLITION OR RELOCATION, THE CONTRACTOR SHALL NOTIFY THE A/E/IN IMMEDIATELY.
 14. THE SURVEY BASE PROVIDED HEREIN IS FOR INFORMATIONAL PURPOSES ONLY. THE OWNER, ARCHITECT & ENGINEERS ARE NOT RESPONSIBLE FOR ANY MICHARTERED OR UNCHARTERED UTILITIES OR OTHER DISCREPANCIES DETECTED. IF THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL SITE CONDITIONS.
 15. THE CONTRACTOR WILL PROTECT ALL UTILITIES, STREETS, STRUCTURES, VEGETATION, AND ADJACENT PROPERTY DESIGNATED TO REMAIN. ANY DAMAGE BY THE CONTRACTOR TO UTILITIES, STREETS, STRUCTURES, VEGETATION AND ADJACENT PROPERTY WILL BE REPLACED OR REPAIRED AT THE CONTRACTOR'S EXPENSE.
 16. THE CONTRACTOR WILL PAY ALL REQUIRE FEES TO THE MUNICIPALITY, AND ANY OTHER AGENCY REQUIRED, FOR COMPLETION OF DEMOLITION WORK.
 17. CONTRACTOR TO ADJUST RIMS OF EXISTING STRUCTURES WHEN SCOPE OF WORK TO RINAL GRADE ELEVATIONS.
 18. EXISTING LATERAL CONNECTIONS FOR UTILITIES SHALL BE COORDINATED WITH THE CORRESPONDING UTILITY COMPANY FOR CAPPING AND CUT OFF WITHIN THE SCOPE OF WORK.
 19. THE CONTRACTORS TO COMPLY WITH FEDERAL, STATE, AND LOCAL ORDINANCES WITH REGARD TO REMOVAL AND DISPOSAL OF MATERIALS FOR ALL ITEMS TO BE DEMOLISHED. WORK INCLUDES THE COMPLETE REMOVAL AND LEGAL DISPOSAL OF ALL OBJECTS AND MATERIALS (REGARDLESS OF THEIR NATURE) INCLUDING BUT NOT LIMITED TO TREE ROOTS, ORGANIC SOIL, DRUMS, TIRE, WOOD, BROKEN CONCRETE PIECES, AND FENCES ABOVE THE REQUIRED ELEVATION.
 20. BURNING ON OWNERS PROPERTY IS NOT PERMITTED.
 21. FULL DEPTH SAWCUTS ARE REQUIRED FOR PAVEMENT REMOVALS, ADJACENT TO EXISTING PAVEMENT TO REMAIN.
 22. SAWCUT ALL TREE ROOTS ENCOUNTERED IN BELT OF USING SHOVELS, HAND SHOVELS OR MECHANICAL). SEE LANDSCAPE PLANS FOR TREE PROTECTION REQUIREMENTS.
 23. POLES, BUILDING, FENCE, STORAGE, ETC. FOUNDATIONS SHALL BE COMPLETELY REMOVED BELOW GRADE TYP.
 24. UTILITIES TO BE CAPPED AND FILLED WITH CONTROLLED LOW STRENGTH MATERIAL.

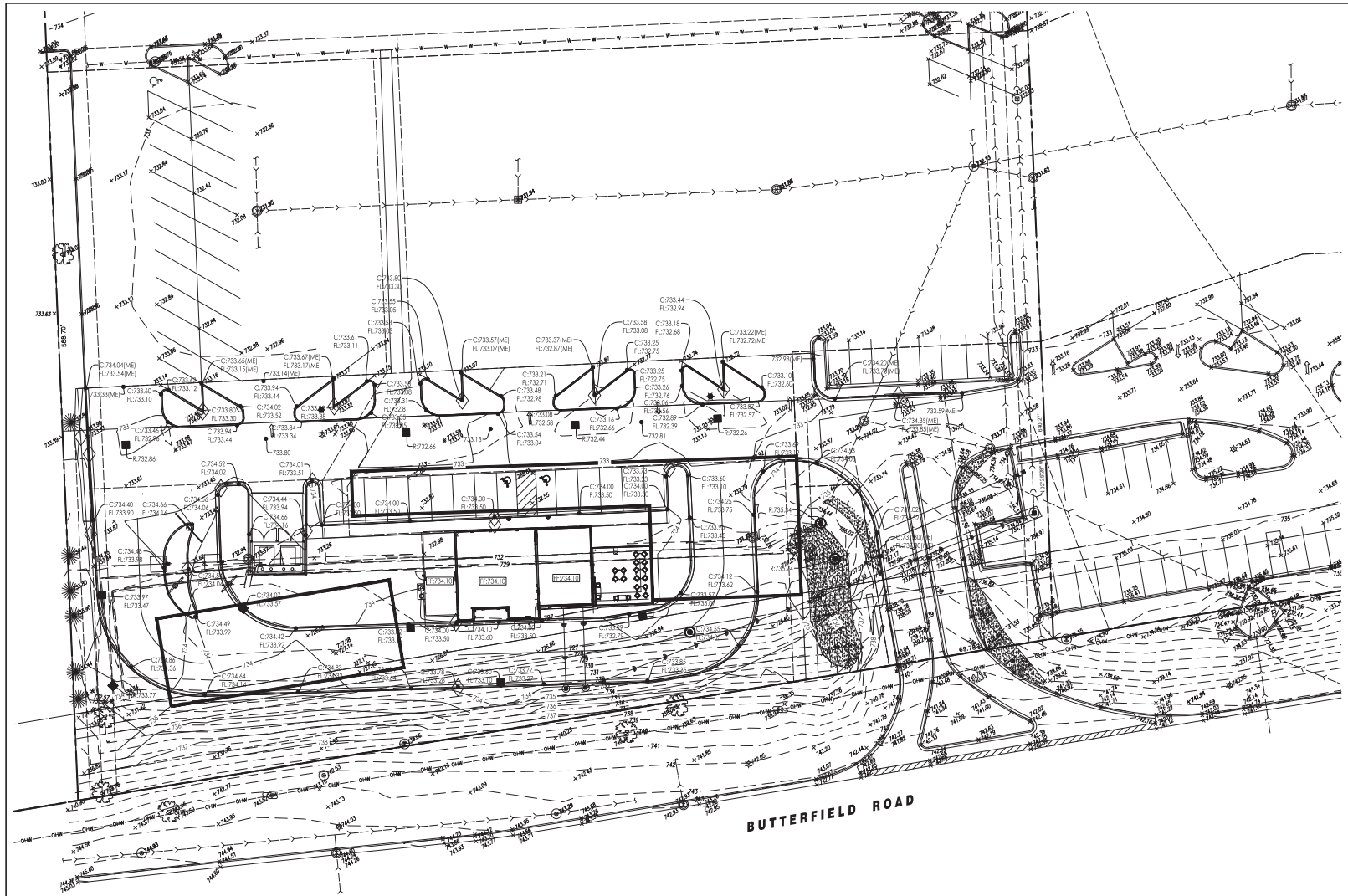
NO.	DATE	DESCRIPTION
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666 E. Algonquin Road
 Suite 200
 Downers Grove, IL 60515
 Telephone: (630) 294-1486
 www.rtm.com
 E-Design Firm: 63060770002

rtm
 engineering consultants

DEMOLITION PLAN
 WENDY'S DOWNERS GROVE
 1422 BUTTERFIELD RD
 DOWNERS GROVE, IL

PROJECT NAME: WENDY'S DOWNERS GROVE
 PROJECT NO.: 21NAREC04
 SHEET NO.: C1.0
 OF 5 SHEETS



- NOTES:**
1. PROPOSED ELEVATIONS SHOWN ON PROPOSED CURB LINES ARE FLOW LINE ELEVATIONS UNLESS NOTED OTHERWISE. ADD 0.50' TO OBTAIN TOP OF CURB ELEVATIONS.
 2. A CONSTANT SLOPE SHALL BE MAINTAINED BETWEEN SPOT GRADES.
 3. 2% MINIMUM SLOPE AND 31' MAXIMUM SLOPE IN TURF AREAS AND 15' MINIMUM SLOPE AND 35' MAXIMUM SLOPE IN PAVED AREAS.
 4. RM GRADES ALONG CURBS ARE FLOW LINE ELEVATIONS.
 5. TOPOGRAPHIC AND BOUNDARY SURVEY PREPARED BY xxxxxxxxxxxxxxxxxxxxxxx

LEGEND:

EXISTING	PROPOSED
1 FOOT CONTOUR	1 FOOT CONTOUR
5 FOOT CONTOUR	5 FOOT CONTOUR
GRADE	GRADE
RIDGE LINE	RIDGE LINE
TOP OF CURB	C.XX.XX
TOP OF WALK	WX.XX.XX
TOP OF PAVEMENT	PX.XX.XX
FLOW LINE @ DEPRESSION CURB	DX.XX.XX
FLOW LINE	FL.XX.XX
EDGE OF PAVEMENT	EX.XX.XX
FINISHED GRADE	GX.XX.XX
RM GRADE	RX.XX.XX
MATCH EXISTING	ME.XX.XX
FINISHED FLOOR	FX.XX.XX
FLOW ARROW	↑
OVERFLOW	↑

NO.	DATE	DESCRIPTION
1	11/21/22	PRELIMINARY

606 E. Algonquin Road
 Suite 400
 Naperville, IL 60563
 Telephone: (630) 795-1486
 www.rtm.com
 IL Design Firm: IL0606770002

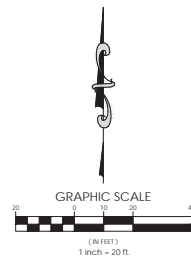


GRADING PLAN

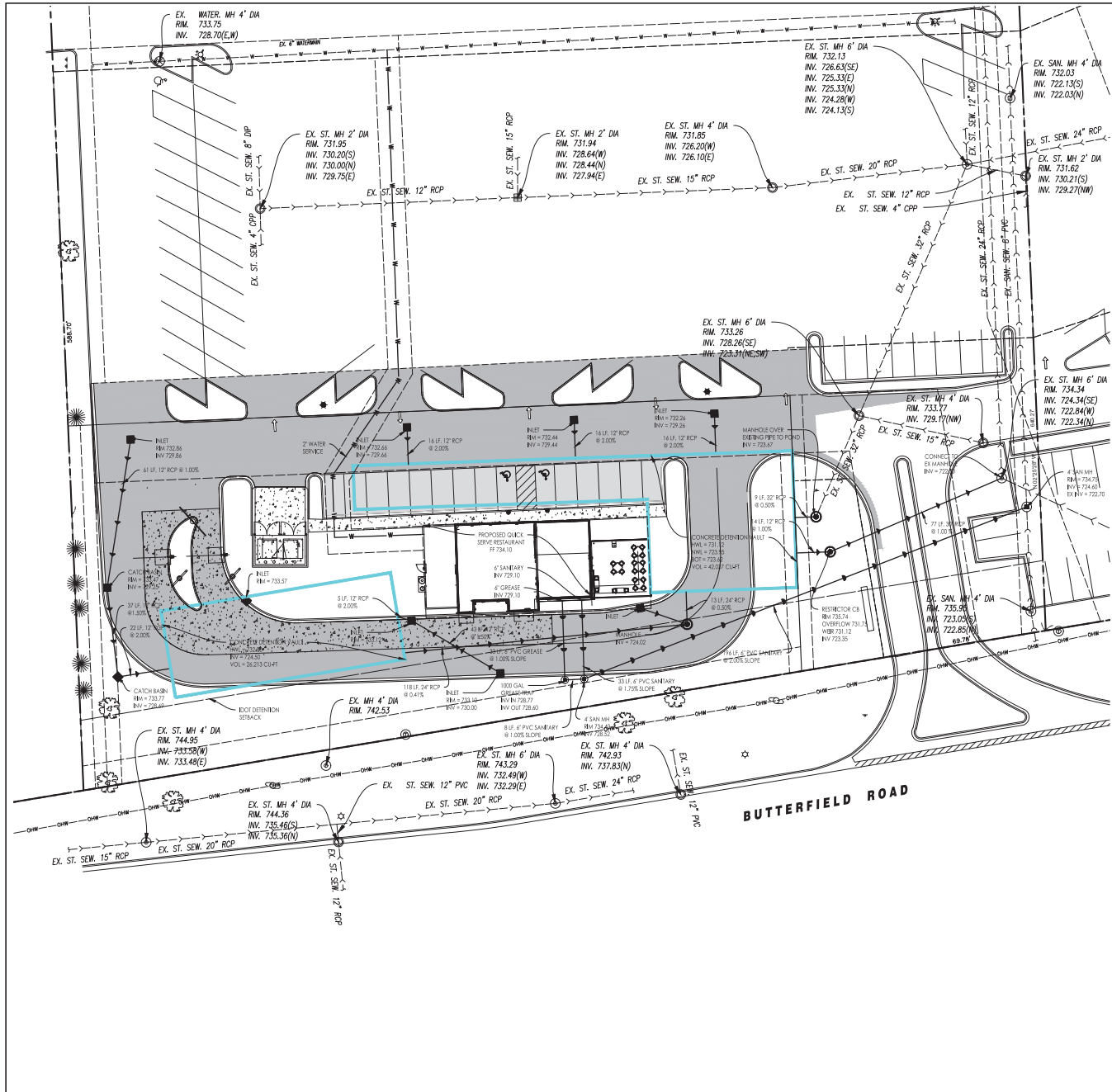
PROJECT NAME
WENDY'S DOWNERS GROVE
 1422 BUTTERFIELD RD
 DOWNERS GROVE, IL

SHEET NAME
C.3.0
 OF 5 SHEETS

PROJECT NO.
21NAREC04



User: kashy@rtm.com File: \A3021\31\NAME\CON\DWG\ORD\2023\9846\CON\GRADING PLAN.rvt Plotted: Jan 10, 2024, 8:38am



STORAGE SUMMARY
 EXISTING DETENTION TO REPLACE = 44,250 CF
 VOLUME CONTROL FOR PROPOSED INTERVENTIONS = 3,010 CF
 TOTAL STORAGE REQUIRED = 48,160 CF
 TOTAL STORAGE PROVIDED = 48,250 CF
 RM = 724.61
 INV = 722.01
 BOTTOM OF STRUCTURE = 724.50

- NOTES:**
- EXISTING SHALL BE FIELD VERIFIED. RELOCATION OR ADJUSTMENT MAY BE NEEDED. CONTRACTOR TO VERIFY.
 - CONTRACTOR SHALL VERIFY ALL WORK INCLUDING BUT NOT LIMITED TO: SEE MATERIALS AND LOCATIONS WITH UTILITY CONTRACTORS PRIOR TO CONSTRUCTION.
 - VERIFY SERVICE LOCATIONS WITH BUILDING PLANS PRIOR TO CONSTRUCTION AND NOTIFY ENGINEER OF ANY DISCREPANCIES.
 - RM GRADES ALONG CURBS ARE FLOW LINE ELEVATIONS.
 - SEE SPECIFICATIONS SHEET FOR ALL STORM, SANITARY, AND WATER PIPE AND STRUCTURE SPECIFICATIONS.
 - ALL UTILITY RE-INSTALLATIONS ARE FROM CENTER OF UTILITY AND TO BACK OF CURB WHEN APPLICABLE TO CURB LINES UNLESS OTHERWISE NOTED.
 - CONTRACTOR TO VERIFY EXISTING SERVICE AT POINT OF CONNECTION. CONTRACTOR TO VERIFY THAT EXISTING IS IN GOOD WORKING CONDITION. CONTRACTOR TO REPAIR AS REQUIRED.
 - CONTRACTOR TO NOTIFY OWNER/ENGINEER. CONFLICTS OCCUR.
 - NEW OPENING CONNECTIONS TO EXISTING MANHOLE STRUCTURES SHALL BE CONSIDERED AND UNLIEBER RUBBER ISOOLS CONFORMING TO ASTM C491.

NO.	DATE	DESCRIPTION	BY	DATE	DESCRIPTION
1	11/27/22	PRELIMINARY			

600 E. Algonquin Road
 Suite 200
 Naperville, IL 60563
 Telephone: (630) 759-1180
 www.ctm.com
 IL Design Firm: 060607700002

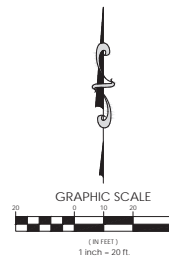


UTILITY PLAN

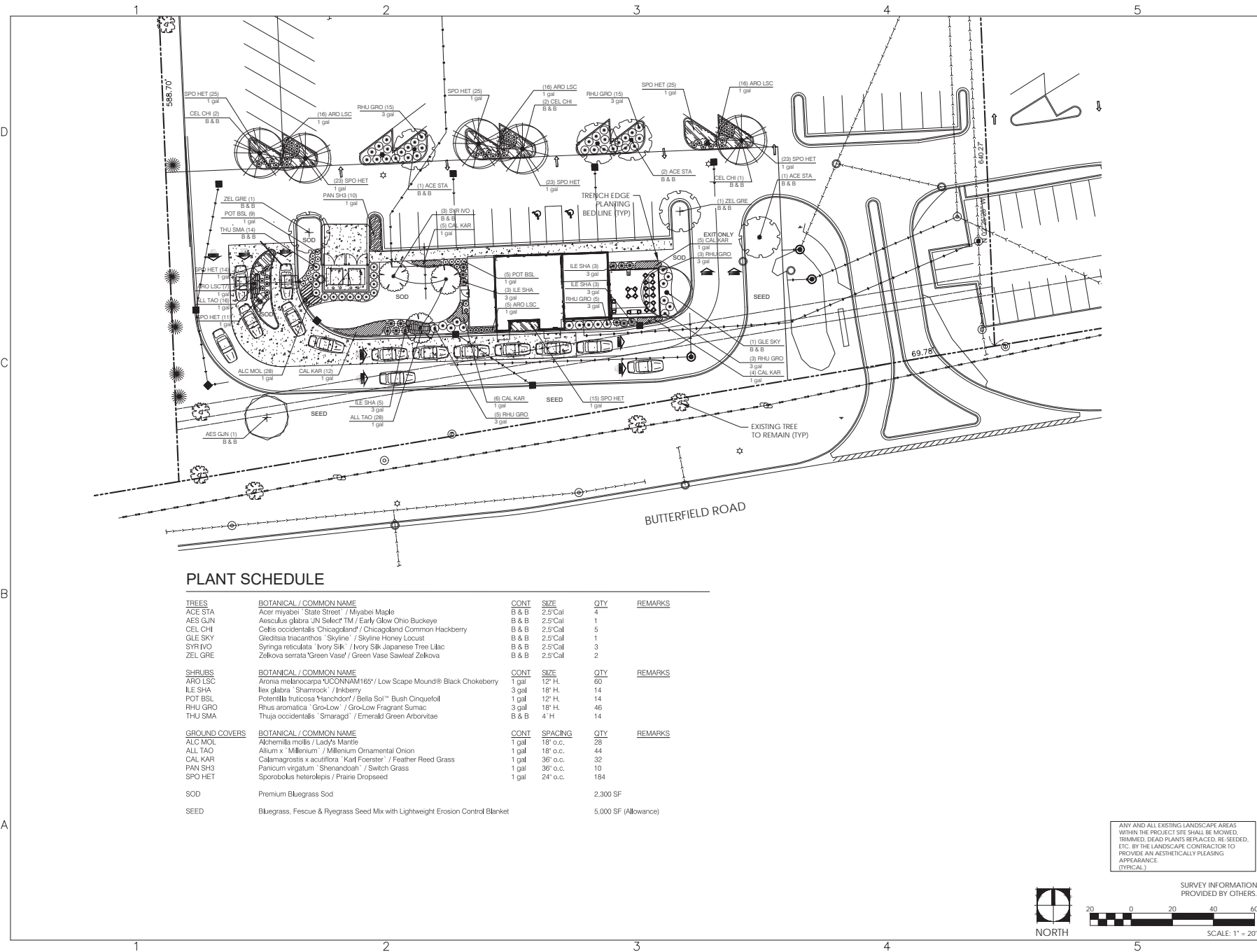
PROJECT NAME
WENDY'S DOWNERS GROVE
 1422 BUTTERFIELD RD
 DOWNERS GROVE, IL

PROJECT NO.
21NAREC04

SHEET NO.
C4.0
 OF 5 SHEETS



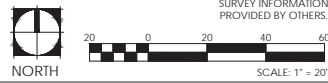
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PLANT SCHEDULE

TREES	BOTANICAL / COMMON NAME	CONT	SIZE	QTY	REMARKS
ACE STA	Acer myriabil 'State Street' / Myriabil Maple	B & B	2.5' Cal	4	
AES GUN	Aesculus glabra 'JN Select TM' / Early Glow Ohio Buckeye	B & B	2.5' Cal	1	
CEL CHI	Celtis occidentalis 'Chicagoland' / Chicagoland Common Hackberry	B & B	2.5' Cal	5	
GLE SKY	Gleditsia triacanthos 'Skyline' / Skyline Honey Locust	B & B	2.5' Cal	1	
SYR IVO	Syringa reticulata 'Ivory Silk' / Ivory Silk Japanese Tree Lilac	B & B	2.5' Cal	3	
ZEL GRE	Zelkova serrata 'Green Vase' / Green Vase Sawleaf Zelkova	B & B	2.5' Cal	2	
SHRUBS	BOTANICAL / COMMON NAME	CONT	SIZE	QTY	REMARKS
ARO LSC	Aronia melanocarpa 'OCONNAM166' / Low Scape Mound® Black Chokeberry	1 gal	12" H.	60	
ILE SHA	Ilex glabra 'Shamrock' / Inhberry	3 gal	18" H.	14	
POT BSL	Potentilla fruticosa 'Hanchdon' / Bella Sol™ Bush Cinquefoil	1 gal	12" H.	14	
RHU GRO	Rhus aromatica 'Gro-Low' / Gro-Low Fragrant Sumac	3 gal	18" H.	46	
THU SMA	Thuja occidentalis 'Smaragd' / Emerald Green Arborvitae	B & B	4" H.	14	
GROUND COVERS	BOTANICAL / COMMON NAME	CONT	SPACING	QTY	REMARKS
ALC MOL	Alchemilla mollis / Lady's Mantle	1 gal	18" o.c.	28	
ALL TAO	Allium x 'Millenium' / Millenium Ornamental Onion	1 gal	18" o.c.	44	
CAL KAR	Calamagrostis x acutiflora 'Karl Foerster' / Feather Reed Grass	1 gal	36" o.c.	32	
PAN SH3	Panicum virgatum 'Shenandoah' / Switch Grass	1 gal	36" o.c.	10	
SPO HET	Sporobolus heterolepis / Prairie Dropseed	1 gal	24" o.c.	184	
SOD	Premium Bluegrass Sod			2,300 SF	
SEED	Bluegrass, Fescue & Ryegrass Seed Mix with Lightweight Erosion Control Blanket			5,000 SF (Allowance)	

ANY AND ALL EXISTING LANDSCAPE AREAS WITHIN THE PROJECT SITE SHALL BE MOWED, TRIMMED, DEAD PLANTS REPLACED, RE SEEDED, ETC. BY THE LANDSCAPE CONTRACTOR TO PROVIDE AN AESTHETICALLY PLEASING APPEARANCE. (TYPICAL)



WENDY'S RESTAURANT
1330 BUTTERFIELD ROAD
DOWNERS GROVE, IL

Design Perspectives, Inc.
Grounded to Creativity
1167 Hobson Mill Drive
Naperville, Illinois 60540
Telephone: (630) 606-0776
www.design-perspectives.net

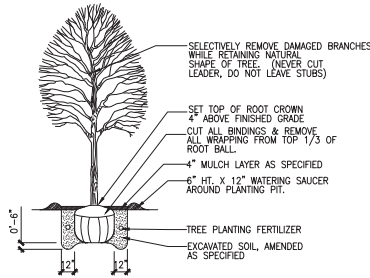
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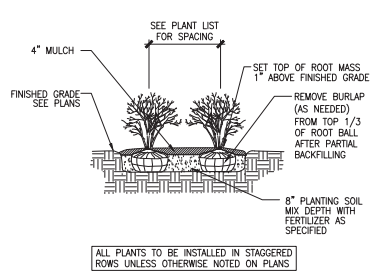
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CHECKED BY: TS

DRAWING TITLE:
LANDSCAPE PLAN

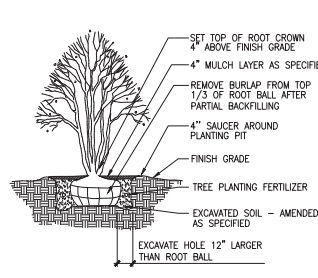
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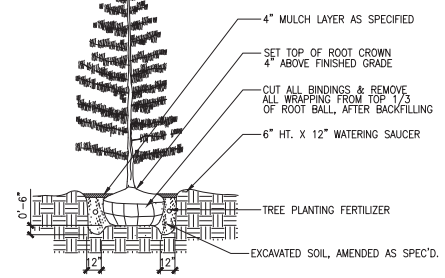
○ SHADE TREE PLANTING
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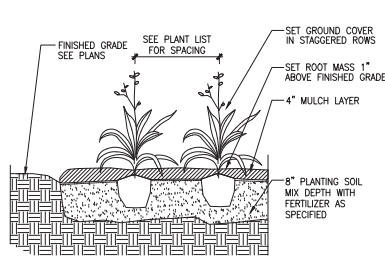
○ SHRUB PLANTING
SCALE: 1/2"=1'-0" DT-shrub-gn



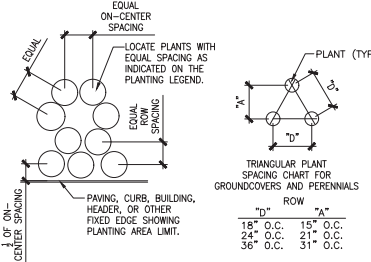
○ ORNAMENTAL TREE PLANTING
SCALE: 1/4"=1'-0" DT-ornamenttree-gn



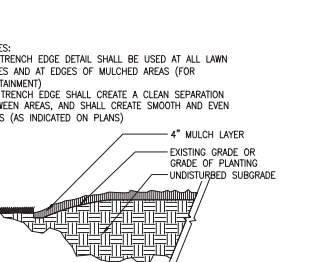
○ EVERGREEN TREE PLANTING
SCALE: 1/4"=1'-0" DT-evergreen-gn



○ GROUNDCOVER PLANTING
SCALE: 1"=1'-0" DT-groundcover-gn



○ PLANT SPACING DETAIL
SCALE: 1/2"=1'-0" DT-plantspc-gn



○ TRENCH EDGE DETAIL
SCALE: 1"=1'-0" DT-trench-gn

1. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR MAKING HIMSELF FAMILIAR WITH ALL UNDERGROUND UTILITIES AND STRUCTURES. SEE CONSTRUCTION NOTES.
2. DO NOT WILLFULLY PROCEED WITH PLANTINGS AS DESIGNED WHEN IT IS OBVIOUS THAT OBSTRUCTIONS AND/OR GRADE DIFFERENCES EXIST THAT MAY NOT HAVE BEEN KNOWN DURING THE DESIGN PROCESS. SUCH CONDITIONS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE PROJECT MANAGER. THE LANDSCAPE CONTRACTOR WILL BE HELD RESPONSIBLE FOR ANY NECESSARY REVISIONS AND COSTS DUE TO FAILURE TO GIVE SUCH NOTIFICATION.
3. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AND/OR SUPPLIERS AS REQUIRED TO ACCOMPLISH PLANTING OPERATIONS.
4. THE LANDSCAPE CONTRACTOR IS TO RECEIVE THE SITE AT +/- 1/10TH OF AN INCH. THE LANDSCAPE CONTRACTOR SHALL OBTAIN A LETTER OF GRADE FROM THE GENERAL CONTRACTOR PRIOR TO BEGINNING WORK.
5. REFER TO SPECIFICATIONS FOR PLANTING REQUIREMENTS, MATERIALS, AND EXECUTION.
6. ALL TREES SHALL BE TAGGED BY THE PROJECT MANAGER AT A NURSERY SELECTED BY THE LANDSCAPE CONTRACTOR OR AT THE DISCRETION OF THE PROJECT MANAGER.

○ PLANTING NOTES
SCALE: N/A DT-plantnote-gn

7. FINAL LOCATION OF ALL PLANT MATERIAL SHALL BE SUBJECT TO APPROVAL OF THE PROJECT MANAGER PRIOR TO DIGGING ANY HOLES. THE LANDSCAPE CONTRACTOR IS RESPONSIBLE FOR PROVIDING PROJECT MANAGER ADEQUATE ADVANCE NOTICE FOR ON-SITE APPROVALS. THE LANDSCAPE CONTRACTOR IS TO THE FOLLOWING BEFORE BEGINNING INSTALLING PLANTINGS:
- SHRUBS - LAY OUT THE ACTUAL CONTAINERS ON-SITE BEFORE DIGGING HOLES.
- TREES - STAKE THE LOCATIONS BEFORE DIGGING HOLES. ANY TREE PLANTED WITHOUT ITS FINAL LOCATION APPROVED BY THE PROJECT MANAGER MAY BE REQUESTED TO BE RELOCATED AT THE SOLE EXPENSE OF THE LANDSCAPE CONTRACTOR.
8. THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE PROJECT MANAGER AT LEAST 48 HOURS IN ADVANCE PRIOR TO COMMENCEMENT OF WORK TO COORDINATE PROJECT OBSERVATION SCHEDULES.
9. IF CONFLICTS ARISE BETWEEN THE ACTUAL SIZE OF AREAS ON THE SITE AND THE DRAWINGS, CONTACT THE PROJECT MANAGER FOR RESOLUTION.
10. IT IS THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY TO FURNISH PLANTS FREE OF PESTS AND/OR DISEASES. PRE-SELECTED OR "PROJECT MANAGER TAGGED" PLANT MATERIAL MUST BE INSPECTED BY THE LANDSCAPE CONTRACTOR AND CERTIFIED PEST AND DISEASE FREE. IT IS THE LANDSCAPE CONTRACTOR'S OBLIGATION TO WARRANTY ALL PLANT MATERIAL PER THE SPECIFICATIONS.

