Regular Planning Commission Meeting
Wednesday, September 4, 2024, at 5:30 PM
City Council Chambers, City Hall (10 3rd Ave SW)
Any person needing special accommodation for the meeting is requested to notify the City Clerk's office at 857-4752.

1. ROLL CALL

2. PLEDGE OF ALLEGIANCE

3. INTRODUCTIONS AND DECORUM

   3.1. INTRODUCTIONS AND DECORUM HANDOUT

4. PLANNING COMMISSION

   4.1. APPROVAL OF AUGUST 2024 REGULAR MEETING MINUTES

5. PUBLIC HEARING

   5.1. CASE #2024-07-02 - MINOT FIRST ADDITION - ZONE CHANGE

   Public hearing request by Eric Thoemke representing Orlan & Mary Rovig, owner for a request of a zoning map amendment rezoning the property from "M1" Light Industrial District to "CBD" Central Business District. The legal description for the property is Lots 2, 3, 4, 5, 6, 8, 9, 10 and 11 of Block 30 Minot First Addition to the City of Minot, Ward County, North Dakota.
   The subject property address is 18 3rd St. SE

   5.2. CASE #2024-07-03 - LIVINGSTON'S 7TH ADDITION - CUP

   Public hearing request by John Coughlin, representing Meadowlark Holdings, LLC, owner for a request of a conditional use permit for a Truck Stop on a property zoned "C2" General Commercial District. The legal description for the property is Block 2 Livingston's 7th Addition to the City of Minot, North Dakota. The subject property is unaddressed.

   5.3. CASE #2024-07-04 - CITY OF MINOT - PRELIM PLAT

   Public hearing request by Lance Meyer, City Engineer representing the CRE-Provender Partners, LLC. owner for a request of a preliminary plat on a property zoned "M1" Light Industrial. The legal description for the property is

Outlot 38 less Lot A and Outlot 42, Section 26, Township 155 North, Range 83 West, Ward County, North Dakota.

The subject property address is 1625 Burdick EXPY W.

6. MISCELLANEOUS AND DISCUSSION ITEMS

7. ADJOURNMENT

INTRO

The Planning Commission evaluates land use applications for compliance with the standards and procedural requirements outlined within the Zoning Supplement to the City of Minot (Zoning Code) and North Dakota Century Code. Further, the Planning Commission is tasked to ensure development within the City of Minot aligns with the City of Minot 2012 Comprehensive Plan (Comprehensive Plan).[1]

Planning Department staff are assigned to support the Planning Commission by reviewing applications for compliance with the Zoning Code and alignment with the Comprehensive Plan. Staff summarizes this information to the Planning Commission in the form of written staff reports, which include a recommendation. Oral presentations summarizing a staff report and any additional information obtained since the date said staff report was written is provided as determined necessary by the Planning Commission.

Planning Commission is not required to follow City staff recommendation. However, a deviation from staff's recommendation may require clarification to the findings of fact along with clearly stated reasoning for any alternative recommendation.

Finally, staff is not able to anticipate all information entered into the record via Planning Commissioner discussion or provided by the public during the open public comment period. Staff is available to answer any questions which may arise through discussion.

The Planning Commission renders a decision for variances, interim use permits, and conditional use permits that may be appealed to City Council. The Planning Commission provides recommendations to City Council for all other land use applications.

DECORUM

Persons attending public hearings are expected to conduct themselves with decorum to assure fairness and equity in the proceedings. Participants must:

- Step to the podium/microphone each time you wish to be recognized by the Planning Commission to offer a comment, or to ask or answer a question, and state your name for the record. To ensure minutes of the meeting accurately reflect the individual for which statements are made a sign-in sheet is provided at the podium for those wishing to speak.
- Address all testimony, comments and questions to the Chair of the Commission and not the other participants, the applicant, or the staff. The Chair of the Commission will determine the appropriateness of all questions and when and where to direct them.
- Allow others in attendance an opportunity to present their testimony. Do not interrupt the proceedings with applause, heckling, outbursts or other disruptive behavior.
- Address the issues and application that are before the Commission. These proceedings are not the forum to discuss the appropriateness of particular land use policies, regulations, or alternatives.
- Please silence your phones or set them to vibrate at this time.

[1] Per N.D.C.C 40-48-09, the basic purpose of the plan:

> *…The plan shall be made with the general purpose of guiding and accomplishing a coordinated, adjusted, and harmonious development of the municipality and its environs, which, in accordance with present and future needs, best will promote the amenities of life, health, safety, morals, order, convenience, prosperity, and general welfare as well as efficiency and economy in the process of development, including adequate provision for light and air, distribution of population, good civic design and arrangement, wise and efficient expenditure of public funds, the adequate provision of public utilities and other public requirements, the improvement and control of architecture, and the general embellishment of the area under its jurisdiction.*

On August 6, 2024, a Regular Planning Commission Meeting of the Minot Planning Commission was held in the City Council Chambers, City Hall (10 3rd Ave SW). Chairman Offerdahl called the meeting to order at 05:25 PM.

1. ROLL CALL

Members Present: Tim Baumann, Annette Mennem, Serena Pontenila, Dustin Offerdahl, Kayla Johnson, Robert Kibler, Logan Longtin

Members Absent: Elisha Gates, Erin Iverson

City Staff Present: Nick Schmitz, Corbin Dickerson, Emily Huettl, Brian Billingsley, Hannah Hornberger, Doug Diedrichsen, Dan Falconer, Bryan Banfill, Kevin Braaten

Others Present: Kelly Dillon, Dan Stranberg, Jonathan Layne, Lyndsey Ledahl, Doug Bonsness, Brittany Shattuck, Travis Zablotney, Brian Everson, Patrick Fisher

2. PLEDGE OF ALLEGIANCE

3. INTRODUCTIONS AND DECORUM

3.1. INTRODUCTIONS AND DECORUM HANDOUT

4. PLANNING COMMISSION

4.1. APPROVAL OF THE JULY 2024 REGULAR MEETING MINUTES

The motion to Approve July 2024 Planning Commission Meeting MInutes was initiated by Planning Commission Representative Baumann seconded by Planning Commission Representative Pontenila and carried by the following roll call vote: ayes: Tim Baumann, Kayla Johnson, Robert Kibler, Logan Longtin, Annette Mennem, Dustin Offerdahl, Serena Pontenila; nays: None.
Motion carried.

5. PUBLIC HEARING

5.1. CASE #2024-06-04 - COPACETIC ADDITION - PRELIM PLAT

Mr. Diedrichsen goes over staff findings.
The Commissioners had a discussion.
Chairman Offerdahl opened the public hearing to the public for testimony.
No one appeared to testify.
Chairman Offerdahl closed the public hearing.
The motion to Approve on staff findings of fact was initiated by Planning Commission Representative Kibler seconded by Planning Commission Representative Mennem and carried by the following roll call vote: ayes: Tim Baumann, Kayla Johnson, Robert Kibler, Logan Longtin, Annette Mennem, Dustin Offerdahl, Serena Pontenila; nays: None.

Motion Carried.

5.2. CASE #2024-06-05 - CITY OF MINOT - PUBLIC WORKS SALT & SAND BUILDING - PUBLIC ZONE PLAN REVIEW

Mr. Diedrichsen goes over staff findings.
The Commissioners had a discussion.
Chairman Offerdahl opened the public hearing to the public for testimony.
No one appeared to testify.
Chairman Offerdahl closed the public hearing.
The motion to Approve on staff findings of fact was initiated by Planning Commission Representative Baumann seconded by Planning Commission Representative Pontenila and carried by the following roll call vote: ayes: Tim Baumann, Kayla Johnson, Robert Kibler, Logan Longtin, Annette Mennem, Dustin Offerdahl, Serena Pontenila; nays: None.
Motion Carried.

5.3. CASE #2024-06-06 - ENDEAVOR SOBER LIVING - CUP

Mr. Diedrichsen goes over the staff findings.
The Commissioners had a discussion.
Chairman Offerdahl opened the public hearing to the public for testimony.
Kelly Dillon - resident - discusses concerns.
Dan Stranberg - resident - discusses concerns.
Jonathan Layne - owner of Endeavor Sober Living - explains the purpose of the program.
Commissioners discuss questions with Mr. Layne.
Lynsey Ledahl - staff member Endeavor Sober Living - discusses the benefits of the program.
Doug Bonsness - resident - discusses concerns.
Brittany Shattuck - resident - discusses concerns.
Chairman Offerdahl closed the public hearing.
Commissioners have questions for staff.
City staff answers questions.
The motion to Approve based on staff conditions and findings of fact was initiated by Planning Commission Representative Kibler seconded by Planning Commission Representative Longtin and carried by the following roll call vote: ayes: Kayla Johnson, Robert Kibler, Logan Longtin, Annette Mennem, Dustin Offerdahl; nays: Tim Baumann, Serena Pontenila.
Motion Carried.

5.4. CASE #2024-07-01 - GREAT PLAINS ADDITION - PRELIM PLAT & ZONE CHANGE

Mr. Diedrichsen goes over staff findings.
The Commissioners had a discussion.
Chairman Offerdahl opened the public hearing to the public for testimony.
Travis Zablotney - applicant - discusses application.
Patrick Fisher & Brian Everson - Northern Plains Ag - present the future facility.

Chairman Offerdahl closed the public hearing.
Commissioners have questions for staff.
Staff answers questions.
Commissioners have further discussion.
The motion to Recommend Approval of Prelim Plat to City Council was initiated by Planning Commission Representative Kibler seconded by Planning Commission Representative Longtin and carried by the following roll call vote: ayes: Tim Baumann, Kayla Johnson, Robert Kibler, Logan Longtin, Annette Mennem, Dustin Offerdahl, Serena Pontenila; nays: None.
Motion Carried.
The motion to Recommend Denial of Zone Change to City Council was initiated by Planning Commission Representative Baumann seconded by Planning Commission Representative Kibler and carried by the following roll call vote: ayes: Tim Baumann, Robert Kibler, Annette Mennem; nays: Kayla Johnson, Logan Longtin, Dustin Offerdahl, Serena Pontenila.
Motion Failed.
The motion to Recommend Approval of Zone Change not based on staff conditions or findings of fact as outlined in the staff report to City Council on the basis that within the LDO that #1 is satisfied it upholds the spirit of C2 but aligns with the M1 zoning conditions and #4 fulfills and is consistent with the plans, policies and purpose of the ordinance was initiated by Planning Commission Representative Longtin seconded by Planning Commission Representative Pontenila and carried by the following roll call vote: ayes: Kayla Johnson, Logan Longtin, Dustin Offerdahl, Serena Pontenila; nays: Tim Baumann, Robert Kibler, Annette Mennem.
Motion Carried.

6. MISCELLANEOUS AND DISCUSSION ITEMS

6.1. ACCESSORY BUILDINGS

Mr. Falconer discusses presentation of accessory buildings and goes over changes that could be made if the Planning Commissioners see fit in the future.
6.2 Chairman Offerdahl discusses with Planning Commissioners about making their emails and phone numbers available to the public if they want.

7. ADJOURNMENT

With no further business, Chairman Offerdahl adjourned the meeting at 8:20 pm.

City of Minot

Planning Commission
Staff Report

Application Date: 07/15/2024
Date of Staff Report: 08/15/2024
Date of Planning Commission Meeting: 09/04/2024

Staff Contact: Doug Diedrichsen, Principal Planner
Staff Recommendation: Approval

Case Number: 2024-07-02

Project Name: Minot First Addition – Zone Change

Current Legal Description: Lots 2, 3, 4, 5, 6, 8, 9, 10 and 11 of Block 30 Minot First Addition to the City of Minot, Ward County, North Dakota

Proposed Legal Description: No Change

Present Address: 18 3rd St. SE

Owners: Orlan & Mary Rovig

Representative: Eric Thoemke

Entitlements Requested: Zoning Map Amendment from "M1" Light Industrial District to "CBD" Central Business District

Present Zone(s): "M1" Light Industrial District

Present Use(s): Vacant office and warehouse

Uses Allowed in Present Zone(s): See Chapter 2.2 for allowed and conditionally permitted uses within each district.

Present Future Land Use Map Designation: Downtown Fringe

Proposed Zone(s): "CBD" Central Business District

Proposed Use(s): Convert existing vacate warehouse and office space into "Commercial Recreational Indoor" space

Uses Allowed in Proposed Zone(s): See Chapter 2.2 for allowed and conditionally permitted uses within each district

Proposed Future Land Use Map Designation: No Change

PROJECT DESCRIPTION:

Public hearing request by Eric Thoemke representing Orlan & Mary Rovig, owner for a request of a zoning map amendment rezoning the property from "M1" Light Industrial District to "CBD" Central Business District. The legal description for the property is Lots 2, 3, 4, 5, 6, 8, 9, 10 and 11 of Block 30 Minot First Addition to the City of Minot, Ward County, North Dakota.

The address for the property is 18 3rd St. SE, an aerial map including the notification boundary, is provided in **Exhibit 1**.

BACKGROUND INFORMATION:

The applicant desires to rezone the property from "M1" Light Industrial District to "CBD" Central Business District in order to be able to convert a vacant office and warehouse space to a recreational facility. Currently any redevelopment of the subject property other than for industrial uses would require the entire property to be brought into compliance with the uses currently allowed in the "M1" district.

The "CBD" Central Business District allows for uses that complement the adjacent downtown uses that have been developed nearby.

"CBD" Central Business District is a complimentary zoning district for properties falling in the Downtown Fringe future land use category as outlined in chapter 3 of the 2040 Comprehensive Plan.

The applicant's letter of intent is provided in **Exhibit 2**.

The zoning and future land use map of the subject property and immediate vicinity is provided in **Exhibit 3**.

Site photos are provided in **Exhibit 4**.

STAFF ANALYSIS:

Zoning Map Amendment Analysis:

Section 9.1-7 of the Minot Land Development Code provides the procedures for amending the official zoning map of the City of Minot. Section 9.2 provides the noticing requirements for public hearings held by the Planning Commission. Section 9.1-7 D. recognizes that the future land use map may need to be amended to support any rezoning request. The applicant has submitted the necessary application documents required per Section 9.1-7 C. and noticing has been conducted as required per Section 9.2.

The subject property future land use designation is Downtown Fringe, which aligns with the proposed zone change to "CBD" Central Business District. Staff finds no future land use map amendment is necessary.

Section 9.1-7 E. 2. requires the Planning Commission to provide findings of fact to ensure the criteria included in Section 9.1-7 H. has been satisfied in order to support any recommendation regarding any proposed changes to the zoning map or Future Land Use Map. Staff provides the following guidance:

Section 9.1-7 H. relates to whether or not the proposed zoning map amendment is justified due to a change in conditions, error in the zoning map, or by in order to fulfill the future land use map of the Comprehensive Plan. The request stems from an application that would fulfill the future land use map of the Comprehensive Plan, as the existing zoning designation, "M1", is not a complementary zone for the Downtown Fringe designation as outlined in chapter 3 of the Comprehensive Plan. Section 9.1-7 H. 1 is satisfied.

The City and other agencies will be able to provide necessary public services and facilities to serve the proposed development. Section 9.1-7 H. 2 is satisfied as no new public infrastructure is requested and any additions or changes to the on-site infrastructure would be at the developer's expense.

Section 9.1-7 H. 3 requires that the proposed zoning map amendment will not substantially diminish the condition or value of property in the vicinity. Staff finds no evidence that the zoning map amendment to "CBD" Central Business District will diminish the condition or value of property within the vicinity. Section 9.1-7. H. 3. is satisfied.

Section 9.1-7. H. 4. requires the zoning change to be consistent with the purpose of the Land Development Ordinance of the City of Minot, the Comprehensive Plan, and other adopted plans and policies of the City. The proposed development must comply with all development standards within the Land Development Ordinance of the City of Minot and the zoning map amendment aligns with the future land use designation of Downtown Fringe in the City of Minot 2040 Comprehensive Plan. Therefore, Section 9.1-7. 4. is satisfied.

Comments:

a) There were no public comments at the time of writing this staff report.
b) The application was distributed to city departments and external public agencies within the City for review and no comments were received.

FINDINGS OF FACT:

The Minot Planning Commission should accept the following findings of facts:

1) The applicants have submitted a complete application.

2) The present zoning is "M1" Light Industrial District.

3) The City of Minot 2040 Comprehensive Plan Future Land Use Map designates this area as Downtown Fringe.

4) The proposed zoning map amendment satisfies the evaluative criteria of Section 9.1-7. H. 1. thru 4. of the Land Development Ordinance as outlined in the Staff Analysis section of staff's written report.

5) The Minot Planning Commission has the authority to hear this case and provide a recommendation to City Council whether the zoning map amendment be approved, with or without conditions, or denied. The

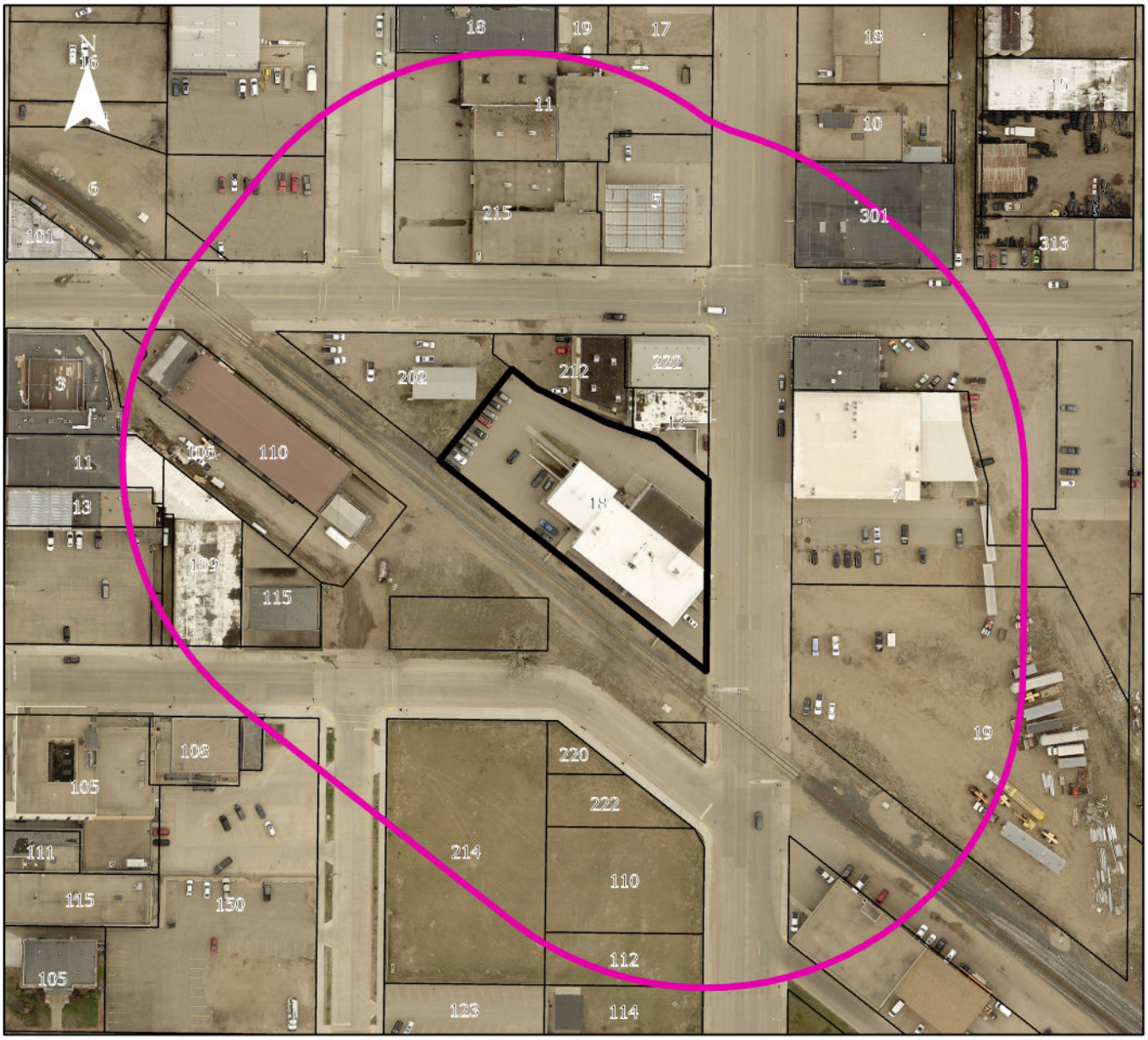
public notice requirements were met, the hearing was legally noticed and posted, and the hearing was held and conducted under the requirements of North Dakota Century Code and Minot City ordinances.

RECOMMENDATION:

Staff recommends the Planning Commission adopt staff's findings of fact and recommend approval to City Council for a zoning map amendment from "M1" Light Industrial District to "CBD" Central Business District with no conditions.

City of Minot

EXHIBIT 1



Two Mile Boundary
City Limits
Case # 2024-07-02
Case # 2024-07-02 Notification Area

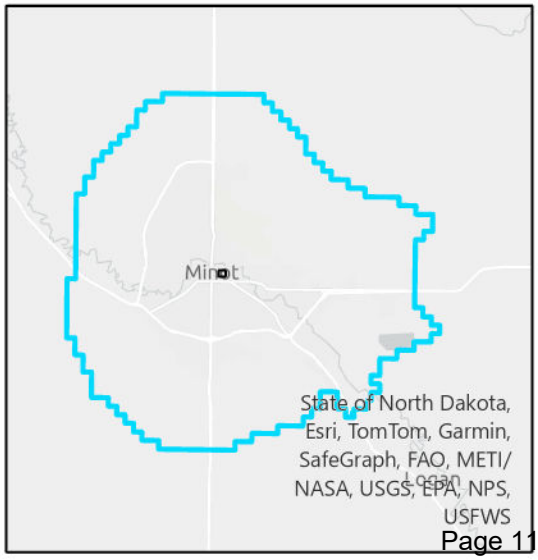


Exhibit 2

Eric Thoemke
830 University Ave W.
Minot, ND 58703
701-721-0001
elmdevelopmentsnd@gmail.com

20th August 2024

Planning Commission
1025 31st St. SE
Minot, ND 58702

Dear Members of the Planning Commission,

Subject: Request for Zoning Change from M1 Industrial to CBD

I am writing to formally request a zoning change for the property located at 18 3rd Street SE, currently designated as M1 Industrial, to be reclassified as Central Business District (CBD). This change aligns with our intention to establish a multi-faceted business that will significantly contribute to the vibrancy and economic growth of our downtown community.

Purpose of the Request

Our proposed business aims to create a dynamic space that includes a blend of business, entertainment, and dining experiences. By situating this venture in the Central Business District, we will be able to leverage the area's existing infrastructure and foot traffic, which are crucial for the success of our business model. Our goal is to integrate into the downtown community, offering new cultural and recreational opportunities to residents and visitors alike.

Benefits to the Community

1. **Economic Growth**: The establishment of our business will generate new jobs and stimulate local economic activity. It will attract visitors, increase consumer spending, and support other local businesses through increased traffic and collaboration. The Top floor of our building would be split in two to accommodate a current tenant. The street facing unit will house a growing marketing firm which is already rooted in the Minot community. The garage space will become a gathering space for families and friends. It will serve as both a coffee and cocktail lounge as well as a place for patrons of the lower level entertainment zone to relax and have food. The lower level will be the new home to an existing downtown business, Up Your Axe, but it will

expand its business model to include other recreational games such as curling and standing shuffleboard. It will also be home to a restaurant that will promote local ND ingredients. With 22,000sqft to play with, there are other exciting plans in the works as development continues.

2. **Enhanced Vibrancy**: Our venture aims to be a cultural hub, offering events and activities that will make the downtown area more vibrant and attractive. This aligns with the city's vision of a bustling and active Central Business District.
3. **Revitalization of the Area**: Transitioning this property to a CBD designation will help revitalize an area that may otherwise remain underutilized. Our business will contribute to the aesthetic and functional improvement of the property and its surroundings.
4. **Community Engagement**: We are committed to engaging with the local community through events and partnerships with other businesses and organizations. This will foster a stronger sense of community and support the city's broader goals of inclusivity and cultural enrichment.

Alignment with City Goals

The proposed change aligns with the city's strategic plans for downtown development. By transitioning to a CBD designation, the property will be better positioned to support the city's objectives for economic development, urban renewal, and the enhancement of public spaces.

Conclusion

We believe that changing the zoning designation to Central Business District will be mutually beneficial, allowing us to contribute positively to the downtown area while also achieving our business objectives. We are excited about the opportunity to be part of the city's vibrant growth and look forward to working with the Planning Commission to make this vision a reality.

Thank you for considering our request. We are eager to discuss this further and provide any additional information that may be required.

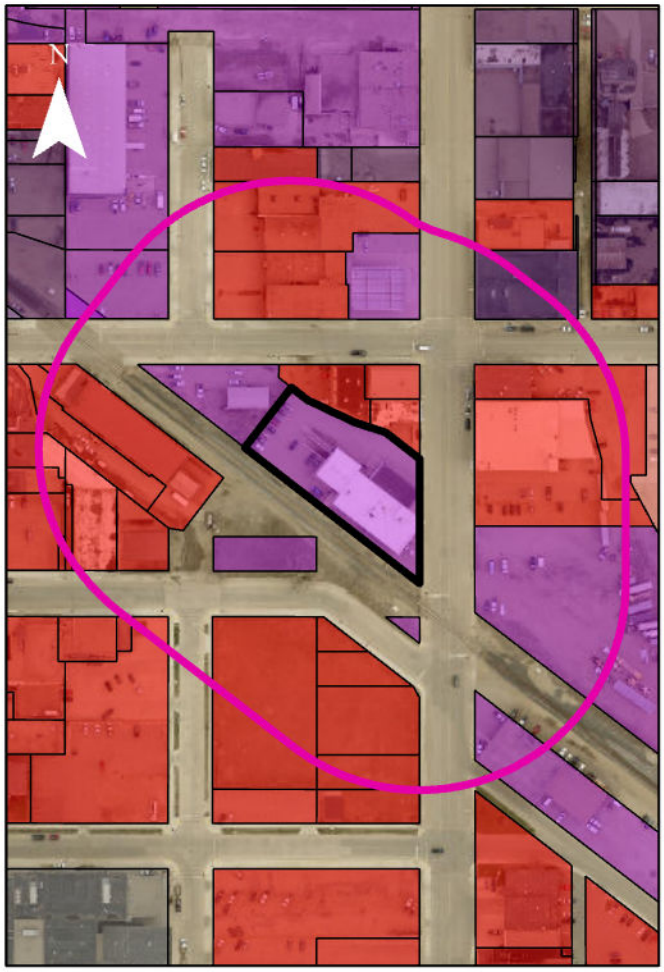
Sincerely,

Eric Thoemke
Building Owner and Developer
Elm Developments ND LLC.

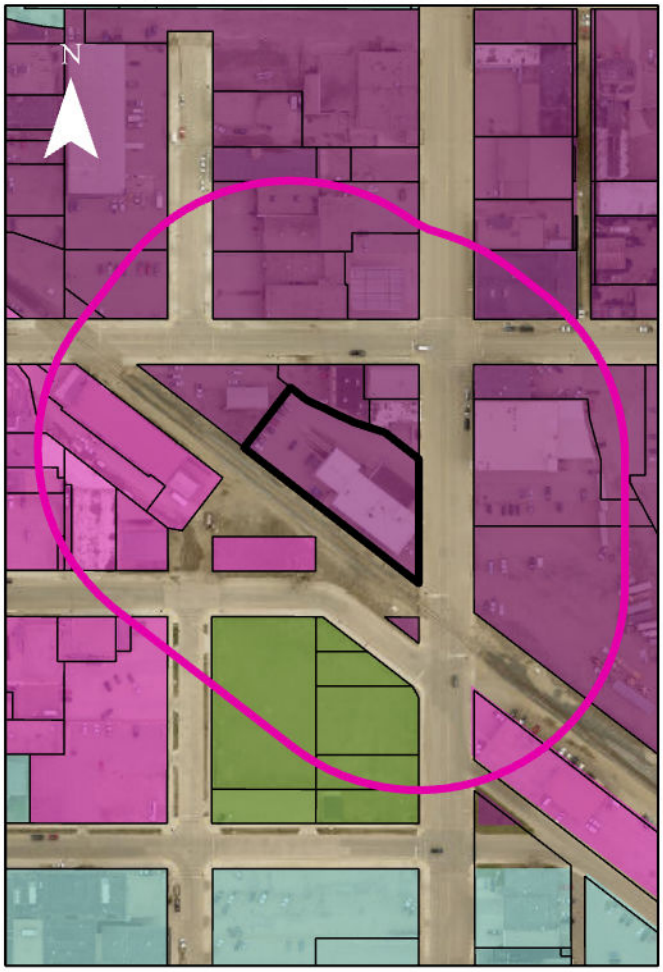
City of Minot

Exhibit 3

ZONING



FUTURE LAND USE



0 137.5 275 550 Feet

Zoning

Zoning	
	C2
	CBD
	M1
	M2
	P

Both Maps

- Case # 2024-07-02
- Case # 2024-07-02 Notification Area

Land Use Type

- Downtown Mixed Use
- Downtown Fringe
- Parks and Recreation
- Public and Institutional

Exhibit 4 – Site Photos

Facing South

Facing Northwest

Facing West

Facing Northwest 2

City of Minot

Planning Commission
Staff Report

Application Date: 07/29/2024
Date of Staff Report: 08/15/2024
Date of Planning Commission Meeting: 09/04/2024

Staff Contact: Doug Diedrichsen, Principal Planner
Staff Recommendation: Approval

Case Number: 2024-07-03
Project Name: Livingston's 7th Addition Truck Stop - CUP

Current Legal Description: See Project Description

Proposed Legal Description: No Change
Present Address: Unaddressed (See Project Description)

Owners: Meadowlark Holdings, LLC

Representative: John Coughlin on behalf of Meadowlark Holdings, LLC.

Entitlements Requested: Conditional Use Permit – Truck Stop

Present Zone(s): "C2" General Commercial District

Present Use(s): Vacant

Uses Allowed in Present Zone(s): See Table 2.2 for allowed and conditionally permitted uses within each district.

Present Future Land Use Map Designation: Urban Residential

Proposed Zone(s): No Change

Proposed Use(s): Gas Station/Truck Stop

Uses Allowed in Proposed Zone(s): See Table 2.2 for allowed and conditionally permitted uses within each district.

Proposed Future Land Use Map Designation: No Change

PROJECT DESCRIPTION:

Public hearing request by John Coughlin on behalf of Meadowlark Holdings, LLC., owner, for a conditional use permit to construct and operate a truck stop in a "C2" General Commercial District. The legal description for the property is Block 2, Livingston's 7th Addition.

The property is unaddressed and is located northwest of the intersection of 13th St. SE and 21st Ave. SE. An aerial, including the notification boundary, is provided in **Exhibit 1**.

BACKGROUND INFORMATION:

The subject property was platted in 2012 as part of a commercial development south of Highway 2/52. The lots have been slowly developed and nearby businesses include Sanford Health Clinic, Trinity Health Clinic, Tractor Supply Company, among a few others. The site is located immediately off of the 13th St. SE intersection of Hwy 2/52, which is signalized. The intersection of 13th St. SE and 21st Ave SE is a two-way stop, with 13th St. SE being unconstrained.

The applicants have provided a letter of intent and site plan which may be found in **Exhibit 2**.

The subject property is zoned "C2" General Commercial District, being surrounded by the same zoning on all sides. A map of the area zoning and future land use may be found in **Exhibit 3**.

Select site photos are available in **Exhibit 4.**

March 14th, 2023 staff report can be found in **Exhibit 5.**

North Dakota Department of Transportation, Programming Division, Traffic Operations Section, August 2024: 2021-2023 Urban High Crash Locations report can be found in **Exhibit 6.**

Applicatnt Submitted Traffic Impact Study can be found in **Exhibit 7.**

Applicant submitted Traffic Letter can be found in **Exhibit 8.**

Minuets from the May 29th, 2024 Development Review Team Meeting can be found in **Exhibit 9.**

STAFF ANALYSIS:

Conditional Use Permit Amendment Analysis:

Section 9.1-4 of the Minot Land Development Ordinance (Zoning Ordinance) recognizes that certain land uses, when under special conditions and review can be compatible with uses that are permitted by right in a zoning district. The review of the conditional use permit (CUP) application and any special conditions imposed by either the Zoning Ordinance or city staff should occur via a thorough public process as prescribed by Section 9.2-1 including a public hearing, direct noticing to neighboring property owners, and general public noticing within the Minot Daily News. Per Section 9.1-4 I., an amendment to a CUP follows the same process as a new

application. The applicant has submitted the necessary application documents required per Section 9.1-4 C. and noticing has been conducted as required per Section 9.2-1.

Section 9.1-4 F. states that the Planning Commission shall find that the application meets all of the following:

1. The request will be harmonious with the general and applicable specific objectives of the City's Comprehensive Plan and this Ordinance.
2. The proposed conditional use at the specified location will not be detrimental to or endanger the health, safety, welfare, comfort, or convenience of the public.
3. The proposed conditional use will not cause substantial injury to the value of other property within the area in which it is located.
4. The location, size, design, and operating intensity of the proposed conditional use will not prevent the development and use of neighboring property in accordance with the applicable zoning district. In making this determination, the Planning Commission will consider the siting, nature, and height of existing and proposed buildings and structures, and the extent and effectiveness of proposed buffering or landscaping.
5. Adequate public services and facilities exist or will be provided by the developer at the time of development, including adequate utilities, water and sewer systems, drainage structures, and other such facilities and services which are necessary to serve the development.
6. The request will not create excessive additional requirements for public facilities and services at public cost and will not be detrimental to the economic welfare of the community.
7. Adequate access roads or entrance and exit drives exist or will be provided by the developer to prevent traffic safety hazards and minimize traffic congestion on public streets.
8. The request will not result in the destruction, loss, damage of a natural, scenic, or historic feature of major importance.

Relating to Section 9.1-4 F. 1., staff finds the proposed use is not harmonious with the property's current future land use designation of Urban Residential, however staff believes that this designation was placed on the 21st Ave SE corridor in error. A staff-initiated application to amend the future land use designation from Urban Residential to General Commercial has been submitted and will be reviewed by the Planning Commission at the October 1st Meeting. The proposed use is harmonious with the existing zoning District of "C2" General Commercial. Further, the LDO further includes specific use standards in Section 4.1-6. E. 1. and are provided below:

a) Motor fuel facilities shall be installed in accordance with State and City standards.
b) Filling station pumps and pump islands shall not be located within forty feet (40') of any property line nor within one hundred feet (150') from the boundary of any residential district.
c) Adequate space shall be provided to access gas pumps and to allow maneuverability around the pumps.
d) Underground fuel storage tanks shall be positioned to allow adequate access by motor fuel transports and unloading operations which do not conflict with circulation, access, and other activities on the site.
e) Filling station canopies shall not extend within thirty feet (30') of any property line.
f) All canopy lighting shall be recessed or fully shielded.
g) All access drives shall be subject to approval by the Engineering Department.

With regard to the above use standards, the proposal generally complies with the use standards subject to conditions of approval that are required to bring it into strict compliance. Surrounding a) above, all applicable State and City standards will apply. The following condition should be included to satisfy this use standard:

- The development must generally comply with the site plan provided in Exhibit 2 and is further subject to all necessary modifications stemming from other required conditions of approval and the Land Development Ordinance of the City of Minot.

Surrounding b) through f), the preliminary site plan appears to generally meet these requirements for fuel station pumps, pump island, and fuel canopy setbacks, as well overall adequate circulation. Per the letter of intent, lighting will be recessed and/or fully shielded. This is also required for all new development per the LDO.

Finally, regarding g), the Engineering Department required a traffic impact study be completed, reviewed and approved by the City and North Dakota Department of Transportation. Any improvements will be at the expense of the developer and should not place an additional financial burden on taxpayers for future intersection improvements. Further, the Engineering Department has determined that the approach directly onto 13th St. SE cannot be continued for this commercial development. The approach directly onto 13th St. SE will need to be removed and approach spacing onto 21st Ave. SE will need to meet spacing requirements for a collector roadway per the City's Transportation Plan. It is also important to note that the intersection of 13th St. SE and Hwy 2 & 52 BYP E was included in the North Dakota DOT Programming Division, Traffic Operations Section August 2024 report's list of 2021-2013 Urban High Crash Locations placing it in the top twenty-five intersections with the highest number of crashes statewide.

In summary, Section 9.1-4 F. 1. is satisfied with the conditions outlined in this report and recommended changes to the Future Land Use Map.

Staff finds Section 9.1-4 F. 2. through 4. is satisfied with prior conditions and applicable use standards, as these requirements will help to ensure harmony with adjacent commercial uses.

Staff finds Section 9.1-4. F. 5. is satisfied with conditions, which have been provided by the Engineering Department memorializing standard commercial development policy. These conditions are:

- A storm water management plan is required for future development.
- A site plan is required for development.
- A pedestrian connection from the site to the existing shared use path along 13th St is required. Sidewalks are not required on 21st Avenue.
- Sanitary sewer connection fees are required for future development.

Sections 9.1-4. F. 6. and 7. are satisfied subject to conditions, as there remains disputes with regard to traffic impact of the development on the overall road network. A traffic impact study has been conducted to provide

information to the City and North Dakota Department of Transportation. Improvements, if any are required, must be at the expense of the developer to satisfy these two evaluative criteria. Other necessary traffic and access-related conditions are outlined in Section 9.1-4. F. 1.

Finally, Section 9.1-4. F. 8. is satisfied, as the request will not result in the destruction, loss, damage of a natural, scenic, or historic feature of major importance.

Comments:

a) There were no public comments at the time of writing this staff report.
b) The application was distributed to city departments and external public agencies within the City for review and the following comments were provided:
    a. Engineering – City of Minot
        i. A storm water management plan is required for future development.
        ii. A site plan is required for development.
        iii. A pedestrian connection from the site to the existing shared use path along 13th St is required. Sidewalks are not required on 21st Avenue.
        iv. A traffic impact study is required for future development and shall be reviewed and approved by the City and NDDOT. Any required improvements must be paid for by the developer and included in a developer agreement approved by the City Council.
        v. There shall be no access points on 13th St SE. Existing access point will be removed by the developer per city ordinance.
        vi. Access onto 21st Ave SE shall meet spacing requirements for a collector roadway per the City's Transportation Plan.
        vii. Sanitary sewer connection fees are required for future development.

    b. Engineering - NDDOT
        i. The NDDOT met with Circle K and the City of Minot on February 27, 2024 to discuss the layout. In attendance from the NDDOT was the Minot District, Local Government Division, and our Traffic Operations Section. Concerns were brought up at that meeting and the NDDOT was not in favor of the layout. On May 17, 2024, Colliers Engineering and Design sent a revised layout that addressed all the concerns brought up at the February meeting. The DOT agreed this was an approved layout. We were then informed on August 16, 2024 that the layout that was agreed to by all parties had been reversed.
        ii. This intersection ranks 25th in the state in the 2021-2023 Urban High Crash Locations. As was stated at the February meeting, our worry with the original layout is that traffic may back up on to Hwy 2 if there is a dedicated right turn so close to the intersection of US 2 and 13th Street.
        iii. Some other concerns of the original layout is that semis can come off of 13th Street into the right-in entrance thinking it will connect to the diesel area further to the west. Another is if people drive out of the one way to get to 13th Street faster. Doesn't matter how many signs are up, people will drive out that way and create an even bigger issue. This slip-lane driveway is all things detrimental to the roadway system and needs to be removed. This will also be detrimental if the City would ever need a right turn onto 21st Avenue.

1. These are some of the same concerns that were brought up during the review.

iv. Because of all of the above, the NDDOT is still not in favor of Circle K having a right in off of 13th Street and believe the layout should be changed back to the one that was agreed upon by all parties.

The comments from Engineering are either explained in detail within the staff analysis section of the report or follow standard general and/or commercial development policy and will be memorialized as conditions of approval.

FINDINGS OF FACT:

The Minot Planning Commission should accept the following findings of facts:

1) The property is zoned "C2" General Commercial District.

2) The City of Minot 2012 Comprehensive Plan Future Land Use Map designates this area as Urban Residential. Staff believes this designation was applied to this corridor in error and has initiated an application to correct the error.

3) The proposed development meets the use standards subject to conditions for a truck stop in a "C2" General Commercial District per Section 4.1-6. E. 1. as outlined in the Staff Analysis section of staff's written report.

4) The development complies with 9.1-4. F. 1. thru 8. with conditions as outlined in the Staff Analysis section of staff's written report.

5) The Minot Planning Commission has the authority to hear this case and decide whether it be approved or denied. The public notice requirements were met, the hearing was legally noticed and posted and the hearing was held and conducted under the requirements of North Dakota Century Code and Minot City ordinances.

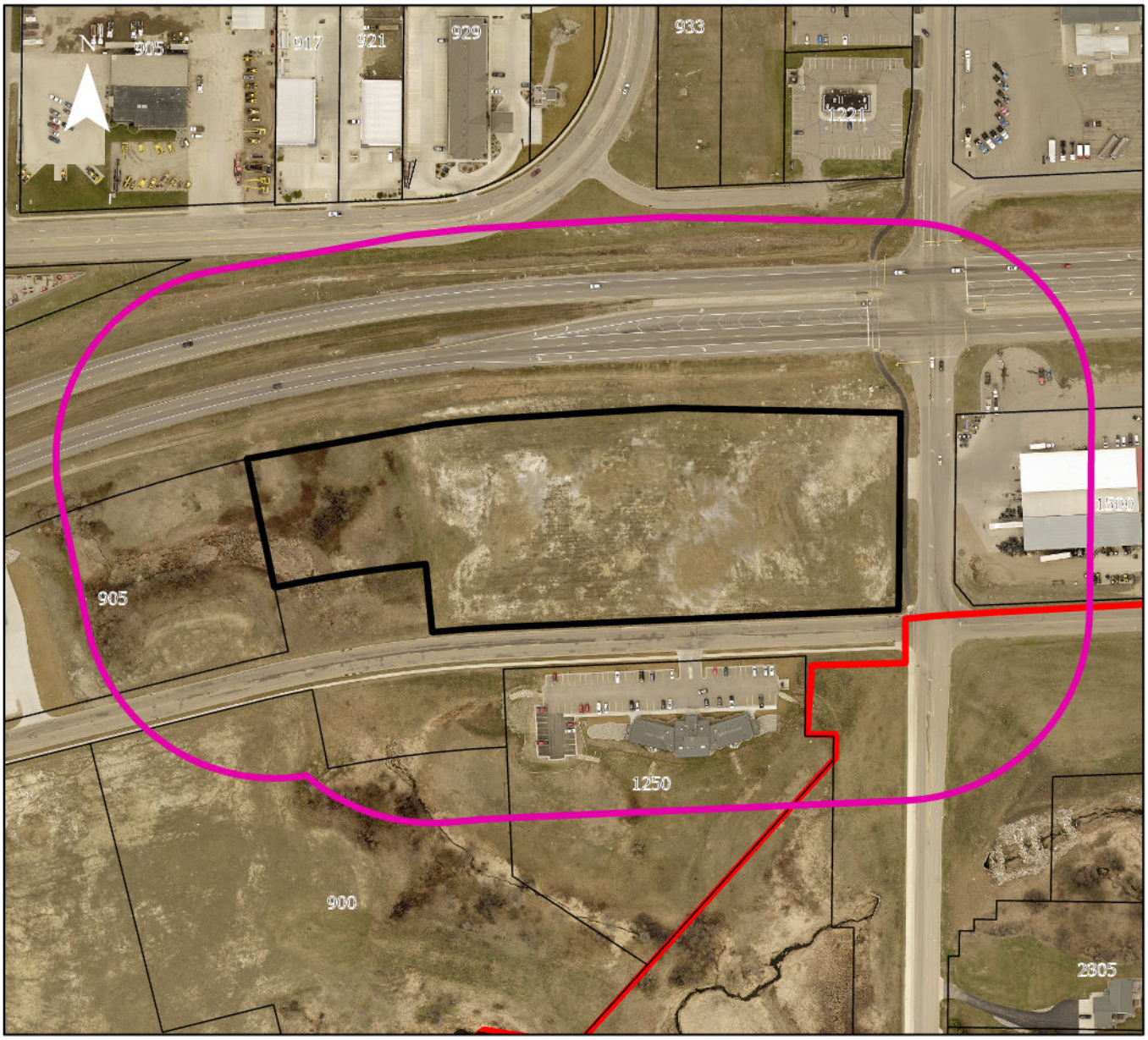
RECOMMENDATION:

Staff recommends the Planning Commission adopt the staff findings of fact and recommend approval of a conditional use permit for a truck stop with the following conditions:

1. The development must generally comply with the site plan provided in Exhibit 2 and is further subject to all necessary modifications stemming from other required conditions of approval and the Land Development Ordinance of the City of Minot.
2. A storm water management plan is required for future development.
3. A site plan is required for development.
4. A pedestrian connection from the site to the existing shared use path along 13th St is required. Sidewalks are not required on 21st Avenue.
5. A traffic impact study is required for future development and shall be reviewed and approved by the City and NDDOT. Any required improvements must be paid for by the developer and included in a developer agreement approved by the City Council.
6. There shall be no access points on 13th St SE. Existing access point will be removed by the developer per city ordinance.
7. Access onto 21st Ave SE shall meet spacing requirements for a collector roadway per the City's Transportation Plan.
8. Sanitary sewer connection fees are required for future development.
9. An approved traffic impact study must be possessed by the City of Minot prior to building permit issuance. A building permit may be issued prior to completion of necessary improvements, if any, stemming from the results of the approved traffic impact study. No Certificate of Occupancy may be issued until necessary improvements, if any, are completed to the satisfaction of the City of Minot and North Dakota Department of Transportation.
10. Site grading and preparation activities may occur upon approval of the storm water management plan and prior to building permit issuance.

City of Minot

EXHIBIT 1



0 175 350 700 Feet

- Two Mile Boundary
- City Limits
- Case # 2024-07-03
- Case # 2024-07-03 Notification Area

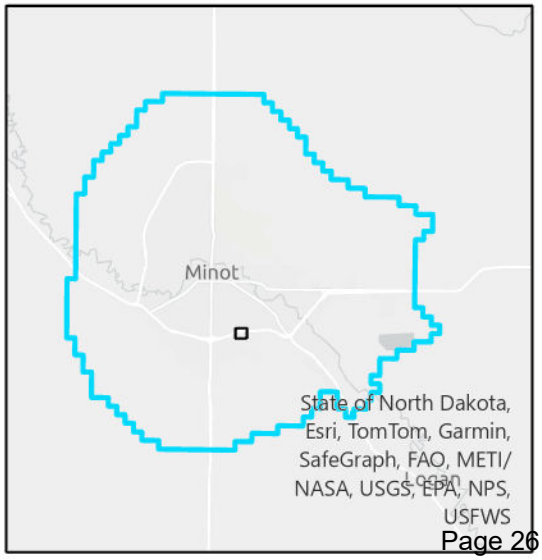


EXHIBIT 2 - LETTER OF INTENT, SITE PLAN, FLOOR PLANS

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

February 28, 2023

Holiday Stationstores
Northwest Corner of 21st Ave & 13th St, Minot, North Dakota
Conditional Use Permit Letter of Intent

Pursuant to the Minot Land Development Code Conditional Use Permit Section 9.1-4:

1. The proposed convenience store/truck stop (including 16 standard fuel pumps, 3 high speed diesel pumps, and a 7,108 sq.ft. building with attached carwash) with associated onsite improvements to include sidewalk, drive aisles, ADA parking spaces with an accessible route, dumpster enclosure, and landscape where screening may be required will be harmonious with the City's Comprehensive Plan and Land Development Ordinance for uses located within the Commercial (C2) District.

2. The project is located along a highway and within a commercially zoned and commercially populated area within the City of Minot. The projects' use as it relates to the location within the City of Minot is in harmony with the surrounding commercial neighborhood and land uses. The proposal will not be detrimental to or endanger the health, safety, welfare, comfort, or convenience of the public.

3. The project is located along a highway and within a commercially zoned and commercially populated area within the City of Minot. The projects' use as it relates to the location within the City of Minot is in harmony with the surrounding commercial neighborhood and land use. Substantial injury to the value of other properties within the commercial area the site is located will not be created.

4. The project is located within a commercial district within the City of Minot and will meet all zoning requirements with respect to location, size, design, siting on property, height, and operating intensity. The development of this proposal will not prevent the development and use of any neighboring properties.

5. Existing public water, sanitary sewer and storm sewer facilities are currently located adjacent to the project site and will serve the site. The existing utilities are sufficient to serve the proposed use and public extensions will not be needed.

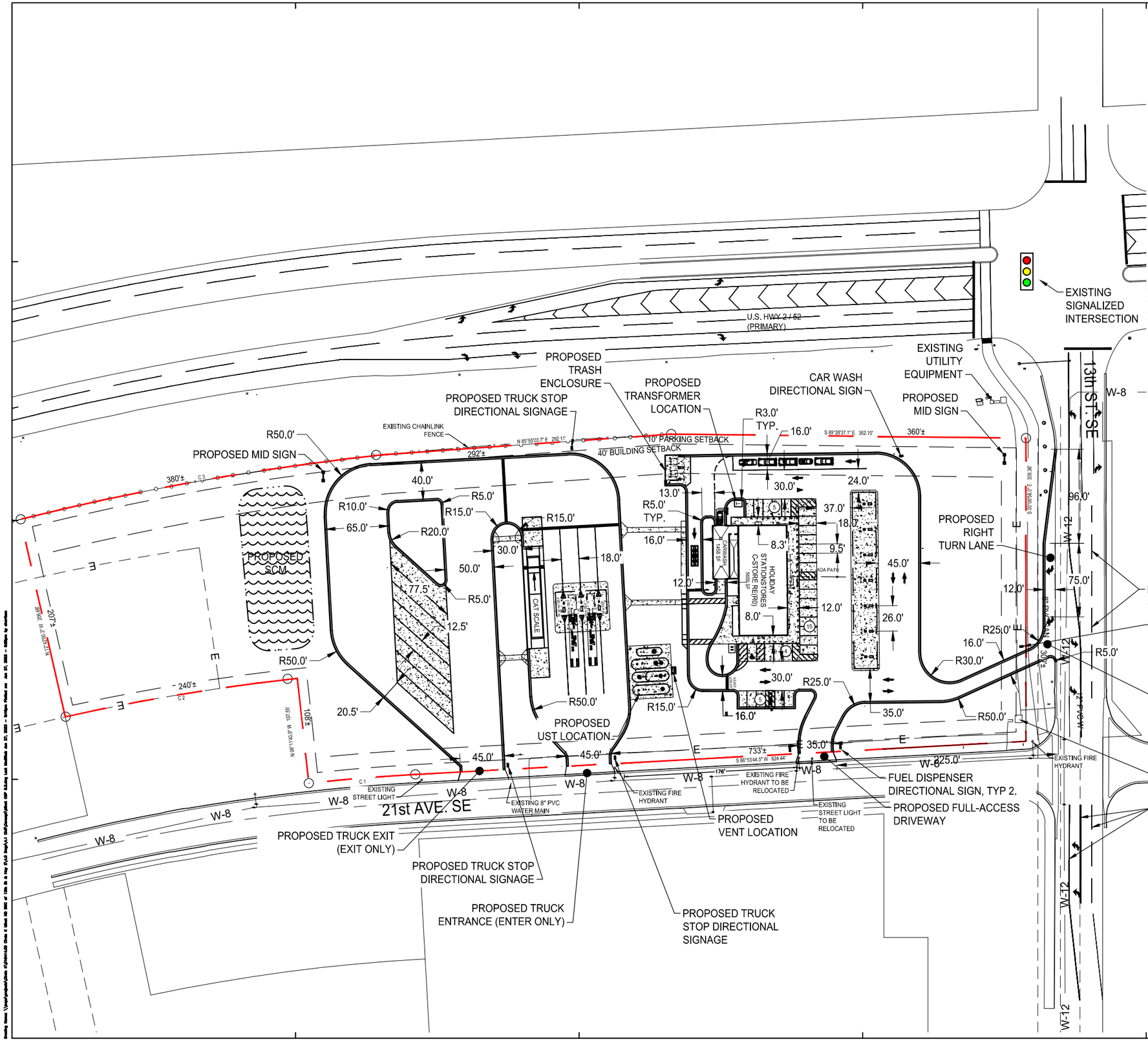
6. The proposed use is a common use located throughout the US and should not require any excessive additional requirements for public facilities and services. The facility will be privately owned, operated, and maintained causing no detriment to the economic welfare of the community.