11. GROUNDCOVERS AND SHRUBS ARE TO BE TRIANGULARLY SPACED UNLESS INDICATED ON THE PLANS.
12. ALL TREES WITHIN A SPECIES SHALL HAVE MATCHING FORM, UNLESS OTHERWISE NOTED.
13. ALL TREES, SHRUB AND GROUNDCOVER AREAS (EXCLUDING TURF AND SLOPE AREAS) ARE TO BE MULCHED PER DETAILS.
14. ALL MULCH TO BE SHREDDED HARDWOOD MULCH MINIMUM 4" THICK.
15. TREES SHALL BE SET BACK A MINIMUM OF TEN FEET (10') HORIZONTALLY FROM UTILITY STRUCTURES, INCLUDING, BUT NOT LIMITED TO, MANHOLES, VALVE VAULTS, VALVE BOXES, FIRE HYDRANTS, TRANSFORMERS AND SWITCH GANS. TREES SHALL BE SET BACK A MINIMUM OF FIVE (5') HORIZONTALLY FROM SANITARY SEWER AND WATER SERVICES. CONTRACTOR TO MAKE NECESSARY ADJUSTMENTS UNDER THE APPROVAL OF OWNER.
16. PLANTING RESTRICTIONS: PLANT DURING ONE OF THE FOLLOWING PERIODS. COORDINATE PLANTING PERIODS WITH MAINTENANCE PERIODS TO PROVIDE REQUIRED MAINTENANCE FROM DATE OF SUBSTANTIAL COMPLETION.
1. SPRING PLANTING: 5/1 - 6/15
 2. FALL PLANTING: 9/15 - 12/1

WENDY'S RESTAURANT
1330 BUTTERFIELD ROAD
DOWNERS GROVE, IL



1167 Hobson Mill Drive
Naperville, Illinois 60540
Telephone: (630) 606-0776
www.design-perspectives.net

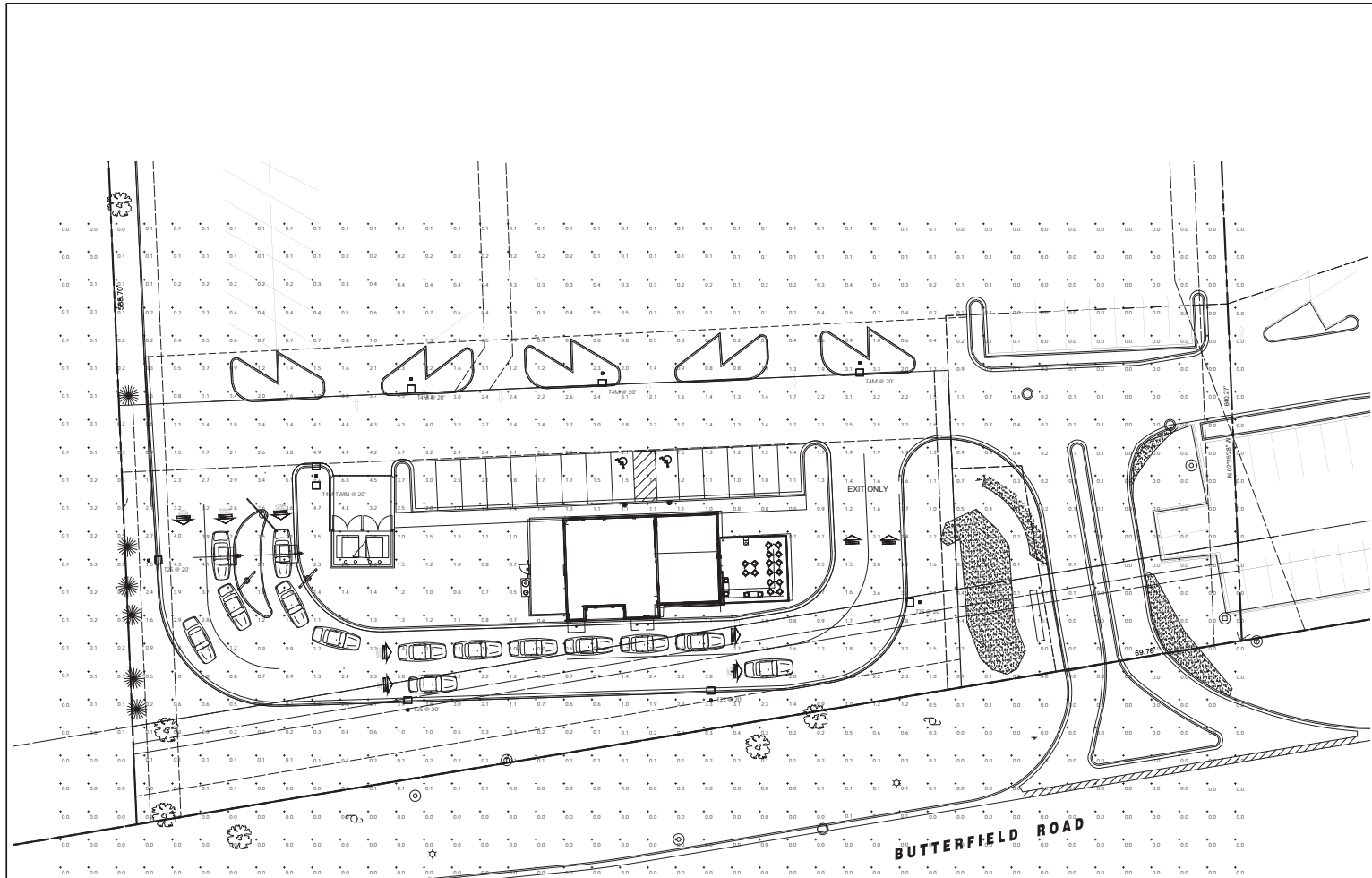
REV.	COMMENT	DATE



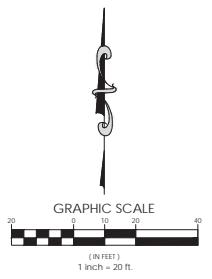
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JOB NO.: 22-1G4Z
DRAWN BY: TS
CHECKED BY: TS

DRAWING TITLE:
LANDSCAPE DETAILS

SHEET NO.:
LP-500



Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Overall Slope	+	0.2%	7.6%	0.0%	N/A	N/A



No.	DATE	DESCRIPTION

554 E. Algonquin Road
 Schaumburg, IL 60197
 (630) 295-7951 ext. 400
 www.rtm.com
 IL Design Firm: 04-0077-002



PHOTOMETRIC PLAN

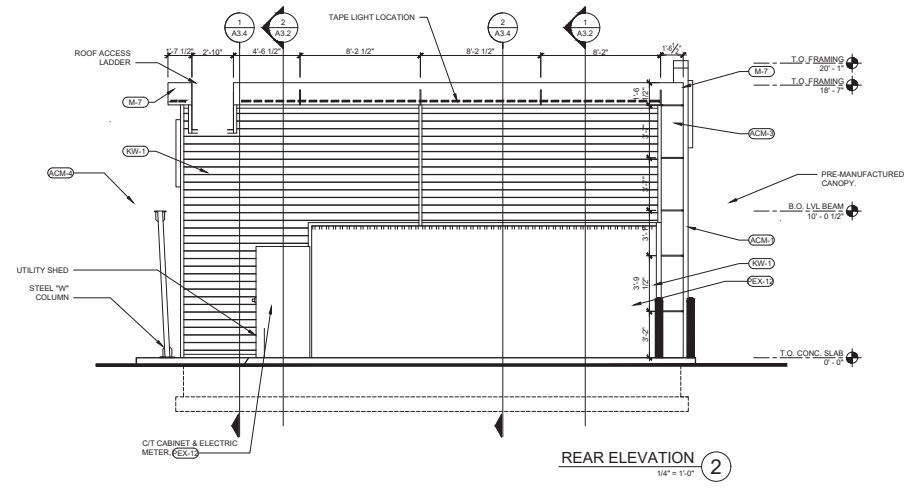
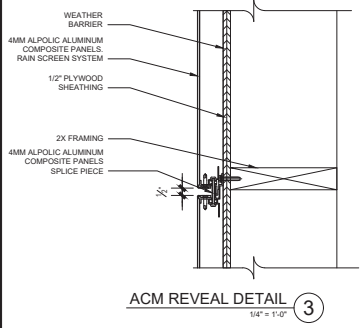
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 1422 BUTTERFIELD RD., DOWNERS GROVE, IL

PROJECT No.
21.NAREC04

SHEET No.
P1

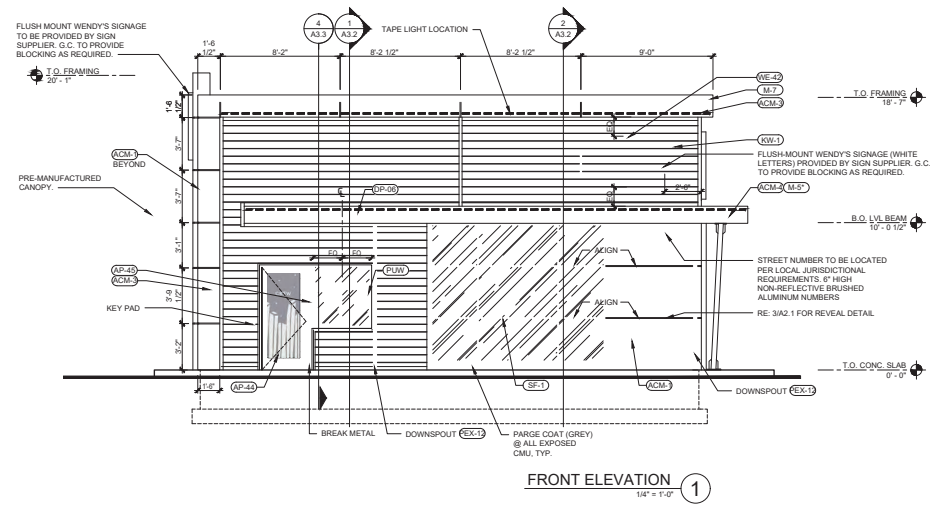
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Excluding the parapet: At the high end the top of roof is 15'-1". At the low end the top of the roof is 14'-4.5".

- RTUs will meet one of the screening requirements listed below:
- a. a parapet shall be installed that is as tall as the tallest part of the equipment;
 - b. a screen around the equipment that is at least as tall as the tallest part of the equipment, with the screen providing at least 80% direct view blocking and which is an integral part of the building's architectural design;
 - c. an equipment setback from the roof edges that is at least 3 feet in depth for each one foot of equipment height.



EXTERIOR FINISH SCHEDULE	
SF-1	STOREFRONT - "DARK BRONZE"
PJW	PICK-UP WINDOW TO MATCH STOREFRONT
M-3	EXCEPTIONAL METALS DRIP EDGE - "BRIGHT RED"
M-4	EXCEPTIONAL METALS - "SILVER METALLIC"
M-5	BRASS METAL - "CLEAR ANODIZED"
M-7	EXCEPTIONAL METALS - "DARK GRAY"
KW-1	KNOTWOOD PREFINISHED ALUM SIDING - "LIGHT OAK"
ACM-1	ALUMINUM COMPOSITE 4MM - "RED" SPEC TBD
ACM-5	ALUMINUM COMPOSITE 4MM - "STORMY GRAY" SPEC TBD
PEX-12	EXTERIOR PAINT - "SW7674 PEPPERCORN"
BL-1	BOLLARD SLEEVE - "YELLOW"

EXTERIOR SIGNAGE SCHEDULE	
CA-54	INTERNALLY ILLUMINATED COME 54"
WE-42	INTERNALLY ILLUMINATED WAVE 42" (WHITE OR RED FACE)
MF-51	NON-ILLUMINATED MFTO LETTER SIGN
QR-08	NON-ILLUMINATED QIOR LETTER SIGN 6" (US AND CANADA MARKETS)
DP-06	NON-ILLUMINATED DELIVERY PICKUP LETTER SIGN 6"

SITE NUMBER:	00000
BUILDING TYPE:	GLOBAL NEXT GEN 30
ASSET TYPE:	FREESTANDING
CLASSIFICATION:	NEW
OWNER:	COMPANY/FRANCHISE
BASE VERSION:	2022
UPGRADE CLASSIFICATION:	NEW BUILD
PROJECT YEAR:	XXXX
DESIGN TYPE:	GLOBAL
DRAWING RELEASE:	FALL 2022

PROJECT TYPE: NEW
GLOBAL NEXT GEN 30

Wendy's
123 SMART ST.
ANY CITY, ST 45678

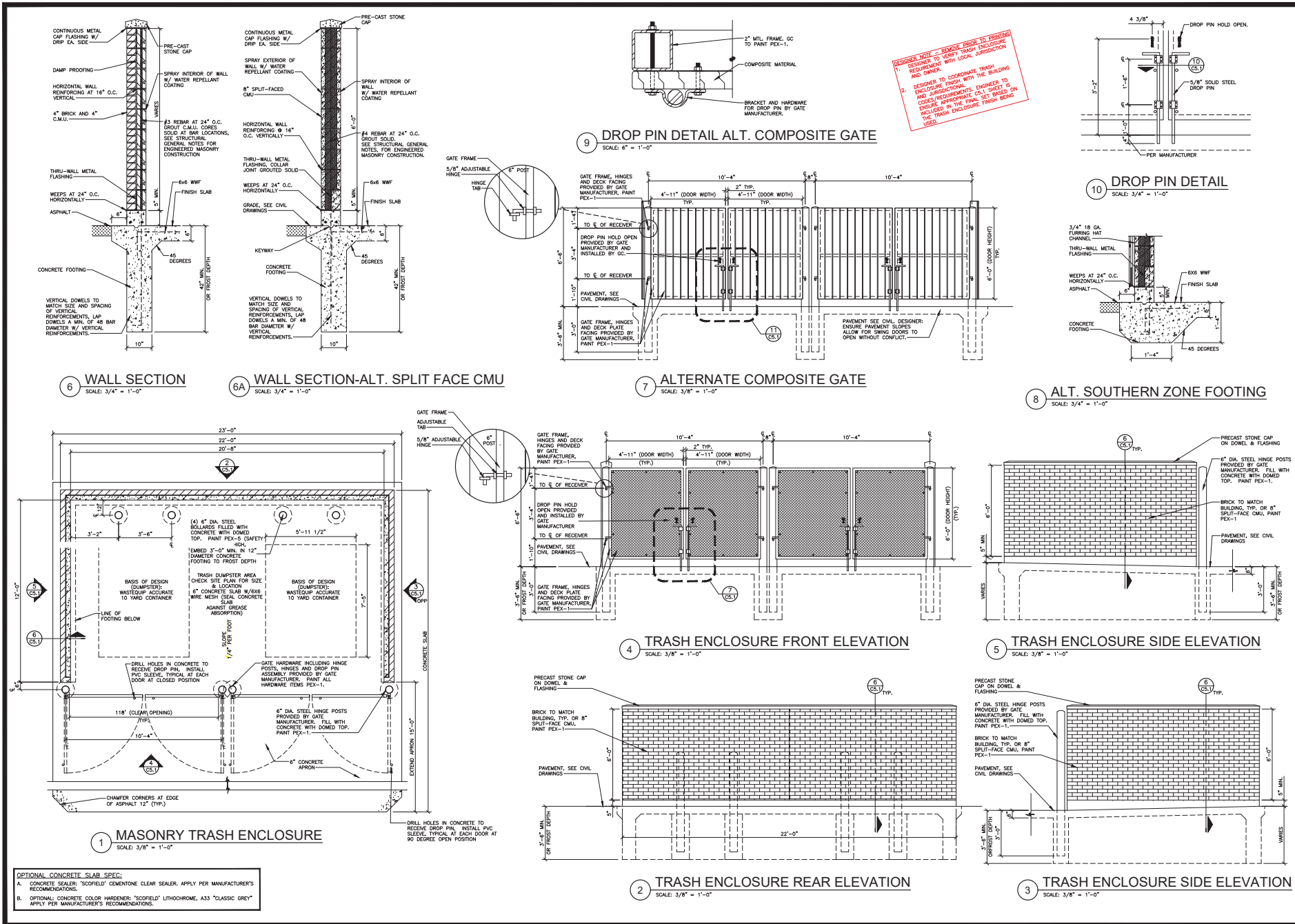
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REVISION:	"A"
PROJECT NUMBER:	----
DRAWN BY:	XXX
CHECKED BY:	XXX

DESIGN
GUIDELINE ONLY -
NOT FOR
CONSTRUCTION

EXTERIOR ELEVATIONS
ACM

SHEET NUMBER
A2.1

13/20/2022 3:58 PM W:\Wendy's\Projects\1302-2202-1302L_Chester\RevGen\30_A2_1_Exterior Elevations.dwg (Marty) 3/20/22



OPTIONAL CONCRETE SLAB SPEC:
 A. CONCRETE SEALER "SOFOIELD" CEMENTONE CLEAR SEALER. APPLY PER MANUFACTURER'S RECOMMENDATIONS.
 B. OPTIONAL: CONCRETE COLOR HARDENER "SOFOIELD" LITHOCHROME, A33 "CLASSIC GREY" APPLY PER MANUFACTURER'S RECOMMENDATIONS.

SITE NUMBER: _____
 BASE MODEL: CIVIL/SITE PROTO
 ASSET TYPE: COMPANY
 CLASSIFICATION: NEW
 OWNER: COMPANY
 BASE VERSION: 2021
 UPGRADE CLASSIFICATION: _____
 NEW BUILD
 PROJECT YEAR: 2021
 FURNITURE PACKAGE: XXX
 DRAWING RELEASE: SPRING 2021

fishbeck
 CONSULTANTS

811
 Know what's below.
 Call before you dig.
 3 business days
 prior to excavation.

PROJECT TYPE: CIVIL/SITE
 PROTOTYPE

Wendy's
 123 SMART ST.
 ANY CITY, ST 45678

DATE: _____
 PROJECT NUMBER: _____
 DRAWN BY: _____
 CHECKED BY: _____
 DATE: _____

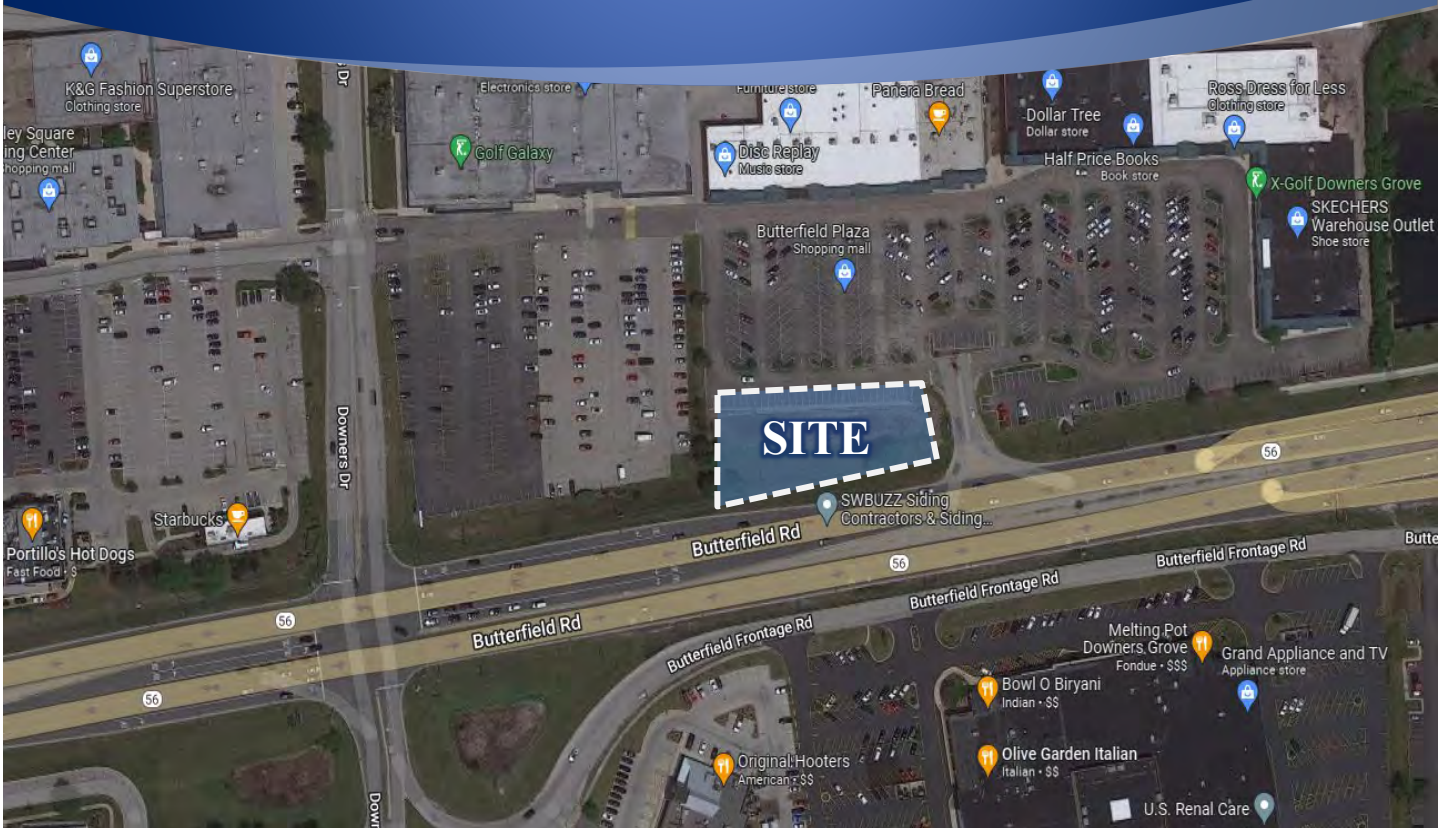
DESIGN
 GUIDELINES FOR
 CONSTRUCTION

SHEET NUMBER: _____
 MASONRY TRASH
 ENCLOSURE DETAILS

C5.1

Traffic and Parking Impact Study Proposed Wendy's Restaurant

Downers Grove, Illinois



Prepared For:

RTM Engineering Consultants



January 4, 2023

1. Introduction

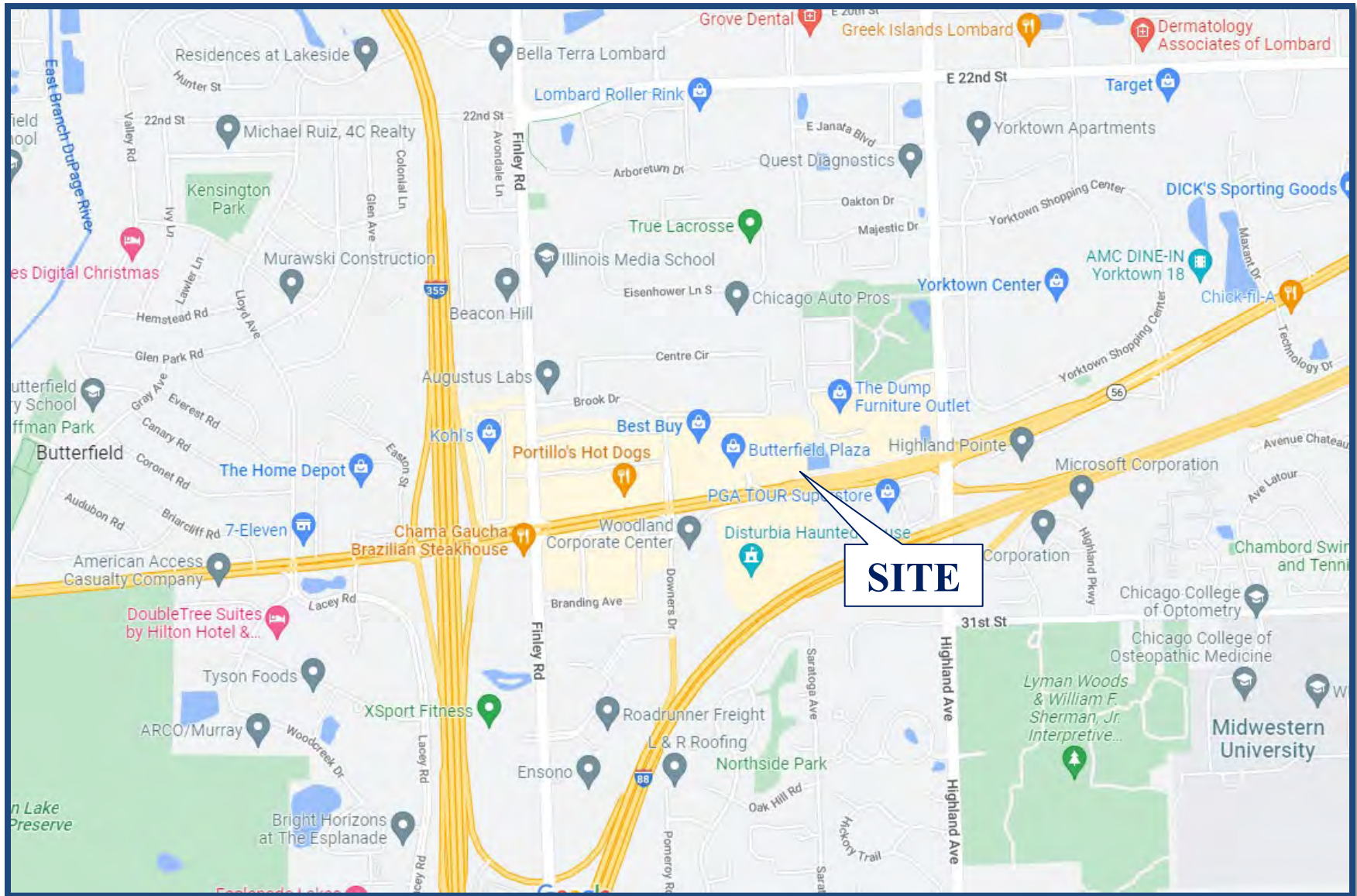
This report summarizes the methodologies, results, and findings of a traffic impact study conducted by Kenig, Lindgren, O’Hara, Aboona, Inc. (KLOA, Inc.) for a proposed Wendy’s Restaurant to be located within the Butterfield Plaza shopping center in Downers Grove, Illinois. The site is located in the northeast quadrant of the intersection of Butterfield Road with Downers Drive. As proposed, the site will be developed with an approximately 2,400 square-foot fast food restaurant with a drive-through lane and 15 parking spaces. Access to the restaurant will be provided via the existing access system serving the shopping center.

The purpose of this study was to examine background traffic conditions, assess the impact that the proposed restaurant will have on traffic conditions in the area, and determine if any roadway or access improvements are necessary to accommodate the traffic generated by the proposed development. **Figure 1** shows the location of the site in relation to the area roadway system. **Figure 2** shows an aerial view of the site. The sections of this report present the following:

- Existing roadway conditions
- A description of the proposed restaurant
- Directional distribution of the new restaurant traffic
- Vehicle trip generation for the proposed restaurant.
- Future traffic conditions including access to the restaurant
- Traffic analyses for the weekday morning, weekday evening, and Saturday midday peak hours
- Recommendations with respect to adequacy of the site access and adjacent roadway system
- Evaluation of the on-site circulation and drive-through stacking
- Evaluation of the adequacy of the parking supply

Traffic capacity analyses were conducted for the weekday morning, weekday evening, and Saturday midday peak hours for the following conditions:

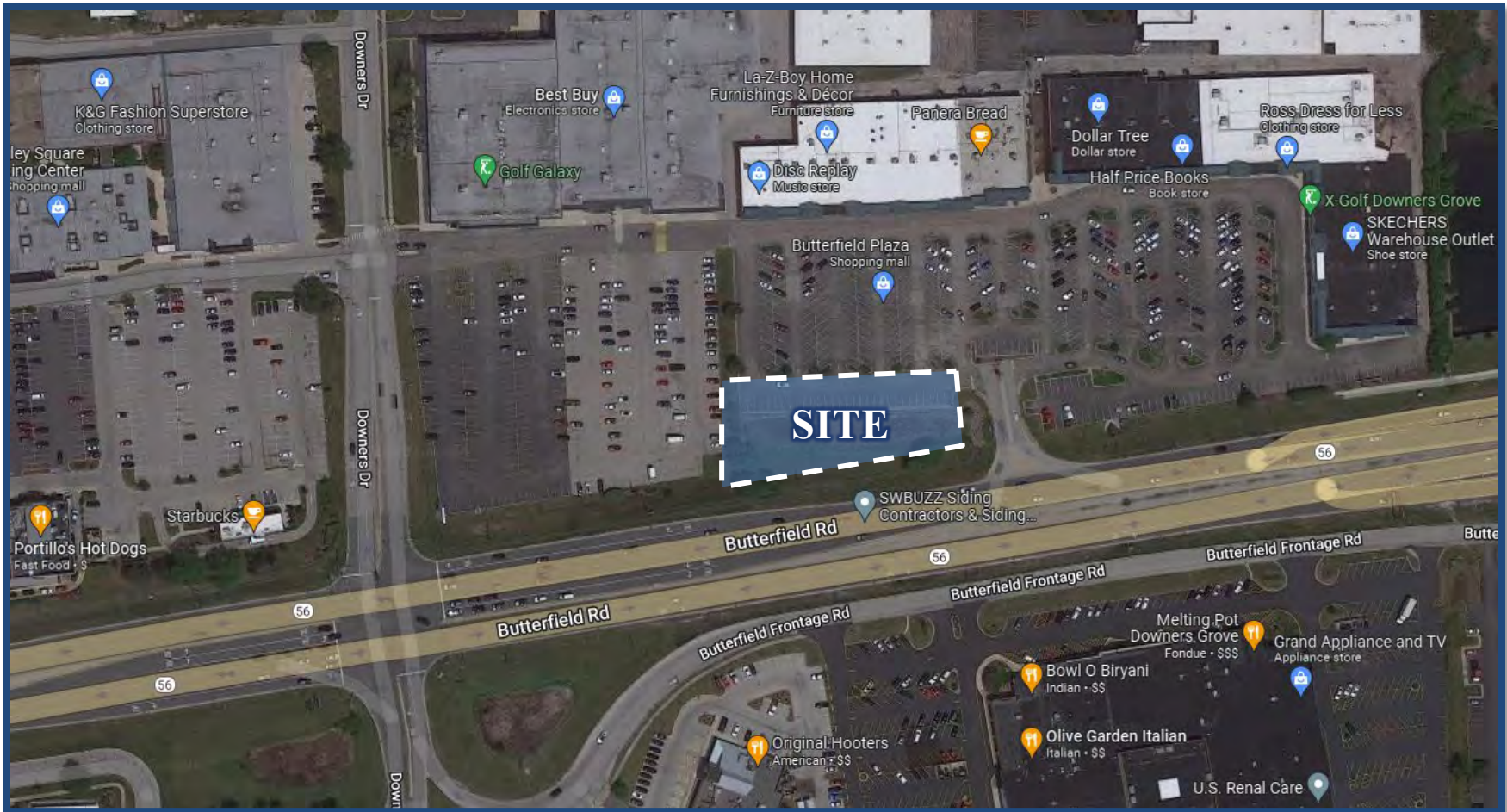
1. Year 2022 Base Conditions – Analyzes the capacity of the existing roadway system using peak hour traffic volumes conducted in the surrounding areas.
2. Year 2028 No-Build Conditions – Analyzes the capacity of the existing roadway system using Year 2022 base traffic volumes increased by an ambient area growth factor not attributable to any particular development.
3. Year 2028 Total Projected Conditions – Analyzes the capacity of the future roadway system using the projected traffic volumes that include the Year 2028 no-build conditions and the traffic estimated to be generated by the proposed development.



Site Location

Figure 1

*Proposed Wendy's Restaurant
Downers Grove, Illinois*



Aerial View of Site

Figure 2

*Proposed Wendy's Restaurant
Downers Grove, Illinois*

2. Existing Conditions

Existing transportation conditions in the vicinity of the site were documented based on a field visit conducted by KLOA, Inc. in order to obtain a database for projecting future conditions. The following provides a description of the geographical location of the site, physical characteristics of the area roadway system including lane usage and traffic control devices, and existing peak hour traffic volumes.

Site Location

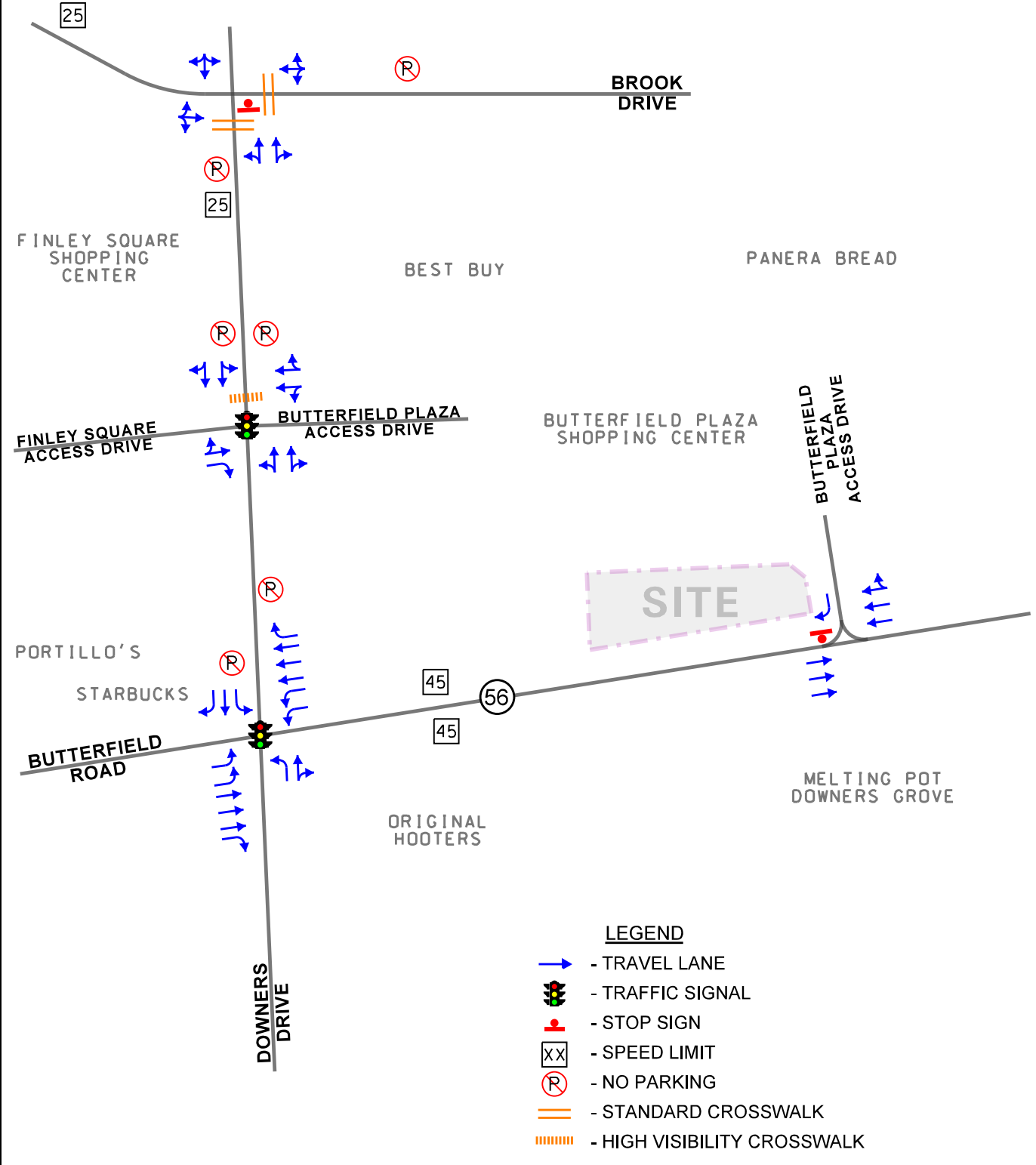
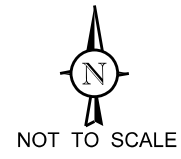
The site is located within the Butterfield Plaza shopping center in the northeast quadrant of the intersection of Butterfield Road with Downers Drive. Land uses in the vicinity of the site are primarily commercial including Best Buy and Panera Bread to the north, the Finley Square shopping center to the west, Skechers Warehouse Outlet to the east, and Original Hooters and Melting Pot to the south.

Existing Roadway System Characteristics

The characteristics of the existing roadways near the development are described below. **Figure 3** illustrates the existing roadway characteristics.

Butterfield Road (IL 56) is an east-west principal arterial roadway that in the vicinity of the site provides three through lanes in each direction. At its signalized intersection with Downers Drive, Butterfield Road provides two exclusive left-turn lanes, three through lanes, and one exclusive right-turn lane on the northbound and southbound approaches. At its unsignalized intersection with the Butterfield Plaza shopping center access drive, Butterfield Road provides three through lanes on the eastbound approach and two through lanes and a shared through/right-turn lane on the westbound approach. Butterfield Road is under the jurisdiction of the Illinois Department of Transportation (IDOT), carries an Annual Average Daily Traffic (AADT) volume of 51,800 vehicles (IDOT 2019), and has a posted speed limit of 45 miles per hour.

Downers Drive is a north-south minor collector roadway that provides two through lanes in each direction. At its signalized intersection with Butterfield Road, this roadway provides an exclusive left-turn lane and a shared through/right-turn lane on the northbound approach and an exclusive left-turn lane, a through lane, and an exclusive right-turn lane on the southbound approach. At its signalized intersection with the Finley Square shopping center access drive/Butterfield Plaza shopping center access drive, Downers Drive provides a shared left-turn/through lane and a shared through/right-turn lane on the northbound and southbound approaches. A high visibility crosswalk is provided on the north leg. At its unsignalized intersection with Brook Drive, Downers Drive provides a shared left-turn/through lane and a shared through/right-turn lane on the northbound approach and a shared left-turn/through/right-turn lane on the southbound approach. A crosswalk is provided on the south leg of this intersection. This roadway is under the jurisdiction of the Village of Downers Grove, has a posted speed limit of 25 miles per hour, and carries an AADT volume of 2,400 vehicles (IDOT 2020). In the vicinity of the site, parking is prohibited along this roadway.



- LEGEND**
- TRAVEL LANE
 - TRAFFIC SIGNAL
 - STOP SIGN
 - SPEED LIMIT
 - NO PARKING
 - STANDARD CROSSWALK
 - HIGH VISIBILITY CROSSWALK

Proposed Wendy's
Downers Grove, Illinois

Existing Roadway Characteristics

Job No: 22-284 Figure: 3

Brook Drive is an east-west minor collector roadway west of Downers Drive and a local roadway east of Downers Drive that provides one through lane in each direction. At its unsignalized intersection with Downers Drive, this roadway provides a shared left-turn/through/right-turn lane on the westbound and eastbound approaches and a crosswalk is provided on the east leg of this intersection. This roadway is under the jurisdiction of the Village of Downers Grove and has a posted speed limit of 25 miles per hour.