280 East Broad Street, Suite 200
Rochester, NY 14604
TEL: 585.232.5135
www.bergmannpc.com

7. Access is proposed along 13th Street and 21st Avenue for standard public use. Additional access is proposed along 21st Avenue for the high speed diesel pumps, weighing station and parking for commercial truck use. The site layout and entrance drive locations will allow for all customers to be located fully within the property boundaries eliminating the need for customers to park on nearby roads. A majority of the traffic this type of use encounters is considered a 'pass-by use', meaning the site will not create a significant increase in traffic levels, but rather capture the existing traffic that would be typically passing by the site.

8. The site is currently a vacant field with no trees located next adjacent to Highway 2 in a commercial district with neighboring commercial properties. This proposal will not create any destruction, loss, damage of a natural, scenic, or historic feature of major importance.

9. Potential nuisances will be mitigated through careful design, following the City of Minot requirements. Examples of nuisance reduction measures include fully recessed lighting withing the fuel canopies to prevent glare and using down lighting for parking area lighting. Additionally, a pedestrian connection to the proposed convenience store will be provided from the existing sidewalk located 13th Street. SE.



SITE LEGEND:

- PROPERTY SETBACK LINE
- GREEN SPACE SETBACK
- PROPERTY LINE
- # NUMBER OF PARKING SPACES

SITE DATA:

ZONING: C2 COMMERCIAL

CURRENT LAND USE: NONE / VACANT

TOTAL LOT AREA: ±6.83 ACRES
±297,274 SQ. FT.
AREA OF PROPOSED LOT: ±297,274 SQ. FT.
AREA OF OPEN SPACE: TBD - SQ. FT.
GROSS FLOOR AREA OF BUILDINGS: 5,200 SQ. FT.

BUILDING SETBACKS:
25' (40) FRONT (ARTERIAL)
0' (15) SIDE (ABUTS AG/Res. DIST.)
25' IF ABUTS STREET OR CORNER
40' IF ABUTS ARTERIAL STREET
0' (25) REAR (AG/Res.)
60' MAX. HEIGHT
10,000 SF MIN. LOT AREA

GREENSPACE SETBACKS: 10' FRONT

PARKING SETBACKS: 10' FROM STREETS

PARKING REQUIRED: (9'x18' PER CODE)
CAR WASH: ≥6 STACKING SPACES/BAY
FUEL/CONVENIENCE
MIN. 5 SPACES PER 1,000 SF GROSS AREA
MAX. 7
- 5,200/1,000 * 5 = 26 SPACES

PARKING PROVIDED:
27 SPACES + 2 ADA = 30 PARKING
+ 16 PUMP SPACES
PARKING SPACES DIMENSION = 9.5' x 18'

PLAN REVIEW NOTES
1. LANDSCAPE ISLANDS AREN'T DEPICTED. FINAL CONSTRUCTION DRAWINGS MAY REQUIRE ISLANDS AND THIS WOULD IMPACT THE LAYOUT AND PARKING COUNT.
2. EXISTING CONDITIONS BASED ON DATA OBTAINED FROM GOOGLE MAPS ON 7/12/2022.
3. THIS CONCEPT SITE PLAN DOES NOT GUARANTEE ALL REQUIREMENTS FROM ZONING ISSUES, NOR SIGNAGE, STORM DRAINAGE, GRADING, UTILITIES, EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THE TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE SITE LAYOUT. ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE CLIENT, ARCHITECT, JOINT DEVELOPER, OR ANY OF THE GOVERNMENTAL PERMITTING AGENCIES.

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PROJECT MANAGER
S. HARRISON
QUALITY CONTROL
S. HARRISON
DRAWN BY
J. WILLIAMS
DATE ISSUED
12/23/22

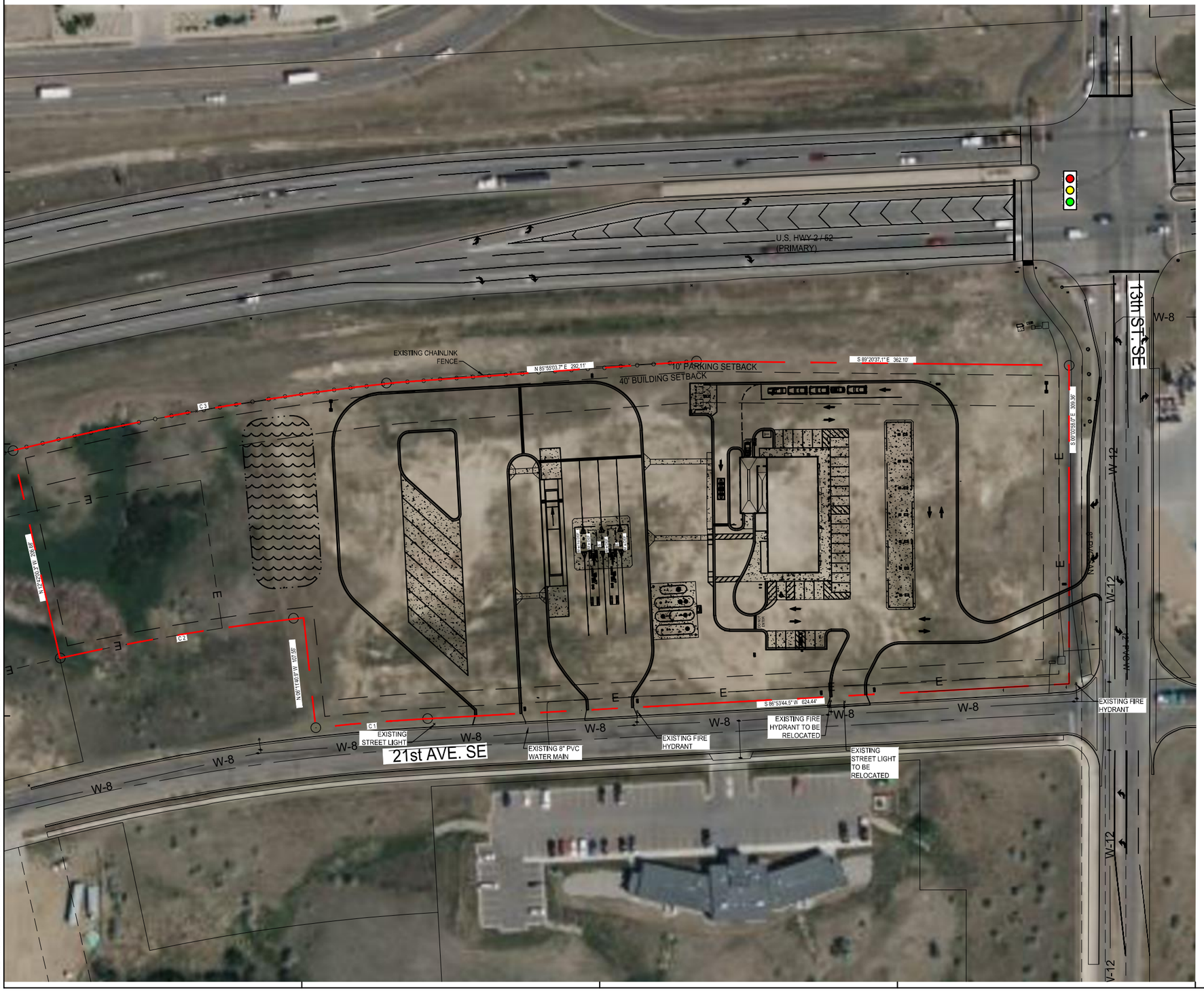
PROJECT NAME
NTI MINOT ND
SWC 21st AVE & 13th ST
MINOT,
ND 58702
NORTHERN TIER BU

HOLIDAY STATIONSTORES, INC.

PROJECT NUMBER
16414

SHEET TITLE
CONCEPTUAL SITE PLAN

SHEET NUMBER
CSP 5.2 W



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- NUMBER OF PARKING SPACES

SITE DATA:

ZONING: C2 COMMERCIAL

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±297,274 SQ. FT.
AREA OF PROPOSED LOT: ±297,274 SQ. FT.
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GROSS FLOOR AREA OF BUILDINGS: 5,200 SQ. FT.

BUILDING SETBACKS:
25' (40) FRONT (ARTERIAL)
0' (15) SIDE (ABUTS AG/Res. DIST.)
25' IF ABUTS STREET OR CORNER
40' IF ABUTS ARTERIAL STREET
0' (25) REAR (AG/Res.)
60' MAX. HEIGHT
10,000 SF MIN. LOT AREA

GREENSPACE SETBACKS: 10' FRONT

PARKING SETBACKS: 10' FROM STREETS

PARKING REQUIRED: (9'x18' PER CODE)
CAR WASH: ≥6 STACKING SPACES/BAY
FUEL/CONVENIENCE
MIN. 5 SPACES PER 1,000 SF GROSS AREA
MAX. 7
- 5,200/1,000 * 5 = 26 SPACES

PARKING PROVIDED:
27 SPACES + 2 ADA = 30 PARKING
+ 16 PUMP SPACES
PARKING SPACES DIMENSION = 9.5' x 18'

TRUCK USED: WB - 50 - OVERALL LENGTH = 55 FT
TRAILER LENGTH 42.5 FT
HSD: WB - 67 - OVERALL LENGTH = 73.6 FT
TRAILER LENGTH 53 FT
TRUCK PARKING: 8

PLAN REVIEW NOTES
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N

SCALE 1"=100'
0 100' 200'

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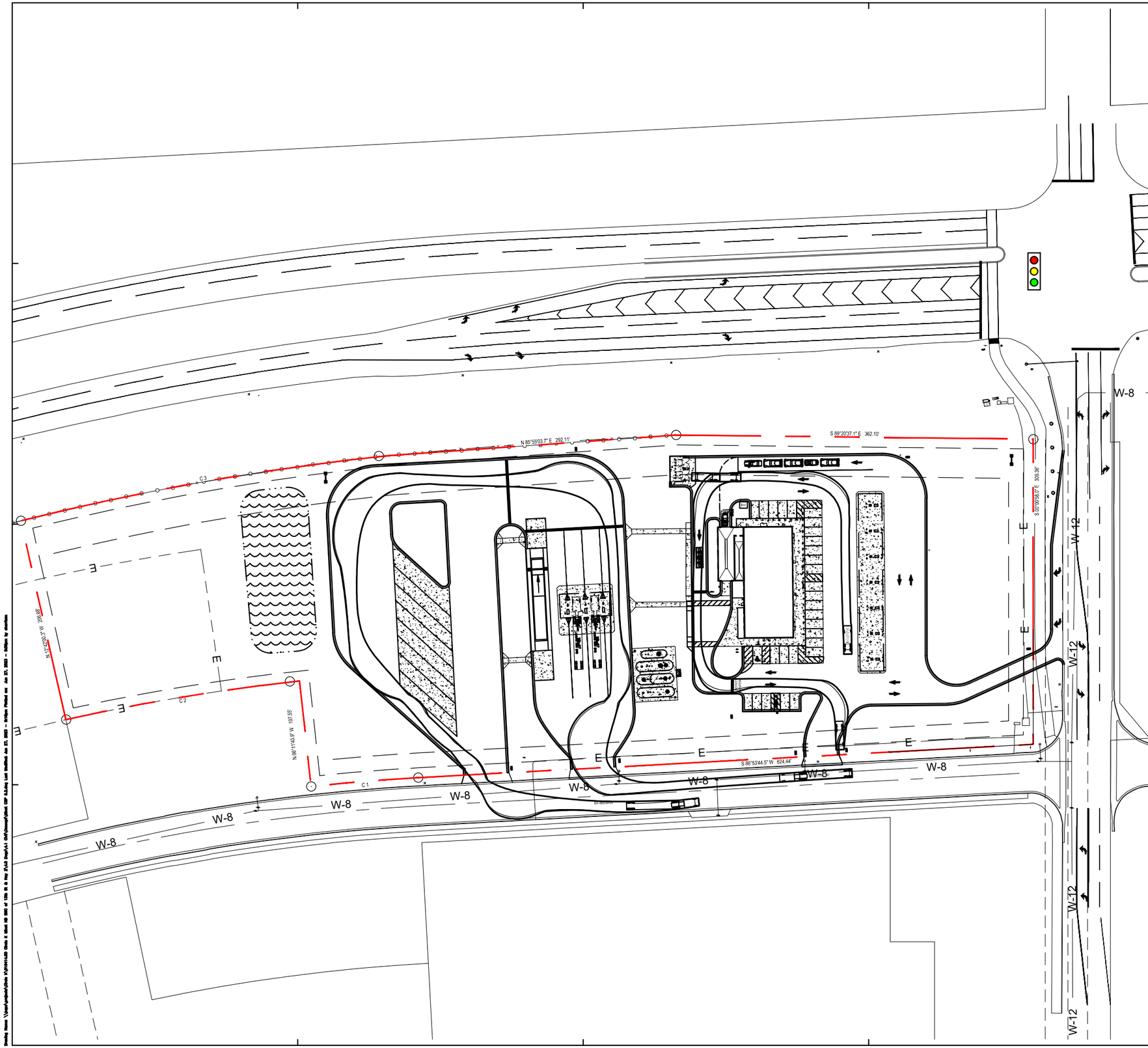

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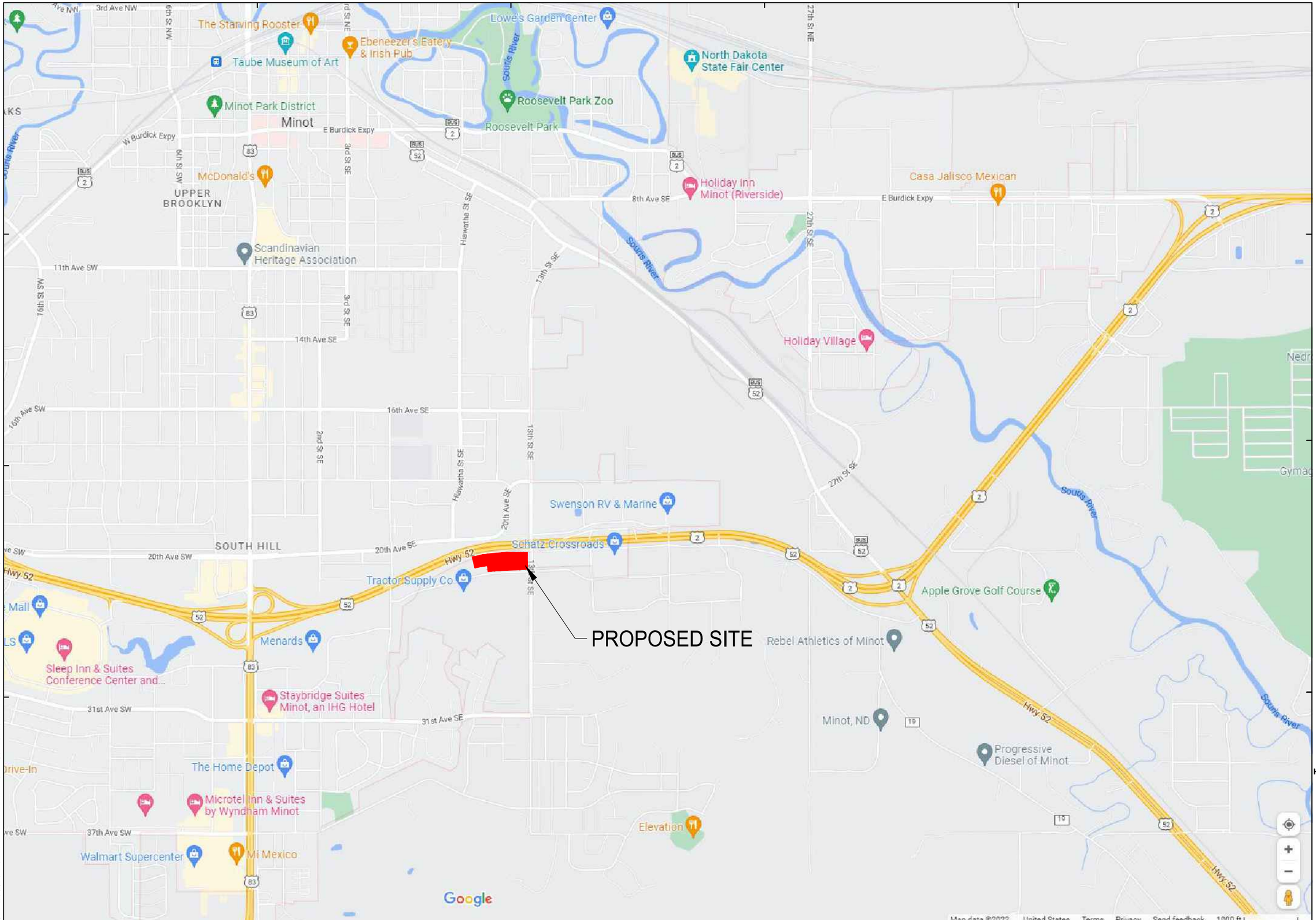

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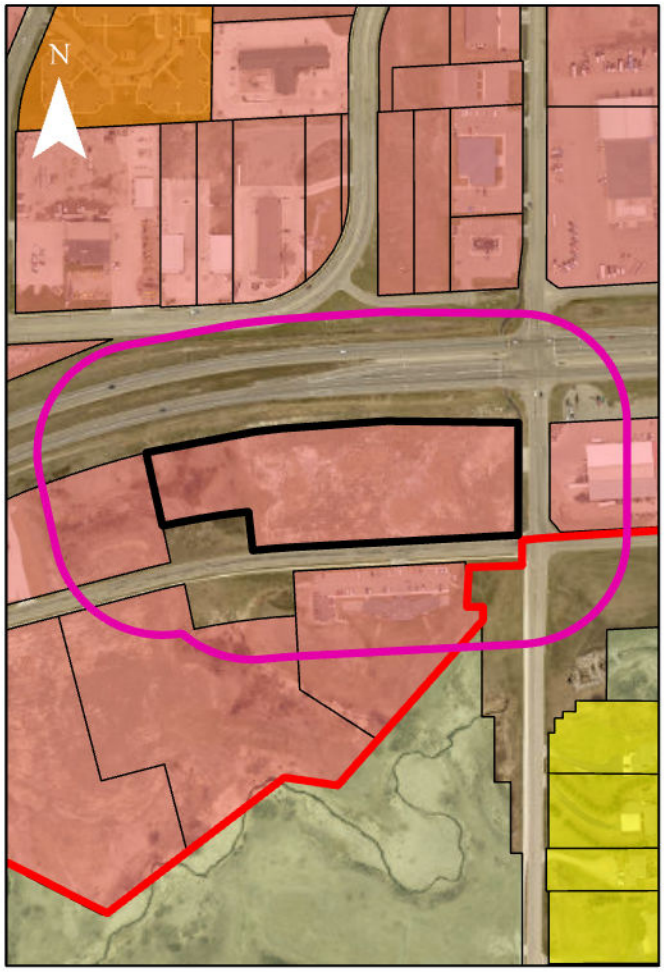
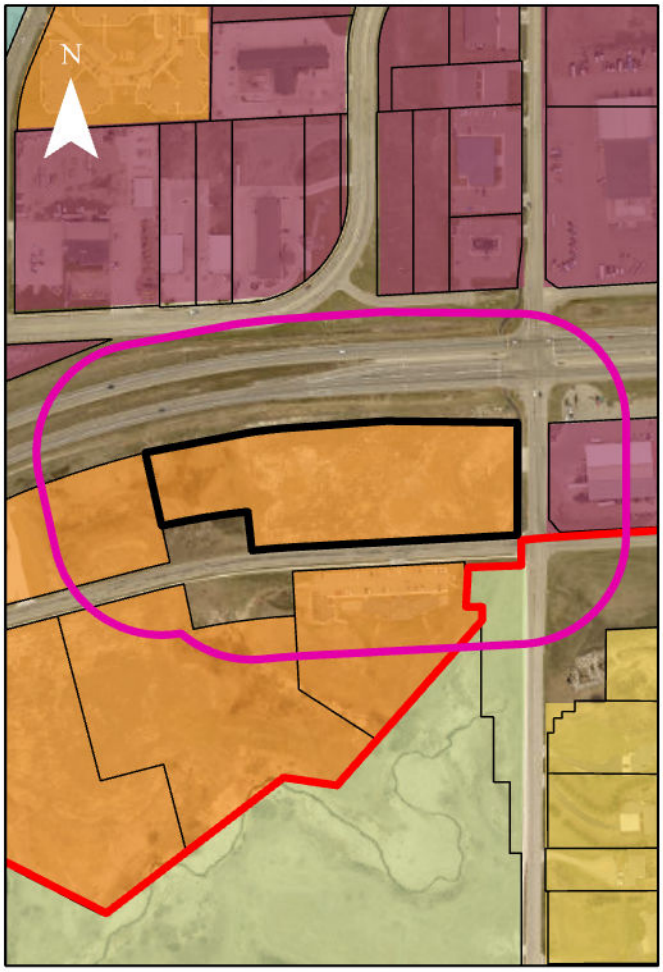
City of Minot

Exhibit 3

ZONING



FUTURE LAND USE



0 245 490 980 Feet

Zoning

Zoning

- AG
- C2
- R1
- R3

Both Maps

- Case # 2024-07-03
- Case # 2024-07-03 Notification Area

Land Use Type

- Public Institutional
- General Commercial
- Urban Residential
- Agricultural and Open Space
- Suburban Residential
- Urban Residential
- General Commercial

Exhibit 4 – Site Photos

Facing North

Facing Northwest

Facing Northeast

Facing 13th St access

Facing 13th St access 2

City of Minot

Exhibit 5

Planning Commission
Staff Report

Application Date: 02/27/2023
Date of Staff Report: 03/14/2023
Date of Planning Commission Meeting: 04/04/2023

Staff Contact: John Van Dyke, Principal Planner
Staff Recommendation: Approval

Case Number: 2023-04-03
Project Name: Livingston's 7th Addition Truck Stop - CUP

Current Legal Description: See Project Description

Proposed Legal Description: No Change
Present Address: Unaddressed (See Project Description)
Entitlements Requested: Conditional Use Permit – Truck Stop

Owners: Meadowlark Holdings, LLC

Representative: Duemelands Commercial Real Estate

Present Zone(s): "C2" General Commercial District

Present Use(s): Vacant

Uses Allowed in Present Zone(s): See Table 2.2 for allowed and conditionally permitted uses within each district.

Present Future Land Use Map Designation: Commercial

Proposed Zone(s): No Change

Proposed Use(s): Truck Stop

Uses Allowed in Proposed Zone(s): See Table 2.2 for allowed and conditionally permitted uses within each district.

Proposed Future Land Use Map Designation: No Change

PROJECT DESCRIPTION:

Public hearing request by Stephen Harrison on behalf of Duemelands Commercial Real Estate, representative for Meadowlark Holdings, LLC, owner, for a conditional use permit to construct and operate a truck stop in a "C2" General Commercial District. The legal description for the property is Block 2, Livingston's 7th Addition.

The property is unaddressed and is located northwest of the intersection of 13th St. SE and 21st Ave. SE. An aerial, including the notification boundary, is provided in **Exhibit 1**.

BACKGROUND INFORMATION:

The subject property was platted in 2012 as part of a commercial development south of Highway 2/52. The lots have been slowly developed and nearby businesses include Sanford Health Clinic, Trinity Health Clinic, Tractor Supply Company, among a few others. The site is located immediately off of the 13th St. SE intersection of Hwy 2/52, which is signalized. The intersection of 13th St. SE and 21st Ave SE is a two-way stop, with 13th St. SE being unconstrained.

The applicants have provided a letter of intent, site plan, and floor plans, which may be found in **Exhibit 2**.

The subject property is zoned "C2" General Commercial District, being surrounded by the same zoning on all sides. A map of the area zoning and future land use may be found in **Exhibit 3**.

Select site photos are available in **Exhibit 4.**

STAFF ANALYSIS:

Conditional Use Permit Amendment Analysis:

Section 9.1-4 of the Minot Land Development Ordinance (Zoning Ordinance) recognizes that certain land uses, when under special conditions and review can be compatible with uses that are permitted by right in a zoning district. The review of the conditional use permit (CUP) application and any special conditions imposed by either the Zoning Ordinance or city staff should occur via a thorough public process as prescribed by Section 9.2-1 including a public hearing, direct noticing to neighboring property owners, and general public noticing within the Minot Daily News. Per Section 9.1-4 I., an amendment to a CUP follows the same process as a new application. The applicant has submitted the necessary application documents required per Section 9.1-4 C. and noticing has been conducted as required per Section 9.2-1.

Section 9.1-4 F. states that the Planning Commission shall find that the application meets all of the following:

1. The request will be harmonious with the general and applicable specific objectives of the City's Comprehensive Plan and this Ordinance.
2. The proposed conditional use at the specified location will not be detrimental to or endanger the health, safety, welfare, comfort, or convenience of the public.
3. The proposed conditional use will not cause substantial injury to the value of other property within the area in which it is located.

4. The location, size, design, and operating intensity of the proposed conditional use will not prevent the development and use of neighboring property in accordance with the applicable zoning district. In making this determination, the Planning Commission will consider the siting, nature, and height of existing and proposed buildings and structures, and the extent and effectiveness of proposed buffering or landscaping.
5. Adequate public services and facilities exist or will be provided by the developer at the time of development, including adequate utilities, water and sewer systems, drainage structures, and other such facilities and services which are necessary to serve the development.
6. The request will not create excessive additional requirements for public facilities and services at public cost and will not be detrimental to the economic welfare of the community.
7. Adequate access roads or entrance and exit drives exist or will be provided by the developer to prevent traffic safety hazards and minimize traffic congestion on public streets.
8. The request will not result in the destruction, loss, damage of a natural, scenic, or historic feature of major importance.

Relating to Section 9.1-4 F. 1., staff finds the proposed use is harmonious with the comprehensive plan future land use map designation of Commercial. Further, the LDO further includes use standards in Section 4.1-6. E. 1. and are provided below:

a) Motor fuel facilities shall be installed in accordance with State and City standards.
b) Filling station pumps and pump islands shall not be located within forty feet (40') of any property line nor within one hundred feet (150') from the boundary of any residential district.
c) Adequate space shall be provided to access gas pumps and to allow maneuverability around the pumps.
d) Underground fuel storage tanks shall be positioned to allow adequate access by motor fuel transports and unloading operations which do not conflict with circulation, access, and other activities on the site.
e) Filling station canopies shall not extend within thirty feet (30') of any property line.
f) All canopy lighting shall be recessed or fully shielded.
g) All access drives shall be subject to approval by the Engineering Department.

With regard to the above use standards, the proposal generally complies with the use standards subject to conditions of approval that are required to bring it into strict compliance. Surrounding a) above, all applicable State and City standards will apply. The following condition should be included to satisfy this use standard:

- The development must generally comply with the site plan provided in Exhibit 2 and is further subject to all necessary modifications stemming from other required conditions of approval and the Land Development Ordinance of the City of Minot.

Surrounding b) through f), the preliminary site plan appears to generally meet these requirements for fuel station pumps, pump island, and fuel canopy setbacks, as well overall adequate circulation. Per the letter of intent, lighting will be recessed and/or fully shielded. This is also required for all new development per the LDO.

Finally, regarding g), the Engineering Department will require a traffic impact study to be reviewed and approved by the City and North Dakota Department of Transportation. Any improvements would be at the expense of

the developer. Further, the Engineering Department has determined that the approach directly onto 13th St. SE cannot be continued for this commercial development. The approach directly onto 13th St. SE will need to be removed and approach spacing onto 21st Ave. SE will need to meet spacing requirements for a collector roadway per the City's Transportation Plan.

In summary, Section 9.1-4 F. 1. is satisfied with conditions.

Staff finds Section 9.1-4 F. 2. through 4. is satisfied with prior conditions and applicable use standards, as these requirements will help to ensure harmony with adjacent commercial uses.

Staff finds Section 9.1-4. F. 5. is satisfied with conditions, which have been provided by the Engineering Department memorializing standard commercial development policy. These conditions are:

- A storm water management plan is required for future development.
- A site plan is required for development.
- A pedestrian connection from the site to the existing shared use path along 13th St is required. Sidewalks are not required on 21st Avenue.
- Sanitary sewer connection fees are required for future development.

Sections 9.1-4. F. 6. and 7. are satisfied subject to conditions, as there remains unknowns with regard to traffic impact of the development on the overall road network. A traffic impact study must be conducted to provide information to the City and North Dakota Department of Transportation. Improvements, if any are required, must be at the expense of the developer to satisfy these two evaluative criteria. Other necessary traffic and access-related conditions are outlined in Section 9.1-4. F. 1.

Finally, Section 9.1-4. F. 8. is satisfied, as the request will not result in the destruction, loss, damage of a natural, scenic, or historic feature of major importance.

<u>Comments:</u>

a) There were no public comments at the time of writing this staff report.
b) The application was distributed to city departments and external public agencies within the City for review and the following comments were provided:
    a. Engineering –
        i. A storm water management plan is required for future development.
        ii. A site plan is required for development.
        iii. A pedestrian connection from the site to the existing shared use path along 13th St is required. Sidewalks are not required on 21st Avenue.
        iv. A traffic impact study is required for future development and shall be reviewed and approved by the City and NDDOT. Any required improvements must be paid for by the developer and included in a developer agreement approved by the City Council.
        v. There shall be no access points on 13th St SE. Existing access point will be removed by the developer per city ordinance.

vi. Access onto 21st Ave SE shall meet spacing requirements for a collector roadway per the City's Transportation Plan.
vii. Sanitary sewer connection fees are required for future development.

The comments from Engineering are either explained in detail within the staff analysis section of the report or follow standard general and/or commercial development policy and will be memorialized as conditions of approval.

FINDINGS OF FACT:

The Minot Planning Commission should accept the following findings of facts:

1) The property is zoned "C2" General Commercial District.

2) The City of Minot 2012 Comprehensive Plan Future Land Use Map designates this area as Commercial.

3) The proposed development meets the use standards subject to conditions for a truck stop in a "C2" General Commercial District per Section 4.1-6. E. 1. as outlined in the Staff Analysis section of staff's written report.

4) The development complies with 9.1-4. F. 1. thru 8. with conditions as outlined in the Staff Analysis section of staff's written report.

5) The Minot Planning Commission has the authority to hear this case and decide whether it be approved or denied. The public notice requirements were met, the hearing was legally noticed and posted and the hearing was held and conducted under the requirements of North Dakota Century Code and Minot City ordinances.

RECOMMENDATION:

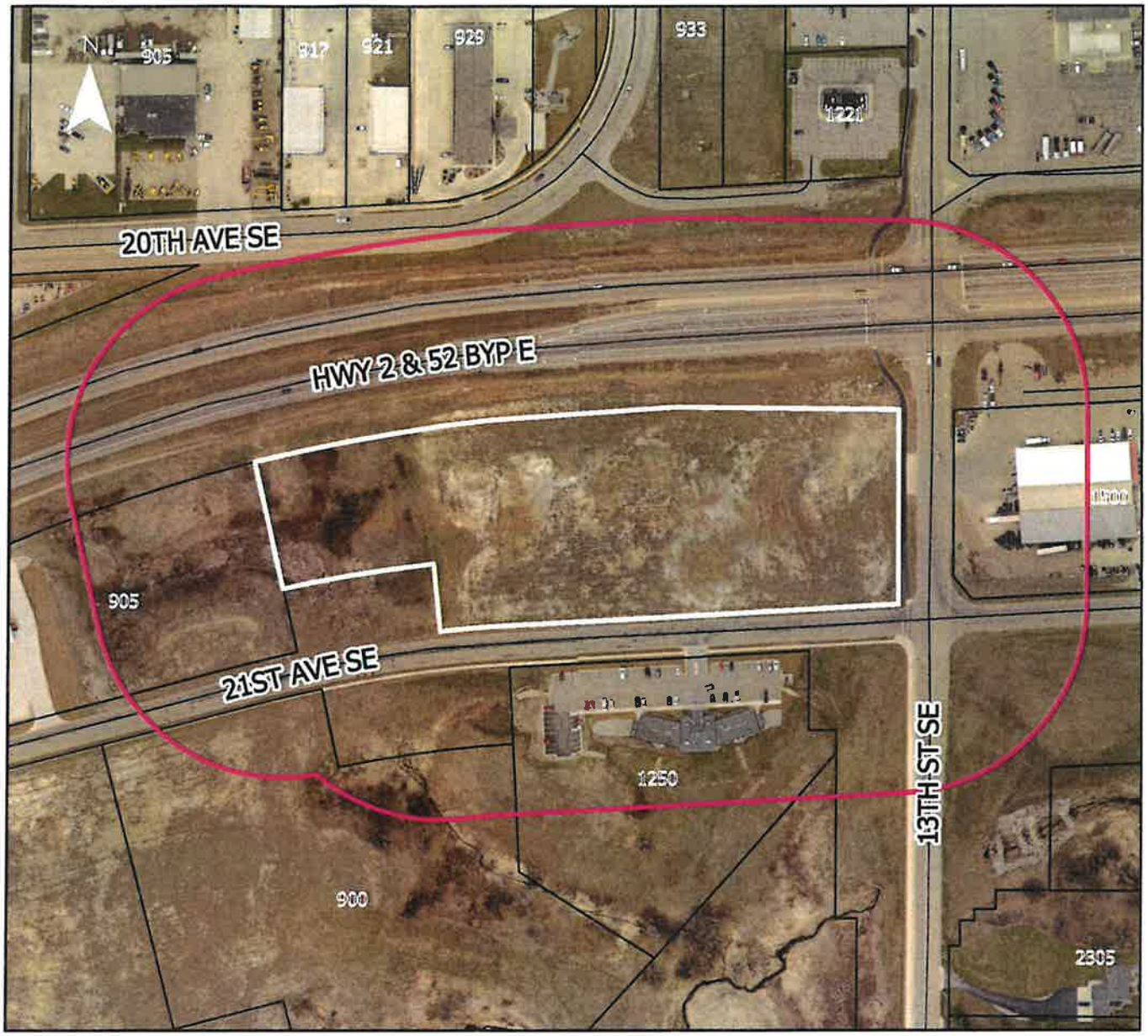
Staff recommends the Planning Commission adopt the staff findings of fact and recommend approval of a conditional use permit for a truck stop with the following conditions:

1. The development must generally comply with the site plan provided in Exhibit 2 and is further subject to all necessary modifications stemming from other required conditions of approval and the Land Development Ordinance of the City of Minot.
2. A storm water management plan is required for future development.
3. A site plan is required for development.
4. A pedestrian connection from the site to the existing shared use path along 13th St is required. Sidewalks are not required on 21st Avenue.

5. A traffic impact study is required for future development and shall be reviewed and approved by the City and NDDOT. Any required improvements must be paid for by the developer and included in a developer agreement approved by the City Council.
6. There shall be no access points on 13th St SE. Existing access point will be removed by the developer per city ordinance.
7. Access onto 21st Ave SE shall meet spacing requirements for a collector roadway per the City's Transportation Plan.
8. Sanitary sewer connection fees are required for future development.
9. An approved traffic impact study must be possessed by the City of Minot prior to building permit issuance. A building permit may be issued prior to completion of necessary improvements, if any, stemming from the results of the approved traffic impact study. No Certificate of Occupancy may be issued until necessary improvements, if any, are completed to the satisfaction of the City of Minot and North Dakota Department of Transportation.
10. Site grading and preparation activities may occur upon approval of the storm water management plan and prior to building permit issuance.

City of Minot

EXHIBIT 1 - AERIAL

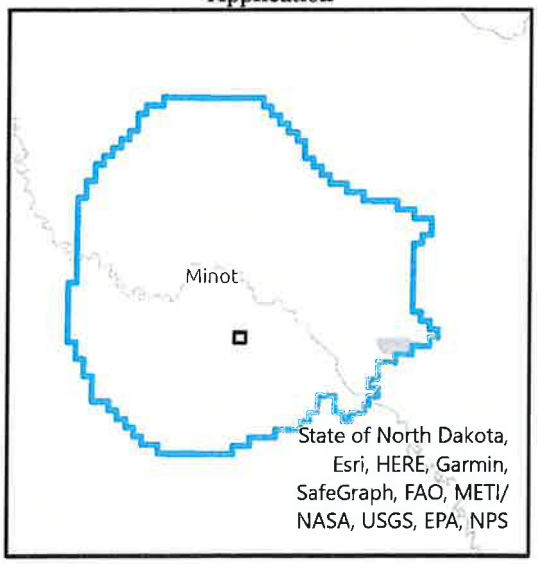


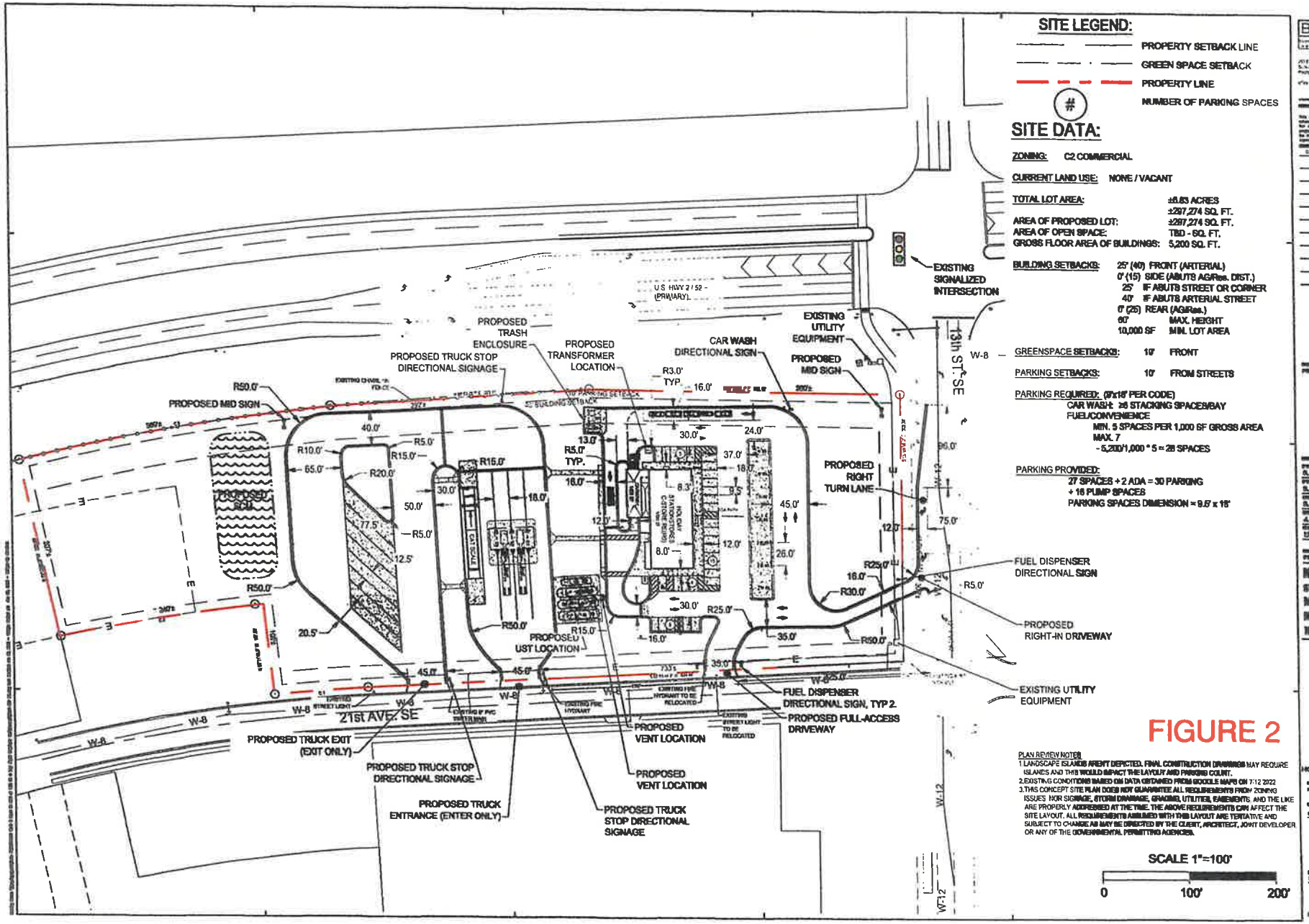
0 250 500 1,000 Feet

Subject Property(ies)

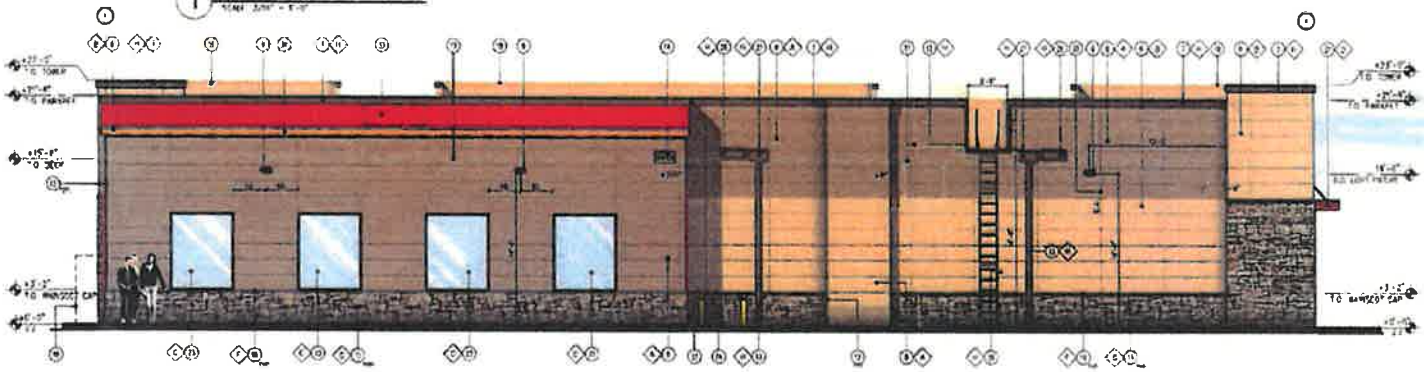
300' Buffer

Area of Subject Application

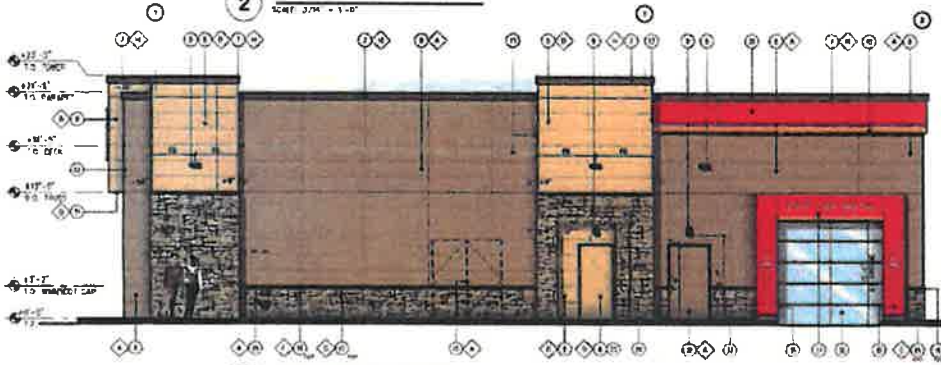



SITE LEGEND:
PROPERTY SETBACK LINE
GREEN SPACE SETBACK
PROPERTY LINE
NUMBER OF PARKING SPACES
SITE DATA:
ZONING: C2 COMMERCIAL
CURRENT LAND USE: NONE / VACANT
TOTAL LOT AREA: ±6.63 ACRES ±287,274 SQ. FT.
AREA OF PROPOSED LOT: ±287,274 SQ. FT.
AREA OF OPEN SPACE: TBD - SQ. FT.
GROSS FLOOR AREA OF BUILDINGS: 5,200 SQ. FT.
BUILDING SETBACKS: 25' (40) FRONT (ARTERIAL)
0' (15) SIDE (ABUTS AG/Res. DIST.)
25' IF ABUTS STREET OR CORNER
40' IF ABUTS ARTERIAL STREET
0' (25) REAR (AG/Res.)
60' MAX. HEIGHT
10,000 SF MIN. LOT AREA
GREENSPACE SETBACKS: 10' FRONT
PARKING SETBACKS: 10' FROM STREETS
PARKING REQUIRED: (9'x18' PER CODE)
CAR WASH: 26 STACKING SPACES/BAY
FUEL/CONVENIENCE
MIN. 5 SPACES PER 1,000 SF GROSS AREA
MAX. 7
- 5,200/1,000 * 5 = 26 SPACES
PARKING PROVIDED:
27 SPACES + 2 ADA = 30 PARKING
+ 16 PUMP SPACES
PARKING SPACES DIMENSION = 9.5' x 18'
EXISTING SIGNALIZED INTERSECTION
EXISTING UTILITY EQUIPMENT
PROPOSED MID SIGN
CAR WASH DIRECTIONAL SIGN
PROPOSED TRANSFORMER LOCATION
PROPOSED TRUCK STOP DIRECTIONAL SIGNAGE
PROPOSED TRASH ENCLOSURE
PROPOSED MID SIGN
PROPOSED RIGHT TURN LANE
FUEL DISPENSER DIRECTIONAL SIGN
PROPOSED RIGHT-IN DRIVEWAY
EXISTING UTILITY EQUIPMENT
FUEL DISPENSER DIRECTIONAL SIGN, TYP 2
PROPOSED FULL-ACCESS DRIVEWAY
PROPOSED VENT LOCATION
PROPOSED VENT LOCATION
PROPOSED UST LOCATION
PROPOSED TRUCK STOP DIRECTIONAL SIGNAGE
PROPOSED TRUCK ENTRANCE (ENTER ONLY)
PROPOSED TRUCK STOP DIRECTIONAL SIGNAGE
PROPOSED TRUCK EXIT (EXIT ONLY)
21st AVE SE
13th ST SE
U.S. HWY 2 / 52 - (PRIMARY)
PROPOSED SCM
PLAN REVIEW NOTES:
1. LANDSCAPE ISLANDS ARENT DEPICTED. FINAL CONSTRUCTION DRAWINGS MAY REQUIRE ISLANDS AND THIS WOULD IMPACT THE LAYOUT AND PARKING COUNT.
2. EXISTING CONDITIONS BASED ON DATA OBTAINED FROM GOOGLE MAPS ON 7-12-2022
3. THIS CONCEPT SITE PLAN DOES NOT GUARANTEE ALL REQUIREMENTS FROM ZONING ISSUES NOR SIGNAGE, STORM DRAINAGE, GRADING, UTILITIES, EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THE TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE SITE LAYOUT. ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE CLIENT, ARCHITECT, JOINT DEVELOPER OR ANY OF THE GOVERNMENTAL PERMITTING AGENCIES.
SCALE 1"=100'
0 100' 200'
FIGURE 2
BERGMANN
NTI MINOT ND
SWC 21st AVE & 13th ST
MINOT, ND 58702
NORTHERN TIER BID
Holiday
HOLIDAY STATIONSTORES, INC.
19414
CONCEPTUAL SITE PLAN
CSP 5.1 W