Traffic Signal Interconnect

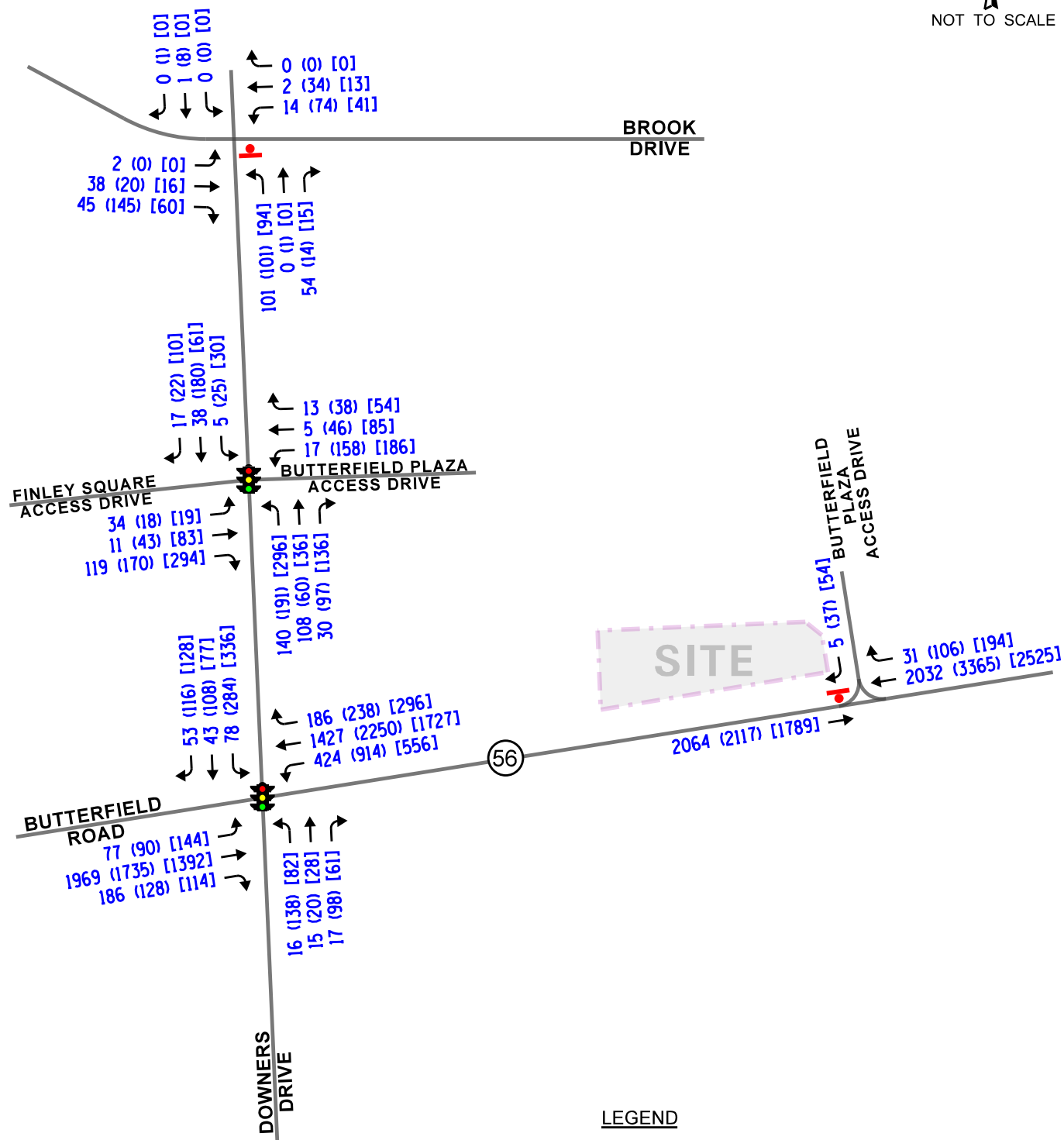
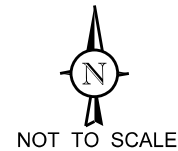
The intersection of Butterfield Road with Downers Drive is part of a seven-signal interconnect system that extends along Butterfield Road from Woodcreek Drive to Downers Drive and another signal at Woodcreek Drive with Lacey Road. These traffic signals and the interconnect system are maintained by IDOT.

Year 2022 Base Traffic Volumes

In order to determine current traffic conditions in the vicinity of the site, KLOA, Inc. conducted peak period traffic counts using Miovision Scout Video Collection Units on Thursday, September 1, 2022 during the weekday morning (7:00 A.M. to 9:00 A.M.) and weekday evening (4:00 P.M. to 6:00 P.M.) peak periods and on Saturday, September 10, 2022 during the Saturday midday peak period (12:00 P.M. to 2:00 P.M.) at the following intersections:

- Butterfield Road with Butterfield Plaza shopping center access drive
- Butterfield Road with Downers Drive
- Downers Drive with Finley Square shopping center access drive
- Downers Drive with Brook Drive

The results of the traffic counts indicated that the weekday morning peak hour of traffic occurs from 7:30 A.M. to 8:30 A.M., the weekday evening peak hour of traffic occurs from 4:30 P.M. to 6:30 P.M., and the Saturday midday peak hour occurs from 1:00 P.M. to 2:00 P.M. Copies of the traffic count summary sheets are included in the Appendix. In order to ensure that Year 2022 traffic counts represent normal traffic conditions, the traffic counts were compared with the 2015 traffic count data previously collected by KLOA, Inc. Based on the comparison, the traffic volumes were increased by 20 percent during all three peak hours. **Figure 4** illustrates the Year 2022 base peak hour traffic volumes.



LEGEND

- 00 - AM PEAK HOUR (7:30-8:30 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)
- [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)

Proposed Wendy's
Downers Grove, Illinois

Year 2022 Base Traffic Volumes



Job No: 22-284

Figure: 4

Crash Analysis

KLOA, Inc. obtained crash data¹ for the most recent available past five years (2017 to 2021) for the study area intersections. A review of the crash data indicated that no fatalities were reported at any of the intersections during the review period. Crash data for the intersections is summarized in **Tables 1** through **3**.

Table 1
BUTTERFIELD ROAD WITH DOWNERS DRIVE

Year	Type of Crash Frequency						Total
	Angle	Object	Rear End	Sideswipe	Turning	Other	
2017	1	0	7	0	2	0	10
2018	0	1	7	1	3	0	12
2019	1	0	2	0	4	0	7
2020	1	0	6	0	0	0	7
2021	<u>2</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>4</u>	<u>0</u>	<u>6</u>
Total	5	1	22	1	13	0	42
Average	1.0	<1.0	4.4	<1.0	2.6	--	8.4

¹ IDOT DISCLAIMER: The motor vehicle crash data referenced herein was provided by the Illinois Department of Transportation. Any conclusions drawn from analysis of the aforementioned data are the sole responsibility of the data recipient(s). Additionally, for coding years 2015 to present, the Bureau of Data Collection uses the exact latitude/longitude supplied by the investigating law enforcement agency to locate crashes. Therefore, location data may vary in previous years since data prior to 2015 was physically located by bureau personnel.

Table 2

DOWNERS DRIVE WITH FINLEY SQUARE SHOPPING CENTER ACCESS DRIVE

Year	Type of Crash Frequency						Total
	Angle	Object	Rear End	Sideswipe	Turning	Other	
2017	1	0	0	0	1	0	2
2018	0	0	0	0	0	0	0
2019	0	0	0	0	1	0	1
2020	0	0	0	0	0	0	0
2021	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	1	0	0	0	2	0	3
Average	<1.0	--	--	--	<1.0	--	<1.0

Table 3

DOWNERS DRIVE WITH BROOK DRIVE

Year	Type of Crash Frequency						Total
	Angle	Object	Rear End	Sideswipe	Turning	Other	
2017	0	0	0	0	0	0	0
2018	0	0	0	0	0	0	0
2019	0	0	0	0	1	0	1
2020	0	0	0	0	0	0	0
2021	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	0	0	0	0	1	0	1
Average	--	--	--	--	<1.0	--	<1.0

3. Traffic Characteristics of the Proposed Restaurant

In order to properly evaluate future traffic conditions in the surrounding area, it was necessary to determine the traffic characteristics of the proposed development, including the directional distribution and volumes of traffic that it will generate.

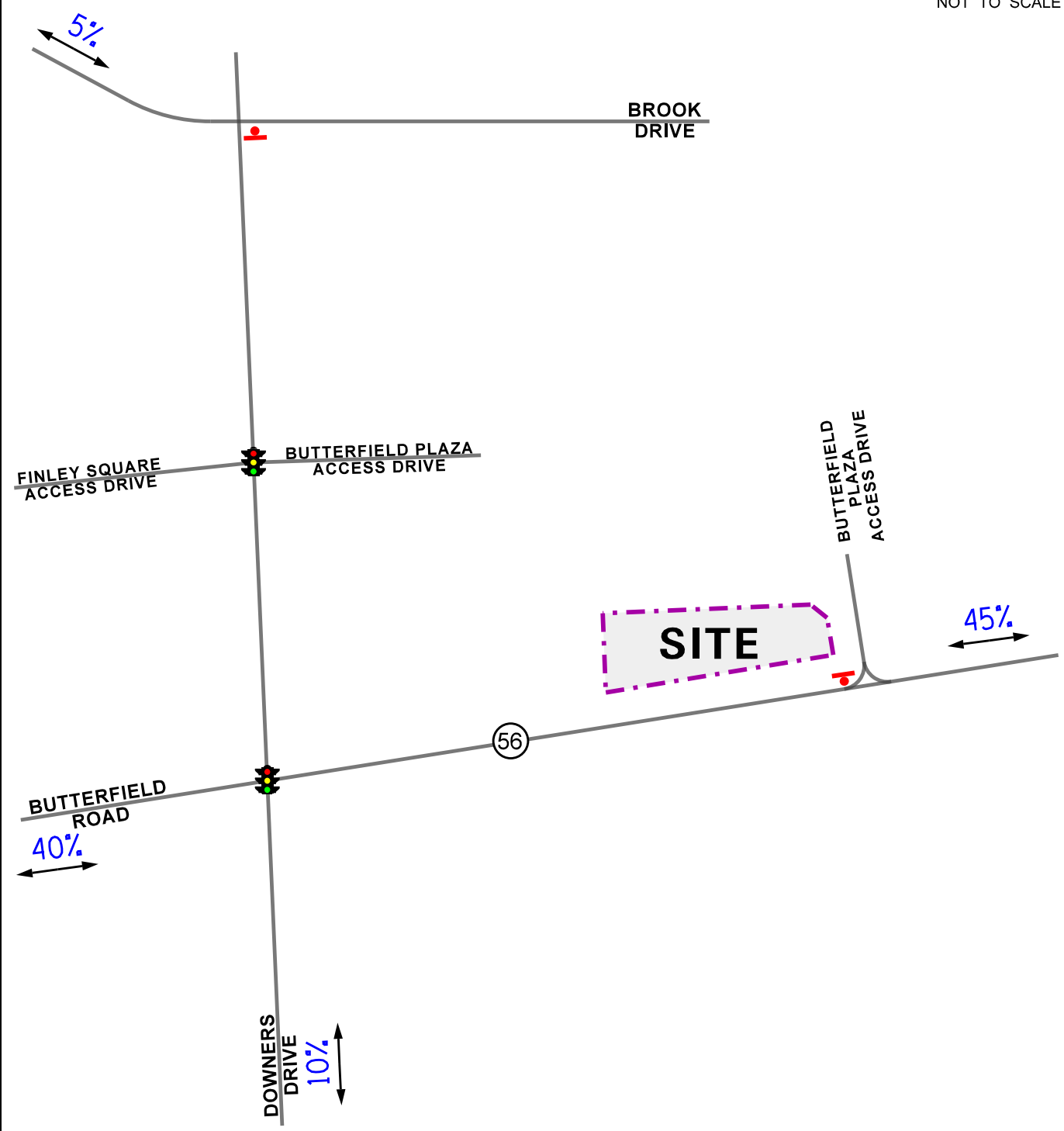
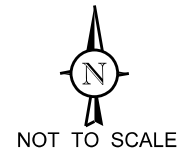
Proposed Site and Development Plan

As proposed, the site will be developed within the Butterfield Plaza shopping center with an approximately 2,400 square-foot Wendy's fast food restaurant with a drive-through lane and a 15-space surface parking lot. Access to the development will be provided via the existing access system serving the shopping center.

A copy of the preliminary site plan is included in the Appendix.

Directional Distribution

The directional distribution of future site-generated trips on the roadway system is a function of several variables, including the operational characteristics of the roadway system and the ease with which drivers can travel over various sections of the roadway system. This is particularly true for pass-by traffic. The directions from which patrons and employees of the proposed development will approach and depart the site were calculated based on the existing traffic volumes and are illustrated in **Figure 5**.



LEGEND

00% - PERCENT DISTRIBUTION

Proposed Wendy's
Downers Grove, Illinois

Directional Distribution



Job No: 22-284

Figure: 5

Estimated Site Traffic Generation

The volume of traffic generated by a development is based on the type of land uses and the size of the development. The number of peak hour vehicle trips estimated to be generated by the proposed restaurant is based on vehicle trip generation rates contained in *Trip Generation Manual*, 11th Edition, published by ITE. The “Fast-Food Restaurant with Drive Through Window” (ITE Land-Use Code 934) rate was used for the fast-food restaurant.

It is important to note that surveys conducted by ITE have shown that approximately 50 percent of trips made to restaurants with drive-throughs are made up of existing traffic on the roadway system. This is particularly true during the weekday morning and evening peak hours when traffic is diverted from the home-to-work and work-to-home trips (pass-by traffic). As such, the new traffic to be generated restaurant was reduced by 50 percent to account for pass-by traffic. **Table 4** summarizes the trips projected to be generated by the proposed restaurant. Copies of the ITE trip generation summary sheets are included in the Appendix.

Table 4
ESTIMATED SITE-GENERATED TRAFFIC VOLUMES

ITE Land-Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour			Daily Trips	
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out
934	Fast Food Restaurant (2,400 s.f.)	55	52	107	41	38	79	68	65	133	561	561
	<i>50% Pass-By Reduction</i>	-27	-27	-54	-20	-20	-40	-33	-33	-66	-280	-280
	Total New Trips	28	25	53	21	18	39	35	32	67	193	193

4. Projected Traffic Conditions

The total projected traffic volumes include the base traffic volumes, increase in background traffic due to growth, and the traffic estimated to be generated by the proposed subject development.

Development Traffic Assignment

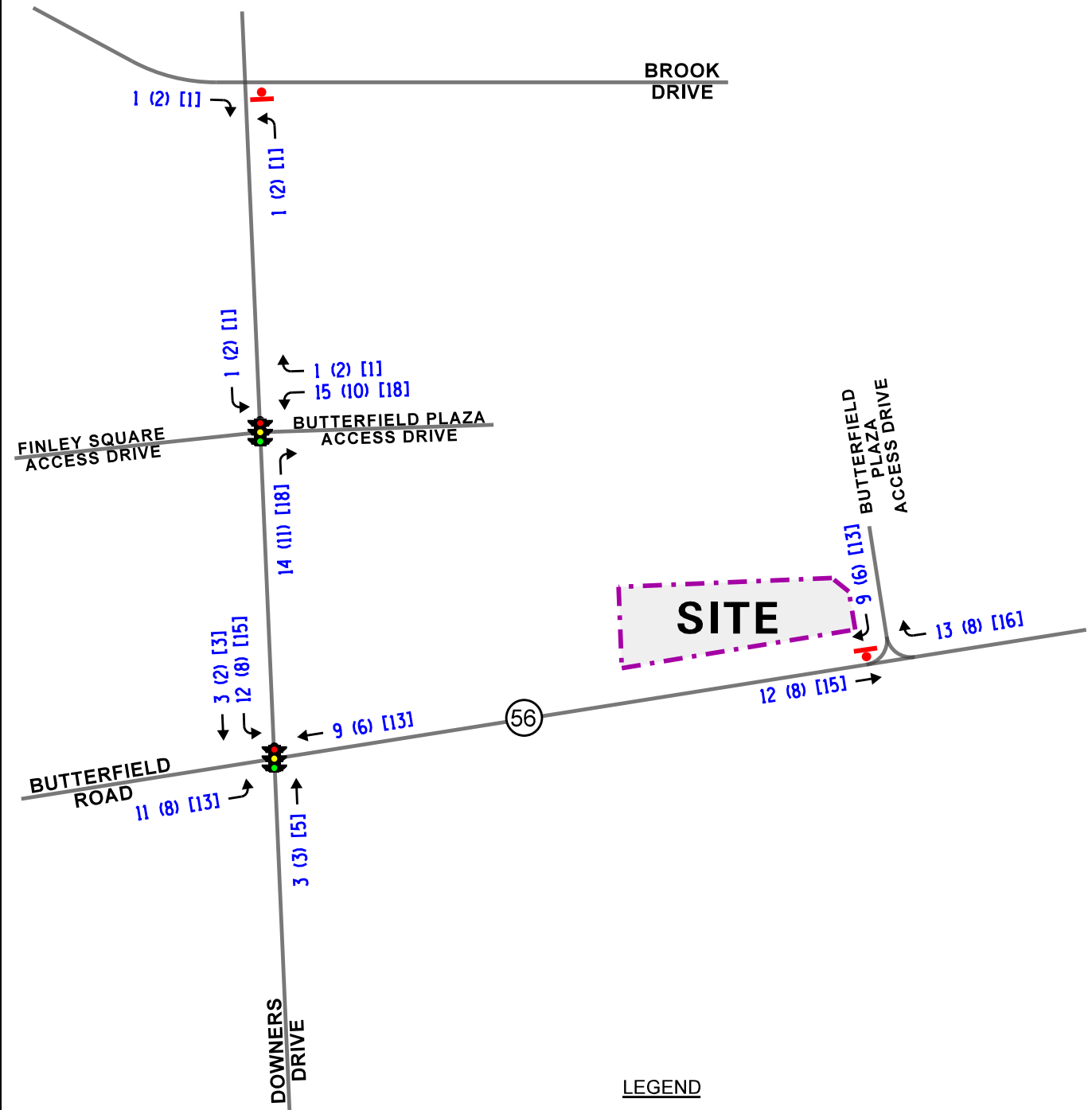
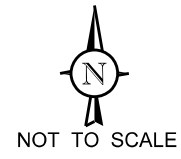
The estimated weekday morning, weekday evening, and Saturday midday peak hours traffic volumes that will be generated by the proposed development were assigned to the roadway system in accordance with the previously described directional distribution (Figure 5). The new site-generated traffic assignment for the proposed development is illustrated in **Figure 6** and the pass-by traffic assignment is illustrated in **Figure 7**.

Background Traffic Conditions

The Year 2022 base traffic volumes (Figure 4) were increased by a regional growth factor to account for the increase in existing traffic related to regional growth in the area (i.e., not attributable to any particular planned development). Based on AADT projections provided by the Chicago Metropolitan Agency for Planning (CMAP), the existing traffic volumes were increased by an annually compounded growth rate of 0.39 percent per year for six years (buildout year plus five years) for a total of two percent. Furthermore, Butterfield Plaza currently has an approximately 3,300 square feet of retail vacancy. The number of peak hour vehicle trips estimated to be generated by this vacancy was based on the rates for Land-Use Code 822 (“Strip Retail Plaza”). **Table A** in the Appendix summarizes the estimated trips by the vacant retail space. The Year 2028 no-build traffic volumes are illustrated in **Figure 8**.

Total Projected Traffic Volumes

The development-generated traffic (Figures 6 and 7) was added to the Year 2028 no-build traffic volumes (Figure 8) to determine the Year 2028 total projected traffic volumes, shown in **Figure 9**.



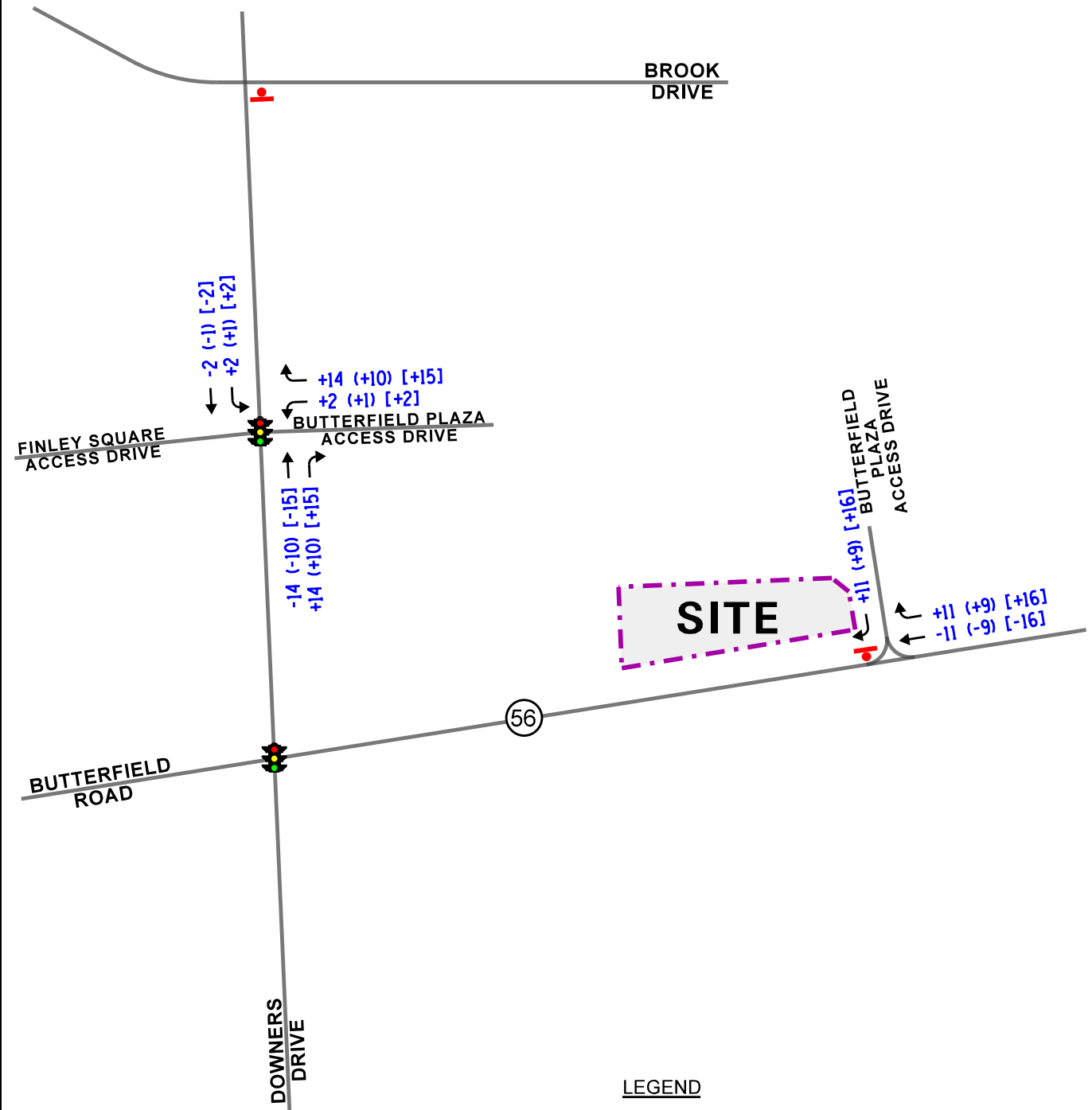
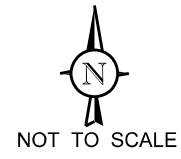
LEGEND

- 00 - AM PEAK HOUR (7:30-8:30 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)
- [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)

Proposed Wendy's
Downers Grove, Illinois

Site-Generated Traffic Volumes

Job No: 22-284 Figure: 6



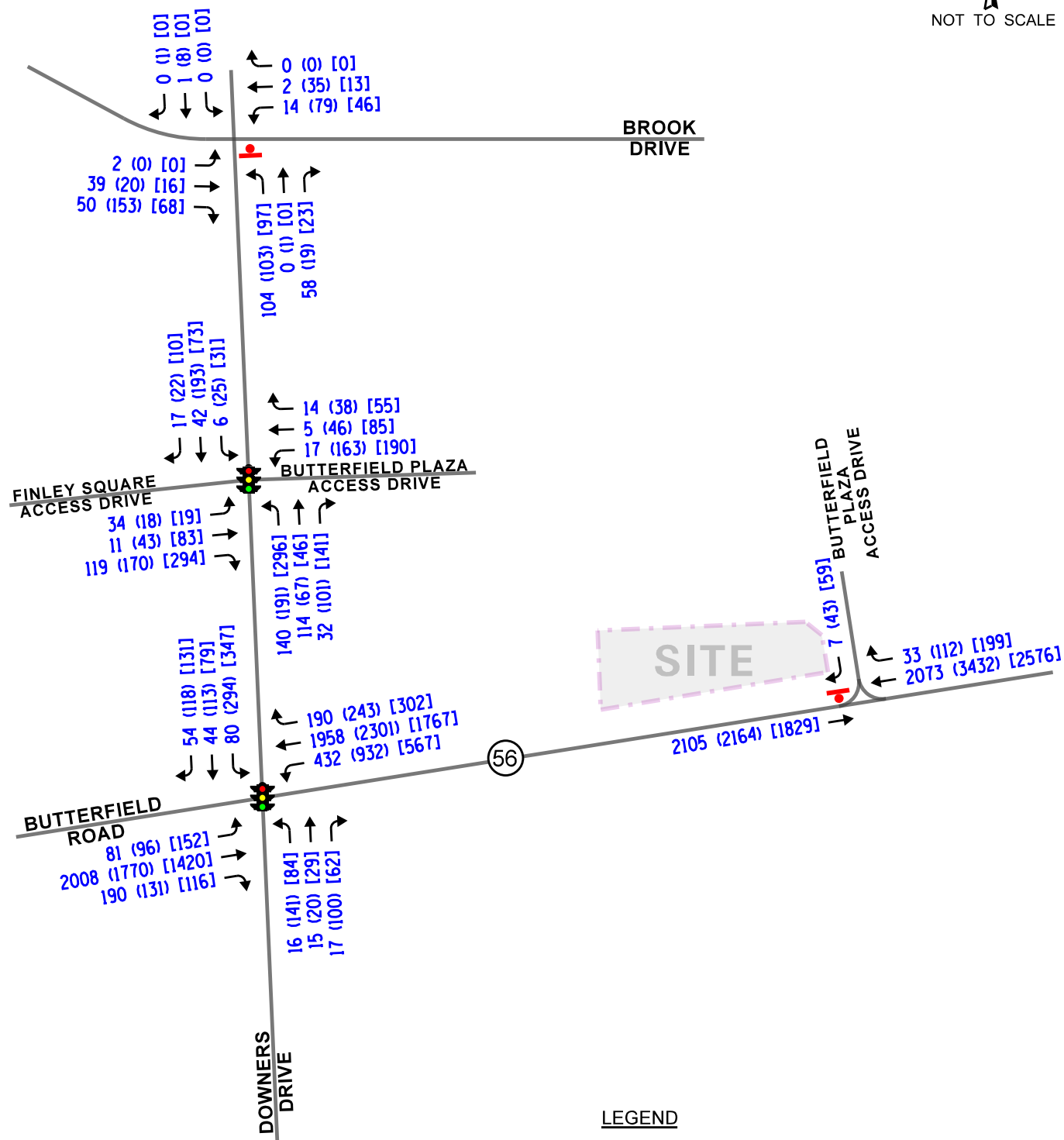
LEGEND

- 00 - AM PEAK HOUR (7:30-8:30 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)
- [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)

Proposed Wendy's
Downers Grove, Illinois

Pass-By Traffic Volumes

Job No: 22-284 Figure: 7



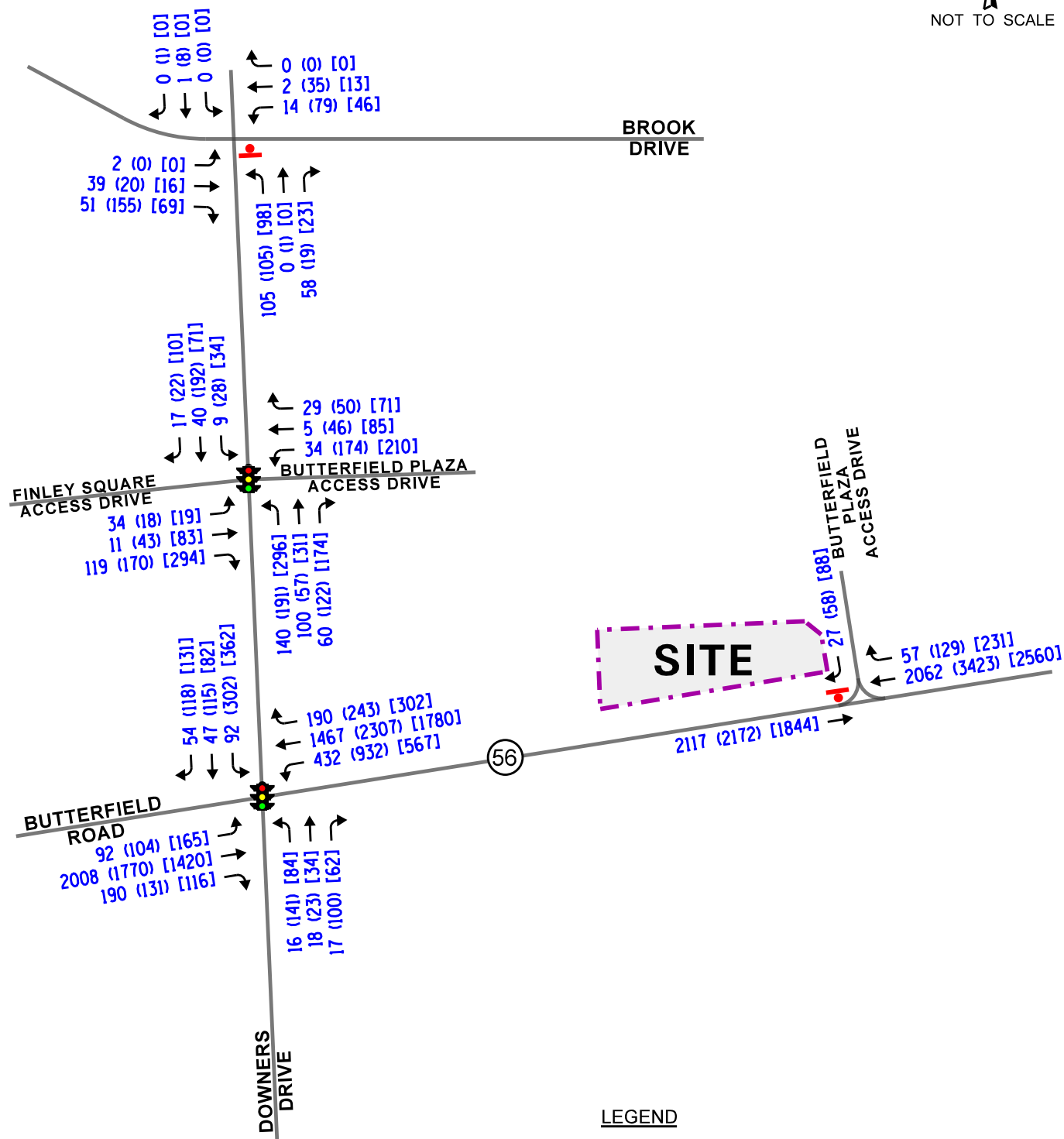
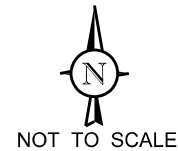
Proposed Wendy's
Downers Grove, Illinois

Year 2028 No-Build Traffic Volumes



Job No: 22-284

Figure: 8



LEGEND

- 00 - AM PEAK HOUR (7:30-8:30 AM)
- (00) - PM PEAK HOUR (4:30-5:30 PM)
- [00] - SATURDAY MIDDAY PEAK HOUR (1:00-2:00 PM)

Proposed Wendy's
Downers Grove, Illinois

Year 2028 Total Projected Traffic Volumes



Job No: 22-284

Figure: 9

5. Traffic Analysis and Recommendations

The following provides an evaluation conducted for the weekday morning, weekday evening, and Saturday midday peak hours. The analysis includes conducting capacity analyses to determine how well the roadway system and access drives are projected to operate and whether any roadway improvements or modifications are required.

Traffic Analyses

Roadway and adjacent or nearby intersection analyses were performed for the weekday morning, weekday evening, and Saturday midday peak hours for the Year 2022 base, Year 2028 no-build, and Year 2028 total projected traffic volumes.

The traffic analyses were performed using the methodologies outlined in the Transportation Research Board's *Highway Capacity Manual (HCM)*, 6th Edition and analyzed using Synchro/SimTraffic 11 software. The analysis for the traffic-signal controlled intersections were accomplished using actual cycle lengths and phasings to determine the average overall vehicle delay and levels of service.

The analyses for the unsignalized intersections determine the average control delay to vehicles at an intersection. Control delay is the elapsed time from a vehicle joining the queue at a stop sign (includes the time required to decelerate to a stop) until its departure from the stop sign and resumption of free flow speed. The methodology analyzes each intersection approach controlled by a stop sign and considers traffic volumes on all approaches and lane characteristics.

The ability of an intersection to accommodate traffic flow is expressed in terms of level of service, which is assigned a letter from A to F based on the average control delay experienced by vehicles passing through the intersection. The *Highway Capacity Manual* definitions for levels of service and the corresponding control delay for signalized intersections and unsignalized intersections are included in the Appendix of this report.

Summaries of the traffic analysis results showing the level of service and overall intersection delay (measured in seconds) for the projected Year 2022 base, Year 2028 no-build, and Year 2028 total projected conditions are presented in **Tables 5** through **9**. A discussion of each intersection follows. Summary sheets for the capacity analyses are included in the Appendix.