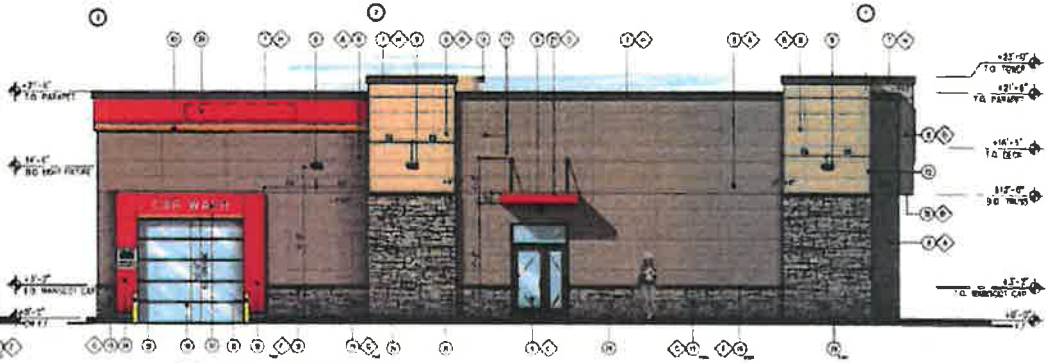
1 SOUTH - FRONT ELEVATION



2 NORTH - BACK ELEVATION



3 EAST - SIDE ELEVATION



4 WEST - SIDE ELEVATION

FINISH SCHEDULE

KEY NOTES

BERGMANN

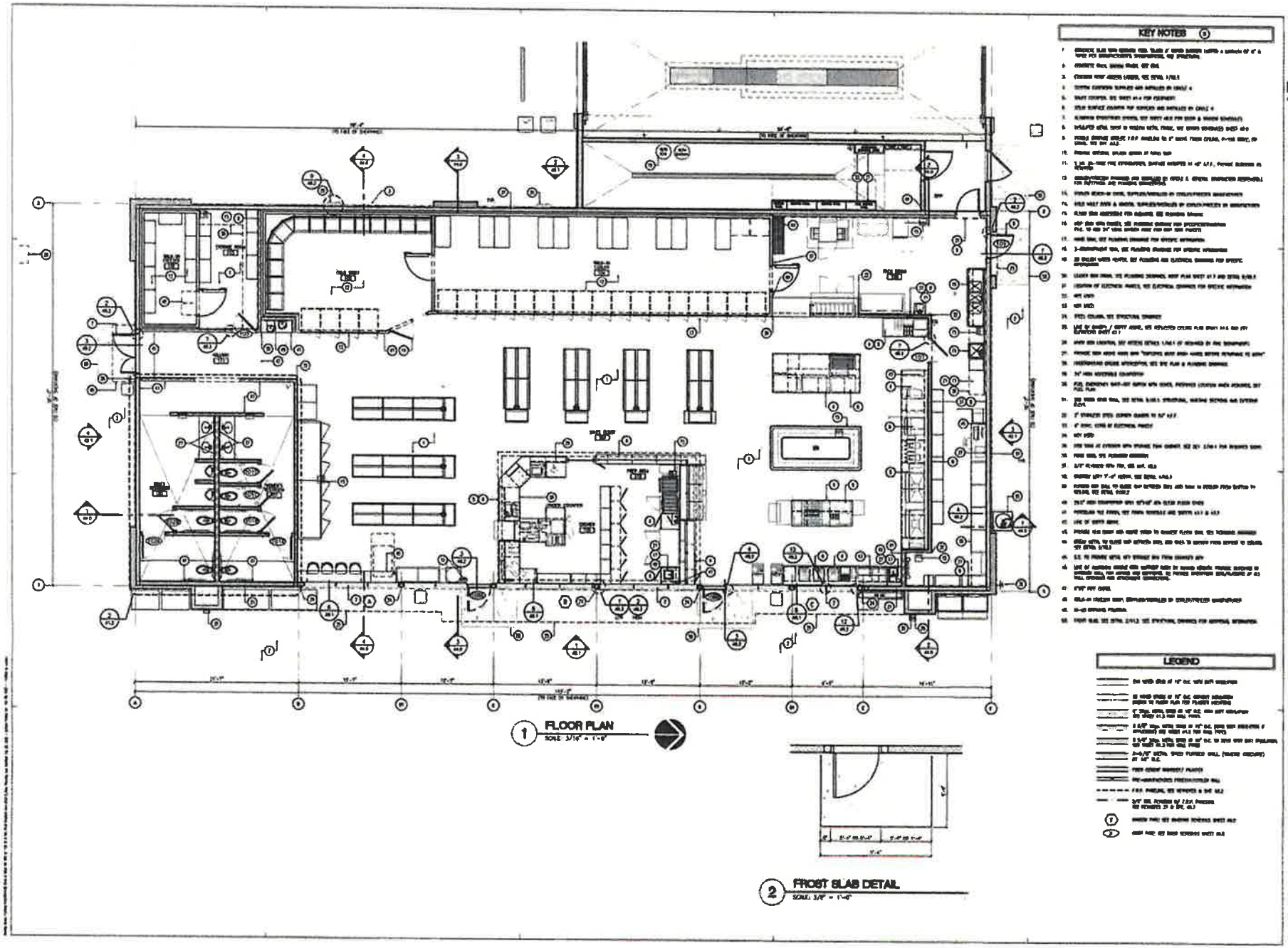
Holiday

CIRCLE K | EXTERIOR ELEVATIONS

SCALE: AS NOTED

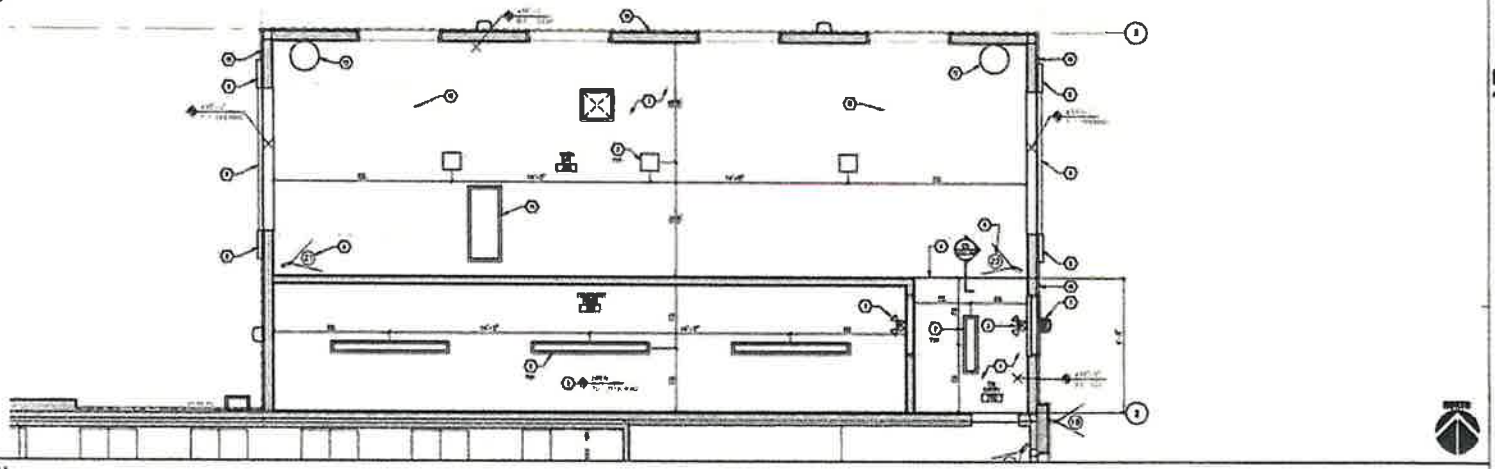
A-2

09/28/2021


KEY NOTES
LEGEND
1 FLOOR PLAN
SCALE: 3/16" = 1'-0"
2 FROST SLAB DETAIL
SCALE: 3/8" = 1'-0"
BERGMANN
PROFESSIONAL SEAL
PROJECT NAME
HOLIDAY STATION STORE STORE #XXXX
MINOT
NORTH DAKOTA 58702
SWC 21ST AVE & 12TH ST
Holiday
PROJECT NUMBER
016414.00
SHEET TITLE
FLOOR PLAN
SHEET NUMBER
A1.2

REFLECTED CEILING PLAN KEY NOTES

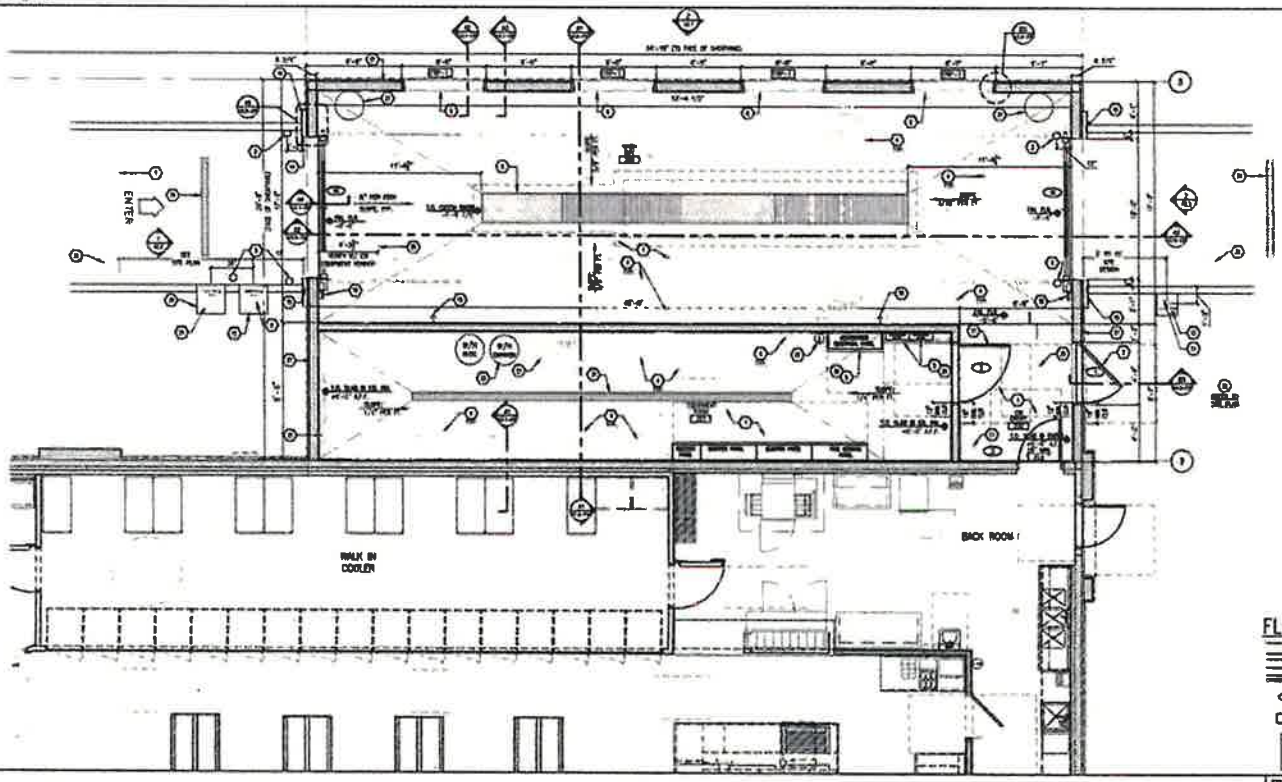
GENERAL NOTES:



C1 SCALE 1/8"=1'-0" REFLECTED CEILING PLAN

FLOOR PLAN KEY NOTES

GENERAL NOTES:



A1 SCALE 1/8"=1'-0" FLOOR PLAN

FLOOR PLAN LEGEND

FOR SHEET NUMBER REFERENCES NOTED ON THIS DRAWING, REFER TO SHEET NUMBER WITH SUFFIX '-CW'.

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

PROFESSIONAL SEAL

PROFESSIONAL IN CHARGE
A. SCHOP
PROJECT MANAGER
A. SCHOP
QUALITY CONTROL
A. SCHOP
DRAWN BY
A. SCHOP

PROJECT NAME
HOLIDAY STATION STORE
STORE #XXXX
MINOT
NORTH DAKOTA 58702
SWC 21ST AVE & 13TH ST

Holiday

PROJECT NUMBER
0154414.00

SHEET TITLE
FLOOR & REFLECTED CEILING PLAN

SHEET NUMBER
A1.0-CW

BERGMANN
ARCHITECTS ENGINEERS PLANNERS

EXHIBIT 2 - LETTER OF INTENT, SITE PLAN, FLOOR PLANS

February 28, 2023

Holiday Stationstores
Northwest Corner of 21st Ave & 13th St, Minot, North Dakota
Conditional Use Permit Letter of Intent

Pursuant to the Minot Land Development Code Conditional Use Permit Section 9.1-4:

1. The proposed convenience store/truck stop (including 16 standard fuel pumps, 3 high speed diesel pumps, and a 7,108 sq.ft. building with attached carwash) with associated onsite improvements to include sidewalk, drive aisles, ADA parking spaces with an accessible route, dumpster enclosure, and landscape where screening may be required will be harmonious with the City's Comprehensive Plan and Land Development Ordinance for uses located within the Commercial (C2) District.

2. The project is located along a highway and within a commercially zoned and commercially populated area within the City of Minot. The projects' use as it relates to the location within the City of Minot is in harmony with the surrounding commercial neighborhood and land uses. The proposal will not be detrimental to or endanger the health, safety, welfare, comfort, or convenience of the public.

3. The project is located along a highway and within a commercially zoned and commercially populated area within the City of Minot. The projects' use as it relates to the location within the City of Minot is in harmony with the surrounding commercial neighborhood and land use. Substantial injury to the value of other properties within the commercial area the site is located will not be created.

4. The project is located within a commercial district within the City of Minot and will meet all zoning requirements with respect to location, size, design, siting on property, height, and operating intensity. The development of this proposal will not prevent the development and use of any neighboring properties.

5. Existing public water, sanitary sewer and storm sewer facilities are currently located adjacent to the project site and will serve the site. The existing utilities are sufficient to serve the proposed use and public extensions will not be needed.

6. The proposed use is a common use located throughout the US and should not require any excessive additional requirements for public facilities and services. The facility will be privately owned, operated, and maintained causing no detriment to the economic welfare of the community.

280 East Broad Street, Suite 200
Rochester, NY 14604
TEL 585.232.5135
www.bergmannpc.com

7. Access is proposed along 13th Street and 21st Avenue for standard public use. Additional access is proposed along 21st Avenue for the high speed diesel pumps, weighing station and parking for commercial truck use. The site layout and entrance drive locations will allow for all customers to be located fully within the property boundaries eliminating the need for customers to park on nearby roads. A majority of the traffic this type of use encounters is considered a 'pass-by use', meaning the site will not create a significant increase in traffic levels, but rather capture the existing traffic that would be typically passing by the site.

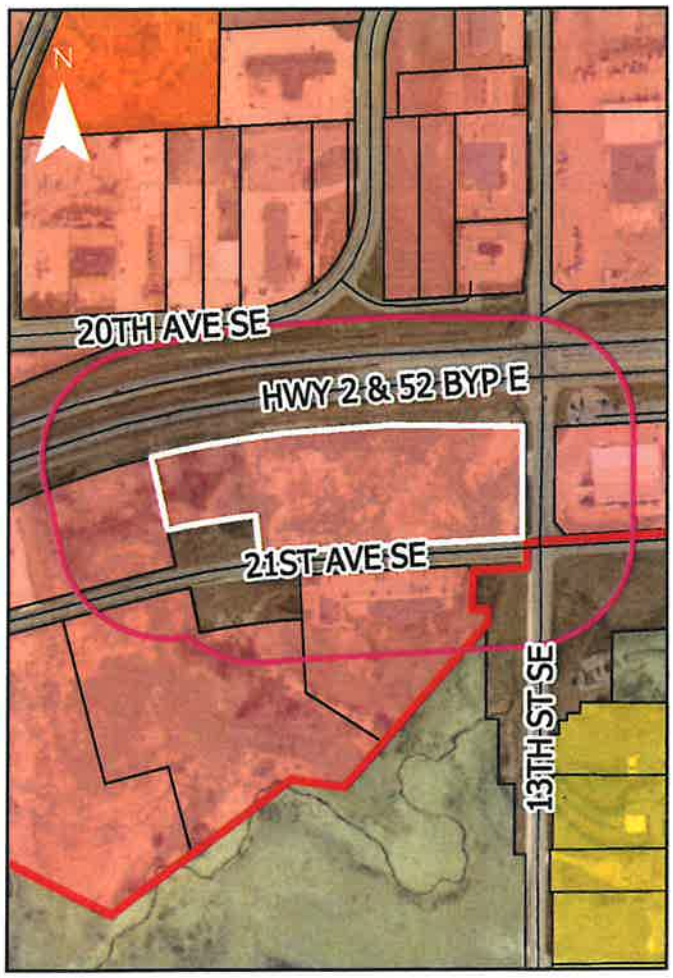
8. The site is currently a vacant field with no trees located next adjacent to Highway 2 in a commercial district with neighboring commercial properties. This proposal will not create any destruction, loss, damage of a natural, scenic, or historic feature of major importance.

9. Potential nuisances will be mitigated through careful design, following the City of Minot requirements. Examples of nuisance reduction measures include fully recessed lighting withing the fuel canopies to prevent glare and using down lighting for parking area lighting. Additionally, a pedestrian connection to the proposed convenience store will be provided from the existing sidewalk located 13th Street. SE.

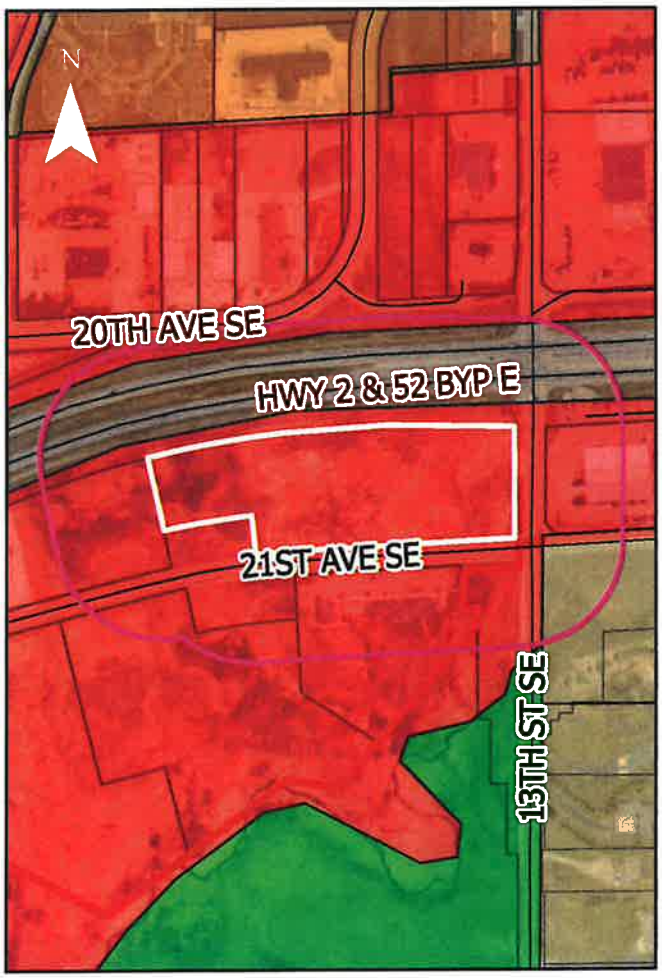
City of Minot

EXHIBIT 3 - ZONING AND FLU MAP

ZONING



FUTURE LAND USE



0 250 500 1,000 Feet

Zoning
- AG
- C2
- R1
- R3

Both Maps
- Subject Property(ies)
- 300' Buffer

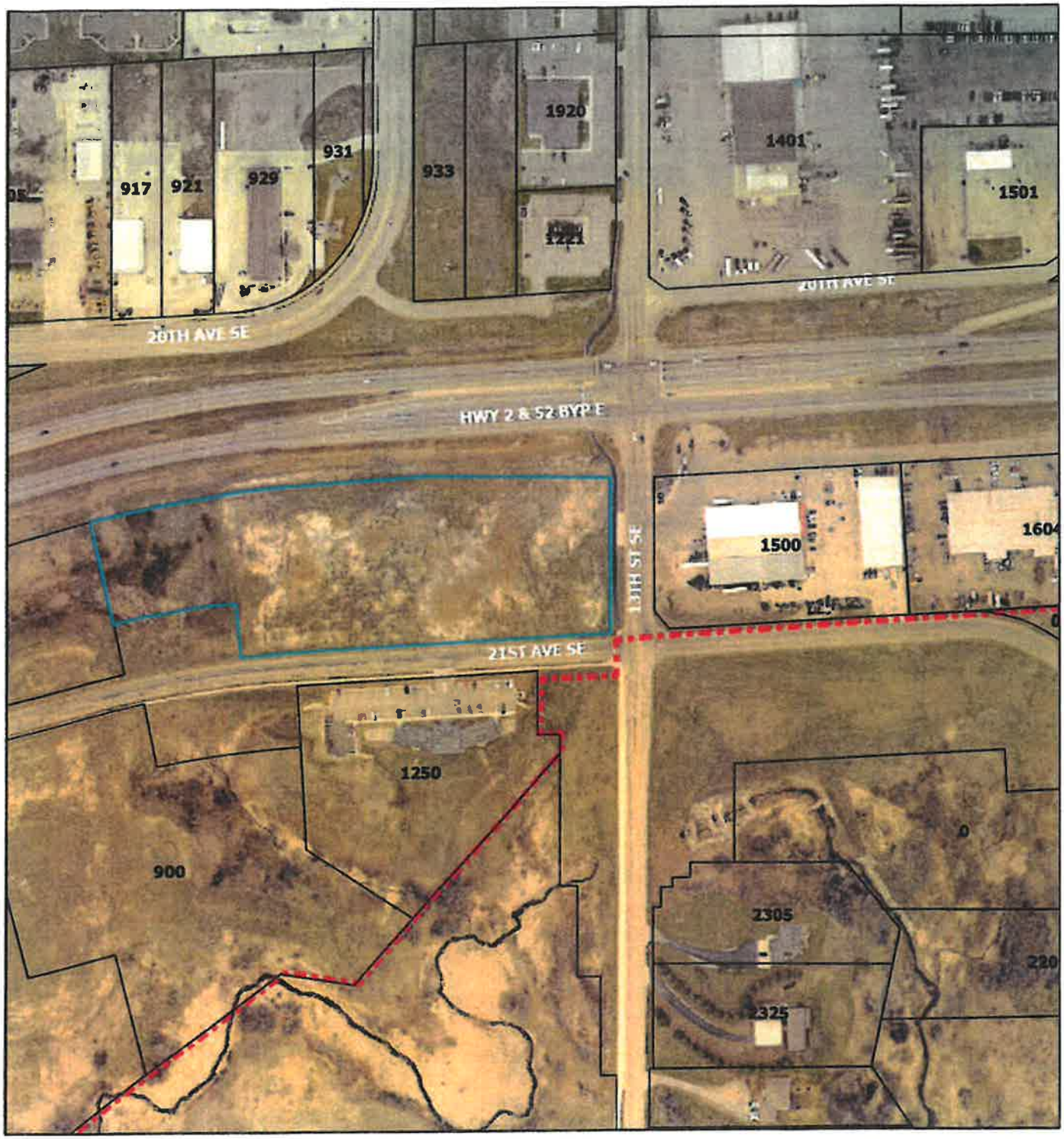
Future Land Use
- Commercial
- Medium Density Residential
- Parks and Open Space
- Very Low Density Residential

EXHIBIT 4 - SITE PHOTOS

Facing North

Facing North/Northeast

NW Corner of 13th St and 21st Ave



2/22/2023, 4:40:36 PM

1:5,000

0 0.03 0.06 0.11 mi

0 0.04 0.09 0.18 km

Minot Parcels

City Limits

Two Mile Boundary

ArcGIS Web AppBuilder

Prepared by the North Dakota Department of Transportation
Programming Division, Traffic Operations Section, August 2024
Sorted by Rank

2021-2023 Urban High Crash Locations

23 USC § 407 Documents
NDDOT Reserves All Objections

Location	Crash Severity					Total Crashes	Total Crashes By Year		Weighted Total	Rank 2021-2023	Prior Rank	Trends	Related Studies / Projects
	Fatal	InjA	InjB	InjC	PDO								
Bismarck State St & 43rd Ave N	0	2	18	17	62	99	2021 = 54 2022 = 29 2023 = 16	Crashes Decreasing	665	**1**	1	There were 52 NB rear end crashes (2021=33, 2022=12, 2023=7).	In 2021 PCN 22435 closed 43rd Ave (east of 26th St) which likely increased traffic along State St. In 2022 PCN 22929 reconstructed 43rd Ave from this intersection east to 26th St. The Arrive 2045 Metropolitan Transportation Plan shows increasing to 3 NB/SB through lanes between 2024 and 2031.
Fargo 13th Ave S & 25th St	1	2	19	4	21	47	2021 = 16 2022 = 15 2023 = 16	Crashes Steady	598	**2**	3	There were three pedestrian crashes, 1 fatal. There were 15 angle crashes, 15 left turn crashes, and 12 rear end crashes (1 injA).	---
Fargo 13th Ave S & 45th St	0	3	13	7	24	47	2021 = 16 2022 = 18 2023 = 13	Crashes Peaked in 2022	487	**3**	2	There were 17 angle crashes, but no predominant direction. 21 total crashes (45%) occurred during non-dry conditions (15 ice/snow, 6 wet).	---
Fargo 45th St & 17th Ave S	0	2	13	7	15	37	2021 = 10 2022 = 11 2023 = 16	Crashes Increased in 2023	423	**4**	5	There were 25 (68%) rear end crashes; 12 NB, 9 SB, 3 WB, and 1 EB. 1 inj A involved a pedestrian the other was a left turn crash.	---
Bismarck Main Ave & 7th St	1	1	8	7	43	60	2021 = 23 2022 = 16 2023 = 21	Crashes Dipped in 2022	411	**5**	16	There were 20 SB sideswipe same-direction crashes, and most involved a vehicle attempting to turn left from an incorrect lane. There were 16 SB+EB angle crashes. The fatality involved a driver who made a WB to SB left turn on flashing yellow arrow and hit a pedestrian (WB in the south leg crosswalk).	In 2022 PCN22904 replaced the traffic signal. In 2023 a Main Ave corridor study was performed.
Fargo 45th St & 23rd Ave S	0	1	11	11	17	40	2021 = 15 2022 = 16 2023 = 9	Crashes decreased in 2023	380	**6**	---	Crashes have decreased. There were 17 rear end crashes; 11 NB (1 inj A), 4 SB, and 2 EB. 14 (35%) of the crashes were on ice/snow surface conditions and all except one were angle or left turn crashes.	---
Fargo 13th Ave S & 32nd St / Westrac Dr	1	1	9	4	18	33	2021 = 15 2022 = 10 2023 = 8	Crashes Decreasing	370	**7**	29	The fatal crashed involved a vehicle that entered on green and hit a pedestrian who was attempting to cross on red. There were 11 angle crashes, but no predominant direction.	---
Fargo 45th St & 15th Ave S	0	3	7	6	12	28	2021 = 12 2022 = 10 2023 = 6	Crashes Decreasing	362	**8**	23	There were 11 left turn crashes, 2 were inj A; 6 SB to EB, 3 NB to WB (1 was making a U-turn), and 2 WB to SB. 11 crashes occurred during ice/snow conditions.	---
Bismarck State St & Century Ave	0	0	8	14	70	92	2021 = 35 2022 = 30 2023 = 27	Crashes Decreasing	360	**9**	7	There were 53 rear end crashes (23 NB, 11 SB, 10 EB, 9 WB). 31 total crashes (34%) occurred during non-dry conditions (25 ice/snow, 6 wet). In 2023 there were 16 crashes coded as road construction.	In 2023 PCN 20097/20098 replaced the traffic signal and added WB to SB and EB to NB dual left turn lanes.

Prepared by the North Dakota Department of Transportation
Programming Division, Traffic Operations Section, August 2024
Sorted by Rank

2021-2023 Urban High Crash Locations

23 USC § 407 Documents
NDDOT Reserves All Objections

Location	Crash Severity					Total Crashes	Total Crashes By Year		Weighted Total	Rank 2021-2023	Prior Rank	Trends	Related Studies / Projects
	Fatal	InjA	InjB	InjC	PDO								
Bismarck State St & Calgary Ave	0	1	8	9	59	77	2021 = 18 2022 = 32 2023 = 27	Crashes Peaked in 2022	349	**10**	48	There were 40 NB rear end crashes (2021=15, 2022=16, 2023=9).	In 2022 PCN 22929 occasionally reduced the number of NB T lanes on State St. In 2023 PCN 20097/20098 replaced the traffic signal and added EB/WB right turn lanes at this intersection. The Arrive 2045 Metropolitan Transportation Plan shows increasing to 3 NB/SB through lanes from here north between 2024 and 2031.
Fargo 13th Ave S & 38th St	0	2	6	8	15	31	2021 = 12 2022 = 9 2023 = 10	Crashes Steady	315	**11**	49	12 crashes (39%) occurred during non-dry conditions (9 ice/snow, 3 wet). One InjA involved a bicyclist that hit a vehicle (veh had green light). The other InjA was an EB to NB left turner who failed to yield and was hit by a WB vehicle (had green light).	---
Bismarck Bismarck Expwy & Miriam Ave	0	0	8	12	39	59	2021 = 24 2022 = 16 2023 = 19	Crashes Steady	307	**12**	24	There were 29 NB rear end crashes. 19 total crashes (32%) occurred during non-dry conditions (12 ice/snow, 7 wet).	In 2024 PCN 22648 plans to reconstruct the interchange area, including this intersection.
Bismarck Bismarck Expwy & Washington St	0	0	12	6	35	53	2021 = 22 2022 = 12 2023 = 19	Crashes Dipped in 2022	305	**13**	11	11 crashes were coded as road construction (5 in 2021 and 6 in 2023). There were 12 EB rear end crashes (2021=6, 2022=4, 2023=2). 9 crashes occurred during non-dry conditions (5 ice/snow, 4 wet). There were 13 angle crashes (6 NB+WB, 4 SB+WB, 2 SB+EB, 1 NB+EB).	In 2021 N/S lanes were reduced temporarily during a city paving project. In Nov 2022 coordination timings were revised. In 2023 PCN 23225 eliminated the 3rd EB through lane and revised the SB lane config to have a shared through-right lane. In 2025 PCN 23741 plans to replace the traffic signals along Bis Expwy.
Bismarck State St & Capitol Ave	0	1	10	5	24	40	2021 = 11 2022 = 13 2023 = 16	Crashes Steady	304	**14**	45	Crashes have increased.There were 12 angle crashes, no predominant direction. There were 14 NB/SB rear end crashes. In 2023 there were 7 crashes coded as road construction.	In 2023 PCN 20097/20098 replaced the traffic signal and added NB/SB exclusive right turn lanes.
Bismarck Washington St & Divide Ave	0	1	6	9	41	57	2021 = 17 2022 = 30 2023 = 10	Crashes Peaked in 2022	297	**15**	15	There were 49 rear end crashes (23 SB, 17 NB, 5 EB, 4 WB). 25 total crashes (44%) occurred between 3pm and 6pm.	In 2023 a city project replaced the traffic signal.
Fargo 13th Ave S & 42nd St	0	1	5	12	17	35	2021 = 13 2022 = 13 2023 = 9	Crashes Steady	289	**16**	30	There were 17 rear end crashes (9 EB, 5 WB, 2 SB, 1 NB). There were 9 angle crashes, but no predominant direction.	---
Fargo 25th St & 17th Ave S	0	1	9	5	17	32	2021 = 9 2022 = 12 2023 = 11	Crashes Steady	280	**17**	33	There were 5 NB to WB left turn crashes. 11 total crashes (34%) occurred during non-dry conditions (8 ice/snow, 3 wet).	---
Fargo 19th Ave N & I-29 NB Ramps	**1**	2	3	0	17	23	2021 = 7 2022 = 8 2023 = 8	Crashes Steady	278	**18**	20	The fatal crash involved an unresponsive driver that passed through the intersection and hit a traffic signal standard. The two InjA crashes were both motorcyclists that stopped abruptly and were rear-ended by other motorcycles.	---
Bismarck Main Ave & 9th St	0	0	6	11	51	68	2021 = 27 2022 = 26 2023 = 15	Crashes Dropped in 2023	274	**19**	8	There were 16 NB+EB angle crashes and 7 NB+WB angle crashes. There were 18 WB rear end crashes.	In 2022 PCN22904 replaced the traffic signal. In 2023 a Main Ave corridor study was performed.

Prepared by the North Dakota Department of Transportation
Programming Division, Traffic Operations Section, August 2024
Sorted by Rank

2021-2023 Urban High Crash Locations

23 USC § 407 Documents
NDDOT Reserves All Objections

Location	Crash Severity					Total Crashes	Total Crashes By Year		Weighted Total	Rank 2021-2023	Prior Rank	Trends	Related Studies / Projects
	Fatal	InjA	InjB	InjC	PDO								
Grand Forks Washington St & DeMers Ave	0	0	7	10	43	60	2021 = 11 2022 = 31 2023 = 18	Crashes Peaked in 2022	272	**20**	6	There were 30 rear end crashes (12 SB, 8 NB, 6 WB, and 4 EB). There were 7 NB to WB left turn crashes and 7 SB to EB left turn crashes. 21 total crashes (35%) occurred during non-dry conditions (18 ice/snow, 3 wet).	In 2021 a Road Safety Review was performed (REF #4478) and analyzed various intersection configurations. In 2024 PCN 22167 plans to rehabilitate the railroad bridge just north of this intersection.
Bismarck Bismarck Expwy & Airport Rd	0	2	6	4	15	27	2021 = 10 2022 = 11 2023 = 6	Crashes Decreased in 2023	271	**21**	47	8 crashes (30%) occurred during non-dry conditions (7 ice/snow, 1 wet). There were 5 SB+WB angle crashes (2021=1, 2022=1, 2023=3).	In Nov 2022 coordination timings were revised along Bis Expwy. In 2025 PCN 23741 plans to replace the traffic signals along Bis Expwy.
Mandan Main St & Twin City Dr	**1**	1	5	1	13	21	2021 = 10 2022 = 5 2023 = 6	Crashes Steady	264	**22**	---	There were 5 WB to SB left turn crashes, including 1 fatal (left turning driver was unbelted, ejected, and died).	---
Grand Forks Columbia Rd & 24th Ave S	**1**	1	4	2	18	26	2021 = 5 2022 = 8 2023 = 13	Crashes Increasing	263	**23**	---	There were 15 left turn crashes (7 EB to NB, 4 NB to WB, 4 SB to EB). The fatal crash involved a driver who attempted to make a NB to WB left turn and was hit by a SB vehicle (had green ball).	In 2028 HSIP 624002 plans to re-align negative offset left turn lanes.
Bismarck State St & Interchange Ave	0	1	4	9	40	54	2021 = 25 2022 = 13 2023 = 16	Crashes Steady	262	**24**	36	There were 16 NB rear end crashes (2021=10, 2022=3, 2023=3). There were 14 SB to EB left turn crashes (2021=5, 2022=1, 2023=8).	In 2023 PCN 20097/20098 revised the intersection from full access to 3/4 access.
Minot US 2 & 13th St SE	0	3	4	1	12	20	2021 = 8 2022 = 8 2023 = 4	Crashes Dropped in 2023	256	**25**	---	There were 3 InjA crashes (2021=2, 2022=1, 2023=0). One was an angle crash (SB+EB) where the EB driver ran a red light, one was an angle crash (NB+WB) where the intersection was temporarily an all-way stop, and one was a left turn crash where a WB emergency vehicle hit an EB to NB left turner.	---
Fargo 32nd Ave S & 42nd St	0	0	10	6	18	34	2021 = 12 2022 = 18 2023 = 4	Crashes Decreased in 2023	254	**26**	9	There were 12 left turn crashes; 5 WB to SB, 4 EB to NB, and 3 SB to EB. 53% of crashes occurred during wet or ice/snow conditions.	---
Fargo 13th Ave S & 34th St / Fiechtner Dr	**1**	0	5	5	14	25	2021 = 10 2022 = 5 2023 = 10	Crashes Dipped in 2022	254	**27**	---	The fatal crash was a WB driver who suddenly veered into the traffic signal standard, was not belted, and died. There were 9 WB rear end crashes.	---
Minot US 2 & Evergreen Ave	**1**	2	1	1	11	16	2021 = 11 2022 = 5 2023 = 0	Crashes Decreasing	249	**28**	10	There were 10 angle crashes, including 1 fatal and 1 InjA (2021=8, 2022=2, 2023=zero). 8 total crashes (51%) occurred during non-dry conditions (6 ice/snow, 2 wet).	In 2022 PCN 22829 revised access control in this area.
Bismarck Bismarck Expwy & 3rd St	0	2	4	3	37	46	2021 = 13 2022 = 20 2023 = 13	Crashes Peaked in 2022	248	**29**	17	There were 17 WB rear end crashes. 12 total crashes occurred during non-dry conditions (10 ice/snow, 2 wet).	In Nov 2022 coordination timings were revised along Bis Expwy. In 2025 PCN 23741 plans to replace the traffic signals along Bis Expwy.

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2021-2023 Urban High Crash Locations

23 USC § 407 Documents
NDDOT Reserves All Objections

Location	Crash Severity					Total Crashes	Total Crashes By Year		Weighted Total	Rank 2021-2023	Prior Rank	Trends	Related Studies / Projects
	Fatal	InjA	InjB	InjC	PDO								
Fargo 19th Ave N & University Dr	0	0	10	5	23	38	2021 = 18 2022 = 10 2023 = 10	Crashes Decreasing	248	**30**	17	There were 10 EB to NB left turn crashes and 10 WB to SB left turn crashes (2021=9, 2022=7, 2023=4). There were 7 SB+EB angle crashes.	In ~2026 HSIP 822001 plans to re-align the negative offset left turn lanes.
Fargo 45th St & 12th Ave N	0	0	11	4	16	31	2021 = 10 2022 = 11 2023 = 10	Crashes Steady	247	**31**	28	There were 13 left turn crashes; 7 SB to EB, 4 WB to SB, 1 EB to NB, and 1 NB to WB. There were 10 rear end crashes; 4 NB, 3 EB, and 3 WB.	The city plans to add left turn heads for NB/SB vehicles.
Minot Broadway & 40th Ave SW	1	1	3	3	8	16	2021 = 4 2022 = 6 2023 = 6	Crashes Steady	247	**32**	---	13 angle crashes involved SB+EB vehicles, included 1 fatal. Half of the total crashes (8 of 16) occurred during the noon and 1pm hours.	In 2021 a Broadway Corridor Study was performed and recommended changing this intersection to 3/4 access. In 2022 an NDDOT study was performed (REF #4489) and also favored 3/4 access. In 2023 the city converted the intersection to 3/4 access.
West Fargo Sheyenne St & 32nd Ave	0	1	8	3	23	35	2021 = 12 2022 = 12 2023 = 11	Crashes Steady	247	**33**	32	There were 18 left turn crashes (2021=7, 2022=9, 2023=2). 17 total crashes (49%) occurred during non-dry conditions (9 wet, 8 ice/snow).	---
Bismarck State St & Divide Ave	0	1	5	5	45	56	2021 = 20 2022 = 17 2023 = 19	Crashes Steady	240	**34**	31		In 2023 PCN 20097/20098 replaced the traffic signal, added NB/SB exclusive right turn lanes, and revised EB/WB to have dual left turn lanes.
Bismarck 9th St & Arbor Ave	0	1	7	4	20	32	2021 = 10 2022 = 7 2023 = 15	Crashes Increased in 2023	238	**35**	---	There were 17 angle crashes (12 NB+EB, 5 NB+WB): 2021=6, 2022=2, 2023=9.	In 2023 PCN 23202 converted this intersection from signalized to two-way stop control.
Fargo 32nd Ave S & 39th St	0	0	8	8	14	30	2021 = 7 2022 = 13 2023 = 10	Crashes Peaked in 2022	238	**36**	20	There were 10 rear end crashes; 7 WB, 2 NB, and 1 EB.	---
Fargo 45th St & 40th Ave S	0	2	3	6	10	21	2021 = 4 2022 = 7 2023 = 10	Crashes Increased in 2023	237	**37**	---	There were 5 left turn crashes (inj A) and 4 angle crashes. The other inj A was a single vehicle crash.	---
Fargo 30th Ave S & 45th St S	0	1	6	6	12	25	2021 = 7 2022 = 10 2023 = 8	Crashes Steady	235	**38**	---	There were 5 NB to WB left turn crashes and 5 SB to EB left turn crashes.	---
Bismarck Bismarck Expwy & 7th St	0	0	6	8	42	56	2021 = 20 2022 = 18 2023 = 18	Crashes Steady	232	**39**	---	There were 36 rear end crashes (15 WB, 12 EB, 9 SB). 19 of 56 total crashes (34%) occurred during non-dry conditions (13 ice/snow, 6 wet).	In 2025 PCN 23741 plans to replace the traffic signals along Bis Expwy.

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2021-2023 Urban High Crash Locations

23 USC § 407 Documents
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Location	Crash Severity					Total Crashes	Total Crashes By Year		Weighted Total	Rank 2021-2023	Prior Rank	Trends	Related Studies / Projects
	Fatal	InjA	InjB	InjC	PDO								
Bismarck Bismarck Expwy & 12th St	0	1	6	5	19	31	2021 = 10 2022 = 12 2023 = 9	Crashes Steady	231	**40**	41	There were 3 ped/bike crashes, all in 2023, and all in the west leg crosswalk. One involved a driver who made a SB to WB right turn on green and hit a SB pedestrian, one involved a driver who made a NB to WB left turn on flashing yellow arrow and hit a NB bicyclist, and one involved a driver making an EB to SB right turn on green and getting hit by a SB bicyclist (crossing on red).	In Nov 2022 coordination timings were revised along Bis Expwy. In 2025 PCN 23741 plans to replace the traffic signals along Bis Expwy.
Fargo Main Ave & University Dr	0	1	5	7	14	27	2021 = 7 2022 = 11 2023 = 9	Crashes Peaked in 2022	231	**41**	11	11 crashes were rear ends; 6 EB, 4 SB, and 1 WB. 9 occurred at dark, 1 was a pedestrian inj A.	In 2020 PCN 21170 reconstructed the intersection.
Grand Forks Columbia Rd & 17th Ave S	0	0	7	8	23	38	2021 = 11 2022 = 13 2023 = 14	Crashes Steady	230	**42**	---	There were 9 angle crashes (4 SB+WB, 3 SB+EB, 1 NB+WB, 1 NB+EB). 13 total crashes (34%) occurred during non-dry conditions (11 ice/snow, 2 wet). There were 6 NB to WB left turn crashes (2021=1, 2022=3, 2023=2).	---
Fargo University Dr & 8th Ave N	0	2	3	5	13	23	2021 = 9 2022 = 7 2023 = 7	Crashes Steady	229	**43**	---	There were 15 angle crashes; 8 SB + WB, 7 SB + EB. There were 3 pedacycle crashes; I inj A, 1 inj B, and 1 inj C.	---
Grand Forks Washington St & 24th Ave S	1	0	4	3	21	29	2021 = 11 2022 = 10 2023 = 8	Crashes Steady	222	**44**	26	There were 16 SB rear end crashes, including 1 fatal. 11 total crashes (36%) occurred during non-dry conditions (8 ice/snow, 3 wet).	---
Fargo 45th St & 9th Ave S	0	2	4	3	10	19	2021 = 6 2022 = 7 2023 = 6	Crashes Steady	221	**45**	34	There were 8 left turn crashes; 5 SB to EB, 2 NB to WB, 1 WB to SB. 42% (8) of the crashes occurred on ice/snow surface conditions.	---
Fargo 45th St & I-94 WB Ramps	0	1	5	5	26	37	2021 = 10 2022 = 13 2023 = 14	Crashes Steady	221	**46**	---	There were 20 rear end crashes; 16 WB, 2 NB, and 2 EB. There were 4 pedacycle crashes, 1 inj A.	---
Minot Broadway & Burdick Expwy	0	2	4	2	21	29	2021 = 9 2022 = 10 2023 = 10	Crashes Steady	221	**47**	---	There were 11 N/S left turn crashes (6 NB to WB, 5 SB to EB). 12 total crashes (42%) occurred during non-dry conditions (8 ice/snow, 4 wet).	In 2024 a city project plans to replace the traffic signal.
Bismarck State St & Interstate Ave	0	0	5	8	47	60	2021 = 17 2022 = 23 2023 = 20	Crashes Peaked in 2022	220	**48**	20	There were 15 NB rear end crashes (2021=6, 2022=6, 2023=3). 21 total crashes (35%) occurred during non-dry conditions (15 ice/snow, 6 wet).	In 2023 PCN 20097/20098 replaced the traffic signal, reduced SB to a single left turn lane, and increased WB to dual left turn lanes.
Bismarck State St & Weiss Ave / Harvest Lane	0	0	6	8	28	42	2021 = 16 2022 = 18 2023 = 8	Crashes Dropped in 2023	218	**49**	---	There were 14 SB rear end crashes and 11 NB rear end crashes. There were only 8 total crashes in 2023.	In 2023 PCN 20097/20098 replaced the traffic signal, increased NB to have dual left turn lanes, and added a NB to EB exclusive right turn lane.
Fargo Main Ave & 25th St	0	2	5	1	7	15	2021 = 5 2022 = 6 2023 = 4	Crashes Steady	213	**50**	---	There were 7 angle crashes, 1 inj A and a pedacyle crash, inj A. 8 crashes occurred on wet or ice/snow surface conditions.	---

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Colliers Engineering & Design

October 25, 2023

Lance Meyer, City Engineer
City of Minot, North Dakota
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Circle K Store
US Highway 2 / 13th Street SE / 21st Avenue SE
City of Minot, Ward County, North Dakota
Colliers Engineering & Design Project No. 22008607A

Dear Mr. Meyer,

This Traffic Letter has been prepared as a supplemental update to the previously submitted Traffic Impact Study - Circle K Store - City of Minot, Ward County, North Dakota, prepared by Colliers Engineering & Design, dated June 23, 2023. This Traffic Letter has been prepared for Holiday Stationstores, Inc ("Applicant") in association with a proposed convenience market with fueling stations and carwash ("Project") within the City of Minot, Ward County, North Dakota.

Executive Summary

Based upon the original TIA submitted on June 23, 2023 and the additional information submitted within this Traffic Letter update, the following benefits have been identified by constructing a passenger vehicle right-in driveway along 13th Street SE for the proposed project:

- The proposed passenger vehicle right-in driveway along 13th Street SE is anticipated to reduce total delay per vehicle and stops per vehicle within the study area when compared to prohibiting 13th Street SE access and constructing a right-turn lane at 21st Avenue. Providing direct and discernible ingress access to the site reduces network delay and vehicle stops, which benefits the motoring public from a congestion and safety standpoint.

- The proposed passenger vehicle right-in driveway along 13th Street SE will help separate local primary trips traveling to/from the south from the majority of ingress commuter traffic from US 2/52. This would enhance the travel route for local motorists by reducing conflict.

- The proposed passenger vehicle right-in driveway along 13th Street SE will provide a second access to the convenience market and fuel dispensers enhancing emergency access.

- The proposed passenger vehicle right-in driveway along 13th Street SE can be designed to meet current City and State standards and can be compatible with future city improvements along 13th Street SE (by others). Trucks can be physically restricted from accessing the 13th Street SE passenger vehicle right-in driveway and destination signs can be implemented to route trucks to 21st Avenue SE. Trucks will have dedicated ingress and egress access points on 21st Avenue SE.

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Introduction

This Traffic Letter has been prepared for Holiday Stationstores, Inc ("Applicant") in association with a proposed convenience market with fueling stations and carwash ("Project") within the City of Minot, Ward County, North Dakota. The site is currently undeveloped. The Applicant proposes to construct a 5,650 SF convenience store and gas station with 14 vehicle fueling positions, 4 truck fueling positions and an ancillary car wash. Please note, the anticipated land use is a convenience store and gas station, not a truck stop. Trucking facilities such as showers and overnight stays will not be provided. The site is bounded by 13th Street SE to the east, 21st Avenue SE to the south, and U.S. Highway 2/52 to the north. The site is located within the Commercial (C-2) Zoning District. A site location map is **enclosed**.

One (1) right-in-only passenger vehicle driveway with a deceleration lane is proposed along 13th Street SE southbound. One (1) full-movement driveway for passenger vehicles and bi-furcated ingress and egress truck access driveways are proposed along 21st Avenue SE. The proposed Conceptual Site Plan is **enclosed**.

Previous Study, Meetings and Additional Information

The original Traffic Impact Study - Circle K Store - City of Minot, Ward County, North Dakota, prepared by Colliers Engineering Design was prepared on June 23, 2023 and then submitted to the City of Minot. The TIS was forwarded to NDDOT by the City on June 28, 2023. Colliers Engineering & Design was in receipt of the City and NDDOT comments on July 21, 2023.

The City of Minot, NDDOT, the Applicant and Colliers Engineering & Design, met virtually on July 26, 2023 to discuss the joint review. At that time, additional information was requested in support of the right-turn-in only passenger vehicle driveway along 13th Street SE southbound. An in-person meeting was held at the Minot City Hall building on Friday, September 1, 2023 between the City of Minot, NDDOT, the Applicant Project Team, and Colliers Engineering & Design. The following additional information and analyses were requested in support of the right-turn-in only passenger vehicle driveway along 13th Street SE southbound:

- Compare traffic operations with a right-in access on 13th Street to having a 13th Street right-turn deceleration lane at 21st Avenue.
- Overall assessment of traffic operations when separating ingress traffic flow (primary traffic would enter at 13th Street with right-in access) from egress traffic flow.
- On-site circulation and conflict assessment.
- Review corner clearances, offsets, and traffic functional area of proposed right-in access off of 13th Street with regard to the traffic signal at US 2 & 13th Street.
- Emergency access.
- Right-in access driveway design.
- Truck signing and routing.
- Driveway Compatibility with Future Improvements:
    - Future 13th Street northbound left-turn bay at US 2.
    - Shared-use path considerations.

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Delay Analysis Comparison of Driveway Options

The 2025 Build condition AM and PM peak hour traffic operations within the overall study area and along the 13th Street SE corridor was reviewed. The traffic operational analysis compared a scenario with the passenger vehicle right-in driveway along 13th Street SE to a scenario where 13th Street SE access is prohibited and a 13th Street SE right-turn lane at 21st Avenue is constructed. The analyses were performed using the latest version of *Synchro Trafficware*, a traffic analysis and simulation program.

From an isolated capacity standpoint, constructing a 13th Street SE southbound right-turn deceleration lane either at the proposed right-in access or at 21st Avenue will provide similar capacity supporting the demand. However, by getting traffic into the site in advance at a right-in driveway on 13th Street and not circuitously sending ingress trips south to 21st Avenue and then into the site where the egress traffic is exiting, the total delay per vehicle and stops per vehicle are significantly improved. **Table 1** summarizes the total delay per vehicle and stops per vehicle within the overall network and 13th Street SE corridor. The capacity analysis worksheets are **enclosed**.

Table 1 – Level of Service Summary

Location	Measure of Effectiveness	2025 Build w/ 13th Street SE Right-In Access		2025 Build w/o 13th Street SE Right-In Access		% Improvement with proposed Right-In Access	
		AM Peak	PM Peak	AM Peak	PM Peak	AM Peak	PM Peak
13th Street SE Corridor	Total Delay / Veh (s/v)	10	10	15	17	**33%**	**70%**
	Stops / Veh	0.24	0.23	0.37	0.38	**35%**	**39%**
Overall Study Area	Total Delay / Veh (s/v)	15	18	18	21	**17%**	**14%**
	Stops / Veh	0.41	0.41	0.49	0.52	**16%**	**21%**

External and Internal Reduction in Conflicts

Reduction in External Conflicts

This ingress right-in only driveway will service the majority of trips into this site. In the build condition, the right-turn lane will service 129 ingress trips and 125 ingress trips during the Weekday AM and PM peak hours, respectively. The right-in driveway will service 81% of the entering passenger vehicles trips during the AM and PM peak hours. The proposed right-in driveway on 13th Street SE will significantly enhance the traffic operations at the intersection of 13th Street SE & 21st Avenue SE when compared to a build condition without the right-in driveway. Without the right-in driveway, all ingress traffic would have to traverse to 21st Avenue SE. The proposed 13th Street SE southbound right-in driveway eliminates 129 AM peak hour trips and 125 PM peak hour trips from having to traverse the intersection of 13th Street SE & 21st Avenue SE. This reduces the peak hour demand and enhances operations at the intersection of 13th Street SE & 21st Avenue SE.

The 21st Avenue passenger vehicle driveway will service 159 egress trips and 154 egress trips during the Weekday AM and PM peak hours, respectively. With the 129 ingress trips and 125 ingress trips entering from 13th Street, the majority of ingress and egress trips are separated, and the traffic flows have minimal conflict with one another. By sending ingress trips south to 21st Avenue and then into the site where the egress traffic is exiting, the ingress and egress traffic are funneled to one passenger vehicle access point increasing conflict points. Separating the ingress and egress traffic flows of the site enhances a vehicles ability to safely exit onto 21st Avenue from the 21st Avenue passenger vehicle driveway.

Furthermore, the proposed passenger vehicle right-in driveway along 13th Street SE will help separate local primary trips traveling to/from the south from the majority of ingress commuter traffic from US 2/52. This would enhance the travel route for local motorists by reducing conflict.

Reduction in Internal Conflicts

The primary on-site internal intersection is a four-leg intersection providing access towards parking and the fuel dispensers. The internal intersection is located approximately 60' north of 21st Avenue. By providing a secondary access, the ingress traffic can be distributed more proportionally on-site reducing the conflicts and traffic density at the internal on-site intersection. Without the right-turn into the site from 13th Street, all entering and exiting movements will traverse through the four-leg intersection on-site, which would potentially increase on-site conflicts 60' north of 21st Avenue.

13th Street SE Right-In Proximity to US 2/52

There is approximately 300' between the proposed right-in access on 13th Street to US 2/52. The following sections assess the offset.

Deceleration Lane

This ingress right-in only driveway will include a deceleration lane. The right-turn lane lengths will meet NDDOT standards, which includes a 96' taper and a 75' deceleration length (171' total). The opportunity for a deceleration lane at the proposed right-in driveway on 13th Street SE southbound will allow ingress maneuvers to decelerate separate from the 13th Street SE southbound through volumes. The traffic flow along 13th Street SE southbound and the traffic interaction with the traffic signal will be enhanced with a dedicated 13th Street SE deceleration lane at the right-in access point.

City of Minot Corner Clearance to US 2/52

The City of Minot utilizes the MNDOT corner clearance requirements for their offsets. A corner clearance of 225' is required by the City of Minot.

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NDDOT Intersection Functional Area

The NDDOT Traffic Operation Manual was referenced to determine the downstream functional area needed from US 2/52 to the proposed right-in access on 13th Street SE. The NDDOT Traffic Operations Manual states:

> *"The functional area downstream of an intersection consists of enough distance for drivers to accelerate back up to speed if they were previously stopped and should be at least as long as the stopping sight distance for the roadway."*

With a posted speed limit of 30mph, the AASHTO stopping sight distance along 13th Street SE is 200'. The functional area downstream of US 2/52 on 13th Street is 200.'

Right-In Driveway Queueing

There will be no stop condition once vehicles have entered the site from 13th Street SE. There will be no traffic control delay or queueing caused by traffic control. By separating ingress and egress traffic between two passenger vehicle access points, internal traffic is better dispersed on-site reducing on-site conflicts and potential for queue spill backs. In a later section, truck routing is discussed to physically prohibit and to properly communicate that the 13th Street SE access is for passenger vehicles only.

13th Street Access Proximity Summary

The deceleration lane can be constructed to NDDOT standards. Vehicles entering the site will utilize the deceleration lane and not impede the 13th Street SE Southbound through traffic flow. The 300' offset from US 2/52 to the proposed right-in driveway exceeds both the City corner clearance the NDDOT Intersection Functional Area requirements. The proposed access is right-in only and no stop control is proposed immediately on-site, therefore, no traffic control delay is anticipated. The results of the proximity analysis area summarized in **Table 2** below.

Table 2 – Proposed 13th Street SE Right-In Access Proximity Assessment

Distance between proposed 13th Street SE Right-In Driveway to US 2/52	Right-Turn Deceleration Length Required	City of Minot Corner Clearance Requirement	NDDOT Intersection Functional Area Requirement	Does the 13th Street SE Right-In Driveway Proximity to US 2/52 meet City & State Requirements
300'	171'	225'	200'	**YES**

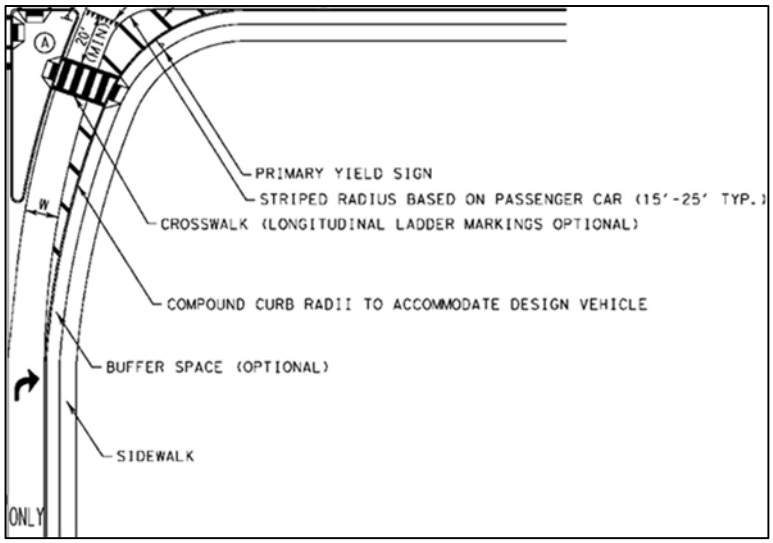
Emergency Access, Driveway Design and Truck Routing

Emergency Access

Although the site proposes one full-movement driveway and bi-furcated ingress and egress truck access driveways along 21st Avenue SE, only the full-movement driveway provides paved access to convenience store and passenger vehicle fueling dispensers. The 13th Street SE right-in access will provide a secondary point of access to the convenience store and passenger vehicle fueling dispensers. Secondary points of access provide a significant safety benefit for emergency response.

Driveway Design

Driveway channelization can be implemented with both striping and physical curb to physically delineate that the right-in driveway on 13th Street SE is for passenger vehicles only. Many state DOTs are using 75 degrees to 55 degrees for right-turn channelization rather than 45 degrees. This provides enhanced line of sight for pedestrians and motorists. An example of this type of channelization is shown on the inset detail and can be implemented at the 13th Street SE right-in driveway.



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Truck Signing

The proposed passenger vehicle right-in driveway along 13th Street SE will be delineated with striping and channelization. It is recommended to implement truck restriction sign assemblies (Sign Assembly #1 and #2) at the passenger vehicle right-in driveway along 13th Street SE. It is recommended to implement the Truck Entrance Sign (Sign Assembly #3) at the 21st Avenue SE diesel/truck access point. Sign Assemblies # 4 and #5 are recommended to provide directions for trucks looking to obtain diesel fuel to turn right from 13th Street SE southbound to 21st Avenue SE westbound and then to turn into the 21st Avenue SE ingress truck access. Examples of the sign assemblies are detailed below.

Sign Assembly #1 Sign Assembly #2 Sign Assembly #3 Sign Assembly #4 Sign Assembly #5

Driveway Compatibility with Future Improvements by Others

The proposed right-in driveway and existing shared-use path can be shifted closer into the site to allow future improvements (by others) at the intersection of US Hwy 2 & 13th Street SE. Should the proposed 13th Street SE right-in access be permitted, the Applicant can coordinate with the City regarding right-of-way and a shared-use path (sidewalk) easement on-site to support the City's envisioned future growth. An exhibit illustrating the ability to construct a right-in driveway and shift over the existing shared-use path along 13th Street SE southbound to support the City's future improvements at US Hwy 2 & 13th Street is **enclosed**.

Colliers Engineering & Design

Summary

The Applicant proposes to construct a 5,650 SF convenience store and gas station with 14 vehicle fueling positions, 4 truck fueling positions and an ancillary car wash. The anticipated land use is a convenience store and gas station, not a truck stop. Trucking facilities such as showers and overnight stays will not be provided.

Based upon the original TIA submitted on June 23, 2023 and the additional information submitted in this letter, the proposed passenger vehicle right-in driveway along 13th Street SE is anticipated to reduce total delay per vehicle and stops per vehicle within the study area when compared to prohibiting 13th Street SE access and constructing a right-turn lane at 21st Avenue. Providing direct and discernible ingress access to the site reduces network delay and vehicle stops, which benefits the motoring public from a congestion and safety standpoint.

The proposed passenger vehicle right-in driveway along 13th Street SE will help separate local primary trips traveling to/from the south from the majority of ingress commuter traffic from US 2/52. This would enhance the travel route for local motorists by reducing conflict.

A proposed passenger vehicle right-in driveway along 13th Street SE provides external and internal traffic flow benefits and is offset far enough south of US 2/52 to meet current Minot corner clearance requirements, NDDOT intersection functional area requirements, and deceleration length requirements.

The right-in driveway will provide a second access to the convenience market and fuel dispensers enhancing emergency access. The right-in passenger driveway can be designed appropriately to discourage delivery and fuel truck use. Trucks will have dedicated ingress and egress access points on 21st Avenue SE.

The proposed right-in driveway and existing shared-use path can be shifted closer into the site to allow future improvement by others at the intersection of US Hwy 2 & 13th Street SE. Should the proposed 13th Street SE right-in access be permitted, the Applicant can coordinate with the City regarding right-of-way and a shared-use path (sidewalk) easement on-site to support the City's envisioned future growth (by others).

Colliers Engineering & Design

Should you have any additional questions, please contact this office.

Sincerely,

Colliers Engineering & Design, Inc.

REGISTERED PROFESSIONAL ENGINEER
NICHOLAS D. AIELLO
PE-30037
DATE10/25/2023
NORTH DAKOTA

Nicholas Aiello, PE, PTOE, PTP
Department Manager

cc: Harold Stewart, Minot City Manager
Stephen Joersz, Minot Traffic Engineer
Justin Schlosser, NDDOT Traffic Operations Engineer
Korby Seward, NDDOT Minot District Engineer
Jim Goeppner, Holiday Stationstores, Inc
John Coughlin, Coughlin Inc.
Jill Duemeland, Duemelands Commercial Real Estate
Richard Blasey, Colliers Engineering & Design

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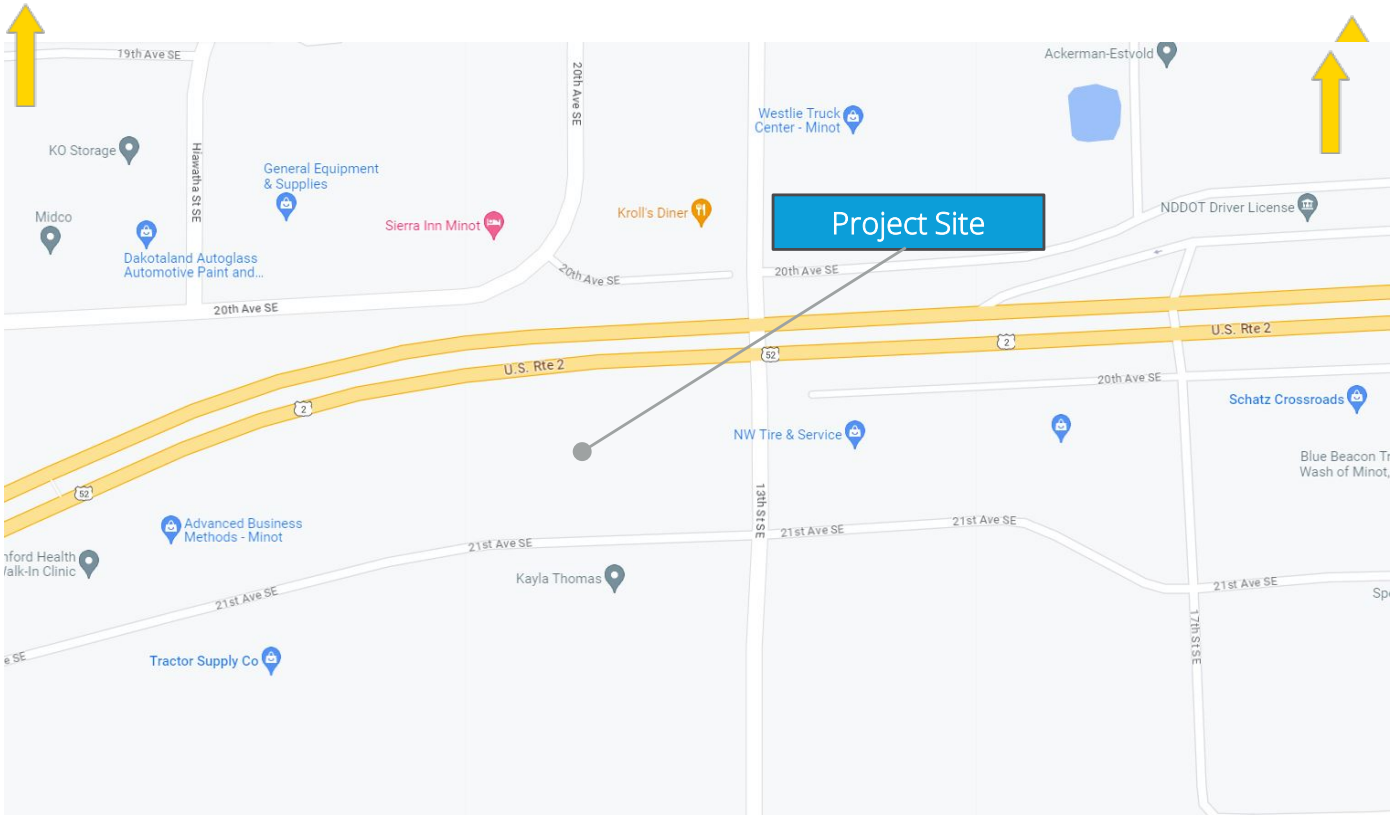
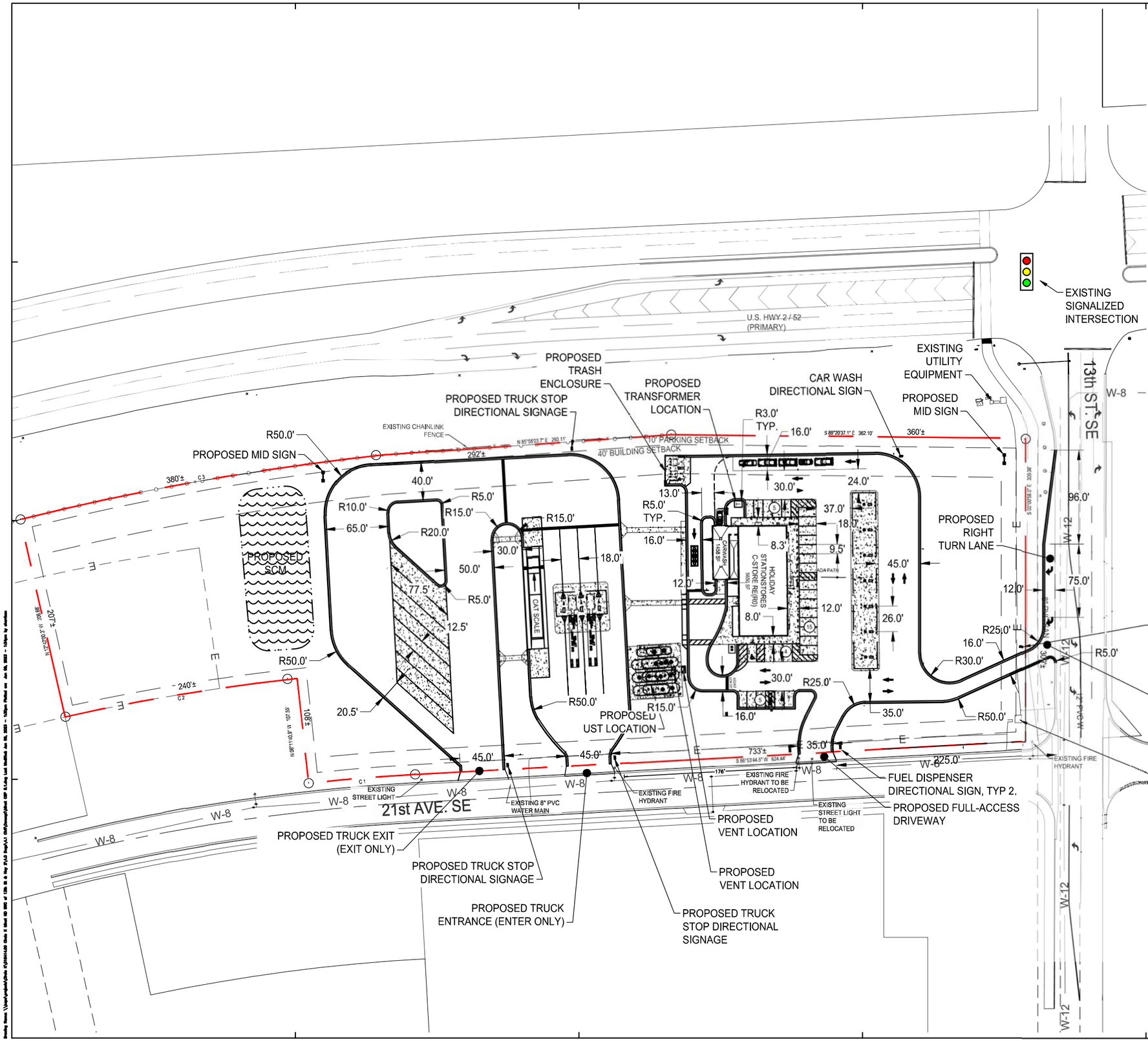


Colliers Engineering & Design	Holiday Stationstores, Inc.	**Figure 1**
	Project No. 22008607A	
	City of Minot, Ward County, North Dakota	**Site Location Map**



SITE LEGEND:

- PROPERTY SETBACK LINE
- GREEN SPACE SETBACK
- PROPERTY LINE
- # NUMBER OF PARKING SPACES

SITE DATA:

ZONING: C2 COMMERCIAL

CURRENT LAND USE: NONE / VACANT

TOTAL LOT AREA:	±6.83 ACRES
	±297,274 SQ. FT.
AREA OF PROPOSED LOT:	±297,274 SQ. FT.
AREA OF OPEN SPACE:	TBD - SQ. FT.
GROSS FLOOR AREA OF BUILDINGS:	5,200 SQ. FT.

BUILDING SETBACKS:
25' (40) FRONT (ARTERIAL)
0' (15) SIDE (ABUTS AG/Res. DIST.)
25' IF ABUTS STREET OR CORNER
40' IF ABUTS ARTERIAL STREET
0' (25) REAR (AG/Res.)
60' MAX. HEIGHT
10,000 SF MIN. LOT AREA

GREENSPACE SETBACKS: 10' FRONT

PARKING SETBACKS: 10' FROM STREETS

PARKING REQUIRED: (9'x18' PER CODE)
CAR WASH: ≥6 STACKING SPACES/BAY
FUEL/CONVENIENCE
MIN. 5 SPACES PER 1,000 SF GROSS AREA
MAX. 7
- 5,200/1,000 * 5 = 26 SPACES

PARKING PROVIDED:
27 SPACES + 2 ADA = 30 PARKING
+ 16 PUMP SPACES
PARKING SPACES DIMENSION = 9.5' x 18'

PLAN REVIEW NOTES
1. LANDSCAPE ISLANDS AREN'T DEPICTED. FINAL CONSTRUCTION DRAWINGS MAY REQUIRE ISLANDS AND THIS WOULD IMPACT THE LAYOUT AND PARKING COUNT.
2. EXISTING CONDITIONS BASED ON DATA OBTAINED FROM GOOGLE MAPS ON 7/12/2022.
3. THIS CONCEPT SITE PLAN DOES NOT GUARANTEE ALL REQUIREMENTS FROM ZONING ISSUES, NOR SIGNAGE, STORM DRAINAGE, GRADING, UTILITIES, EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THE TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE SITE LAYOUT. ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE CLIENT, ARCHITECT, JOINT DEVELOPER, OR ANY OF THE GOVERNMENTAL PERMITTING AGENCIES.

FIGURE 2

SCALE 1"=100'
0 100' 200'

BERGMANN ARCHITECTS ENGINEERS PLANNERS
Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad St.
Suite 200
Rochester, NY 14604
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www.bergmannpc.com

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DATE	DESCRIPTION

PROFESSIONAL SEAL

PROFESSIONAL IN CHARGE
G. HARVEY
PROJECT MANAGER
S. HARRISON
QUALITY CONTROL
S. HARRISON
DRAWN BY
J. WILLIAMS
DATE ISSUED
12/23/22

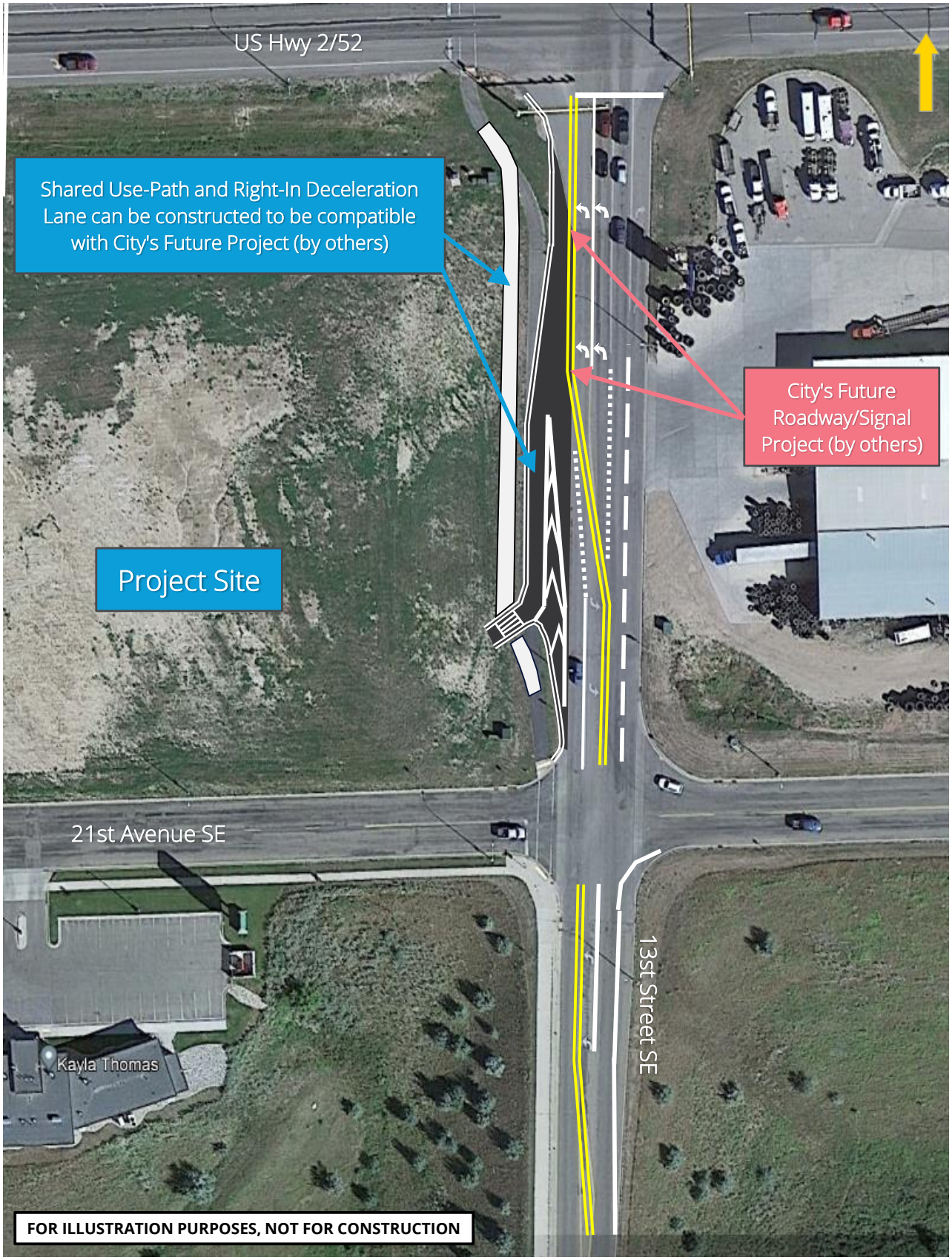
PROJECT NAME
NTI MINOT ND
SWC 21st AVE & 13th ST
MINOT,
ND 58702
NORTHERN TIER BU

HOLIDAY STATIONSTORES, INC.

PROJECT NUMBER
16414

SHEET TITLE
CONCEPTUAL SITE PLAN

SHEET NUMBER
CSP 5.1 W



Colliers Engineering & Design	Traffic Impact Study - Circle K Minot	**Access Compatibility with Future Improvements by Others**
	Project No. 23008607A	
	City of Minot, Ward County, North Dakota	

13th Street SE

Direction	NB	SB	All
Total Delay / Veh (s/v)	11	8	10
Stops / Veh	0.26	0.22	0.24
Performance Index	6.5	3.1	9.7

Network Totals

Number of Intersections	6
Total Delay / Veh (s/v)	15
Stops / Veh	0.41
Performance Index	27.5

13th Street SE

Direction	NB	SB	All
Total Delay / Veh (s/v)	10	10	10
Stops / Veh	0.23	0.24	0.23
Performance Index	4.7	5.7	10.5

Network Totals

Number of Intersections	6
Total Delay / Veh (s/v)	18
Stops / Veh	0.41
Performance Index	34.8

13th Street SE

Direction	NB	SB	All
Total Delay / Veh (s/v)	18	11	15
Stops / Veh	0.41	0.32	0.37
Performance Index	6.5	3.1	9.7

Network Totals

Number of Intersections	5
Total Delay / Veh (s/v)	18
Stops / Veh	0.49
Performance Index	27.2

13th Street SE

Direction	NB	SB	All
Total Delay / Veh (s/v)	17	17	17
Stops / Veh	0.38	0.38	0.38
Performance Index	4.7	5.7	10.5

Network Totals

Number of Intersections	5
Total Delay / Veh (s/v)	21
Stops / Veh	0.52
Performance Index	33.8

Exhibit 8

Colliers Engineering & Design

Traffic Impact Study

June 23, 2023

Circle K Store

City of Minot, Ward County, North Dakota

Prepared for:

Holiday Stationstores, LLC
4567 American Boulevard West
Bloomington, MN 55437

Prepared by:

REGISTERED PROFESSIONAL ENGINEER
NICHOLAS D. AIELLO
PE-30037
DATE 6/23/2023
NORTH DAKOTA

Nicholas D. Aiello, P.E., PTOE, PTP
North Dakota Professional
Engineer No. PE-30037

Colliers Engineering & Design
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Project No. 22008607A

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Appendix C ..... Trip Generation

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Introduction

The following report has been prepared for Holiday Stationstores, Inc ("Applicant") in association with a proposed convenience market with fueling stations and carwash ("Project") within the City of Minot, Ward County, North Dakota. The site is currently undeveloped. The Applicant proposes to construct a 5,650 SF convenience store and gas station with 14 vehicle fueling positions, 4 truck fueling positions and an ancillary car wash. The site is bounded by 13th Street SE to the east, 21st Avenue SE to the south, and U.S. Highway 2/52 to the north. The site is located within the Commercial (C-2) Zoning District. A site location map is included as **Figure 1** in **Appendix A**.

One (1) right-in-only passenger vehicle driveway with a deceleration lane is proposed along 13th Street SE southbound. One (1) full-movement driveway for passenger vehicles and bi-furcated ingress and egress truck access driveways are proposed along 21st Avenue SE. The proposed Conceptual Site Plan is provided as **Figure 2** in **Appendix A**.

This study presents an evaluation of the current and future traffic conditions in the vicinity of the Project. Specific elements included in this study are:

- An inventory of the roadway facilities in the vicinity of the Project, including the existing physical and traffic operating characteristics;
- Determination of the Existing Conditions;
- Site Generated Trips as described in the ITE *Trip Generation Manual, 11th Edition*;
- Trip Distribution and Assignment;
- Turn Lane Warrant Analysis;
- Forecast of the 2025 No-Build Traffic Volumes;
- Peak Hour Capacity Analysis for the 2025 No-Build Conditions;
- Forecast of the 2025 Build Traffic Volumes;
- Peak Hour Capacity Analysis for the 2025 Build Conditions;
- Site Access and Queueing Assessment; and
- Summary and Conclusions.

Existing Roadway Conditions

A field investigation was conducted adjacent to the project site to obtain an inventory of existing roadway conditions, posted traffic controls, adjacent land uses, lane configurations, and existing vehicular/pedestrian traffic patterns.

Roadways

(U.S. Highway 2/52) is an east-west oriented principal arterial roadway under jurisdiction of the North Dakota Department of Transportation (NDDOT). The roadway provides two (2) travel lanes in each direction separated by a grass median. The posted speed limit is 50 mph.

13th Street SE is a north-south oriented minor arterial roadway under jurisdiction of the City of Minot. The roadway provides one (1) travel lane in each direction with a posted speed limit of 30 mph.

21st Avenue SE is an east-west oriented collector roadway under jurisdiction of the City of Minot. The roadway provides one (1) travel lane in each direction with a posted speed limit of 25 mph.

Signalized Intersections

(U.S. Highway 2/52) & 13th Street SE is a signalized four-leg intersection operating with four phases under the jurisdiction of NDDOT. The first phase is the U.S. Highway 2/52 eastbound/westbound lead lefts (protected/permitted), the second phase is the U.S. Highway 2/52 eastbound/westbound ROW, the third phase is the 13th Street SE northbound/southbound lead lefts (protected/permitted), and the fourth phase is the 13th Street SE northbound/southbound ROW. U.S. Highway 2/52 eastbound and westbound both provide one (1) dedicated left-turn lane that are channelized with positive offsets, two (2) dedicated through lanes, and one (1) dedicated right-turn lane. 13th Street SE northbound and southbound both provide one (1) dedicated left-turn lane, one (1) dedicated through lane, and one (1) dedicated right-turn lane. The traffic signal timing printout is provided in **Appendix B**.

Unsignalized Intersections

13th Street SE & 21st Avenue SE is an unsignalized four-leg intersection with the eastbound and westbound approaches of 21st Avenue SE under stop-control. 13th Street SE northbound and southbound both provide one (1) dedicated left-turn lane and one (1) shared through/right-turn lane. 13th Street SE eastbound and westbound both provide one (1) shared lane for all turning movements.

Existing Traffic Conditions

Traffic volume data was collected within the study area to gain an understanding of the existing roadway conditions and operations through turning movement counts ("TMC") conducted on Wednesday, November 16, 2022, from 7:00 AM to 7:00 AM at the intersection of U.S. Highway 2/52 & 13th Street SE and on Wednesday, April 12, 2023 from 7:00 AM to 9:00 AM and 4:00 PM to 6:00 PM at the intersection of 13th Street SE & 21st Avenue SE. The data collection efforts are detailed in **Table 1**. The processed TMC data is provided in **Appendix B**.

Table 1 – Data Collection Efforts and Established Network Peak Hours

Peak Period	Date Collected	Traffic Count Time Frame	Established Network Peak Hour
Weekday Morning	Wednesday, November 16, 2022 & Wednesday, April 12, 2023	7:00 AM – 9:00 AM	7:30 AM – 8:30 AM
Weekday Evening		4:00 PM – 6:00 PM	4:30 PM – 5:30 PM

The TMC data was balanced in an upward fashion between the two (2) intersections to provide a conservative analysis. A Volume Flow Diagram illustrating the 2023 Existing Conditions is provided as **Figure 3** in **Appendix A.**

Trip Generation and Distribution

Trip Generation

The site generated trips associated with the proposed development were estimated in accordance with standard methodology found within the Institute of Transportation Engineers' (ITE) publication, *Trip Generation Manual, 11th Edition* utilizing data published under Land Use Code 945 – Convenience Store/Gas Station – VFP (12-15). Passenger vehicle trips were generated using the gross floor area of the convenience market. This ITE publication sets forth trip generation rates based on traffic counts conducted at research sites throughout the country.

Passenger Vehicle Pass-By Trips

A pass-by trip is defined by ITE as a trip that is made as an intermediate stop while traveling to the primary trip destination without route diversion. The identification of pass-by trips is important to traffic analysis, as pass-by trips are counted as part of the existing traffic volumes. As a result, the trip is not "new" to the roadway network; it already existed prior to the development being constructed. However, pass-by trips do not reduce the trip generation at the site access.

Within the ITE Trip Generation User's Guide and Handbook, pass-by rates have been established for individual land uses. These rates are published as a percentage of the total site generated traffic. They are based on numerous site studies where surveys were conducted to determine if the trip was a primary destination or intermediate stop. For Land Use Code 945 – Convenience Store/Gas Station, ITE provides pass-by rates of 76% during both the weekday morning and evening peak hours. This percentage was applied to the overall trip generation to forecast the passenger vehicle pass-by trips.

Truck Pass-By Trips

The amount of pass-by site generated trips that will be trucks is anticipated to be proportional to the amount of heavy vehicles on Route 2/52. Therefore, the existing traffic volumes along Route 2/52 were reviewed to determine the appropriate truck pass-by trip generation. Approximately 10% of the U.S. Highway 2/52 average daily traffic (ADT) is heavy vehicles. As such, an additional 10% of pass-by trips was added to the total site generated trips to conservatively forecast the truck traffic generated by the truck fueling areas.

Table 2 provides a summary of the site generated trips by trip type. The trip generation worksheets are provided in **Appendix C**.

Table 2 – Site Generated Trips

ITE Land Use	Size	Trip/Vehicle Type	AM Peak			PM Peak		
			Enter	Exit	Total	Enter	Exit	Total
LUC 945 - Convenience Store/Gas Station - VFP (12-15)	5,650 SF 14 VFP, 4 TFP	Passenger Vehicle Trips	160	159	319	154	154	308
		Passenger Vehicle Primary Trips (24% AM/PM)	39	38	77	37	37	74
		Passenger Vehicle Pass-By Trips (76% AM/PM)	121	121	242	117	117	234
		Truck Trips (10% of Total Passenger Vehicle Pass-By Trips)	+12	+12	+24	+11	+11	+22
Total Pass-By Trips (Passenger Vehicles + Trucks)			**133**	**133**	**266**	**128**	**128**	**256**
Total Trips (Passenger Vehicles + Trucks)			**172**	**171**	**343**	**165**	**165**	**330**

Trip Distribution

Trip distribution methodology is developed based on a variety of factors. These factors include the existing travel patterns within the adjacent roadway network, adjacent land uses, proposed land uses, development locations, driveway locations, and the proximity of major arterials within the project vicinity.

Primary Trip Distribution

The following trip distribution pattern was established for primary trips based upon a review of the existing roadway volumes, adjacent land uses, and proposed driveway configurations:

- To/From U.S. Highway 2/52 Business, West of Site – 30%;
    - 10% entering to the site from 6th Street SE SB and 21st Avenue EB
    - 20% entering to the site from 13th Street SE SB
    - 30% exiting from the site to 21st Avenue EB and then 13th Street SE NB
- To/From U.S. Highway 2/52 Business, East of Site – 40%;
- To/From 21st Avenue SE, West of Site – 10%;
- To/From 13th Street SE, North of Site – 10%; and
- To/From 13th Street SE, South of Site – 10%.

Volume Flow Diagrams illustrating the Passenger Vehicle Primary Trip Distribution and Site Generated Trips are provided as **Figures 4** and **5** in **Appendix A**.

Passenger Vehicle Pass-By Trip Distribution

The following trip distribution pattern was established for pass-by trips based upon a review of the existing roadway volumes, adjacent land uses, and anticipated commuter travel patterns:

- U.S. Highway 2/52 Business Eastbound – 50%; and
    - 15% entering the site from 6th Street SE SB and 21st Avenue EB
    - 35% entering the site from 13th Street SE SB
    - 50% exiting from the site to 21st Avenue EB and then 13th Street SE NB
- U.S. Highway 2/52 Business Westbound – 50%.
    - 50% entering the site from 13th Street SE SB
    - 15% exiting the site from 21st Avenue WB and 6th Street SE NB
    - 35% exiting from the site to 21st Avenue EB and then 13th Street SE NB

Truck Pass-By Trip Distribution

The following trip distribution pattern was established for pass-by trips based upon a review of the existing roadway volumes, adjacent land uses, and anticipated truck travel patterns:

- U.S. Highway 2/52 Business Eastbound – 50%; and
    - 15% entering the site from 6th Street SE SB and 21st Avenue EB
    - 35% entering the site from 13th Street SE SB
    - 50% exiting from the site to 21st Avenue EB and then 13th Street SE NB
- U.S. Highway 2/52 Business Westbound – 50%.
    - 50% entering the site from 13th Street SE SB
    - 50% exiting from the site to 21st Avenue EB and then 13th Street SE NB

Volume Flow Diagrams illustrating the Passenger Vehicle Pass-By Trip Distribution and Site Generated Trips are provided as **Figures 6** and **7** in **Appendix A**. Volume Flow Diagrams illustrating the Truck Pass-By Trip Distribution and Site Generated Trips are provided as **Figures 8** and **9** in **Appendix A.** Volume Flow Diagrams illustrating the Total Pass-By Site Generated Trips is provided as **Figure 10** in **Appendix A**. A Volume Flow Diagram illustrating the Total Site Generated Trips is provided as **Figure 11** in **Appendix A**.

Future Traffic Conditions

To determine the traffic impact of the proposed development, an estimation of the operational traffic characteristics at the Build date, without the construction of the Project (or "No-Build" condition), is made. The existing volumes have been projected to the build year of 2025.

Background Growth

A general background rate of 2.50% was estimated based on traffic volume data published on the NDDOT Transportation Information Map. The growth rate was applied to the transient traffic volumes within the study area to account for general increases in traffic due to regional population and employment growth by the build year.

Adjacent Developments

Colliers Engineering & Design contacted the City of Minot to determine if there are any planned or approved developments within the vicinity of the study area. It was determined there are currently no such developments.

2025 No-Build Conditions

The 2025 No-Build traffic volumes were forecasted by applying the background growth rate to the existing traffic volumes. A Volume Flow Diagram illustrating the 2025 No-Build Conditions is provided as **Figure 12** in **Appendix A**.

2025 Build Conditions

The 2025 Build traffic volumes were forecasted by adding the site generated traffic to the 2025 No-Build traffic volumes within the roadway network. A Volume Flow Diagram illustrating the 2025 Build Conditions is provided as **Figure 13** in **Appendix A**.

Turn Lane Warrant Analysis

Right-Turn Lane Warrant Analysis

A right-turn lane warrant analysis was conducted at the proposed right-in driveway along 13th Street SE southbound. Based upon the NDDOT Traffic Operations Manual, a right-turn lane warrant on a roadway with a posted speed limit under 50mph is at the discretion of engineering judgement. Based upon NDDOT traffic count data, 13th Street SE has an existing AADT of 6,470. In the build condition, the right-turn will service 129 trips and 125 trips during the Weekday AM and PM peak hours, respectively. Additionally, there is adequate spacing along 13th Street SE southbound between U.S. Highway 2/52 and 21st Avenue SE to install a NDDOT compliant right-turn lane. To promote efficient traffic flow and have the ingress deceleration to occur separate from the 13th Street SE through lane, a right-turn lane into the site is recommended. Based upon the NDDOT roadway design manual, the right-turn lane should have a 96' taper and a 75' deceleration length (171' total).

HCM Capacity Analysis

The peak hour traffic operations within the project vicinity were evaluated at the study intersections. The analyses were performed using the latest version of *Synchro Trafficware*, a traffic analysis and simulation program. The results of these analyses provide Levels of Service ("LOS"), volume/capacity descriptions, and average seconds of delay for the intersection movements.

The efficiency with which an intersection operates is a function of volume and capacity. The capacity of an intersection is the volume of vehicles it can accommodate during a given time period. LOS is a qualitative measure describing operational conditions within a traffic stream in terms of traffic characteristics, such as freedom to maneuver, traffic interruption, comfort, and convenience. Six (6) LOS are defined for each type of facility with analysis procedures available. Levels of Service range from "A" through "F," with Level "A" representing excellent conditions with no delays, and failure and deficient operations denoted by Level "F." The HCM LOS criteria for signalized and unsignalized intersections are summarized in **Table 3**.

Table 3 – HCM LOS/Delay Criteria

Level of Service	Average Control Delay (sec/veh)	
	Signalized Intersections	Unsignalized Intersections
A	≤ 10	≤ 10
B	> 10 – 20	> 10 – 15
C	> 20 – 35	> 15 – 25
D	> 35 – 55	> 25 – 35
E	> 55 – 80	> 35 – 50
F	> 80	> 50

The Levels of Service for the 2025 No-Build and 2025 Build conditions are detailed in **Table 4**. The capacity analysis calculation worksheets are provided in **Appendix D**.

Colliers Engineering & Design

Table 4 – Level of Service Summary

Intersection	Movement		2025 No-Build				2025 Build			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
U.S. Highway 2/52 (EB/WB) & 13th Street SE (NB/SB)	EB	L	C	20.1	C	20.3	C	21.2	C	22.0
		T	C	25.8	C	26.4	C	27.9	C	29.1
		R	C	21.1	C	21.5	C	25.0	C	25.7
	WB	L	B	19.8	C	20.2	C	23.9	C	25.6
		T	C	25.9	C	26.1	C	25.2	C	26.5
		R	C	22.2	C	20.8	C	22.7	C	21.9
	NB	L	C	22.1	C	23.6	C	27.9	C	27.2
		T	C	31.5	C	29.4	C	31.2	C	29.0
		R	C	24.4	C	27.6	C	26.7	C	30.1
	SB	L	C	23.3	C	22.3	C	23.4	C	22.4
		T	C	29.4	C	32.5	C	29.6	C	34.7
		R	C	26.4	C	25.6	C	26.5	C	27.0
	Overall		**C**	**25.5**	**C**	**25.9**	**C**	**26.6**	**C**	**27.7**
21st Avenue (EB/WB) & 13th Street SE (NB/SB)*	EB	LTR	c	20.6	d	26.9	f*	59.4*	f*	94.2*
	WB	LTR	c	15.3	c	15.3	c	15.5	c	15.3
	NB	L	a	7.9	a	8.4	a	8.0	a	8.4
	SB	L	a	8.4	a	8.0	a	8.5	a	8.0
21st Avenue (EB/WB) & Eastern Site Driveway (SB)	EB	L	-	-	-	-	a	7.4	a	7.4
	SB	LR	-	-	-	-	b	10.6	b	11.0
21st Avenue (EB/WB) & Western Truck Site Driveway (SB)	SB	LR	-	-	-	-	b	10.5	b	11.0

Note: Uppercase indicates signalized intersections; lowercase indicates unsignalized intersections.
*Mitigation is recommended at the intersection of 21st Avenue (EB/WB) & 13th Street SE (NB/SB).

U.S. Highway 2/52 & 13th Street SE

2025 No-Build Analysis

Under the No-Build condition, all intersection movements will operate at Levels of Service "C" or better during both peak hours studied. The intersection will operate at an overall Level of Service "C" during both peak hours studied.

2025 Build Analysis

Under the Build condition, all intersection movements will continue to operate at or near No-Build Levels of Service during both peak hours studied. The intersection will continue to operate at an overall Level of Service "C" during both peak hours studied.

13th Street SE & 21st Avenue SE

2025 No-Build Analysis

Under the No-Build condition, all intersection movements will operate at Levels of Service "D" or better during both peak hours studied.

2025 Build Analysis

Under the Build condition, all intersection movements will continue to operate at or near No-Build Levels of Service during both peak hours studied, with the exception of the eastbound approach which will experience delays during both peak hours studied. Mitigation is recommended to support acceptable traffic operations.

Proposed Mitigation

Mitigation is proposed at the intersection of 13th Street SE & 21st Avenue SE to support acceptable traffic operation in the build condition. The existing 13th Street SE northbound approach has a dedicated left-turn lane and an oversized shared through/right-turn lane. The oversized lane is 24' wide, which is twice as wide as a typical travel lane. It is proposed to restripe the northbound approach of 13th Street SE to provide one (1) dedicated left-turn lane, one (1) dedicated through lane, and one (1) shared through/right-turn lane.

This proposed mitigation is conducive to the traffic flow along 13th Street. Based upon the observed turning movement traffic counts, there is a relatively balanced demand between 13th Street SE northbound vehicles that travel through and vehicles that turn right at U.S. Highway 2/52. The restriping of 13th Street SE northbound will provide additional capacity and enhance the upstream delineation between the northbound dedicated through lane and the northbound dedicated right-turn lane at U.S. Highway 2/52. The restriping would benefit motorists by providing more advance delineation, which would allow motorists to position themselves into their desired lanes. Overall, this will improve operation for both 13th Street SE northbound and 21st Avenue SE eastbound.

The proposed striping improvements are conceptually illustrated on the Site Plan on **Figure 2** in **Appendix A**.

2025 Build with Mitigation Analysis

With the proposed mitigation, all intersection movements will continue to operate at or near No-Build Levels of Service during both peak hours studied. The mitigated level of service at the intersection of 21st Avenue (EB/WB) & 13th Street SE (NB/SB) is detailed in **Table 5**.

Table 5 – Mitigated Level of Service – 21st Avenue SE & 13th Street SE

Intersection	Movement		2025 No-Build				2025 Build with Mitigation			
			AM Peak		PM Peak		AM Peak		PM Peak	
			LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay
21st Avenue SE (EB/WB) & 13th Street SE (NB/SB)	EB	LTR	c	20.6	d	26.9	d	27.4	e	43.5
	WB	LTR	c	15.3	c	15.3	b	14.5	b	14.8
	NB	L	a	7.9	a	8.4	a	8.0	a	8.4
	SB	L	a	8.4	a	8.0	a	8.6	a	8.0

21st Avenue SE & Eastern Site Driveway

2025 Build Analysis

Under the Build condition, all intersection movements will operate at a Level of Service "B," or better, during both peak hours studied. The calculated 95th percentile queues at the Eastern Site Driveway of approximately one (1) vehicle or less during both peak hours studied can be accommodated within the layout of the site.

21st Avenue SE & Western Truck Site Driveway

2025 Build Analysis

Under the Build condition, all intersection movements will operate at a Level of Service "B," or better, during both peak hours studied. The calculated 95th percentile queues at the Western Truck Site Driveway of approximately one (1) vehicle or less during both peak hours studied can be accommodated within the layout of the site.

Site Access and Queueing Assessment

Proposed Right-In Access on 13th Street SE southbound

One (1) right-in-only passenger vehicle driveway with a deceleration lane is proposed along 13th Street SE southbound.

Primary Ingress Movement and Reduced Impact to 13th Street SE & 21st Avenue SE

This ingress right-in only driveway will service the majority of trips into this site. In the build condition, the right-turn lane will service 129 trips and 125 trips during the Weekday AM and PM peak hours, respectively. The right-in driveway will service 81% of the entering passenger vehicles trips during the AM and PM peak hours. The proposed right-in driveway on 13th Street SE will significantly enhance the traffic operations at the intersection of 13th Street SE & 21st Avenue SE when compared to a build condition without the right-in driveway. Without the right-in driveway, all ingress traffic would have to traverse to 21st Avenue SE. The proposed 13th Street SE southbound right-in driveway eliminates 129 AM peak hour trips and 125 PM peak hour trips from having to traverse the intersection of 13th Street SE & 21st Avenue SE. This reduces the peak hour demand and enhances operations at the intersection of 13th Street SE & 21st Avenue SE.

Deceleration Lane

This ingress right-in only driveway will also include a deceleration lane. The right-turn lane lengths will meet NDDOT standards, which includes a 96' taper and a 75' deceleration length (171' total). The opportunity for a deceleration lane at the proposed right-in driveway on 13th Street SE southbound will allow ingress maneuvers to deceleration separate from the 13th Street SE southbound through volumes. The traffic flow along 13th Street SE southbound and the traffic interaction with the traffic signal will be enhanced with a dedicated 13th Street SE deceleration lane at the right-in access point.

On-Site Circulation

Additionally, the 13th Street SE southbound right-in driveway gets ingress motorists to their destination in a more direct and efficient manner. The driveway positions motorists towards the fueling area on-site, which is conducive to enhanced circulation on-site.

Queue Assessment 21st Avenue SE Eastbound

The Eastern Site Driveway along 21st Avenue SE satisfies the corner clearance requirement of 225 feet from the intersection of 13th Street SE & 21st Avenue SE. In addition, the 95th percentile queue lengths along 21st Avenue SE eastbound were compared to the corner clearance to determine if the offset is adequate. Under the 2025 build with mitigation condition, the calculated peak hour 95th percentile queue lengths of 21st Avenue SE eastbound at 13th Street do not exceed the corner clearance. A queue length comparison is provided in **Table 6.**

Table 6 – 95th Percentile Queues Summary – 13th Street SE & 21st Avenue SE

2025 Build with Mitigation Condition				
Intersection	**Corner Clearance btwn. 13th Street SE and the Proposed Eastern Site Driveway**	**95th Percentile Queue Lengths 21st Avenue SE EB at 13th Street SE**		**Queue Length Exceeds Corner Clearance?**
		AM Peak Hour	**PM Peak Hour**	
13th Street SE (NB/SB) & 21st Avenue SE (EB/WB)	225’	3.2 veh (~80’)	5.8 veh (~145’)	NO

Summary and Conclusions

The Traffic Impact Study evaluated the proposed convenience store/gas station within the City of Minot, Ward County, North Dakota. The findings of the Traffic Impact Study are summarized as follows:

1. The Applicant proposes to construct a 5,650 SF convenience store/gas station with 14 vehicle fueling positions, 4 truck fueling positions, and an ancillary car wash.

2. One (1) right-in-only passenger vehicle driveway with a deceleration lane is proposed along 13th Street SE southbound. One (1) full-movement driveway for passenger vehicles and bi-furcated ingress and egress truck access driveways are proposed along 21st Avenue SE.

3. Based upon the NDDOT Traffic Operations Manual and engineering judgement, a right-turn deceleration lane is warranted at the proposed right-in only driveway along 13th Street SE southbound. Based upon the NDDOT roadway design manual, the right-turn lane should have a 96' taper and a 75' deceleration length (171' total).

4. This ingress right-in only driveway will service the majority of trips into this site. In the build condition, the right-turn lane will service 129 trips and 125 trips during the Weekday AM and PM peak hours, respectively. The right-in driveway will service 81% of the entering passenger vehicles trips during the AM and PM peak hours. The proposed right-in driveway on 13th Street SE will significantly enhance the traffic operations at the intersection of 13th Street SE & 21st Avenue SE when compared to a build condition without the right-in driveway. Without the right-in driveway, all ingress traffic would have to traverse to 21st Avenue SE. The proposed 13th Street SE southbound right-in driveway eliminates 129 AM peak hour trips and 125 PM peak hour trips from having to traverse the intersection of 13th Street SE & 21st Avenue SE. This reduces the peak hour demand and enhances operations at the intersection of 13th Street SE & 21st Avenue SE.