Table 5
CAPACITY ANALYSIS RESULTS – BUTTERFIELD ROAD WITH DOWNERS DRIVE – SIGNALIZED

	Peak Hour	Eastbound			Westbound			Northbound		Southbound			Overall
		L	T	R	L	T	R	L	T/R	L	T	R	
Base Conditions	Weekday Morning	E 61.9	C 27.8	A 1.9	E 68.9	B 15.3	A 1.1	D 37.3	C 31.0	D 40.5	D 50.1	A 1.7	C 26.3
		C – 26.8			C – 25.2			C – 33.1		C – 31.1			
	Weekday Evening	E 67.3	E 71.9	A 4.8	E 63.1	C 26.0	A 0.9	D 46.9	C 22.5	E 61.4	D 53.4	B 13.5	D 46.0
		E – 67.3			C – 34.2			D – 35.6		D – 48.7			
	Saturday Midday	D 48.3	D 36.5	A 2.5	E 63.7	C 29.7	A 1.5	C 22.4	B 18.6	C 30.3	C 32.8	A 4.5	C 32.8
		D – 35.2			C – 33.7			C – 20.4		C – 24.5			
Year 2028 No-Build Conditions	Weekday Morning	E 62.4	C 28.3	A 1.9	E 70.1	B 15.5	A 1.1	D 37.3	C 31.0	D 40.6	D 50.2	A 1.8	C 26.7
		C – 27.3			C – 25.5			C – 33.1		C – 31.2			
	Weekday Evening	E 67.9	E 79.3	A 5.1	E 65.1	C 26.7	A 1.0	D 47.6	C 22.6	E 64.9	D 53.7	B 13.8	D 48.9
		E – 73.8			D – 35.2			D – 36.1		D – 51.0			
	Saturday Midday	D 48.7	D 37.4	A 2.6	E 67.0	C 30.6	A 1.5	C 22.5	B 18.7	C 32.8	C 32.9	A 4.5	C 33.9
		D – 36.0			D – 35.1			C – 20.6		C – 25.8			
Year 2028 Projected Conditions	Weekday Morning	E 63.4	C 28.3	A 1.9	E 70.1	B 15.6	A 1.1	D 37.3	C 32.5	D 41.3	D 50.3	A 1.8	C 26.9
		C – 27.6			C – 25.5			C – 34.0		C – 32.5			
	Weekday Evening	E 68.9	E 79.3	A 5.1	E 65.1	C 26.9	A 1.0	D 47.7	C 23.8	E 68.8	D 54.0	B 13.8	D 49.2
		E – 73.9			D – 35.3			D – 36.6		D – 53.4			
Saturday Midday	D 49.4	D 37.4	A 2.6	E 67.0	C 31.0	A 1.5	C 22.5	B 19.8	C 33.5	C 33.0	A 4.5	C 34.1	
	D – 36.2			D – 35.3			C – 21.1		C – 26.9				
Letter denotes Level of Service L – Left Turn R – Right Turn Delay is measured in seconds. T – Through													

Table 6

CAPACITY ANALYSIS RESULTS – DOWNERS DRIVE WITH FINLEY SQUARE SHOPPING CENTER ACCESS DRIVE/BUTTERFIELD PLAZA SHOPPING CENTER ACCESS DRIVE – SIGNALIZED

	Peak Hour	Eastbound		Westbound	Northbound	Southbound	Overall
		L/T	R	L/T/R	L/T/R	L/T/R	
Base Conditions	Weekday Morning	C 21.5	A 5.7	B 14.7	A 7.3	A 5.5	A 8.4
		B – 10.1					
	Weekday Evening	C 21.7	A 5.4	C 20.8	A 6.2	A 6.9	B 10.5
		A – 9.8					
	Saturday MIDDAY	C 22.9	A 5.5	C 23.1	A 6.7	A 6.5	B 11.8
		A – 10.0					
Year 2028 No-Build Conditions	Weekday Morning	C 21.5	A 5.7	B 14.4	A 7.3	A 5.6	A 8.4
		B – 10.1					
	Weekday Evening	C 21.7	A 5.4	C 21.0	A 6.2	A 6.9	B 10.5
		A – 9.8					
	Saturday MIDDAY	C 22.9	A 5.5	C 23.3	A 6.8	A 6.7	B 11.9
		A – 10.0					
Year 2028 Projected Conditions	Weekday Morning	C 21.5	A 5.7	B 13.8	A 6.5	A 5.7	A 8.2
		B – 10.1					
	Weekday Evening	C 21.7	A 5.4	C 20.8	A 5.8	A 7.0	B 10.5
		A – 9.8					
	Saturday MIDDAY	C 23.0	A 5.5	C 23.8	A 6.1	A 6.7	B 12.0
		A – 10.0					
Letter denotes Level of Service L – Left Turn R – Right Turn Delay is measured in seconds. T – Through							

Table 7
CAPACITY ANALYSIS RESULTS
YEAR 2022 BASE CONDITIONS – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
Downers Drive with Brook Drive						
Northbound Approach	A	9.6	B	12.0	B	10.3
Southbound Approach	A	9.9	B	11.8	A	0.1
Eastbound Left Turn	A	7.2	A	0.1	A	0.1
Westbound Left Turn	A	7.6	A	7.8	A	7.5
Butterfield Road with Butterfield Plaza Access Drive						
Southbound Approach	B	11.2	E	36.1	B	14.7
LOS = Level of Service Delay is measured in seconds.						

Table 8
CAPACITY ANALYSIS RESULTS
YEAR 2028 NO-BUILD TRAFFIC VOLUMES – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
Downers Drive with Brook Drive						
Northbound Approach	A	9.6	B	12.2	B	10.5
Southbound Approach	A	9.9	B	12.0	A	0.1
Eastbound Left Turn	A	7.2	A	0.1	A	0.1
Westbound Left Turn	A	7.6	A	7.8	A	7.5
Butterfield Road with Butterfield Plaza Access Drive						
Southbound Approach	B	11.5	E	45.9	C	15.5
LOS = Level of Service Delay is measured in seconds.						

Table 9
CAPACITY ANALYSIS RESULTS
YEAR 2028 TOTAL PROJECTED TRAFFIC VOLUMES – UNSIGNALIZED

Intersection	Weekday Morning Peak Hour		Weekday Evening Peak Hour		Saturday Midday Peak Hour	
	LOS	Delay	LOS	Delay	LOS	Delay
Downers Drive with Brook Drive						
Northbound Approach	A	9.6	B	12.2	B	10.5
Southbound Approach	A	9.9	B	12.0	A	0.1
Eastbound Left Turn	A	7.2	A	0.1	A	0.1
Westbound Left Turn	A	7.6	A	7.8	A	7.5
Butterfield Road with Butterfield Plaza Access Drive						
Southbound Approach	B	11.8	F	53.8	C	15.6
LOS = Level of Service Delay is measured in seconds.						

Discussion and Recommendations

The following summarizes how the intersections are projected to operate and identifies any roadway and traffic control improvements necessary to accommodate the restaurant-generated traffic.

Butterfield Road with Downers Drive

The results of the capacity analysis indicate that this intersection currently operates at Level of Service (LOS) C during the weekday morning and Saturday midday peak hours and LOS D during the weekday evening peak hour. All the approaches operate at LOS D or better during all three peak hours except for the eastbound approach, which operates at LOS E during the weekday evening peak hour.

Under Year 2028 no-build conditions, this intersection is projected to continue operating at the same existing levels of service during all the peak hours with increases in delay of approximately three seconds or less. All the approaches will continue to operate at LOS D or better with increases in delay of less than two seconds except for the eastbound approach which will operate at LOS E during the weekday evening peak hour with an increase in delay of less than six seconds.

Under Year 2028 total projected conditions, the intersection will continue to operate at the same existing levels of service during all three peak hours with increases in delay of less than one second over the no-build conditions. All approaches will continue to operate at LOS D or better during all peak hours with increases in delay of approximately three seconds or less except for the eastbound approach, which will operate at LOS E during all three peak hours.

As such, the proposed restaurant traffic will have a limited impact on the operations of this intersection and no roadway or traffic control improvements will be required as part of the development.

Downers Drive with Finley Square Access Drive/Butterfield Plaza Access Drive

The results of the capacity analysis indicate that this intersection currently operates at LOS A during the weekday morning peak hour and LOS B during the weekday evening and Saturday midday peak hours. All the approaches operate at LOS B or better during all three peak hours except for the westbound approach that operates at LOS C during the weekday evening and Saturday midday peak hours.

Under Year 2028 no-build conditions, this intersection and all its approaches are projected to continue operating at the same existing levels of service during all peak hours.

Under Year 2028 total projected conditions, the intersection will operate at the same existing levels of service during all peak hours with increases in delay of less than one second over no-build conditions.

As such, this access drive can adequately accommodate existing traffic as well as traffic estimated to be generated by the proposed restaurant.

Downers Drive with Brook Drive

The results of the capacity analysis indicate that the northbound approach currently operates at LOS A during the weekday morning peak hour and LOS B during the weekday evening and Saturday midday peak hours. The southbound approach currently operates at LOS A during the weekday morning and Saturday midday peak hours and LOS B during the weekday evening peak hours. In addition, the eastbound and westbound left-turn movements operate at LOS A during all three peak hours.

Under Year 2028 no-build conditions, all the approaches and their critical movements are projected to continue operating at the same existing levels of service during all peak hours with increases in delay of less than one second.

Under Year 2028 total projected conditions, the all the approaches and their critical movements will operate at the same existing levels of service during all three peak hours with increases in delay of less than one second over the no-build conditions.

As such, the proposed restaurant traffic will have a limited impact on the operations of this intersection and no roadway or traffic control improvements will be required as a part of the development.

Butterfield Road with Restricted Right-In/Right-Out Access Drive

The results of the capacity analysis indicate that the southbound approach currently operate at LOS B during the weekday morning and Saturday midday peak hours and LOS E during the weekday evening peak hour.

Under Year 2028 no-build conditions, the southbound approach is projected to operate at LOS B during the weekday morning peak hour, LOS E during the weekday evening peak hour, and LOS C during the Saturday midday peak hours with increases in delay of less than one second, approximately ten seconds, and less than one second, respectively.

Under Year 2028 total projected conditions, the southbound approach will continue to operate at LOS B and C during the weekday morning and Saturday midday peak hours, respectively, with increases in delay of less than one second over no-build conditions. The southbound approach is projected to operate at LOS F during the weekday evening peak hour with a volume-over-capacity (v/c) ratio of 0.46 and a 95th percentile queue of two to three vehicles, which can be accommodated by the access drive. It should be noted that this level of service is common and expected at the intersection of an access drive with an arterial roadway such as Butterfield Road.

As such, this access drive can adequately accommodate existing traffic as well as traffic estimated to be generated by the proposed development.

On-Site Circulation and Design

As proposed, the pick-up window for the proposed Wendy's will be located on the north side of the building with vehicles entering the drive-through lane from the east side of the building and travelling counter-clockwise. A review of the site plan indicates that approximately four vehicles can stack by the two ordering boards and approximately six vehicles can stack between the ordering boards and the pick-up window. In addition, a bypass lane is provided around the building.

In order to provide efficient and orderly internal traffic flow, the following is recommended:

- Wayfinding signs directing traffic to the drive-through lane should be provided within the shopping center access system and on the site directing traffic to the entrance of the drive-through lane.
- "Do Not Enter" signs facing north should be posted at the exit of the drive-through lane.

Parking Evaluation

Existing Parking Demand

In order to determine the existing parking demand at Butterfield Plaza, KLOA, Inc. conducted hourly parking occupancy surveys on Saturday, September 10 and Tuesday, September 13, 2022 from 8:00 A.M. to 8:00 P.M. An exhibit is included in the Appendix which shows the parking fields that were surveyed within Butterfield Plaza, numbered from 1 to 4. The results show that on Tuesday, the plaza had a peak parking demand of 188 vehicles occurring at 12:30 P.M. which represents 44 percent occupancy of the parking spaces within the plaza while on Saturday, the plaza had a peak parking demand of 181 vehicles occurring at 1:00 P.M. which represents an occupancy of 43 percent of the parking spaces within the plaza. Results of the surveys are summarized in **Tables 10** and **11**.

Table 10
 PARKING OCCUPANCY RESULTS – TUESDAY, SEPTEMBER 13, 2022

Time	1	2	3	4	Total
8:00 AM	4	15	24	5	48
8:30 AM	7	17	16	5	45
9:00 AM	19	17	26	5	67
9:30 AM	18	20	40	6	84
10:00 AM	29	23	46	5	103
10:30 AM	38	28	56	9	131
11:00 AM	39	25	68	7	139
11:30 AM	42	30	66	8	146
12:00 PM	48	32	85	6	171
12:30 PM	52	34	95	7	188
1:00 PM	46	23	78	7	154
1:30 PM	46	28	82	11	167
2:00 PM	45	13	67	7	132
2:30 PM	43	12	69	7	131
3:00 PM	41	12	70	7	140
3:30 PM	40	16	65	6	127
4:00 PM	43	12	80	6	141
4:30PM	46	15	73	8	142
5:00 PM	40	12	76	4	132
5:30 PM	38	11	62	4	115
6:00 PM	37	13	61	5	116
6:30 PM	32	14	55	4	105
7:00 PM	28	8	73	2	111
7:30 PM	14	7	54	2	77
8:00 PM	11	6	54	2	73
Inventory	157	38	166	63	424

Table 11
 PARKING OCCUPANCY RESULTS – SATURDAY, SEPTEMBER 10, 2022

Time	1	2	3	4	Total
8:00 AM	9	16	52	0	77
8:30 AM	16	24	67	0	107
9:00 AM	17	28	74	3	122
9:30 AM	23	25	80	1	129
10:00 AM	26	25	86	1	138
10:30 AM	28	25	83	4	140
11:00 AM	34	26	90	4	154
11:30 AM	34	28	101	6	169
12:00 PM	37	27	94	8	166
12:30 PM	42	26	104	6	178
1:00 PM	41	26	109	5	181
1:30 PM	40	20	101	5	166
2:00 PM	31	18	88	5	142
2:30 PM	29	19	95	5	148
3:00 PM	29	20	96	7	152
3:30 PM	28	17	90	6	141
4:00 PM	26	18	104	4	152
4:30PM	29	15	88	3	135
5:00 PM	24	16	82	2	124
5:30 PM	25	15	77	2	119
6:00 PM	29	14	79	2	124
6:30 PM	22	10	70	4	106
7:00 PM	13	6	65	4	88
7:30 PM	9	4	54	3	70
8:00 PM	7	5	32	3	47
Inventory	157	38	166	63	424

Total Projected Parking Demand

The parking estimated to be generated by the proposed restaurant was calculated based on the Village of Downers Grove Municipal Code requirements and parking rates provided by Institute of Transportation Engineers (ITE) *Parking Generation Manual*, 5th Edition as follows:

- The Village of Downers Grove Municipal Code requires four parking spaces per 1,000 square feet, which translates into approximately 10 parking spaces for the Wendy's restaurant which can be accommodated by the parking supply.
- The parking estimated to be generated by the proposed Wendy's restaurant was calculated based on ITE Land-Use Code 934 ("Fast-Food Restaurant with Drive-Through Window"), resulting in a peak demand of 21 spaces on a weekday and 22 spaces on a Saturday.

Butterfield Plaza currently has approximately 3,300 square feet of retail vacancy. The parking estimated to be generated by the retail vacancy was calculated based on the Village of Downers Grove Municipal Code requirements and parking rates provided by ITE parking generation manual as follows:

- The Village of Downers Grove Municipal Code requires four parking spaces per 1,000 square feet of retail land use in the shopping center, resulting in a requirement of approximately 13 parking spaces for the retail vacancy.
- The parking estimated to be generated by this vacancy was based on the Land-Use Code 820 ("Shopping Center") rates. This indicated that the vacant space would have an estimated peak parking demand of six parking spaces during the weekday peak hours and 10 parking spaces during the Saturday evening peak hour. The hourly distribution of the parking spaces was calculated based on the time-of-day distribution from the ITE *Parking Generation Manual*. Copies of the ITE parking generation summary sheets are included in the appendix.

The hourly distribution of the parking demand for the proposed restaurant and the vacant retail space was calculated based on the time-of-day distribution published by ITE *Parking Generation Manual* and is shown in **Table 12**. Copies of the ITE summary sheets are included in the Appendix.

The hourly distribution of parking demand rates from the ITE *Parking Generation Manual* were added to the existing parking demand to calculate the total projected parking demand. As can be seen from **Table 13**, the peak parking demand on a weekday will be 214 parking spaces occurring at 12:30 P.M. while the peak parking demand on Saturday will be 213 spaces occurring at 1:00 P.M. It should be noted that the proposed Wendy's restaurant will result in the net loss of 25 parking spaces, taking into account the 25 spaces being proposed on site. As such, the total parking supply for the shopping center will be reduced to approximately 399 parking spaces. Therefore, based on the projected parking demand, the peak occupancy rate will be approximately 54 percent on weekdays and Saturday with a surplus of 185 and 186 parking spaces, respectively. Given the above, the shopping center has sufficient parking supply to accommodate the parking needs of the proposed restaurant and the retail vacancy.

Table 12

TIME OF DAY DISTRIBUTION FOR PARKING DEMAND

Time	Wendy's Restaurant Parking Demand (Weekday)	Wendy's Restaurant Parking Demand (Saturday)	Retail Vacancy Parking Demand (Weekday)	Retail Vacancy Parking Demand (Saturday)	Total Demand (Weekday)	Total Demand (Saturday)
8:00 AM	3	4	2	4	5	8
8:30 AM	3	4	2	4	5	8
9:00 AM	6	7	4	6	10	13
9:30 AM	6	7	4	6	10	13
10:00 AM	6	7	4	9	10	16
10:30 AM	6	7	4	9	10	16
11:00 AM	13	11	5	9	18	20
11:30 AM	13	11	5	9	18	20
12:00 PM	21	20	5	10	26	30
12:30 PM	21	20	5	10	26	30
1:00 PM	18	22	6	10	24	32
1:30 PM	18	22	6	10	24	32
2:00 PM	12	17	6	10	18	27
2:30 PM	12	17	6	10	18	27
3:00 PM	9	11	5	10	14	21
3:30 PM	9	11	5	10	14	21
4:00 PM	9	7	5	9	14	16
4:30PM	9	7	5	9	14	16
5:00 PM	13	11	5	8	18	19
5:30 PM	13	11	5	8	18	19
6:00 PM	13	15	5	7	18	33
6:30 PM	13	15	5	7	18	33
7:00 PM	4	14	6	6	10	24
7:30 PM	4	14	6	6	10	24
8:00 PM	4	14	5	4	9	23

Table 13
TOTAL PROJECTED PARKING DEMAND

Time	ITE Parking Demand Rates (Weekday)	ITE Parking Demand Rates (Saturday)	Existing Parking Demand (Weekday)	Existing Parking Demand (Saturday)	Total Projected Demand (Weekday)	Total Projected Demand (Saturday)
8:00 AM	5	8	48	77	53	85
8:30 AM	5	8	45	107	50	115
9:00 AM	10	13	67	122	77	135
9:30 AM	10	13	84	129	94	142
10:00 AM	10	16	103	138	113	154
10:30 AM	10	16	131	140	141	156
11:00 AM	18	20	139	154	157	174
11:30 AM	18	20	146	169	164	189
12:00 PM	26	30	171	166	197	196
12:30 PM	26	30	188	178	214	208
1:00 PM	24	32	154	181	178	213
1:30 PM	24	32	167	166	191	198
2:00 PM	18	27	132	142	150	169
2:30 PM	18	27	131	148	149	175
3:00 PM	14	21	140	152	154	173
3:30 PM	14	21	127	141	141	162
4:00 PM	14	16	141	152	155	168
4:30PM	14	16	142	135	156	151
5:00 PM	18	19	132	124	150	143
5:30 PM	18	19	115	119	133	138
6:00 PM	18	33	116	124	134	157
6:30 PM	18	33	105	106	123	139
7:00 PM	10	24	111	88	121	112
7:30 PM	10	24	77	70	87	94
8:00 PM	9	23	73	47	82	70

7. Conclusion

Based on the preceding analyses and recommendations, the following conclusions have been made:

- The traffic that will be generated by the proposed restaurant will be reduced due to pass-by trips and internal capture.
- The existing signalized access drive serving the Butterfield Plaza shopping center will continue to be adequate in accommodating the traffic generated by the proposed Wendy's restaurant and existing vacancy within the plaza and no roadway improvements or signal timing adjustments will be required.
- The existing right-in/right-out access drive on Butterfield Road is adequate to accommodate the existing traffic and the traffic that will be generated by the proposed development and the vacant retail space.
- The parking supply within the Butterfield Plaza shopping center on weekdays and Saturdays will be adequate in accommodating the future parking demand of the plaza which includes the existing parking demand, the parking generated by the vacant retail space within the center, and the parking estimated to be generated by the proposed Wendy's restaurant.

Appendix

Traffic Count Summary Sheets
Site Plan

ITE Trip Generation Summary Sheets
ITE Parking Generation Summary Sheets
Table A

CMAP 2050 Projections Letter
Level of Service Criteria
Capacity Analysis Summary Sheets
Parking Lot Zoning Figure

Traffic Count Summary Sheets



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 sainkeshavarzi@kloainc.com

Count Name: Butterfield Rd with Downers Dr
TMC
Site Code:
Start Date: 09/01/2022
Page No: 1

Turning Movement Data

Start Time	Butterfield Rd Eastbound					Butterfield Rd Westbound					Downers Dr Northbound					Downers Dr Southbound					
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	App. Total	
7:00 AM	1	14	317	15	347	0	76	213	20	309	0	3	2	1	6	0	16	6	9	31	693
7:15 AM	0	9	369	11	389	0	73	270	33	376	0	5	3	2	10	0	12	5	9	26	801
7:30 AM	0	16	383	42	441	0	105	310	34	449	0	2	1	1	4	0	15	11	11	37	931
7:45 AM	0	15	389	37	441	0	93	302	37	432	0	4	3	7	14	0	25	10	12	47	934
Hourly Total	1	54	1458	105	1618	0	347	1095	124	1566	0	14	9	11	34	0	68	32	41	141	3359
8:00 AM	0	20	411	37	468	0	81	278	41	400	0	5	2	2	9	0	10	7	9	26	903
8:15 AM	0	13	398	39	450	0	74	289	43	406	0	2	6	4	12	0	15	8	12	35	903
8:30 AM	0	17	374	44	435	0	71	287	37	395	0	8	2	6	16	0	20	9	12	41	887
8:45 AM	0	23	369	29	421	0	58	285	46	389	0	7	8	4	19	0	18	11	9	38	867
Hourly Total	0	73	1552	149	1774	0	284	1139	167	1590	0	22	18	16	56	0	63	35	42	140	3560
*** BREAK ***																					
4:00 PM	1	21	293	18	333	0	214	438	34	686	0	14	3	21	38	0	53	29	28	110	1167
4:15 PM	0	17	363	25	405	0	163	463	46	672	0	16	9	16	41	0	70	19	20	109	1227
4:30 PM	1	22	344	30	397	0	192	467	44	703	0	21	3	19	43	0	55	22	26	103	1246
4:45 PM	1	14	320	22	357	0	146	497	59	702	0	29	5	22	56	0	71	23	20	114	1229
Hourly Total	3	74	1320	95	1492	0	715	1865	183	2763	0	80	20	78	178	0	249	93	94	436	4869
5:00 PM	0	17	360	28	405	0	203	434	41	678	0	39	8	20	67	0	58	28	26	112	1262
5:15 PM	1	19	360	27	407	0	221	477	54	752	0	26	1	21	48	0	53	17	25	95	1302
5:30 PM	0	18	337	22	377	0	156	420	40	616	0	21	4	12	37	0	54	20	22	96	1126
5:45 PM	1	17	329	24	371	0	118	426	48	592	1	11	4	9	25	0	48	15	24	87	1075
Hourly Total	2	71	1386	101	1560	0	698	1757	183	2638	1	97	17	62	177	0	213	80	97	390	4765
Grand Total	6	272	5716	450	6444	0	2044	5856	657	8557	1	213	64	167	445	0	593	240	274	1107	16553
Approach %	0.1	4.2	88.7	7.0	-	0.0	23.9	68.4	7.7	-	0.2	47.9	14.4	37.5	-	0.0	53.6	21.7	24.8	-	-
Total %	0.0	1.6	34.5	2.7	38.9	0.0	12.3	35.4	4.0	51.7	0.0	1.3	0.4	1.0	2.7	0.0	3.6	1.4	1.7	-	6.7
Lights	6	267	5595	448	6316	0	2000	5756	641	8397	1	211	61	166	439	0	580	236	268	-	1084
% Lights	100.0	98.2	97.9	99.6	98.0	-	97.8	98.3	97.6	98.1	100.0	99.1	95.3	99.4	98.7	-	97.8	98.3	97.8	-	97.9
Buses	0	0	11	0	11	0	19	7	1	27	0	2	0	0	2	0	1	0	0	-	1
% Buses	0.0	0.0	0.2	0.0	0.2	-	0.9	0.1	0.2	0.3	0.0	0.9	0.0	0.0	0.4	-	0.2	0.0	0.0	-	0.1
Single-Unit Trucks	0	2	77	1	80	0	16	65	9	90	0	0	2	1	3	0	9	3	4	-	16
% Single-Unit Trucks	0.0	0.7	1.3	0.2	1.2	-	0.8	1.1	1.4	1.1	0.0	0.0	3.1	0.6	0.7	-	1.5	1.3	1.5	-	1.4
Articulated Trucks	0	3	33	1	37	0	9	28	5	42	0	0	0	0	0	0	3	1	2	-	6
% Articulated Trucks	0.0	1.1	0.6	0.2	0.6	-	0.4	0.5	0.8	0.5	0.0	0.0	0.0	0.0	0.0	-	0.5	0.4	0.7	-	0.5
Bicycles on Road	0	0	0	0	0	0	0	0	1	1	0	0	1	0	1	0	0	0	0	-	2



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 sainkeshavarzi@kloainc.com

Count Name: Butterfield Rd with Restricted
Access Dr TMC
Site Code:
Start Date: 09/01/2022
Page No: 1

Turning Movement Data

Start Time	Butterfield Rd Eastbound				Butterfield Rd Westbound				Access Dr Southbound				Int. Total			
	U-Turn	Left	Thru	Peds	App. Total	U-Turn	Right	Thru	Peds	App. Total	U-Turn	Left		Right	Peds	App. Total
7:00 AM	0	0	335	0	335	0	304	3	0	307	0	0	2	0	2	644
7:15 AM	0	0	366	0	366	0	378	4	0	382	0	0	0	0	0	748
7:30 AM	0	0	384	0	384	0	447	8	0	455	0	0	1	0	1	840
7:45 AM	0	0	446	0	446	0	449	5	0	454	0	0	1	0	1	901
Hourly Total	0	0	1531	0	1531	0	1578	20	0	1598	0	0	4	0	4	3133
8:00 AM	0	0	454	0	454	0	395	7	0	402	0	0	2	0	2	858
8:15 AM	0	0	436	0	436	0	402	6	0	408	0	0	0	0	0	844
8:30 AM	0	0	403	0	403	0	408	7	0	415	0	0	4	0	4	822
8:45 AM	0	0	389	0	389	0	398	14	0	412	0	0	2	0	2	803
Hourly Total	0	0	1682	0	1682	0	1603	34	0	1637	0	0	8	0	8	3327
*** BREAK ***																
4:00 PM	0	0	429	0	429	0	689	34	0	723	0	0	12	0	12	1164
4:15 PM	0	0	423	0	423	0	690	17	0	707	0	0	6	1	6	1136
4:30 PM	0	0	432	0	432	0	666	17	0	683	0	0	8	0	8	1123
4:45 PM	0	0	468	0	468	0	670	28	0	698	0	0	7	0	7	1173
Hourly Total	0	0	1752	0	1752	0	2715	96	0	2811	0	0	33	1	33	4596
5:00 PM	0	0	401	0	401	0	712	19	0	731	0	0	3	0	3	1135
5:15 PM	0	0	463	0	463	0	723	24	0	747	0	0	13	0	13	1223
5:30 PM	0	0	426	0	426	0	599	23	0	622	0	0	6	0	6	1054
5:45 PM	0	0	355	0	355	0	628	19	0	647	0	0	7	0	7	1009
Hourly Total	0	0	1645	0	1645	0	2662	85	0	2747	0	0	29	0	29	4421
Grand Total	0	0	6610	0	6610	0	8558	235	0	8793	0	0	74	1	74	15477
Approach %	0.0	0.0	100.0	-	-	0.0	97.3	2.7	-	-	0.0	0.0	100.0	-	-	-
Total %	0.0	0.0	42.7	-	42.7	0.0	55.3	1.5	-	56.8	0.0	0.0	0.5	-	0.5	-
Lights	0	0	6488	-	6488	0	8406	232	-	8638	0	0	74	-	74	15200
% Lights	-	-	98.2	-	98.2	-	98.2	98.7	-	98.2	-	-	100.0	-	100.0	98.2
Buses	0	0	11	-	11	0	28	0	-	28	0	0	0	-	0	39
% Buses	-	-	0.2	-	0.2	-	0.3	0.0	-	0.3	-	-	0.0	-	0.0	0.3
Single-Unit Trucks	0	0	80	-	80	0	82	3	-	85	0	0	0	-	0	165
% Single-Unit Trucks	-	-	1.2	-	1.2	-	1.0	1.3	-	1.0	-	-	0.0	-	0.0	1.1
Articulated Trucks	0	0	31	-	31	0	42	0	-	42	0	0	0	-	0	73
% Articulated Trucks	-	-	0.5	-	0.5	-	0.5	0.0	-	0.5	-	-	0.0	-	0.0	0.5
Bicycles on Road	0	0	0	-	0	0	0	0	-	0	0	0	0	-	0	0
% Bicycles on Road	-	-	0.0	-	0.0	-	0.0	0.0	-	0.0	-	-	0.0	-	0.0	0.0
Pedestrians	-	-	0	-	0	-	-	-	0	-	-	-	-	1	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 sainkeshavarzi@kloainc.com

Count Name: Downers Dr with Access Dr TMC
Site Code:
Start Date: 09/01/2022
Page No: 1

Turning Movement Data

Start Time	Access Dr Eastbound				Access Dr Westbound				Downers Dr Northbound				Downers Dr Southbound				Int. Total		
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right		Peds	App. Total
7:00 AM	0	0	0	19	0	19	0	2	0	0	0	2	0	0	18	18	0	0	36
7:15 AM	0	6	1	21	0	28	0	3	0	0	0	3	0	0	22	18	4	0	44
7:30 AM	1	5	2	21	0	29	0	6	1	0	0	7	0	0	31	18	6	0	55
7:45 AM	0	8	3	34	0	45	0	2	1	1	0	4	1	31	20	7	0	59	
Hourly Total	1	19	6	95	0	121	0	13	2	1	0	16	1	102	74	17	0	194	
8:00 AM	0	9	0	15	0	24	0	4	2	6	0	12	0	26	28	5	0	59	
8:15 AM	0	5	4	29	0	38	0	2	0	4	0	6	0	28	24	7	0	59	
8:30 AM	0	5	1	21	0	27	0	10	0	2	0	12	0	26	26	4	0	56	
8:45 AM	0	6	2	27	0	35	0	2	0	2	0	4	0	42	22	12	0	76	
Hourly Total	0	25	7	92	0	124	0	18	2	14	0	34	0	122	100	28	0	250	
*** BREAK ***	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4:00 PM	0	1	8	27	0	36	0	38	7	12	0	57	0	25	11	21	0	57	
4:15 PM	0	2	11	30	0	43	0	42	13	13	0	68	0	32	14	28	0	74	
4:30 PM	0	2	6	38	0	46	0	31	12	8	0	51	0	38	12	16	0	66	
4:45 PM	0	5	10	33	0	48	0	33	6	8	0	47	0	45	9	21	0	75	
Hourly Total	0	10	35	128	0	173	0	144	38	41	0	223	0	140	46	86	0	272	
5:00 PM	0	3	11	38	0	52	0	35	11	10	0	56	1	33	10	27	0	71	
5:15 PM	0	5	9	33	0	47	0	33	9	6	0	48	0	42	12	17	0	71	
5:30 PM	0	5	12	32	1	49	0	32	11	7	0	50	1	38	11	11	0	61	
5:45 PM	0	2	8	35	0	45	0	32	7	7	0	46	0	34	10	24	0	68	
Hourly Total	0	15	40	138	1	193	0	132	38	30	0	200	2	147	43	79	0	271	
Grand Total	1	69	88	453	1	611	0	307	80	86	0	473	3	511	263	210	0	987	
Approach %	0.2	11.3	14.4	74.1	-	-	0.0	64.9	16.9	18.2	-	-	0.3	51.8	26.6	21.3	-	-	
Total %	0.0	2.8	3.5	18.2	-	24.5	0.0	12.3	3.2	3.4	-	19.0	0.1	20.5	10.5	8.4	-	39.6	
Lights	1	68	88	447	-	604	0	304	79	85	-	488	3	504	247	210	-	964	
% Lights	100.0	98.6	100.0	98.7	-	98.9	-	99.0	98.8	98.8	-	98.9	100.0	98.6	93.9	100.0	-	97.7	
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	
% Buses	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.4	0.0	-	0.1	
Single-Unit Trucks	0	1	0	6	-	7	0	3	1	1	-	5	0	6	9	0	-	15	
% Single-Unit Trucks	0.0	1.4	0.0	1.3	-	1.1	-	1.0	1.3	1.2	-	1.1	0.0	1.2	3.4	0.0	-	1.5	
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	4	0	0	5	
% Articulated Trucks	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.2	1.5	0.0	-	0.5	
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 sainkeshavarzi@kloainc.com

Count Name: Downers Dr with Access Dr TMC
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Start Date: 09/01/2022
Page No: 4

Turning Movement Peak Hour Data (4:30 PM)

Start Time	Access Dr Eastbound					Access Dr Westbound					Downers Dr Northbound					Downers Dr Southbound									
	U-Turn	Left	Thru	Right	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total	
4:30 PM	0	2	6	38	0	46	0	31	12	8	0	51	0	38	12	16	0	66	0	7	42	5	0	54	217
4:45 PM	0	5	10	33	0	48	0	33	6	8	0	47	0	45	9	21	0	75	0	4	36	5	0	45	215
5:00 PM	0	3	11	38	0	52	0	35	11	10	0	56	1	33	10	27	0	71	0	3	40	4	3	47	226
5:15 PM	0	5	9	33	0	47	0	33	9	6	0	48	0	42	12	17	0	71	0	7	29	4	2	40	206
Total	0	15	36	142	0	193	0	132	38	32	0	202	1	158	43	81	0	283	0	21	147	18	5	186	864
Approach %	0.0	7.8	18.7	73.6	-	-	0.0	65.3	18.8	15.8	-	-	0.4	55.8	15.2	28.6	-	-	0.0	11.3	79.0	9.7	-	-	-
Total %	0.0	1.7	4.2	16.4	-	22.3	0.0	15.3	4.4	3.7	-	23.4	0.1	18.3	5.0	9.4	-	32.8	0.0	2.4	17.0	2.1	-	21.5	-
PHF	0.000	0.750	0.818	0.934	-	0.928	0.000	0.943	0.792	0.800	-	0.902	0.250	0.878	0.896	0.750	-	0.943	0.000	0.750	0.875	0.900	-	0.861	0.956
% Lights	0	15	36	141	-	192	0	132	38	31	-	201	1	158	41	81	-	281	0	21	143	18	-	182	856
% Lights	-	100.0	100.0	99.3	-	99.5	-	100.0	100.0	96.9	-	99.5	100.0	100.0	95.3	100.0	-	99.3	-	100.0	97.3	100.0	-	97.8	99.1
Buses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	1	-	1	0	0	0	1	-	1	0	0	0	0	-	0	0	0	2	0	-	2	4
% Single-Unit Trucks	-	0.0	0.0	0.7	-	0.5	-	0.0	0.0	3.1	-	0.5	0.0	0.0	0.0	0.0	-	0.0	-	0.0	1.4	0.0	-	1.1	0.5
Articulated Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	2	0	0	2	3
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	2.3	0.0	-	0.4	-	0.0	1.4	0.0	-	1.1	0.3
Bicycles on Road	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0	0.0	2.3	0.0	-	0.4	-	0.0	0.0	0.0	-	0.0	0.1
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	5	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 sainkeshavarzi@kloainc.com

Count Name: Downers Dr with Shopping Center Access
Site Code:
Start Date: 09/10/2022
Page No: 1

Turning Movement Data

Start Time	West Shopping Center Access Eastbound						East Shopping Center Access Westbound						Downers Dr Northbound						Downers Dr Southbound						
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
11:30 AM	0	5	15	52	0	72	0	40	6	11	0	57	0	64	5	16	0	85	0	6	3	8	0	17	231
11:45 AM	0	4	14	46	0	64	0	30	7	10	0	47	0	48	6	43	0	97	0	6	5	3	3	14	222
Hourly Total	0	9	29	98	0	136	0	70	13	21	0	104	0	112	11	59	0	182	0	12	8	11	3	31	453
12:00 PM	0	4	15	42	0	61	0	35	13	12	0	60	0	62	7	27	0	96	0	5	6	3	1	14	231
12:15 PM	0	8	8	55	0	71	0	35	16	8	0	59	0	65	6	31	0	102	0	11	5	4	6	20	252
12:30 PM	0	3	12	48	0	63	1	35	13	11	0	60	0	68	12	22	0	102	0	2	8	5	2	15	240
12:45 PM	0	1	21	63	0	85	0	47	15	9	0	71	0	74	7	20	0	101	0	11	6	1	7	18	275
Hourly Total	0	16	56	208	0	280	1	152	57	40	0	250	0	269	32	100	0	401	0	29	25	13	16	67	998
1:00 PM	0	6	17	76	0	99	0	40	17	12	0	69	0	61	8	25	0	94	0	10	16	0	3	26	288
1:15 PM	0	5	19	50	0	74	0	51	18	9	0	78	0	61	9	29	0	99	0	5	9	2	3	16	267
1:30 PM	0	3	14	55	0	72	0	37	20	9	0	66	0	71	3	25	0	99	0	5	5	4	3	14	251
1:45 PM	0	2	19	64	0	85	0	27	16	15	0	58	0	54	7	34	0	95	0	5	12	2	4	19	257
Hourly Total	0	16	69	245	0	330	0	155	71	45	0	271	0	247	27	113	0	387	0	25	42	8	13	75	1063
Grand Total	0	41	154	551	0	746	1	377	141	106	0	625	0	628	70	272	0	970	0	66	75	32	32	173	2514
Approach %	0.0	5.5	20.6	73.9	-	-	0.2	60.3	22.6	17.0	-	-	0.0	64.7	7.2	28.0	-	-	0.0	38.2	43.4	18.5	-	-	-
Total %	0.0	1.6	6.1	21.9	-	29.7	0.0	15.0	5.6	4.2	-	24.9	0.0	25.0	2.8	10.8	-	38.6	0.0	2.6	3.0	1.3	-	6.9	-
Lights	0	41	154	547	-	742	1	376	140	105	-	622	0	622	68	270	-	960	0	66	75	32	-	173	2497
% Lights	-	100.0	100.0	99.3	-	99.5	100.0	99.7	99.3	99.1	-	99.5	-	99.0	97.1	99.3	-	99.0	-	100.0	100.0	100.0	-	100.0	99.3
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	1	0	0	-	1	0	0	0	0	-	0	1
% Buses	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.2	0.0	0.0	-	0.1	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	4	-	4	0	0	1	1	-	2	0	5	1	1	-	7	0	0	0	0	-	0	13
% Single-Unit Trucks	-	0.0	0.0	0.7	-	0.5	0.0	0.0	0.7	0.9	-	0.3	-	0.8	1.4	0.4	-	0.7	-	0.0	0.0	0.0	-	0.0	0.5
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	1	1	-	2	0	0	0	0	-	0	3
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	0.0	0.3	0.0	0.0	-	0.2	-	0.0	1.4	0.4	-	0.2	-	0.0	0.0	0.0	-	0.0	0.1
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	0.0	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	32	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



Kenig Lindgren O'Hara Aboona, Inc.
9575 W. Higgins Rd., Suite 400

Rosemont, Illinois, United States 60018
(847)518-9990 sainkeshavarzi@kloainc.com

Count Name: Downers Dr with Shopping Center Access
Site Code:
Start Date: 09/10/2022
Page No: 2

Turning Movement Peak Hour Data (1:00 PM)

Start Time	West Shopping Center Access Eastbound						East Shopping Center Access Westbound						Downers Dr Northbound						Downers Dr Southbound						
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	Int. Total
1:00 PM	0	6	17	76	0	99	0	40	17	12	0	69	0	61	8	25	0	94	0	10	16	0	3	26	288
1:15 PM	0	5	19	50	0	74	0	51	18	9	0	78	0	61	9	29	0	99	0	5	9	2	3	16	267
1:30 PM	0	3	14	55	0	72	0	37	20	9	0	66	0	71	3	25	0	99	0	5	5	4	3	14	251
1:45 PM	0	2	19	64	0	85	0	27	16	15	0	58	0	54	7	34	0	95	0	5	12	2	4	19	257
Total	0	16	69	245	0	330	0	155	71	45	0	271	0	247	27	113	0	387	0	25	42	8	13	75	1063
Approach %	0.0	4.8	20.9	74.2	-	-	0.0	57.2	26.2	16.6	-	-	0.0	63.8	7.0	29.2	-	-	0.0	33.3	56.0	10.7	-	-	-
Total %	0.0	1.5	6.5	23.0	-	31.0	0.0	14.6	6.7	4.2	-	25.5	0.0	23.2	2.5	10.6	-	36.4	0.0	2.4	4.0	0.8	-	7.1	-
PHF	0.000	0.667	0.908	0.806	-	0.833	0.000	0.760	0.888	0.750	-	0.869	0.000	0.870	0.750	0.831	-	0.977	0.000	0.625	0.656	0.500	-	0.721	0.923
Lights	0	16	69	244	-	329	0	154	71	45	-	270	0	247	26	113	-	386	0	25	42	8	-	75	1060
% Lights	-	100.0	100.0	99.6	-	99.7	-	99.4	100.0	100.0	-	99.6	-	100.0	96.3	100.0	-	99.7	-	100.0	100.0	100.0	-	100.0	99.7
Buses	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Buses	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Single-Unit Trucks	0	0	0	1	-	1	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	1
% Single-Unit Trucks	-	0.0	0.0	0.4	-	0.3	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.1
Articulated Trucks	0	0	0	0	-	0	0	1	0	0	-	1	0	0	1	0	-	1	0	0	0	0	-	0	2
% Articulated Trucks	-	0.0	0.0	0.0	-	0.0	-	0.6	0.0	0.0	-	0.4	-	0.0	3.7	0.0	-	0.3	-	0.0	0.0	0.0	-	0.0	0.2
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0
% Bicycles on Road	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	-	0.0	0.0	0.0	-	0.0	0.0
Pedestrians	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	13	-	-
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	100.0	-	-



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9575 W. Higgins Rd., Suite 400

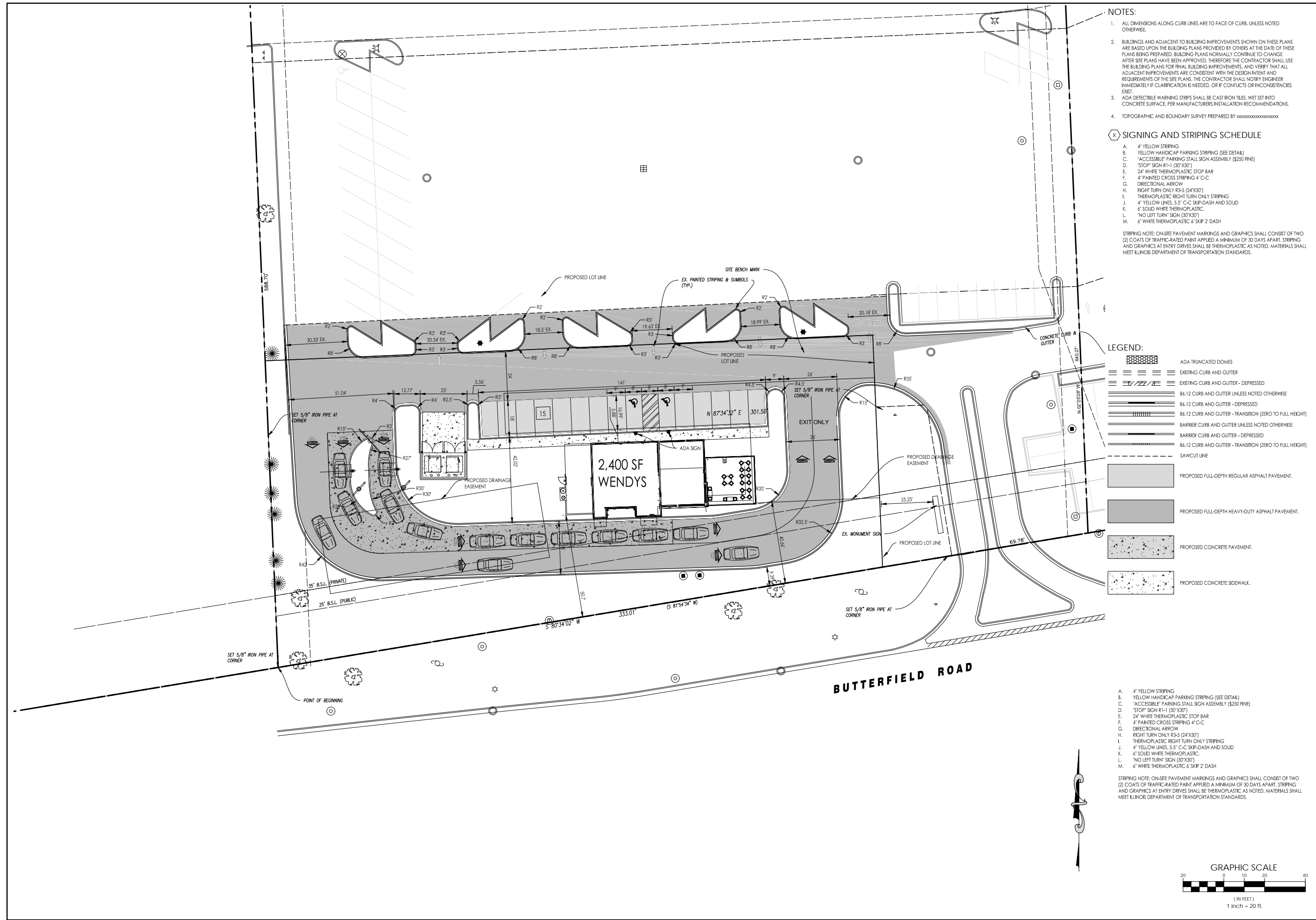
Rosemont, Illinois, United States 60018
(847)518-9990 sainkeshavarzi@kloainc.com

Count Name: Downers Dr with Brook Dr TMC
Site Code:
Start Date: 09/01/2022
Page No: 1

Turning Movement Data

Start Time	Brook Dr Eastbound					Brook Dr Westbound					Downers Dr Northbound					Downers Dr Southbound					App. Total	Int. Total																										
	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left	Thru	Right	Peds	App. Total	U-Turn	Left			Thru	Right	Peds	App. Total																						
7:00 AM	0	0	4	6	0	10	0	5	0	0	0	5	0	8	0	0	11	0	19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0					
7:15 AM	0	0	3	3	0	6	0	2	0	0	0	2	0	8	1	10	0	19	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0						
7:30 AM	0	0	4	9	0	13	0	3	1	0	2	4	0	13	0	11	0	24	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
7:45 AM	0	0	9	6	0	15	0	8	0	0	0	8	0	25	0	5	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Hourly Total	0	0	20	24	0	44	0	18	1	0	2	19	0	54	1	37	0	92	0	0	0	1	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0						
8:00 AM	0	2	13	7	0	22	0	0	0	0	0	0	0	30	0	11	0	41	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
8:15 AM	0	0	6	11	0	17	0	1	1	0	0	2	0	16	0	15	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
8:30 AM	0	0	11	12	0	23	0	2	0	0	0	2	0	22	2	14	0	38	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
8:45 AM	0	0	4	7	0	11	0	9	0	0	0	9	0	14	1	13	0	28	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0						
Hourly Total	0	2	34	37	0	73	0	12	1	0	0	13	0	82	3	53	0	138	1	0	0	1	0	2	1	0	0	1	0	2	1	0	0	0	0	2	2	0	0	0	0	2						
*** BREAK ***																																																
4:00 PM	0	0	2	31	0	33	0	29	9	0	0	38	0	24	0	8	0	32	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
4:15 PM	0	0	1	22	0	23	0	16	3	0	0	19	0	24	1	5	0	30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
4:30 PM	0	0	7	35	0	42	0	16	9	0	0	25	0	20	0	1	0	21	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
4:45 PM	0	0	3	22	0	25	0	20	10	0	0	30	0	19	0	1	0	20	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Hourly Total	0	0	13	110	0	123	0	81	31	0	0	112	0	87	1	15	0	103	0	0	0	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
5:00 PM	0	0	2	31	0	33	0	16	4	0	0	20	0	23	1	2	0	26	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
5:15 PM	0	0	5	25	0	30	0	10	5	0	0	15	0	22	0	1	0	23	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
5:30 PM	0	1	3	22	0	26	0	17	4	0	0	21	0	16	0	4	0	20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
5:45 PM	0	1	3	14	1	18	0	9	4	0	0	13	0	20	1	3	0	24	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0						
Hourly Total	0	2	13	92	1	107	0	52	17	0	0	69	0	81	2	10	0	93	0	0	0	2	2	2	0	0	0	2	2	4	0	0	0	0	0	0	0	0	0	0	0	0						
Grand Total	0	4	80	263	1	347	0	163	50	0	2	213	0	304	7	115	0	426	1	0	0	6	3	4	10	0	0	6	3	4	10	0	0	0	0	0	10	0	0	60.0	30.0	-						
Approach %	0.0	1.2	23.1	75.8	-	-	0.0	76.5	23.5	0.0	-	-	0.0	71.4	1.6	27.0	-	-	0.1	0.0	0.6	0.3	-	-	10.0	0.0	0.0	0.6	0.3	-	1.0	-	-	-	-	-	0.1	0.0	0.6	0.3	-	-						
Total %	0.0	0.4	8.0	26.4	-	34.8	0.0	16.4	5.0	0.0	-	21.4	0.0	30.5	0.7	11.5	-	42.8	0.1	0.0	0.6	0.3	-	-	10.0	0.0	0.0	0.6	0.3	-	1.0	-	-	-	-	-	0.1	0.0	0.6	0.3	-	-						
Lights	0	4	78	258	-	340	0	153	47	0	-	200	0	297	6	103	-	406	1	0	5	3	-	-	100.0	-	-	83.3	100.0	-	90.0	-	-	-	-	-	95.9	-	-	-	-	-	100.0	-	-	83.3	100.0	-
% Lights	-	100.0	97.5	98.1	-	98.0	-	93.9	94.0	-	-	93.9	-	97.7	85.7	89.6	-	95.3	100.0	-	-	83.3	100.0	-	90.0	-	-	-	-	-	95.9	-	-	-	-	-	100.0	-	-	83.3	100.0	-						
Buses	0	0	0	1	-	1	0	0	0	0	-	0	0	1	0	1	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Buses	-	0.0	0.0	0.4	-	0.3	-	0.0	0.0	-	-	0.0	-	0.3	0.0	0.9	-	0.5	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	-	-	-	0.0	-	-	0.0	0.0	-						
Single-Unit Trucks	0	0	1	3	-	4	0	6	3	0	-	9	0	3	1	5	-	9	0	0	0	1	0	-	0	0	0	1	0	-	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0
% Single-Unit Trucks	-	0.0	1.3	1.1	-	1.2	-	3.7	6.0	-	-	4.2	-	1.0	14.3	4.3	-	2.1	0.0	-	-	16.7	0.0	-	0.0	-	-	16.7	0.0	-	10.0	-	-	-	-	-	0.0	-	-	16.7	0.0	-						
Articulated Trucks	0	0	1	1	-	2	0	4	0	0	-	4	0	1	0	6	-	7	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0						
% Articulated Trucks	-	0.0	1.3	0.4	-	0.6	-	2.5	0.0	-	-	1.9	-	0.3	0.0	5.2	-	1.6	0.0	-	-	0.0	0.0	-	0.0	-	-	0.0	0.0	-	0.0	-	-	-	-	-	0.0	-	-	0.0	0.0	-						
Bicycles on Road	0	0	0	0	-	0	0	0	0	0	-	0	0	2	0	0	-	2	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0	0	0	0	0	-	0						

Site Plan



- NOTES:**
1. ALL DIMENSIONS ALONG CURB LINES ARE TO FACE OF CURB, UNLESS NOTED OTHERWISE.
 2. BUILDINGS AND ADJACENT TO BUILDING IMPROVEMENTS SHOWN ON THESE PLANS ARE BASED UPON THE BUILDING PLANS PROVIDED BY OTHERS AT THE DATE OF THESE PLANS BEING PREPARED. BUILDING PLANS NORMALLY CONTINUE TO CHANGE AFTER SITE PLANS HAVE BEEN APPROVED. THEREFORE THE CONTRACTOR SHALL USE THE BUILDING PLANS FOR FINAL BUILDING IMPROVEMENTS, AND VERIFY THAT ALL ADJACENT IMPROVEMENTS ARE CONSISTENT WITH THE DESIGN INTENT AND REQUIREMENTS OF THE SITE PLANS. THE CONTRACTOR SHALL NOTIFY ENGINEER IMMEDIATELY IF CLARIFICATION IS NEEDED, OR IF CONFLICTS OR INCONSISTENCIES EXIST.
 3. ADA DETECTIBLE WARNING STRIPS SHALL BE CAST IRON TILES, WET SET INTO CONCRETE SURFACE, PER MANUFACTURERS INSTALLATION RECOMMENDATIONS.
 4. TOPOGRAPHIC AND BOUNDARY SURVEY PREPARED BY xxxxxxxxxxxxxxxxxxxxxxx

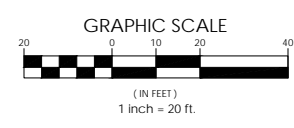
- (X) SIGNING AND STRIPING SCHEDULE**
- A. 4" YELLOW STRIPING
 - B. YELLOW HANDICAP PARKING STRIPING (SEE DETAIL)
 - C. "ACCESSIBLE" PARKING STALL SIGN ASSEMBLY (\$250 FINE)
 - D. "STOP" SIGN R1-1 (30"x30")
 - E. 24" WHITE THERMOPLASTIC STOP BAR
 - F. 4" PAINTED CROSS STRIPING 4" C-C
 - G. DIRECTIONAL ARROW
 - H. RIGHT TURN ONLY R3-5 (24"x30")
 - I. THERMOPLASTIC RIGHT TURN ONLY STRIPING
 - J. 4" YELLOW LINES, 5.5" C-C SKIP-DASH AND SOLID
 - K. 6" SOLID WHITE THERMOPLASTIC
 - L. "NO LEFT TURN" SIGN (30"x30")
 - M. 6" WHITE THERMOPLASTIC 6" SKIP 2" DASH

STRIPING NOTE: ON-SITE PAVEMENT MARKINGS AND GRAPHICS SHALL CONSIST OF TWO (2) COATS OF TRAFFIC-RATED PAINT APPLIED A MINIMUM OF 30 DAYS APART. STRIPING AND GRAPHICS AT ENTRY DRIVES SHALL BE THERMOPLASTIC AS NOTED. MATERIALS SHALL MEET ILLINOIS DEPARTMENT OF TRANSPORTATION STANDARDS.

- LEGEND:**
- ADA TRUNCATED DOMES
 - EXISTING CURB AND GUTTER
 - EXISTING CURB AND GUTTER - DEPRESSED
 - 6.12 CURB AND GUTTER - DEPRESSED
 - 6.12 CURB AND GUTTER - TRANSITION (ZERO TO FULL HEIGHT)
 - BARRIER CURB AND GUTTER - DEPRESSED
 - BARRIER CURB AND GUTTER - TRANSITION (ZERO TO FULL HEIGHT)
 - SAWCUT LINE
 - PROPOSED FULL-DEPTH REGULAR ASPHALT PAVEMENT.
 - PROPOSED FULL-DEPTH HEAVY-DUTY ASPHALT PAVEMENT.
 - PROPOSED CONCRETE PAVEMENT.
 - PROPOSED CONCRETE SIDEWALK.

- A. 4" YELLOW STRIPING
- B. YELLOW HANDICAP PARKING STRIPING (SEE DETAIL)
- C. "ACCESSIBLE" PARKING STALL SIGN ASSEMBLY (\$250 FINE)
- D. "STOP" SIGN R1-1 (30"x30")
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NO.	DATE	DESCRIPTION
0	10/11/22	PRELIMINARY

PROJECT NAME	WENDY'S DOWNERS GROVE
PROJECT No.	21.NARE.CO4
SHEET No.	C2.0
SHEET NAME	SITE PLAN
SHEET NUMBER	1422 BUTTERFIELD RD DOWNERS GROVE IL
OF 5 SHEETS	

650 E. Algonquin Road Suite 250 Schmaling, IL 60773 Telephone (630) 756-4486 www.rtm.com	IL Design Firm: 840667770002
--	------------------------------

User: lucas.keller File: J:\2023\21 NARE CO4 Wendy's Downers Grove\07 DESIGN DRAWINGS\02 SHEETS\21 NARE CO4 SITE PLAN.dwg Time: Jan 03, 2023, 1:40pm

ITE Trip Generation Summary Sheets

Land Use: 934

Fast-Food Restaurant with Drive-Through Window

Description

This land use includes any fast-food restaurant with a drive-through window. This type of restaurant is characterized by a large drive-through and large carry-out clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours a day) and high turnover rates for eat-in customers. The restaurant does not provide table service. A patron generally orders from a menu board and pays before receiving the meal. A typical duration of stay for an eat-in patron is less than 30 minutes. Fast casual restaurant (Land Use 930), high-turnover (sit-down) restaurant (Land Use 932), fast-food restaurant without drive-through window (Land Use 933), and fast-food restaurant with drive-through window and no indoor seating (Land Use 935) are related uses.

Additional Data

Users should exercise caution when applying statistics during the AM peak periods, as the sites contained in the database for this land use may or may not be open for breakfast. In cases where it was confirmed that the sites were not open for breakfast, data for the AM peak hour of the adjacent street traffic were removed from the database.

If the restaurant has outdoor seating, its area is not included in the overall gross floor area. For a restaurant that has significant outdoor seating, the number of seats may be more reliable than GFA as an independent variable on which to establish a trip generation rate.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alaska, Alberta (CAN), California, Colorado, Florida, Indiana, Kentucky, Maryland, Massachusetts, Minnesota, Montana, New Hampshire, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Dakota, Texas, Vermont, Virginia, Washington, and Wisconsin.

Source Numbers

163, 164, 168, 180, 181, 241, 245, 278, 294, 300, 301, 319, 338, 340, 342, 358, 389, 438, 502, 552, 577, 583, 584, 617, 640, 641, 704, 715, 728, 810, 866, 867, 869, 885, 886, 927, 935, 962, 977, 1050, 1053, 1054

Fast-Food Restaurant with Drive-Through Window (934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 71

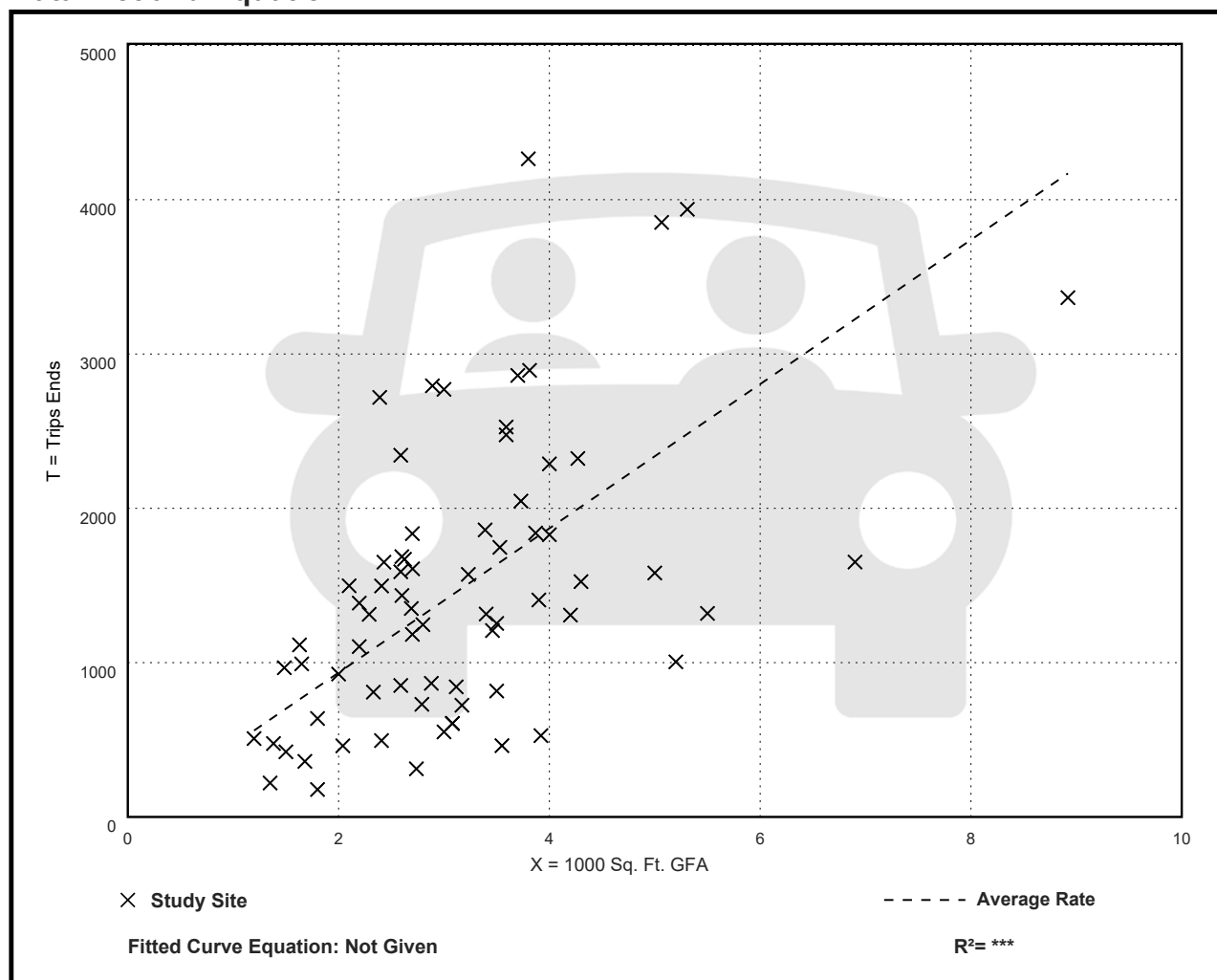
Avg. 1000 Sq. Ft. GFA: 3

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
467.48	98.89 - 1137.66	238.62

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window (934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 96

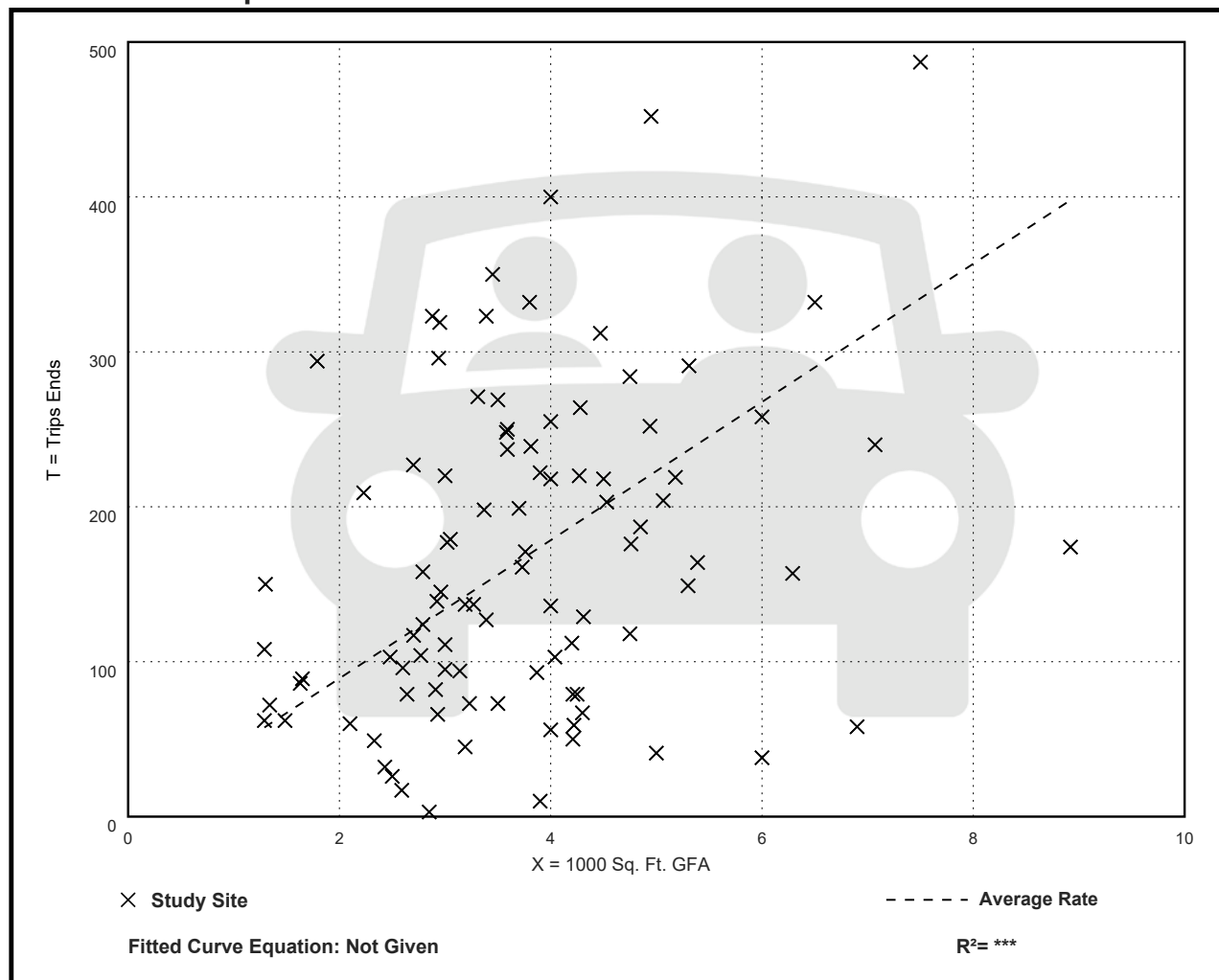
Avg. 1000 Sq. Ft. GFA: 4

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
44.61	1.05 - 164.25	27.14

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window (934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 190