5. Mitigation is proposed at the intersection of 13th Street SE & 21st Avenue SE to support acceptable traffic operation in the build condition. The existing 13th Street SE northbound approach has a dedicated left-turn lane and an oversized shared through/right-turn lane. The oversized lane is 24' wide, which is twice as wide as a typical travel lane. It is proposed to restripe the northbound approach of 13th Street SE to provide one (1) dedicated left-turn lane, one (1) dedicated through lane, and one (1) shared through/right-turn lane.

6. The proposed mitigation is conducive to the traffic flow along 13th Street. Based upon the observed turning movement traffic counts, there is a relatively balanced demand between 13th Street SE northbound vehicles that travel through and vehicles that turn right at U.S. Highway 2/52. The restriping of 13th Street SE northbound will provide additional capacity and enhance the upstream delineation between the northbound dedicated through lane and the northbound dedicated right-turn lane at U.S. Highway 2/52.

7. The Eastern Site Driveway along 21st Avenue SE satisfies the corner clearance requirement of 225 feet from the intersection of 13th Street SE & 21st Avenue SE. In addition, the 95th percentile queue lengths along 21st Avenue SE eastbound were compared to the corner clearance to determine if the offset is adequate. Under the 2025 build with mitigation condition, the calculated peak hour 95th percentile queue lengths of 21st Avenue SE eastbound at 13th Street do not exceed the corner clearance.

8. With the proposed mitigation, all intersection movements at the intersection of 13th Street SE & 21st Avenue SE will continue to operate at or near No-Build Levels of Service during both peak hours studied.

9. Under the Build condition, all movements at the intersection of U.S. Highway 2/52 & 13th Street SE will continue to operate at or near No-Build Levels of Service during both peak hours studied. The intersection will continue to operate at an overall Level of Service "C" or better during both peak hours studied.

10. Under the Build condition, all movements at the Eastern Site Driveway along 21st Avenue SE will operate at a Level of Service "B," or better, during both peak hours studied. The calculated 95th percentile queues at the Eastern Site Driveway of approximately one (1) vehicle or less during both peak hours studied can be accommodated within the layout of the site.

11. Under the Build condition all movements at the Western Truck Site Driveway along 21st Avenue SE will operate at a Level of Service "B," or better, during both peak hours studied. The calculated 95th percentile queues at the Western Truck Site Driveway of approximately one (1) vehicle or less during both peak hours studied can be accommodated within the layout of the site.

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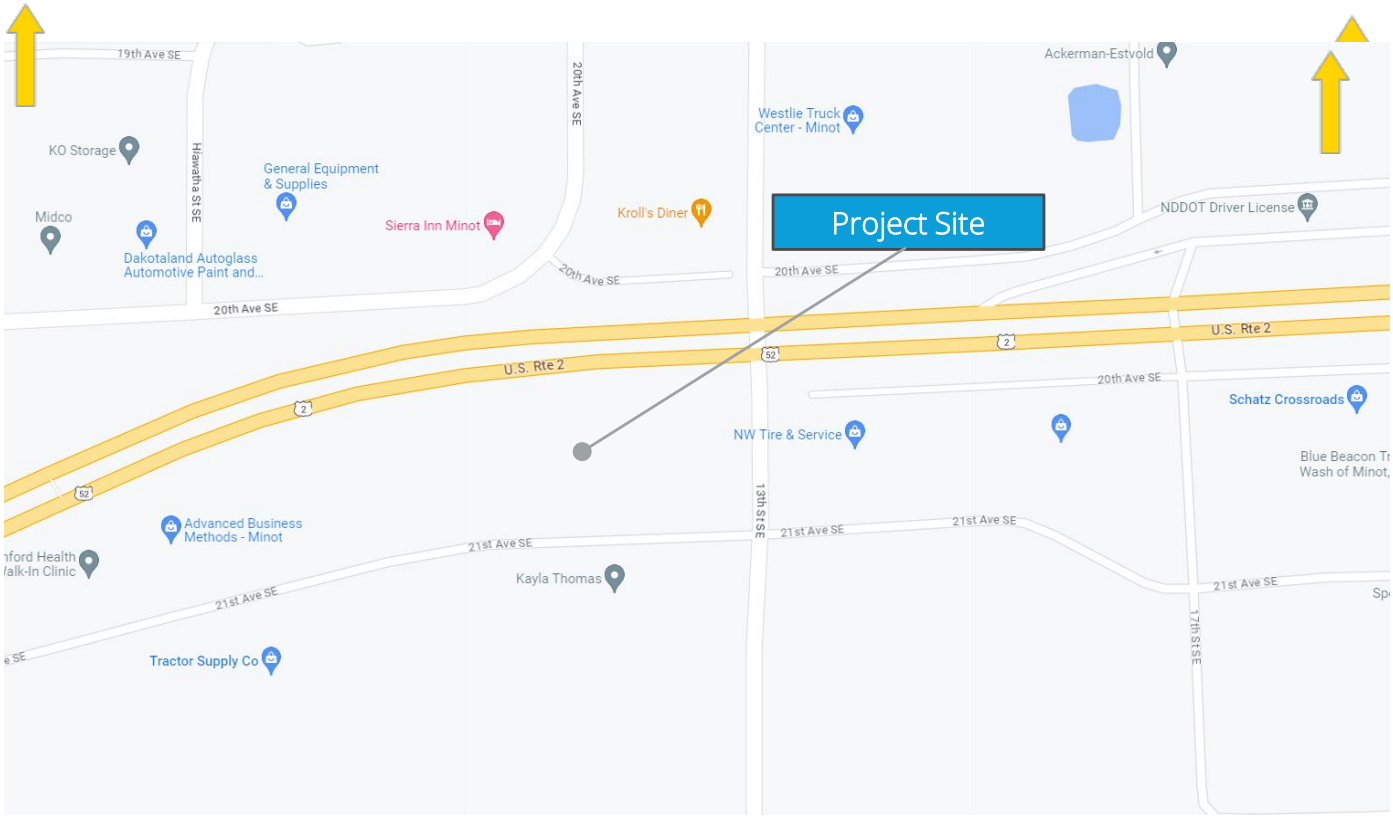
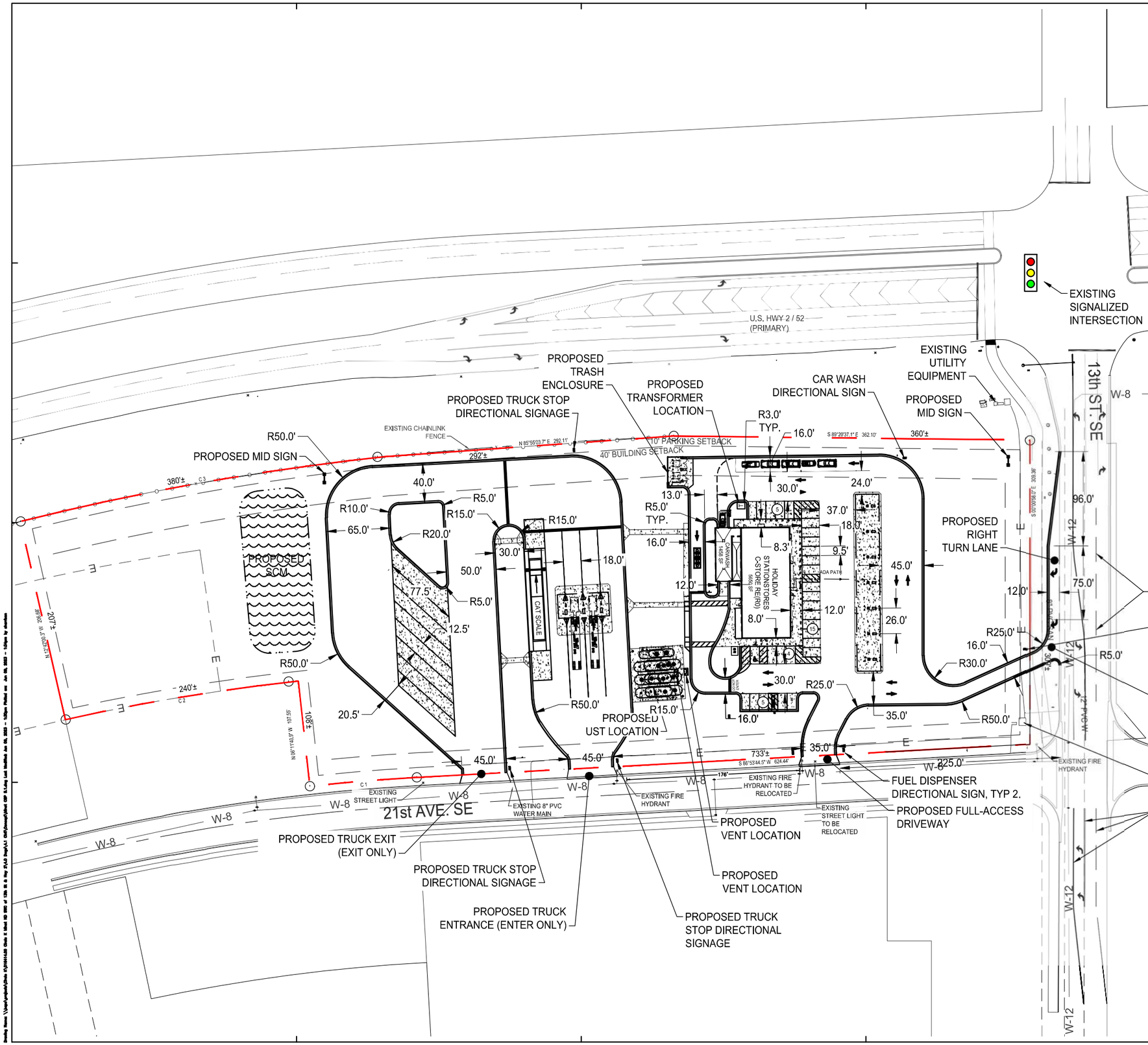
Traffic Impact Study

Appendix A | Traffic Figures



Colliers Engineering & Design	Holiday Stationstores, Inc.	**Figure 1**
	Project No. 22008607A	**Site Location Map**
	City of Minot, Ward County, North Dakota	



SITE LEGEND:

- PROPERTY SETBACK LINE
- GREEN SPACE SETBACK
- PROPERTY LINE
- # NUMBER OF PARKING SPACES

SITE DATA:

ZONING: C2 COMMERCIAL

CURRENT LAND USE: NONE / VACANT

TOTAL LOT AREA:	±6.83 ACRES
	±297,274 SQ. FT.
AREA OF PROPOSED LOT:	±297,274 SQ. FT.
AREA OF OPEN SPACE:	TBD - SQ. FT.
GROSS FLOOR AREA OF BUILDINGS:	5,200 SQ. FT.

BUILDING SETBACKS:
- 25' (40) FRONT (ARTERIAL)
- 0' (15) SIDE (ABUTS AG/Res. DIST.)
- 25' IF ABUTS STREET OR CORNER
- 40' IF ABUTS ARTERIAL STREET
- 0' (25) REAR (AG/Res.)
- 60' MAX. HEIGHT
- 10,000 SF MIN. LOT AREA

GREENSPACE SETBACKS: 10' FRONT

PARKING SETBACKS: 10' FROM STREETS

PARKING REQUIRED: (9'x18' PER CODE)
- CAR WASH: ≥6 STACKING SPACES/BAY
- FUEL/CONVENIENCE
  - MIN. 5 SPACES PER 1,000 SF GROSS AREA
  - MAX. 7
  - 5,200/1,000 * 5 = 26 SPACES

PARKING PROVIDED:
- 27 SPACES + 2 ADA = 30 PARKING
- + 16 PUMP SPACES
- PARKING SPACES DIMENSION = 9.5' x 18'

PLAN REVIEW NOTES
1. LANDSCAPE ISLANDS AREN'T DEPICTED. FINAL CONSTRUCTION DRAWINGS MAY REQUIRE ISLANDS AND THIS WOULD IMPACT THE LAYOUT AND PARKING COUNT.
2. EXISTING CONDITIONS BASED ON DATA OBTAINED FROM GOOGLE MAPS ON 7/12/2022.
3. THIS CONCEPT SITE PLAN DOES NOT GUARANTEE ALL REQUIREMENTS FROM ZONING ISSUES, NOR SIGNAGE, STORM DRAINAGE, GRADING, UTILITIES, EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THE TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE SITE LAYOUT. ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE CLIENT, ARCHITECT, JOINT DEVELOPER, OR ANY OF THE GOVERNMENTAL PERMITTING AGENCIES.

FIGURE 2

SCALE 1"=100'

0 100' 200'

BERGMANN
ARCHITECTS ENGINEERS PLANNERS
Bergmann Associates, Architects, Engineers, Landscape Architects & Surveyors, D.P.C.
280 East Broad St.
Suite 200
Rochester, NY 14604
office: 585.232.5135
www.bergmannpc.com

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DATE	DESCRIPTION

PROFESSIONAL SEAL

PROFESSIONAL IN CHARGE
G. HARVEY
PROJECT MANAGER
S. HARRISON
QUALITY CONTROL
S. HARRISON
DRAWN BY
J. WILLIAMS
DATE ISSUED
12/23/22

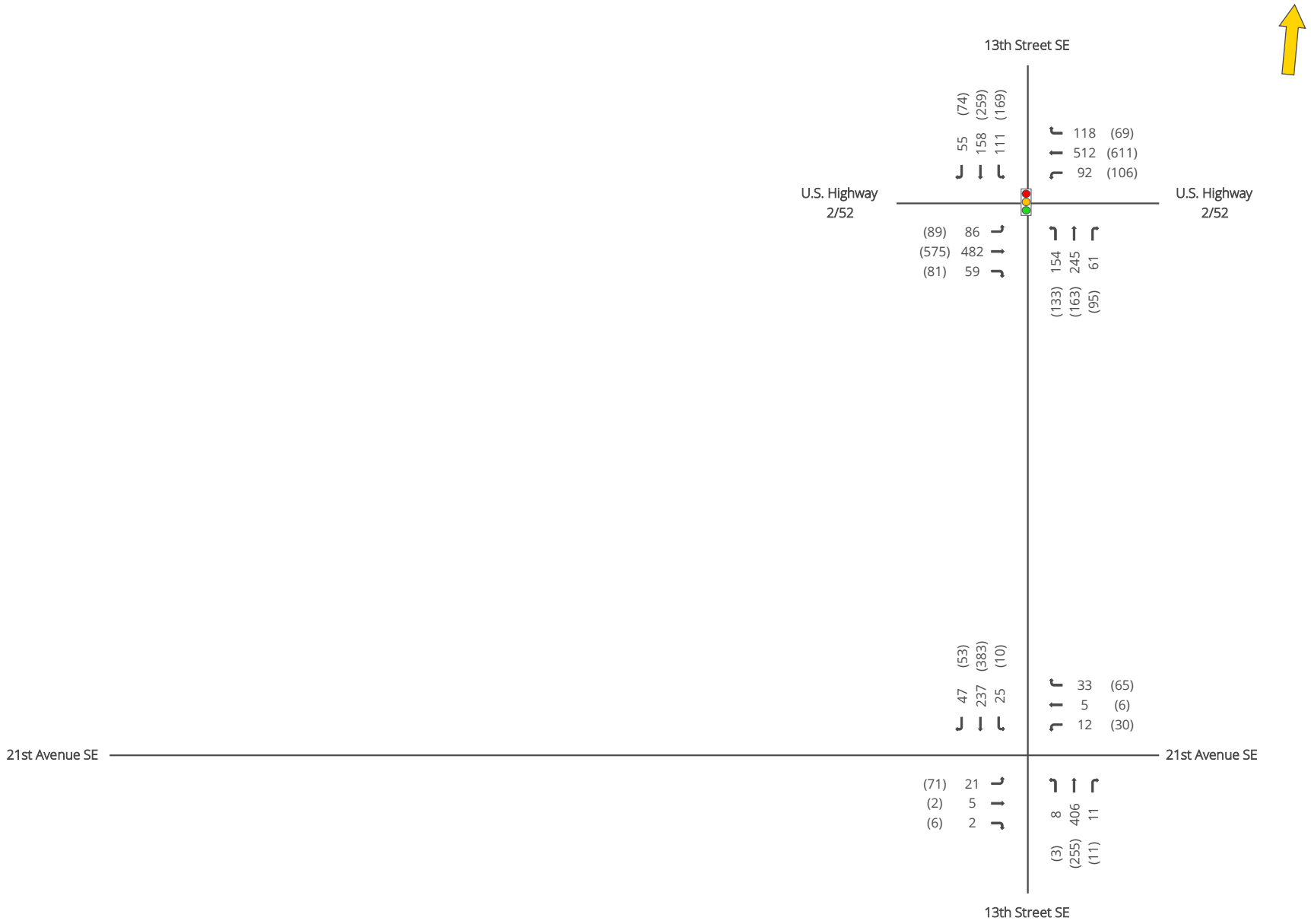
PROJECT NAME
NTI MINOT ND
SWC 21st AVE & 13th ST
MINOT,
ND 58702
NORTHERN TIER BU

HOLIDAY STATIONSTORES, INC.

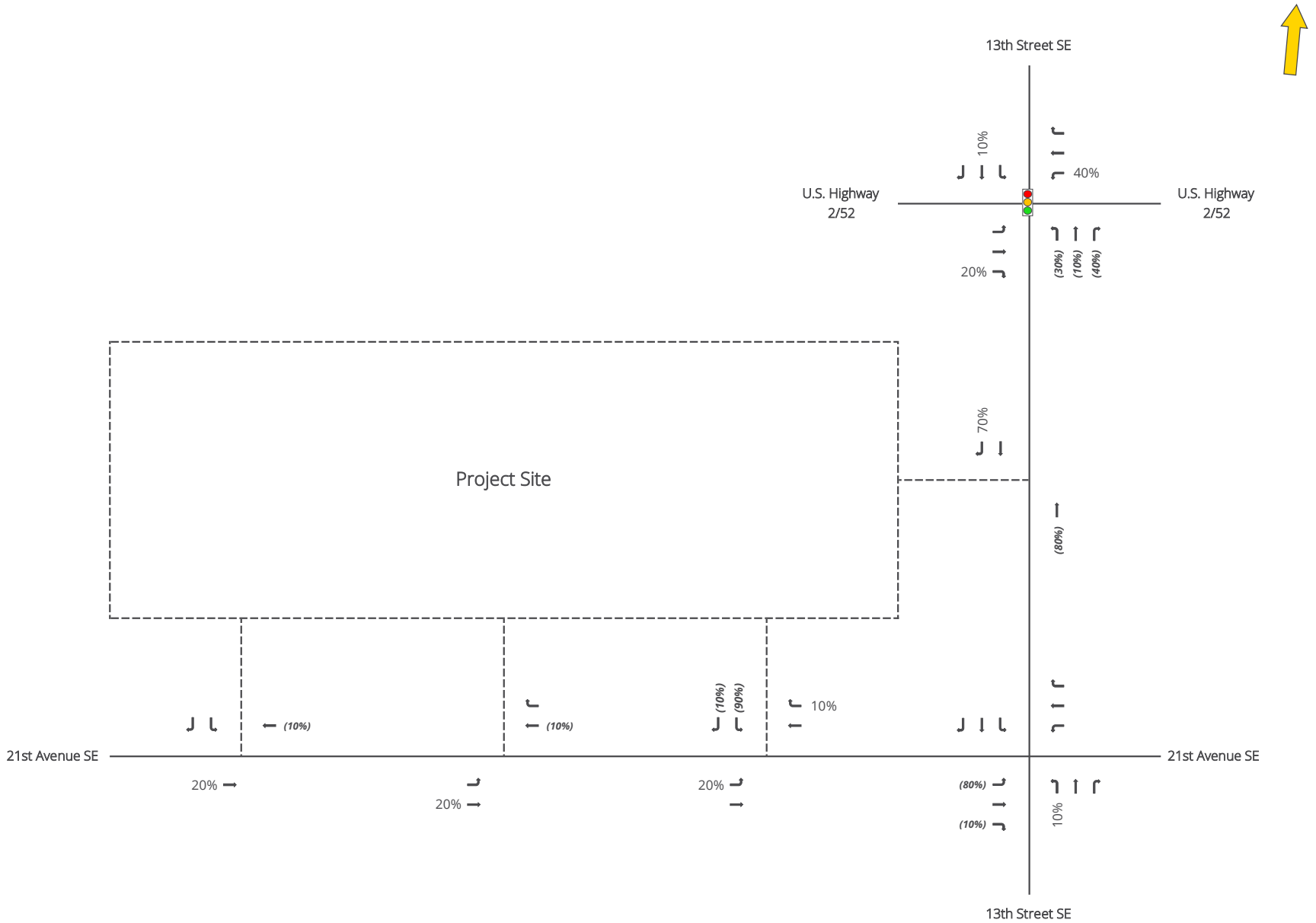
PROJECT NUMBER
16414

SHEET TITLE
CONCEPTUAL SITE PLAN

SHEET NUMBER
CSP 5.1 W

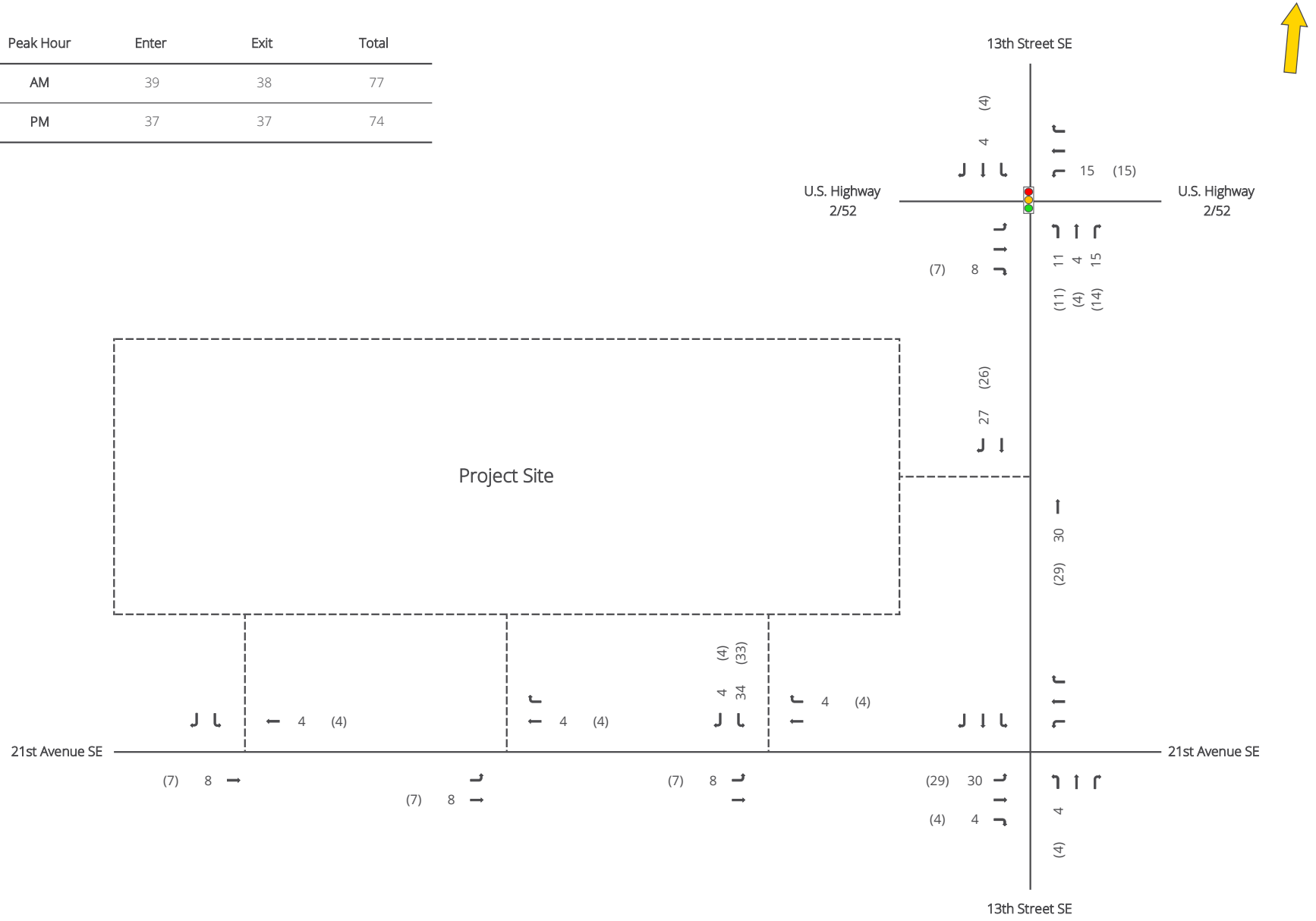


Colliers Engineering & Design	Holiday Stationstores, Inc. Project No. 22008607A City of Minot, Ward County, North Dakota	Legend AM Peak Hour: ### PM Peak Hour: (###) Through Movement: Turning Movement: Signalized Intersection:	**Figure 3** **2023 Existing Conditions** **AM & PM Peak Hours**



Colliers Engineering & Design	Holiday Stationstores, Inc. Project No. 22008607A City of Minot, Ward County, North Dakota	Legend AM Peak Hour: ### PM Peak Hour: (###) Through Movement: Turning Movement: Signalized Intersection:	**Figure 4** **Passenger Vehicle Primary Trip Distribution** **AM & PM Peak Hours**

Peak Hour	Enter	Exit	Total
AM	39	38	77
PM	37	37	74



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Project No. 22008607A

City of Minot, Ward County, North Dakota

Legend

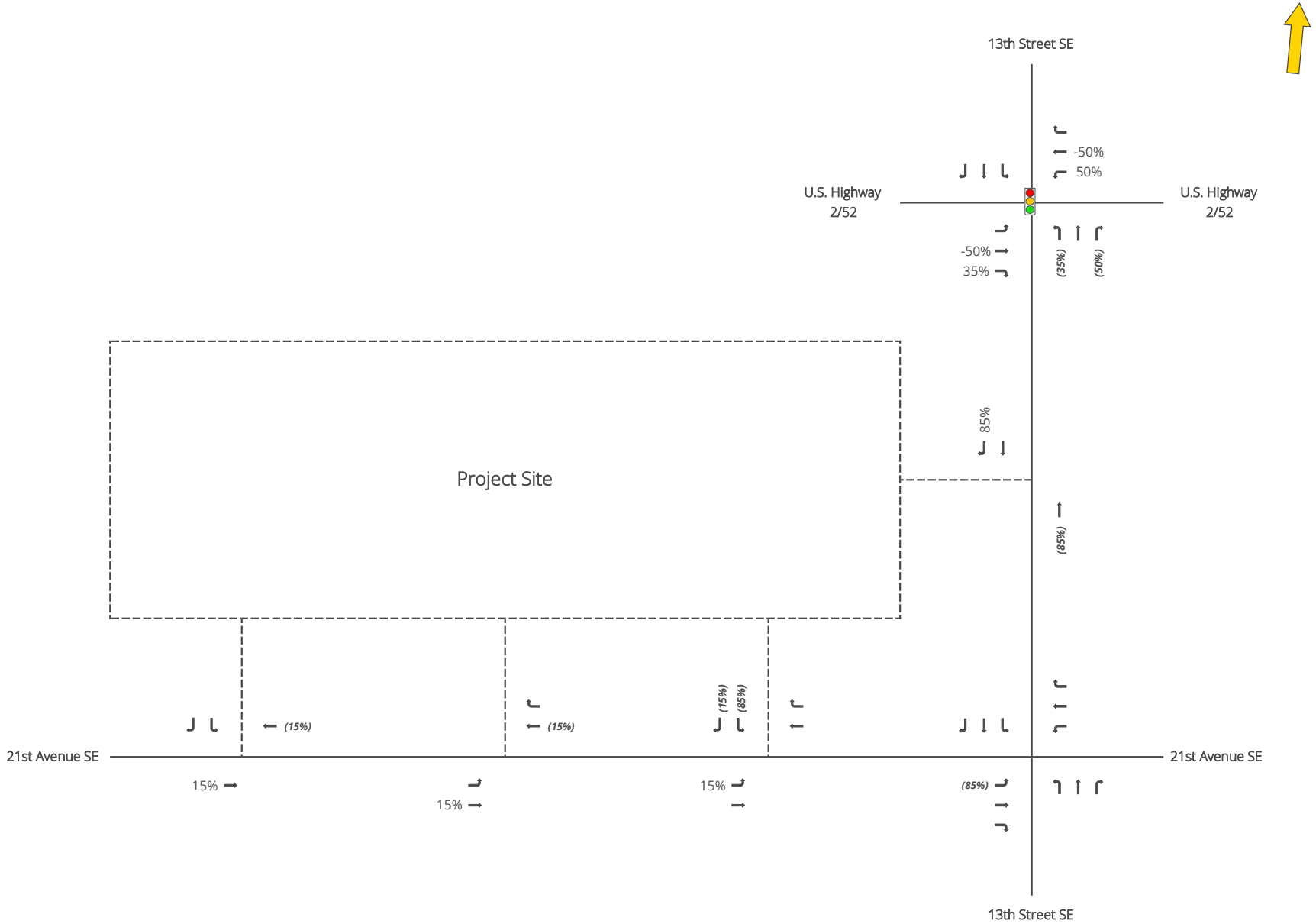
AM Peak Hour: ###
PM Peak Hour: (###)

Through Movement:
Turning Movement:
Signalized Intersection:

Figure 5

Passenger Vehicle Primary Site Generated Trips

AM & PM Peak Hours



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Project No. 22008607A

City of Minot, Ward County, North Dakota

Legend

AM Peak Hour: ###
PM Peak Hour: (###)

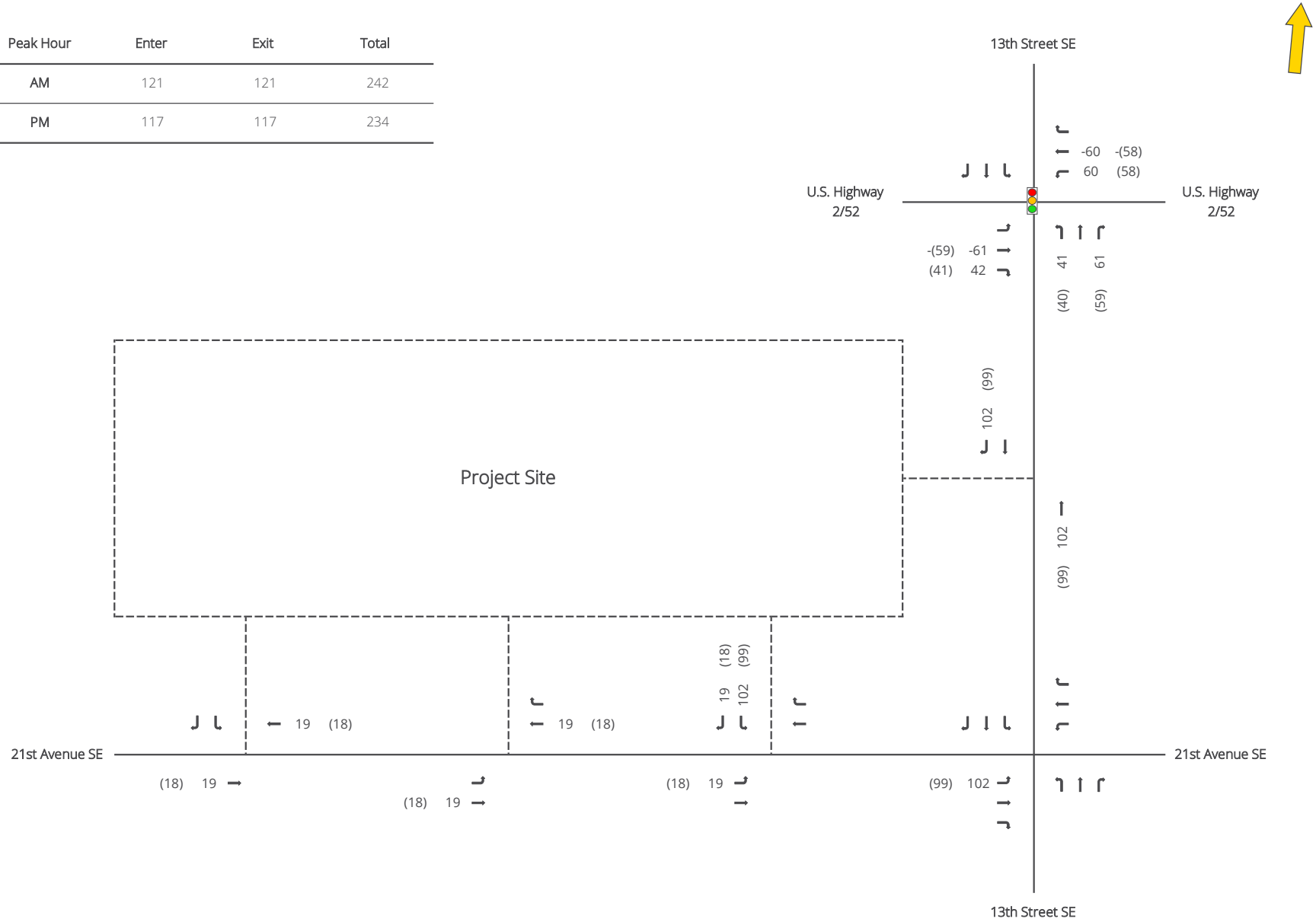
Through Movement:
Turning Movement:
Signalized Intersection:

Figure 6

Passenger Vehicle Pass-By Trip Distribution

AM & PM Peak Hours

Peak Hour	Enter	Exit	Total
AM	121	121	242
PM	117	117	234



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Project No. 22008607A

City of Minot, Ward County, North Dakota

Legend

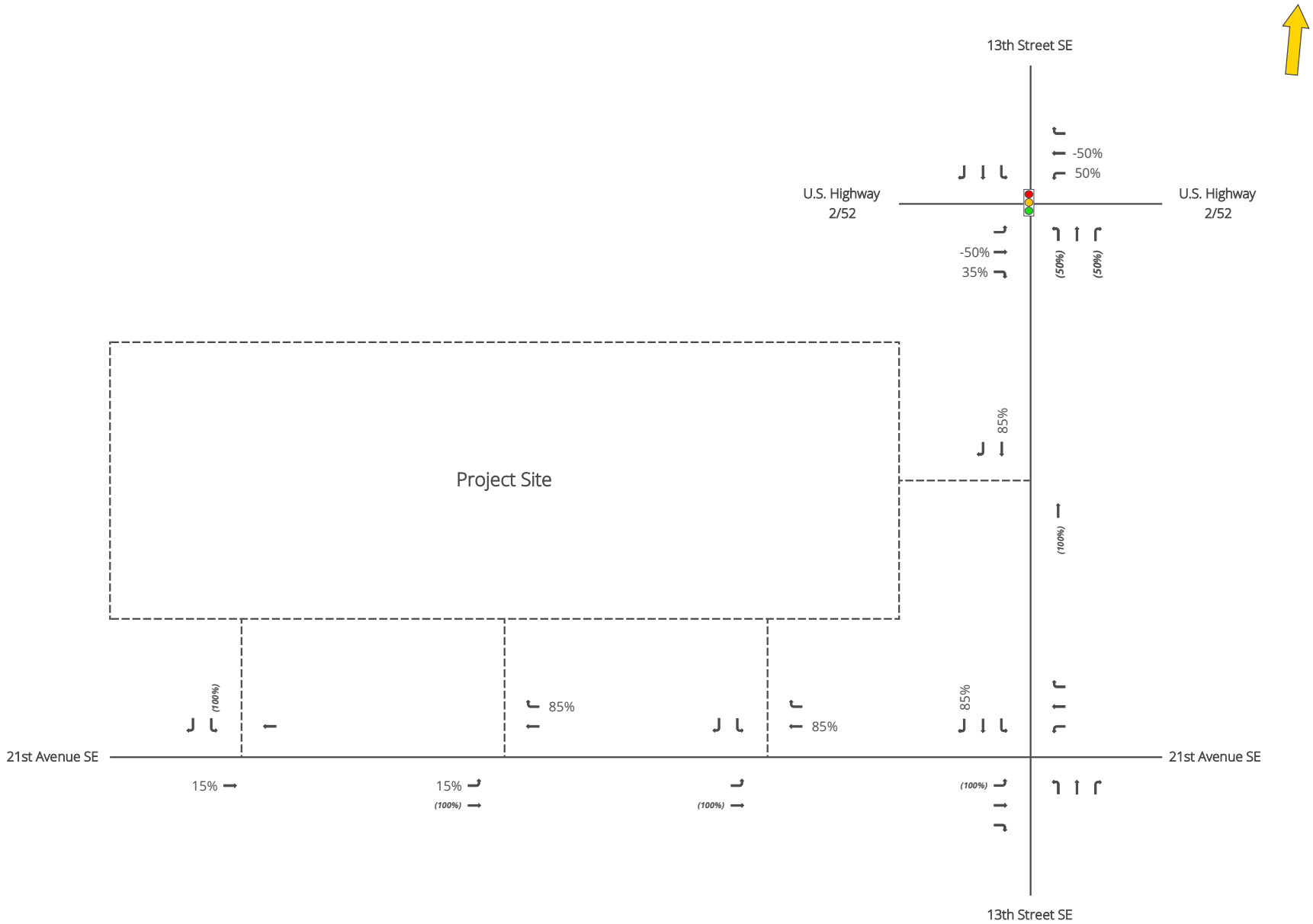
AM Peak Hour: ###
PM Peak Hour: (###)

Through Movement:
Turning Movement:
Signalized Intersection:

Figure 7

Passenger Vehicle Pass-By Site Generated Trips

AM & PM Peak Hours



Colliers Engineering & Design

Holiday Stationstores, Inc.

Project No. 22008607A

City of Minot, Ward County, North Dakota

Legend

AM Peak Hour: ###
PM Peak Hour: (###)

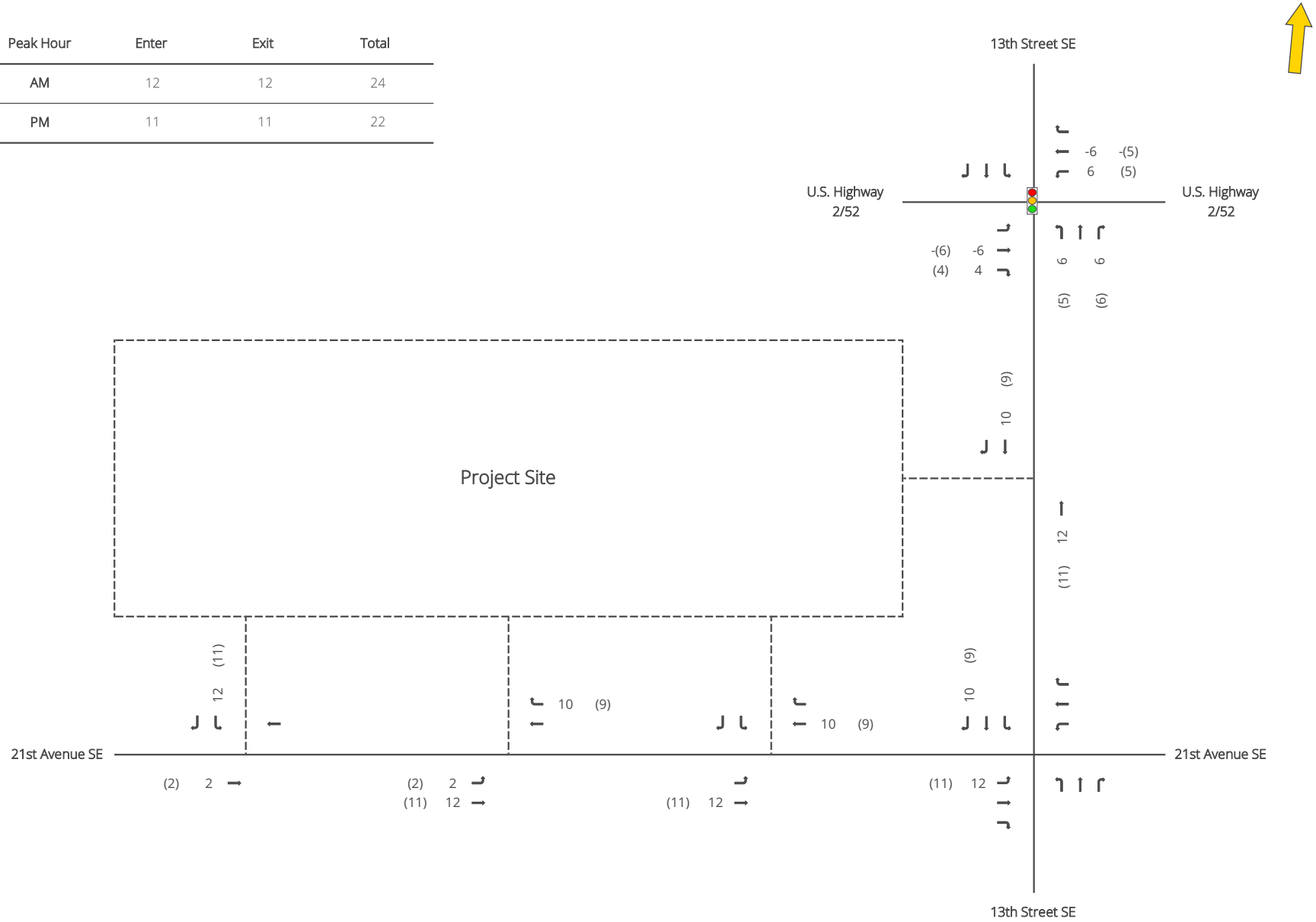
Through Movement:
Turning Movement:
Signalized Intersection:

Figure 8

Truck Pass-By Trip Distribution

AM & PM Peak Hours

Peak Hour	Enter	Exit	Total
AM	12	12	24
PM	11	11	22



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Project No. 22008607A

City of Minot, Ward County, North Dakota

Legend

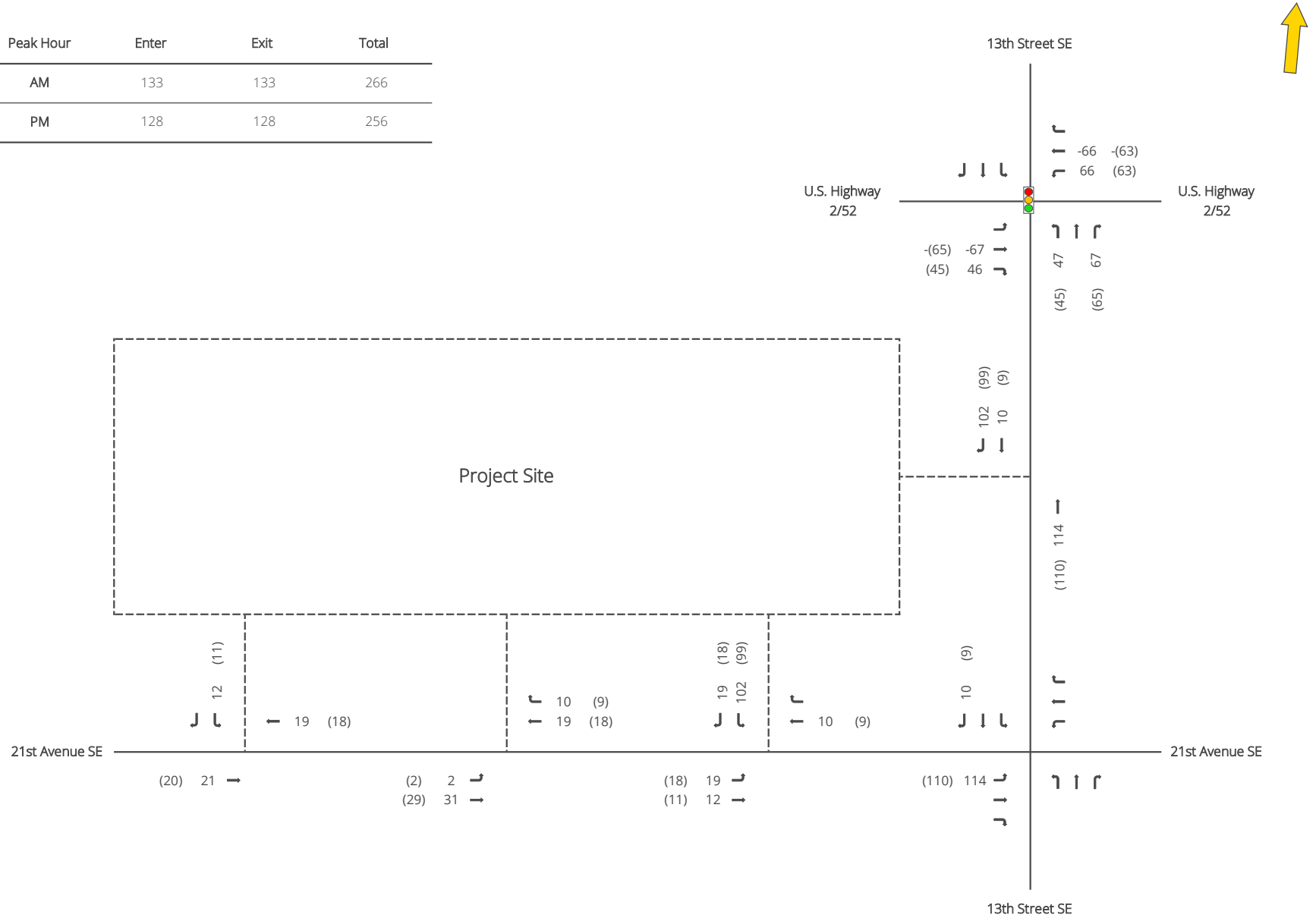
AM Peak Hour: ###
PM Peak Hour: (###)
Through Movement:
Turning Movement:
Signalized Intersection:

Figure 9

Truck Pass-By Site Generated Trips

AM & PM Peak Hours

Peak Hour	Enter	Exit	Total
AM	133	133	266
PM	128	128	256



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Project No. 22008607A

City of Minot, Ward County, North Dakota

Legend

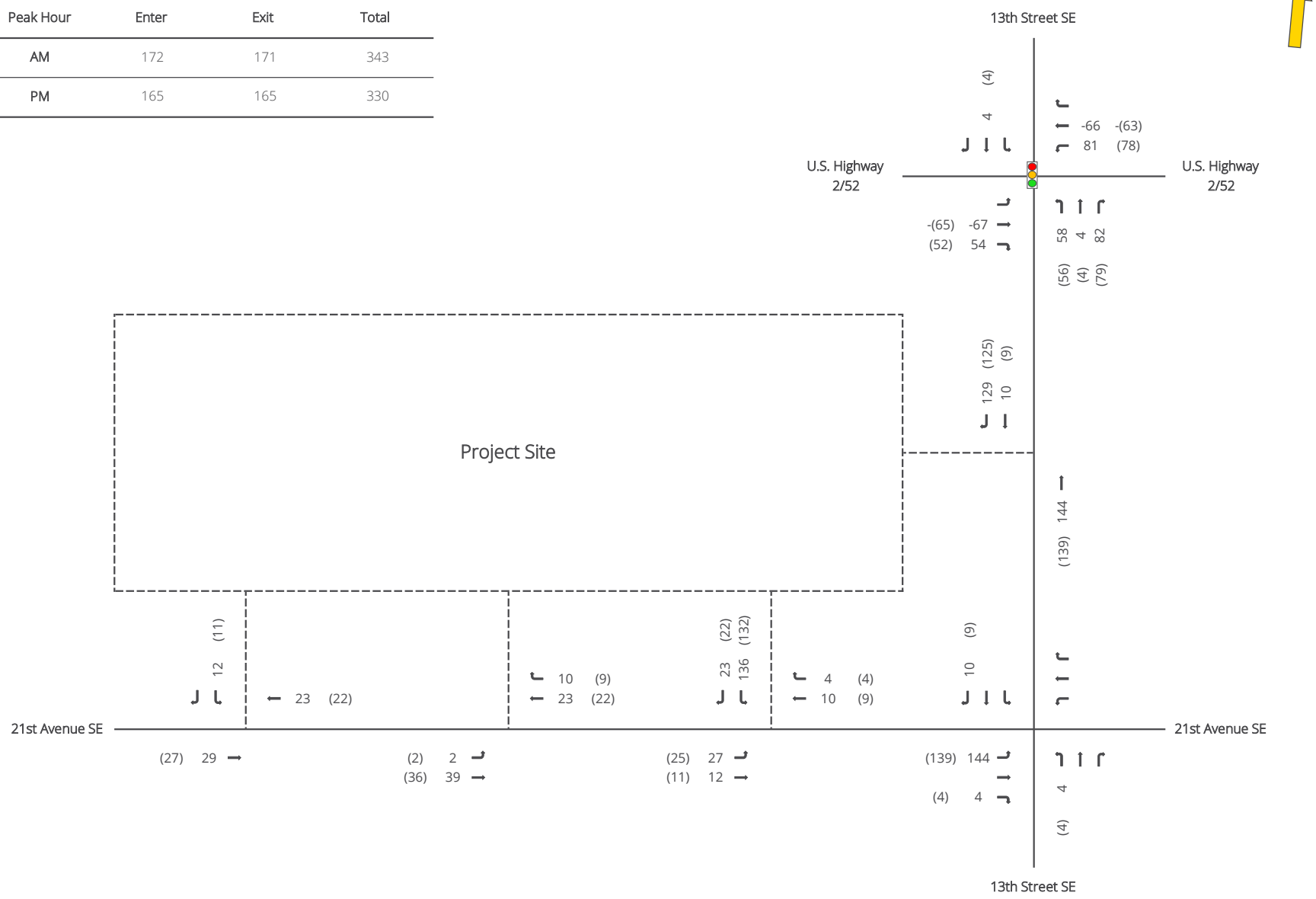
AM Peak Hour: ###
PM Peak Hour: (###)
Through Movement:
Turning Movement:
Signalized Intersection:

Figure 10

Total Pass-By Site Generated Trips

AM & PM Peak Hours

Peak Hour	Enter	Exit	Total
AM	172	171	343
PM	165	165	330



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Holiday Stationstores, Inc.