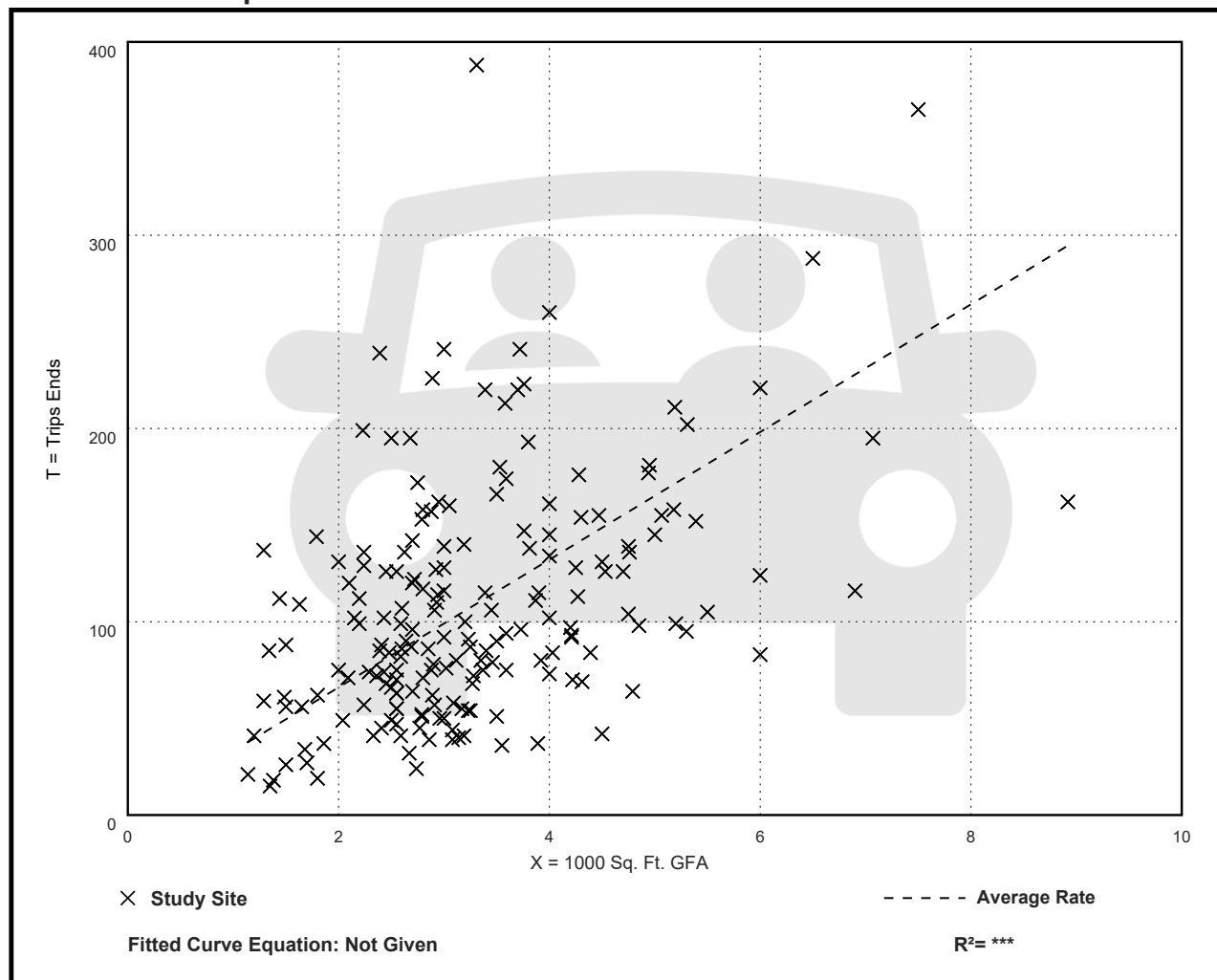
Avg. 1000 Sq. Ft. GFA: 3

Directional Distribution: 52% entering, 48% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
33.03	8.77 - 117.22	17.59

Data Plot and Equation



Fast-Food Restaurant with Drive-Through Window (934)

Vehicle Trip Ends vs: 1000 Sq. Ft. GFA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 53

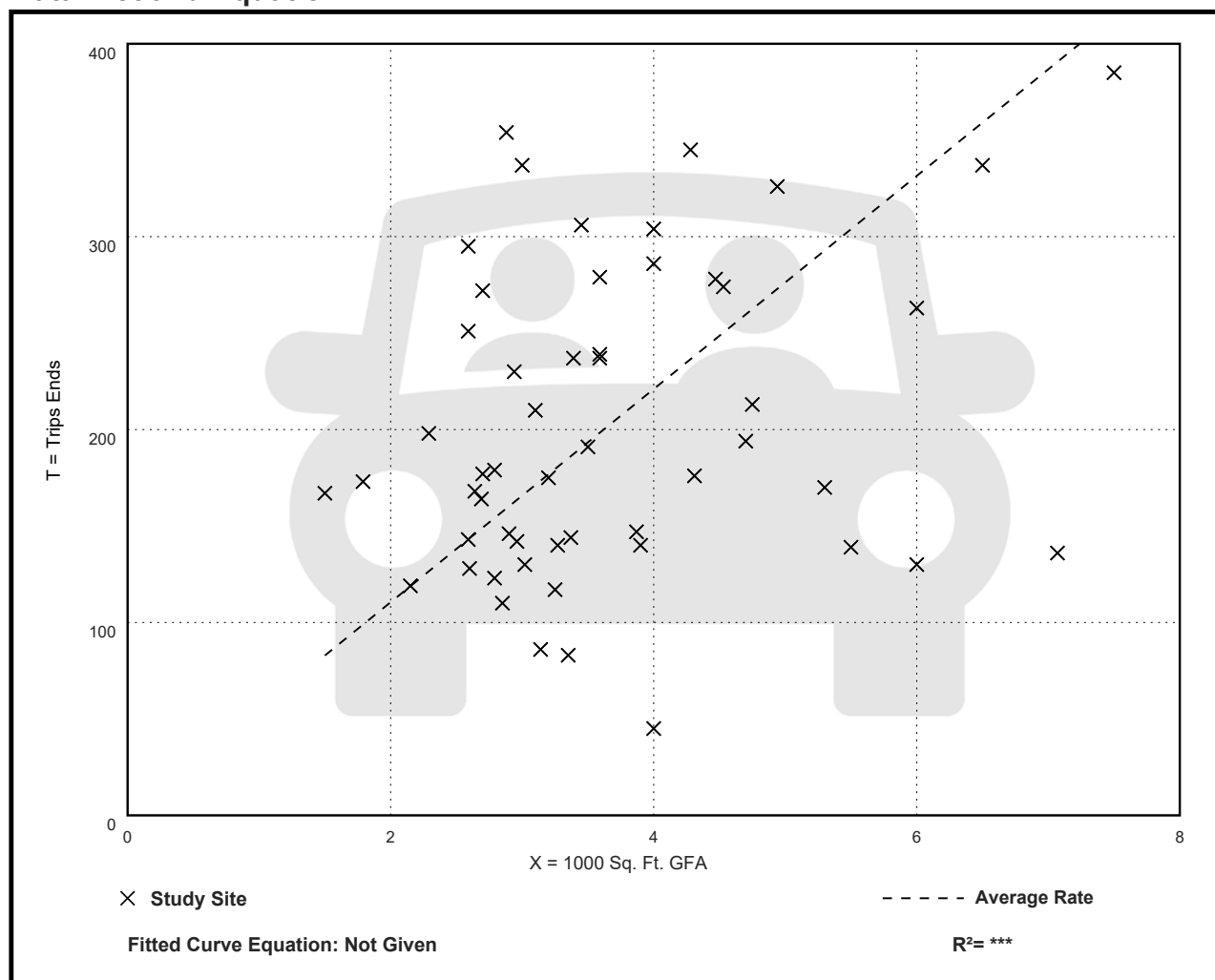
Avg. 1000 Sq. Ft. GFA: 4

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
55.25	11.25 - 122.92	24.62

Data Plot and Equation



Land Use: 822

Strip Retail Plaza (<40k)

Description

A strip retail plaza is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. Each study site in this land use has less than 40,000 square feet of gross leasable area (GLA). Because a strip retail plaza is open-air, the GLA is the same as the gross floor area of the building.

The 40,000 square feet GFA threshold between strip retail plaza and shopping plaza (Land Use 821) was selected based on an examination of the overall shopping center/plaza database. No shopping plaza with a supermarket as its anchor is smaller than 40,000 square feet GLA.

Shopping center (>150k) (Land use 820), shopping plaza (40-150k) (Land Use 821), and factory outlet center (Land Use 823) are related uses.

Additional Data

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), California, Delaware, Florida, New Jersey, Ontario (CAN), South Dakota, Vermont, Washington, and Wisconsin.

Source Numbers

304, 358, 423, 428, 437, 507, 715, 728, 936, 960, 961, 974, 1009

Strip Retail Plaza (<40k) (822)

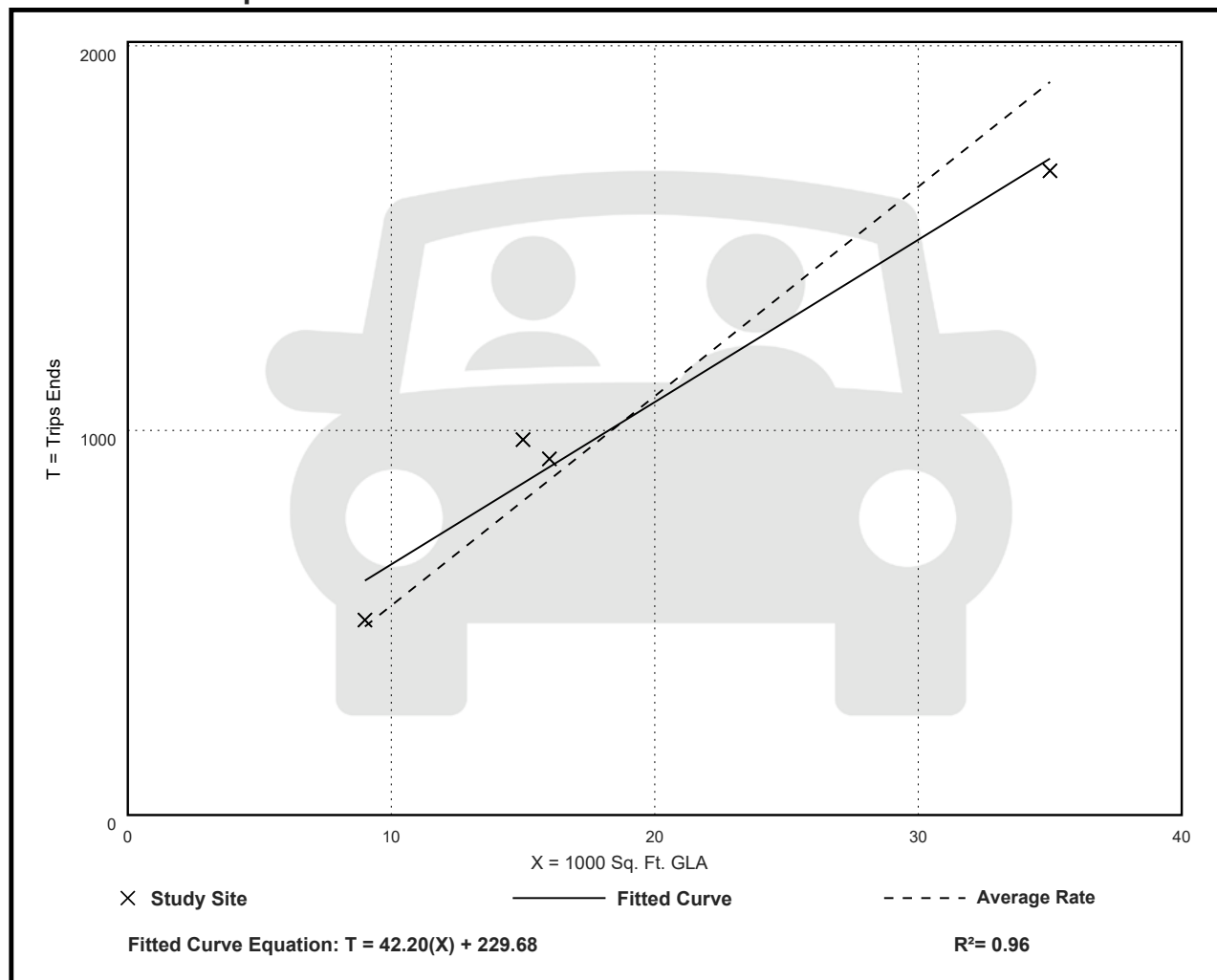
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 4
Avg. 1000 Sq. Ft. GLA: 19
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
54.45	47.86 - 65.07	7.81

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: **Weekday,**
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 5

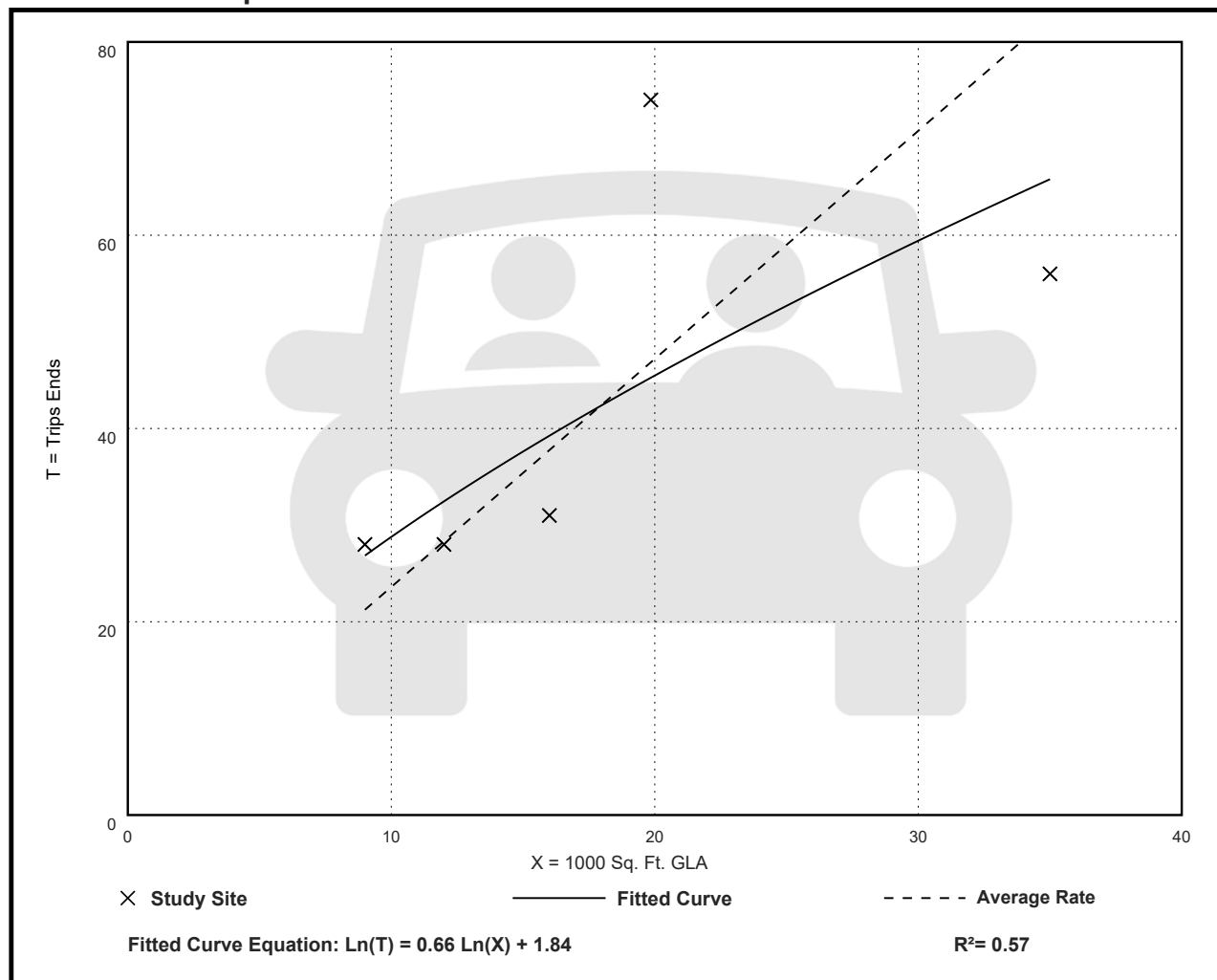
Avg. 1000 Sq. Ft. GLA: 18

Directional Distribution: 60% entering, 40% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
2.36	1.60 - 3.73	0.94

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: **Weekday,**

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 25

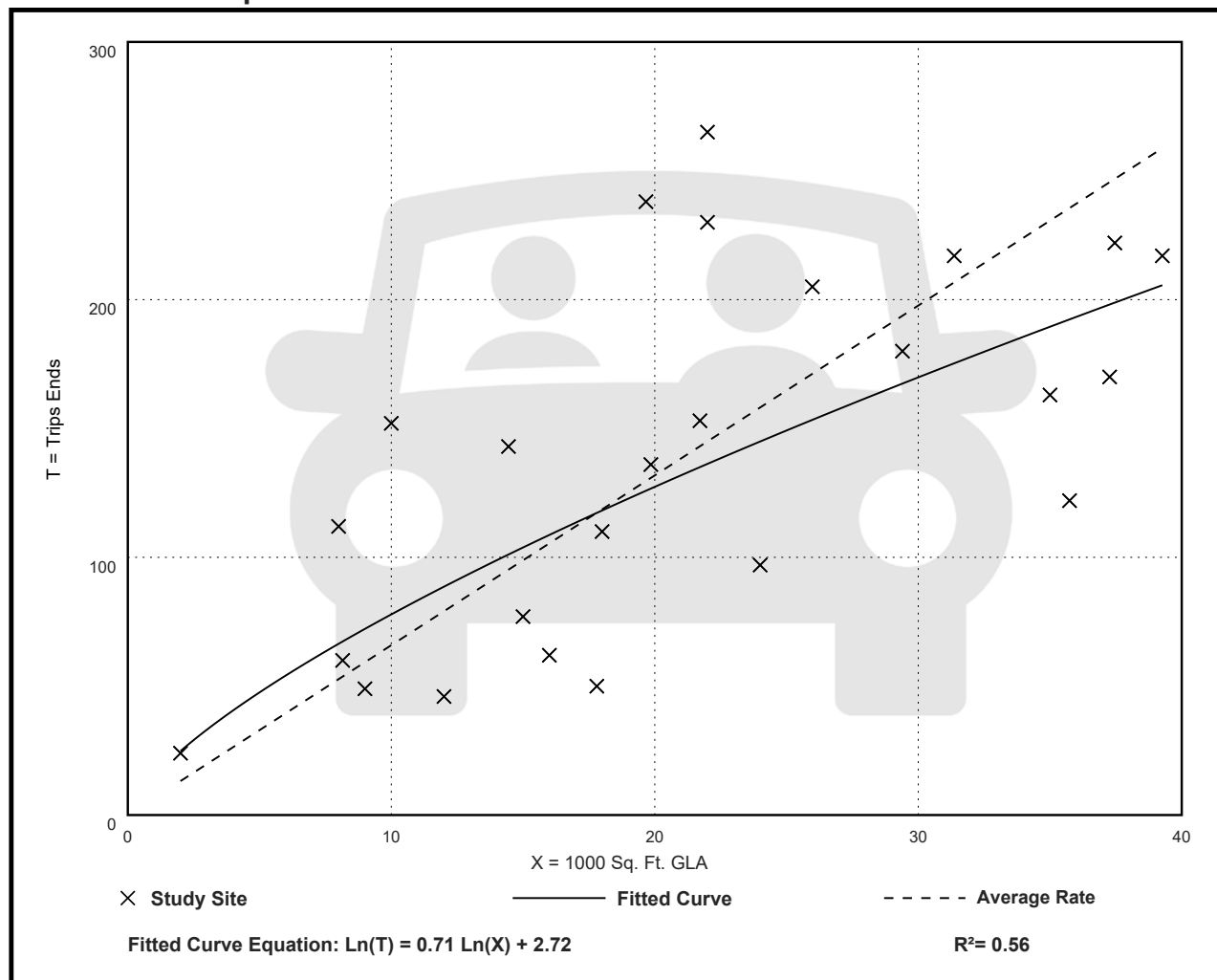
Avg. 1000 Sq. Ft. GLA: 21

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.59	2.81 - 15.20	2.94

Data Plot and Equation



Strip Retail Plaza (<40k) (822)

Vehicle Trip Ends vs: 1000 Sq. Ft. GLA

On a: Saturday, Peak Hour of Generator

Setting/Location: General Urban/Suburban

Number of Studies: 12

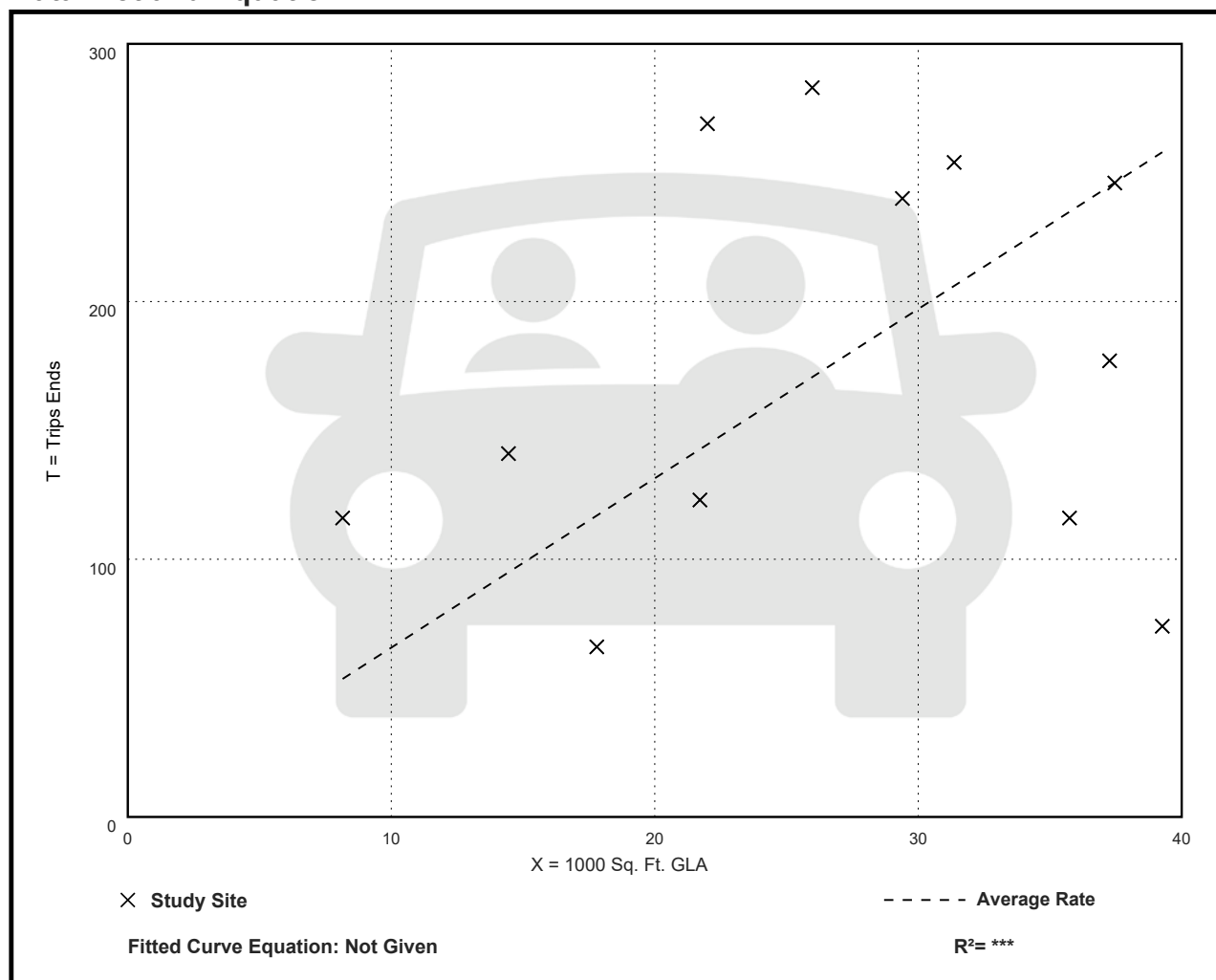
Avg. 1000 Sq. Ft. GLA: 27

Directional Distribution: 51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
6.57	1.88 - 14.23	3.45

Data Plot and Equation



ITE Parking Generation Summary Sheets

Land Use: 934 Fast-Food Restaurant with Drive-Through Window

Description

This category includes fast-food restaurants with drive-through windows. This type of restaurant is characterized by a large drive-through and large carry-out clientele, long hours of service (some are open for breakfast, all are open for lunch and dinner, some are open late at night or 24 hours a day) and high turnover rates for eat-in customers. These limited-service eating establishments do not provide table service. A patron generally orders from a menu board and pays before receiving the meal. A typical duration of stay for an eat-in patron is less than 30 minutes. Fast casual restaurant (Land Use 930), high-turnover (sit-down) restaurant (Land Use 932), fast-food restaurant without drive-through window (Land Use 933), and fast-food restaurant with drive-through window and no indoor seating (Land Use 935) are related uses.

Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand on a Monday-through-Thursday weekday (four study sites) and a Saturday (one study site) in a general urban/suburban setting.

Hour Beginning	Percent of Peak Parking Demand	
	Weekday	Saturday
12:00–4:00 a.m.	–	–
5:00 a.m.	–	–
6:00 a.m.	–	–
7:00 a.m.	–	–
8:00 a.m.	–	–
9:00 a.m.	–	–
10:00 a.m.	28	31
11:00 a.m.	60	50
12:00 p.m.	100	88
1:00 p.m.	85	100
2:00 p.m.	57	75
3:00 p.m.	43	50
4:00 p.m.	45	31
5:00 p.m.	59	50
6:00 p.m.	62	69
7:00 p.m.	18	63
8:00 p.m.	–	–
9:00 p.m.	–	–
10:00 p.m.	–	–
11:00 p.m.	–	–

Land Use: 820 Shopping Center

Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's composition is related to its market area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands.

Time of Day Distribution for Parking Demand

The following table presents a time-of-day distribution of parking demand **during the month of December** on a weekday (seven study sites), a Friday (eight study sites), and a Saturday (19 study sites).

Hour Beginning	Percent of Peak Parking Demand during December		
	Weekday	Friday	Saturday
12:00–4:00 a.m.	–	–	–
5:00 a.m.	–	–	–
6:00 a.m.	–	–	–
7:00 a.m.	–	–	–
8:00 a.m.	–	–	–
9:00 a.m.	–	–	–
10:00 a.m.	–	74	–
11:00 a.m.	–	87	85
12:00 p.m.	77	97	97
1:00 p.m.	100	100	98
2:00 p.m.	98	92	100
3:00 p.m.	90	85	97
4:00 p.m.	76	84	88
5:00 p.m.	82	78	77
6:00 p.m.	89	75	64
7:00 p.m.	90	63	–
8:00 p.m.	84	–	–
9:00 p.m.	–	–	–
10:00 p.m.	–	–	–
11:00 p.m.	–	–	–

The following table presents a time-of-day distribution of parking demand **during a non-December month** on a weekday (18 study sites), a Friday (seven study sites), and a Saturday (13 study sites).

Hour Beginning	Percent of Non-December Peak Parking Demand		
	Weekday	Friday	Saturday
12:00–4:00 a.m.	–	–	–
5:00 a.m.	–	–	–
6:00 a.m.	–	–	–
7:00 a.m.	–	–	–
8:00 a.m.	15	32	27
9:00 a.m.	32	50	46
10:00 a.m.	54	67	67
11:00 a.m.	71	80	85
12:00 p.m.	99	100	95
1:00 p.m.	100	98	100
2:00 p.m.	90	90	98
3:00 p.m.	83	78	92
4:00 p.m.	81	81	86
5:00 p.m.	84	86	79
6:00 p.m.	86	84	71
7:00 p.m.	80	79	69
8:00 p.m.	63	70	60
9:00 p.m.	42	–	51
10:00 p.m.	15	–	38
11:00 p.m.	–	–	–

Additional Data

The parking demand database includes data from strip, neighborhood, community, town center, and regional shopping centers. Some of the centers contain non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs, and recreational facilities.

Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied included peripheral buildings, it can be assumed that some of the data show their effect.

Table A

Table A
ESTIMATED RETAIL-GENERATED TRAFFIC VOLUMES

ITE Land Use Code	Type/Size	Weekday Morning Peak Hour			Weekday Evening Peak Hour			Saturday Midday Peak Hour			Daily Two-Way Trips	
		In	Out	Total	In	Out	Total	In	Out	Total	In	Out
822	Retail (3,200 s.f.)	5	3	8	10	11	21	11	10	21	87	87

CMAP 2050 Projections Letter



Chicago Metropolitan
Agency for Planning

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

October 3, 2022

Shahrzad Ainkeshavarzi
Traffic Engineer
Kenig, Lindgren, O'Hara, Aboona, Inc.
9575 West Higgins Road
Suite 400
Rosemont, IL 60018

Subject: Butterfield Road (IL 56) @ Downers Drive
IDOT

Dear Ms. Ainkeshavarzi:

In response to a request made on your behalf and dated October 3, 2022, we have developed year 2050 average daily traffic (ADT) projections for the subject location.

ROAD SEGMENT	Current ADT	Year 2050 ADT
Butterfield Rd (IL 56) west of Downers Dr	37,400	42,000
Butterfield Rd (IL 56) east of Downers Dr	48,500	54,400
Downers Dr north of Butterfield Rd (IL 56)	4,700	5,300

Traffic projections are developed using existing ADT data provided in the request letter and the results from the December 2021 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.

Sincerely,

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

cc: Rios (IDOT)
S:\AdminGroups\ResearchAnalysis\2022_ForecastTraffic\DownersGrove\du-47-22\du-47-22.docx

Level of Service Criteria

LEVEL OF SERVICE CRITERIA

Signalized Intersections		
Level of Service	Interpretation	Average Control Delay (seconds per vehicle)
A	Favorable progression. Most vehicles arrive during the green indication and travel through the intersection without stopping.	≤10
B	Good progression, with more vehicles stopping than for Level of Service A.	>10 - 20
C	Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear. Number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 - 35
D	The volume-to-capacity ratio is high and either progression is ineffective, or the cycle length is too long. Many vehicles stop and individual cycle failures are noticeable.	>35 - 55
E	Progression is unfavorable. The volume-to-capacity ratio is high, and the cycle length is long. Individual cycle failures are frequent.	>55 - 80
F	The volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80.0
Unsignalized Intersections		
Level of Service	Average Total Delay (SEC/VEH)	
A	0 - 10	
B	> 10 - 15	
C	> 15 - 25	
D	> 25 - 35	
E	> 35 - 50	
F	> 50	

Source: *Highway Capacity Manual*, 2010.