Project No. 22008607A

City of Minot, Ward County, North Dakota

Legend

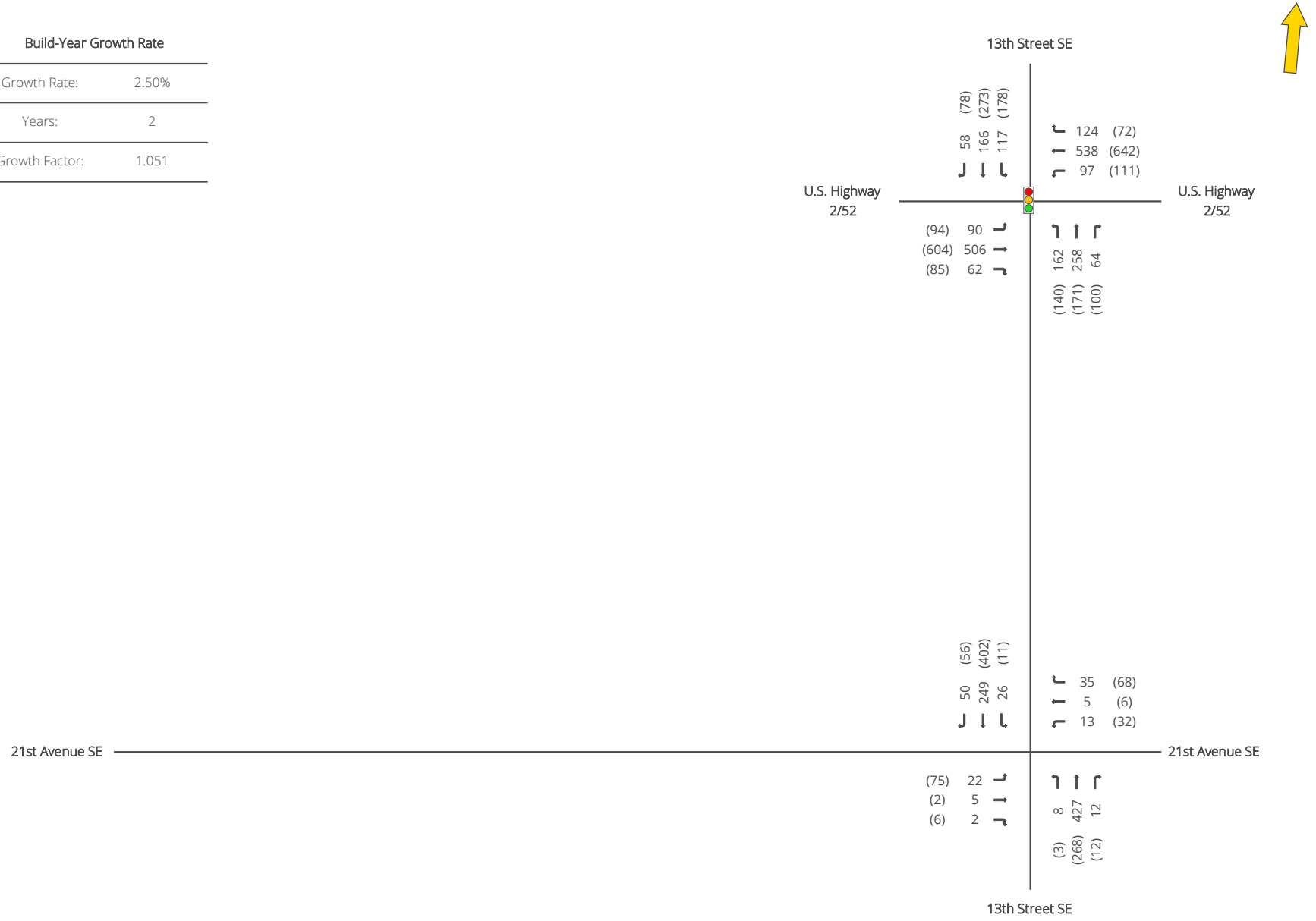
AM Peak Hour: ###
PM Peak Hour: (###)
Through Movement:
Turning Movement:
Signalized Intersection:

Figure 11

Total Site Generated Trips

AM & PM Peak Hours

Build-Year Growth Rate	
Growth Rate:	2.50%
Years:	2
Growth Factor:	1.051



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Holiday Stationstores, Inc.

Project No. 22008607A

City of Minot, Ward County, North Dakota

Legend

AM Peak Hour: ###
PM Peak Hour: (###)

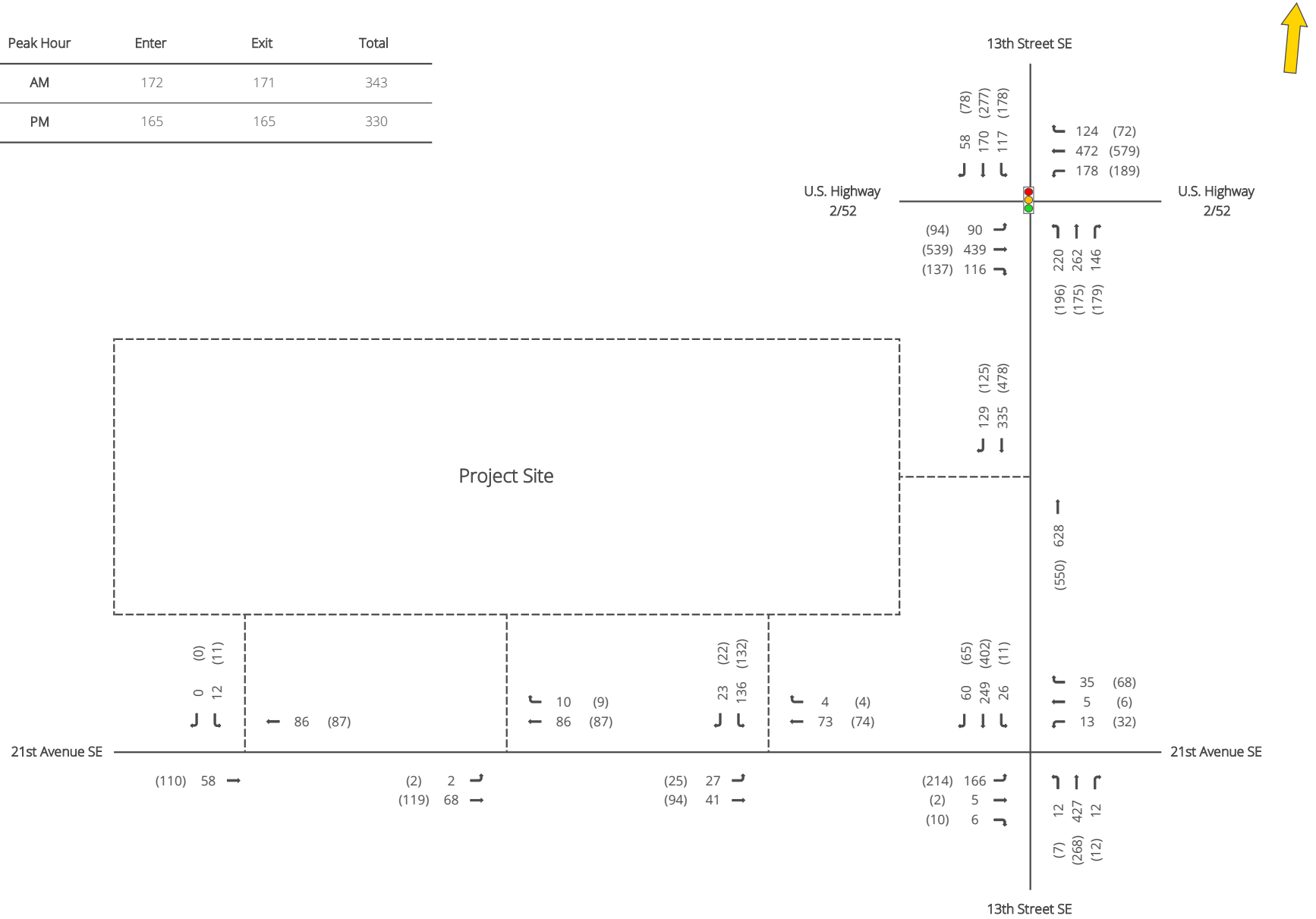
Through Movement:
Turning Movement:
Signalized Intersection:

Figure 12

2025 No-Build Conditions

AM & PM Peak Hours

Peak Hour	Enter	Exit	Total
AM	172	171	343
PM	165	165	330



Colliers Engineering & Design	Holiday Stationstores, Inc. Project No. 22008607A City of Minot, Ward County, North Dakota	Legend AM Peak Hour: ### PM Peak Hour: (###) Through Movement: Turning Movement: Signalized Intersection:	**Figure 13** **2025 Build Conditions** **AM & PM Peak Hours**

Traffic Impact Study

Appendix B | Traffic Data

1500 20th Ave SE - TMC
Wed Nov 16, 2022
Full Length (7 AM-7 AM (+1))
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road)
All Movements
ID: 1015504, Location: 48.21133, -101.27433

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	US 2-52						US 2-52						13th						13th						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-11-16 7:00AM	13	66	1	0	**80**	0	9	72	6	0	**87**	0	25	21	9	0	**55**	0	17	19	10	0	**46**	0	**268**
7:15AM	17	94	11	0	**122**	0	19	111	13	0	**143**	0	30	43	16	0	**89**	0	16	14	10	0	**40**	0	**394**
7:30AM	19	137	5	0	**161**	0	16	116	22	1	**155**	0	49	78	15	0	**142**	0	26	32	17	0	**75**	0	**533**
7:45AM	31	163	19	0	**213**	0	21	150	44	0	**215**	0	41	77	17	0	**135**	0	36	47	12	0	**95**	0	**658**
Hourly Total	80	460	36	0	**576**	0	65	449	85	1	**600**	0	145	219	57	0	**421**	0	95	112	49	0	**256**	0	**1853**
8:00AM	21	99	24	0	**144**	0	29	131	29	0	**189**	0	33	50	13	0	**96**	0	30	37	15	0	**82**	0	**511**
8:15AM	15	83	11	0	**109**	0	25	115	23	0	**163**	0	30	38	16	0	**84**	0	19	42	11	0	**72**	0	**428**
8:30AM	20	86	5	0	**111**	0	12	144	13	0	**169**	0	37	39	16	0	**92**	0	26	26	14	0	**66**	0	**438**
8:45AM	21	87	3	0	**111**	0	15	110	20	0	**145**	0	27	35	12	0	**74**	0	23	25	19	0	**67**	0	**397**
Hourly Total	77	355	43	0	**475**	0	81	500	85	0	**666**	0	127	162	57	0	**346**	0	98	130	59	0	**287**	0	**1774**
9:00AM	9	95	7	0	**111**	0	16	103	11	0	**130**	0	24	23	8	0	**55**	0	20	24	12	0	**56**	0	**352**
9:15AM	9	77	3	0	**89**	0	6	92	14	0	**112**	0	28	20	8	0	**56**	0	24	25	13	0	**62**	0	**319**
9:30AM	12	74	5	0	**91**	0	10	101	10	0	**121**	0	30	29	9	0	**68**	0	15	17	6	0	**38**	0	**318**
9:45AM	6	101	8	0	**115**	0	9	93	13	0	**115**	0	25	30	9	0	**64**	0	18	32	7	0	**57**	0	**351**
Hourly Total	36	347	23	0	**406**	0	41	389	48	0	**478**	0	107	102	34	0	**243**	0	77	98	38	0	**213**	0	**1340**
10:00AM	9	87	5	0	**101**	0	15	98	14	0	**127**	0	19	29	13	0	**61**	0	26	18	12	0	**56**	0	**345**
10:15AM	14	89	7	0	**110**	0	15	87	10	0	**112**	0	17	17	8	0	**42**	0	20	22	14	0	**56**	0	**320**
10:30AM	9	79	6	1	**95**	0	18	100	9	0	**127**	0	17	28	6	0	**51**	0	16	29	18	0	**63**	0	**336**
10:45AM	19	79	7	0	**105**	0	12	105	9	0	**126**	0	17	18	16	0	**51**	0	16	23	16	0	**55**	0	**337**
Hourly Total	51	334	25	1	**411**	0	60	390	42	0	**492**	0	70	92	43	0	**205**	0	78	92	60	0	**230**	0	**1338**
11:00AM	11	82	7	0	**100**	0	15	105	9	0	**129**	0	21	32	9	0	**62**	0	29	28	14	0	**71**	0	**362**
11:15AM	11	80	3	0	**94**	0	14	106	14	0	**134**	0	29	22	11	0	**62**	0	25	26	10	0	**61**	0	**351**
11:30AM	23	97	8	0	**128**	0	14	111	12	0	**137**	0	24	26	14	0	**64**	0	38	24	17	0	**79**	0	**408**
11:45AM	24	89	6	0	**119**	0	17	104	10	0	**131**	0	29	17	14	0	**60**	0	29	27	17	0	**73**	0	**383**
Hourly Total	69	348	24	0	**441**	0	60	426	45	0	**531**	0	103	97	48	0	**248**	0	121	105	58	0	**284**	0	**1504**
12:00PM	19	108	10	0	**137**	0	19	123	16	0	**158**	0	31	40	12	0	**83**	0	23	36	20	0	**79**	0	**457**
12:15PM	15	117	16	0	**148**	0	17	105	13	0	**135**	0	25	32	14	0	**71**	0	27	40	11	0	**78**	0	**432**
12:30PM	19	107	6	0	**132**	0	16	101	12	0	**129**	0	31	40	21	0	**92**	0	26	24	14	0	**64**	0	**417**
12:45PM	25	138	15	0	**178**	0	10	118	14	0	**142**	0	36	45	17	0	**98**	0	35	40	9	0	**84**	0	**502**
Hourly Total	78	470	47	0	**595**	0	62	447	55	0	**564**	0	123	157	64	0	**344**	0	111	140	54	0	**305**	0	**1808**
1:00PM	25	130	18	1	**174**	0	23	94	14	0	**131**	0	26	35	18	0	**79**	0	26	42	12	0	**80**	0	**464**
1:15PM	14	102	17	0	**133**	0	20	97	15	1	**133**	0	27	57	17	0	**101**	0	37	46	16	0	**99**	0	**466**
1:30PM	24	119	15	0	**158**	0	11	94	11	0	**116**	0	36	48	18	0	**102**	0	29	44	13	0	**86**	0	**462**
1:45PM	22	115	8	0	**145**	0	18	95	16	0	**129**	0	18	33	16	0	**67**	0	25	25	20	0	**70**	0	**411**
Hourly Total	85	466	58	1	**610**	0	72	380	56	1	**509**	0	107	173	69	0	**349**	0	117	157	61	0	**335**	0	**1803**
2:00PM	24	115	12	1	**152**	0	12	74	11	0	**97**	0	28	32	13	0	**73**	0	22	21	15	0	**58**	0	**380**
2:15PM	16	130	5	1	**152**	1	12	92	15	0	**119**	0	24	24	18	0	**66**	0	28	22	13	0	**63**	0	**400**
2:30PM	16	107	5	1	**129**	0	16	91	14	0	**121**	0	21	27	12	0	**60**	0	37	24	14	0	**75**	0	**385**
2:45PM	17	128	14	2	**161**	0	16	81	12	0	**109**	0	31	36	15	0	**82**	0	25	36	14	0	**75**	0	**427**
Hourly Total	73	480	36	5	**594**	1	56	338	52	0	**446**	0	104	119	58	0	**281**	0	112	103	56	0	**271**	0	**1592**
3:00PM	13	91	11	0	**115**	0	16	102	10	0	**128**	0	15	49	20	0	**84**	0	29	30	23	0	**82**	0	**409**
3:15PM	14	139	12	0	**165**	0	20	103	13	0	**136**	0	14	31	18	0	**63**	0	24	41	24	0	**89**	0	**453**
3:30PM	26	131	4	0	**161**	0	20	118	12	0	**150**	1	20	32	14	0	**66**	0	39	44	12	0	**95**	0	**472**
3:45PM	21	132	14	1	**168**	0	17	146	13	1	**177**	0	22	37	16	0	**75**	0	30	34	13	0	**77**	0	**497**
Hourly Total	74	493	41	1	**609**	0	73	469	48	1	**591**	1	71	149	68	0	**288**	0	122	149	72	0	**343**	0	**1831**
4:00PM	13	155	12	0	**180**	0	25	143	11	0	**179**	0	23	33	14	0	**70**	0	33	46	19	0	**98**	0	**527**
4:15PM	13	134	17	0	**164**	0	27	119	13	0	**159**	0	21	39	23	0	**83**	0	38	27	12	0	**77**	0	**483**
4:30PM	16	137	19	0	**172**	0	26	150	14	0	**190**	1	34	40	17	0	**91**	0	41	69	21	0	**131**	0	**584**
4:45PM	23	123	21	2	**169**	0	22	127	18	0	**167**	0	35	43	33	0	**111**	0	38	57	18	0	**113**	0	**560**
Hourly Total	65	549	69	2	**685**	0	100	539	56	0	**695**	1	113	155	87	0	**355**	0	150	199	70	0	**419**	0	**2154**
5:00PM	27	178	22	0	**227**	0	32	170	20	0	**222**	0	31	35	29	0	**95**	0	43	69	19	0	**131**	0	**675**
5:15PM	23	137	17	0	**177**	0	24	164	17	0	**205**	0	31	43	15	0	**89**	0	47	59	16	0	**122**	0	**593**
5:30PM	18	143	15	0	**176**	0	24	108	16	0	**148**	0	38	49	23	0	**110**	0	39	49	25	0	**113**	0	**547**
5:45PM	23	131	15	0	**169**	0	25	111	9	0	**145**	0	19	40	22	0	**81**	0	26	32	11	0	**69**	0	**464**
Hourly Total	91	589	69	0	**749**	0	105	553	62	0	**720**	0	119	167	89	0	**375**	0	155	209	71	0	**435**	0	**2279**

Leg	US 2-52						US 2-52						13th						13th						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	L	T	R	U	App	Ped*	Int
6:00PM	16	138	14	0	168	0	24	103	14	0	141	0	23	29	18	0	70	0	20	41	12	0	73	0	452
6:15PM	10	124	10	0	144	0	16	110	10	0	136	0	21	30	20	0	71	0	13	20	11	0	44	0	395
6:30PM	14	101	8	0	123	0	17	73	3	0	93	0	20	30	13	0	63	0	17	25	11	0	53	0	332
6:45PM	5	111	8	0	124	0	22	80	10	0	112	0	24	28	7	0	59	0	15	36	9	0	60	0	355
Hourly Total	45	474	40	0	559	0	79	366	37	0	482	0	88	117	58	0	263	0	65	122	43	0	230	0	1534
7:00PM	9	99	11	1	120	0	10	90	6	0	106	0	15	27	14	0	56	0	11	28	6	0	45	0	327
7:15PM	11	77	11	1	100	0	11	44	6	0	61	0	14	21	7	0	42	0	11	20	3	0	34	0	237
7:30PM	10	76	8	0	94	0	3	32	0	0	35	0	13	10	6	0	29	0	11	15	3	0	29	0	187
7:45PM	10	78	5	0	93	0	6	53	2	0	61	0	9	15	9	0	33	0	23	18	3	0	44	0	231
Hourly Total	40	330	35	2	407	0	30	219	14	0	263	0	51	73	36	0	160	0	56	81	15	0	152	0	982
8:00PM	8	55	4	0	67	0	3	46	1	0	50	0	5	13	6	0	24	0	14	25	5	0	44	0	185
8:15PM	7	53	7	0	67	0	10	35	4	0	49	0	9	12	7	0	28	0	7	17	5	0	29	0	173
8:30PM	10	51	4	0	65	0	7	32	2	0	41	0	9	15	12	0	36	0	12	16	5	0	33	0	175
8:45PM	4	55	6	2	67	0	0	23	0	0	23	0	8	12	2	0	22	0	4	12	2	0	18	0	130
Hourly Total	29	214	21	2	266	0	20	136	7	0	163	0	31	52	27	0	110	0	37	70	17	0	124	0	663
9:00PM	6	39	2	0	47	0	3	25	0	0	28	0	4	4	5	0	13	0	8	6	4	0	18	0	106
9:15PM	2	58	1	1	62	0	4	18	2	0	24	0	3	7	7	0	17	0	8	12	4	0	24	0	127
9:30PM	4	42	5	0	51	0	3	19	2	0	24	0	11	10	9	0	30	0	8	14	4	0	26	0	131
9:45PM	3	27	4	0	34	0	4	24	1	0	29	0	7	3	2	0	12	0	5	7	5	0	17	0	92
Hourly Total	15	166	12	1	194	0	14	86	5	0	105	0	25	24	23	0	72	0	29	39	17	0	85	0	456
10:00PM	2	33	1	0	36	0	2	23	2	0	27	0	1	3	0	0	4	0	8	4	3	0	15	0	82
10:15PM	4	39	1	0	44	0	1	17	1	0	19	0	4	3	2	0	9	0	1	4	3	0	8	0	80
10:30PM	0	18	0	0	18	0	2	13	0	0	15	0	4	5	1	0	10	0	1	6	1	0	8	0	51
10:45PM	4	23	5	0	32	0	0	13	1	0	14	0	3	3	0	0	6	0	2	4	3	0	9	0	61
Hourly Total	10	113	7	0	130	0	5	66	4	0	75	0	12	14	3	0	29	0	12	18	10	0	40	0	274
11:00PM	0	21	1	0	22	0	1	15	1	0	17	0	5	4	1	0	10	0	4	2	1	0	7	0	56
11:15PM	0	15	1	0	16	0	4	4	0	0	8	0	2	2	0	0	4	0	0	3	0	0	3	0	31
11:30PM	2	14	0	0	16	0	0	7	1	0	8	0	2	1	1	0	4	0	0	2	0	0	2	0	30
11:45PM	0	3	2	0	5	0	0	10	1	0	11	0	2	4	2	0	8	0	1	5	0	0	6	0	30
Hourly Total	2	53	4	0	59	0	5	36	3	0	44	0	11	11	4	0	26	0	5	12	1	0	18	0	147
2022-11-17 12:00AM	2	11	1	0	14	0	2	7	1	0	10	0	4	1	0	0	5	0	1	1	1	0	3	0	32
12:15AM	2	6	0	0	8	0	0	2	0	0	2	0	2	1	1	0	4	0	1	3	0	0	4	0	18
12:30AM	0	4	0	0	4	0	1	10	1	0	12	0	1	2	0	0	3	0	2	0	0	0	2	0	21
12:45AM	1	9	0	0	10	0	1	8	0	0	9	0	0	0	0	0	0	0	1	0	0	0	1	0	20
Hourly Total	5	30	1	0	36	0	4	27	2	0	33	0	7	4	1	0	12	0	5	4	1	0	10	0	91
1:00AM	1	2	0	0	3	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	3	0	3	0	8
1:15AM	2	5	0	0	7	0	0	7	1	0	8	0	3	2	1	0	6	0	1	0	1	0	2	0	23
1:30AM	4	8	0	0	12	0	1	10	0	0	11	0	0	2	1	0	3	0	1	3	0	0	4	0	30
1:45AM	0	6	1	0	7	0	0	3	0	0	3	0	1	2	0	0	3	0	0	1	1	0	2	0	15
Hourly Total	7	21	1	0	29	0	1	22	1	0	24	0	4	6	2	0	12	0	2	4	5	0	11	0	76
2:00AM	0	6	1	0	7	0	2	4	0	0	6	0	1	2	0	0	3	0	0	1	1	0	2	0	18
2:15AM	0	3	0	0	3	0	1	3	0	0	4	0	1	1	0	0	2	0	1	2	0	0	3	0	12
2:30AM	1	4	0	0	5	0	0	3	1	0	4	0	0	0	1	0	1	0	1	1	0	0	2	0	12
2:45AM	1	10	0	0	11	0	0	3	1	0	4	0	1	0	1	0	2	0	0	0	1	0	1	0	18
Hourly Total	2	23	1	0	26	0	3	13	2	0	18	0	3	3	2	0	8	0	2	4	2	0	8	0	60
3:00AM	0	4	0	0	4	0	0	6	0	0	6	0	0	1	0	0	1	0	0	0	0	0	0	0	11
3:15AM	0	2	0	0	2	0	0	11	0	0	11	0	3	2	1	0	6	0	0	1	0	0	1	0	20
3:30AM	0	5	1	0	6	0	0	8	1	0	9	0	1	0	0	0	1	0	1	0	0	0	1	0	17
3:45AM	2	6	1	0	9	0	1	8	0	0	9	0	0	1	0	0	1	0	1	1	0	0	2	0	21
Hourly Total	2	17	2	0	21	0	1	33	1	0	35	0	4	4	1	0	9	0	2	2	0	0	4	0	69
4:00AM	0	6	0	0	6	0	0	9	0	0	9	0	1	0	0	0	1	0	1	0	0	0	1	0	17
4:15AM	0	10	0	0	10	0	0	16	0	0	16	0	2	3	0	0	5	0	1	0	2	0	3	0	34
4:30AM	0	9	0	0	9	0	2	20	0	0	22	0	2	2	2	0	6	0	3	1	1	0	5	0	42
4:45AM	2	18	0	0	20	1	2	12	0	0	14	0	2	2	0	0	4	1	3	2	2	0	7	0	45
Hourly Total	2	43	0	0	45	1	4	57	0	0	61	0	7	7	2	0	16	1	8	3	5	0	16	0	138
5:00AM	3	14	0	0	17	1	1	20	0	0	21	0	8	2	0	0	10	0	1	1	0	0	2	0	50
5:15AM	1	26	0	0	27	0	0	16	1	0	17	0	7	3	3	0	13	0	1	0	1	0	2	0	59
5:30AM	2	35	1	0	38	0	1	27	1	0	29	0	4	10	0	0	14	0	3	0	3	0	6	0	87
5:45AM	4	30	4	0	38	0	1	48	5	0	54	0	9	8	3	0	20	0	5	1	6	0	12	0	124
Hourly Total	10	105	5	0	120	1	3	111	7	0	121	0	28	23	6	0	57	0	10	2	10	0	22	0	320
6:00AM	5	31	3	0	39	0	2	27	3	0	32	0	8	8	4	0	20	0	6	3	4	0	13	0	104
6:15AM	7	56	2	0	65	0	4	58	1	0	63	0	10	12	3	0	25	0	4	3	11	0	18	0	171
6:30AM	9	59	1	0	69	0	8	63	8	0	79	0	8	19	11	0	38	0	9	6	10	0	25	0	211

Leg Direction	US 2-52 Eastbound						US 2-52 Westbound						13th Northbound						13th Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
6:45AM	8	82	8	0	**98**	0	4	81	13	0	**98**	0	17	24	9	0	**50**	0	9	12	3	0	**24**	0	**270**
Hourly Total	29	228	14	0	**271**	0	18	229	25	0	**272**	0	43	63	27	0	**133**	0	28	24	28	0	**80**	0	**756**
Total	977	6708	614	15	**8314**	3	962	6281	742	3	**7988**	2	1503	1993	866	0	**4362**	1	1497	1879	802	0	**4178**	0	**24842**
% Approach	11.8%	80.7%	7.4%	0.2%	**-**	-	12.0%	78.6%	9.3%	0%	**-**	-	34.5%	45.7%	19.9%	0%	**-**	-	35.8%	45.0%	19.2%	0%	**-**	-	**-**
% Total	3.9%	27.0%	2.5%	0.1%	**33.5%**	-	3.9%	25.3%	3.0%	0%	**32.2%**	-	6.1%	8.0%	3.5%	0%	**17.6%**	-	6.0%	7.6%	3.2%	0%	**16.8%**	-	**-**
Lights	950	5778	605	14	**7347**	-	947	5489	698	2	**7136**	-	1397	1952	847	0	**4196**	-	1422	1841	772	0	**4035**	-	22714
% Lights	97.2%	86.1%	98.5%	93.3%	**88.4%**	-	98.4%	87.4%	94.1%	66.7%	**89.3%**	-	92.9%	97.9%	97.8%	0%	**96.2%**	-	95.0%	98.0%	96.3%	0%	**96.6%**	-	91.4%
Articulated Trucks	9	705	3	1	**718**	-	0	607	14	1	**622**	-	76	8	7	0	**91**	-	24	1	12	0	**37**	-	1468
% Articulated Trucks	0.9%	10.5%	0.5%	6.7%	**8.6%**	-	0%	9.7%	1.9%	33.3%	**7.8%**	-	5.1%	0.4%	0.8%	0%	**2.1%**	-	1.6%	0.1%	1.5%	0%	**0.9%**	-	5.9%
Buses and Single-Unit Trucks	18	223	6	0	**247**	-	15	185	30	0	**230**	-	30	33	12	0	**75**	-	51	37	18	0	**106**	-	658
% Buses and Single-Unit Trucks	1.8%	3.3%	1.0%	0%	**3.0%**	-	1.6%	2.9%	4.0%	0%	**2.9%**	-	2.0%	1.7%	1.4%	0%	**1.7%**	-	3.4%	2.0%	2.2%	0%	**2.5%**	-	2.6%
Bicycles on Road	0	2	0	0	**2**	-	0	0	0	0	**0**	-	0	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%
Pedestrians	-	-	-	-	-	3	-	-	-	-	-	2	-	-	-	-	-	1	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	100%	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

1500 20th Ave SE - TMC

Wed Nov 16, 2022
AM Peak (Nov 16 2022 7:30AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road)
All Movements
ID: 1015504, Location: 48.21133, -101.27433

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	US 2-52						US 2-52						13th						13th						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-11-16 7:30AM	19	137	5	0	**161**	0	16	116	22	1	**155**	0	49	78	15	0	**142**	0	26	32	17	0	**75**	0	**533**
7:45AM	31	163	19	0	**213**	0	21	150	44	0	**215**	0	41	77	17	0	**135**	0	36	47	12	0	**95**	0	**658**
8:00AM	21	99	24	0	**144**	0	29	131	29	0	**189**	0	33	50	13	0	**96**	0	30	37	15	0	**82**	0	**511**
8:15AM	15	83	11	0	**109**	0	25	115	23	0	**163**	0	30	38	16	0	**84**	0	19	42	11	0	**72**	0	**428**
Total	86	482	59	0	**627**	0	91	512	118	1	**722**	0	153	243	61	0	**457**	0	111	158	55	0	**324**	0	**2130**
% Approach	13.7%	76.9%	9.4%	0%	**-**	-	12.6%	70.9%	16.3%	0.1%	**-**	-	33.5%	53.2%	13.3%	0%	**-**	-	34.3%	48.8%	17.0%	0%	**-**	-	**-**
% Total	4.0%	22.6%	2.8%	0%	**29.4%**	-	4.3%	24.0%	5.5%	0%	**33.9%**	-	7.2%	11.4%	2.9%	0%	**21.5%**	-	5.2%	7.4%	2.6%	0%	**15.2%**	-	**-**
PHF	0.694	0.739	0.615	-	**0.736**	-	0.784	0.853	0.670	0.250	**0.840**	-	0.781	0.779	0.897	-	**0.805**	-	0.771	0.840	0.809	-	**0.853**	-	0.809
Lights	84	429	58	0	**571**	-	90	462	115	1	**668**	-	142	241	60	0	**443**	-	105	156	48	0	**309**	-	1991
% Lights	97.7%	89.0%	98.3%	0%	**91.1%**	-	98.9%	90.2%	97.5%	100%	**92.5%**	-	92.8%	99.2%	98.4%	0%	**96.9%**	-	94.6%	98.7%	87.3%	0%	**95.4%**	-	93.5%
Articulated Trucks	1	37	0	0	**38**	-	0	38	1	0	**39**	-	8	2	0	0	**10**	-	1	0	2	0	**3**	-	90
% Articulated Trucks	1.2%	7.7%	0%	0%	**6.1%**	-	0%	7.4%	0.8%	0%	**5.4%**	-	5.2%	0.8%	0%	0%	**2.2%**	-	0.9%	0%	3.6%	0%	**0.9%**	-	4.2%
Buses and Single-Unit Trucks	1	16	1	0	**18**	-	1	12	2	0	**15**	-	3	0	1	0	**4**	-	5	2	5	0	**12**	-	49
% Buses and Single-Unit Trucks	1.2%	3.3%	1.7%	0%	**2.9%**	-	1.1%	2.3%	1.7%	0%	**2.1%**	-	2.0%	0%	1.6%	0%	**0.9%**	-	4.5%	1.3%	9.1%	0%	**3.7%**	-	2.3%
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%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

1500 20th Ave SE - TMC

Wed Nov 16, 2022
PM Peak (Nov 16 2022 4:30PM - 5:30 PM) - Overall Peak Hour
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road)
All Movements
ID: 1015504, Location: 48.21133, -101.27433

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg	US 2-52						US 2-52						13th						13th						
Direction	Eastbound						Westbound						Northbound						Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2022-11-16 4:30PM	16	137	19	0	**172**	0	26	150	14	0	**190**	1	34	40	17	0	**91**	0	41	69	21	0	**131**	0	**584**
4:45PM	23	123	21	2	**169**	0	22	127	18	0	**167**	0	35	43	33	0	**111**	0	38	57	18	0	**113**	0	**560**
5:00PM	27	178	22	0	**227**	0	32	170	20	0	**222**	0	31	35	29	0	**95**	0	43	69	19	0	**131**	0	**675**
5:15PM	23	137	17	0	**177**	0	24	164	17	0	**205**	0	31	43	15	0	**89**	0	47	59	16	0	**122**	0	**593**
Total	89	575	79	2	**745**	0	104	611	69	0	**784**	1	131	161	94	0	**386**	0	169	254	74	0	**497**	0	**2412**
% Approach	11.9%	77.2%	10.6%	0.3%	**-**	-	13.3%	77.9%	8.8%	0%	**-**	-	33.9%	41.7%	24.4%	0%	**-**	-	34.0%	51.1%	14.9%	0%	**-**	-	**-**
% Total	3.7%	23.8%	3.3%	0.1%	**30.9%**	-	4.3%	25.3%	2.9%	0%	**32.5%**	-	5.4%	6.7%	3.9%	0%	**16.0%**	-	7.0%	10.5%	3.1%	0%	**20.6%**	-	**-**
PHF	0.824	0.808	0.898	0.250	**0.820**	-	0.813	0.899	0.863	-	**0.883**	-	0.936	0.936	0.712	-	**0.869**	-	0.899	0.920	0.881	-	**0.948**	-	0.893
Lights	83	517	76	2	**678**	-	104	563	67	0	**734**	-	126	157	91	0	**374**	-	167	252	73	0	**492**	-	2278
% Lights	93.3%	89.9%	96.2%	100%	**91.0%**	-	100%	92.1%	97.1%	0%	**93.6%**	-	96.2%	97.5%	96.8%	0%	**96.9%**	-	98.8%	99.2%	98.6%	0%	**99.0%**	-	94.4%
Articulated Trucks	1	42	2	0	**45**	-	0	39	1	0	**40**	-	5	1	1	0	**7**	-	0	0	0	0	**0**	-	92
% Articulated Trucks	1.1%	7.3%	2.5%	0%	**6.0%**	-	0%	6.4%	1.4%	0%	**5.1%**	-	3.8%	0.6%	1.1%	0%	**1.8%**	-	0%	0%	0%	0%	**0%**	-	3.8%
Buses and Single-Unit Trucks	5	16	1	0	**22**	-	0	9	1	0	**10**	-	0	3	2	0	**5**	-	2	2	1	0	**5**	-	42
% Buses and Single-Unit Trucks	5.6%	2.8%	1.3%	0%	**3.0%**	-	0%	1.5%	1.4%	0%	**1.3%**	-	0%	1.9%	2.1%	0%	**1.3%**	-	1.2%	0.8%	1.4%	0%	**1.0%**	-	1.7%
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%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	1	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	100%	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

21st Avenue Southeast & 13th Street Southeast - TMC

Wed Apr 12, 2023
Full Length (7 AM-9 AM, 4 PM-6 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1051787, Location: 48.209947, -101.274288

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	21st Ave Eastbound						21st Ave Westbound						13th St Northbound						13th St Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2023-04-12 7:00AM	0	0	0	0	**0**	0	1	0	3	0	**4**	0	2	52	0	0	**54**	0	5	23	8	0	**36**	0	**94**
7:15AM	2	0	0	0	**2**	0	2	0	7	0	**9**	0	0	88	3	0	**91**	0	6	34	2	0	**42**	0	**144**
7:30AM	6	0	0	0	**6**	0	4	0	6	0	**10**	0	0	123	3	0	**126**	0	6	44	8	0	**58**	0	**200**
7:45AM	2	1	0	0	**3**	0	2	0	7	0	**9**	0	3	127	4	0	**134**	0	12	45	10	0	**67**	0	**213**
Hourly Total	10	1	0	0	**11**	0	9	0	23	0	**32**	0	5	390	10	0	**405**	0	29	146	28	0	**203**	0	**651**
8:00AM	7	1	1	0	**9**	0	3	0	5	0	**8**	0	3	75	1	0	**79**	0	2	69	15	0	**86**	0	**182**
8:15AM	6	3	1	0	**10**	0	3	5	15	0	**23**	0	2	81	3	0	**86**	0	3	55	10	0	**68**	0	**187**
8:30AM	7	0	2	0	**9**	0	2	2	6	0	**10**	0	0	73	3	0	**76**	0	1	49	7	0	**57**	0	**152**
8:45AM	6	1	1	0	**8**	0	4	4	13	0	**21**	0	3	51	3	0	**57**	0	4	48	13	0	**65**	0	**151**
Hourly Total	26	5	5	0	**36**	0	12	11	39	0	**62**	0	8	280	10	0	**298**	0	10	221	45	0	**276**	0	**672**
4:00PM	17	3	1	0	**21**	0	6	1	8	0	**15**	0	3	63	1	0	**67**	0	4	75	10	0	**89**	0	**192**
4:15PM	13	0	3	0	**16**	0	9	1	13	0	**23**	0	1	47	3	0	**51**	0	3	64	7	0	**74**	0	**164**
4:30PM	14	0	3	0	**17**	0	4	0	11	0	**15**	0	1	63	2	0	**66**	0	1	87	8	0	**96**	0	**194**
4:45PM	16	0	0	0	**16**	0	11	2	10	0	**23**	0	1	70	4	0	**75**	0	2	76	13	0	**91**	0	**205**
Hourly Total	60	3	7	0	**70**	0	30	4	42	0	**76**	0	6	243	10	0	**259**	0	10	302	38	0	**350**	0	**755**
5:00PM	20	2	1	0	**23**	0	9	2	29	0	**40**	0	1	54	3	0	**58**	0	3	103	20	0	**126**	0	**247**
5:15PM	21	0	2	0	**23**	0	6	2	15	0	**23**	0	0	68	2	0	**70**	0	4	117	12	0	**133**	0	**249**
5:30PM	13	1	1	0	**15**	0	10	3	9	0	**22**	0	1	72	6	0	**79**	0	3	77	7	0	**87**	0	**203**
5:45PM	12	0	2	0	**14**	0	4	1	17	0	**22**	0	1	63	6	0	**70**	0	1	79	7	0	**87**	0	**193**
Hourly Total	66	3	6	0	**75**	0	29	8	70	0	**107**	0	3	257	17	0	**277**	0	11	376	46	0	**433**	0	**892**
Total	162	12	18	0	**192**	0	80	23	174	0	**277**	0	22	1170	47	0	**1239**	0	60	1045	157	0	**1262**	0	**2970**
% Approach	84.4%	6.3%	9.4%	0%	**-**	-	28.9%	8.3%	62.8%	0%	**-**	-	1.8%	94.4%	3.8%	0%	**-**	-	4.8%	82.8%	12.4%	0%	**-**	-	-
% Total	5.5%	0.4%	0.6%	0%	**6.5%**	-	2.7%	0.8%	5.9%	0%	**9.3%**	-	0.7%	39.4%	1.6%	0%	**41.7%**	-	2.0%	35.2%	5.3%	0%	**42.5%**	-	-
Lights	160	12	18	0	**190**	-	76	23	141	0	**240**	-	22	1159	45	0	**1226**	-	58	1028	156	0	**1242**	-	2898
% Lights	98.8%	100%	100%	0%	**99.0%**	-	95.0%	100%	81.0%	0%	**86.6%**	-	100%	99.1%	95.7%	0%	**99.0%**	-	96.7%	98.4%	99.4%	0%	**98.4%**	-	97.6%
Articulated Trucks	0	0	0	0	**0**	-	0	0	30	0	**30**	-	0	0	0	0	**0**	-	2	0	0	0	**2**	-	32
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	17.2%	0%	**10.8%**	-	0%	0%	0%	0%	**0%**	-	3.3%	0%	0%	0%	**0.2%**	-	1.1%
Buses and Single-Unit Trucks	2	0	0	0	**2**	-	4	0	3	0	**7**	-	0	11	2	0	**13**	-	0	17	1	0	**18**	-	40
% Buses and Single-Unit Trucks	1.2%	0%	0%	0%	**1.0%**	-	5.0%	0%	1.7%	0%	**2.5%**	-	0%	0.9%	4.3%	0%	**1.0%**	-	0%	1.6%	0.6%	0%	**1.4%**	-	1.3%
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%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

21st Avenue Southeast & 13th Street Southeast - TMC

Wed Apr 12, 2023
AM Peak (7:30 AM - 8:30 AM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1051787, Location: 48.209947, -101.274288

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

Leg Direction	21st Ave Eastbound						21st Ave Westbound						13th St Northbound						13th St Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2023-04-12 7:30AM	6	0	0	0	**6**	0	4	0	6	0	**10**	0	0	123	3	0	**126**	0	6	44	8	0	**58**	0	**200**
7:45AM	2	1	0	0	**3**	0	2	0	7	0	**9**	0	3	127	4	0	**134**	0	12	45	10	0	**67**	0	**213**
8:00AM	7	1	1	0	**9**	0	3	0	5	0	**8**	0	3	75	1	0	**79**	0	2	69	15	0	**86**	0	**182**
8:15AM	6	3	1	0	**10**	0	3	5	15	0	**23**	0	2	81	3	0	**86**	0	3	55	10	0	**68**	0	**187**
Total	21	5	2	0	**28**	0	12	5	33	0	**50**	0	8	406	11	0	**425**	0	23	213	43	0	**279**	0	**782**
% Approach	75.0%	17.9%	7.1%	0%	**-**	-	24.0%	10.0%	66.0%	0%	**-**	-	1.9%	95.5%	2.6%	0%	**-**	-	8.2%	76.3%	15.4%	0%	**-**	-	-
% Total	2.7%	0.6%	0.3%	0%	**3.6%**	-	1.5%	0.6%	4.2%	0%	**6.4%**	-	1.0%	51.9%	1.4%	0%	**54.3%**	-	2.9%	27.2%	5.5%	0%	**35.7%**	-	-
PHF	0.750	0.417	0.500	-	**0.700**	-	0.750	0.250	0.550	-	**0.543**	-	0.667	0.799	0.688	-	**0.793**	-	0.479	0.772	0.717	-	**0.811**	-	0.918
Lights	20	5	2	0	**27**	-	11	5	26	0	**42**	-	8	401	9	0	**418**	-	23	209	42	0	**274**	-	761
% Lights	95.2%	100%	100%	0%	**96.4%**	-	91.7%	100%	78.8%	0%	**84.0%**	-	100%	98.8%	81.8%	0%	**98.4%**	-	100%	98.1%	97.7%	0%	**98.2%**	-	97.3%
Articulated Trucks	0	0	0	0	**0**	-	0	0	6	0	**6**	-	0	0	0	0	**0**	-	0	0	0	0	**0**	-	6
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	18.2%	0%	**12.0%**	-	0%	0%	0%	0%	**0%**	-	0%	0%	0%	0%	**0%**	-	0.8%
Buses and Single-Unit Trucks	1	0	0	0	**1**	-	1	0	1	0	**2**	-	0	5	2	0	**7**	-	0	4	1	0	**5**	-	15
% Buses and Single-Unit Trucks	4.8%	0%	0%	0%	**3.6%**	-	8.3%	0%	3.0%	0%	**4.0%**	-	0%	1.2%	18.2%	0%	**1.6%**	-	0%	1.9%	2.3%	0%	**1.8%**	-	1.9%
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%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

21st Avenue Southeast & 13th Street Southeast - TMC

Wed Apr 12, 2023
Forced Peak (4:30 PM - 5:30 PM)
All Classes (Lights, Articulated Trucks, Buses and Single-Unit Trucks, Pedestrians, Bicycles on Road, Bicycles on Crosswalk)
All Movements
ID: 1051787, Location: 48.209947, -101.274288

GEWALT HAMILTON ASSOCIATES, INC.
Provided by: Gewalt Hamilton Associates Inc.
625 Forest Edge Drive, Vernon Hills, IL, 60061, US

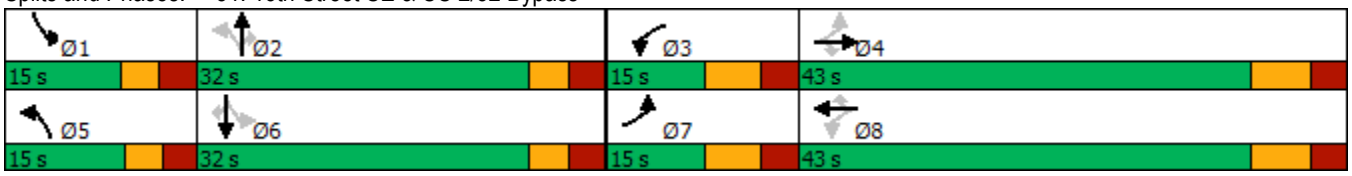
Leg Direction	21st Ave Eastbound						21st Ave Westbound						13th St Northbound						13th St Southbound						
Time	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	L	T	R	U	**App**	Ped*	**Int**
2023-04-12 4:30PM	14	0	3	0	**17**	0	4	0	11	0	**15**	0	1	63	2	0	**66**	0	1	87	8	0	**96**	0	**194**
4:45PM	16	0	0	0	**16**	0	11	2	10	0	**23**	0	1	70	4	0	**75**	0	2	76	13	0	**91**	0	**205**
5:00PM	20	2	1	0	**23**	0	9	2	29	0	**40**	0	1	54	3	0	**58**	0	3	103	20	0	**126**	0	**247**
5:15PM	21	0	2	0	**23**	0	6	2	15	0	**23**	0	0	68	2	0	**70**	0	4	117	12	0	**133**	0	**249**
Total	71	2	6	0	**79**	0	30	6	65	0	**101**	0	3	255	11	0	**269**	0	10	383	53	0	**446**	0	**895**
% Approach	89.9%	2.5%	7.6%	0%	**-**	-	29.7%	5.9%	64.4%	0%	**-**	-	1.1%	94.8%	4.1%	0%	**-**	-	2.2%	85.9%	11.9%	0%	**-**	-	-
% Total	7.9%	0.2%	0.7%	0%	**8.8%**	-	3.4%	0.7%	7.3%	0%	**11.3%**	-	0.3%	28.5%	1.2%	0%	**30.1%**	-	1.1%	42.8%	5.9%	0%	**49.8%**	-	-
PHF	0.845	0.250	0.500	-	**0.859**	-	0.682	0.750	0.560	-	**0.631**	-	0.750	0.911	0.688	-	**0.897**	-	0.625	0.818	0.663	-	**0.838**	-	0.899
Lights	71	2	6	0	**79**	-	29	6	58	0	**93**	-	3	254	11	0	**268**	-	9	382	53	0	**444**	-	884
% Lights	100%	100%	100%	0%	**100%**	-	96.7%	100%	89.2%	0%	**92.1%**	-	100%	99.6%	100%	0%	**99.6%**	-	90.0%	99.7%	100%	0%	**99.6%**	-	98.8%
Articulated Trucks	0	0	0	0	**0**	-	0	0	6	0	**6**	-	0	0	0	0	**0**	-	1	0	0	0	**1**	-	7
% Articulated Trucks	0%	0%	0%	0%	**0%**	-	0%	0%	9.2%	0%	**5.9%**	-	0%	0%	0%	0%	**0%**	-	10.0%	0%	0%	0%	**0.2%**	-	0.8%
Buses and Single-Unit Trucks	0	0	0	0	**0**	-	1	0	1	0	**2**	-	0	1	0	0	**1**	-	0	1	0	0	**1**	-	4
% Buses and Single-Unit Trucks	0%	0%	0%	0%	**0%**	-	3.3%	0%	1.5%	0%	**2.0%**	-	0%	0.4%	0%	0%	**0.4%**	-	0%	0.3%	0%	0%	**0.2%**	-	0.4%
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%
Pedestrians	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Pedestrians	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Bicycles on Crosswalk	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	-	-	-	-	-	0	
% Bicycles on Crosswalk	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*Pedestrians and Bicycles on Crosswalk. L: Left, R: Right, T: Thru, U: U-Turn

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	80	225	75	45	300	60	155	140	120	75	80	85
Future Volume (vph)	80	225	75	45	300	60	155	140	120	75	80	85
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	15.0	22.7	22.7	15.0	22.7	22.7	15.0	16.1	16.1	15.0	16.1	16.1
Total Split (s)	15.0	43.0	43.0	15.0	43.0	43.0	15.0	32.0	32.0	15.0	32.0	32.0
Total Split (%)	14.3%	41.0%	41.0%	14.3%	41.0%	41.0%	14.3%	30.5%	30.5%	14.3%	30.5%	30.5%
Yellow Time (s)	4.3	4.7	4.7	4.3	4.7	4.7	3.0	3.1	3.1	3.0	3.1	3.1
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	2.7	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	7.3	7.7	7.7	7.3	7.7	7.7	5.7	6.1	6.1	6.0	6.1	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None
Act Effct Green (s)	20.3	15.9	15.9	18.1	12.7	12.7	19.0	11.9	11.9	16.4	11.2	11.2
Actuated g/C Ratio	0.33	0.26	0.26	0.30	0.21	0.21	0.31	0.20	0.20	0.27	0.18	0.18
v/c Ratio	0.23	0.29	0.16	0.13	0.48	0.15	0.45	0.47	0.30	0.22	0.28	0.22
Control Delay	14.8	22.9	0.7	14.0	26.9	0.7	18.9	31.0	3.5	15.8	27.9	1.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.8	22.9	0.7	14.0	26.9	0.7	18.9	31.0	3.5	15.8	27.9	1.2
LOS	B	C	A	B	C	A	B	C	A	B	C	A
Approach Delay		16.8			21.6			18.6			14.7	
Approach LOS		B			C			B			B	

Intersection Summary	
Cycle Length: 105	
Actuated Cycle Length: 60.9	
Natural Cycle: 70	
Control Type: Actuated-Uncoordinated	
Maximum v/c Ratio: 0.48	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 51.3%	ICU Level of Service A
Analysis Period (min) 15	

Splits and Phases: 51: 13th Street SE & US 2/52 Bypass



Traffic Impact Study

Appendix C | Trip Generation

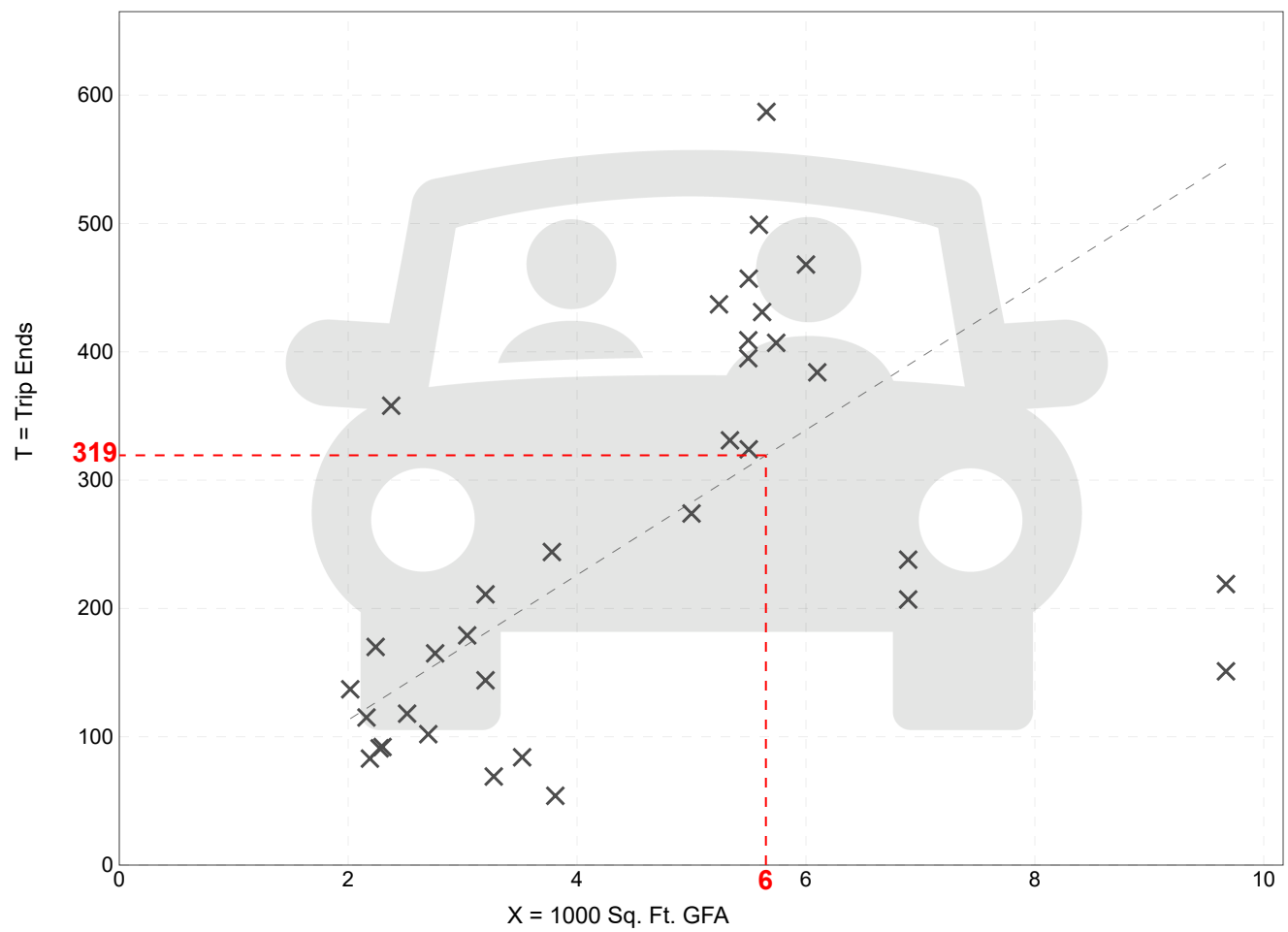
Convenience Store/Gas Station - VFP (9-15)
(945)

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:	34
Avg. 1000 Sq. Ft. GFA:	4
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
56.52	14.17 - 150.67	27.56

Data Plot and Equation



Study Site — **Average Rate**

Fitted Curve Equation: Not Given — **R^2= ******

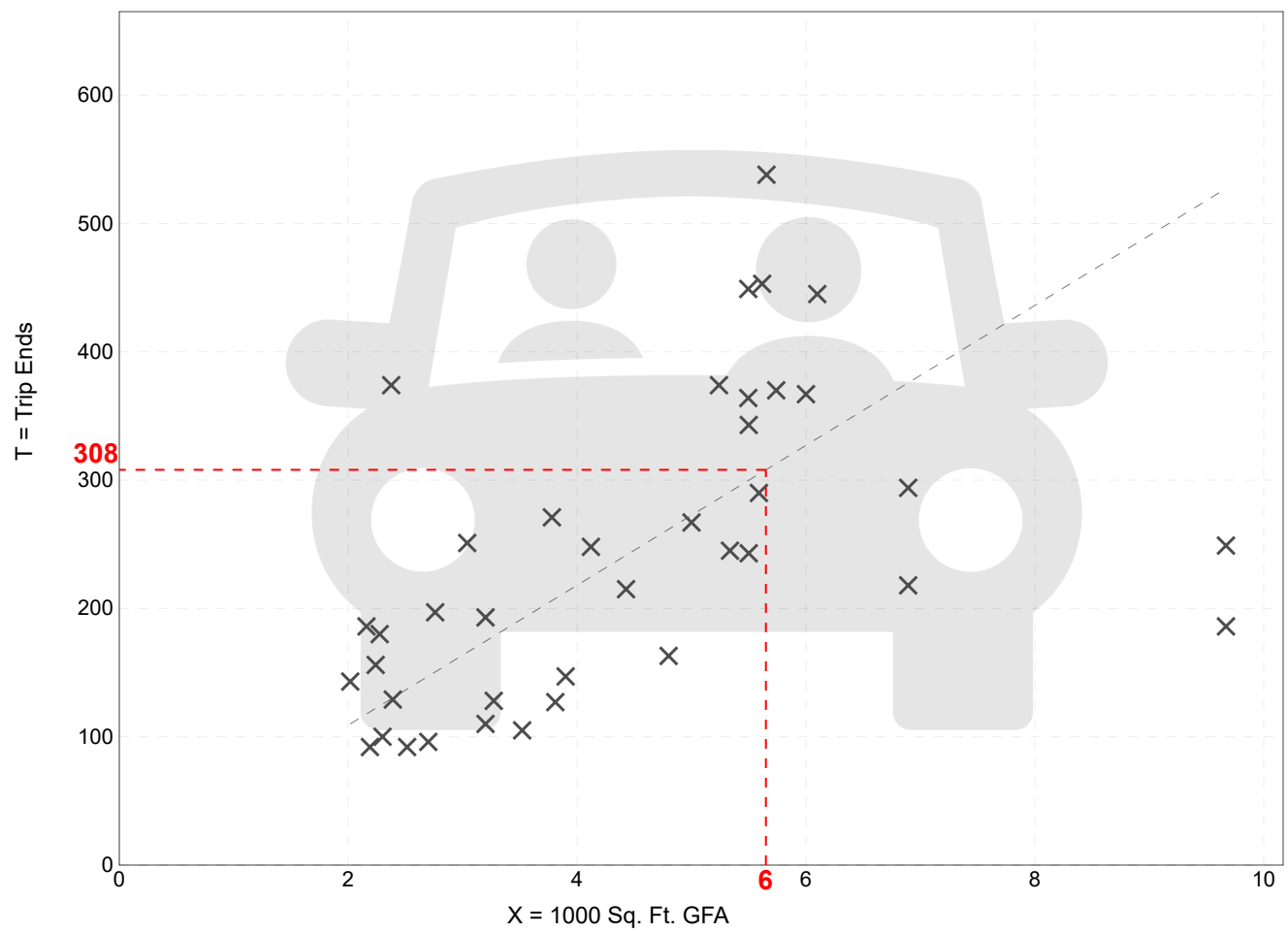
Convenience Store/Gas Station - VFP (9-15)
(945)

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:	39
Avg. 1000 Sq. Ft. GFA:	4
Directional Distribution:	50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
54.52	19.23 - 157.41	23.69

Data Plot and Equation



Study Site — **Average Rate**

Fitted Curve Equation: Not Given — **R^2= ******

Traffic Impact Study

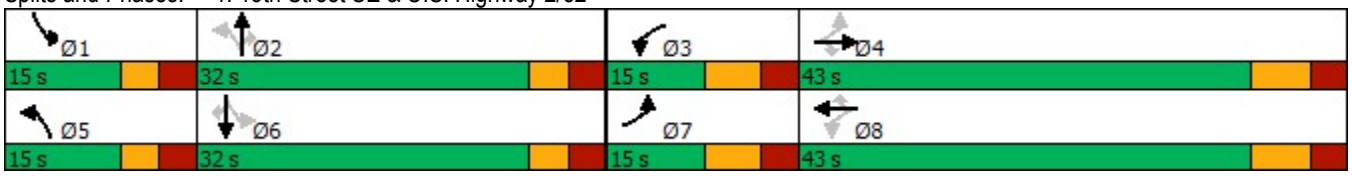
Appendix D | Capacity Analysis

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	506	62	97	538	124	162	258	64	117	166	58
Future Volume (vph)	90	506	62	97	538	124	162	258	64	117	166	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	13	13	12	13	12	12	13	12	12	13
Storage Length (ft)	550		540	540		525	200		150	200		115
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		1942			1101			344			1194	
Travel Time (s)		26.5			15.0			7.8			27.1	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	2%	11%	2%	2%	10%	3%	7%	2%	2%	5%	2%	13%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	15.0	22.7	22.7	15.0	22.7	22.7	15.0	16.1	16.1	15.0	16.1	16.1
Total Split (s)	15.0	43.0	43.0	15.0	43.0	43.0	15.0	32.0	32.0	15.0	32.0	32.0
Total Split (%)	14.3%	41.0%	41.0%	14.3%	41.0%	41.0%	14.3%	30.5%	30.5%	14.3%	30.5%	30.5%
Yellow Time (s)	4.3	4.7	4.7	4.3	4.7	4.7	3.0	3.1	3.1	3.0	3.1	3.1
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	7.3	7.7	7.7	7.3	7.7	7.7	6.0	6.1	6.1	6.0	6.1	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 87.8
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: 13th Street SE & U.S. Highway 2/52



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	506	62	97	538	124	162	258	64	117	166	58
Future Volume (veh/h)	90	506	62	97	538	124	162	258	64	117	166	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1737	1945	1945	1752	1930	1796	1870	1945	1826	1870	1776
Adj Flow Rate, veh/h	111	625	77	120	664	153	200	319	79	144	205	72
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	11	2	2	10	3	7	2	2	5	2	13
Cap, veh/h	275	873	436	295	895	440	386	396	349	300	342	275
Arrive On Green	0.06	0.26	0.26	0.07	0.27	0.27	0.12	0.21	0.21	0.09	0.18	0.18
Sat Flow, veh/h	1853	3300	1648	1853	3328	1635	1711	1870	1648	1739	1870	1505
Grp Volume(v), veh/h	111	625	77	120	664	153	200	319	79	144	205	72
Grp Sat Flow(s),veh/h/ln	1853	1650	1648	1853	1664	1635	1711	1870	1648	1739	1870	1505
Q Serve(g_s), s	3.2	12.7	2.7	3.4	13.5	5.6	6.8	12.0	2.9	4.9	7.4	3.0
Cycle Q Clear(g_c), s	3.2	12.7	2.7	3.4	13.5	5.6	6.8	12.0	2.9	4.9	7.4	3.0
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	275	873	436	295	895	440	386	396	349	300	342	275
V/C Ratio(X)	0.40	0.72	0.18	0.41	0.74	0.35	0.52	0.80	0.23	0.48	0.60	0.26
Avail Cap(c_a), veh/h	351	1577	788	362	1590	781	393	656	578	357	656	528
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.1	24.6	21.0	18.9	24.7	21.8	20.9	27.7	24.1	22.1	27.7	25.9
Incr Delay (d2), s/veh	1.0	1.1	0.2	0.9	1.2	0.5	1.1	3.9	0.3	1.2	1.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	8.0	1.7	2.4	8.4	3.5	4.9	9.4	1.9	3.6	6.0	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.1	25.8	21.1	19.8	25.9	22.2	22.1	31.5	24.4	23.3	29.4	26.4
LnGrp LOS	C	C	C	B	C	C	C	C	C	C	C	C
Approach Vol, veh/h		813			937			598			421	
Approach Delay, s/veh		24.5			24.5			27.4			26.8	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	21.8	12.3	27.3	14.7	19.6	12.0	27.6
Change Period (Y+Rc), s	6.0	6.1	7.3	7.7	6.0	6.1	7.3	7.7
Max Green Setting (Gmax), s	9.0	25.9	7.7	35.3	9.0	25.9	7.7	35.3
Max Q Clear Time (g_c+I1), s	6.9	14.0	5.4	14.7	8.8	9.4	5.2	15.5
Green Ext Time (p_c), s	0.1	1.7	0.1	3.9	0.0	1.2	0.1	4.4

Intersection Summary	
HCM 6th Ctrl Delay	25.5
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	22	5	2	13	5	35	8	427	12	26	249	50
Future Vol, veh/h	22	5	2	13	5	35	8	427	12	26	249	50
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	2	2	8	2	21	2	2	18	2	2	2
Mvmt Flow	24	5	2	14	5	38	9	464	13	28	271	54

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	864	849	298	847	870	471	325	0	0	477	0	0
Stage 1	354	354	-	489	489	-	-	-	-	-	-	-
Stage 2	510	495	-	358	381	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.52	6.22	7.18	6.52	6.41	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.15	5.52	-	6.18	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.52	-	6.18	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.018	3.318	3.572	4.018	3.489	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	271	298	741	275	290	556	1235	-	-	1085	-	-
Stage 1	657	630	-	549	549	-	-	-	-	-	-	-
Stage 2	541	546	-	648	613	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	243	288	741	263	280	556	1235	-	-	1085	-	-
Mov Cap-2 Maneuver	243	288	-	263	280	-	-	-	-	-	-	-
Stage 1	652	614	-	545	545	-	-	-	-	-	-	-
Stage 2	495	542	-	624	597	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	20.6	15.3	0.1	0.7
HCM LOS	C	C		

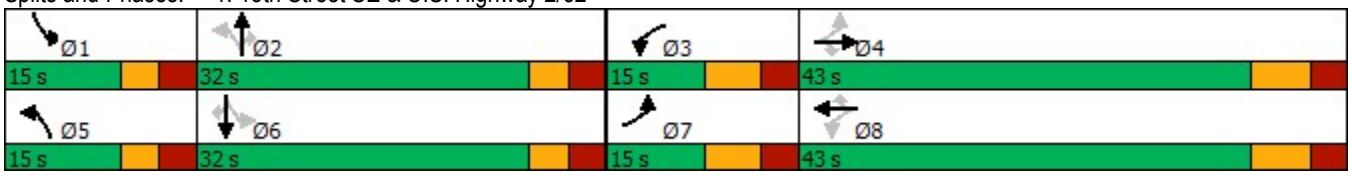
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1235	-	-	262	407	1085	-	-
HCM Lane V/C Ratio	0.007	-	-	0.12	0.142	0.026	-	-
HCM Control Delay (s)	7.9	-	-	20.6	15.3	8.4	-	-
HCM Lane LOS	A	-	-	C	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.5	0.1	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	604	85	111	642	72	140	171	100	178	273	78
Future Volume (vph)	94	604	85	111	642	72	140	171	100	178	273	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	13	13	12	13	12	12	13	12	12	13
Storage Length (ft)	550		540	540		525	200		150	200		115
Storage Lanes	1		1	1		1	1		1	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		1942			1101			344			1194	
Travel Time (s)		26.5			15.0			7.8			27.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	7%	10%	4%	2%	8%	3%	4%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	15.0	22.7	22.7	15.0	22.7	22.7	15.0	16.1	16.1	15.0	16.1	16.1
Total Split (s)	15.0	43.0	43.0	15.0	43.0	43.0	15.0	32.0	32.0	15.0	32.0	32.0
Total Split (%)	14.3%	41.0%	41.0%	14.3%	41.0%	41.0%	14.3%	30.5%	30.5%	14.3%	30.5%	30.5%
Yellow Time (s)	4.3	4.7	4.7	4.3	4.7	4.7	3.0	3.1	3.1	3.0	3.1	3.1
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	7.3	7.7	7.7	7.3	7.7	7.7	6.0	6.1	6.1	6.0	6.1	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 88.7
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: 13th Street SE & U.S. Highway 2/52



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	604	85	111	642	72	140	171	100	178	273	78
Future Volume (veh/h)	94	604	85	111	642	72	140	171	100	178	273	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1868	1752	1914	1945	1781	1930	1841	1856	1930	1870	1870	1945
Adj Flow Rate, veh/h	106	679	96	125	721	81	157	192	112	200	307	88
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	10	4	2	8	3	4	3	3	2	2	2
Cap, veh/h	263	908	442	286	949	458	308	344	303	396	383	337
Arrive On Green	0.06	0.27	0.27	0.07	0.28	0.28	0.09	0.19	0.19	0.11	0.20	0.20
Sat Flow, veh/h	1779	3328	1622	1853	3385	1635	1753	1856	1635	1781	1870	1648
Grp Volume(v), veh/h	106	679	96	125	721	81	157	192	112	200	307	88
Grp Sat Flow(s),veh/h/ln	1779	1664	1622	1853	1692	1635	1753	1856	1635	1781	1870	1648
Q Serve(g_s), s	3.2	14.1	3.5	3.6	14.7	2.8	5.3	7.1	4.5	6.7	11.8	3.4
Cycle Q Clear(g_c), s	3.2	14.1	3.5	3.6	14.7	2.8	5.3	7.1	4.5	6.7	11.8	3.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	263	908	442	286	949	458	308	344	303	396	383	337
V/C Ratio(X)	0.40	0.75	0.22	0.44	0.76	0.18	0.51	0.56	0.37	0.50	0.80	0.26
Avail Cap(c_a), veh/h	335	1556	758	347	1582	764	351	636	561	406	641	565
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	19.4	25.1	21.2	19.1	24.9	20.6	22.3	27.9	26.9	21.3	28.6	25.2
Incr Delay (d2), s/veh	1.0	1.3	0.2	1.0	1.3	0.2	1.3	1.4	0.7	1.0	3.9	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.2	8.7	2.2	2.6	9.1	1.8	4.0	5.7	3.0	5.0	9.3	2.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	20.3	26.4	21.5	20.2	26.1	20.8	23.6	29.4	27.6	22.3	32.5	25.6
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		881			927			461			595	
Approach Delay, s/veh		25.1			24.9			27.0			28.1	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	20.1	12.5	28.3	13.1	21.6	12.0	28.9
Change Period (Y+Rc), s	6.0	6.1	7.3	7.7	6.0	6.1	7.3	7.7
Max Green Setting (Gmax), s	9.0	25.9	7.7	35.3	9.0	25.9	7.7	35.3
Max Q Clear Time (g_c+I1), s	8.7	9.1	5.6	16.1	7.3	13.8	5.2	16.7
Green Ext Time (p_c), s	0.0	1.3	0.1	4.3	0.1	1.7	0.0	4.5

Intersection Summary	
HCM 6th Ctrl Delay	25.9
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	4.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	75	2	6	32	6	68	3	268	12	11	402	56
Future Vol, veh/h	75	2	6	32	6	68	3	268	12	11	402	56
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	90	90	90	90	90	90	90	90	90	90	90	90
Heavy Vehicles, %	2	2	2	3	2	11	2	2	2	10	2	2
Mvmt Flow	83	2	7	36	7	76	3	298	13	12	447	62

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	854	819	478	818	844	305	509	0	0	311	0	0
Stage 1	502	502	-	311	311	-	-	-	-	-	-	-
Stage 2	352	317	-	507	533	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.13	6.52	6.31	4.12	-	-	4.2	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.13	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.13	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.527	4.018	3.399	2.218	-	-	2.29	-	-
Pot Cap-1 Maneuver	279	310	587	294	300	714	1056	-	-	1205	-	-
Stage 1	552	542	-	697	658	-	-	-	-	-	-	-
Stage 2	665	654	-	546	525	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	243	306	587	286	296	714	1056	-	-	1205	-	-
Mov Cap-2 Maneuver	243	306	-	286	296	-	-	-	-	-	-	-
Stage 1	550	537	-	695	656	-	-	-	-	-	-	-
Stage 2	587	652	-	532	520	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	26.9	15.3	0.1	0.2
HCM LOS	D	C		

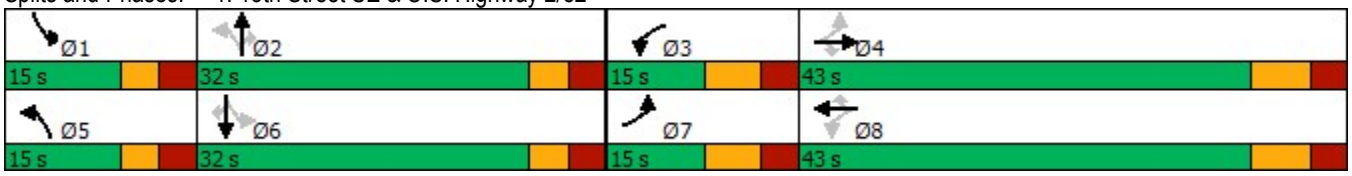
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1056	-	-	255	466	1205	-	-
HCM Lane V/C Ratio	0.003	-	-	0.362	0.253	0.01	-	-
HCM Control Delay (s)	8.4	-	-	26.9	15.3	8	-	-
HCM Lane LOS	A	-	-	D	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	1.6	1	0	-	-

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	90	439	116	178	472	124	220	262	146	117	170	58
Future Volume (vph)	90	439	116	178	472	124	220	262	146	117	170	58
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	13	13	12	13	12	12	13	12	12	13
Storage Length (ft)	550		540	540		525	200		150	200		115
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		1942			1101			283			1194	
Travel Time (s)		26.5			15.0			6.4			27.1	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Heavy Vehicles (%)	2%	11%	2%	2%	10%	3%	7%	2%	2%	5%	2%	13%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	15.0	22.7	22.7	15.0	22.7	22.7	15.0	16.1	16.1	15.0	16.1	16.1
Total Split (s)	15.0	43.0	43.0	15.0	43.0	43.0	15.0	32.0	32.0	15.0	32.0	32.0
Total Split (%)	14.3%	41.0%	41.0%	14.3%	41.0%	41.0%	14.3%	30.5%	30.5%	14.3%	30.5%	30.5%
Yellow Time (s)	4.3	4.7	4.7	4.3	4.7	4.7	3.0	3.1	3.1	3.0	3.1	3.1
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	7.3	7.7	7.7	7.3	7.7	7.7	6.0	6.1	6.1	6.0	6.1	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 85
Natural Cycle: 75
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: 13th Street SE & U.S. Highway 2/52



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	90	439	116	178	472	124	220	262	146	117	170	58
Future Volume (veh/h)	90	439	116	178	472	124	220	262	146	117	170	58
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1945	1737	1945	1945	1752	1930	1796	1870	1945	1826	1870	1776
Adj Flow Rate, veh/h	111	542	143	220	583	153	272	323	180	144	210	72
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Percent Heavy Veh, %	2	11	2	2	10	3	7	2	2	5	2	13
Cap, veh/h	300	751	375	347	884	434	389	406	358	298	346	279
Arrive On Green	0.07	0.23	0.23	0.10	0.27	0.27	0.12	0.22	0.22	0.09	0.19	0.19
Sat Flow, veh/h	1853	3300	1648	1853	3328	1635	1711	1870	1648	1739	1870	1505
Grp Volume(v), veh/h	111	542	143	220	583	153	272	323	180	144	210	72
Grp Sat Flow(s),veh/h/ln	1853	1650	1648	1853	1664	1635	1711	1870	1648	1739	1870	1505
Q Serve(g_s), s	3.4	11.3	5.5	6.7	11.6	5.7	9.0	12.2	7.2	4.9	7.7	3.1
Cycle Q Clear(g_c), s	3.4	11.3	5.5	6.7	11.6	5.7	9.0	12.2	7.2	4.9	7.7	3.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	300	751	375	347	884	434	389	406	358	298	346	279
V/C Ratio(X)	0.37	0.72	0.38	0.63	0.66	0.35	0.70	0.80	0.50	0.48	0.61	0.26
Avail Cap(c_a), veh/h	370	1562	780	347	1575	774	389	649	572	353	649	523
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	20.4	26.6	24.4	20.1	24.4	22.2	22.5	27.6	25.7	22.2	27.9	26.0
Incr Delay (d2), s/veh	0.8	1.3	0.6	3.7	0.8	0.5	5.4	3.6	1.1	1.2	1.7	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.4	7.4	3.6	5.2	7.5	3.6	7.7	9.5	4.7	3.6	6.3	1.8
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	21.2	27.9	25.0	23.9	25.2	22.7	27.9	31.2	26.7	23.4	29.6	26.5
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		796			956			775			426	
Approach Delay, s/veh		26.5			24.5			29.0			27.0	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	22.3	15.0	24.7	15.0	19.9	12.2	27.5
Change Period (Y+Rc), s	6.0	6.1	7.3	7.7	6.0	6.1	7.3	7.7
Max Green Setting (Gmax), s	9.0	25.9	7.7	35.3	9.0	25.9	7.7	35.3
Max Q Clear Time (g_c+I1), s	6.9	14.2	8.7	13.3	11.0	9.7	5.4	13.6
Green Ext Time (p_c), s	0.1	2.0	0.0	3.7	0.0	1.2	0.0	4.0

Intersection Summary	
HCM 6th Ctrl Delay	26.6
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	11.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	166	5	6	13	5	35	12	427	12	26	249	60
Future Vol, veh/h	166	5	6	13	5	35	12	427	12	26	249	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	2	2	8	2	21	2	2	18	10	2	2
Mvmt Flow	180	5	7	14	5	38	13	464	13	28	271	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	878	863	304	863	889	471	336	0	0	477	0	0
Stage 1	360	360	-	497	497	-	-	-	-	-	-	-
Stage 2	518	503	-	366	392	-	-	-	-	-	-	-
Critical Hdwy	7.15	6.52	6.22	7.18	6.52	6.41	4.12	-	-	4.2	-	-
Critical Hdwy Stg 1	6.15	5.52	-	6.18	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.15	5.52	-	6.18	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.545	4.018	3.318	3.572	4.018	3.489	2.218	-	-	2.29	-	-
Pot Cap-1 Maneuver	265	292	736	268	282	556	1223	-	-	1045	-	-
Stage 1	652	626	-	544	545	-	-	-	-	-	-	-
Stage 2	535	541	-	641	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	236	281	736	254	271	556	1223	-	-	1045	-	-
Mov Cap-2 Maneuver	236	281	-	254	271	-	-	-	-	-	-	-
Stage 1	645	609	-	538	539	-	-	-	-	-	-	-
Stage 2	488	535	-	613	590	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	59.4	15.5	0.2	0.7
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1223	-	-	243	400	1045	-	-
HCM Lane V/C Ratio	0.011	-	-	0.792	0.144	0.027	-	-
HCM Control Delay (s)	8	-	-	59.4	15.5	8.5	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	5.9	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	27	41	73	4	136	23
Future Vol, veh/h	27	41	73	4	136	23
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	29	45	79	4	148	25

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	83	0	-	0	184	81
Stage 1	-	-	-	-	81	-
Stage 2	-	-	-	-	103	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1514	-	-	-	805	979
Stage 1	-	-	-	-	942	-
Stage 2	-	-	-	-	921	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1514	-	-	-	789	979
Mov Cap-2 Maneuver	-	-	-	-	789	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	921	-

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1514	-	-	-	812
HCM Lane V/C Ratio	0.019	-	-	-	0.213
HCM Control Delay (s)	7.4	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		⋔	
Traffic Vol, veh/h	0	58	86	0	12	1
Future Vol, veh/h	0	58	86	0	12	1
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	100	2
Mvmt Flow	0	63	93	0	13	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	156	93
Stage 1	-	-	-	-	93	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	-	-	-	-	7.4	6.22
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	-	-	4.4	3.318
Pot Cap-1 Maneuver	0	-	-	0	652	964
Stage 1	0	-	-	0	734	-
Stage 2	0	-	-	0	760	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	652	964
Mov Cap-2 Maneuver	-	-	-	-	652	-
Stage 1	-	-	-	-	734	-
Stage 2	-	-	-	-	760	-

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

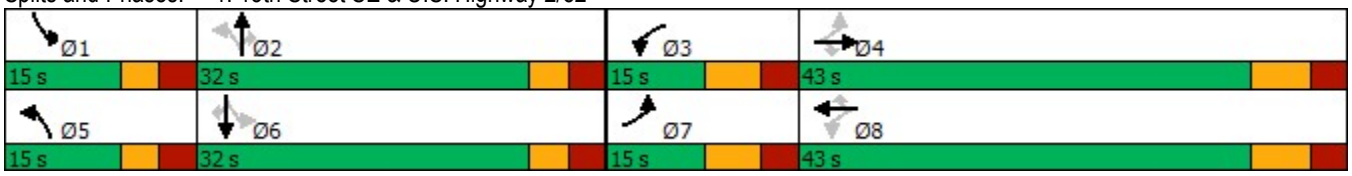
Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	669
HCM Lane V/C Ratio	-	-	0.021
HCM Control Delay (s)	-	-	10.5
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	94	539	137	189	579	72	196	175	179	178	277	78
Future Volume (vph)	94	539	137	189	579	72	196	175	179	178	277	78
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width (ft)	14	12	13	13	12	13	12	12	13	12	12	13
Storage Length (ft)	550		540	540		525	200		150	200		115
Storage Lanes	1		1	1		1	1		0	1		1
Taper Length (ft)	25			25			25			25		
Right Turn on Red			Yes			Yes			Yes			Yes
Link Speed (mph)		50			50			30			30	
Link Distance (ft)		1942			1101			283			1194	
Travel Time (s)		26.5			15.0			6.4			27.1	
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Heavy Vehicles (%)	7%	10%	4%	2%	8%	3%	4%	3%	3%	2%	2%	2%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm
Protected Phases	7	4		3	8		5	2		1	6	
Permitted Phases	4		4	8		8	2		2	6		6
Detector Phase	7	4	4	3	8	8	5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0	5.0	7.0	7.0
Minimum Split (s)	15.0	22.7	22.7	15.0	22.7	22.7	15.0	16.1	16.1	15.0	16.1	16.1
Total Split (s)	15.0	43.0	43.0	15.0	43.0	43.0	15.0	32.0	32.0	15.0	32.0	32.0
Total Split (%)	14.3%	41.0%	41.0%	14.3%	41.0%	41.0%	14.3%	30.5%	30.5%	14.3%	30.5%	30.5%
Yellow Time (s)	4.3	4.7	4.7	4.3	4.7	4.7	3.0	3.1	3.1	3.0	3.1	3.1
All-Red Time (s)	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
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	0.0
Total Lost Time (s)	7.3	7.7	7.7	7.3	7.7	7.7	6.0	6.1	6.1	6.0	6.1	6.1
Lead/Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?												
Recall Mode	None	Min	Min	None	Min	Min	None	None	None	None	None	None

Intersection Summary

Area Type: Other
Cycle Length: 105
Actuated Cycle Length: 86.9
Natural Cycle: 80
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: 13th Street SE & U.S. Highway 2/52



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	539	137	189	579	72	196	175	179	178	277	78
Future Volume (veh/h)	94	539	137	189	579	72	196	175	179	178	277	78
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1868	1752	1914	1945	1781	1930	1841	1856	1930	1870	1870	1945
Adj Flow Rate, veh/h	106	606	154	212	651	81	220	197	201	200	311	88
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	7	10	4	2	8	3	4	3	3	2	2	2
Cap, veh/h	279	813	396	326	942	455	334	384	339	399	382	337
Arrive On Green	0.06	0.24	0.24	0.10	0.28	0.28	0.11	0.21	0.21	0.11	0.20	0.20
Sat Flow, veh/h	1779	3328	1622	1853	3385	1635	1753	1856	1635	1781	1870	1648
Grp Volume(v), veh/h	106	606	154	212	651	81	220	197	201	200	311	88
Grp Sat Flow(s),veh/h/ln	1779	1664	1622	1853	1692	1635	1753	1856	1635	1781	1870	1648
Q Serve(g_s), s	3.5	13.4	6.3	6.8	13.6	3.0	7.8	7.5	8.8	6.9	12.6	3.6
Cycle Q Clear(g_c), s	3.5	13.4	6.3	6.8	13.6	3.0	7.8	7.5	8.8	6.9	12.6	3.6
Prop In Lane	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	279	813	396	326	942	455	334	384	339	399	382	337
V/C Ratio(X)	0.38	0.75	0.39	0.65	0.69	0.18	0.66	0.51	0.59	0.50	0.81	0.26
Avail Cap(c_a), veh/h	340	1480	721	326	1505	727	334	605	533	404	610	538
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	21.2	27.7	25.1	21.0	25.6	21.8	22.4	27.9	28.5	21.4	30.2	26.6
Incr Delay (d2), s/veh	0.8	1.4	0.6	4.5	0.9	0.2	4.7	1.1	1.7	1.0	4.5	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.5	8.6	4.1	5.4	8.7	1.9	6.3	6.0	5.9	5.1	9.9	2.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.0	29.1	25.7	25.6	26.5	21.9	27.2	29.0	30.1	22.4	34.7	27.0
LnGrp LOS	C	C	C	C	C	C	C	C	C	C	C	C
Approach Vol, veh/h		866			944			618			599	
Approach Delay, s/veh		27.6			25.9			28.7			29.4	
Approach LOS		C			C			C			C	

Timer - Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.8	22.5	15.0	27.1	15.0	22.3	12.3	29.8
Change Period (Y+Rc), s	6.0	6.1	7.3	7.7	6.0	6.1	7.3	7.7
Max Green Setting (Gmax), s	9.0	25.9	7.7	35.3	9.0	25.9	7.7	35.3
Max Q Clear Time (g_c+I1), s	8.9	10.8	8.8	15.4	9.8	14.6	5.5	15.6
Green Ext Time (p_c), s	0.0	1.6	0.0	4.0	0.0	1.6	0.0	4.1

Intersection Summary	
HCM 6th Ctrl Delay	27.7
HCM 6th LOS	C

Intersection	
Int Delay, s/veh	21

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	214	2	10	32	6	68	7	268	12	11	402	65
Future Vol, veh/h	214	2	10	32	6	68	7	268	12	11	402	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	3	2	11	2	2	2	10	2	2
Mvmt Flow	233	2	11	35	7	74	8	291	13	12	437	71

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	851	817	473	817	846	298	508	0	0	304	0	0
Stage 1	497	497	-	314	314	-	-	-	-	-	-	-
Stage 2	354	320	-	503	532	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.13	6.52	6.31	4.12	-	-	4.2	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.13	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.13	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.527	4.018	3.399	2.218	-	-	2.29	-	-
Pot Cap-1 Maneuver	280	311	591	294	299	721	1057	-	-	1213	-	-
Stage 1	555	545	-	695	656	-	-	-	-	-	-	-
Stage 2	663	652	-	549	526	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	244	305	591	283	294	721	1057	-	-	1213	-	-
Mov Cap-2 Maneuver	244	305	-	283	294	-	-	-	-	-	-	-
Stage 1	551	540	-	689	651	-	-	-	-	-	-	-
Stage 2	585	647	-	531	521	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	94.2	15.3	0.2	0.2
HCM LOS	F	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1057	-	-	251	465	1213	-	-
HCM Lane V/C Ratio	0.007	-	-	0.979	0.248	0.01	-	-
HCM Control Delay (s)	8.4	-	-	94.2	15.3	8	-	-
HCM Lane LOS	A	-	-	F	C	A	-	-
HCM 95th %tile Q(veh)	0	-	-	9.3	1	0	-	-

Intersection	
Int Delay, s/veh	5.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	25	94	74	4	132	22
Future Vol, veh/h	25	94	74	4	132	22
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	27	102	80	4	143	24

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	84	0	-	0	238	82
Stage 1	-	-	-	-	82	-
Stage 2	-	-	-	-	156	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1513	-	-	-	750	978
Stage 1	-	-	-	-	941	-
Stage 2	-	-	-	-	872	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1513	-	-	-	736	978
Mov Cap-2 Maneuver	-	-	-	-	736	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	872	-

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1513	-	-	-	763
HCM Lane V/C Ratio	0.018	-	-	-	0.219
HCM Control Delay (s)	7.4	0	-	-	11
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.8

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑	↑		⋔	
Traffic Vol, veh/h	0	110	87	0	11	1
Future Vol, veh/h	0	110	87	0	11	1
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	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	100	2
Mvmt Flow	0	120	95	0	12	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	215	95
Stage 1	-	-	-	-	95	-
Stage 2	-	-	-	-	120	-
Critical Hdwy	-	-	-	-	7.4	6.22
Critical Hdwy Stg 1	-	-	-	-	6.4	-
Critical Hdwy Stg 2	-	-	-	-	6.4	-
Follow-up Hdwy	-	-	-	-	4.4	3.318
Pot Cap-1 Maneuver	0	-	-	0	598	962
Stage 1	0	-	-	0	732	-
Stage 2	0	-	-	0	711	-
Platoon blocked, %		-	-			
Mov Cap-1 Maneuver	-	-	-	-	598	962
Mov Cap-2 Maneuver	-	-	-	-	598	-
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	711	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	11
HCM LOS			B

Minor Lane/Major Mvmt	EBT	WBT	SBLn1
Capacity (veh/h)	-	-	617
HCM Lane V/C Ratio	-	-	0.021
HCM Control Delay (s)	-	-	11
HCM Lane LOS	-	-	B
HCM 95th %tile Q(veh)	-	-	0.1

Intersection	
Int Delay, s/veh	5.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	166	5	6	13	5	35	12	427	12	26	249	60
Future Vol, veh/h	166	5	6	13	5	35	12	427	12	26	249	60
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	110	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	5	2	2	8	2	21	2	2	18	10	2	2
Mvmt Flow	180	5	7	14	5	38	13	464	13	28	271	65

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	621	863	304	863	889	239	336	0	0	477	0	0
Stage 1	360	360	-	497	497	-	-	-	-	-	-	-
Stage 2	261	503	-	366	392	-	-	-	-	-	-	-
Critical Hdwy	7.375	6.53	6.23	7.42	6.53	7.215	4.13	-	-	4.25	-	-
Critical Hdwy Stg 1	6.175	5.53	-	6.62	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.575	5.53	-	6.22	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.5475	4.019	3.319	3.576	4.019	3.4995	2.219	-	-	2.295	-	-
Pot Cap-1 Maneuver	380	292	735	253	282	714	1222	-	-	1036	-	-
Stage 1	650	626	-	511	544	-	-	-	-	-	-	-
Stage 2	715	541	-	638	606	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	344	281	735	240	271	714	1222	-	-	1036	-	-
Mov Cap-2 Maneuver	344	281	-	240	271	-	-	-	-	-	-	-
Stage 1	643	609	-	505	538	-	-	-	-	-	-	-
Stage 2	663	535	-	610	590	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	27.4	14.5	0.2	0.7
HCM LOS	D	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1222	-	-	348	436	1036	-	-
HCM Lane V/C Ratio	0.011	-	-	0.553	0.132	0.027	-	-
HCM Control Delay (s)	8	-	-	27.4	14.5	8.6	-	-
HCM Lane LOS	A	-	-	D	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	3.2	0.5	0.1	-	-

Intersection	
Int Delay, s/veh	10.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	214	2	10	32	6	68	7	268	12	11	402	65
Future Vol, veh/h	214	2	10	32	6	68	7	268	12	11	402	65
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	110	100	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	3	2	11	2	2	2	10	2	2
Mvmt Flow	233	2	11	35	7	74	8	291	13	12	437	71

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	662	817	473	817	846	152	508	0	0	304	0	0
Stage 1	497	497	-	314	314	-	-	-	-	-	-	-
Stage 2	165	320	-	503	532	-	-	-	-	-	-	-
Critical Hdwy	7.33	6.53	6.23	7.345	6.53	7.065	4.13	-	-	4.25	-	-
Critical Hdwy Stg 1	6.13	5.53	-	6.545	5.53	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.53	5.53	-	6.145	5.53	-	-	-	-	-	-	-
Follow-up Hdwy	3.519	4.019	3.319	3.5285	4.019	3.4045	2.219	-	-	2.295	-	-
Pot Cap-1 Maneuver	361	310	590	280	298	842	1055	-	-	1205	-	-
Stage 1	554	544	-	670	656	-	-	-	-	-	-	-
Stage 2	821	652	-	548	525	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	319	304	590	270	293	842	1055	-	-	1205	-	-
Mov Cap-2 Maneuver	319	304	-	270	293	-	-	-	-	-	-	-
Stage 1	550	539	-	665	651	-	-	-	-	-	-	-
Stage 2	736	647	-	530	520	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	43.5	14.8	0.2	0.2
HCM LOS	E	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1055	-	-	325	482	1205	-	-
HCM Lane V/C Ratio	0.007	-	-	0.756	0.239	0.01	-	-
HCM Control Delay (s)	8.4	-	-	43.5	14.8	8	-	-
HCM Lane LOS	A	-	-	E	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	5.8	0.9	0	-	-

Colliers Engineering & Design

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Civil/Site • Traffic/Transportation • Governmental • Survey/Geospatial
Infrastructure • Geotechnical/Environmental • Telecommunications • Utilities/Energy

Exhibit 9

City of Minot

Community Development

Development Review Team Meeting Form **Date:** 5-29-2024

The intent of the Development Review Team meeting is to provide information in regards to city code, policies, and procedures. This meeting does not constitute approvals of a site plan, access points, street sections, variances, or waivers of policy, etc. Additional requirements may become apparent upon review of an application.

Project Name: Holiday Stationstore

Site Address: Hwy. 2/52 & 13th St. SE | Parcel ID or Legal:

☐ Applicant ☐ Architect ☒ Engineer ☐ Other:

Name: Jaime Salinas

Email Address: jaime.salinas@collierseng.com Phone #: 210-979-8444

☒ Applicant ☐ Architect ☐ Engineer ☐ Other:

Name: Jim Goeppner

Email Address: jim.goeppner@circlek.com Phone #: 952-830-8080

☐ Applicant ☐ Architect ☐ Engineer ☒ Other:

Name: Jill Duemeland

Email Address: jill@duemeland.com Phone #: 701-221-9033

☐ Applicant ☐ Architect ☒ Engineer ☐ Other:

Name: Nick Parker

Email Address: nick.parker@collierseng.com Phone #: 210-979-8444

City/Park Staff Present:

☑ Lance M. ☑ Brian B. ☐ Kelli K ☐ Luke T. ☑ Emily H. ☑ Robby B. ☑ Doug D. ☐ Darren M.

☐ Dan F. ☐ Jason S. ☑ Gage D. ☐ Elly D. ☐ Stephen J. ☑ Mark ☐ ☐

City Alderman Planning Commissioner

Project Description:

Contruct a gas station and truck stop on a vacant parcel.

PLANNING DEPARTMENT ☐**NO REQUIREMENTS**

Type of Application: (check all that apply)

☐ Annexation ☐ Rezone ☒ Conditional Use ☐ Planned Development ☐ Preliminary Plat ☐ Variance
☐ Ordinance Amendment ☐ Plat/Street Vacation ☐ Comp. Plan Map Amend. ☒ Building Permit
☐ Other:

City Limits:	Comp. Plan:	Zoning:	Surrounding Zoning:
☒ Yes ☐ No	Current: Urban Residential Proposed: Same	Current: Gen. Commercial Proposed: Same	North: C2 South: C2 East: C2 West: C2

General Site Information: New Existing Percentage Increase

# of existing buildings: 0 Total sq. ft.: Acreage: 6.83 Buildings to be torn down: ☐ Yes ☒ No
New construction: ☒ Yes ☐ No Total new 5,650 Addition: ☐ Yes ☒ No Total Addition sq. ft.:

Parking, Section 6.1-2 F. 7.:
Parking required: ☒ Yes ☐ No Minimum # of spaces required: 5 spavces per 1,000 SF
Other Parking Comments: plus spaces required for accessory uses (restaurants, etc).

Landscape Buffers, Section 7.1-1 D. 1-2: ☐N/A

Street #1: 21st Ave. SE Street #2: 13th St. SE
Buffers between land uses: ☐ Yes ☒ No Width: Parking lot landscaping required: ☒ Yes ☐ No

Signage: ☐N/A

Type signage: ☐ Pole ☐ Wall ☐ Monument ☐ Other: _____ Sign permit required: ☒ Yes ☐ No
Maximum sign square footage: Maximum height:

Design Standards: (choose three of seven): ☐N/A

☐ Contrasting colors ☐ Horizontal & vertical elements ☐ Accent materials ☐ Enhanced front entry
☐ 25% window coverage facing street ☐ Irregular building shape ☐ Other architectural features:

Exterior Building Finishes: (choose two of nine):

☐ Brick ☐ Natural stone ☐ Split face CMU ☐ Pre-case concrete ☐ Durable wood ☐ Architectural metal
☐ Glass curtain wall panels ☐ Stucco or EFIS ☐ Other material accepted by Director:_____

Setbacks:	Maximum Building Height:	Minimum Lot Width:	Maximum Density:	Maximum Lot Coverage:	Overlay Zone:
Front: 40' (21st Ave. SE) Rear: 40' (Hwy. 2) Side: 40' (13th St. SE) Street Side: 0' (West)	60'	100'	N/A	None	None

Additional Information:
Master Sign Plan will be required.
Truck stop will require a new conditional use permit.

SECTION 3.1-9. FENCE REGULATIONS
Fence construction in all Zoning Districts is subject to the following provisions:
C. Commercial and Industrial District Fencing Standards

1. Fences in commercial and industrial districts shall not exceed eight feet (8′) in height unless an exception is granted in writing by the Planning Division.
2. Fence materials allowed in commercial districts shall include maintenance free, wood, PVC vinyl, stone, masonry, black powder-coated chain link, or related materials. Traditional chain link (non-black powder-coated) may be erected in limited circumstances including schools, parks, or other public or semi-public facilities zoned " P" Public District following commercial standards or as noted as a condition of approval for conditionally permitted uses within commercial districts
(e.g. Commericial Self Storage).
3. Privacy slats are not allowed in commercial zones except as permitted for trash and/or recycling enclosure gates per Article 7: Landscaping.

SECTION 4.1-6. COMMERCIAL USES
D. Convenience Stores/Fuel Station
1. C1, C2, M1, and I1 Districts:
a. Motor fuel facilities shall be installed in accordance with State and City standards.
b. Filling station pumps and pump islands shall not be located within twenty feet (20') of any property line nor within one hundred feet (100') from the boundary of any residential district.
c. Adequate space shall be provided to access gas pumps and to allow maneuverability around the pumps.
d. Underground fuel storage tanks shall be positioned to allow adequate access by motor fuel transports and unloading operations which do not conflict with circulation, access, and other
activities on the site.
e. Filling station canopies shall not extend within fifteen feet (15') of any property line.
f. All canopy lighting shall be recessed or fully shielded.
g. All access drives shall be subject to approval by the Engineering Department.

E. Truck Stops
1. All Districts Where Permitted:
a. Motor fuel facilities shall be installed in accordance with State and City standards.
b. Filling station pumps and pump islands shall not be located within forty feet (40') of any property line nor within one hundred feet (150') from the boundary of any residential district.
c. Adequate space shall be provided to access gas pumps and to allow maneuverability around the pumps.
d. Underground fuel storage tanks shall be positioned to allow adequate access by motor fuel transports and unloading operations which do not conflict with circulation, access, and other activities on the site.
e. Filling station canopies shall not extend within thirty feet (30') of any property line.
g. All access drives shall be subject to approval by the Engineering Department.

SECTION 4.2-6. COMMERCIAL/OFFICE PARK (C1, C2, OP, AND P DISTRICTS)
A. Design Elements
B. Accent Materials
C. Exterior Building Finishes
D. Building and Roofing Materials
E. Utilities
F. External Loading and Service Areas

SECTION 6.1-5. PARKING LOT DESIGN STANDARDS
A. Design
B. Curbing
C. Conventional Paving

SECTION 7.1-3. MINIMUM LANDSCAPING REQUIRED
A. Street Landscaping
1. Depth of Landscaping.
2. Street Trees
4. Exemptions
B.Parking Lot Landscaping
1. Interior Landscaping
2. Perimeter plantings
C.Foundation Plantings

SECTION 7.1-4. SCREENING REQUIREMENTS

B.Trash Handling and Recycling Screening Requirements

PARK DISTRICT ☐**NO REQUIREMENTS**

Park Land Dedication: ☐N/A

% of area to be dedicated as public park: Minimum acreage:

Private/HOA owned land set aside for open space: ☐ Yes ☐ No If yes, how much:

Type of dedication: ☐ Deed ☐ Easement ☐ Other: _____

Amenities: ☐N/A

Amenities that will be provided:

☐ Playground equipment	☐ Athletic fields	☐ Canopy/Gazebo
☐ Swimming pool	☐ Pond	☐ Lighting
☐ Benches	☐ Picnic tables	☐ Bathrooms
☐ Public parking	☐ Fencing	☐ Storage buildings
☐ _____	☐ _____	☐ _____

Park Impact Fees:

Will this project require a payment of park impact fees to the park district: ☒ Yes ☐ No

If yes, how much (estimated amount): 0.001% of overall project cost.

Pathways:

Will the applicant need to construct a shared use path: ☐ Yes ☐ No

General location: Width: Length:

Pathway surface: ☐ Asphalt ☐ Concrete ☐ Other: _____

Landscaping Requirements:

☐ Lawn	☐ Trees	☐ Shrubs
☐ Conifers	☐ Rock	☐ Bark

Will the applicant need to submit a landscaping plan prepared by a state of North Dakota registered landscape architect: ☐ Yes ☐ No

Additional Information:

INSPECTIONS DEPARTMENT ☐**NO REQUIREMENTS**

Application(s) Required:

☒ New construction/addition ☐ Change of use/occupancy ☒ Electrical permit
☒ Plumbing permit ☒ Mechanical permit ☒ Sign permit
☐ Demolition permit ☐ Fence permit ☐ Other:

ADA Requirements: ☐N/A

☒ Entrances ☒ Ramps ☒ Bathrooms
☒ Doorways ☒ Door hardware ☒ Accessible route to public way

Building Separation Requirements:

Will the building need to be separated: ☐ Yes ☐ No
Plans prepared by State of North Dakota licensed architect: ☒ Yes ☐ No

Will the proposed use require: ☐ Underground grease interceptor ☐ Under-the-sink grease trap ☐N/A

Plumbing Information:

Water pipe sizing: > 1" Drain sizing: > 4" Treated building drainage: ☐ Yes ☒ No

When these items are field reviewed, typically the job is already installed and corrections may involve stopping the project from cover and possible removal of the pipe and/or fixtures and days in waiting to hear back from the design professional.