Capacity Analysis Summary Sheets
Existing Weekday Morning Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	77	1969	186	424	1427	186	16	15	17	78	43	53
Future Volume (vph)	77	1969	186	424	1427	186	16	15	17	78	43	53
Ideal Flow (vphp)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.920				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1599	3335	5301	1553	1671	1685	0	1719	1792	1583
Flt Permitted	0.950			0.950			0.728			0.656		
Satd. Flow (perm)	3433	5353	1599	3335	5301	1553	1281	1685	0	1187	1792	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			190			190		17				96
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	1%	5%	3%	4%	8%	8%	0%	5%	6%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	2009	190	433	1456	190	16	32	0	80	44	54
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	21.5	8.0	8.5	22.0	8.0	8.0	19.0		8.0	21.0	8.5
Total Split (s)	12.5	67.5	12.5	24.0	79.0	12.5	12.5	21.0		12.5	21.0	12.5
Total Split (%)	10.0%	54.0%	10.0%	19.2%	63.2%	10.0%	10.0%	16.8%		10.0%	16.8%	10.0%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	0.0	1.0	1.5	0.0	0.0	1.5		0.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	3.5	4.5	6.0	3.5	3.5	6.0		3.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	7.5	62.1	74.6	18.9	73.5	87.9	24.6	15.6		28.4	17.5	31.0
Actuated g/C Ratio	0.06	0.50	0.60	0.15	0.59	0.70	0.20	0.12		0.23	0.14	0.25
v/c Ratio	0.39	0.76	0.18	0.86	0.47	0.17	0.06	0.14		0.26	0.18	0.12
Control Delay	61.9	27.8	1.9	68.9	15.3	1.1	37.3	31.0		40.5	50.1	1.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	61.9	27.8	1.9	68.9	15.3	1.1	37.3	31.0		40.5	50.1	1.7
LOS	E	C	A	E	B	A	D	C		D	D	A
Approach Delay		26.8			25.2			33.1				31.1
Approach LOS		C			C			C				C
Queue Length 50th (ft)	31	471	0	177	234	0	10	11		52	32	0
Queue Length 95th (ft)	58	532	29	#255	271	21	29	43		96	70	7

Lanes, Volumes, Timings

3: Downers Drive & Butterfield Road

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	219	2658	1058	520	3116	1155	305	225		313	250	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.36	0.76	0.18	0.83	0.47	0.16	0.05	0.14		0.26	0.18	0.11

Intersection Summary

Area Type: Other
 Cycle Length: 125
 Actuated Cycle Length: 125
 Offset: 30 (24%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.86
 Intersection Signal Delay: 26.3
 Intersection LOS: C
 Intersection Capacity Utilization 73.0%
 ICU Level of Service C
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Downers Drive & Butterfield Road



Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖↗			↖↗			↖↗	
Traffic Volume (vph)	34	11	119	17	5	13	140	108	30	5	38	17
Future Volume (vph)	34	11	119	17	5	13	140	108	30	5	38	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.943			0.984			0.958	
Flt Protected		0.964			0.976			0.975			0.996	
Satd. Flow (prot)	0	1832	1583	0	3323	0	0	3360	0	0	3106	0
Flt Permitted		0.806			0.861			0.777			0.936	
Satd. Flow (perm)	0	1531	1583	0	2931	0	0	2678	0	0	2919	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128		14			29			18	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	3%	4%	0%	0%	17%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	128	0	37	0	0	299	0	0	64	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		6			
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.12	0.24		0.05			0.19			0.04	
Control Delay		21.5	5.7		14.7			7.3			5.5	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		21.5	5.7		14.7			7.3			5.5	
LOS		C	A		B			A			A	
Approach Delay		10.1			14.7			7.3			5.5	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		17	0		4			28			4	
Queue Length 95th (ft)		42	37		14			46			12	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		418	525		811			1547			1681	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.12	0.24		0.05			0.19			0.04	

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 0.24

Intersection Signal Delay: 8.4

Intersection LOS: A

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC

6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	2064	2032	31	0	5
Future Vol, veh/h	0	2064	2032	31	0	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	2	3	0	0	0
Mvmt Flow	0	2150	2117	32	0	5
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	1075
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3
Pot Cap-1 Maneuver	0	-	-	-	0	*584
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	-	*584
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	11.2			
HCM LOS						B
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	584		
HCM Lane V/C Ratio	-	-	-	0.009		
HCM Control Delay (s)	-	-	-	11.2		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0		
Notes						
-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 6th TWSC
8: Downers Drive & Brook Drive

10/06/2022

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	38	45	14	2	0	101	0	54	0	1	0
Future Vol, veh/h	2	38	45	14	2	0	101	0	54	0	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	3	17	50	0	0	0	7	0	0	0
Mvmt Flow	2	47	56	17	2	0	125	0	67	0	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	103	0	0	116	115	75	149	143	2
Stage 1	-	-	-	-	-	-	79	79	-	36	36	-
Stage 2	-	-	-	-	-	-	37	36	-	113	107	-
Critical Hdwy	4.1	-	-	4.27	-	-	7.1	6.5	6.27	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.353	-	-	3.5	4	3.363	3.5	4	3.3
Pot Cap-1 Maneuver	1634	-	-	1400	-	-	865	779	973	824	752	1088
Stage 1	-	-	-	-	-	-	935	833	-	985	869	-
Stage 2	-	-	-	-	-	-	984	869	-	897	811	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1634	-	-	1400	-	-	855	769	973	760	742	1088
Mov Cap-2 Maneuver	-	-	-	-	-	-	855	769	-	760	742	-
Stage 1	-	-	-	-	-	-	934	832	-	984	859	-
Stage 2	-	-	-	-	-	-	971	859	-	835	810	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			6.7			9.6			9.9		
HCM LOS							A			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	855	973	1634	-	-	1400	-	-	742
HCM Lane V/C Ratio	0.146	0.069	0.002	-	-	0.012	-	-	0.002
HCM Control Delay (s)	9.9	9	7.2	0	-	7.6	0	-	9.9
HCM Lane LOS	A	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0	-	-	0

Capacity Analysis Summary Sheets
Existing Weekday Evening Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	1735	128	914	2250	238	138	20	98	284	108	116
Future Volume (vph)	90	1735	128	914	2250	238	138	20	98	284	108	116
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.876				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5406	1615	3467	5406	1599	1787	1664	0	1770	2000	1599
Flt Permitted	0.950			0.950			0.685			0.415		
Satd. Flow (perm)	3502	5406	1615	3467	5406	1599	1289	1664	0	773	2000	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125			245		101				89
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	1%	1%	0%	0%	2%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	93	1789	132	942	2320	245	142	122	0	293	111	120
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	21.5	8.0	8.5	22.0	8.0	8.0	19.0		8.0	14.5	8.5
Total Split (s)	13.5	49.0	13.5	44.5	80.0	23.0	13.5	18.5		23.0	28.0	13.5
Total Split (%)	10.0%	36.3%	10.0%	33.0%	59.3%	17.0%	10.0%	13.7%		17.0%	20.7%	10.0%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	0.0	1.0	1.5	0.0	0.0	1.5		0.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	3.5	4.5	6.0	3.5	3.5	6.0		3.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	8.3	43.8	59.6	39.2	74.7	99.8	25.2	12.9		38.0	22.2	36.5
Actuated g/C Ratio	0.06	0.32	0.44	0.29	0.55	0.74	0.19	0.10		0.28	0.16	0.27
v/c Ratio	0.43	1.02	0.17	0.94	0.78	0.20	0.51	0.49		0.82	0.34	0.24
Control Delay	67.3	71.9	4.8	63.1	26.0	0.9	46.9	22.5		61.4	53.4	13.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	67.3	71.9	4.8	63.1	26.0	0.9	46.9	22.5		61.4	53.4	13.5
LOS	E	E	A	E	C	A	D	C		E	D	B
Approach Delay		67.3			34.2			35.6				48.7
Approach LOS		E			C			D				D
Queue Length 50th (ft)	41	-618	3	412	568	0	98	17		222	87	20
Queue Length 95th (ft)	71	#714	42	#534	629	21	158	80		#357	147	71

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	233	1752	784	1027	2991	1249	279	250		361	328	504
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.40	1.02	0.17	0.92	0.78	0.20	0.51	0.49		0.81	0.34	0.24

Intersection Summary	
Area Type:	Other
Cycle Length:	135
Actuated Cycle Length:	135
Offset:	89 (66%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.02
Intersection Signal Delay:	46.0
Intersection LOS:	D
Intersection Capacity Utilization	94.1%
ICU Level of Service	F
Analysis Period (min)	15
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 3: Downers Drive & Butterfield Road



Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Volume (vph)	18	43	170	158	46	38	191	60	97	25	180	22
Future Volume (vph)	18	43	170	158	46	38	191	60	97	25	180	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.976			0.958			0.985	
Flt Protected		0.985			0.968			0.973			0.995	
Satd. Flow (prot)	0	1872	1599	0	3395	0	0	3353	0	0	3456	0
Flt Permitted		0.873			0.757			0.695			0.896	
Satd. Flow (perm)	0	1659	1599	0	2655	0	0	2395	0	0	3112	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177		28			101			23	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	3%	0%	2%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	177	0	253	0	0	363	0	0	237	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		6			
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.14	0.31		0.34			0.26			0.13	
Control Delay		21.7	5.4		20.8			6.2			6.9	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		21.7	5.4		20.8			6.2			6.9	
LOS		C	A		C			A			A	
Approach Delay		9.8			20.8			6.2			6.9	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		22	0		43			27			22	
Queue Length 95th (ft)		52	43		74			48			37	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		453	565		746			1416			1794	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.14	0.31		0.34			0.26			0.13	

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 0.34

Intersection Signal Delay: 10.5

Intersection LOS: B

Intersection Capacity Utilization 64.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC

6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	2117	3365	106	0	37
Future Vol, veh/h	0	2117	3365	106	0	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	1	2	0	0
Mvmt Flow	0	2228	3542	112	0	39
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	1827
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3
Pot Cap-1 Maneuver	0	-	-	-	0	*154
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	-	*154
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	36.1			
HCM LOS						E
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	154		
HCM Lane V/C Ratio	-	-	-	0.253		
HCM Control Delay (s)	-	-	-	36.1		
HCM Lane LOS	-	-	-	E		
HCM 95th %tile Q(veh)	-	-	-	1		
Notes						
-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 6th TWSC
8: Downers Drive & Brook Drive

10/06/2022

Intersection												
Int Delay, s/veh	5.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	20	145	74	34	0	101	1	14	0	8	1
Future Vol, veh/h	0	20	145	74	34	0	101	1	14	0	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	12	1	5	7	0	0	0	20	0	0	0
Mvmt Flow	0	23	165	84	39	0	115	1	16	0	9	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	39	0	0	188	0	0	318	313	106	321	395	39
Stage 1	-	-	-	-	-	-	106	106	-	207	207	-
Stage 2	-	-	-	-	-	-	212	207	-	114	188	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.5	6.4	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4	3.48	3.5	4	3.3
Pot Cap-1 Maneuver	1584	-	-	1368	-	-	639	606	901	636	545	1038
Stage 1	-	-	-	-	-	-	905	811	-	800	734	-
Stage 2	-	-	-	-	-	-	795	734	-	896	748	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1584	-	-	1368	-	-	599	568	901	594	511	1038
Mov Cap-2 Maneuver	-	-	-	-	-	-	599	568	-	594	511	-
Stage 1	-	-	-	-	-	-	905	811	-	800	688	-
Stage 2	-	-	-	-	-	-	734	688	-	879	748	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	5.3	12	11.8
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	599	883	1584	-	-	1368	-	-	542
HCM Lane V/C Ratio	0.193	0.019	-	-	-	0.061	-	-	0.019
HCM Control Delay (s)	12.4	9.2	0	-	-	7.8	0	-	11.8
HCM Lane LOS	B	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.7	0.1	0	-	-	0.2	-	-	0.1

Capacity Analysis Summary Sheets
Existing Weekend Midday Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	144	1392	114	556	1727	296	82	28	61	336	77	128
Future Volume (vph)	144	1392	114	556	1727	296	82	28	61	336	77	128
Ideal Flow (vphp)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.897				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5406	1615	3433	5406	1615	1787	1704	0	1805	1942	1615
Flt Permitted	0.950			0.950			0.706			0.582		
Satd. Flow (perm)	3433	5406	1615	3433	5406	1615	1328	1704	0	1106	1942	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			305		63				132
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	1%	0%	2%	1%	0%	1%	0%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	148	1435	118	573	1780	305	85	92	0	346	79	132
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	21.5	8.0	8.5	22.0	8.0	8.0	19.0		8.0	21.0	8.5
Total Split (s)	13.0	38.0	15.0	21.0	46.0	21.0	15.0	20.0		21.0	26.0	13.0
Total Split (%)	13.0%	38.0%	15.0%	21.0%	46.0%	21.0%	15.0%	20.0%		21.0%	26.0%	13.0%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5		3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5		0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0		3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	9.0	32.0	46.6	18.0	41.0	63.9	26.7	15.1		38.0	23.4	38.4
Actuated g/C Ratio	0.09	0.32	0.47	0.18	0.41	0.64	0.27	0.15		0.38	0.23	0.38
v/c Ratio	0.48	0.83	0.14	0.93	0.80	0.27	0.22	0.30		0.64	0.17	0.19
Control Delay	48.3	36.5	2.5	63.7	29.7	1.5	22.4	18.6		30.3	32.8	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	48.3	36.5	2.5	63.7	29.7	1.5	22.4	18.6		30.3	32.8	4.5
LOS	D	D	A	E	C	A	C	B		C	C	A
Approach Delay		35.2			33.7			20.4				24.5
Approach LOS		D			C			C				C
Queue Length 50th (ft)	46	308	0	187	361	0	35	16		167	40	0
Queue Length 95th (ft)	77	367	23	#288	427	28	67	62		252	83	38

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

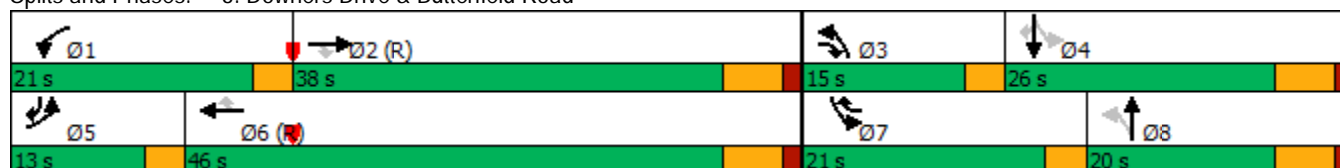


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	343	1729	873	617	2214	1155	454	310		546	454	716
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.43	0.83	0.14	0.93	0.80	0.26	0.19	0.30		0.63	0.17	0.18

Intersection Summary

Area Type: Other
 Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 8 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated
 Maximum v/c Ratio: 0.93
 Intersection Signal Delay: 32.8
 Intersection LOS: C
 Intersection Capacity Utilization 80.0%
 ICU Level of Service D
 Analysis Period (min) 15
 # 95th percentile volume exceeds capacity, queue may be longer.
 Queue shown is maximum after two cycles.

Splits and Phases: 3: Downers Drive & Butterfield Road



Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖↗			↖↗			↖↗	
Traffic Volume (vph)	19	83	294	186	85	54	296	36	136	30	61	10
Future Volume (vph)	19	83	294	186	85	54	296	36	136	30	61	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.975			0.956			0.985	
Flt Protected		0.991			0.972			0.969			0.985	
Satd. Flow (prot)	0	1883	1615	0	3421	0	0	3334	0	0	3503	0
Flt Permitted		0.892			0.752			0.729			0.799	
Satd. Flow (perm)	0	1695	1615	0	2647	0	0	2508	0	0	2841	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			320		31			139			11	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	320	0	353	0	0	509	0	0	110	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.24	0.48		0.47			0.34			0.07	
Control Delay		22.9	5.5		23.1			6.7			6.5	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		22.9	5.5		23.1			6.7			6.5	
LOS		C	A		C			A			A	
Approach Delay		10.0			23.1			6.7			6.5	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		40	0		65			41			10	
Queue Length 95th (ft)		80	57		104			67			20	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		463	673		746			1497			1633	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.24	0.48		0.47			0.34			0.07	

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 11.8

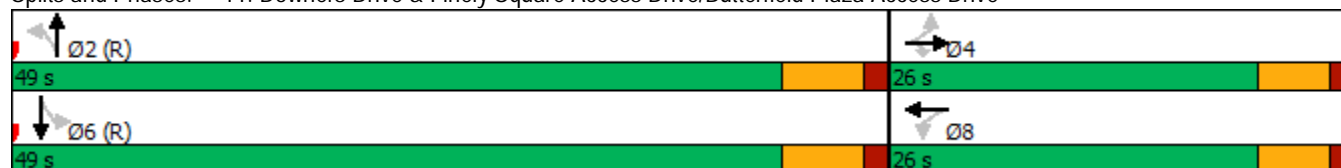
Intersection LOS: B

Intersection Capacity Utilization 65.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC
6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	1789	2525	194	0	54
Future Vol, veh/h	0	1789	2525	194	0	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	1807	2551	196	0	55

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 1374
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.1
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3
Pot Cap-1 Maneuver	0	-	- 0 *425
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	- - 1
Mov Cap-1 Maneuver	-	-	- - *425
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	425
HCM Lane V/C Ratio	-	-	-	0.128
HCM Control Delay (s)	-	-	-	14.7
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.4

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
8: Downers Drive & Brook Drive

10/06/2022

Intersection												
Int Delay, s/veh	6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	16	60	41	13	0	94	0	15	0	0	0
Future Vol, veh/h	0	16	60	41	13	0	94	0	15	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	8	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	21	77	53	17	0	121	0	19	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	98	0	0	183	183	60	192	221	17
Stage 1	-	-	-	-	-	-	60	60	-	123	123	-
Stage 2	-	-	-	-	-	-	123	123	-	69	98	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1613	-	-	1508	-	-	783	715	1011	772	681	1068
Stage 1	-	-	-	-	-	-	957	849	-	886	798	-
Stage 2	-	-	-	-	-	-	886	798	-	946	818	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1613	-	-	1508	-	-	762	690	1011	737	657	1068
Mov Cap-2 Maneuver	-	-	-	-	-	-	762	690	-	737	657	-
Stage 1	-	-	-	-	-	-	957	849	-	886	770	-
Stage 2	-	-	-	-	-	-	855	770	-	928	818	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			5.7			10.3			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	762	1011	1613	-	-	1508	-	-	-
HCM Lane V/C Ratio	0.158	0.019	-	-	-	0.035	-	-	-
HCM Control Delay (s)	10.6	8.6	0	-	-	7.5	0	-	0
HCM Lane LOS	B	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0.1	-	-	-

Capacity Analysis Summary Sheets
Year 2028 No-Build Weekday Morning Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	81	2008	190	432	1458	190	16	15	17	80	44	54
Future Volume (vph)	81	2008	190	432	1458	190	16	15	17	80	44	54
Ideal Flow (vphp)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.920				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5353	1599	3335	5301	1553	1671	1685	0	1719	1792	1583
Flt Permitted	0.950			0.950			0.728			0.656		
Satd. Flow (perm)	3433	5353	1599	3335	5301	1553	1281	1685	0	1187	1792	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			194			194		17				96
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	2%	2%	1%	5%	3%	4%	8%	8%	0%	5%	6%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	83	2049	194	441	1488	194	16	32	0	82	45	55
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	27.0	8.0	8.5	22.0	8.0	8.0	19.0		8.0	21.0	8.5
Total Split (s)	12.5	67.5	12.5	24.0	79.0	12.5	12.5	21.0		12.5	21.0	12.5
Total Split (%)	10.0%	54.0%	10.0%	19.2%	63.2%	10.0%	10.0%	16.8%		10.0%	16.8%	10.0%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	0.0	1.0	1.5	0.0	0.0	1.5		0.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	3.5	4.5	6.0	3.5	3.5	6.0		3.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	7.5	62.0	74.5	19.0	73.5	87.9	24.6	15.6		28.4	17.5	31.0
Actuated g/C Ratio	0.06	0.50	0.60	0.15	0.59	0.70	0.20	0.12		0.23	0.14	0.25
v/c Ratio	0.40	0.77	0.19	0.87	0.48	0.17	0.06	0.14		0.27	0.18	0.12
Control Delay	62.4	28.3	1.9	70.1	15.5	1.1	37.3	31.0		40.6	50.2	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	62.4	28.3	1.9	70.1	15.5	1.1	37.3	31.0		40.6	50.2	1.8
LOS	E	C	A	E	B	A	D	C		D	D	A
Approach Delay		27.3			25.5			33.1				31.2
Approach LOS		C			C			C				C
Queue Length 50th (ft)	34	485	0	180	242	0	10	11		53	33	0
Queue Length 95th (ft)	60	548	29	#262	279	21	29	43		99	71	8

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	219	2654	1059	520	3115	1155	305	224		313	250	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.38	0.77	0.18	0.85	0.48	0.17	0.05	0.14		0.26	0.18	0.12

Intersection Summary	
Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	125
Offset:	30 (24%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	26.7
Intersection LOS:	C
Intersection Capacity Utilization	74.0%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 3: Downers Drive & Butterfield Road

Ø1 24 s	Ø2 (R) 67.5 s	Ø3 12.5 s	Ø4 21 s
Ø5 12.5 s	Ø6 (R) 79 s	Ø7 12.5 s	Ø8 21 s

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖↗			↖↗			↖↗	
Traffic Volume (vph)	34	11	119	17	5	14	140	114	32	6	42	17
Future Volume (vph)	34	11	119	17	5	14	140	114	32	6	42	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.941			0.983			0.961	
Flt Protected		0.964			0.977			0.976			0.996	
Satd. Flow (prot)	0	1832	1583	0	3319	0	0	3360	0	0	3110	0
Flt Permitted		0.805			0.863			0.778			0.932	
Satd. Flow (perm)	0	1530	1583	0	2932	0	0	2679	0	0	2911	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128		15			30			18	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	3%	4%	0%	0%	17%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	128	0	38	0	0	308	0	0	69	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		6			
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.12	0.24		0.05			0.20			0.04	
Control Delay		21.5	5.7		14.4			7.3			5.6	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		21.5	5.7		14.4			7.3			5.6	
LOS		C	A		B			A			A	
Approach Delay		10.1			14.4			7.3			5.6	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		17	0		4			29			4	
Queue Length 95th (ft)		42	37		14			48			13	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		418	525		812			1548			1676	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.12	0.24		0.05			0.20			0.04	

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 0.24

Intersection Signal Delay: 8.4

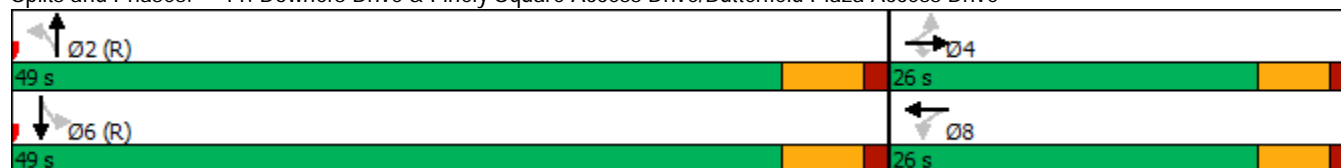
Intersection LOS: A

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC

6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	2105	2073	33	0	7
Future Vol, veh/h	0	2105	2073	33	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	2	3	0	0	0
Mvmt Flow	0	2193	2159	34	0	7
Major/Minor	Major1	Major2	Minor2			
Conflicting Flow All	-	0	-	0	-	1097
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3
Pot Cap-1 Maneuver	0	-	-	-	0	*561
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-	-	1
Mov Cap-1 Maneuver	-	-	-	-	-	*561
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB	SB			
HCM Control Delay, s	0	0	11.5			
HCM LOS			B			
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	561		
HCM Lane V/C Ratio	-	-	-	0.013		
HCM Control Delay (s)	-	-	-	11.5		
HCM Lane LOS	-	-	-	B		
HCM 95th %tile Q(veh)	-	-	-	0		
Notes						
-: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon						

HCM 6th TWSC
8: Downers Drive & Brook Drive

10/06/2022

Intersection												
Int Delay, s/veh	6.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	39	50	14	2	0	104	0	58	0	1	0
Future Vol, veh/h	2	39	50	14	2	0	104	0	58	0	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	3	17	50	0	0	0	7	0	0	0
Mvmt Flow	2	48	62	17	2	0	128	0	72	0	1	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	2	0	0	110	0	0	120	119	79	155	150	2
Stage 1	-	-	-	-	-	-	83	83	-	36	36	-
Stage 2	-	-	-	-	-	-	37	36	-	119	114	-
Critical Hdwy	4.1	-	-	4.27	-	-	7.1	6.5	6.27	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.353	-	-	3.5	4	3.363	3.5	4	3.3
Pot Cap-1 Maneuver	1634	-	-	1392	-	-	860	775	968	816	745	1088
Stage 1	-	-	-	-	-	-	930	830	-	985	869	-
Stage 2	-	-	-	-	-	-	984	869	-	890	805	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1634	-	-	1392	-	-	851	765	968	748	735	1088
Mov Cap-2 Maneuver	-	-	-	-	-	-	851	765	-	748	735	-
Stage 1	-	-	-	-	-	-	929	829	-	984	859	-
Stage 2	-	-	-	-	-	-	971	859	-	823	804	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	6.7	9.6	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	851	968	1634	-	-	1392	-	-	735
HCM Lane V/C Ratio	0.151	0.074	0.002	-	-	0.012	-	-	0.002
HCM Control Delay (s)	10	9	7.2	0	-	7.6	0	-	9.9
HCM Lane LOS	B	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0	-	-	0

Capacity Analysis Summary Sheets
Year 2028 No-Build Weekday Evening Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	1770	131	932	2301	243	141	20	100	294	113	118
Future Volume (vph)	96	1770	131	932	2301	243	141	20	100	294	113	118
Ideal Flow (vphpl)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.875				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5406	1615	3467	5406	1599	1787	1662	0	1770	2000	1599
Flt Permitted	0.950			0.950			0.682			0.404		
Satd. Flow (perm)	3502	5406	1615	3467	5406	1599	1283	1662	0	753	2000	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125			251		103				89
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	1%	1%	0%	0%	2%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	99	1825	135	961	2372	251	145	124	0	303	116	122
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	21.5	8.0	8.5	22.0	8.0	8.0	19.0		8.0	14.5	8.5
Total Split (s)	13.5	49.0	13.5	44.5	80.0	23.0	13.5	18.5		23.0	28.0	13.5
Total Split (%)	10.0%	36.3%	10.0%	33.0%	59.3%	17.0%	10.0%	13.7%		17.0%	20.7%	10.0%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	0.0	1.0	1.5	0.0	0.0	1.5		0.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	3.5	4.5	6.0	3.5	3.5	6.0		3.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	8.4	43.5	59.4	39.5	74.6	99.9	25.0	12.7		38.0	22.2	36.6
Actuated g/C Ratio	0.06	0.32	0.44	0.29	0.55	0.74	0.19	0.09		0.28	0.16	0.27
v/c Ratio	0.46	1.05	0.17	0.95	0.79	0.20	0.53	0.50		0.85	0.35	0.25
Control Delay	67.9	79.3	5.1	65.1	26.7	1.0	47.6	22.6		64.9	53.7	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	67.9	79.3	5.1	65.1	26.7	1.0	47.6	22.6		64.9	53.7	13.8
LOS	E	E	A	E	C	A	D	C		E	D	B
Approach Delay		73.8			35.2			36.1				51.0
Approach LOS		E			D			D				D
Queue Length 50th (ft)	43	-642	5	423	590	0	100	17		231	92	22
Queue Length 95th (ft)	74	#738	44	#552	654	21	160	81		#387	152	72

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	233	1743	782	1027	2988	1250	276	249		358	328	504
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.42	1.05	0.17	0.94	0.79	0.20	0.53	0.50		0.85	0.35	0.24

Intersection Summary	
Area Type:	Other
Cycle Length:	135
Actuated Cycle Length:	135
Offset:	89 (66%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	100
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.05
Intersection Signal Delay:	48.9
Intersection LOS:	D
Intersection Capacity Utilization	95.8%
ICU Level of Service	F
Analysis Period (min)	15
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 3: Downers Drive & Butterfield Road



Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Volume (vph)	18	43	170	163	46	38	191	67	101	25	193	22
Future Volume (vph)	18	43	170	163	46	38	191	67	101	25	193	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr _t			0.850		0.977			0.958			0.986	
Fl _t Protected		0.985			0.968			0.974			0.995	
Satd. Flow (prot)	0	1872	1599	0	3398	0	0	3356	0	0	3458	0
Fl _t Permitted		0.872			0.756			0.693			0.898	
Satd. Flow (perm)	0	1657	1599	0	2654	0	0	2388	0	0	3121	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177		28			105			23	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	3%	0%	2%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	177	0	258	0	0	374	0	0	250	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.14	0.31		0.35			0.26			0.14	
Control Delay		21.7	5.4		21.0			6.2			6.9	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		21.7	5.4		21.0			6.2			6.9	
LOS		C	A		C			A			A	
Approach Delay		9.8			21.0			6.2			6.9	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		22	0		44			28			23	
Queue Length 95th (ft)		52	43		76			50			38	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		452	565		745			1413			1799	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.14	0.31		0.35			0.26			0.14	

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 0.35

Intersection Signal Delay: 10.5

Intersection LOS: B

Intersection Capacity Utilization 64.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC
6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	2164	3432	112	0	43
Future Vol, veh/h	0	2164	3432	112	0	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	1	2	0	0
Mvmt Flow	0	2278	3613	118	0	45

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 1866
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.1
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3
Pot Cap-1 Maneuver	0	-	- 0 *132
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	- - 1
Mov Cap-1 Maneuver	-	-	- - *132
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	45.9
HCM LOS			E

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	132
HCM Lane V/C Ratio	-	-	-	0.343
HCM Control Delay (s)	-	-	-	45.9
HCM Lane LOS	-	-	-	E
HCM 95th %tile Q(veh)	-	-	-	1.4

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
8: Downers Drive & Brook Drive

10/06/2022

Intersection												
Int Delay, s/veh	5.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	20	153	79	35	0	103	1	19	0	8	1
Future Vol, veh/h	0	20	153	79	35	0	103	1	19	0	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	12	1	5	7	0	0	0	20	0	0	0
Mvmt Flow	0	23	174	90	40	0	117	1	22	0	9	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	197	0	0	335	330	110	342	417	40
Stage 1	-	-	-	-	-	-	110	110	-	220	220	-
Stage 2	-	-	-	-	-	-	225	220	-	122	197	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.5	6.4	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4	3.48	3.5	4	3.3
Pot Cap-1 Maneuver	1583	-	-	1358	-	-	622	592	897	616	530	1037
Stage 1	-	-	-	-	-	-	900	808	-	787	725	-
Stage 2	-	-	-	-	-	-	782	725	-	887	742	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1583	-	-	1358	-	-	581	552	897	569	494	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-	581	552	-	569	494	-
Stage 1	-	-	-	-	-	-	900	808	-	787	676	-
Stage 2	-	-	-	-	-	-	718	676	-	864	742	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			5.4			12.2			12		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	581	883	1583	-	-	1358	-	-	525
HCM Lane V/C Ratio	0.202	0.025	-	-	-	0.066	-	-	0.019
HCM Control Delay (s)	12.8	9.2	0	-	-	7.8	0	-	12
HCM Lane LOS	B	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.1	0	-	-	0.2	-	-	0.1

Capacity Analysis Summary Sheets
Year 2028 No-Build Weekend Midday Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	152	1420	116	567	1767	302	84	29	62	347	79	131
Future Volume (vph)	152	1420	116	567	1767	302	84	29	62	347	79	131
Ideal Flow (vphp)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.898				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3433	5406	1615	3433	5406	1615	1787	1706	0	1805	1942	1615
Flt Permitted	0.950			0.950			0.704			0.579		
Satd. Flow (perm)	3433	5406	1615	3433	5406	1615	1324	1706	0	1100	1942	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			311		64				135
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	2%	1%	0%	2%	1%	0%	1%	0%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	157	1464	120	585	1822	311	87	94	0	358	81	135
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	21.5	8.0	8.5	22.0	8.0	8.0	19.0		8.0	21.0	8.5
Total Split (s)	13.0	38.0	15.0	21.0	46.0	21.0	15.0	20.0		21.0	26.0	13.0
Total Split (%)	13.0%	38.0%	15.0%	21.0%	46.0%	21.0%	15.0%	20.0%		21.0%	26.0%	13.0%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5		3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5		0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0		3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	9.2	32.0	46.7	18.0	40.8	63.9	26.6	14.9		38.0	23.3	38.5
Actuated g/C Ratio	0.09	0.32	0.47	0.18	0.41	0.64	0.27	0.15		0.38	0.23	0.38
v/c Ratio	0.50	0.85	0.15	0.95	0.83	0.27	0.22	0.31		0.67	0.18	0.19
Control Delay	48.7	37.4	2.6	67.0	30.6	1.5	22.5	18.7		31.1	32.9	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		1.1	0.0	0.0
Total Delay	48.7	37.4	2.6	67.0	30.6	1.5	22.5	18.7		32.2	32.9	4.5
LOS	D	D	A	E	C	A	C	B		C	C	A
Approach Delay		36.0			35.1			20.6				25.8
Approach LOS		D			D			C				C
Queue Length 50th (ft)	49	316	0	191	376	0	36	17		174	41	0
Queue Length 95th (ft)	81	377	24	#297	442	29	69	63		262	85	38

Lanes, Volumes, Timings

3: Downers Drive & Butterfield Road

10/06/2022

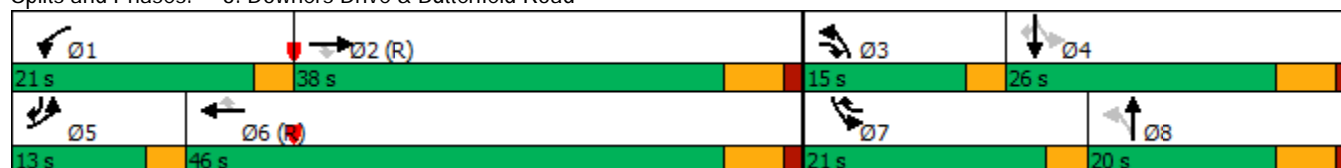


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	343	1729	873	617	2206	1156	451	308		544	452	717
Starvation Cap Reductn	0	0	0	0	0	0	0	0		57	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.46	0.85	0.14	0.95	0.83	0.27	0.19	0.31		0.74	0.18	0.19

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	8 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	33.9
Intersection LOS:	C
Intersection Capacity Utilization	81.5%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 3: Downers Drive & Butterfield Road



Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↖			↖			↖	↗
Traffic Volume (vph)	19	83	294	190	85	55	296	46	141	31	73	10
Future Volume (vph)	19	83	294	190	85	55	296	46	141	31	73	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr't			0.850		0.975			0.956			0.987	
Flt Protected		0.991			0.972			0.970			0.986	
Satd. Flow (prot)	0	1883	1615	0	3421	0	0	3335	0	0	3513	0
Flt Permitted		0.890			0.752			0.727			0.802	
Satd. Flow (perm)	0	1691	1615	0	2647	0	0	2499	0	0	2858	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			320		31			140			11	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	4%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	320	0	359	0	0	525	0	0	124	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.24	0.48		0.48			0.35			0.08	
Control Delay		22.9	5.5		23.3			6.8			6.7	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		22.9	5.5		23.3			6.8			6.7	
LOS		C	A		C			A			A	
Approach Delay		10.0			23.3			6.8			6.7	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		40	0		66			43			11	
Queue Length 95th (ft)		80	57		106			71			22	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		462	673		746			1492			1643	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.24	0.48		0.48			0.35			0.08	

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 0.48

Intersection Signal Delay: 11.9

Intersection LOS: B

Intersection Capacity Utilization 65.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC
6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	1829	2576	199	0	59
Future Vol, veh/h	0	1829	2576	199	0	59
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	1847	2602	201	0	60

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 1402
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.1
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3
Pot Cap-1 Maneuver	0	-	- 0 *403
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	- - 1
Mov Cap-1 Maneuver	-	-	- - *403
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.5
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	403
HCM Lane V/C Ratio	-	-	-	0.148
HCM Control Delay (s)	-	-	-	15.5
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.5

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC

8: Downers Drive & Brook Drive

10/06/2022

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	16	68	46	13	0	97	0	23	0	0	0
Future Vol, veh/h	0	16	68	46	13	0	97	0	23	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	8	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	21	87	59	17	0	124	0	29	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	108	0	0	200	200	65	214	243	17
Stage 1	-	-	-	-	-	-	65	65	-	135	135	-
Stage 2	-	-	-	-	-	-	135	135	-	79	108	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1613	-	-	1495	-	-	763	699	1005	747	662	1068
Stage 1	-	-	-	-	-	-	951	845	-	873	789	-
Stage 2	-	-	-	-	-	-	873	789	-	935	810	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1613	-	-	1495	-	-	739	671	1005	703	636	1068
Mov Cap-2 Maneuver	-	-	-	-	-	-	739	671	-	703	636	-
Stage 1	-	-	-	-	-	-	951	845	-	873	757	-
Stage 2	-	-	-	-	-	-	838	757	-	908	810	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			5.9			10.5			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	739	1005	1613	-	-	1495	-	-	-
HCM Lane V/C Ratio	0.168	0.029	-	-	-	0.039	-	-	-
HCM Control Delay (s)	10.9	8.7	0	-	-	7.5	0	-	0
HCM Lane LOS	B	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0.1	-	-	-

Capacity Analysis Summary Sheets
Year 2028 Total Projected Weekday Morning Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	2008	190	432	1467	190	16	18	17	92	47	54
Future Volume (vph)	92	2008	190	432	1467	190	16	18	17	92	47	54
Ideal Flow (vphp)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.927				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	5353	1599	3335	5301	1553	1671	1700	0	1736	1810	1583
Flt Permitted	0.950			0.950			0.726			0.646		
Satd. Flow (perm)	3467	5353	1599	3335	5301	1553	1277	1700	0	1180	1810	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			194			194		17				96
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Heavy Vehicles (%)	1%	2%	1%	5%	3%	4%	8%	7%	0%	4%	5%	2%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	94	2049	194	441	1497	194	16	35	0	94	48	55
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	21.5	11.5	8.5	22.0	11.5	11.5	19.0		11.5	21.0	8.5
Total Split (s)	12.5	67.5	12.5	24.0	79.0	12.5	12.5	21.0		12.5	21.0	12.5
Total Split (%)	10.0%	54.0%	10.0%	19.2%	63.2%	10.0%	10.0%	16.8%		10.0%	16.8%	10.0%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	0.0	1.0	1.5	0.0	0.0	1.5		0.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	3.5	4.5	6.0	3.5	3.5	6.0		3.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	7.6	62.0	74.5	19.0	73.4	88.0	24.4	15.4		28.6	17.5	31.1
Actuated g/C Ratio	0.06	0.50	0.60	0.15	0.59	0.70	0.20	0.12		0.23	0.14	0.25
v/c Ratio	0.45	0.77	0.19	0.87	0.48	0.17	0.06	0.16		0.31	0.19	0.12
Control Delay	63.4	28.3	1.9	70.1	15.6	1.1	37.3	32.5		41.3	50.3	1.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	63.4	28.3	1.9	70.1	15.6	1.1	37.3	32.5		41.3	50.3	1.8
LOS	E	C	A	E	B	A	D	C		D	D	A
Approach Delay		27.6			25.5			34.0				32.5
Approach LOS		C			C			C				C
Queue Length 50th (ft)	38	485	0	180	244	0	10	13		62	35	0
Queue Length 95th (ft)	67	548	29	#262	282	21	29	46		111	74	8