Additional Information:

Building Permit Process:

1. Complete the appropriate Inspections Department commercial plans/buildings application.
2. Submit completed application to the Inspections Department with two (2) **COMPLETED** set of 24" by 36" plans.
3. The two sets of plans shall have the wet stamp of the architects and/or engineers that prepared the plans. A complete package shall include but not be limited to architectural, structural, plumbing, mechanical and electrical plans. Please include additional documentation such as structural calculations, specification books and energy compliance forms to help speed up the plan review process. The complete package shall also include all storm water calculations and detailed civil plans as prepared and stamped by a licensed civil engineer.
4. Application is processed through the Inspections Department and distributed and distributed to the Planning, Engineering, and Fire Departments for review and approval.
5. Once the Inspections Department receives the approved application from Planning, Engineering, and Fire, it performs its review and issues a plan review letter that typically asks for revisions before a permit may be issued.
6. Once the revisions have been re-submitted to the Inspections Department, as a complete set in all four (4) sets, and the revisions have been reviewed and approved, the Inspections Department will issue a permit.
7. Applicant will receive a phone call letting him/her know the permit is ready to pick up, along with the amount of fees, which are payable at the time of picking up the permit.

FIRE DEPARTMENT ☐**NO REQUIREMENTS**

# of existing fire hydrants: 1	Need upgrade: ☐ Yes ☒ No	# of new fire hydrants: 0

Sprinkler system required: ☐ Yes ☒ No ☐ Existing Type:

Fire monitoring system required: ☒ Yes ☐ No ☐ Existing Type:

Fire alarm system required: ☐ Yes ☒ No ☐ Existing Type:

Fire extinguishers must be located within a 75-foot travel distance of each other and must be present during construction.

Addressing: ☐N/A

Shall be visible from the street. Numbers shall be not less than 4 inches high with a minimum stroke width of 1/2 inches using contrasting colors.

Knox box required if building is equipped with a sprinkler system and/or fire alarm.

Islands, medians, traffic calming, roundabouts: ☐ Yes ☐ No ☒ N/A Turnaround required: ☐ Yes ☐ No ☒ N/A

Fire lanes required: ☐ Yes ☒ No Fire lane width:

Hazardous or dangerous processes: ☐ Yes ☒ No ☐N/A

Describe:

Hazardous Materials:

On-site: ☒ Yes ☐ No Stored: ☒ Yes ☐ No Used: ☐ Yes ☐ No Waste: ☐ Yes ☐ No

Type: Combustable and flammable liquids Quantity:

Additional Information:

Ansul system required for any grease producing appliances.

ENGINEERING AND PUBLIC WORKS DEPARTMENTS ☐**NO REQUIREMENTS**

Right-of-Way Dedications: ☒N/A

Street #1: ROW required? ☐ Yes ☐ No Feet from centerline:

Street #2: ROW required? ☐ Yes ☐ No Feet from centerline:

Street #3: ROW required? ☐ Yes ☐ No Feet from centerline:

Street #4: ROW required? ☐ Yes ☐ No Feet from centerline:

No encroachments are allowed within the public right-of-way without an approved Encroachment Permit.

Driveways:

# of existing: 1 Locations: 13th St SE

# of proposed: 4 Locations: All on 21st Ave SE

Developer's Agreement:

☒ Yes ☐ No

Addressing: Change in address: ☐ Yes ☐ No New address: ☒ Yes ☐ No

Street Improvements: ☐N/A

Standard residential street section: ☐ Yes ☐ No Non-standard street section: ☒ Yes ☐ No

Sidewalk installation: ☒ Yes ☐ No Lighting: ☐ Yes ☐ No Shared use path installation: ☒ Yes ☐ No

Storm Water Requirements: ☒ Yes, per City Ordinance ☐ Not required ☐ TBD

Existing utilities running through property: ☐ Yes ☒ No
Encroachments in existing or right-of-way easements: ☐ Yes ☒ No

Closest sewer main: 13th St SE Size of sewer main: 8"

Sewer main extension required: ☐ Yes ☒ No Size of required sewer main: 8"

Existing water service: ☐ Yes ☒ No New water service: ☒ Yes ☐ No Fire service: ☐ Yes ☒ No

Closest water main: 13th St and 21st Ave Size of water main: 12" and 8"

Water main extension required: ☐ Yes ☒ No Size of required water main: 8"

Connection Fees:	Traffic Impact Study:	Flood Plain:	Floodway:
☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☒ No	☐ Yes ☒ No

Additional Information:

-Developer agreement required for public improvements in the right of way
-Updates to traffic study required to reflect final agreed upon improvements of right turn lane on 13th St and driveways on 21st Ave SE. No Driveways on 13th St. Tech memo to engineering and NDDOT.
-Storm water management plan required per city ordinance
-Sewer connection fees of $4,440/acre required, -Site plan approval by engineering required.

DEVELOPMENT REVIEW TEAM INFORMATION FORM

1. Project Name: Holiday Stationstore - Hwy 2 & 13th SWC

2. Please list the following information for **ALL PERSONS** who will be in attendance:

NAME	EMAIL ADDRESS	PHONE NUMBER	RELATIONSHIP TO PROJECT
Jaime Salinas	jaime.salinas@collierseng.com	210-979-8444	Civil Engineer
Jim Goeppner	jim.goeppner@circlek.com		Owner
Jill Duemeland	jill@duemeland.com	701-221-9033	
John Coughlin	johncoughlin300@gmail.com		
Nick Parker	nick.parker@collierseng.com	210-979-8444	Civil Engineer
Nicholas Aiello	nicholas.aiello@collierseng.com	609-668-2566	Traffic Engineer
Amy Signor	amy.signor@collierseng.com	518-556-3632	Architect

3. Address and/or Property ID Number of the property: NWC of 13th St & 21sr Ave SE

4. Current use of the property: Vacant Lot

5. Proposed use of the property: Commercial

6. Are you platting a subdivision? ☒ Yes ☐ No If yes, how many lots? 1 How many total units? N/A

7. Are you adding or modifying any water, sewer, or storm sewer utilities? Service taps~ water, sewer, storm

8. Describe your proposed project.

The proposed project will include the construction of a new 5,650 sq. ft. convenience store with quick serve restaurant and a detached car wash. Seven (7) fueling islands for 14 passenger vehicles under a 180 ft. x 24 ft. A high speed diesel canopy along with a truck weighing "CAT Scale" and truck parking will be located behind (west) of the convenience store. Standard parking spaces and ADA parking spaces will be provided for the proposed development. In addition, access drive aisles, stormwater management control, utilities, landscaping will be designed and installed for the project. Access to the overall development will be from 21st Ave. SE.

9. Do you have any specific questions for us?

Stormwater Requirements
City Applications and Fees
Review Time Estimate
Site Access requirements

FOR NEW CONSTRUCTION:

10. What are you building? Convenience Store with detached Carwash, and High Speed Diesel spaces

    Total square feet: 5,650 sq.ft.
    # of stories: 1
    Basement: ☐ Yes ■ No

11. Will the new buildings(s) have a completed fire sprinkler system: ☐ Yes ■ No ☐ Unsure

12. Will the new building(s) be used to store any flammable or hazardous liquids or materials? ■ Yes ☐ No

FOR EXISTING BUILDINGS OR STRUCTURES:

13. Please list the following information for all stories and basements:

	BASEMENT	1st STORY	2nd STORY	3rd STORY AND ABOVE
CURRENT USE				
PROPOSED USE				
SQUARE FOOTAGE				

14. Will you be constructing any additions? ☐ Yes ☐ No ☐ Unsure

15. Will the building be used for storage of flammable or hazardous liquids or materials? ☐ Yes ☐ No

16. Does the site currently have an installed underground grease interceptor? ☐ Yes ☐ No ☐ Unsure

17. Is the building currently fire sprinkled? ☐ Yes ☐ No ☐ Unsure

18. Is the building currently fire monitored? ☐ Yes ☐ No ☐ Unsure

19. Existing number of bathrooms: ☐ None ☐ One ☐ Two ☐ Three ☐ Four ☐ Five or more

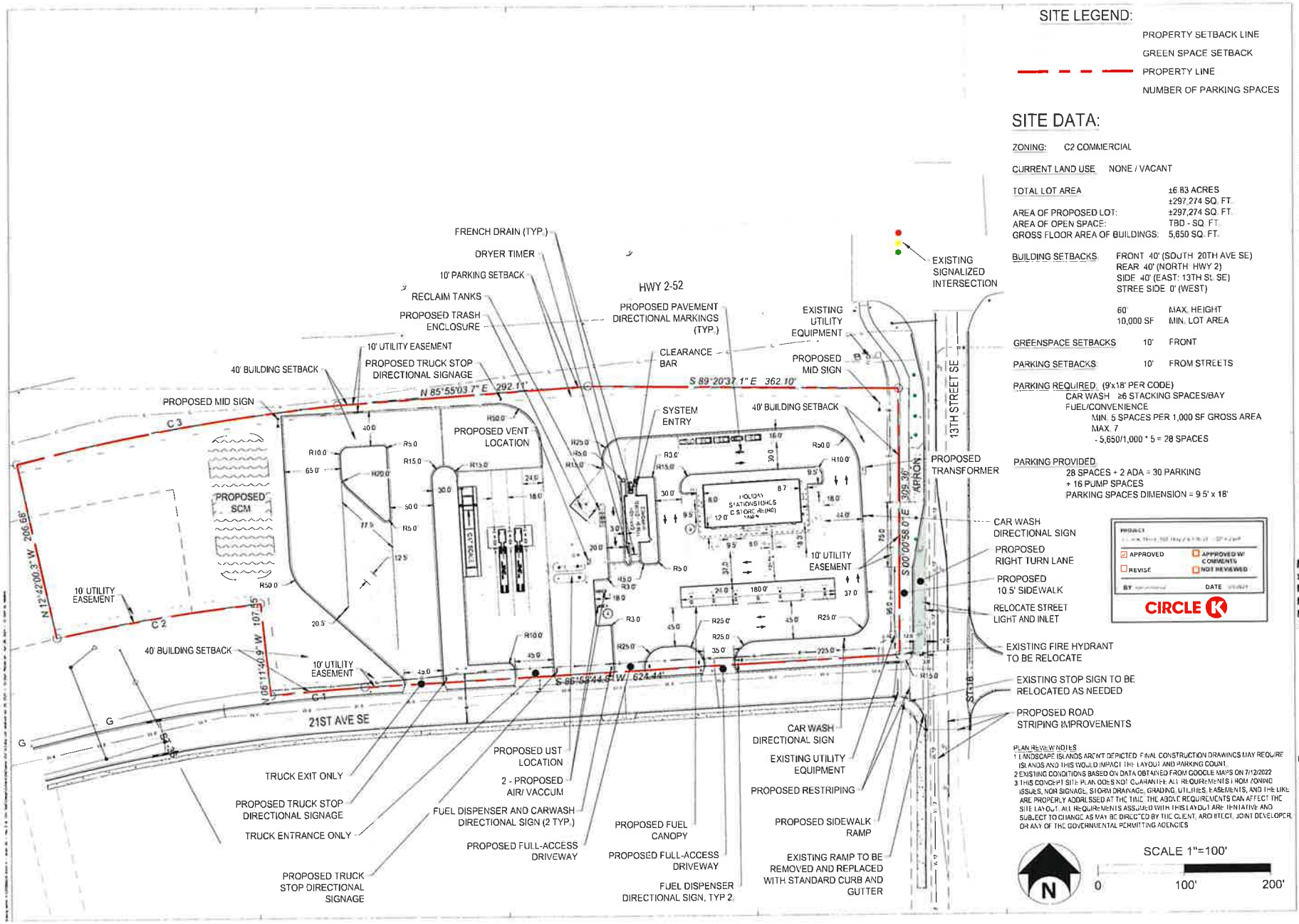
20. Are the bathrooms ADA compliant? ☐ Yes ☐ No ☐ Unsure

21. Is the main entrance ADA compliant: ☐ Yes ☐ No ☐ Unsure

22. How many parking spaces are currently available?

23. How many ADA parking spaces are currently available?

The City of Minot typically holds Development Review Team (DRT) meetings on Wednesdays at 10:00, 11:00 and 1:00. Please submit this form, a site plan, and any other pertinent information to the Planning Division at planner@minotnd.org at least three business days in advance to allow for staff preparation DRT meetings are scheduled on a first-come, first-serve basis. The information transmitted at the DRT meeting is based upon the completeness and accuracy of the information given on this form.



SITE LEGEND:

- PROPERTY SETBACK LINE
- GREEN SPACE SETBACK
- PROPERTY LINE
- NUMBER OF PARKING SPACES

SITE DATA:

ZONING: C2 COMMERCIAL

CURRENT LAND USE: NONE / VACANT

TOTAL LOT AREA	±6.83 ACRES ±297,274 SQ. FT.
AREA OF PROPOSED LOT:	±297,274 SQ. FT.
AREA OF OPEN SPACE:	TBD - SQ. FT.
GROSS FLOOR AREA OF BUILDINGS:	5,650 SQ. FT.

BUILDING SETBACKS: FRONT 40' (SOUTH 20TH AVE SE)
REAR 40' (NORTH HWY 2)
SIDE 40' (EAST: 13TH ST. SE)
STREE SIDE 0' (WEST)

60' MAX. HEIGHT
10,000 SF MIN. LOT AREA

GREENSPACE SETBACKS 10' FRONT

PARKING SETBACKS 10' FROM STREETS

PARKING REQUIRED. (9'x18' PER CODE)
CAR WASH ≥6 STACKING SPACES/BAY
FUEL/CONVENIENCE
MIN. 5 SPACES PER 1,000 SF GROSS AREA
MAX. 7
- 5,650/1,000 * 5 = 28 SPACES

PARKING PROVIDED
28 SPACES + 2 ADA = 30 PARKING
+ 16 PUMP SPACES
PARKING SPACES DIMENSION = 9.5' x 18'

PROJECT
☑ APPROVED ☐ APPROVED W/ COMMENTS
☐ REVISE ☐ NOT REVIEWED
BY DATE
CIRCLE K

PLAN REVIEW NOTES
1 LANDSCAPE ISLANDS ARE NOT DEPICTED. FINAL CONSTRUCTION DRAWINGS MAY REQUIRE ISLANDS AND THIS WOULD IMPACT THE LAYOUT AND PARKING COUNT.
2 EXISTING CONDITIONS BASED ON DATA OBTAINED FROM GOOGLE MAPS ON 7/12/2022
3 THIS CONCEPT SITE PLAN DOES NOT GUARANTEE ALL REQUIREMENTS FROM ZONING ISSUES, NOR SIGNAGE, STORM DRAINAGE, GRADING, UTILITIES, EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THE TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE SITE LAYOUT. ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE CLIENT, ARCHITECT, JOINT DEVELOPER OR ANY OF THE GOVERNMENTAL PERMITTING AGENCIES

SCALE 1"=100'
0 100' 200'

PROFESSIONAL SEAL

PROFESSIONAL IN CHARGE
J. SALINAS P.E.
PROJECT MANAGER
J. SALINAS P.E.
QUALITY CONTROL
J. SALINAS P.E.
DRAWN BY
R. SALDANA
DATE ISSUED
04/29/2024

PROJECT NAME
NTI MINOT ND
SWC 13th ST SE & HWY 2
MINOT,
ND 58702
NORTHERN TIER BU

HOLIDAY STATIONSTORES, INC.

PROJECT NUMBER
16414

SHEET TITLE
CONCEPTUAL SITE PLAN

SHEET NUMBER
CSP 6.2W

SITE LEGEND:

PROPERTY SETBACK LINE

GREEN SPACE SETBACK

PROPERTY LINE

NUMBER OF PARKING SPACES

SITE DATA:

ZONING C2 COMMERCIAL

CURRENT LAND USE NONE / VACANT

TOTAL LOT AREA	±6.83 ACRES ±297,274 SQ. FT.
AREA OF PROPOSED LOT	±297,274 SQ. FT.
AREA OF OPEN SPACE	TBD - SQ. FT.
GROSS FLOOR AREA OF BUILDINGS	5,650 SQ. FT.

BUILDING SETBACKS FRONT 40' (SOUTH 20TH AVE SE)
REAR 40' (NORTH: HWY 2)
SIDE 40' (EAST 13TH St. SE)
STREE SIDE: 0' (WEST)

60' MAX. HEIGHT
10,000 SF MIN. LOT AREA

GREENSPACE SETBACKS 10' FRONT

PARKING SETBACKS 10' FROM STREETS

PARKING REQUIRED (9'x18' PER CODE)
CAR WASH ≥6 STACKING SPACES/BAY
FUEL/CONVENIENCE
MIN. 5 SPACES PER 1,000 SF GROSS AREA
MAX. 7
- 5,650/1,000 * 5 = 28 SPACES

PARKING PROVIDED:
28 SPACES + 2 ADA = 30 PARKING
+ 16 PUMP SPACES
PARKING SPACES DIMENSION = 9.5' x 18'

TRUCK USED
HSD WB - 67 - OVERALL LENGTH = 73.6 FT
TRAILER LENGTH 53 FT
TRUCK PARKING 8

PLAN REVIEW NOTES
1 LANDSCAPE ISLANDS AREN'T DEPICTED FINAL CONSTRUCTION DRAWINGS MAY REQUIRE ISLANDS AND THIS WOULD IMPACT THE LAYOUT AND PARKING COUNT
2 EXISTING CONDITIONS BASED ON DATA OBTAINED FROM GOOGLE MAPS ON 7/12/2022
3 THIS CONCEPT SITE PLAN DOES NOT GUARANTEE ALL REQUIREMENTS FROM ZONING ISSUES, NON SIGNAGE, STORM DRAINAGE, GRADING, UTILITIES, EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THE TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE SITE LAYOUT. ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE CLIENT, ARCHITECT, JOINT DEVELOPER OR ANY OF THE GOVERNMENTAL PERMITTING AGENCIES

N

SCALE 1"=100'

0 100' 200'

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DATE REVISION

PROFESSIONAL SEAL

PROFESSIONAL IN CHARGE
J. SALINAS PE
PROJECT MANAGER
J. SALINAS PE
QUALITY CONTROL
J. SALINAS PE
DRAWN BY
R. SALDANA
DATE ISSUED
04/09/2024

PROJECT NAME

NTI MINOT ND
SWC 13th ST SE & HWY 2
MINOT,
ND 58702
NORTHERN TIER BU

HOLIDAY STATIONSTORES, INC.

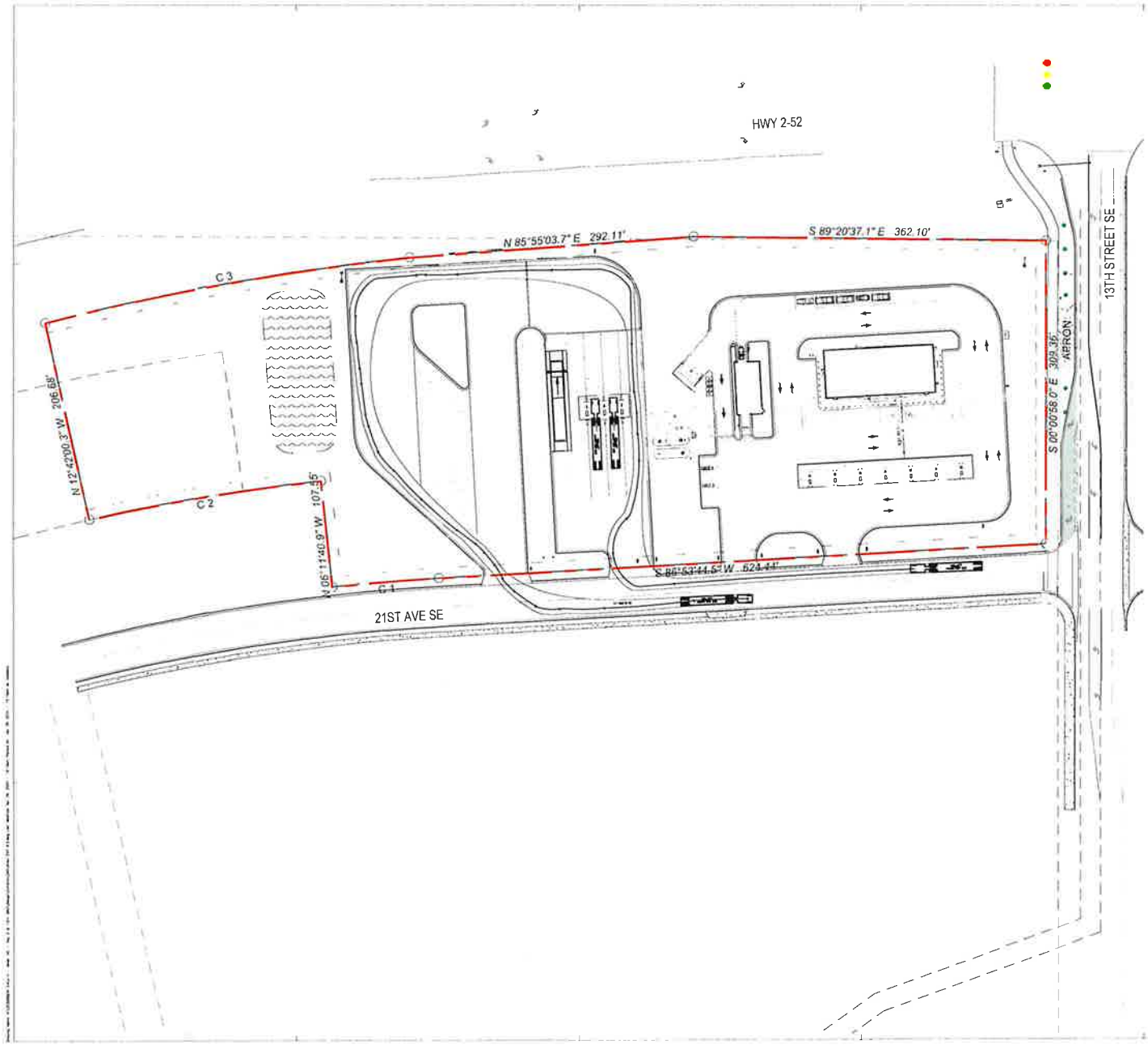
PROJECT NUMBER
16414

SHEET TITLE

CONCEPTUAL SITE PLAN

SHEET NUMBER

CSP 6.2A



SITE LEGEND:

PROPERTY SETBACK LINE

GREEN SPACE SETBACK

PROPERTY LINE

NUMBER OF PARKING SPACES

SITE DATA:

ZONING C2 COMMERCIAL

CURRENT LAND USE NONE / VACANT

TOTAL LOT AREA	±6.83 ACRES
	±297,274 SQ. FT.
AREA OF PROPOSED LOT	±297,274 SQ. FT.
AREA OF OPEN SPACE	TBD - SQ. FT.
GROSS FLOOR AREA OF BUILDINGS:	5,650 SQ. FT.

BUILDING SETBACKS: FRONT 40' (SOUTH 20TH AVE SE)
REAR 40' (NORTH: HWY 2)
SIDE 40' (EAST: 13TH St. SE)
STREE SIDE 0' (WEST)

60' MAX. HEIGHT
10,000 SF MIN. LOT AREA

GREENSPACE SETBACKS 10' FRONT

PARKING SETBACKS: 10' FROM STREETS

PARKING REQUIRED (9'x18' PER CODE)
CAR WASH: ≥6 STACKING SPACES/BAY
FUEL/CONVENIENCE
MIN. 5 SPACES PER 1,000 SF GROSS AREA
MAX. 7
- 5,650/1,000 * 5 = 28 SPACES

PARKING PROVIDED:
28 SPACES + 2 ADA = 30 PARKING
+ 16 PUMP SPACES
PARKING SPACES DIMENSION = 9.5' x 18'

TRUCK USED
HSD WB - 67 - OVERALL LENGTH = 73.6 FT
TRAILER LENGTH 53 FT
TRUCK PARKING 8

PLAN REVIEW NOTES
1 LANDSCAPE ISLANDS ARENT DEPICTED FINAL CONSTRUCTION DRAWINGS MAY REQUIRE ISLANDS AND THIS WOULD IMPACT THE LAYOUT AND PARKING COUNT
2 EXISTING CONDITIONS BASED ON DATA OBTAINED FROM GOOGLE MAPS ON 7/12/2022
3 THIS CONCEPT SITE PLAN DOES NOT GUARANTEE ALL REQUIREMENTS FROM ZONING ISSUES, NOR SIGNAGE, STORM DRAINAGE, GRADING, UTILITIES, EASEMENTS, AND THE LIKE ARE PROPERLY ADDRESSED AT THE TIME. THE ABOVE REQUIREMENTS CAN AFFECT THE SITE LAYOUT. ALL REQUIREMENTS ASSUMED WITH THIS LAYOUT ARE TENTATIVE AND SUBJECT TO CHANGE AS MAY BE DIRECTED BY THE CLIENT, ARCHITECT, JOINT DEVELOPER OR ANY OF THE GOVERNMENTAL PERMITTING AGENCIES

SCALE 1"=100'

0 100' 200'

N

PROFESSIONAL SEAL

PROFESSIONAL IN CHARGE

PROJECT MANAGER

QUALITY CONTROL

DRAWN BY

DATE ISSUED

PROJECT NAME

NTI MINOT ND
SWC 13th ST SE & HWY 2
MINOT,
ND 58702
NORTHERN TIER BU

HOLIDAY STATIONSTORES, INC

PROJECT NUMBER
16414

SHEET TITLE
CONCEPTUAL SITE PLAN

SHEET NUMBER
CSP 6.2T

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PROFESSIONAL IN CHARGE
J. SALINAS P.E.
PROJECT MANAGER
J. SALINAS P.E.
QUALITY CONTROL
J. SALINAS P.E.
DRAWN BY
R. SALDANA
DATE ISSUED
04/29/2024

PROJECT NAME

NTI MINOT ND
SWC 13th ST SE & HWY 2
MINOT,
ND 58702
NORTHERN TIER BU

HOLIDAY STATIONSTORES, INC.

PROJECT NUMBER
16414

SHEET TITLE

CONCEPTUAL SITE PLAN

SHEET NUMBER

CSP 6.2

City of Minot

Planning Commission
Staff Report

Application Date: 07/29/2024
Date of Staff Report: 08/16/2024
Date of Planning Commission Meeting: 09/04/2024

Staff Contact: Doug Diedrichsen, Principal Planner
Staff Recommendation: Approval

Case Number: 2024-07-04
Project Name: 16th Street Addition – Preliminary Plat
Current Legal Description: See the project description below.
Proposed Legal Description: 16th Street Addition

Present Address: See the project description below.

Entitlements Requested: Major Subdivision Preliminary Plat

Owners: CRE-Provender Partners, LLC.

Representative: Lance Meyer, City Engineer

Present Zone(s): "M1" Light Industrial District

Present Use(s): Vacant

Uses Allowed in Present Zone(s): See Table 2.2 for allowed and conditionally permitted uses within each district.

Present Future Land Use Map Designation: Light Industrial

Proposed Zone(s): No Change

Proposed Use(s): Stormwater retention ponds/open space

Uses Allowed in Proposed Zone(s): See Table 2.2 for allowed and conditionally permitted uses within each district.

Proposed Future Land Use Map Designation: No Change

PROJECT DESCRIPTION:

Public hearing request by Lance Meyer, City Engineer representing the CRE-Provender Partners, LLC. owner for a request of a preliminary plat on a property zoned "M1" Light Industrial. The legal description for the property is Outlot 38 less Lot A and Outlot 42, Section 26, Township 155 North, Range 83 West, Ward County, North Dakota.

The subject property address is 1625 Burdick EXPY W.

An aerial photo of the subject property can be found in **Exhibit 1.**

BACKGROUND INFORMATION:

The property owner seeks to subdivide a single lot to create a two (2) lot subdivision. Lot 1 will be 6.61 acres, Lot 2 will be 8.78 acres.

The preliminary plat and proposed site plan can be found in **Exhibit 2.**

The zoning and future land use map designation of the subject property and surrounding area is provided in **Exhibit 3**.

Site photos are provided in **Exhibit 4**.

STAFF ANALYSIS:

Subdivision Design Standards:

Section 10.2-7 C. of the Land Development Ordinance of the City of Minot (LDO) covers the process of application and submittal for a major subdivision preliminary plat. The applicant has submitted the necessary application documents required per Section 10.2-7 C. 2. and noticing has been conducted as required per 9.2-1 (B) and (C).

Section 10.2-7. D. requires that staff's report consider the nature of the proposed development as prescribed within Section 10.2-5 relating to whether or not it meets the technical requirements of Article 10, and if not, whether any such requirements should be waived. To that end, staff provides the following guidance based on the various requirements of Chapter 10.3 – Design Standards:

Section 10.3-1, requiring the proposed subdivision to be designed in accordance with the standards of Chapter 10.3, the Land Development Ordinance as a whole, and a list of various other plans and codes, is satisfied.

Section 10.3-2 prohibits the approval of the subdivision of land that is unsuitable for development due to a variety of reasons. Staff finds the proposed preliminary layout, which proposes a two (2) lots, with adequate terrain and access to be suitable for development. Staff finds Section 10.3-2 is satisfied.

Section 10.3-3. requires that a subdivision name not already be utilized elsewhere and spelled correctly. The name 16th Street Addition has not yet been taken and is spelled correctly. Section 10.3-3. is satisfied.

Section 10.3-4. A-F. relating to street names and numbering is not applicable, as there are no additional streets proposed via this subdivision.

The requirements of Section 10.3-11. relating to the design of the individual lots has been satisfied as those properties to be zoned meet the minimum lots size of 10,000 square feet in the "M1" Light Industrial District located inside city limits.

Section 10.3-12 relating to block design is not applicable.

The requirements of Section 10.3-13.A. relating to the dedication of right-of-way, easements, and street widths is satisfied due to the dedication of right-of-way along 16th St. SW and a ten (10') foot utility easement along all public roads.

Sections 10.3-14 relates to sidewalks, which are exempted within the "M1" Light Industrial District subdivision unless required by the City Engineering or their designee. Section 10.3-14 is satisfied.

Section 10.3-15 related to public utilities is satisfied. No additional public utilities are proposed as part of this subdivision.

Section 10.3-21 related to financial security for necessary infrastructure improvements is not applicable.

Section 10.3-22 is satisfied, as the applicant is required to follow all City permitting processes for any construction.

Comments:

Comment provided by City Engineering Department

1. There were no public comments at the time of writing this staff report.
2. The application was distributed to city departments and external public agencies within the City for review and the following comments were received.

FINDINGS OF FACT:

The Minot Planning Commission should accept the following findings of facts:

1) The applicants have submitted a complete application.

2) The property is zoned "M1" Light Industrial District on the Official Zoning Map and has a "Light Industrial"

designation on the Future Land Use Map of the 2040 Comprehensive Plan.

3) The applicant's request is consistent with the bulk requirements of Chapter 2.4 – "M1" Light Industrial District of the Land Development Ordinance of the City of Minot (LDO).

4) The applicable sections of Chapter 10.3 related to subdivision design are satisfied with the conditions of right-of-way dedications and easements be included on the final plat.

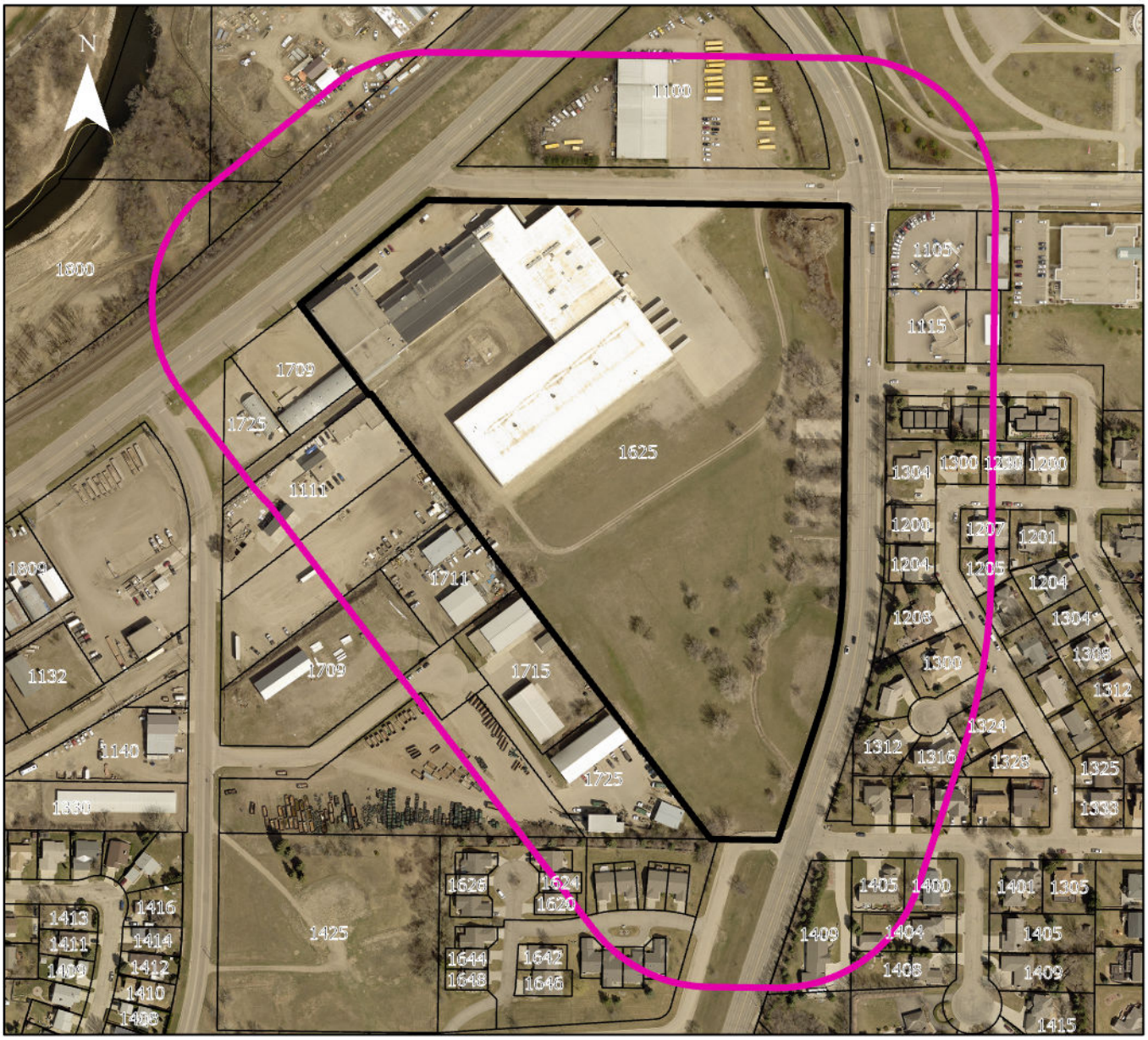
5) The Minot Planning Commission has the authority to recommend approval, with or without conditions, or recommend denial of the Major Subdivision Preliminary Plat. The public notice requirements were met, the hearing was legally noticed and posted, and the hearing was held and conducted under the requirements of North Dakota Century Code and Minot City ordinances.

RECOMMENDATION:

Staff recommends the Planning Commission adopt staff findings of fact and recommend City Council approve the Major Subdivision Preliminary Plat for 16th Street Addition with the condition that the right- of-way along 16th St. SW and required utilities easements be dedicated on the final plat.

City of Minot

EXHIBIT 1



0 230 460 920 Feet

Two Mile Boundary
City Limits
Case # 2024-07-04
Case # 2024-07-04 Notification Area

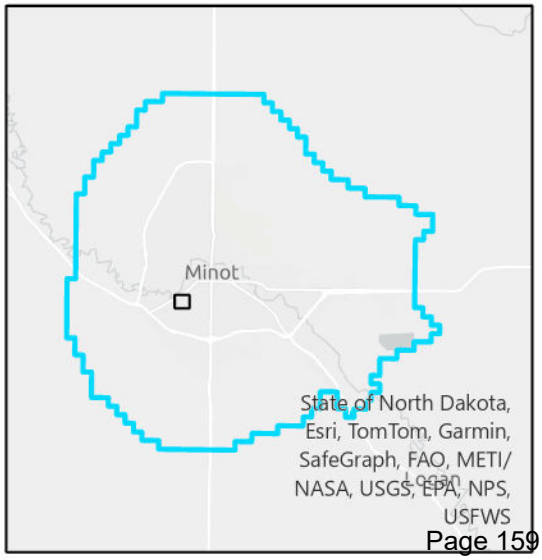
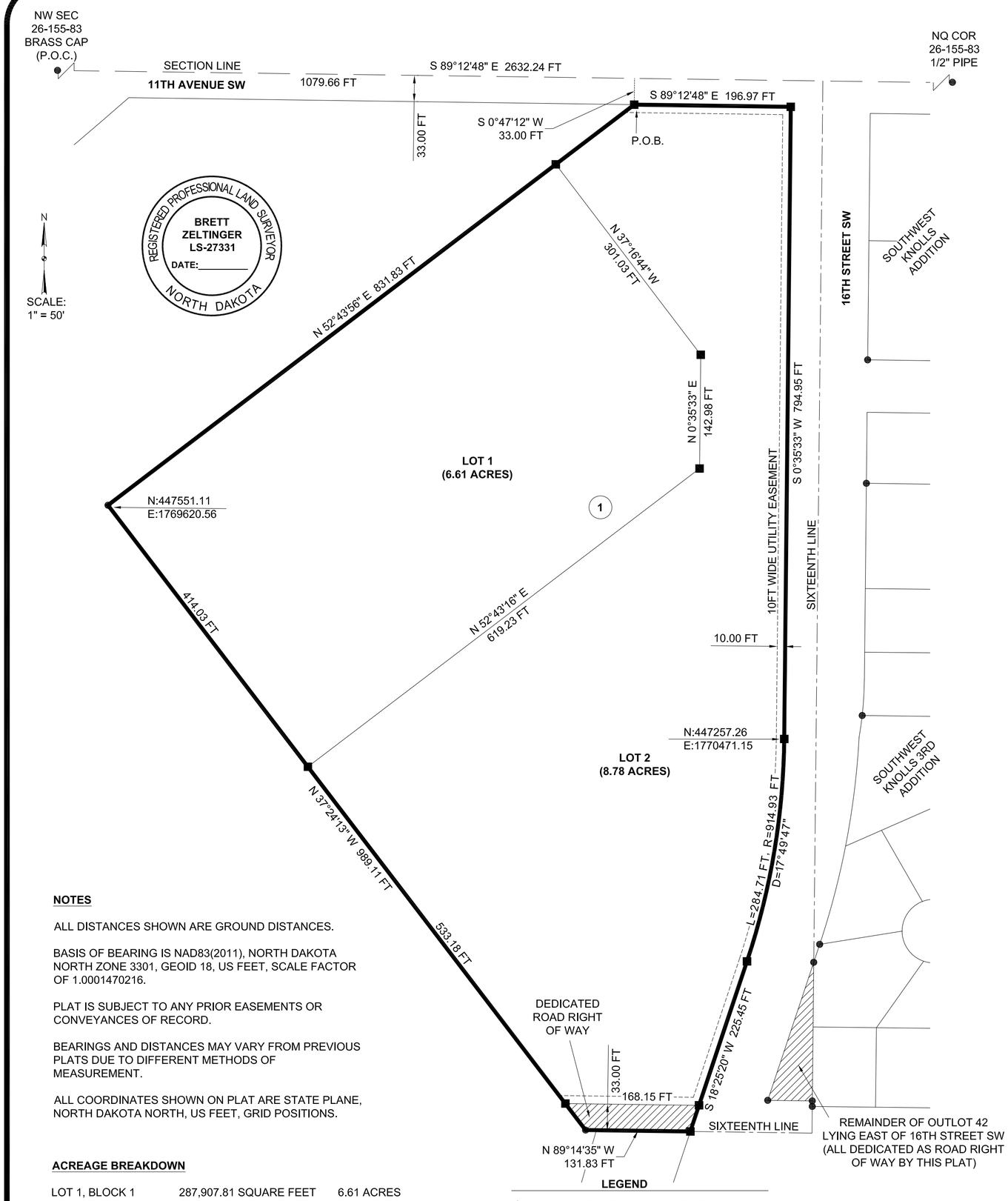


Exhibit 2

16TH STREET ADDITION

BEING A PORTION OF OUTLOT 42 OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER, SECTION 26, TOWNSHIP 155 NORTH, RANGE 83 WEST OF THE FIFTH PRINCIPAL MERIDIAN, WARD COUNTY, NORTH DAKOTA



NOTES

ALL DISTANCES SHOWN ARE GROUND DISTANCES.

BASIS OF BEARING IS NAD83(2011), NORTH DAKOTA NORTH ZONE 3301, GEOID 18, US FEET, SCALE FACTOR OF 1.0001470216.

PLAT IS SUBJECT TO ANY PRIOR EASEMENTS OR CONVEYANCES OF RECORD.

BEARINGS AND DISTANCES MAY VARY FROM PREVIOUS PLATS DUE TO DIFFERENT METHODS OF MEASUREMENT.

ALL COORDINATES SHOWN ON PLAT ARE STATE PLANE, NORTH DAKOTA NORTH, US FEET, GRID POSITIONS.

ACREAGE BREAKDOWN

LOT 1, BLOCK 1	287,907.81 SQUARE FEET	6.61 ACRES
LOT 2, BLOCK 1	382,571.90 SQUARE FEET	8.78 ACRES
TOTALS	670,479.71 SQUARE FEET	15.39 ACRES

LEGEND

● EXISTING MONUMENT

■ SET 24" #5 REBAR WITH ORANGE PLASTIC CAP STAMPED LS-27331

LEGAL DESCRIPTION

A TRACT OF LAND BEING A PORTION OF OUTLOT 42 OF THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER, SECTION 26, TOWNSHIP 155 NORTH, RANGE 83 WEST OF THE FIFTH PRINCIPAL MERIDIAN, WARD COUNTY, NORTH DAKOTA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SAID SECTION 26, SAID POINT BEING A BLM BRASS CAP; THENCE S89°12'48E, ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 26, A DISTANCE OF 1079.66 FEET; THENCE S00°47'12"W, BEING PERPENDICULAR TO THE NORTH LINE OF SAID SECTION 26, A DISTANCE OF 33.00 FEET, TO THE POINT OF BEGINNING, SAID POINT ALSO BEING A NORTHERLY CORNER OF SAID OUTLOT 42; THENCE S89°12'48E, ON THE NORTH LINE OF SAID OUTLOT 42, A DISTANCE OF 196.97 FEET,; THENCE S00°35'33"W, A DISTANCE OF 794.95 FEET; THENCE ALONG A TANGENT CURVE TO THE RIGHT, SAID CURVE HAS A RADIUS OF 914.93 FEET, A DELTA ANGLE OF 17°49'47", AND AN ARC LENGTH OF 284.71 FEET; THENCE S18°25'20"W, A DISTANCE OF 225.45 FEET; THENCE N89°14'35", A DISTANCE OF 131.83 FEET; THENCE N37°24'13"W, A DISTANCE OF 989.11 FEET; THENCE N52°43'56"E, A DISTANCE OF 831.83 FEET, TO THE POINT OF BEGINNING.

SAID TRACT CONTAINS 670,479.71 SQUARE FEET, 4.94 ACRES, MORE OR LESS AND SUBJECT TO ALL PRIOR EASEMENTS AND CONVEYANCES OF RECORD.

SURVEYOR'S CERTIFICATE

I, BRETT ZELTINGER, ND PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT I MADE THE WITHIN AND FOREGOING PLAT AND DESCRIPTION OF LAND AS HEREIN DESCRIBED, AND THAT THE LOTS, DISTANCES, AREA AND LOCATION, AS INDICATED ON SAID PLAT AND CONTAINED IN SAID DESCRIPTION, ARE TRUE AND CORRECT, TO THE BEST OF MY KNOWLEDGE AND BELIEF.

_____ _____
BRETT ZELTINGER LS-27331 N.D. PROFESSIONAL LAND SURVEYOR 8/8/2024
SURVEY DATE

STATE OF NORTH DAKOTA)
ss.
COUNTY OF BURLEIGH)

BE IT KNOWN THAT ON THIS _____ DAY OF _____, 20___ A.D. BEFORE ME PERSONALLY APPEARED **BRETT ZELTINGER**, AND ACKNOWLEDGED THE EXECUTION AND SIGNING OF THE ABOVE.

_____
NOTARY OF PUBLIC

OWNER'S CERTIFICATE

I, THE UNDERSIGNED, BEING THE SOLE OWNER OF THE LAND PLATTED HEREIN, DO HEREBY VOLUNTARILY CONSENT TO THE EXECUTION OF SAID PLAT, AND DO DEDICATE THE AREAS DESIGNATED AS DEDICATED ROAD RIGHT OF WAY, ALLEYS, PARKS, AND PUBLIC GROUNDS AS SHOWN HEREON, INCLUDING ALL SEWERS, CULVERTS, BRIDGES, WATER DISTRIBUTION LINES AND SIDEWALK GROUNDS WHETHER SUCH IMPROVEMENTS ARE SHOWN OR NOT, TO THE PUBLIC USE FOREVER.

I FURTHERMORE DEDICATE ALL THE REMAINDER OF OUTLOT 42 LYING EAST OF 16TH STREET SOUTHWEST, SHOWN ON THE PLAT AS A HATCHED AREA, TO THE PUBLIC USE FOREVER.

I ALSO HEREBY DEDICATE EASEMENTS TO RUN WITH THE LAND FOR WATER, SEWER, GAS, ELECTRIC, TELEPHONE, OR OTHER PUBLIC UTILITY LINES OR SERVICES UNDER, ON, OR OVER THOSE CERTAIN STRIPS OF LAND DESIGNATED HEREON AS "UTILITY EASEMENTS", WHETHER SHOWN OR EXISTING.

_____ _____
CRE-PROVENDER MINOT LLC DATE

STATE OF NORTH DAKOTA)
ss.
COUNTY OF _____)

BE IT KNOWN THAT ON THIS _____ DAY OF _____, 20___ A.D. BEFORE ME PERSONALLY APPEARED _____, AND ACKNOWLEDGED THE EXECUTION AND SIGNING OF THE ABOVE.

_____
NOTARY OF PUBLIC

APPROVAL

I HEREBY THAT THE PLAT SHOWN HEREON HAS BEEN APPROVED BY THE MINOT PLANNING COMMISSION AND THE MINOT CITY COUNCIL.

REVIEW ONLY

_____ _____
CITY OF MINOT ENGINEER DATE

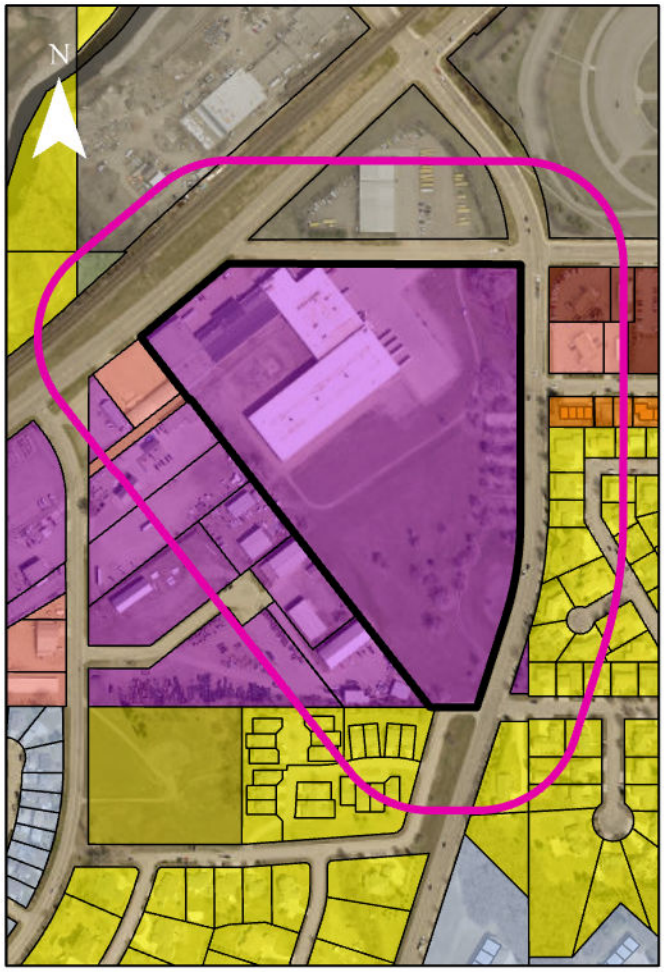
Apex Engineering Group

PRINT 18"x24" T:\Projects\2023\23.106.0006 MIN - 16th St SW Reconstruction\Survey\CAD\16thStAddition.dwg

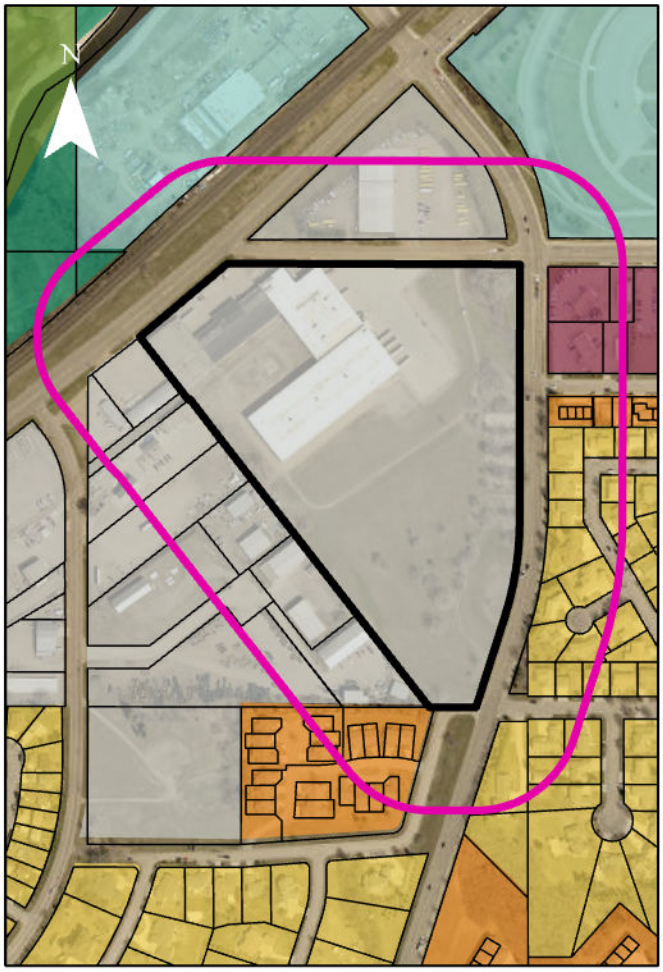
City of Minot

Exhibit 3

ZONING



FUTURE LAND USE



0 262.5 525 1,050 Feet

Zoning

Zoning

- AG
- C2
- C4
- M1
- P
- R1
- R2
- R3B
- R4

Both Maps

- Case # 2024-07-04
- Case # 2024-07-04 Notification Area

Land Use Type

- Public Institutional
- Suburban Residential
- General Commercial
- Parks And Recreation
- Urban Residential
- Light Industrial
- Riverfront Activation

Exhibit 4 – Site Photos

Facing North

Facing West

Facing South

Facing Southwest