Lanes, Volumes, Timings

3: Downers Drive & Butterfield Road

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	221	2654	1059	520	3110	1154	303	223		313	252	470
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.43	0.77	0.18	0.85	0.48	0.17	0.05	0.16		0.30	0.19	0.12

Intersection Summary

Area Type:	Other
Cycle Length:	125
Actuated Cycle Length:	125
Offset:	30 (24%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	90
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.87
Intersection Signal Delay:	26.9
Intersection LOS:	C
Intersection Capacity Utilization	74.7%
ICU Level of Service	D
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 3: Downers Drive & Butterfield Road

Ø1 24 s	Ø2 (R) 67.5 s	Ø3 12.5 s	Ø4 21 s
Ø5 12.5 s	Ø6 (R) 79 s	Ø7 12.5 s	Ø8 21 s

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↖	↗		↖↗			↖↗			↖↗	
Traffic Volume (vph)	34	11	119	34	5	29	140	100	60	9	40	17
Future Volume (vph)	34	11	119	34	5	29	140	100	60	9	40	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Fr't			0.850		0.936			0.970			0.962	
Flt Protected		0.964			0.975			0.977			0.993	
Satd. Flow (prot)	0	1832	1583	0	3294	0	0	3319	0	0	3110	0
Flt Permitted		0.787			0.830			0.783			0.912	
Satd. Flow (perm)	0	1495	1583	0	2805	0	0	2660	0	0	2856	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			128		31			65			18	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	2%	0%	0%	0%	3%	5%	0%	0%	18%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	49	128	0	73	0	0	324	0	0	71	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.12	0.24		0.09			0.21			0.04	
Control Delay		21.5	5.7		13.8			6.5			5.7	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		21.5	5.7		13.8			6.5			5.7	
LOS		C	A		B			A			A	
Approach Delay		10.1			13.8			6.5			5.7	
Approach LOS		B			B			A			A	
Queue Length 50th (ft)		17	0		7			27			5	
Queue Length 95th (ft)		42	37		22			46			13	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		408	525		789			1552			1645	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.12	0.24		0.09			0.21			0.04	

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 0.24

Intersection Signal Delay: 8.2

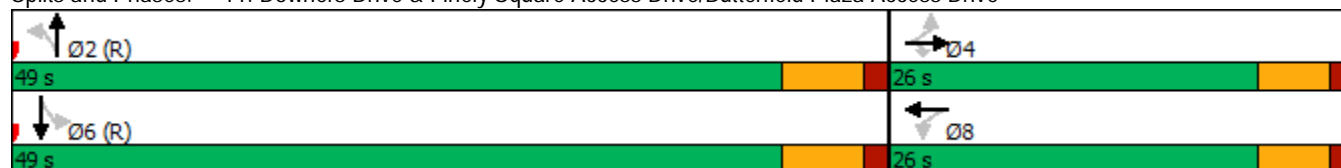
Intersection LOS: A

Intersection Capacity Utilization 64.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC
6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	2117	2062	57	0	27
Future Vol, veh/h	0	2117	2062	57	0	27
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	2	3	0	0	0
Mvmt Flow	0	2205	2148	59	0	28

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 1104
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.1
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3
Pot Cap-1 Maneuver	0	-	- 0 *561
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %		-	- 1
Mov Cap-1 Maneuver	-	-	- - *561
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11.8
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	561
HCM Lane V/C Ratio	-	-	-	0.05
HCM Control Delay (s)	-	-	-	11.8
HCM Lane LOS	-	-	-	B
HCM 95th %tile Q(veh)	-	-	-	0.2

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
8: Downers Drive & Brook Drive

10/06/2022

Intersection

Int Delay, s/veh 6.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	2	39	51	14	2	0	105	0	58	0	1	0
Future Vol, veh/h	2	39	51	14	2	0	105	0	58	0	1	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	81	81	81	81	81	81	81	81	81	81	81	81
Heavy Vehicles, %	0	0	3	17	50	0	0	0	7	0	0	0
Mvmt Flow	2	48	63	17	2	0	130	0	72	0	1	0

Major/Minor	Major1	Major2	Minor1	Minor2
Conflicting Flow All	2	0	0	111
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Critical Hdwy	4.1	-	-	4.27
Critical Hdwy Stg 1	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	2.2	-	-	2.353
Pot Cap-1 Maneuver	1634	-	-	1390
Stage 1	-	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %	-	-	-	-
Mov Cap-1 Maneuver	1634	-	-	1390
Mov Cap-2 Maneuver	-	-	-	-
Stage 1	-	-	-	-
Stage 2	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	6.7	9.6	9.9
HCM LOS			A	A

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	850	966	1634	-	-	1390	-	-	734
HCM Lane V/C Ratio	0.153	0.074	0.002	-	-	0.012	-	-	0.002
HCM Control Delay (s)	10	9	7.2	0	-	7.6	0	-	9.9
HCM Lane LOS	B	A	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.5	0.2	0	-	-	0	-	-	0

Capacity Analysis Summary Sheets
Year 2028 Total Projected Weekday Evening Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	104	1770	131	932	2307	243	141	23	100	302	116	118
Future Volume (vph)	104	1770	131	932	2307	243	141	23	100	302	116	118
Ideal Flow (vphp)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.878				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3502	5406	1615	3467	5406	1599	1787	1668	0	1770	2000	1599
Flt Permitted	0.950			0.950			0.680			0.388		
Satd. Flow (perm)	3502	5406	1615	3467	5406	1599	1279	1668	0	723	2000	1599
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			125			251		103				89
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	0%	1%	0%	1%	1%	1%	1%	0%	0%	2%	0%	1%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	107	1825	135	961	2378	251	145	127	0	311	120	122
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	21.5	8.0	8.5	22.0	8.0	8.0	19.0		8.0	14.5	8.5
Total Split (s)	13.5	49.0	13.5	44.5	80.0	23.0	13.5	18.5		23.0	28.0	13.5
Total Split (%)	10.0%	36.3%	10.0%	33.0%	59.3%	17.0%	10.0%	13.7%		17.0%	20.7%	10.0%
Yellow Time (s)	3.5	4.5	3.5	3.5	4.5	3.5	3.5	4.5		3.5	4.5	3.5
All-Red Time (s)	1.0	1.5	0.0	1.0	1.5	0.0	0.0	1.5		0.0	1.5	1.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	4.5	6.0	3.5	4.5	6.0	3.5	3.5	6.0		3.5	6.0	4.5
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	8.5	43.5	59.4	39.5	74.5	100.0	24.8	12.5		38.0	22.2	36.6
Actuated g/C Ratio	0.06	0.32	0.44	0.29	0.55	0.74	0.18	0.09		0.28	0.16	0.27
v/c Ratio	0.49	1.05	0.17	0.95	0.80	0.20	0.53	0.51		0.88	0.37	0.24
Control Delay	68.9	79.3	5.1	65.1	26.9	1.0	47.7	23.8		68.8	54.0	13.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Delay	68.9	79.3	5.1	65.1	26.9	1.0	47.7	23.8		68.8	54.0	13.8
LOS	E	E	A	E	C	A	D	C		E	D	B
Approach Delay		73.9			35.3			36.6				53.4
Approach LOS		E			D			D				D
Queue Length 50th (ft)	47	-642	5	423	594	0	100	20		239	95	22
Queue Length 95th (ft)	79	#738	44	#552	657	21	160	85		#341	158	72

Lanes, Volumes, Timings

3: Downers Drive & Butterfield Road

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	233	1743	782	1027	2985	1249	274	247		354	328	504
Starvation Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.46	1.05	0.17	0.94	0.80	0.20	0.53	0.51		0.88	0.37	0.24

Intersection Summary

Area Type:	Other
Cycle Length:	135
Actuated Cycle Length:	135
Offset:	89 (66%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	110
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	1.05
Intersection Signal Delay:	49.2
Intersection LOS:	D
Intersection Capacity Utilization	100.3%
ICU Level of Service	G
Analysis Period (min)	15
~ Volume exceeds capacity, queue is theoretically infinite. Queue shown is maximum after two cycles.	
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 3: Downers Drive & Butterfield Road



Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Volume (vph)	18	43	170	174	46	50	191	57	122	28	192	22
Future Volume (vph)	18	43	170	174	46	50	191	57	122	28	192	22
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.972			0.951			0.986	
Flt Protected		0.985			0.969			0.975			0.994	
Satd. Flow (prot)	0	1872	1599	0	3381	0	0	3337	0	0	3456	0
Flt Permitted		0.866			0.758			0.696			0.888	
Satd. Flow (perm)	0	1645	1599	0	2645	0	0	2382	0	0	3087	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			177		36			127			23	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	0%	1%	0%	0%	3%	0%	2%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	64	177	0	281	0	0	385	0	0	252	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2		6			
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.14	0.31		0.38			0.27			0.14	
Control Delay		21.7	5.4		20.8			5.8			7.0	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		21.7	5.4		20.8			5.8			7.0	
LOS		C	A		C			A			A	
Approach Delay		9.8			20.8			5.8			7.0	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		22	0		47			27			23	
Queue Length 95th (ft)		52	43		81			48			39	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		449	565		749			1419			1779	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.14	0.31		0.38			0.27			0.14	

Lanes, Volumes, Timings

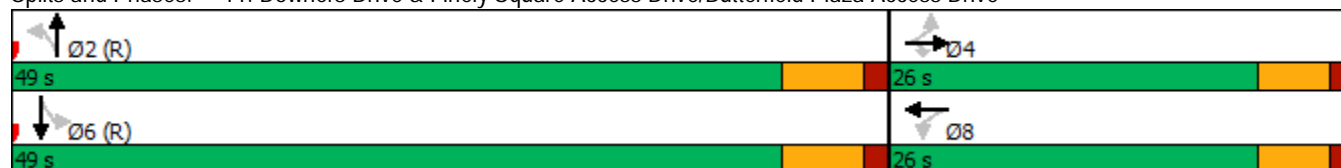
11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type:	Other
Cycle Length:	75
Actuated Cycle Length:	75
Offset:	0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle:	55
Control Type:	Pretimed
Maximum v/c Ratio:	0.38
Intersection Signal Delay:	10.5
Intersection LOS:	B
Intersection Capacity Utilization	64.6%
ICU Level of Service	C
Analysis Period (min)	15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC
6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	2172	3424	129	0	58
Future Vol, veh/h	0	2172	3424	129	0	58
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	0	1	1	2	0	0
Mvmt Flow	0	2286	3604	136	0	61

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	-	0	-	0	- 1870
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-
Critical Hdwy	-	-	-	-	- 7.1
Critical Hdwy Stg 1	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	- 3
Pot Cap-1 Maneuver	0	-	-	-	0 *132
Stage 1	0	-	-	-	0 -
Stage 2	0	-	-	-	0 -
Platoon blocked, %		-	-	-	- 1
Mov Cap-1 Maneuver	-	-	-	-	- *132
Mov Cap-2 Maneuver	-	-	-	-	-
Stage 1	-	-	-	-	-
Stage 2	-	-	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	53.8
HCM LOS			F

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	132
HCM Lane V/C Ratio	-	-	-	0.463
HCM Control Delay (s)	-	-	-	53.8
HCM Lane LOS	-	-	-	F
HCM 95th %tile Q(veh)	-	-	-	2.1

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
8: Downers Drive & Brook Drive

10/06/2022

Intersection

Int Delay, s/veh 5.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	20	155	79	35	0	105	1	19	0	8	1
Future Vol, veh/h	0	20	155	79	35	0	105	1	19	0	8	1
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	0	12	1	5	7	0	0	0	20	0	0	0
Mvmt Flow	0	23	176	90	40	0	119	1	22	0	9	1

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	40	0	0	199	0	0	336	331	111	343	419	40
Stage 1	-	-	-	-	-	-	111	111	-	220	220	-
Stage 2	-	-	-	-	-	-	225	220	-	123	199	-
Critical Hdwy	4.1	-	-	4.15	-	-	7.1	6.5	6.4	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.245	-	-	3.5	4	3.48	3.5	4	3.3
Pot Cap-1 Maneuver	1583	-	-	1356	-	-	622	592	896	615	528	1037
Stage 1	-	-	-	-	-	-	899	807	-	787	725	-
Stage 2	-	-	-	-	-	-	782	725	-	886	740	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1583	-	-	1356	-	-	581	552	896	568	492	1037
Mov Cap-2 Maneuver	-	-	-	-	-	-	581	552	-	568	492	-
Stage 1	-	-	-	-	-	-	899	807	-	787	676	-
Stage 2	-	-	-	-	-	-	718	676	-	863	740	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			5.4			12.2			12		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	581	882	1583	-	-	1356	-	-	523
HCM Lane V/C Ratio	0.206	0.025	-	-	-	0.066	-	-	0.02
HCM Control Delay (s)	12.8	9.2	0	-	-	7.8	0	-	12
HCM Lane LOS	B	A	A	-	-	A	A	-	B
HCM 95th %tile Q(veh)	0.8	0.1	0	-	-	0.2	-	-	0.1

Capacity Analysis Summary Sheets
Year 2028 Total Projected Weekend Midday Peak Hour

Lanes, Volumes, Timings 3: Downers Drive & Butterfield Road

10/06/2022

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	165	1420	116	567	1780	302	84	34	62	362	82	131
Future Volume (vph)	165	1420	116	567	1780	302	84	34	62	362	82	131
Ideal Flow (vphp)	1900	2000	1900	1900	2000	1900	1900	1900	1900	1900	2000	1900
Storage Length (ft)	230		280	350		350	0		0	0		150
Storage Lanes	2		1	2		1	1		0	1		1
Taper Length (ft)	300			300			25			25		
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Frt			0.850			0.850		0.903				0.850
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	3467	5406	1615	3433	5406	1615	1787	1716	0	1805	1942	1615
Flt Permitted	0.950			0.950			0.702			0.576		
Satd. Flow (perm)	3467	5406	1615	3433	5406	1615	1321	1716	0	1094	1942	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			131			311		64				135
Link Speed (mph)		45			45			25				25
Link Distance (ft)		673			818			259				467
Travel Time (s)		10.2			12.4			7.1				12.7
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Heavy Vehicles (%)	1%	1%	0%	2%	1%	0%	1%	0%	0%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	170	1464	120	585	1835	311	87	99	0	373	85	135
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	pm+pt	NA		pm+pt	NA	pm+ov
Protected Phases	5	2	3	1	6	7	3	8		7	4	5
Permitted Phases			2			6	8			4		4
Detector Phase	5	2	3	1	6	7	3	8		7	4	5
Switch Phase												
Minimum Initial (s)	3.0	15.0	3.0	3.0	15.0	3.0	3.0	8.0		3.0	8.0	3.0
Minimum Split (s)	8.5	21.5	8.0	8.5	22.0	8.0	8.0	19.0		8.0	21.0	8.5
Total Split (s)	13.0	38.0	15.0	21.0	46.0	21.0	15.0	20.0		21.0	26.0	13.0
Total Split (%)	13.0%	38.0%	15.0%	21.0%	46.0%	21.0%	15.0%	20.0%		21.0%	26.0%	13.0%
Yellow Time (s)	3.0	4.5	3.0	3.0	4.5	3.0	3.0	4.5		3.0	4.5	3.0
All-Red Time (s)	0.0	1.5	0.0	0.0	1.5	0.0	0.0	1.5		0.0	1.5	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0	0.0
Total Lost Time (s)	3.0	6.0	3.0	3.0	6.0	3.0	3.0	6.0		3.0	6.0	3.0
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag		Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes		Yes	Yes	Yes
Recall Mode	None	C-Min	None	None	C-Min	None	None	Max		None	Max	None
Act Effect Green (s)	9.3	32.0	46.7	18.0	40.7	63.9	26.4	14.8		38.0	23.3	38.6
Actuated g/C Ratio	0.09	0.32	0.47	0.18	0.41	0.64	0.26	0.15		0.38	0.23	0.39
v/c Ratio	0.53	0.85	0.15	0.95	0.83	0.27	0.22	0.32		0.69	0.19	0.19
Control Delay	49.4	37.4	2.6	67.0	31.0	1.5	22.5	19.8		32.3	33.0	4.5
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		1.3	0.0	0.0
Total Delay	49.4	37.4	2.6	67.0	31.0	1.5	22.5	19.8		33.5	33.0	4.5
LOS	D	D	A	E	C	A	C	B		C	C	A
Approach Delay		36.2			35.3			21.1				26.9
Approach LOS		D			D			C				C
Queue Length 50th (ft)	53	316	0	191	381	0	36	20		183	44	0
Queue Length 95th (ft)	87	377	24	#297	447	29	69	67		275	88	38

Lanes, Volumes, Timings

3: Downers Drive & Butterfield Road

10/06/2022

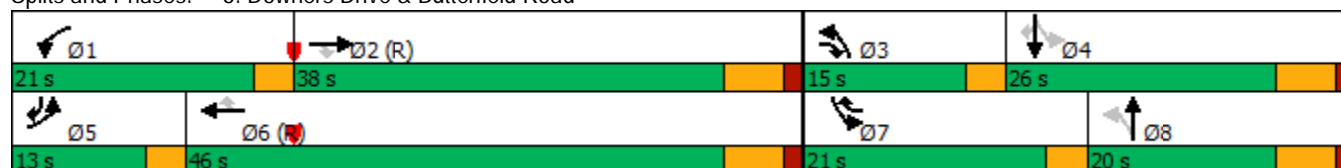


Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Internal Link Dist (ft)		593			738			179			387	
Turn Bay Length (ft)	230		280	350		350						150
Base Capacity (vph)	346	1729	873	617	2200	1154	449	308		543	452	717
Starvation Cap Reductn	0	0	0	0	0	0	0	0		54	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0		0	0	0
Reduced v/c Ratio	0.49	0.85	0.14	0.95	0.83	0.27	0.19	0.32		0.76	0.19	0.19

Intersection Summary

Area Type:	Other
Cycle Length:	100
Actuated Cycle Length:	100
Offset:	8 (8%), Referenced to phase 2:EBT and 6:WBT, Start of Green
Natural Cycle:	80
Control Type:	Actuated-Coordinated
Maximum v/c Ratio:	0.95
Intersection Signal Delay:	34.1
Intersection LOS:	C
Intersection Capacity Utilization	82.3%
ICU Level of Service	E
Analysis Period (min)	15
# 95th percentile volume exceeds capacity, queue may be longer. Queue shown is maximum after two cycles.	

Splits and Phases: 3: Downers Drive & Butterfield Road



Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕			↕			↕	
Traffic Volume (vph)	19	83	294	210	85	71	296	31	174	34	71	10
Future Volume (vph)	19	83	294	210	85	71	296	31	174	34	71	10
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	1.00	1.00	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Frt			0.850		0.971			0.948			0.987	
Flt Protected		0.991			0.972			0.971			0.985	
Satd. Flow (prot)	0	1883	1615	0	3407	0	0	3313	0	0	3510	0
Flt Permitted		0.883			0.752			0.731			0.786	
Satd. Flow (perm)	0	1678	1615	0	2636	0	0	2494	0	0	2801	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			320		39			189			11	
Link Speed (mph)		25			25			25			25	
Link Distance (ft)		279			270			467			440	
Travel Time (s)		7.6			7.4			12.7			12.0	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	5%	0%	0%	0%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	111	320	0	397	0	0	545	0	0	125	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4		4	8			2			6		
Minimum Split (s)	25.5	25.5	25.5	25.5	25.5		26.0	26.0		26.0	26.0	
Total Split (s)	26.0	26.0	26.0	26.0	26.0		49.0	49.0		49.0	49.0	
Total Split (%)	34.7%	34.7%	34.7%	34.7%	34.7%		65.3%	65.3%		65.3%	65.3%	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.5	4.5		4.5	4.5	
All-Red Time (s)	1.5	1.5	1.5	1.5	1.5		1.5	1.5		1.5	1.5	
Lost Time Adjust (s)		0.0	0.0		0.0			0.0			0.0	
Total Lost Time (s)		5.5	5.5		5.5			6.0			6.0	
Lead/Lag												
Lead-Lag Optimize?												
Act Effect Green (s)		20.5	20.5		20.5			43.0			43.0	
Actuated g/C Ratio		0.27	0.27		0.27			0.57			0.57	
v/c Ratio		0.24	0.48		0.53			0.36			0.08	
Control Delay		23.0	5.5		23.8			6.1			6.7	
Queue Delay		0.0	0.0		0.0			0.0			0.0	
Total Delay		23.0	5.5		23.8			6.1			6.7	
LOS		C	A		C			A			A	
Approach Delay		10.0			23.8			6.1			6.7	
Approach LOS		A			C			A			A	
Queue Length 50th (ft)		40	0		73			39			11	
Queue Length 95th (ft)		80	57		116			67			22	
Internal Link Dist (ft)		199			190			387			360	
Turn Bay Length (ft)												
Base Capacity (vph)		458	673		748			1510			1610	
Starvation Cap Reductn		0	0		0			0			0	
Spillback Cap Reductn		0	0		0			0			0	
Storage Cap Reductn		0	0		0			0			0	
Reduced v/c Ratio		0.24	0.48		0.53			0.36			0.08	

Lanes, Volumes, Timings

11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive

10/06/2022

Intersection Summary

Area Type: Other

Cycle Length: 75

Actuated Cycle Length: 75

Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green

Natural Cycle: 55

Control Type: Pretimed

Maximum v/c Ratio: 0.53

Intersection Signal Delay: 12.0

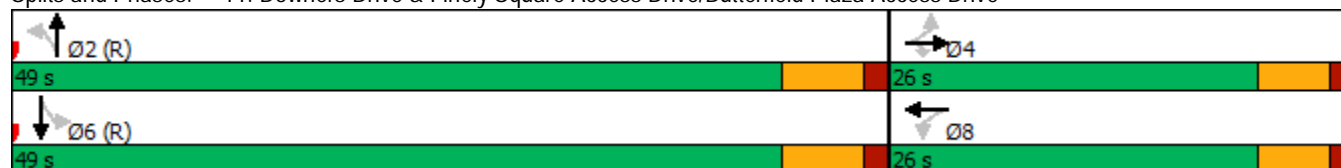
Intersection LOS: B

Intersection Capacity Utilization 65.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 11: Downers Drive & Finely Square Access Drive/Butterfield Plaza Access Drive



HCM 6th TWSC
6: Butterfield Road & Butterfield Plaza Access Drive

10/06/2022

Intersection						
Int Delay, s/veh	0.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑	↑↑↑			↑
Traffic Vol, veh/h	0	1844	2560	231	0	88
Future Vol, veh/h	0	1844	2560	231	0	88
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	99	99	99	99	99	99
Heavy Vehicles, %	0	1	1	0	0	0
Mvmt Flow	0	1863	2586	233	0	89

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	-	0	- 0 - 1410
Stage 1	-	-	- - -
Stage 2	-	-	- - -
Critical Hdwy	-	-	- - 7.1
Critical Hdwy Stg 1	-	-	- - -
Critical Hdwy Stg 2	-	-	- - -
Follow-up Hdwy	-	-	- - 3
Pot Cap-1 Maneuver	0	-	- 0 *429
Stage 1	0	-	- 0 -
Stage 2	0	-	- 0 -
Platoon blocked, %	-	-	- - 1
Mov Cap-1 Maneuver	-	-	- - *429
Mov Cap-2 Maneuver	-	-	- - -
Stage 1	-	-	- - -
Stage 2	-	-	- - -

Approach	EB	WB	SB
HCM Control Delay, s	0	0	15.6
HCM LOS			C

Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	-	-	-	429
HCM Lane V/C Ratio	-	-	-	0.207
HCM Control Delay (s)	-	-	-	15.6
HCM Lane LOS	-	-	-	C
HCM 95th %tile Q(veh)	-	-	-	0.8

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
8: Downers Drive & Brook Drive

10/06/2022

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	0	16	69	46	13	0	98	0	23	0	0	0
Future Vol, veh/h	0	16	69	46	13	0	98	0	23	0	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	78	78	78	78	78	78	78	78	78
Heavy Vehicles, %	0	8	0	0	0	0	0	0	0	0	0	0
Mvmt Flow	0	21	88	59	17	0	126	0	29	0	0	0

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	17	0	0	109	0	0	200	200	65	215	244	17
Stage 1	-	-	-	-	-	-	65	65	-	135	135	-
Stage 2	-	-	-	-	-	-	135	135	-	80	109	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1613	-	-	1494	-	-	763	699	1005	746	661	1068
Stage 1	-	-	-	-	-	-	951	845	-	873	789	-
Stage 2	-	-	-	-	-	-	873	789	-	934	809	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1613	-	-	1494	-	-	739	671	1005	702	635	1068
Mov Cap-2 Maneuver	-	-	-	-	-	-	739	671	-	702	635	-
Stage 1	-	-	-	-	-	-	951	845	-	873	757	-
Stage 2	-	-	-	-	-	-	838	757	-	907	809	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0			5.9			10.5			0		
HCM LOS							B			A		

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	739	1005	1613	-	-	1494	-	-	-
HCM Lane V/C Ratio	0.17	0.029	-	-	-	0.039	-	-	-
HCM Control Delay (s)	10.9	8.7	0	-	-	7.5	0	-	0
HCM Lane LOS	B	A	A	-	-	A	A	-	A
HCM 95th %tile Q(veh)	0.6	0.1	0	-	-	0.1	-	-	-

Parking Lot Zoning Figure



DRAFT

VILLAGE OF DOWNERS GROVE
PLAN COMMISSION MEETING

February 6, 7:00 P.M.

FILE 22-PCE-1004: A petition seeking a Special Use for a restaurant with a drive-through, a Parking Variation and a Final Plat of Subdivision with an exception to the Lot Depth. The property is currently zoned B-3, General Services and Highway Business. The property is located 420 feet east of the intersection of Downers Drive and Butterfield, commonly known as 1330 Butterfield Road, Downers Grove, IL (06-30-404-015). NARE Butterfield, LLC, Petitioner and Owner.

Representing NARE, Mr. Scott DiGilio with, RTM Engineering Consultants introduced Stephen Muench NARE's representative. Mr. DiGilio thanked the Community Development staff for their assistance with the project. He then went on to provide the existing conditions for the Butterfield Plaza shopping center. Mr. DiGilio explained that the proposal included a Wendy's restaurant with a drive-through on an outlot proposed on the southwest corner of the shopping center. He then provided a close up of the subdivision and noted that the subdivision included an exception to the lot depth. Mr. DiGilio explained that the area for the proposed outlot was an existing dry pond. As such, the volume for stormwater would be replaced in two underground vaults below the parking and drive-through areas in the proposed outlot. He noted that the practice of underground vaults was common for new developments.

Mr. DiGilio further explained that shopping center outlots were becoming more common especially with COVID-19 and tenants wanting their own standalone drive-through. He provided the site plan noting the location of the building footprint, drive-through lane, and the loss of parking stalls to the north of the proposed outlot.

Mr. DiGilio explained that the loss of parking allowed for the drive aisles to be better aligned and it ensured that the north lot line would not be bisecting parking stalls. He noted that while there was a net loss of 25 parking stalls in the shopping center, the proposed Wendy's restaurant did provide the required parking on the outlot for the restaurant. Mr. DiGilio then provided the utility plan and proposed elevations. He then noted that the village code required 410 stalls and the proposed parking was 399 stalls, including the new outlot. Mr. DiGilio further explained that the parking study found that only 214 parking stalls would be required to satisfy the actual use of the parking lot. He then noted that parking counts have come down due to order-in and deliveries and so not as many parking stalls were used anymore.

Mr. DiGilio summarized the requested entitlements and stated that they are requesting a special use for the drive-through, a parking variance for the 11 stall deficiency and a lot depth exception with the subdivision request. He further stated that all criteria had been met for the requested entitlements.

Chairman Rickard invited questions from the commissioners.

Commissioner Boyle asked if there were any ideas in terms of screening considering the headlights in the proposed drive-through would emit light onto oncoming the traffic on Butterfield Road. Mr. DiGilio noted that all required screening in terms of landscaping would be provided. Commissioner

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Boyle asked that special attention be paid to screening to ensure that as people make the turn into the proposed drive-through that the traffic on Butterfield is not flooded with headlights. Commissioner Boyle noted that he would like to make this a part of the approval if the petition gets to that point. He then asked if there was an access agreement in place for the drive-aisle that is proposed as the property line. Mr. DiGilio answered yes, that there would be shared access along with a parking agreement.

Commissioner Boyle asked if the net increase in impervious area would be accounted for in the overall volumes of the proposed vaults and if the proposal would meet the current stormwater ordinance requirements. Mr. DiGilio answered yes, the proposed improvements met the current code.

Commissioner Rector asked what the reason was for an exception to the lot depth considering there appeared to be a lot of area available for the outlot. Mr. DiGilio explained that the outlot was proposed to ensure that the lot line would not bisect parking stalls. He also added that the lot lines ensured that the access aisles lined up.

Chairman Rickard opened the public hearing to public comment. No one from the public was present to comment.

Senior Planner, Flora Leon, reviewed the staff report and provided an overview of the special use for a drive-through, a parking deviation, and a subdivision with an exception to the lot depth. She provided location maps and photographs of the site. She stated that they mailed out notification letters to neighbors and received no questions from the public. She provided the existing plat of survey and overlapped the proposed subdivision plat to highlight the location of the proposed outlot.

Ms. Leon provided the demolition plan and highlighted the parking lot area that would be saw cut to allow space for the new restaurant. Additionally, she noted that existing green space would be regraded with the new outlot. Ms. Leon highlighted that there would be no change to the entrance, the circulation inside of the shopping center would not be altered, and the drive-through lane would wrap around the south façade of the proposed building.

Ms. Leon then explained that the proposal would include re-grading the site. Ms. Leon addressed Commissioner Boyle's concern regarding the headlights flooding traffic along Butterfield Road. She explained that the grade change from the edge of the drive-through lane heading south towards Butterfield Road included an eight-foot grade change. Ms. Leon then offered a summary of the requested entitlements: a special use for the drive-through, a parking variation with a net loss of 25 parking stalls, and the plat of subdivision with the exception to the lot depth.

Ms. Leon explained that the lot depth could not be met when the required setback from an existing monument sign was provided. Additionally, she explained that it was not best practice for subdivisions to bisect parking areas and that is why the north lot line was adjusted. Ms. Leon shared the front elevation and noted the proposed building materials. She said it was important to note the future land use plan designated the parcel as regional commercials and also explained that the Comprehensive Plan states that the development of outlots should be promoted to attract new retail development. Ms. Leon said the special use, variation, and subdivision with an exception criteria were provided for review and staff did find the criteria had been met for all three requests.

Commissioner Boyle thanked Ms. Leon for the clarification. He then asked if there were any plans to continue the sidewalk to the east of the shopping center to draw pedestrian connectivity on Butterfield

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Road. Ms. Leon explained that IDOT did not require a sidewalk along Butterfield Road. As such she explained that a pedestrian connection would not be required for this development.

Commissioner Rector asked if the Plan Commission could recommend a sidewalk and a pedestrian connection on Butterfield Road. Planning Manager, Jason Zawila, explained that Butterfield Road was under IDOT jurisdiction. Commissioner Boyle strongly encouraged the petitioner to work with IDOT to create some pedestrian connectivity.

Chairman Rickard asked if the drive-through stacking was being met. Ms. Leon answered yes.

Chairman Rickard asked if the petitioner had anything to add. Mr. DiGilio further confirmed that the stacking requirement in the drive-through was met. He also noted that the grade change would create a berm heading south toward Butterfield Road and this would create a screen for the headlights.

Chairman Rickard move onto Planned Commission deliberation; with no further discussion a motion was offered.

WITH RESPECT TO FILE 22-PCE-1004 AND BASED ON THE PETITIONER'S SUBMITTAL, THE STAFF REPORT, AND THE TESTIMONY PRESENTED, COMMISSIONER RECTOR MADE A MOTION THAT THE PETITIONER HAS MET THE STANDARDS OF APPROVAL FOR A SPECIAL USE, PARKING VARIATION AND A FINAL PLAT OF SUBDIVISION WITH AN EXCEPTION TO THE SUBDIVISION STANDARDS AS REQUIRED BY THE VILLAGE OF DOWNERS GROVE ZONING AND SUBDIVISIONS ORDINANCES AND IS IN THE PUBLIC INTEREST AND THEREFORE, PLAN COMMISSIONER RECTOR MOVED THAT THE PLAN COMMISSION RECOMMEND TO THE VILLAGE COUNCIL APPROVAL OF 22-PCE-1004, SUBJECT TO THE FOLLOWING CONDITIONS:

- 1. THE SPECIAL USE, PARKING VARIATION AND A PLAT OF SUBDIVISION WITH AN EXCEPTION TO THE MINIMUM LOT DEPTH STANDARDS SHALL SUBSTANTIALLY CONFORM TO THE STAFF REPORT; AND CIVIL DRAWINGS PREPARED BY RTM ENGINEERING CONSULTANTS SUBMITTED ON 12/8/22 AND UPDATED 1/25/23 AND THE ARCHITECTURAL DRAWINGS SUBMITTED ON 12/8/22 AND UPDATED ON 1/25/23 EXCEPT AS SUCH PLANS MAY BE MODIFIED TO CONFORM TO THE VILLAGE CODES AND ORDINANCES.**
- 2. A PERPETUAL CROSS ACCESS AND PARKING EASEMENT IS PROVIDED BETWEEN LOTS 1 AND LOT 2 AND IS SHOWN ON THE PLAT OF SUBDIVISION.**
- 3. THE PHOTOMETRIC PLAN SHALL CONFORM TO THE VILLAGE ZONING ORDINANCE.**
- 4. ALL SIGNAGE SHALL BE PERMITTED SEPARATELY AND CONFORM TO THE VILLAGE'S SIGN ORDINANCE.**
- 5. A FINAL PLAT OF SUBDIVISION WILL BE REQUIRED PRIOR TO PERMIT ISSUANCE.**

SECOND BY COMMISSIONER FRANKOVIC.

ROLL CALL:

AYE: RECTOR, FRANKOVIC, ROCHE, BOYLE, CHAIRMAN RICKARD

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NAY: NONE

MOTION PASSED. VOTE: 5-0

/s/ _____ Village Staff
Recording Secretary

(As transcribed by MP-3 Audio)